

E4.1L

Reduce cost, time and weight

Moving energy made even easier -
fast harnessing and time-less design



Advantages of the E4.1L system:

- 30% lighter and lower-priced than comparable E4.1 size
- Very cost-efficient: strong and light due to optimised e-chain® link design
- Ideal ratio of internal and external dimensions with thinner outer links and optimised crossbar geometry
- e-chains® and e-tubes openable along the inner and outer radius, from both sides
- Inside completely accessible for easy filling
- Very tightly fitting lids on the e-tubes, virtually no gaps or openings
- Also suitable for side-mounted, standing and hanging applications



When to use another e-chain® series:

- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
 - ▶ E6.1, from page 750
- When the e-chain® is to be used in cleanrooms (cleanroom ISO Class 1)
 - ▶ E6.1, from page 750
- If even higher strength is required
 - ▶ E4.1, from page 566

Attachment from any side: with KMA mounting bracket

Cost-effective: optimised internal space

Easy filling: openable from both sides

Precise separation: notch crossbar with visual scale

Fast assembly: e-chains® and e-tubes openable along the inner and outer radius, from both sides

No Camber: NC version by rotating the outer link

Chip protection: very tightly sealed lids

High strength: due to undercut design

Straight run: due to inner/outer link principle

Reduce cost, time and weight - E4.1L

Significantly reduce assembly and harnessing time with the E4.1L(ean). Whether as an e-chain® or a chip-proof energy tube, with its sleek design and matching accessories the E4.1L brings maximum efficiency at a cost-effective price. An easily accessible interior, improved crossbars and separators and the new honeycomb strain relief system result in an 80% faster installation. Easily adaptable to any application due to the modular design, this universal solution makes optimal use of the space, is lighter than the alternatives and yet extremely strong. A cable-friendly interior ensures a long service life for the cables. The E4.1L reduces downtime and the assembly and maintenance time whilst saving time and money in operation and acquisition.

Typical industries and applications

● Machine tools ● General mechanical engineering ● If the strength of the E2/000 is insufficient, but an E4.1 is oversized



Electrically conductive ESD e-chains® upon request



High torsional rigidity



iF product design award 2014 for series R4.1L

2014

Series	Inner height <i>hi</i> [mm]	Inner width <i>Bi</i> [mm]	Outer width <i>Ba</i> [mm]	Outer height <i>ha</i> [mm]	Bend radius <i>R</i> [mm]	Unsupported length ≤ [m]	Page
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e-chains® with crossbars every link

light design, openable along the inner and outer radius, from both sides

E4.31L	31	40 - 175	54 - 189	42	055 - 250	2.00	536
E4.38L	38	50 - 300	66 - 316	54	063 - 300	2.75	542
E4.48L	48	50 - 300	70 - 320	64	075 - 350	3.75	550
E4.64L	64	87 - 175	113 - 201	84	100 - 400	4.00	560



e-tubes, fully enclosed

light design, excellent cable protection, openable along the inner and outer radius, from both sides

R4.31L	31	50 - 100	64 - 114	42	075 - 250	2.00	536
R4.38L	38	50 - 250	66 - 266	54	125 - 300	2.75	542
R4.48L	48	50 - 250	70 - 270	64	125 - 350	3.75	550



Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.



What does "Lean" mean in the E4.1L system?

Making a system "lean" means that its individual components are ideally matched to each other, making it more optimised. The aim is to avoid waste and increase efficiency. This is achieved in two ways: from the customer's point of view in order to fulfil their requirements, and from the producer's point of view in order to improve productivity and efficiency. igus® implements these lean properties in its energy supply systems in order to make time-saving e-chain® assembly possible, while also enabling quick and easy harnessing with cables.



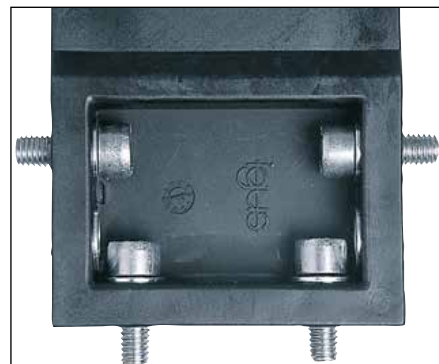
E4.1L e-chains® and R4.1L e-tube crossbars, lids and shelves are openable along the inner and outer radius, from both sides



Lean separators enable extremely fast cable filling in several layers



Assembled in seconds - honeycomb strain relief CFU. Simply insert cables and hoses into the honeycomb and close



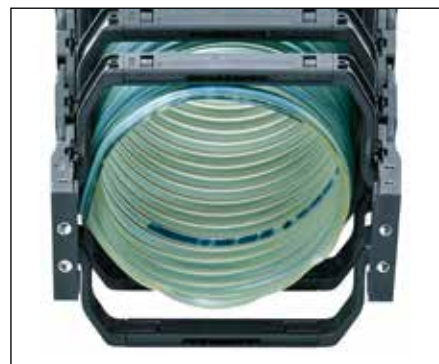
KMA mounting brackets with attachment options from any side



Safe parallel guiding of corrugated tubes with the optional, external TUB guidance



Extension links - for extremely wide e-chains® up to 2.0m with 50% more fill weight



Flexible extender crossbar range - e-chain® extender with crossbars for enlarging the interior



Aluminium SuperTrough - the standard igus® guide trough ▶ From page 1208



Aluminium and steel support tray for support of the lower run ▶ From page 1264

Technical data

	Speed gliding ¹⁾ / acceleration gliding ¹⁾	≤ 5 [m/s] / ≤ 25 [m/s ²]
	Speed FL_G / acceleration FL_G	≤ 20 [m/s] / ≤ 200 [m/s ²]
	Speed FL_B / acceleration FL_B	≤ 3 [m/s] / ≤ 6 [m/s ²]
	Material - permitted temperature °C, igumid G	-40°C / +120°C
	Flammability class, igumid G	VDE 0304 IIC UL94-HB

FL_G = unsupported with straight upper run FL_B = unsupported with permitted sag

¹⁾ Series E4.31L / R4.31L: If a gliding application is required for a long travel, please consult igus®.

Installation types, maximum travels

Series	Unsupported	Gliding ¹⁾	Vertical hanging	Vertical standing	Side mounted unsupported
E4.31L / R4.31L	≤ 4.0m	upon request	≤ 40m	≤ 2.5m	≤ 0.6m
E4.38L / R4.38L	≤ 5.5m	≤ 80m	≤ 50m	≤ 3.0m	≤ 1.0m
E4.48L / R4.48L	≤ 7.5m	≤ 100m	≤ 80m	≤ 3.0m	≤ 1.2m
E4.64L	≤ 4.0m	upon request	≤ 80m	≤ 8.0m	≤ 2.0m

¹⁾ Series E4.31L / R4.31L: If a gliding application is required for a long travel, please consult igus®.



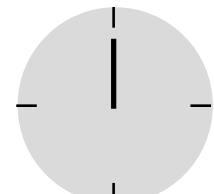
Swarf test in the igus® lab - protection proven in this test; stop-dogs completely free of swarf



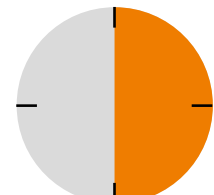
The light and fully enclosed R4.1 L e-tubes from igus® are now available in a high-temperature version

E4.1L | Reduce assembly time with the E4.1L(ean)

Interior separation



Product A



Time saving



E4.1L | The igus® E4.1L(ean) range



Lean interior separation vs. standard interior separation - time saving due to easy shelf insertion

Time-saving lean separators - **New**

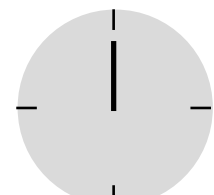
The new design of the igus® lean separators allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time.

- Enable extremely fast replacement of individual cables in a very full e-chain®
- Several layers of cables fitted quickly
- Save up to 50%* assembly time

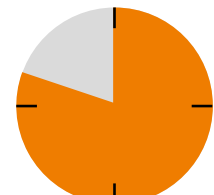
*Lean interior separation vs. standard interior separation. Measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory

▶ **Save around 50% time***

Strain relief



Product A



Time saving



Lean strain relief CFU vs. chainfix CFX - time-saving due to the honeycomb structure

Assembled in seconds - honeycomb strain relief CFU - **New**

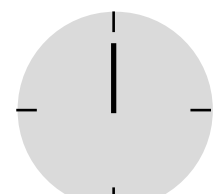
80%* faster strain relief for different cable types in different chambers, fully flexible, with strong holding force and easy assembly.

- Strain relief of different cables in one slot
- Modified tribologically optimised honeycomb design for even higher holding force
- New side sections for assembly and disassembly in seconds
- Simplified parts
- Can be used for long travels

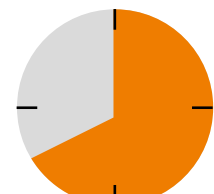
*Lean strain relief CFU vs. chainfix CFX. Measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory

▶ **Save around 80% time***

Opening crossbars and lids



Product A



Time saving



Serie E4.48L vs. E4.42 - time-saving due to easy opening mechanism

E4.1L - fast to harness



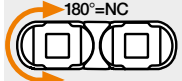




One of the quickest opening systems make the E4.1L the fastest e-chain® for harnessing.

- Save up to 67%* assembly time
- Lower weight, cable-friendly interior and improved ratio of inner to outer size
- Easy accessibility of the complete inner space, openable from both sides

*Series E4.48L vs. E4.42. Measured in the igus® harnessing factory

▶ **Save around 67% time***

Options with order keys | Examples based on series E4.38L/R4.38L



 Standard	<i>Simply turn outer side link, no additional rework</i>	<i>Reverse Bend Radius (RBR) for circular movements</i>	<i>Unsupported lengths +25% possible</i>
Part No. Standard 	Part No. NC-Version 	Part No. RBR 	Part No. XXL material²⁾ 
 E4.38L.100.R.0 e-chain® with crossbars every link	E4.38L.100.R.0.NC e-chain® with crossbars every link	E4.38L.100.R1/R2.0 e-chain® with crossbars every link	E4.38L.100.R.0.XXL e-chain® with crossbars every link
R4.38L.100.R.0 e-tube, closed	R4.38L.100.R.0.NC e-tube, closed	<i>RBR for e-tubes - please consult igus®</i>	R4.38L.100.R.0.XXL e-tube, closed
 Ready to ship* in 24 - 48 hrs.	Ready to ship* in 24 - 48 hrs.	Delivery time*¹⁾ 5-10 business days	Delivery time* upon request

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

1) 2-5 business days with express surcharge 2) Side-bands made from XXL material


No burning-in of hot swarf up to +850°C (1562°F)

ESD - electrically conductive material

Part No. igumid HT 	Part No. igumid ESD 
–	E4.38L.100.R.0.ESD e-chain® with crossbars every link
R4.38L.100.R.0.HT e-tube, closed	R4.38L.100.R.0.ESD e-tube, closed
Delivery time* 7-10 business days	Delivery time* 10 business days

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.






Order example | Examples based on series E4.38L

 **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 18 links	E4.38L.100.150.0
+ Mounting brackets	1 set (with odd number of links and integrated C-profiles)	E4.380.100.1.12.C
Interior separation	with 2 separators assembled every 2 nd link	2 x 38.1.1
Order text:	1m E4.38L.100.150.0 + E4.380.100.1.12.C + 2 x 38.1.1	

Order key and colour examples | Examples based on series E4.38L/R4.38L

 **Order key**

e-chain® with crossbars every link	E4.38L.100.150.0
e-tube fully enclosed	R4.38L.100.150.0
Series / Type	
Inner height	
Width index (depends on <i>B</i>)	
Bend radius <i>R</i>	
Colour index (standard black)	

Order index for colour options

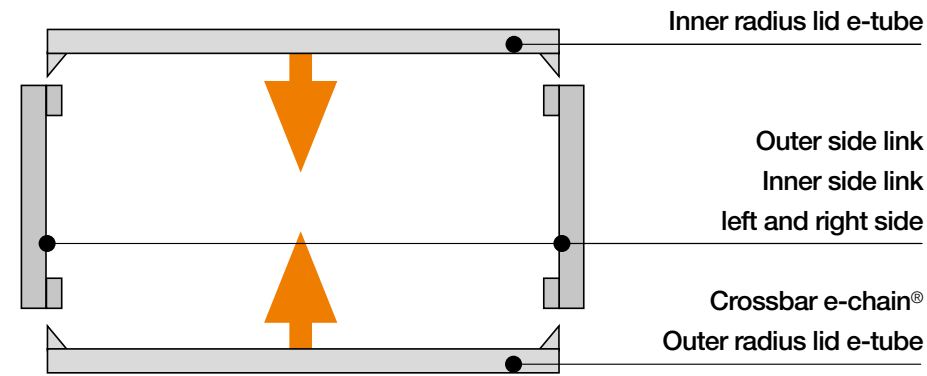
Colour	Order index	Colour	Order index
 Black	Standard .0	 Orange	Special colour .2
 Silver-grey	Special colour .31	 Yellow	Special colour .4
 White	Special colour .1	 Light grey	Special colour .14
 Grey-white	Special colour .1S		

Black e-chains® available from stock.

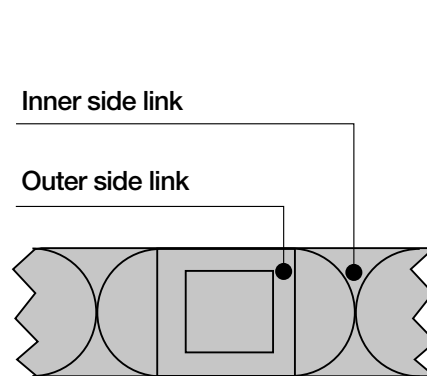
Above special colours upon request.

 Four-piece e-chain® link as individual parts - E4.1L

e-chains®/e-tube link design



Inner/outer link principle



Part No. series	Crossbar ¹⁾ e-chain®	Inner radius lid ¹⁾ e-tube	Outer radius lid ¹⁾ e-tube	Outer side link ²⁾	Inner side link ³⁾
E4.31L / R4.31L	C414. <i>Bi</i>	E4.315. <i>Bi</i>	E4.316. <i>Bi</i>	E4.31L.01	E4.31L.02. <i>R</i>
E4.38L / R4.38L	C622. <i>Bi</i>	E4.385. <i>Bi</i>	E4.386. <i>Bi</i>	E4.38L.01	E4.38L.02. <i>R</i>
E4.48L / R4.48L	C622. <i>Bi</i>	E4.485. <i>Bi</i>	E4.486. <i>Bi</i>	E4.48L.01	E4.48L.02. <i>R</i>
E4.64L	C824. <i>Bi</i>	–	–	E4.64L.01	E4.64L.02. <i>R</i>

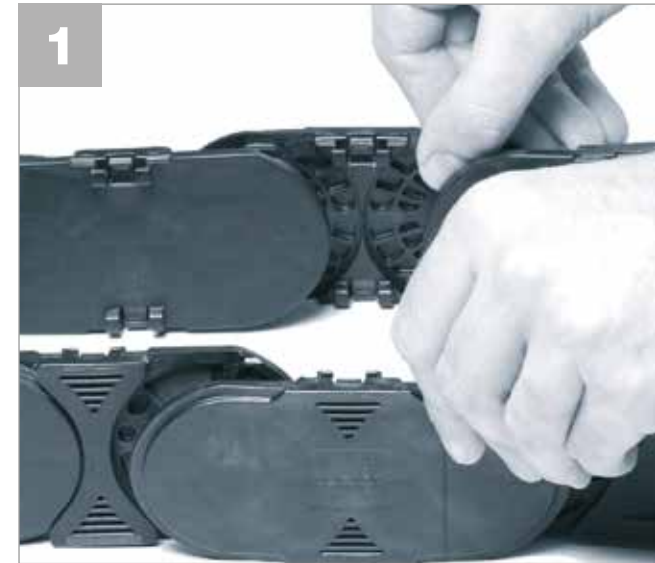
1) Crossbar / lid / shelf - append part number with the desired value in the width index *Bi*, e.g. C622.150

2) Outer link - suitable for any radius

3) Inner link - Part No. with required radius *R*. Example: E4.38L.02.150

 Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.



Line up inner and outer links alternately ...



