



# RX

## Extremely swarf-resistant without undercuts or edges



### Advantages of the RX system:

- Openable along the outer radius
- Round contour prevents swarf accumulation
- Injection-moulded seal between links
- No holes, gaps or undercuts
- RX e-tubes - IP40 tested
- Covered pin/bore connection and stop-dogs
- Interior separation and support tray available
- **RBR** version with Reverse Bend Radius available



### When to use another e-tube:

- For swarf protection on gliding applications
  - ▶ R4.1 e-tubes, page 616
- When a particularly cost-effective solution is required
  - ▶ R2.1 e-tubes, page 442

# Extremely swarf-resistant e-tubes - RX system

Problem solver for energy supply systems in areas with swarf; openable along the outer radius. Swarf and dirt can significantly reduce the service life of cables and hoses. With the RX system igus® offers an extremely tough but smoothly shaped polymer e-tube.

- Openable along the outer radius
- Round contour prevents swarf accumulation
- Injection-moulded seal between links
- No holes, gaps or undercuts
- Covered pin/bore connection and stop-dogs
- Series RX40 has been tested for IP protection class (IP40) (TÜV NORD CERT GmbH)
- **RBR** version with Reverse Bend Radius available

### Typical industries and applications

- Machine tools
- All applications in swarf area
- With dust and dirt
- General mechanical engineering

**IP40** RX e-tubes - IP tested  
 ► [www.igus.eu/RX\\_tested](http://www.igus.eu/RX_tested)

**ESD** Electrically conductive ESD e-tubes upon request

Optionally available with igumid HT material for hot swarf up to +850°C

**UL94-V0** classification upon request

**iF** product design award 2005  
**reddot** design award honourable mention 2011

Flush attachment: mounting bracket with strain relief option

Smooth design: without undercuts or edges

Keep order: modular separation available

Fast assembly: lids removable along the outer radius

Safe: covered pin/bore connection and stop-dogs

Fast opening: with inbuilt locking mechanism

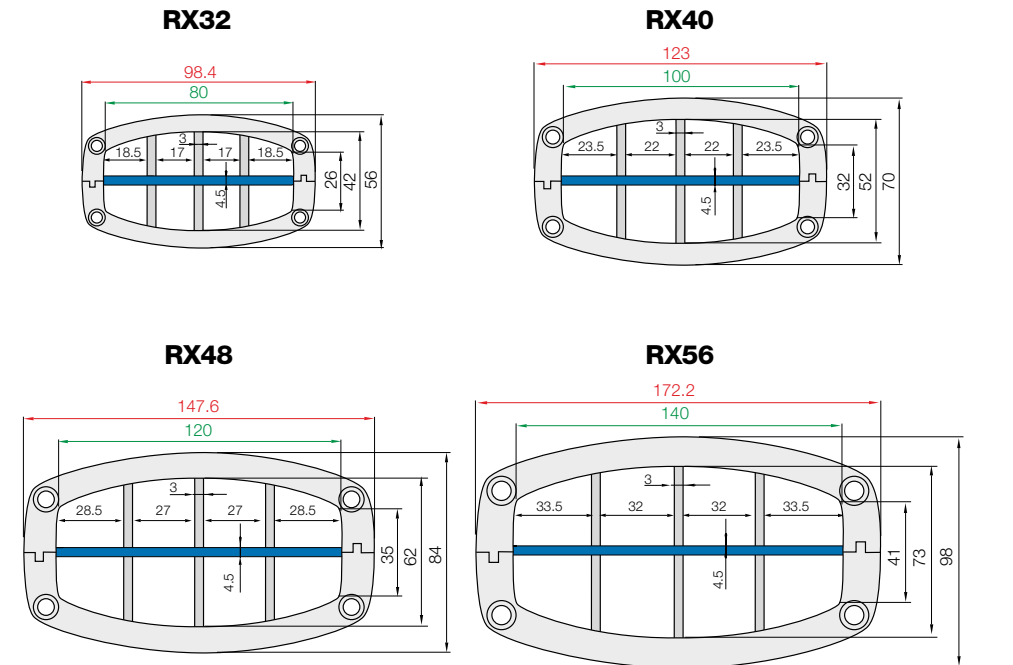
Swarf-resistant design: round contour prevents swarf accumulation

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
<b>RX32</b>	26 / 42	80	98.4	56	080 - 175	1.70	522
<b>RX40</b>	32 / 52	100	123.0	70	100 - 300	1.80	526
<b>RX48</b>	35 / 62	120	147.6	84	120 - 255	2.10	530
<b>RX56</b>	41 / 73	140	172.2	98	140 - 250	2.30	534



**RX system - extremely swarf-resistant e-tubes**  
 lids removable along the outer radius

Available from stock. Ready to ship in 72hrs.\*  
 \*Average time before the ordered goods are dispatched.