... insert the undercut of the outer link into the groove on the inner link and click together



Click in crossbars into one side, close them and snap into place



To open, insert the screwdriver into the locking mechanism and prise it open outwards

 An assembly video available online at www.igus.eu/E4.1L_assembly



e-chains® | E4.31L | Crossbars every link (openable along inner and outer radius, from both sides)
e-tubes | R4.31L | Fully enclosed (lids openable along inner and outer radius, from both sides)

Part No.	Part No.	Bi	Ba	E4.31L	R4.31L	Part No.	Part No.	Bi	Ba	E4.31L	R4.31L
e-chains®	e-tubes	[mm]	[mm]	[kg/m]	[kg/m]	e-chains®	e-tubes	[mm]	[mm]	[kg/m]	[kg/m]
E4.31L.040.R.0	-	040	054	≈ 0.70	-	E4.31L.125.R.0	R4.31L.125.R.0**	125	139	≈ 0.96	≈ 1.28
E4.31L.050.R.0	R4.31L.050.R.0	050	064	≈ 0.74	≈ 0.87	E4.31L.137.R.0**	-	137	151	≈ 0.98	-
E4.31L.062.R.0	-	062	076	≈ 0.76	-	E4.31L.150.R.0	R4.31L.150.R.0**	150	164	≈ 1.00	≈ 1.40
E4.31L.075.R.0	R4.31L.075.R.0**	075	089	≈ 0.78	≈ 1.01	E4.31L.162.R.0	-	162	176	≈ 1.04	-
E4.31L.087.R.0	-	087	101	≈ 0.83	-	E4.31L.175.R.0	R4.31L.175.R.0**	175	189	≈ 1.13	≈ 1.55
E4.31L.100.R.0	R4.31L.100.R.0	100	114	≈ 0.88	≈ 1.10	E4.31L.187.R.0**	-	187	201	≈ 1.17	-
E4.31L.112.R.	-	112	126	≈ 0.93	-	E4.31L.200.R.0**	R4.31L.200.R.0**	200	214	≈ 1.17	≈ 1.68

**Width available upon request. Please consult igus® for delivery time.

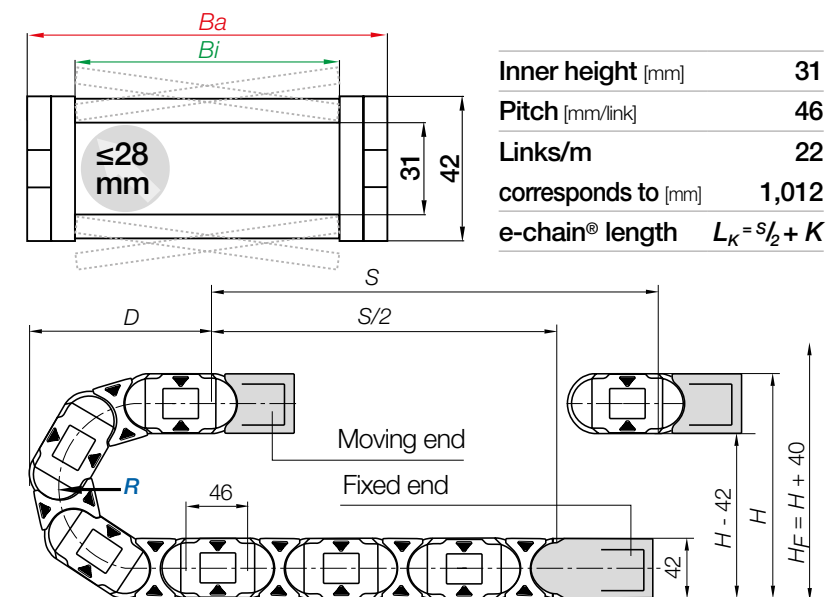
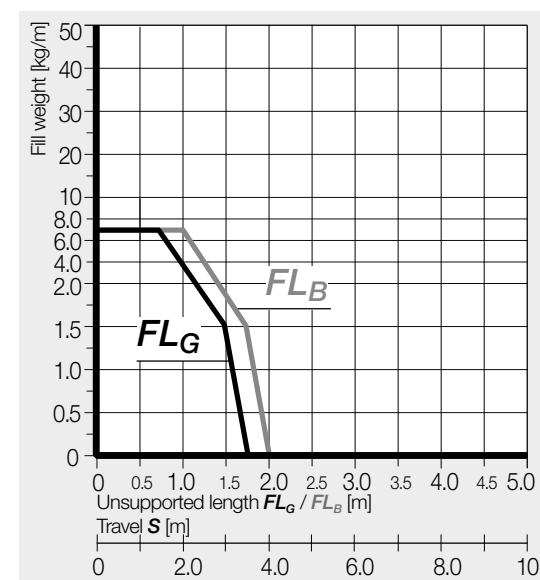
1) Radius not available for e-tubes

Available bend radii

R [mm] | 055¹⁾ | 063¹⁾ | 075 | 100 | 125 | 150 | 175 | 200 | 250 |

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

E4.31L.050.075.0 = crossbars every link / R4.31L.050.075.0 = fully enclosed

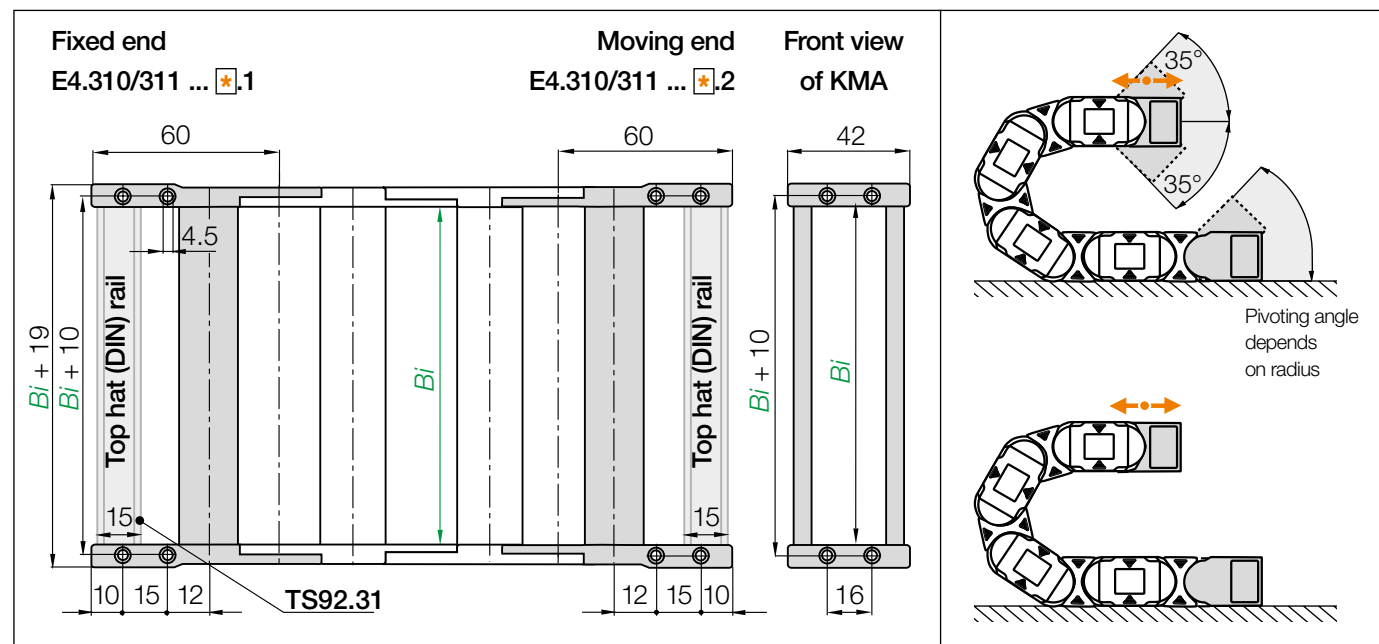


R	055 ¹⁾	063 ¹⁾	075	100	125	150	175	200	250
H	152	168	192	242	292	342	392	442	542
D	145	153	165	190	215	240	265	290	340
K	265	290	330	410	485	565	645	725	880

The required clearance height: $H_F = H + 40\text{mm}$ (with 1.0kg/m fill weight)

1) Radius not available for e-tubes

i If a gliding application is required for a long travel, please consult igus®.



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

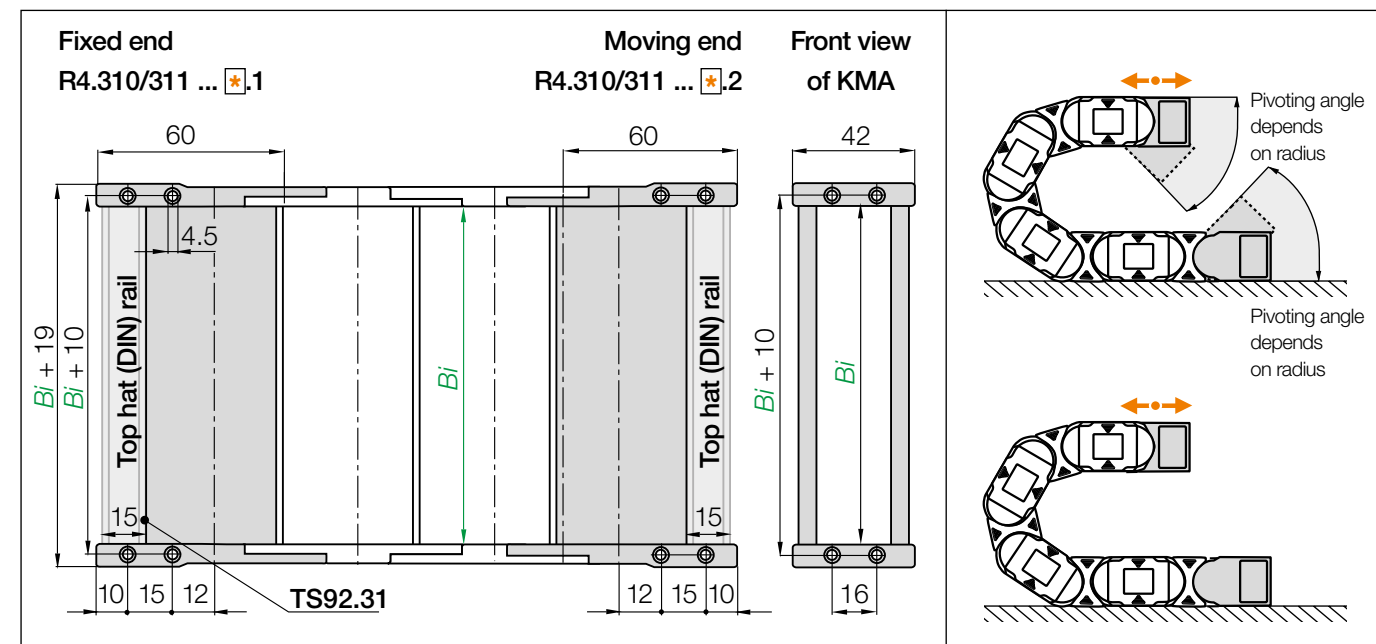
Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]	Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]
040.	E4.310.040.*.12.C	E4.311.040.*.12.C	040	125.	E4.310.125.*.12.C	E4.311.125.*.12.C	125
050.	E4.310.050.*.12.C	E4.311.050.*.12.C	050	137.	E4.310.137.*.12.C*	E4.311.137.*.12.C*	137
062.	E4.310.062.*.12.C	E4.311.062.*.12.C	062	150.	E4.310.150.*.12.C	E4.311.150.*.12.C	150
075.	E4.310.075.*.12.C	E4.311.075.*.12.C	075	162.	E4.310.162.*.12.C	E4.311.162.*.12.C	162
087.	E4.310.087.*.12.C	E4.311.087.*.12.C	087	175.	E4.310.175.*.12.C	E4.311.175.*.12.C	175
100.	E4.310.100.*.12.C	E4.311.100.*.12.C	100	187.	E4.310.187.*.12.C*	E4.311.187.*.12.C*	187
112.	E4.310.112.*.12.C	E4.311.112.*.12.C	112	200.	E4.310.200.*.12.C*	E4.311.200.*.12.C*	200

(KMA = polymer metal mounting bracket) For the TS92.31 top-hat (DIN) rail option please add index .C

*Width available upon request. Delivery time upon request. **Note:** If a gliding application is required for a long travel, please consult igus®.

Strain relief elements with tie-wrap teeth

- Stepped strain relief element outside of the e-chain® cross section
 - For e-chains® and e-tubes
 - Easy to retrofit
 - Simple installation into top hat (DIN) rail 15 (TS92.31)
- Part No. CFV.31.N15 - more information ▶ From page 1330

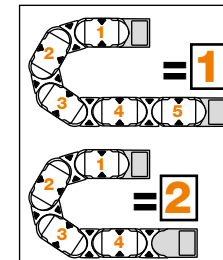


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

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]
050.	R4.310.050.*.12.C	R4.311.050.*.12.C	050	150.	R4.310.150.*.12.C*	R4.311.150.*.12.C*	150
075.	R4.310.075.*.12.C*	R4.311.075.*.12.C*	075	175.	R4.310.175.*.12.C*	R4.311.175.*.12.C*	175
100.	R4.310.100.*.12.C	R4.311.100.*.12.C	100	200.	R4.310.200.*.12.C*	R4.311.200.*.12.C*	200
125.	R4.310.125.*.12.C*	R4.311.125.*.12.C*	125				

(KMA = polymer metal mounting bracket) For the TS92.31 top-hat (DIN) rail option please add index .C

*Width available upon request. Delivery time upon request. **Note:** If a gliding application is required for a long travel, please consult igus®.

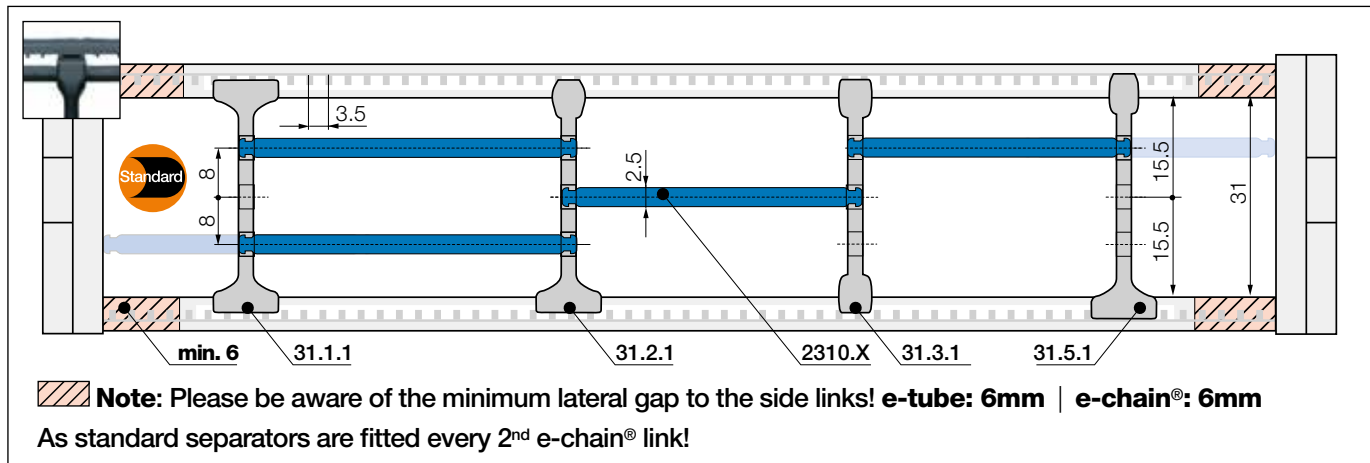


Note: * The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index 1 (for odd) or 2 (for even) depending on an even or odd number of links required. Please add the index .A2 for the preassembled standard version, with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

E4.310.100.2.12.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, tiwrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300