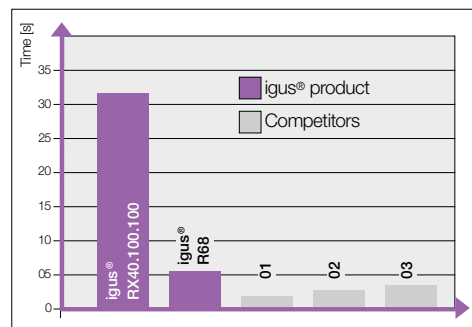
Technical data

	Speed $FL_G$ / acceleration $FL_G$	$\leq 10$ [m/s] / $\leq 100$ [m/s <sup>2</sup> ]
	Speed $FL_B$ / acceleration $FL_B$	$\leq 3$ [m/s] / $\leq 6$ [m/s <sup>2</sup> ]
	Material - permitted temperature °C, igumid G	-40°C / +120°C
	Flammability class, igumid G	VDE 0304 IIC UL94-HB

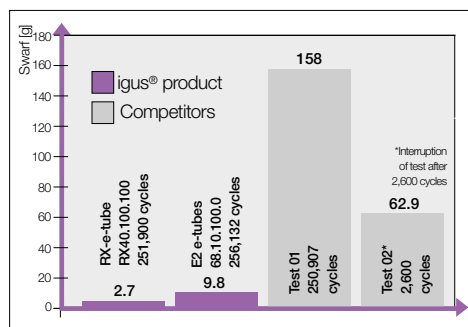
■  $FL_G$  = unsupported with straight upper run ■  $FL_B$  = unsupported with permitted sag

Installation types, maximum travels

Series	Unsupported	Vertical hanging	Vertical standing	Side mounted unsupported	Rotary	Zig-zag
RX32	$\leq 3.40m$	upon request	upon request	upon request	with rework	upon request
RX40	$\leq 3.80m$	upon request	upon request	upon request	with rework	upon request
RX48	$\leq 4.20m$	upon request	upon request	upon request	with rework	upon request
RX56	$\leq 4.60m$	upon request	upon request	upon request	with rework	upon request



Sealed - various tube styles were tested under water. For the RX e-tube, it takes more than 30 sec. to fill up with water



Swarf ingress - various tube styles were covered with a defined quantity of swarf. After 251,900 cycles, only 2.7g of swarf were found in the interior of the RX tube

Options with order keys | Examples based on series RX40

	Standard	Reverse Bend Radius (RBR) for circular movements	e-tube - no burning-in of hot swarf up to 850°C	ESD - electrically conductive material
Part No. Standard	Part No. RBR	Part No. igumid HT	Part No. igumid ESD	
	RX40.100.R.0	RX40.100.R1/R2.0	RX40.100.R.0.HT	RX40.100.R.0.ESD
	Ready to ship in 72hrs.*	Ready to ship in 20 business days*	Ready to ship in 6 weeks*	Ready to ship in 12 business days*

\*Average time before the ordered goods are dispatched.

Order example | Order key and colour examples | Examples based on series RX40

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

e-tube (1.0m)	Please indicate e-tube length or number of links: 1.0m or 18 links	RX40.100.100.0
+ Mounting brackets	Set	RX401.100.12ZB
+ Interior separation	with 1 separator (central position) assembled every 2 <sup>nd</sup> link	1 x RX40.1.1
+ Interior separation	with 2 separators (lateral position) assembled every 2 <sup>nd</sup> link	2 x RX40.2.1
Order text:	1m RX40.100.140.0 + RX401.100.12ZB + 1 x RX40.1.1 + 2 x RX40.2.1	

Order key  
Lids removable along the outer radius

**RX40.100.100.0**

Series / Type	
Width index (depends on B)	
Bend radius R	
Colour index (standard black)	

Order index for colour options

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

Black e-chains® ready to ship in 72hrs.\*  
Above special colours upon request.



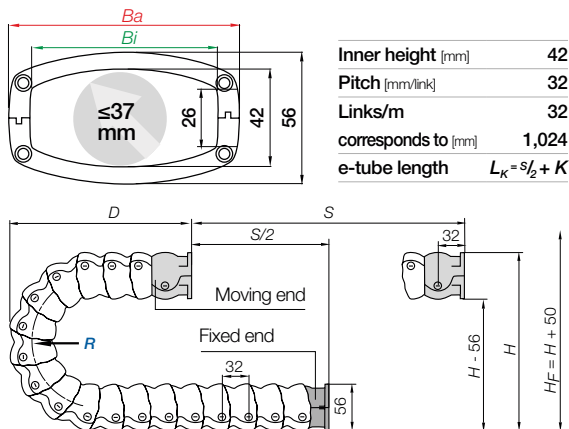
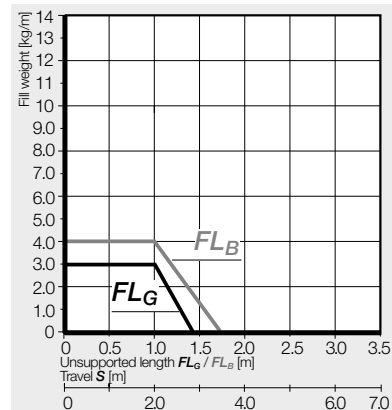
e-tubes | Series RX32 | Lids removable along the outer radius

Part No.	Bi	Ba	R	Available bend radii	RX32
e-tubes	[mm]	[mm]	[mm]		[kg/m]
RX32.080.R.0	80	98.4	080   100   125   150   175   200*   225*   250*		≈ 1.23

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

Complete Part No. with required radius (R). Example: RX32.080.080.0

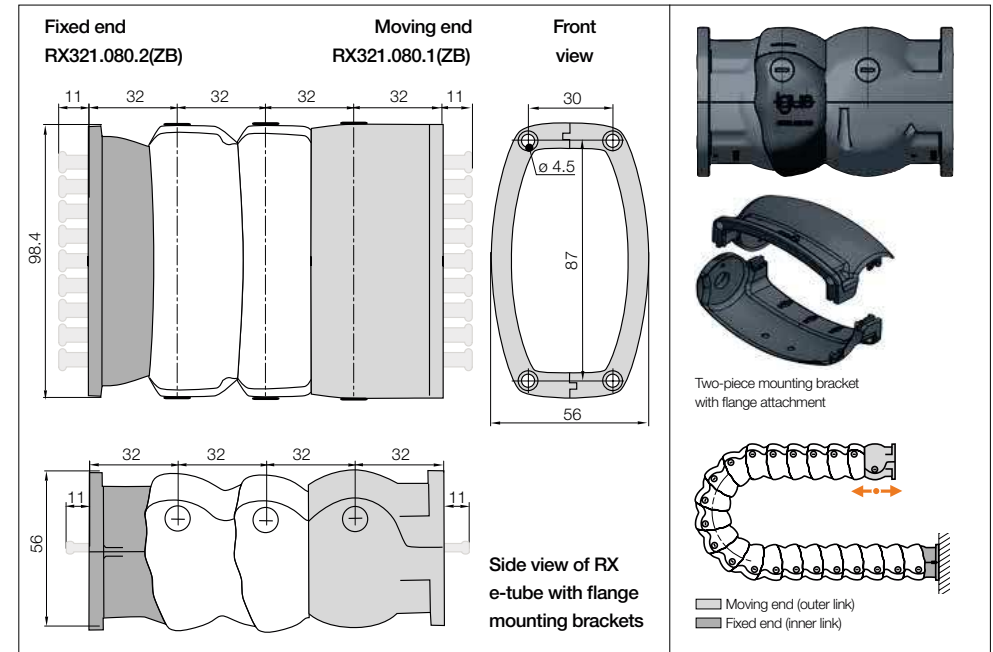
Installation dimensions



R	080	100	125	150	175	200*	225*	250*
H	216	256	306	356	406	456	506	556
D	156	176	201	226	251	276	301	326
K	320	380	460	540	615	695	775	850

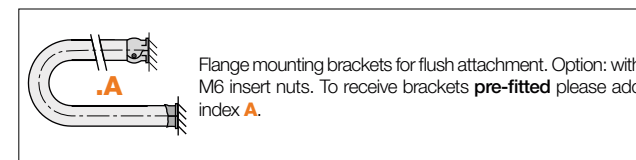
The required clearance height:  $H_e = H + 50\text{mm}$  (with 0.5kg/m fill weight)

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



Mounting brackets, flange | Locking

Width index	Part No. full set with tiewrap plates	Part No. full set without tiewrap plates	Number of teeth
080. ▶	RX321.080.12ZB	RX321.080.12	8



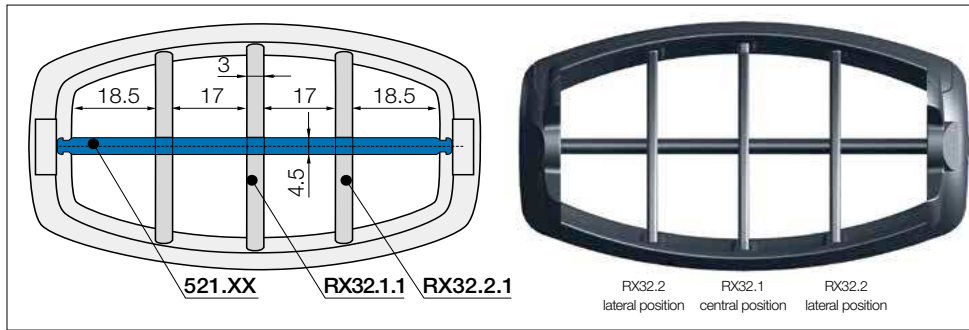
**RX321.080.12ZB.A Order example**

- Pre-assembled
- With integrated strain relief tiewrap plates
- Full set
- Width index
- Series