Standard separator, wide base

unassembled	31.1
assembled	31.1.1

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

Separator, narrow top

unassembled	31.2
assembled	31.2.1

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

Separator, narrow

unassembled	31.3
assembled	31.3.1

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

Notch separator for notched crossbar

unassembled	31.5
assembled	315.1

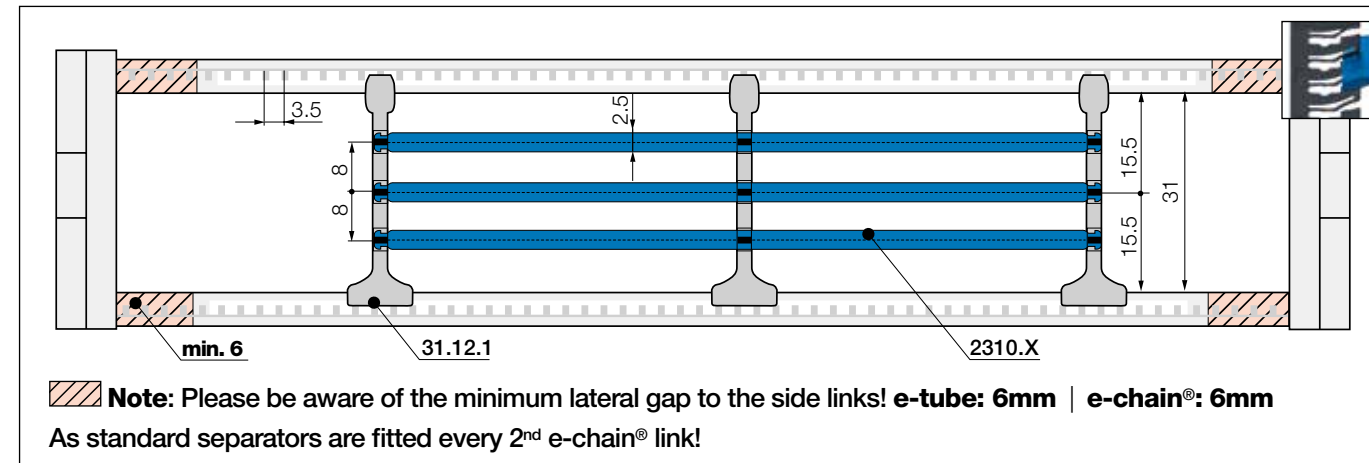
Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Shelf, lockable

unassembled	2300.X
assembled	2310.X

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			
	015	2300.015	2310.015	060	2300.060	2310.060	087	2300.87	2310.087
	025	2300.025	2310.025	062	2300.062	2310.062	090	2300.90	2310.090
	030	2300.030	2310.030	065	2300.065	2310.065	100	2300.100	2310.100
	038	2300.038	2310.038	070	2300.070	2310.070	103	2300.103	2310.103
	040	2300.040	2310.040	075	2300.075	2310.075	110	2300.110	2310.110
	050	2300.050	2310.050	077	2300.077	2310.077	120	2300.120	2310.120
	057	2300.057	2310.057	080	2300.080	2310.080	125	2300.125	2310.125



Lean separator

unassembled	31.12
assembled	31.12.1

Lean separators
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® harnessing factory)



Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any tools

Part No. 31.Z. More information ► From page 1326

Aluminium support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

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.eu/HT



e-chains® | E4.38L | **Crossbars every link** (openable along inner and outer radius, from both sides)
e-tubes | R4.38L | **Fully enclosed** (lids openable along inner and outer radius, from both sides)

Part No.	Part No.	Bi	Ba	E4.38L	R4.38L	Part No.	Part No.	Bi	Ba	E4.38L	R4.38L
e-chains®	e-tubes	[mm]	[mm]	[kg/m]	[kg/m]	e-chains®	e-tubes	[mm]	[mm]	[kg/m]	[kg/m]
E4.38L.050.R.0	R4.38L.050.R.0	050	066	≈ 1.13	≈ 1.20	E4.38L.225.R.0	-	225	241	≈ 1.97	-
E4.38L.062.R.0	-	062	078	≈ 1.19	-	E4.38L.237.R.0	-	237	253	≈ 2.05	-
E4.38L.075.R.0	R4.38L.075.R.0	075	091	≈ 1.26	≈ 1.38	E4.38L.250.R.0	R4.38L.250.R.0	250	266	≈ 2.11	≈ 2.65
E4.38L.087.R.0	-	087	103	≈ 1.30	-	E4.38L.262.R.0	-	262	278	≈ 2.15	-
E4.38L.100.R.0	R4.38L.100.R.0	100	116	≈ 1.37	≈ 1.60	E4.38L.275.R.0**	-	275	291	≈ 2.22	-
E4.38L.105.R.0	-	105	125	≈ 1.39	-	E4.38L.287.R.0**	-	287	303	≈ 2.30	-
E4.38L.112.R.0	-	112	128	≈ 1.44	-	E4.38L.300.R.0	R4.38L.300.R.0**	300	316	≈ 2.36	≈ 3.00
E4.38L.125.R.0	R4.38L.125.R.0	125	141	≈ 1.50	≈ 1.75	E4.38L.312.R.0**	-	312	328	≈ 2.40	-
E4.38L.137.R.0	-	137	153	≈ 1.55	-	E4.38L.325.R.0**	-	325	341	≈ 2.47	-
E4.38L.150.R.0	R4.38L.150.R.0	150	166	≈ 1.65	≈ 1.92	E4.38L.337.R.0**	-	337	353	≈ 2.55	-
E4.38L.162.R.0	-	162	178	≈ 1.69	-	E4.38L.350.R.0**	-	350	366	≈ 2.57	-
E4.38L.175.R.0	R4.38L.175.R.0	175	191	≈ 1.74	≈ 2.10	E4.38L.362.R.0**	-	362	378	≈ 2.60	-
E4.38L.187.R.0**	-	187	203	≈ 1.80	-	E4.38L.375.R.0**	-	375	391	≈ 2.65	-
E4.38L.200.R.0	R4.38L.200.R.0	200	216	≈ 1.86	≈ 2.29	E4.38L.387.R.0**	-	387	403	≈ 2.76	-
E4.38L.212.R.0**	-	212	228	≈ 1.90	-	E4.38L.400.R.0**	-	400	416	≈ 2.83	-

**Width available upon request. Please consult igus® for delivery time.

*Radius available upon request. Please consult igus® for delivery time. 1) Radius not available for e-tubes

Available bend radii

R [mm] | 063¹⁾ | 075¹⁾ | 100¹⁾ | 125 | 150 | 175 | 200 | 250 | 300 | 350*

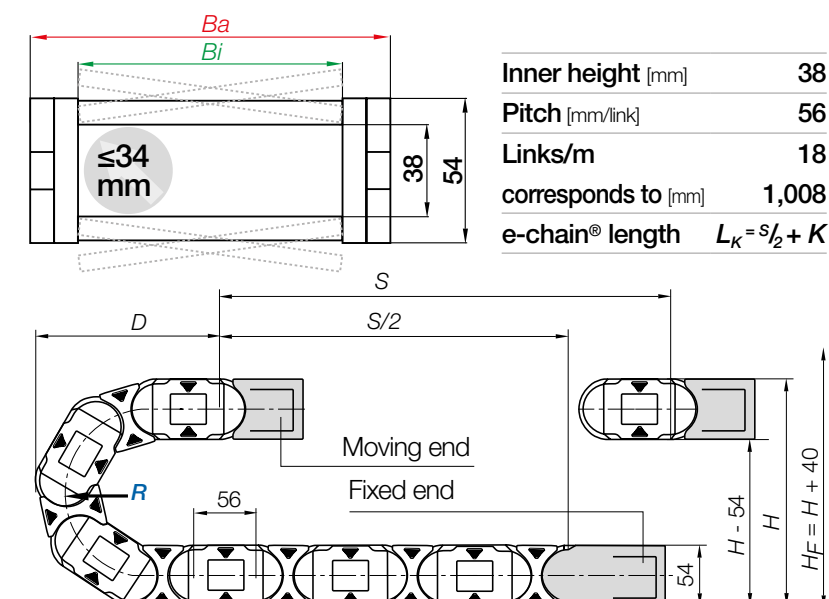
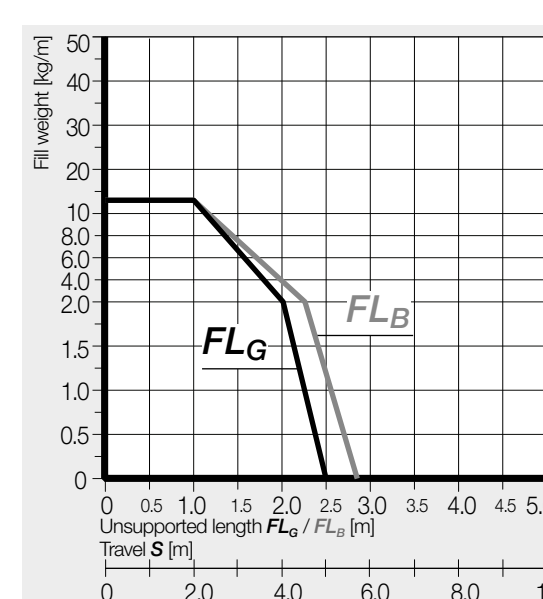
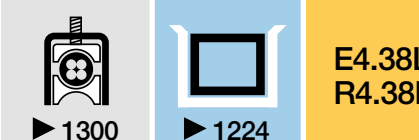
Complete Part No. with required radius (R). Example:

E4.38L.100.150.0 = crossbars every link / R4.38L.100.150.0 = fully enclosed

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.eu/HT

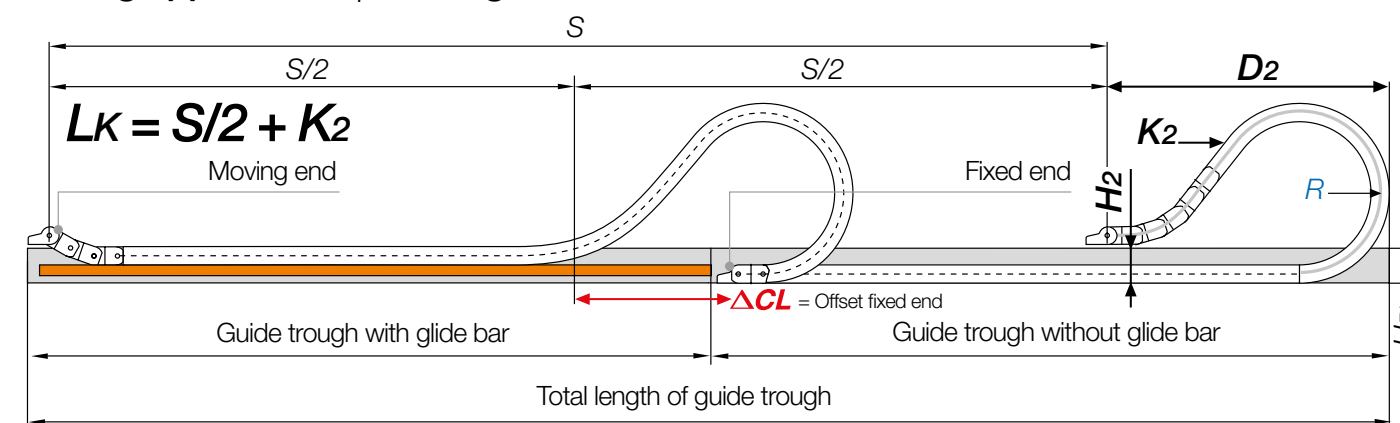


R	063 ¹⁾	075 ¹⁾	100 ¹⁾	125	150	175	200	250	300	350*
H	180	204	254	304	354	404	454	554	654	754
D	174	186	211	236	261	286	311	361	411	461
K	310	350	430	505	585	665	745	900	1,055	1,215

The required clearance height: $H_F = H + 40\text{mm}$ (with 2.0kg/m fill weight)

*Radius available upon request. Please consult igus® for delivery time. 1) Radius not available for e-tubes

Gliding applications | For long travels from 10m to max. 80m

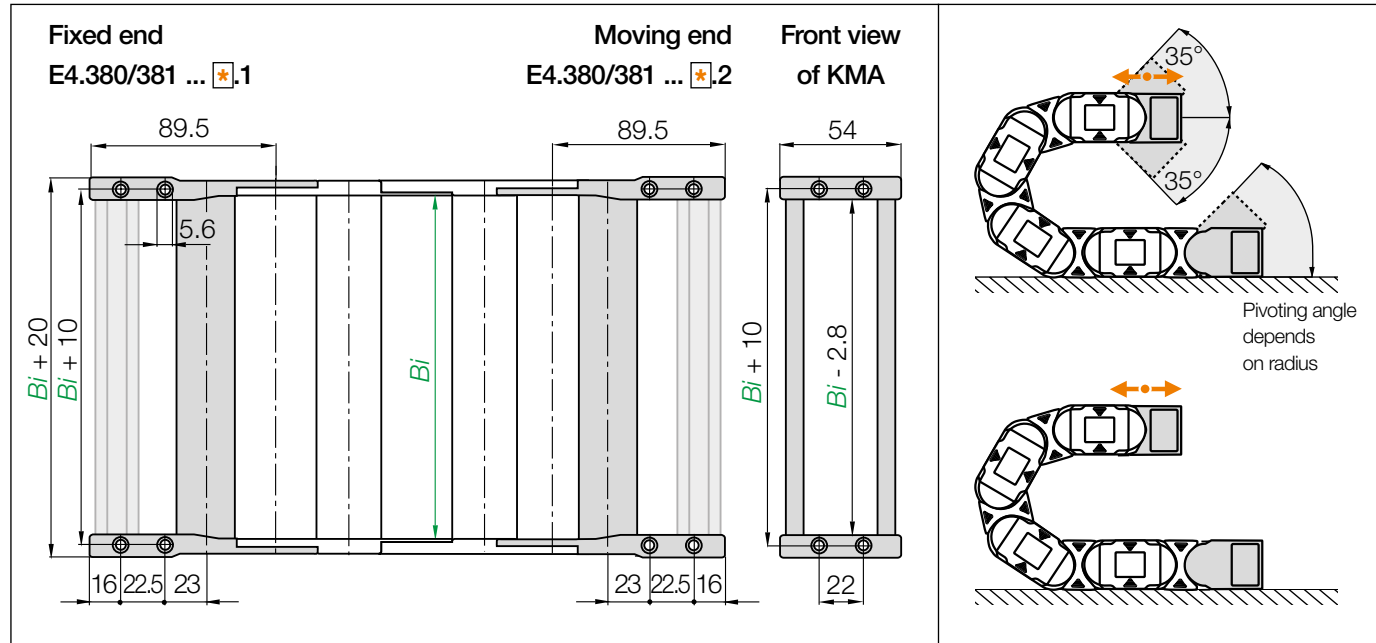


Note: We recommend the project planning of such a system to be carried out by igus®.

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

R	063 ¹⁾	075 ¹⁾	100 ¹⁾	125	150	175	200	250 ²⁾	300 ²⁾	350 ²⁾
H ₂	180	204	96	96	96	96	96	-	-	-
D ₂	174	186	370	470	500	655	770	-	-	-
K ₂	310	350	616	784	896	1,120	1,288	-	-	-
ΔCL	-	-	160	210	240	370	460	-	-	-

1) Radius not available for e-tubes 2) Radius not suitable for long travels. Please consult igus®.