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



Interior separation



**Slotted separator**  
(central position)

unassembled	RX32.1
assembled	RX32.1.1

**Slotted separator**  
(lateral position)

unassembled	RX32.2
assembled	RX32.2.1

**Shelf, lockable**

unassembled	520.X
assembled	521.X



**Shelves**  
Width = X [mm]

X [mm]	unassembled	assembled	X [mm]	unassembled	assembled
024	520.24	521.24	064	520.64	521.64
044	520.44	521.44	084	520.84	521.84

**Vertical separation - slotted separators:**

**RX32.1** (central position)

**RX32.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2<sup>nd</sup> e-tube link!

**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.

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

- e-tubes 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.eu/HT](http://www.igus.eu/HT)



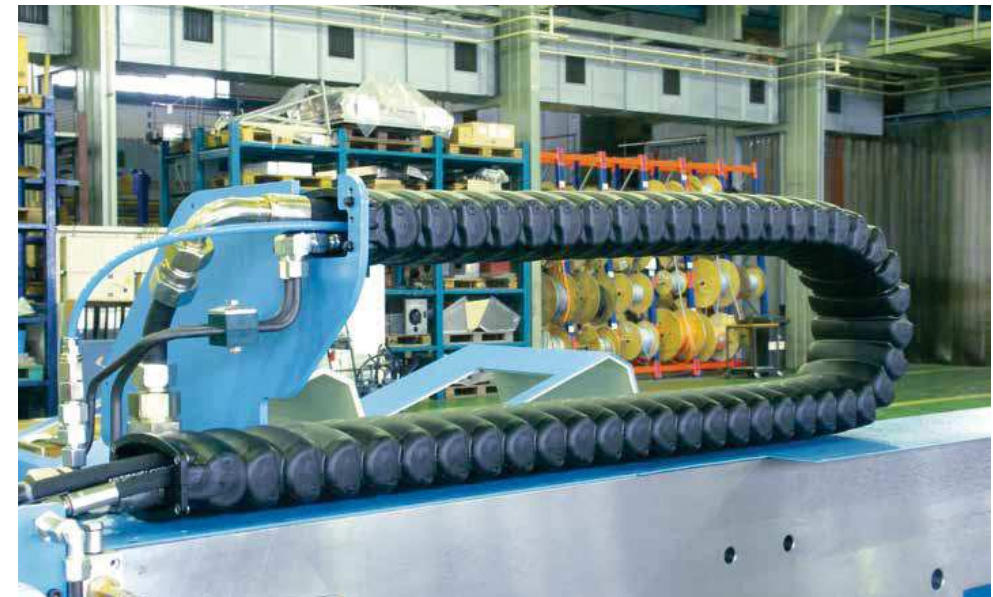
**Steel support tray for support of the lower run**

- Simple one-piece support trays for the lower run
  - Guides the RX e-tube safely and lets the swarf pass through easily
  - Available in different lengths
- More information ► [www.igus.eu/RX](http://www.igus.eu/RX)



**Strain relief block for flange mounting brackets**

- Strain relief block to match cable layout
  - Fast assembly
  - Can be integrated in the RX e-tube flange mounting bracket
- More information ► [www.igus.eu/RX32](http://www.igus.eu/RX32)



Supply of the main spindle in a tooling machine with igus® RX e-tube. The rounded contour of the energy supply repels all kinds of swarf

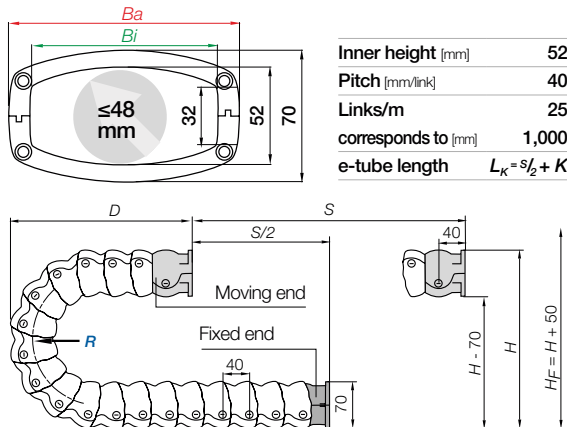
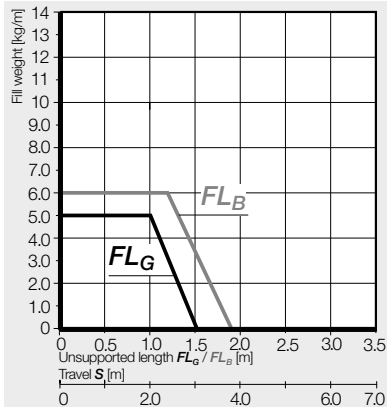


e-tubes | Series RX40 | Lids removable along the outer radius

Part No.	Bi	Ba	R	Available bend radii	RX40
e-tubes	[mm]	[mm]	[mm]		[kg/m]
RX40. 100 .R.0	100	123	100	125   150   175   200   225   250   275   300	≈ 1.89

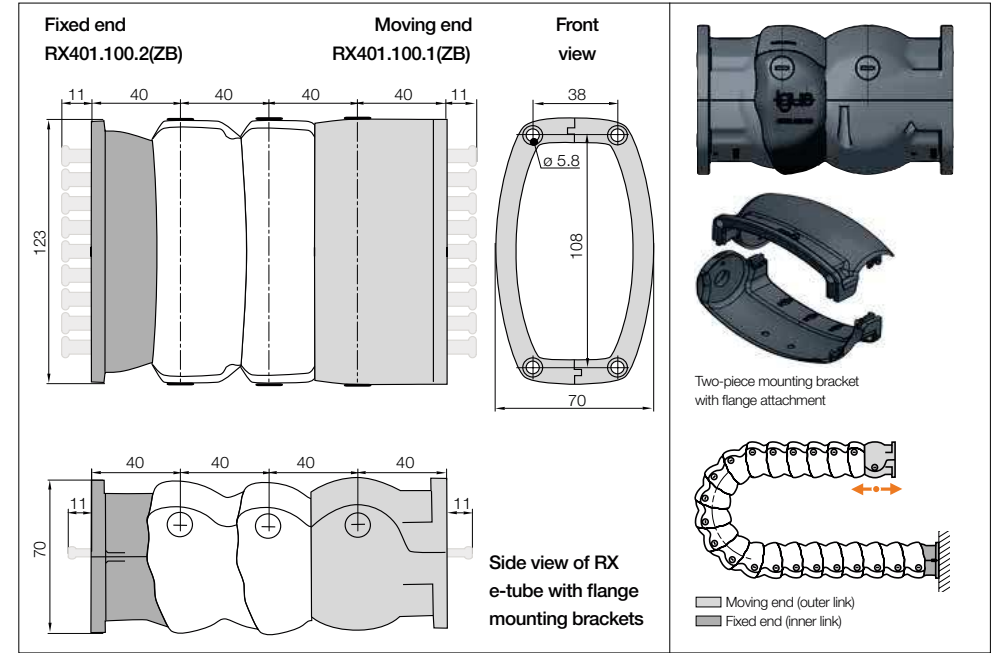
Complete Part No. with required radius (R). Example: RX40.080.080.0

Installation dimensions



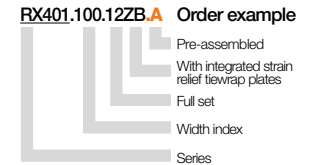
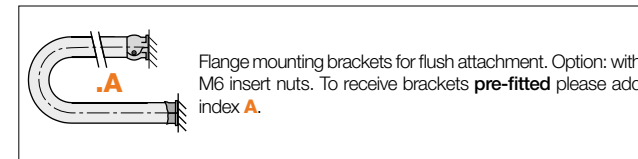
R	100	125	150	175	200	225	250	275	300
H	270	320	370	420	470	520	570	620	670
D	195	220	245	270	295	320	345	370	395
K	395	475	555	630	710	790	870	945	1,025

The required clearance height:  $H_e = H + 50\text{mm}$  (with 0.5kg/m fill weight)



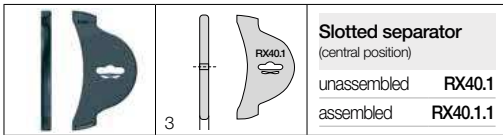
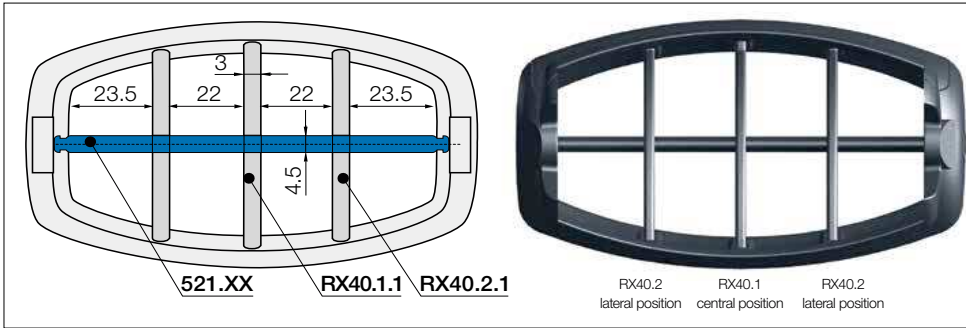
Mounting brackets, flange | Locking

Width index	Part No. full set with tie-wrap plates	Part No. full set without tie-wrap plates	Number of teeth
100. ►	RX401.100.12ZB	RX401.100.12	10