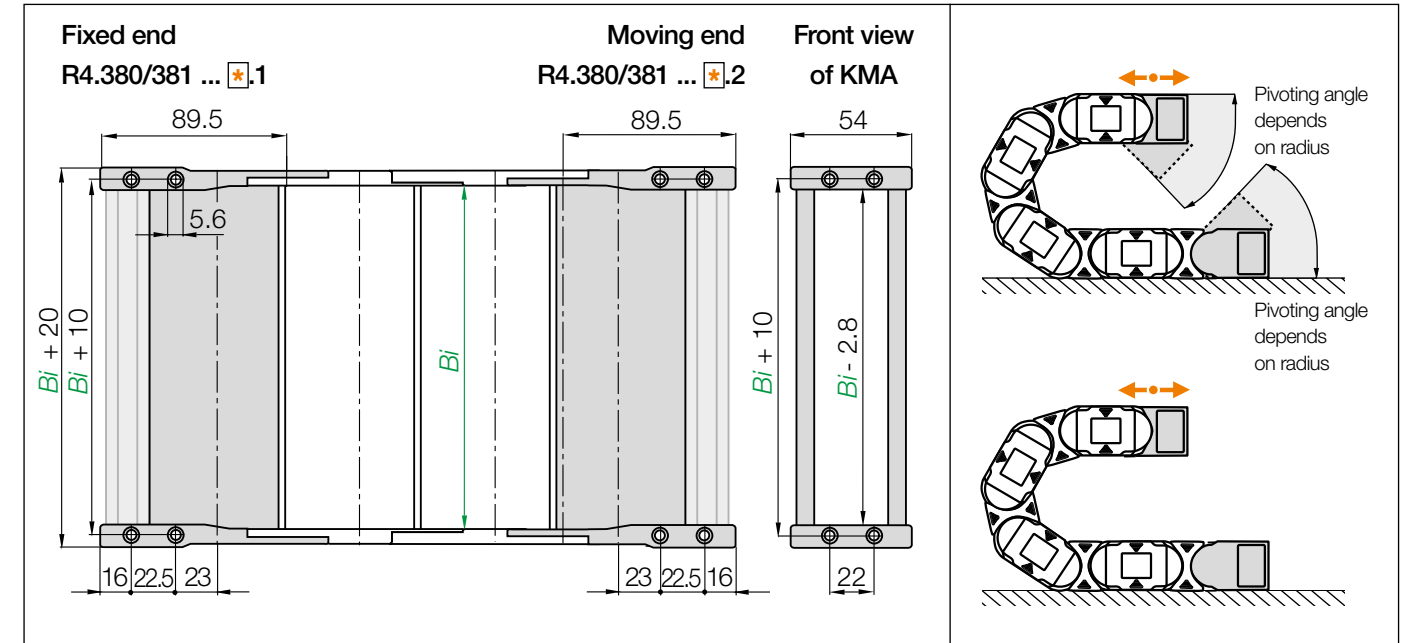


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

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]
050.	E4.380.050.*.12.C	E4.381.050.*.12.C	050	225.	E4.380.225.*.12.C	E4.381.225.*.12.C	225
062.	E4.380.062.*.12.C	E4.381.062.*.12.C	062	237.	E4.380.237.*.12.C	E4.381.237.*.12.C	237
075.	E4.380.075.*.12.C	E4.381.075.*.12.C	075	250.	E4.380.250.*.12.C	E4.381.250.*.12.C	250
087.	E4.380.087.*.12.C	E4.381.087.*.12.C	087	262.	E4.380.262.*.12.C	E4.381.262.*.12.C	262
100.	E4.380.100.*.12.C	E4.381.100.*.12.C	100	275.	E4.380.275.*.12.C*	E4.381.275.*.12.C*	275
105.	E4.380.105.*.12.C	E4.381.105.*.12.C	105	287.	E4.380.287.*.12.C*	E4.381.287.*.12.C*	287
112.	E4.380.112.*.12.C	E4.381.112.*.12.C	112	300.	E4.380.300.*.12.C	E4.381.300.*.12.C	300
125.	E4.380.125.*.12.C	E4.381.125.*.12.C	125	312.	E4.380.312.*.12.C*	E4.381.312.*.12.C*	312
137.	E4.380.137.*.12.C	E4.381.137.*.12.C	137	325.	E4.380.325.*.12.C*	E4.381.325.*.12.C*	325
150.	E4.380.150.*.12.C	E4.381.150.*.12.C	150	337.	E4.380.337.*.12.C*	E4.381.337.*.12.C*	337
162.	E4.380.162.*.12.C	E4.381.162.*.12.C	162	350.	E4.380.350.*.12.C*	E4.381.350.*.12.C*	350
175.	E4.380.175.*.12.C	E4.381.175.*.12.C	175	362.	E4.380.362.*.12.C*	E4.381.362.*.12.C*	362
187.	E4.380.187.*.12.C*	E4.381.187.*.12.C*	187	375.	E4.380.375.*.12.C*	E4.381.375.*.12.C*	375
200.	E4.380.200.*.12.C	E4.381.200.*.12.C	200	387.	E4.380.387.*.12.C*	E4.381.387.*.12.C*	387
212.	E4.380.212.*.12.C*	E4.381.212.*.12.C*	212	400.	E4.380.400.*.12.C*	E4.381.400.*.12.C*	400

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

*Width available upon request. Please consult igus® for delivery time.

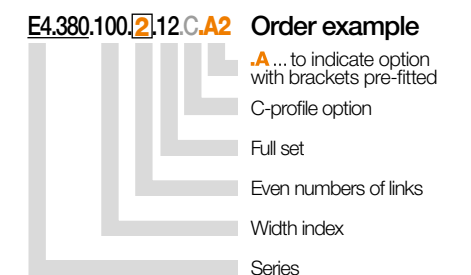
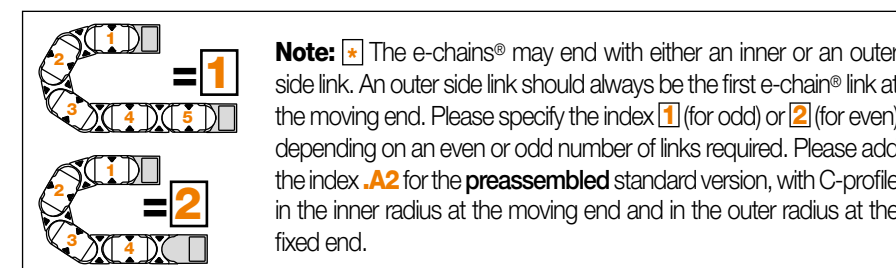


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

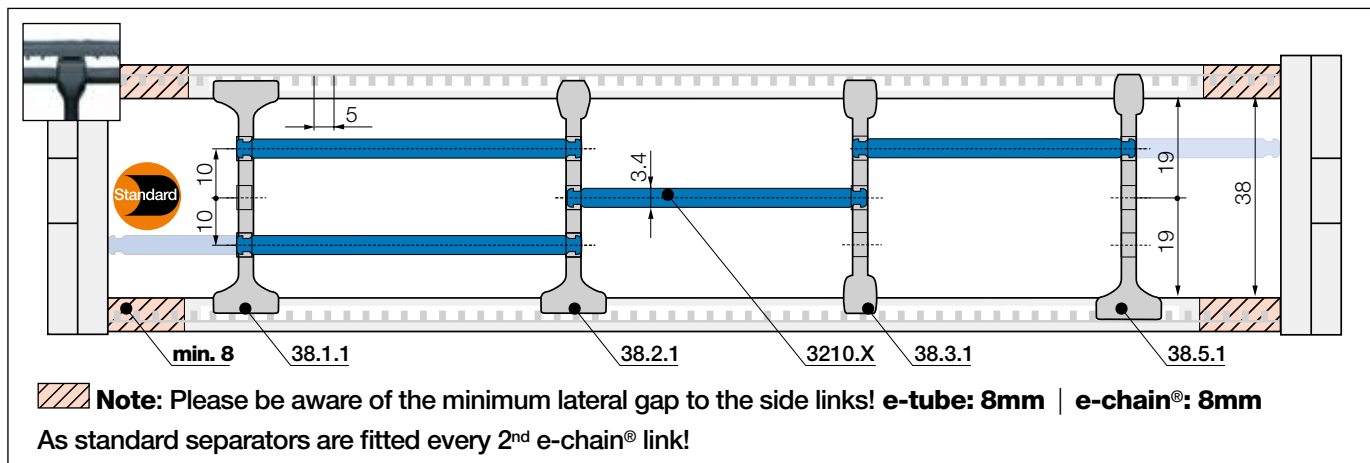
Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]	Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]
050.	R4.380.050.*.12.C	R4.381.050.*.12.C	050	175.	R4.380.175.*.12.C	R4.381.175.*.12.C	175
075.	R4.380.075.*.12.C	R4.381.075.*.12.C	075	200.	R4.380.200.*.12.C	R4.381.200.*.12.C	200
100.	R4.380.100.*.12.C	R4.381.100.*.12.C	100	250.	R4.380.250.*.12.C	R4.381.250.*.12.C	250
125.	R4.380.125.*.12.C	R4.381.125.*.12.C	125	300.	R4.380.300.*.12.C*	R4.381.300.*.12.C*	300
150.	R4.380.150.*.12.C	R4.381.150.*.12.C	150				

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

*Width available upon request. Please consult igus® for delivery time.



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



Standard separator, wide base

un assembled	38.1
assembled	38.1.1

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

Separator, narrow top

un assembled	38.2
assembled	38.2.1

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

Separator, narrow

un assembled	38.3
assembled	38.3.1

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

Notch separator for notched crossbar

un assembled	38.5
assembled	38.5.1

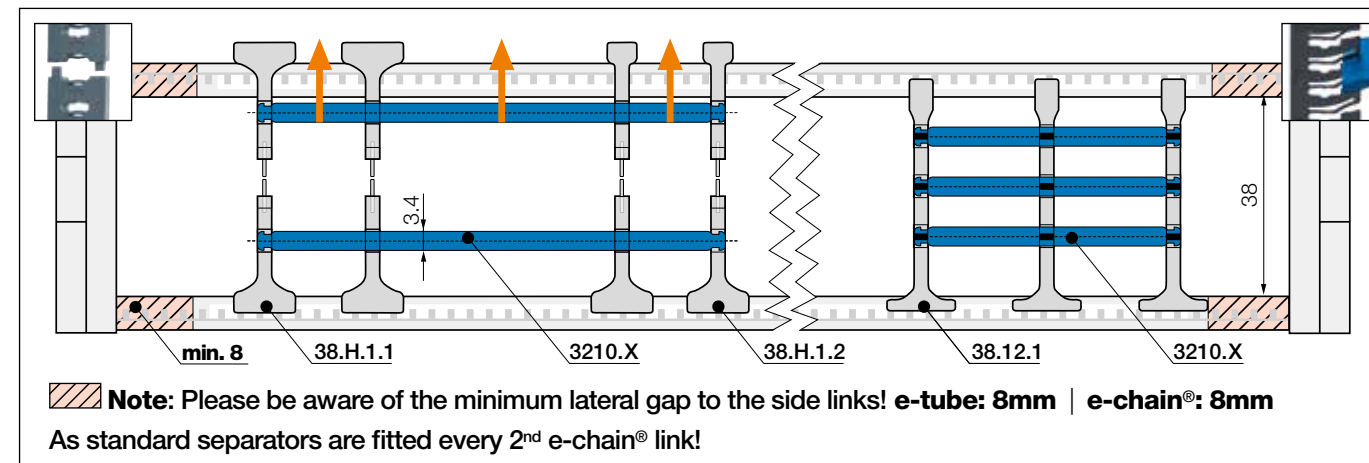
Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Shelf, lockable

un assembled	3200.X
assembled	3210.X

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]	un assembled	assembled	X [mm]	un assembled	assembled	X [mm]	un assembled	assembled
		050	3200.050	3210.050	125	3200.125	3210.125	225	3200.225
	075	3200.075	3210.075	150	3200.150	3210.150	250	3200.250	3210.250
	100	3200.100	3210.100	175	3200.175	3210.175			
	115	3200.115	3210.115	200	3200.200	3210.200			



Split separator, wide base/top

un assembled	38.H.1
assembled	38.H.1.1

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.

Split separator, narrow top

un assembled	38.H.2
assembled	38.H.2.1

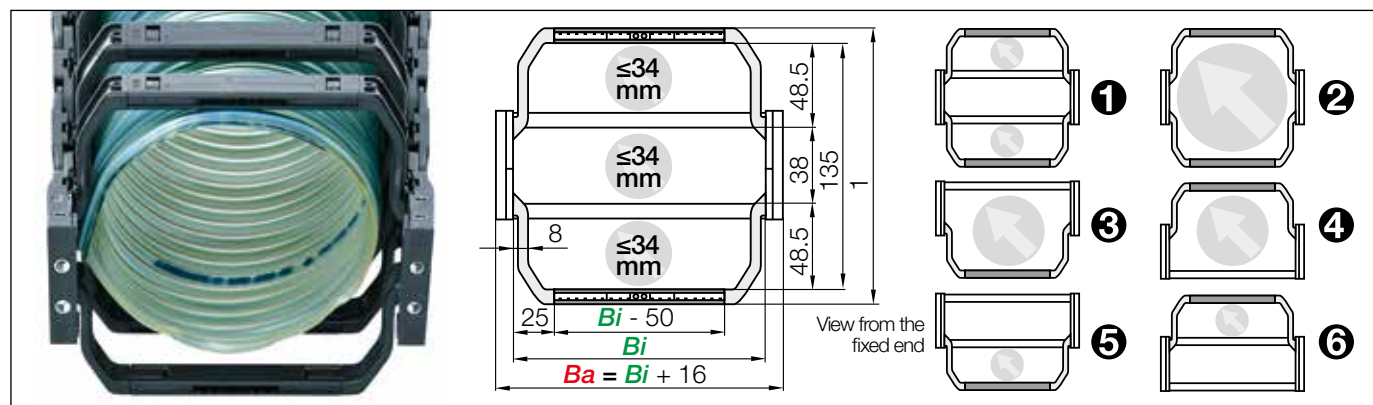
Lean separator

un assembled	38.12
assembled	38.12.1

Lean separators
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® harnessing factory)





Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ [mm]	Part No. e-chain® with extender crossbar
1) Extender crossbar and standard crossbar alternating along the inner and outer radius ¹⁾	34	E4.38L.XXXHB48.R.0
2) Extender crossbar on both sides along the inner and outer radius ²⁾	122	E4.38L.XXXB48.R.0
3) Extender crossbar along the outer radius ³⁾	78	E4.38L.XXXBE48.R.0
4) Extender crossbar along the inner radius ²⁾	78	E4.38L.XXXBZ48.R.0
5) Extender crossbar and standard crossbar alternating along the outer radius ³⁾	34	E4.38L.XXXHBE48.R.0
6) Extender crossbar and standard crossbar alternating along inner radius ¹⁾	34	E4.38L.XXXHBZ48.R.0

1) Minimum bend radius: R 125 2) Minimum bend radius: R 150 3) Minimum bend radius: R 063 *Width available upon request. Delivery time upon request

Bi [mm] Available inner widths

| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 | 262* | 275* | 287* | 300* | 312* | 325* | 337* | 350* |

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

E4.38L.100B48.150.0 = extender crossbar on both sides along inner and outer radius

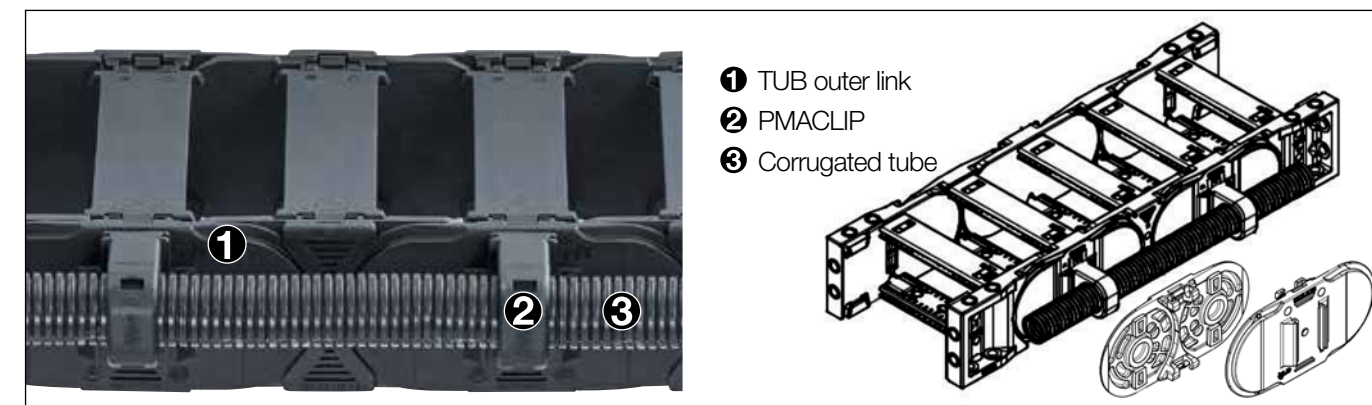


The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

Aluminium support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270



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 07, 10, 12, 17mm 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

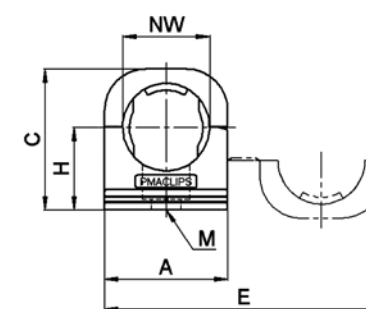
Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4.38L.XXXTUBR.R.0	E4.38L.XXXTUBL.R.0	E4.38L.XXXTUB.R.0	07 / 10 / 12 / 17