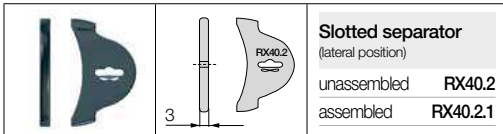


Strain relief e.g. clamps, tie-wrap plates, nuggets and clips are available from stock. The complete chainfix range with ordering options ► From page 1392

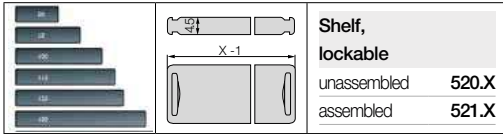
Interior separation



**Slotted separator**  
(central position)  
unassembled **RX40.1**  
assembled **RX40.1.1**



**Slotted separator**  
(lateral position)  
unassembled **RX40.2**  
assembled **RX40.2.1**



**Shelf, lockable**  
unassembled **520.X**  
assembled **521.X**



**Shelves**  
Width = X [mm]

X [mm]	unassembled	assembled	X [mm]	unassembled	assembled
029	520.29	521.29	079	520.79	521.79
054	520.54	521.54	104	520.104	521.104

**Vertical separation - slotted separators:**

**RX40.1** (central position)  
**RX40.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2<sup>nd</sup> e-tube link!

**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.

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

- e-tubes 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.eu/HT](http://www.igus.eu/HT)**



**Steel support tray for support of the lower run**

- Simple one-piece support trays for the lower run
  - Guides the RX e-tube safely and lets the swarf pass through easily
  - Available in different lengths
- More information ► [www.igus.eu/RX](http://www.igus.eu/RX)**



**Strain relief block for flange mounting brackets**

- Strain relief block to match cable layout
  - Fast assembly
  - Can be integrated in the RX e-tube flange mounting bracket
- More information ► [www.igus.eu/RX40](http://www.igus.eu/RX40)**



Swarf tests at the igus® test lab prove the excellent sealing of igus® RX e-tube. **Video online ► [www.igus.eu/RX\\_tested](http://www.igus.eu/RX_tested)**



Extremely swarf-resistant, large size



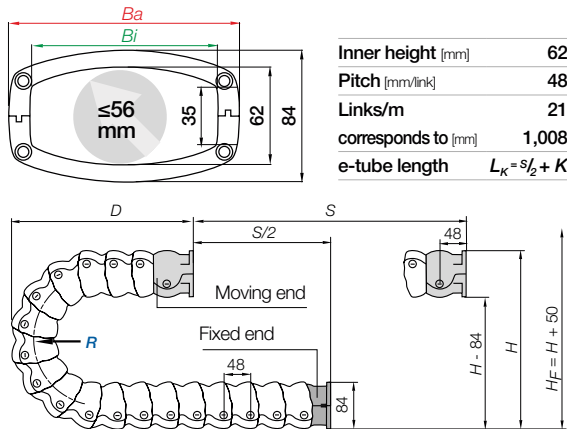
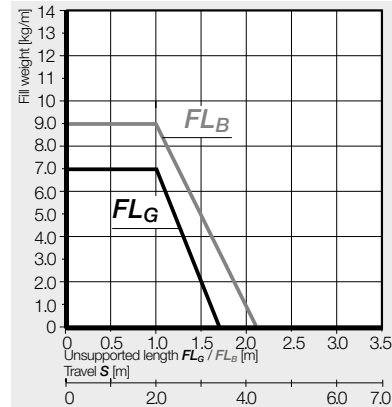
e-tubes | Series RX48 | Lids removable along the outer radius

Part No.	Bi	Ba	R	Available bend radii	RX48
e-tubes	[mm]	[mm]	[mm]		[kg/m]
RX48.120.R.0	120	147.6	120	150   175*   200*   225   250*   275*   300*   325*	≈ 2.76