*View from the fixed end

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

E4.38L.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. PMACLIP	NW Ø [mm]	A mm	B mm	C mm	H mm	E mm	M mm
I-BFH-07-0	07	17.0	20.0	21.5	13.5	40.5	M4
I-BFH-10-0	10	20.5	20.0	24.5	15.5	47.5	M5
I-BFH-12-0	12	24.0	20.0	27.0	16.5	54.5	M5
I-BFH-17-0	17	30.0	20.0	34.0	20.0	68.0	M6



e-chains® | E4.48L | Crossbars every link (openable along inner and outer radius, from both sides)
e-tubes | R4.48L | Fully enclosed (lids openable along inner and outer radius, from both sides)

Part No. e-chains®	Part No. e-tubes	Bi [mm]	Ba [mm]	E4.48L [kg/m]	R4.48L [kg/m]	Part No. e-chains®	Part No. e-tubes	Bi [mm]	Ba [mm]	E4.48L [kg/m]	R4.48L [kg/m]
E4.48L.050.R.0	R4.48L.050.R.0	050	070	≈ 1.53	≈ 1.64	R4.48L.225.R.0	-	225	245	≈ 2.24	-
E4.48L.062.R.0	R4.48L.062.R.0	062	082	≈ 1.58	≈ 1.69	R4.48L.237.R.0	-	237	257	≈ 2.30	-
E4.48L.075.R.0	R4.48L.075.R.0	075	095	≈ 1.64	≈ 1.82	E4.48L.250.R.0	R4.48L.250.R.0	250	270	≈ 2.35	≈ 3.08
E4.48L.087.R.0	R4.48L.087.R.0**	087	107	≈ 1.67	≈ 1.91	E4.48L.262.R.0	-	262	282	≈ 2.39	-
E4.48L.100.R.0	R4.48L.100.R.0	100	120	≈ 1.73	≈ 2.01	E4.48L.275.R.0**	-	275	295	≈ 2.45	-
E4.48L.105.R.0	-	105	125	≈ 1.74	-	E4.48L.287.R.0**	-	287	307	≈ 2.51	-
E4.48L.112.R.0	-	112	132	≈ 1.79	-	E4.48L.300.R.0	R4.48L.300.R.0**	300	320	≈ 2.56	≈ 3.42
E4.48L.125.R.0	R4.48L.125.R.0	125	145	≈ 1.84	≈ 2.18	E4.48L.312.R.0**	-	312	332	≈ 2.60	-
E4.48L.137.R.0	-	137	157	≈ 1.88	-	E4.48L.325.R.0**	-	325	345	≈ 2.66	-
E4.48L.150.R.0	R4.48L.150.R.0	150	170	≈ 1.97	≈ 2.36	E4.48L.337.R.0**	-	337	357	≈ 2.72	-
E4.48L.162.R.0	-	162	182	≈ 2.00	-	E4.48L.350.R.0**	-	350	370	≈ 2.74	-
E4.48L.175.R.0	R4.48L.175.R.0	175	195	≈ 2.04	≈ 2.58	E4.48L.362.R.0**	-	362	382	≈ 2.77	-
E4.48L.187.R.0**	-	187	207	≈ 2.09	-	E4.48L.375.R.0**	-	375	395	≈ 2.81	-
E4.48L.200.R.0	R4.48L.200.R.0	200	220	≈ 2.14	≈ 2.70	E4.48L.387.R.0**	-	387	407	≈ 2.90	-
E4.48L.212.R.0**	-	212	232	≈ 2.18	-	E4.48L.400.R.0**	-	400	420	≈ 2.96	-

**Width available upon request. Please consult igus® for delivery time.

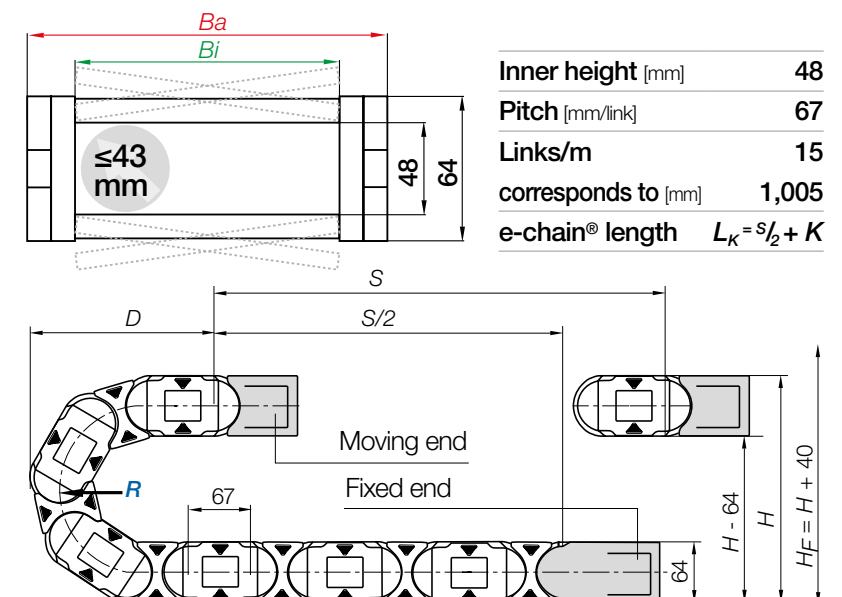
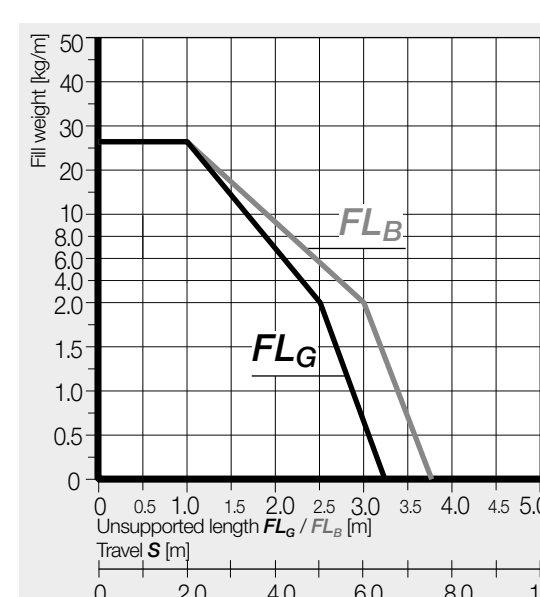
1) Radius not available for e-tubes

Available bend radii

R [mm] | 075¹⁾ | 100¹⁾ | 125 | 150 | 175 | 200 | 250 | 300 | 350 |

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

E4.48L.175.150.0 = crossbars every link / R4.48L.175.150.0 = fully enclosed



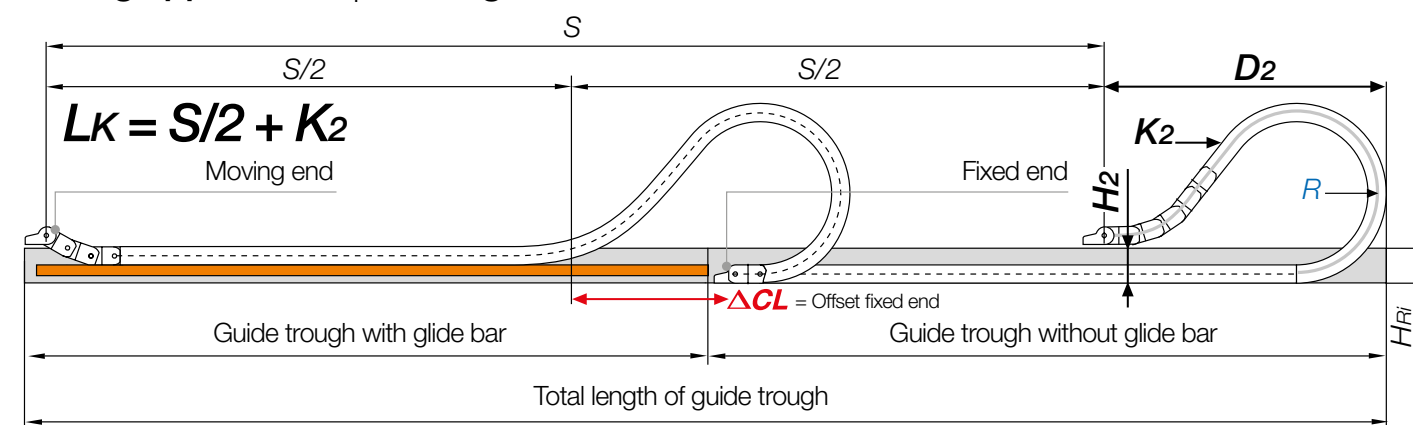
Inner height [mm]	48
Pitch [mm/link]	67
Links/m	15
corresponds to [mm]	1,005
e-chain® length $L_K = S/2 + K$	

R	075 ¹⁾	100 ¹⁾	125	150	175	200	250	300	350
H	214	264	314	364	414	464	564	664	764
D	208	233	258	283	308	333	383	433	483
K	370	450	530	610	685	765	920	1,080	1,235

The required clearance height: $H_F = H + 40\text{mm}$ (with 2.5kg/m fill weight)

1) Radius not available for e-tubes

Gliding applications | For long travels from 10m to max. 100m

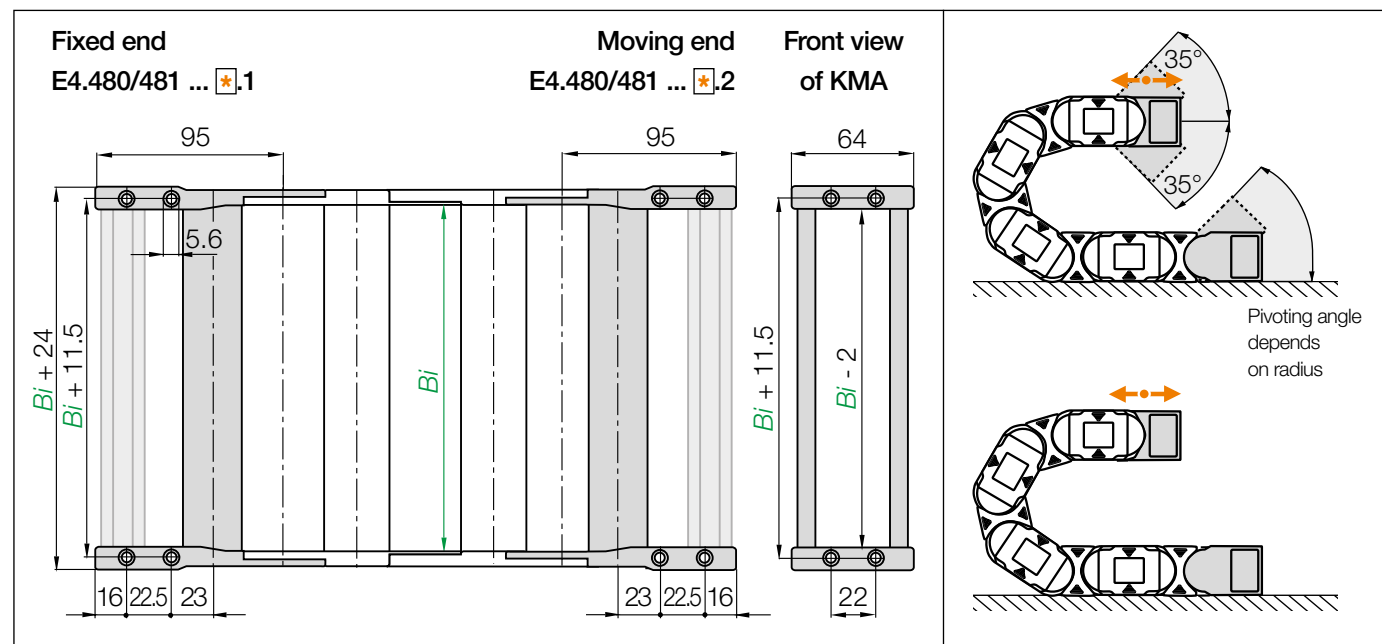


Note: We recommend the project planning of such a system to be carried out by igus®.

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

R	075 ¹⁾	100 ¹⁾	125	150	175	200	250	300 ²⁾	350 ²⁾
H ₂	214	264	106	106	106	106	106	-	-
D ₂	208	233	475	570	670	780	1,030	-	-
K ₂	370	450	804	938	1,139	1,340	1,675	-	-
ΔCL	-	-	230	300	380	460	660	-	-

1) Radius not available for e-tubes 2) Radius not suitable for long travels. Please consult igus®.

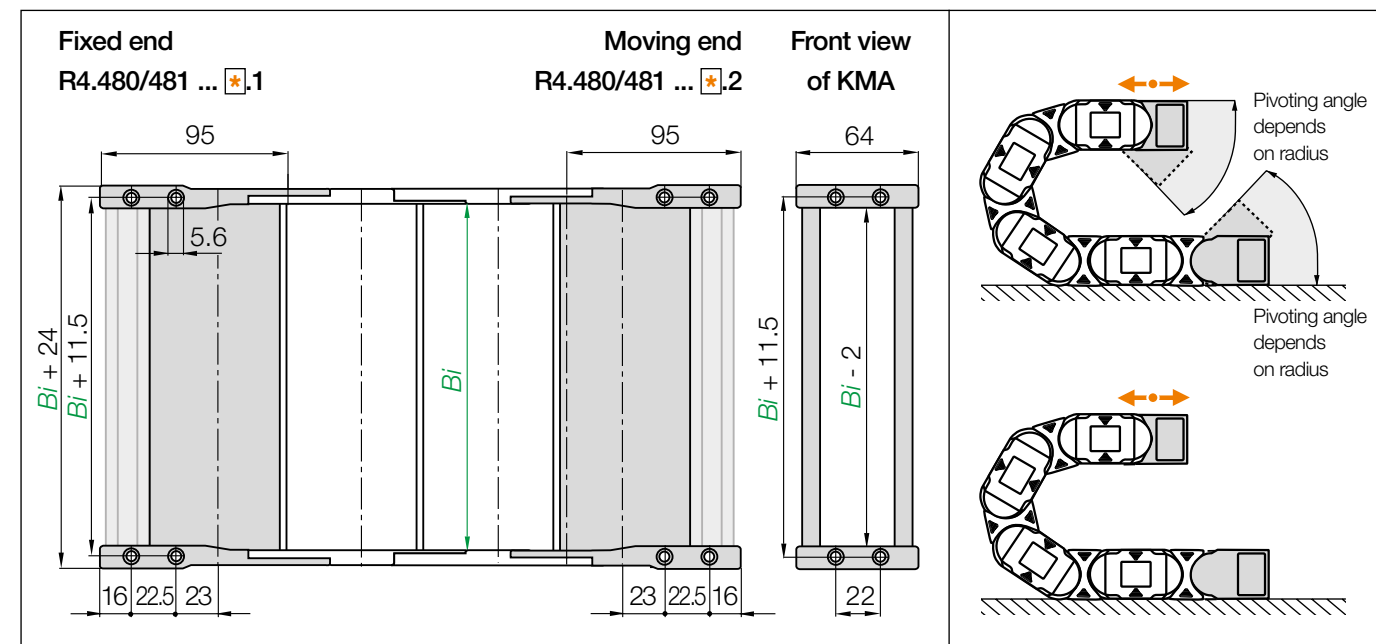


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

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]
050.	E4.480.050.*.12.C	E4.481.050.*.12.C	050	225.	E4.480.225.*.12.C	E4.481.225.*.12.C	225
062.	E4.480.062.*.12.C	E4.481.062.*.12.C	062	237.	E4.480.237.*.12.C	E4.481.237.*.12.C	237
075.	E4.480.075.*.12.C	E4.481.075.*.12.C	075	250.	E4.480.250.*.12.C	E4.481.250.*.12.C	250
087.	E4.480.087.*.12.C	E4.481.087.*.12.C	087	262.	E4.480.262.*.12.C	E4.481.262.*.12.C	262
100.	E4.480.100.*.12.C	E4.481.100.*.12.C	100	275.	E4.480.275.*.12.C*	E4.481.275.*.12.C*	275
105.	E4.480.105.*.12.C	E4.481.105.*.12.C	105	287.	E4.480.287.*.12.C*	E4.481.287.*.12.C*	287
112.	E4.480.112.*.12.C	E4.481.112.*.12.C	112	300.	E4.480.300.*.12.C	E4.481.300.*.12.C	300
125.	E4.480.125.*.12.C	E4.481.125.*.12.C	125	312.	E4.480.312.*.12.C*	E4.481.312.*.12.C*	312
137.	E4.480.137.*.12.C	E4.481.137.*.12.C	137	325.	E4.480.325.*.12.C*	E4.481.325.*.12.C*	325
150.	E4.480.150.*.12.C	E4.481.150.*.12.C	150	337.	E4.480.337.*.12.C*	E4.481.337.*.12.C*	337
162.	E4.480.162.*.12.C	E4.481.162.*.12.C	162	350.	E4.480.350.*.12.C*	E4.481.350.*.12.C*	350
175.	E4.480.175.*.12.C	E4.481.175.*.12.C	175	362.	E4.480.362.*.12.C*	E4.481.362.*.12.C*	362
187.	E4.480.187.*.12.C*	E4.481.187.*.12.C*	187	375.	E4.480.375.*.12.C*	E4.481.375.*.12.C*	375
200.	E4.480.200.*.12.C	E4.481.200.*.12.C	200	387.	E4.480.387.*.12.C*	E4.481.387.*.12.C*	387
212.	E4.480.212.*.12.C*	E4.481.212.*.12.C*	212	400.	E4.480.400.*.12.C*	E4.481.400.*.12.C*	400

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

*Width available upon request. Please consult igus® for delivery time.