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

Complete Part No. with required radius (R). Example: RX48.120.120.0

Installation dimensions

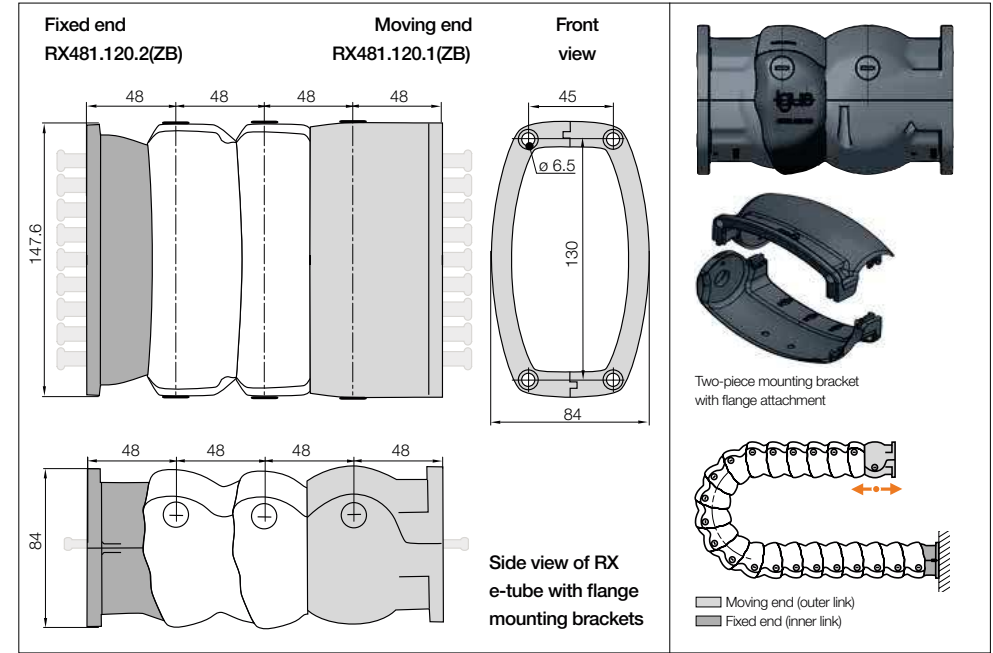


R	120	150	175*	200*	225	250*	275*	300*	325*
H	324	384	434	484	534	584	634	684	734
D	234	264	289	314	339	364	389	414	439
K	475	570	650	725	805	885	960	1,040	1,120

The required clearance height:  $H_e = H + 50\text{mm}$  (with 0.5kg/m fill weight)

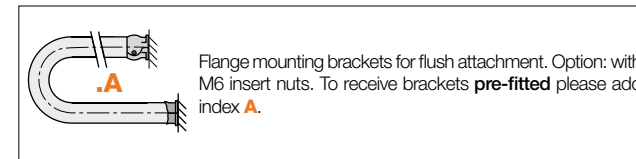
\*Radius available upon request. Please consult igus® for delivery time.

Mounting brackets, flange | Polymer, two-piece | Locking



Mounting brackets, flange | Locking

Width index	Part No. full set with tiewrap plates	Part No. full set without tiewrap plates	Number of teeth
120. ▶	RX481.120.12ZB	RX481.120.12	12



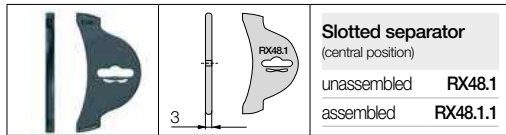
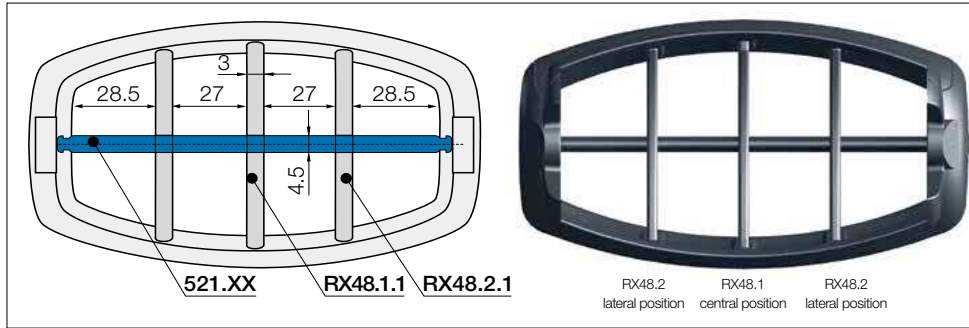
**RX481.120.12ZB.A** Order example

- Pre-assembled
- With integrated strain relief tiewrap plates
- Full set
- Width index
- Series

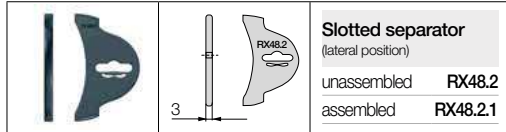
Strain relief e.g. clamps, tiewrap plates, nuggets and clips are available from stock. The complete chainfix range with ordering options ▶ From page 1392



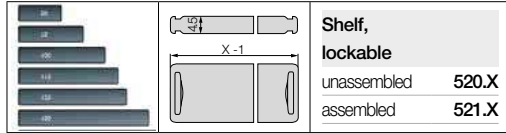
Interior separation



**Slotted separator**  
(central position)  
unassembled **RX48.1**  
assembled **RX48.1.1**



**Slotted separator**  
(lateral position)  
unassembled **RX48.2**  
assembled **RX48.2.1**



**Shelf, lockable**  
unassembled **520.X**  
assembled **521.X**



**Shelves**  
Width = X [mm]

X [mm]	unassembled	assembled	X [mm]	unassembled	assembled
034	520.34	521.34	094	520.94	521.94
064	520.64	521.64	124	520.124	521.124