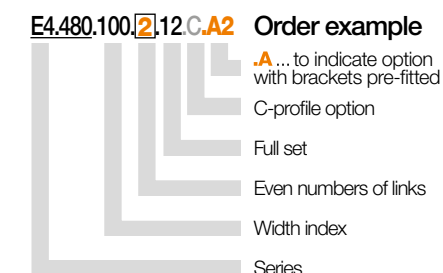
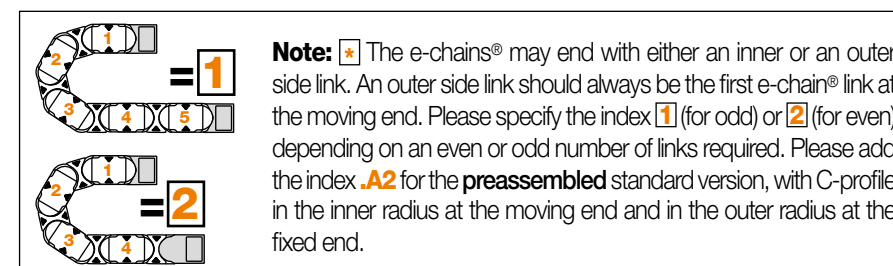


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

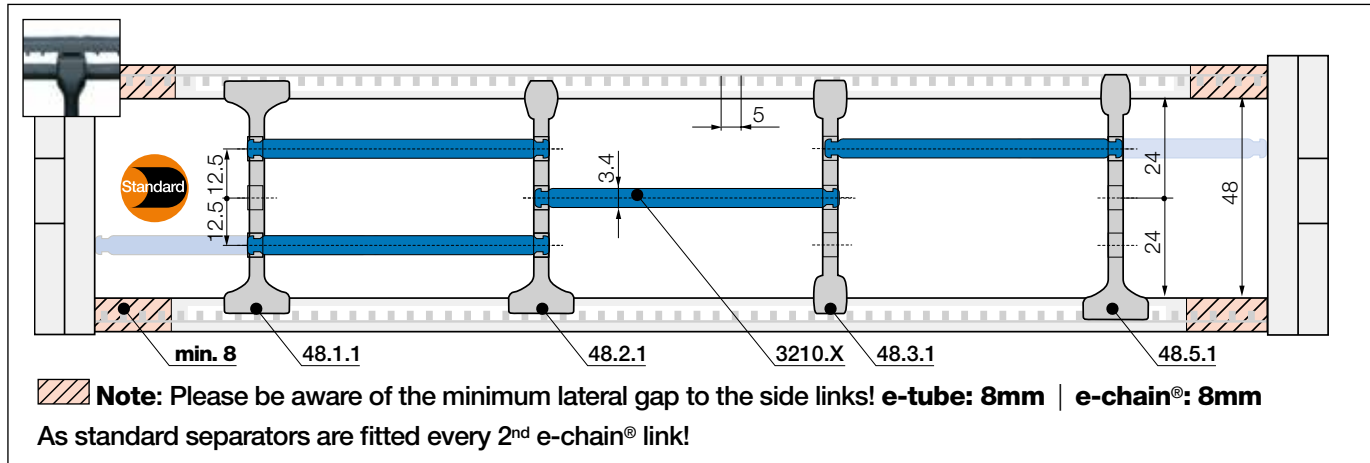
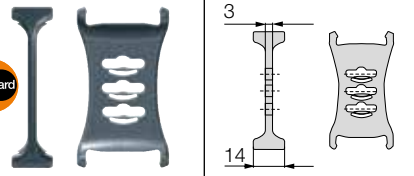
Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]	Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]
050.	R4.480.050.*.12.C	R4.481.050.*.12.C	050	150.	R4.480.150.*.12.C	R4.481.150.*.12.C	150
062.	R4.480.062.*.12.C	R4.481.062.*.12.C	062	175.	R4.480.175.*.12.C	R4.481.175.*.12.C	175
075.	R4.480.075.*.12.C	R4.481.075.*.12.C	075	200.	R4.480.200.*.12.C	R4.481.200.*.12.C	200
087.	R4.480.087.*.12.C*	R4.481.087.*.12.C*	087	250.	R4.480.250.*.12.C	R4.481.250.*.12.C	250
100.	R4.480.100.*.12.C	R4.481.100.*.12.C	100	300.	R4.480.300.*.12.C*	R4.481.300.*.12.C*	300
125.	R4.480.125.*.12.C	R4.481.125.*.12.C	125				

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

*Width available upon request. Please consult igus® for delivery time.



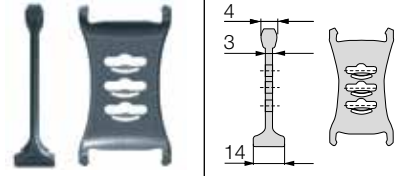
Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

Standard separator, wide base
unassembled **48.1**
assembled **48.1.1**

Standard - for any application

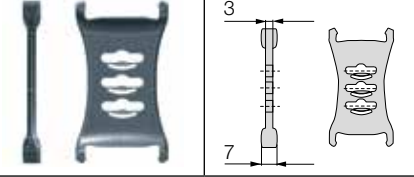
Separator with a wide base for maximum holding force in the e-chain®.



Separator, narrow top
unassembled **48.2**
assembled **48.2.1**

For even faster installation

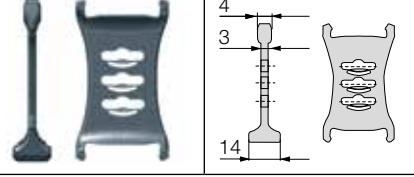
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.



Separator, narrow
unassembled **48.3**
assembled **48.3.1**

For small cables

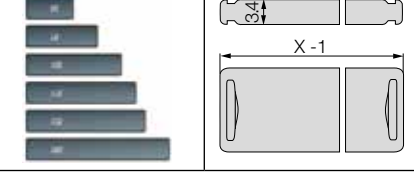
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.



Notch separator for notched crossbar
unassembled **48.5**
assembled **48.5.1**

Locks securely in preset increments

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

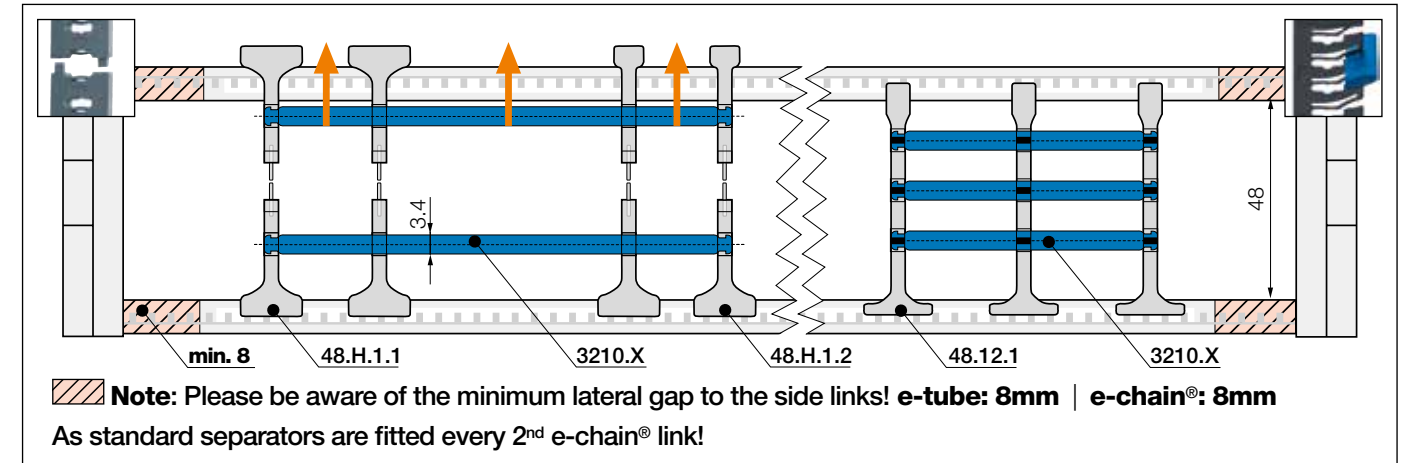
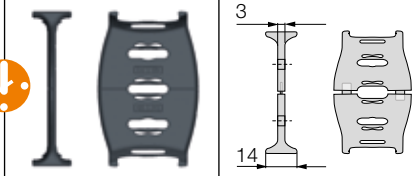


Shelf, lockable
unassembled **3200.X**
assembled **3210.X**

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.

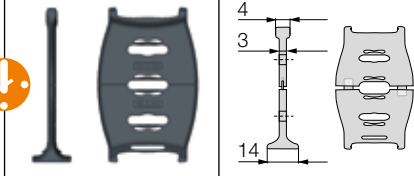
Shelves Width = X [mm]	X [mm]			X [mm]			X [mm]		
	unassembled	assembled		unassembled	assembled		unassembled	assembled	
050	3200.050	3210.050		125	3200.125	3210.125	225	3200.225	3210.225
075	3200.075	3210.075		150	3200.150	3210.150	250	3200.250	3210.250
100	3200.100	3210.100		175	3200.175	3210.175			
115	3200.115	3210.115		200	3200.200	3210.200			

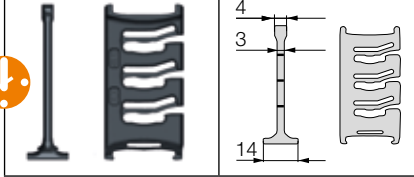
Split separator, wide base/top
unassembled **48.H.1**
assembled **48.H.1.1**

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.



Split separator, narrow top
unassembled **48.H.2**
assembled **48.H.2.1**



Lean separator
unassembled **48.12**
assembled **48.12.1**

Lean separators

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® harnessing factory)



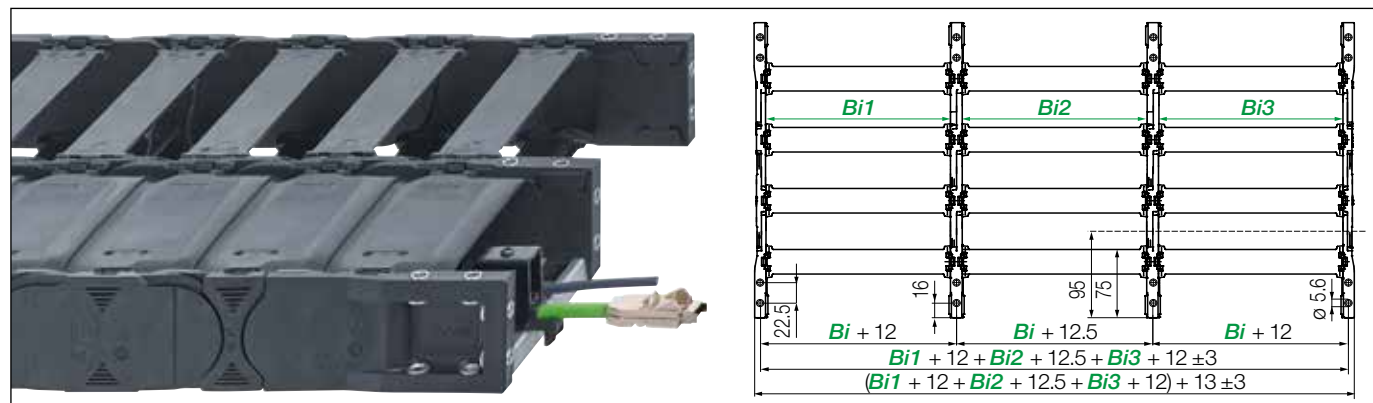
Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any tools

2 versions: Part No. 48.Z / Part No. 48.ZS. More information ▶ From page 1326



Extension links **New**



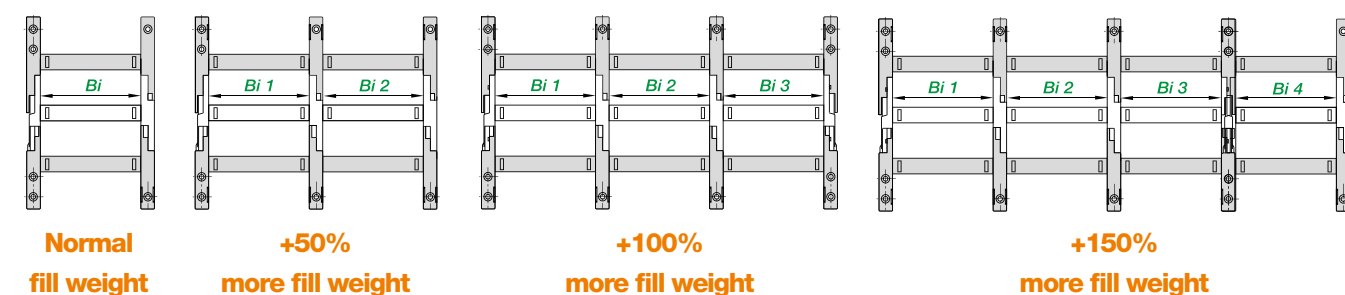
Extension links | For extremely wide e-chains® up to 2.0m with 50% more fill weight

- Extension link e-chains® for 50% higher fill weight extension link up to widths of 2.0m and more
- For heavy fill weights or e-chains® with many heavy cables next to each other
- e-chains® and e-tubes can be combined

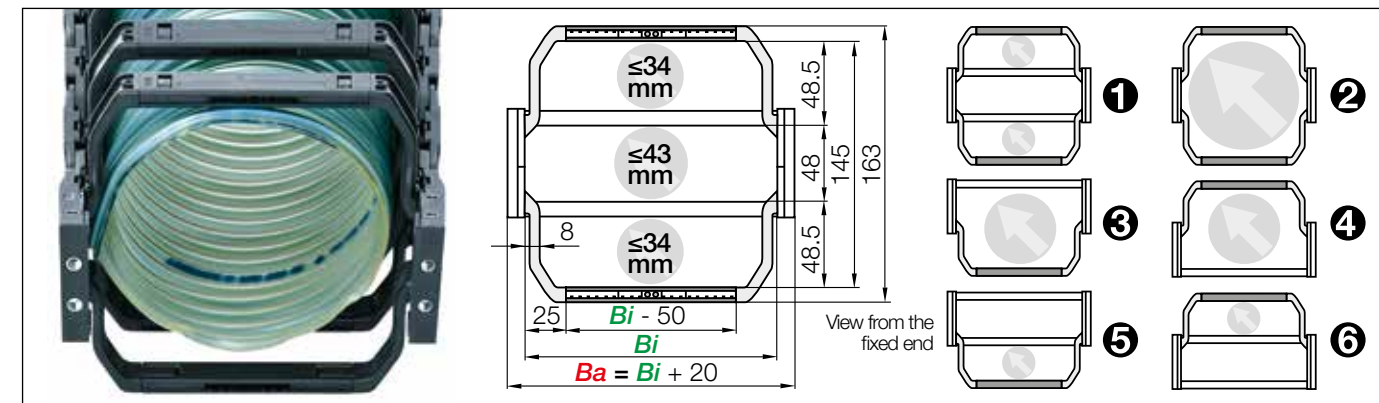
Part No.	Part No.	Part No.
Extension link e-chain®	Extension link e-tube	Extension link as an individual part
E4.48L. <i>Bi1/Bi2/Bi3</i> .R.0	R4.48L. <i>Bi1/Bi2/Bi3</i> .R.0	E4.48ML.R.

Complete Part No. with the width index *Bi1/Bi2/Bi3/etc.* and the radius (*R*). Example: E4.48L.175/175/175.150.0

Increase of the fill weight per extension link



e-chain® with openable extender crossbars



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain® with extender crossbar	Hose Ø ≤ [mm]	Part No. e-chain® with extender crossbar
① Extender crossbar and standard crossbar alternating along the inner and outer radius ¹⁾	34	E4.48L.XXXHB48.R.0
② Extender crossbar on both sides along the inner and outer radius ²⁾	130	E4.48L.XXXB48.R.0
③ Extender crossbar along the outer radius ³⁾	85	E4.48L.XXXBE48.R.0
④ Extender crossbar along the inner radius ³⁾	85	E4.48L.XXXBZ48.R.0
⑤ Extender crossbar and standard crossbar alternating along the outer radius ³⁾	34	E4.48L.XXXHBE48.R.0
⑥ Extender crossbar and standard crossbar alternating along inner radius ¹⁾	34	E4.48L.XXXHBZ48.R.0

1) Minimum bend radius: *R* 125 2) Minimum bend radius: *R* 150 3) Minimum bend radius: *R* 075 *Width available upon request. Delivery time upon request

Bi [mm] Available inner widths

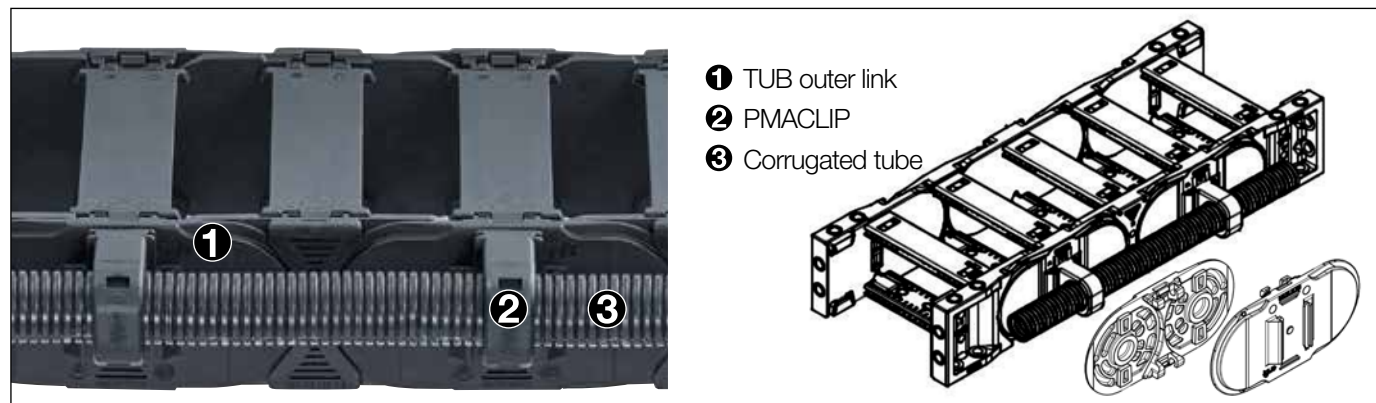
| 100 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 | 262 | 275 | 287 | 300 | 312 | 325 | 337 | 350 |

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

E4.48L.100B48.150.0 = extender crossbar on both sides along inner and outer radius



The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination



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 7, 10, 12, 17, 23, 29, 36mm 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

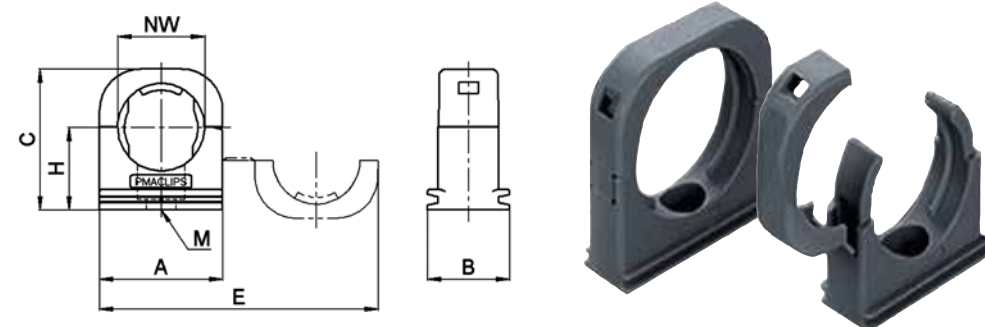
Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4.48L.XXXTUBR.R.0	E4.48L.XXXTUBL.R.0	E4.48L.XXXTUB.R.0	07 / 10 / 12 / 17 / 23 / 29 / 36

*View from the fixed end

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

E4.48L.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. PMACLIP	NW Ø [mm]	A mm	B mm	C mm	H mm	E mm	M mm
I-BFH-07-0	07	17.0	20.0	21.5	13.5	40.5	M4
I-BFH-10-0	10	20.5	20.0	24.5	15.5	47.5	M5
I-BFH-12-0	12	24.0	20.0	27.0	16.5	54.5	M5
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

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



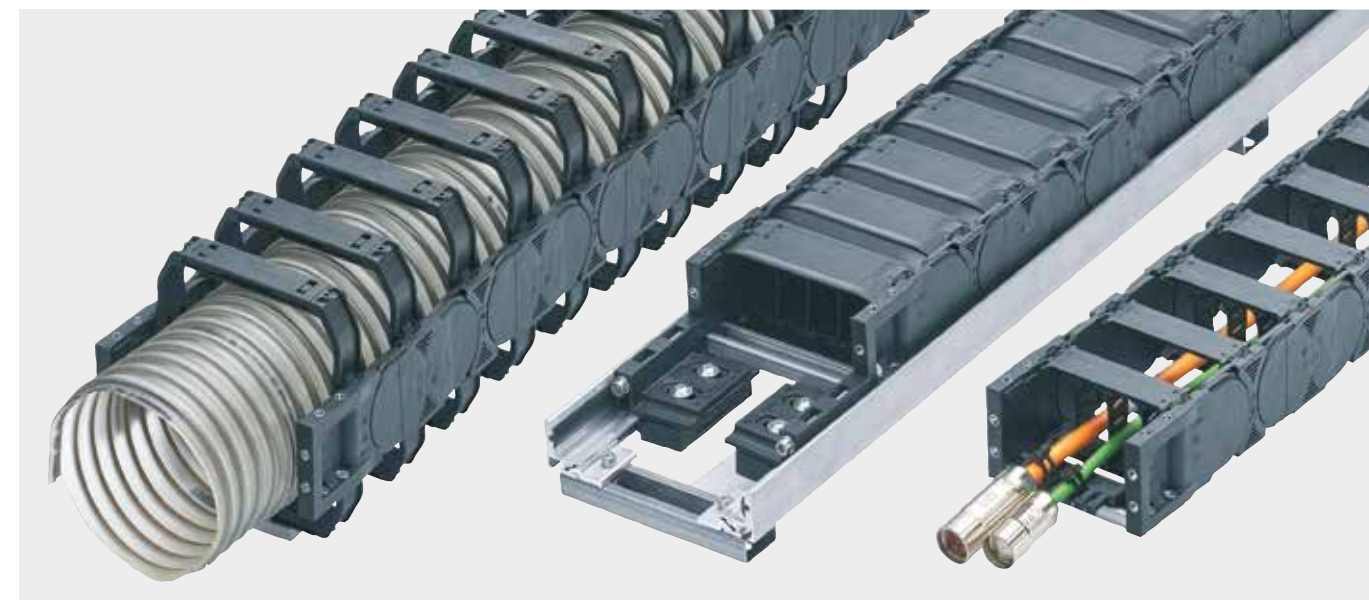
Swarf up to +850°C

- 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.eu/HT

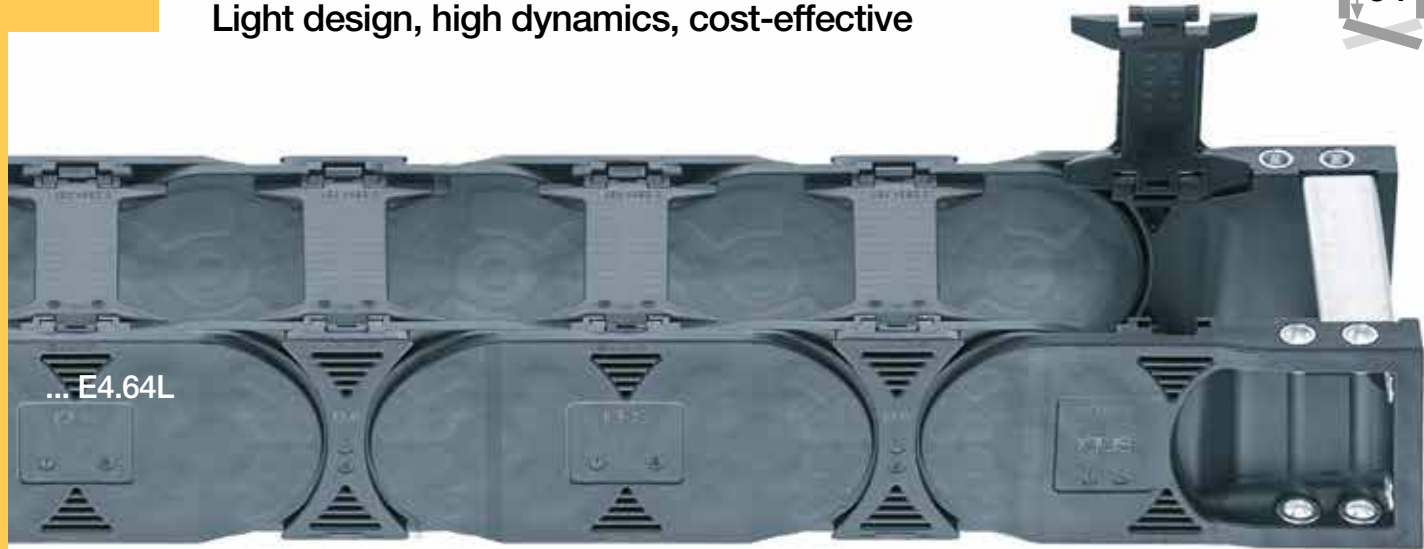


Assembled in seconds - honeycomb strain relief CFU

- Simply insert cables and hoses into the honeycomb and close
 - Strain relief of different cables in one slot
 - Easy to make changes to the filling
 - Can be used in gliding applications
- More information ► www.igus.eu/lean



Due to the modular design, the E4.1L system can be adapted to almost any application. As an open version for cable guidance, with extender crossbars for large hoses, or enclosed chip-resistant tube complete with guide trough - just three of many options



e-chains® | E4.64L | Crossbars every link (openable along inner and outer radius, from both sides)

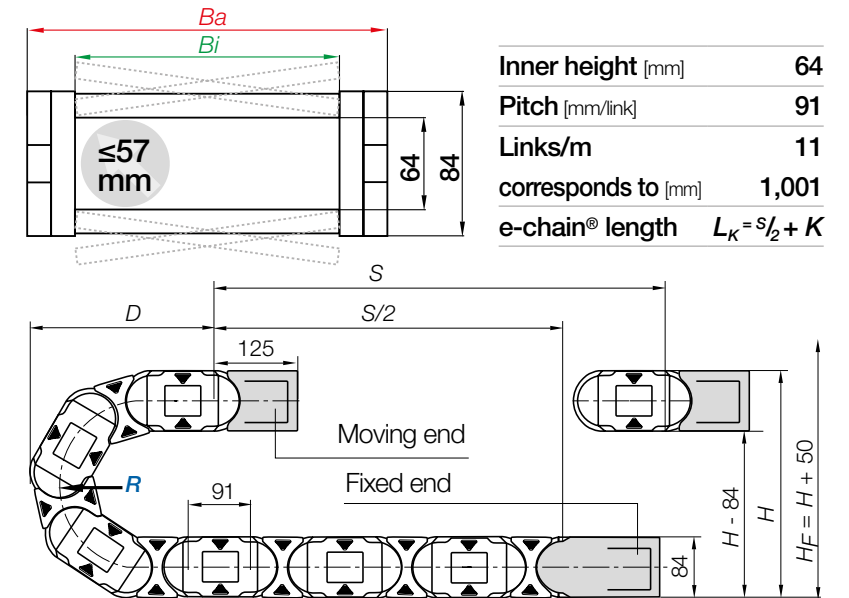
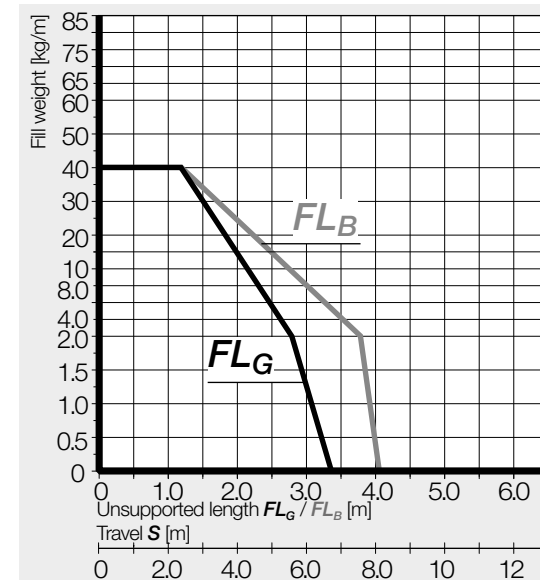
Part No.	Bi	Ba	E4.64L	Part No.	Bi	Ba	E4.64L
e-chains®	[mm]	[mm]	[kg/m]	e-chains®	[mm]	[mm]	[kg/m]
E4.64L.050.R.0**	050	076	-	E4.64L.237.R.0**	237	263	-
E4.64L.062.R.0**	062	088	-	E4.64L.250.R.0**	250	276	-
E4.64L.075.R.0**	075	101	-	E4.64L.262.R.0**	262	288	-
E4.64L.087.R.0	087	113	≈ 2.49	E4.64L.275.R.0**	275	301	-
E4.64L.100.R.0	100	126	≈ 2.57	E4.64L.287.R.0**	287	313	-
E4.64L.112.R.0**	112	138	-	E4.64L.300.R.0**	300	326	-
E4.64L.125.R.0**	125	151	-	E4.64L.312.R.0**	312	338	-
E4.64L.137.R.0**	137	163	-	E4.64L.325.R.0**	325	351	-
E4.64L.150.R.0	150	176	≈ 2.72	E4.64L.337.R.0**	337	363	-
E4.64L.162.R.0**	162	188	-	E4.64L.350.R.0**	350	376	-
E4.64L.175.R.0	175	201	≈ 2.87	E4.64L.362.R.0**	362	388	-
E4.64L.187.R.0**	187	213	-	E4.64L.375.R.0**	375	401	-
E4.64L.200.R.0	200	226	≈ 2.97	E4.64L.387.R.0**	387	413	-
E4.64L.212.R.0**	212	238	-	E4.64L.400.R.0**	400	426	-
E4.64L.225.R.0**	225	251	-				

**Width available upon request. Please consult igus® for delivery time.

Available bend radii

R [mm] | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 |

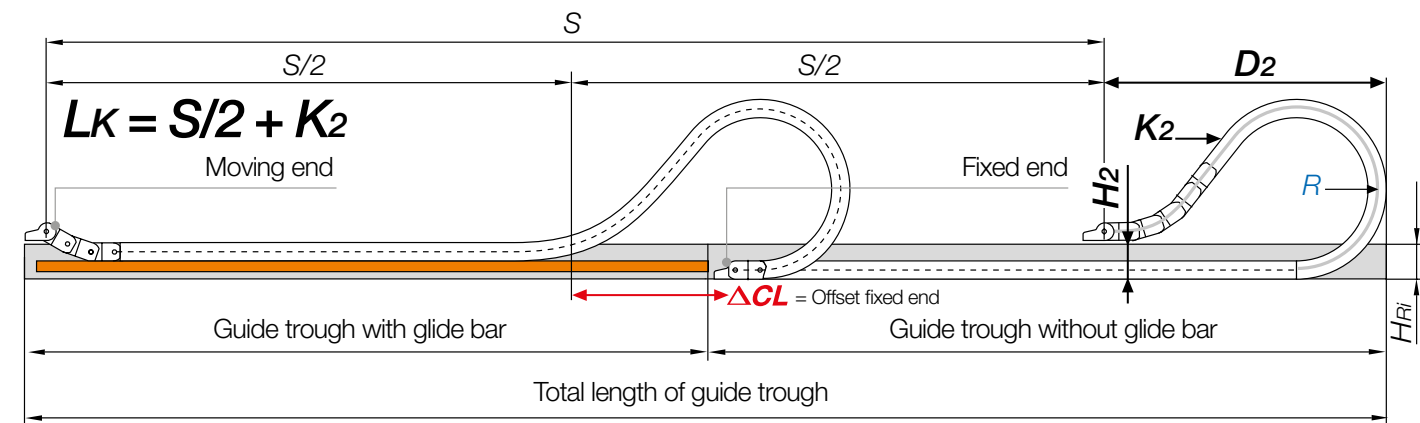
Complete Part No. with required radius (R). Example: E4.64L.150.150.0 = crossbars every link



R	100	125	150	175	200	250	300	350	400
H	284	334	384	434	484	584	684	784	884
D	279	304	329	354	379	429	479	529	579
K	500	575	655	735	815	970	1,125	1,285	1,440

The required clearance height: $H_F = H + 50\text{mm}$ (with 2.0kg/m fill weight)

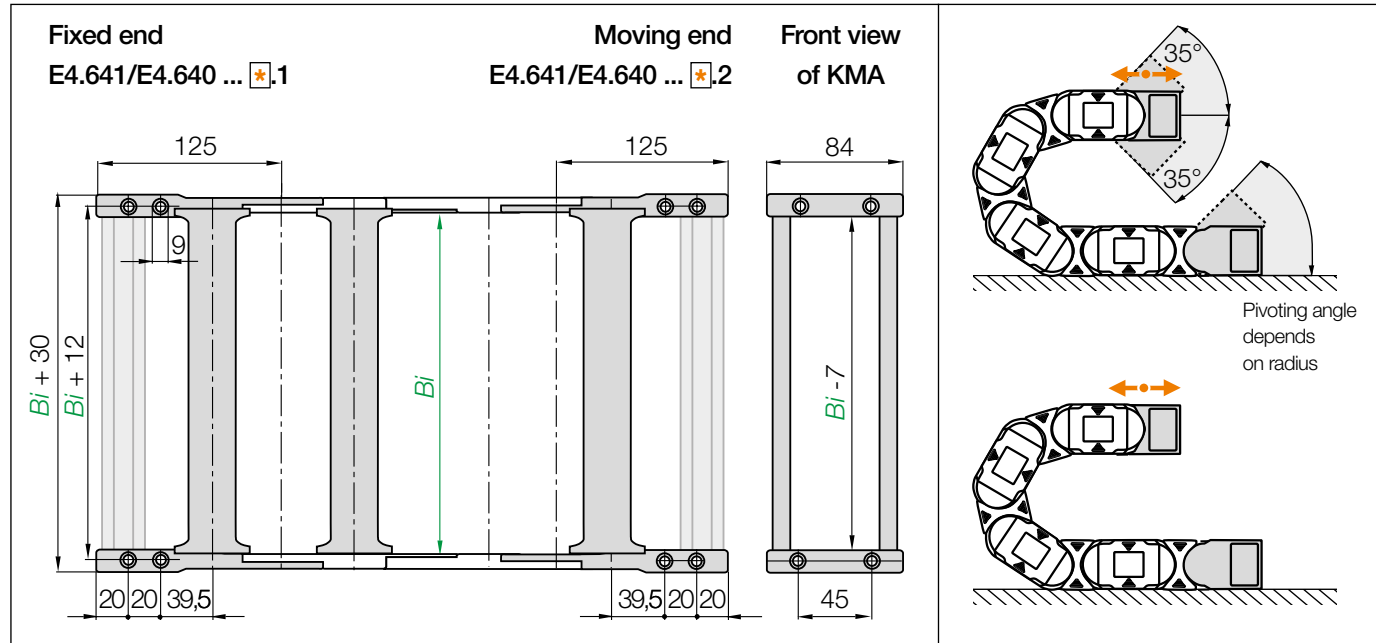
Gliding applications | For long travels, upon request



Note: We recommend the project planning of such a system to be carried out by igus®. In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

R	100	125	150	175	200	250	300	350	400
H ₂	-	180	180	180	180	180	-	-	-
D ₂	-	505	580	705	830	1,080	-	-	-
K ₂	-	819	910	1,183	1,365	1,729	-	-	-
ΔCL	-	**	**	**	**	**	-	-	-

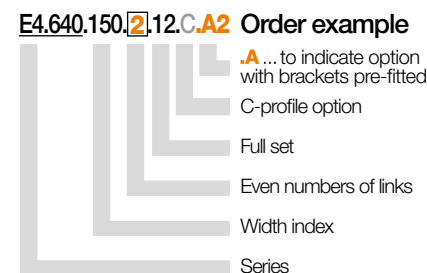
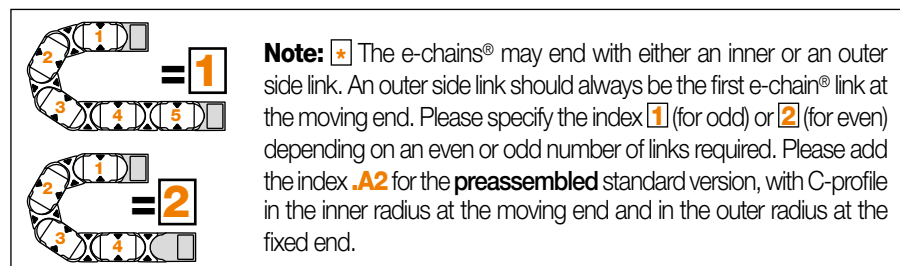
**Values upon request



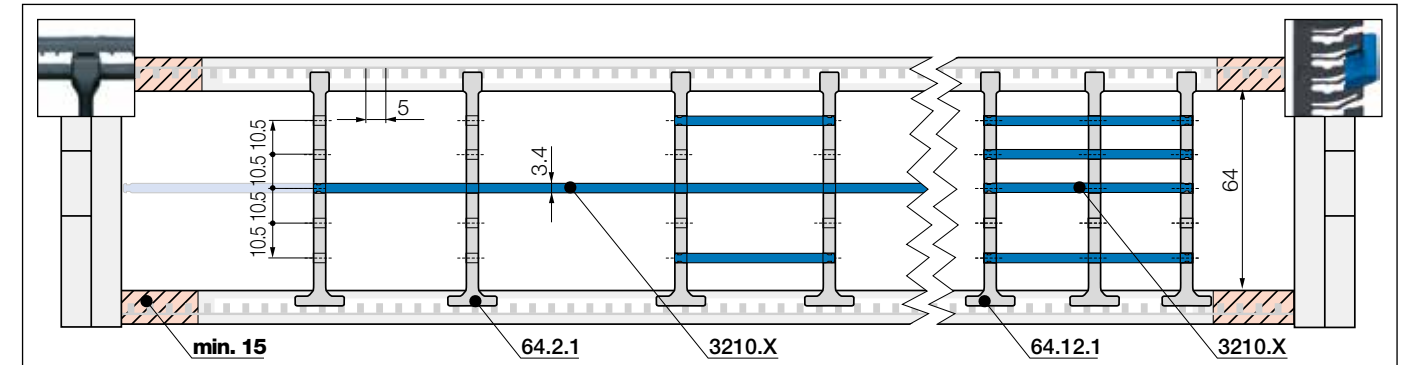
KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

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.	E4.640. 05 *12.C*	E4.641. 05 *12.C*	050	23.	E4.640. 23 *12.C*	E4.641. 23 *12.C*	237
06.	E4.640. 06 *12.C*	E4.641. 06 *12.C*	062	25.	E4.640. 25 *12.C*	E4.641. 25 *12.C*	250
07.	E4.640. 07 *12.C*	E4.641. 07 *12.C*	075	26.	E4.640. 26 *12.C*	E4.641. 26 *12.C*	262
08.	E4.640. 08 *12.C	E4.641. 08 *12.C	087	27.	E4.640. 27 *12.C*	E4.641. 27 *12.C*	275
10.	E4.640. 10 *12.C	E4.641. 10 *12.C	100	28.	E4.640. 28 *12.C*	E4.641. 28 *12.C*	287
11.	E4.640. 11 *12.C*	E4.641. 11 *12.C*	112	30.	E4.640. 30 *12.C*	E4.641. 30 *12.C*	300
12.	E4.640. 12 *12.C*	E4.641. 12 *12.C*	125	31.	E4.640. 31 *12.C*	E4.641. 31 *12.C*	312
13.	E4.640. 13 *12.C*	E4.641. 13 *12.C*	137	32.	E4.640. 32 *12.C*	E4.641. 32 *12.C*	325
15.	E4.640. 15 *12.C	E4.641. 15 *12.C	150	33.	E4.640. 33 *12.C*	E4.641. 33 *12.C*	337
16.	E4.640. 16 *12.C*	E4.641. 16 *12.C*	162	35.	E4.640. 35 *12.C*	E4.641. 35 *12.C*	350
17.	E4.640. 17 *12.C	E4.641. 17 *12.C	175	36.	E4.640. 36 *12.C*	E4.641. 36 *12.C*	362
18.	E4.640. 18 *12.C*	E4.641. 18 *12.C*	187	37.	E4.640. 37 *12.C*	E4.641. 37 *12.C*	375
20.	E4.640. 20 *12.C	E4.641. 20 *12.C	200	38.	E4.640. 38 *12.C*	E4.641. 38 *12.C*	387
21.	E4.640. 21 *12.C*	E4.641. 21 *12.C*	212	40.	E4.640. 40 *12.C*	E4.641. 40 *12.C*	400
22.	E4.640. 22 *12.C*	E4.641. 22 *12.C*	225				

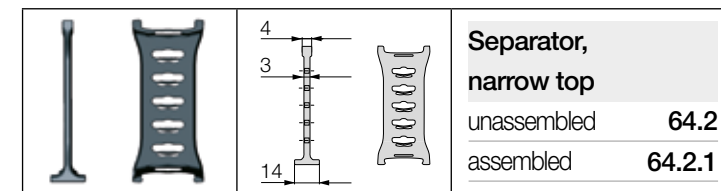
(KMA = polymer metal mounting bracket) For the C-profile option please add index .C *Width available upon request. Please consult igus® for delivery time.



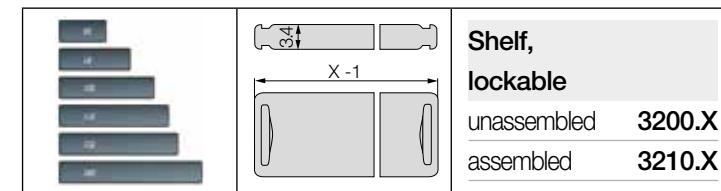
Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300



Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 15mm
 As standard separators are fitted every 2nd e-chain® link!



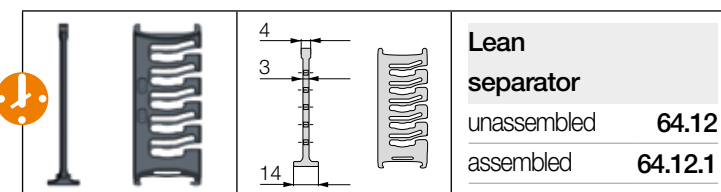
For even faster installation
 Wide on one side for high holding force, narrow on opposite side for easy cable fitting.



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	
		part no.	part no.	part no.	part no.		part no.	part no.		
	050	3200.050	3210.050	125	3200.125	3210.125	225	3200.225	3210.225	
	075	3200.075	3210.075	150	3200.150	3210.150	250	3200.250	3210.250	
	100	3200.100	3210.100	175	3200.175	3210.175				
	115	3200.115	3210.115	200	3200.200	3210.200				

Interior separation | To allow faster filling **New**

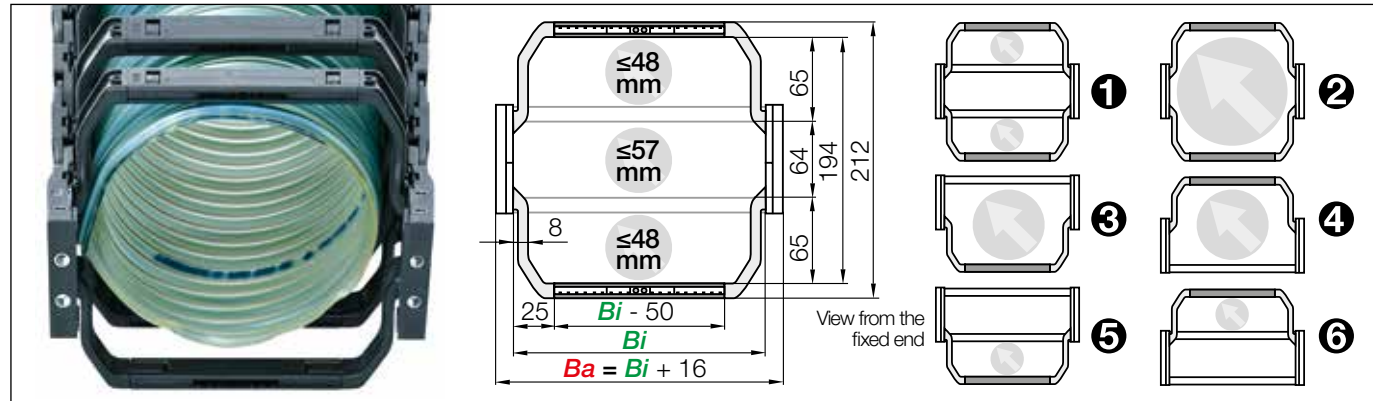


Lean separators
 New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

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® harnessing factory)



e-chain® with openable extender crossbars



Extender crossbars with flexible width | Safe guiding for large hoses

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

Versions e-chain®

with extender crossbar

	Hose Ø ≤ [mm]	Part No. e-chain® with extender crossbar
❶ Extender crossbar and standard crossbar alternating along the inner and outer radius ¹⁾	48	E4.64L.XXXHB65.R.0
❷ Extender crossbar on both sides along the inner and outer radius ²⁾	170	E4.64L.XXXB65.R.0
❸ Extender crossbar along the outer radius ³⁾	115	E4.64L.XXXBE65.R.0
❹ Extender crossbar along the inner radius ²⁾	115	E4.64L.XXXBZ65.R.0
❺ Extender crossbar and standard crossbar alternating along the outer radius ³⁾	48	E4.64L.XXXHBE65.R.0
❻ Extender crossbar and standard crossbar alternating along inner radius ¹⁾	48	E4.64L.XXXHBZ65.R.0

1) Minimum bend radius: R 125 2) Minimum bend radius: R 150 3) Minimum bend radius: R 100 *Width available upon request. Delivery time upon request

 B_i [mm] Available inner widths

| 100 | 112 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 | 262 | 275 | 287 | 300 | 312 | 325 | 337 | 350 |

Complete Part No. with the width index **XXX B_i** and the radius (**R**). Example:

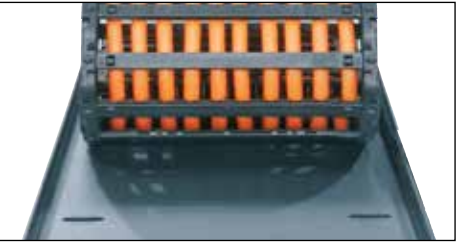
E4.64L.087B65.150.0 = extender crossbar on both sides along inner and outer radius



The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination

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



The R4.1L e-tubes are used to guide motor, encoder and sensor cables to supply the moving part of this bending machine