**Vertical separation - slotted separators:**

**RX48.1** (central position)

**RX48.2** (lateral position)

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  - Available in different lengths
- More information ► [www.igus.eu/RX](http://www.igus.eu/RX)**



**Strain relief block for flange mounting brackets**

- Strain relief block to match cable layout
  - Fast assembly
  - Can be integrated in the RX e-tube flange mounting bracket
- More information ► [www.igus.eu/RX48](http://www.igus.eu/RX48)**



With the extremely swarf-resistant igus® RX e-tube and harnessed chainflex® cables, the service life of this woodworking machine was considerably increased. Because of dust and dirt, previous cables failed after one month

Extremely swarf-resistant, very large size



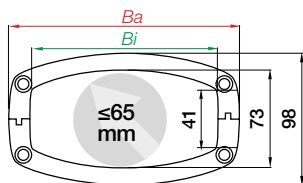
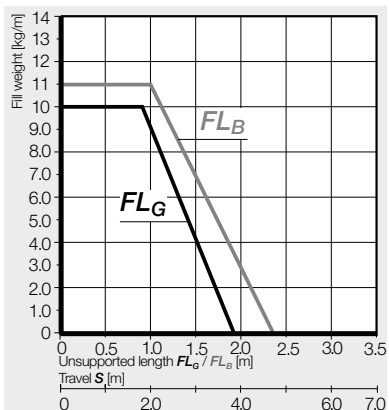
e-tubes | Series RX56 | Lids removable along the outer radius

Part No.	Bi	Ba	R	Available bend radii	RX56
e-tubes	[mm]	[mm]	[mm]		[kg/m]
RX56. 140 .R.0	140	172.2	140	175*   200*   225*   250   275*   300*   325*   350*	≈ 3.83

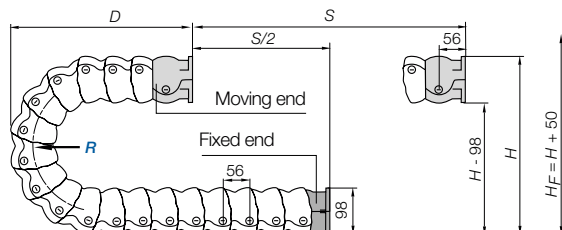
\*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: RX56.140.140.0

Installation dimensions



Inner height [mm]	73
Pitch [mm/link]	56
Links/m	18
corresponds to [mm]	1,008
e-tube length $L_k = \frac{S}{2} + K$	

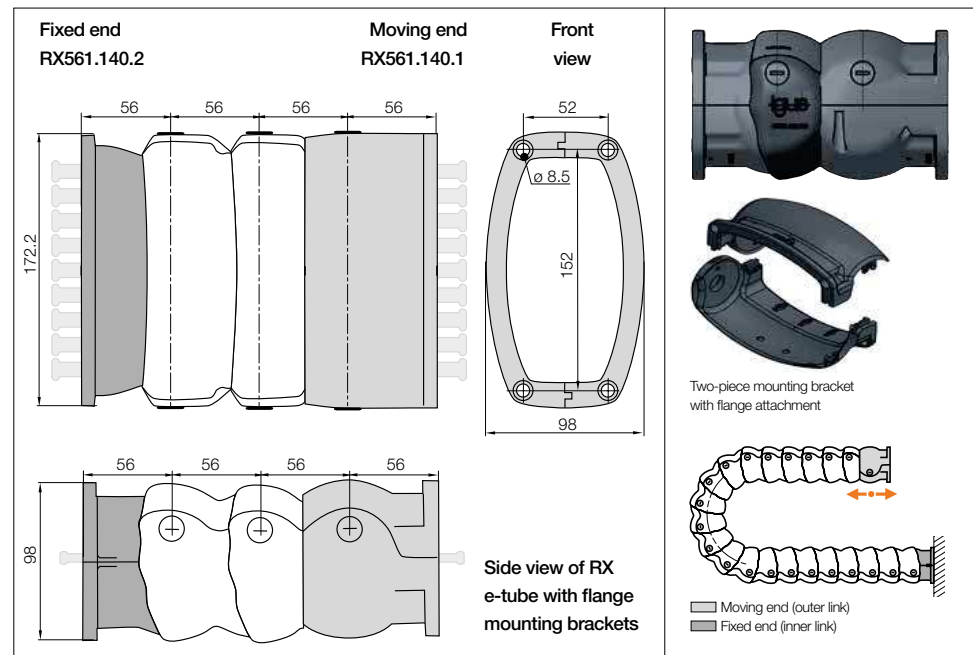


R	140	175*	200*	225*	250	275*	300*	325*	350*
H	378	448	498	548	598	648	698	748	798
D	273	308	333	358	383	408	433	458	483
K	555	665	745	820	900	980	1,055	1,135	1,215

The required clearance height:  $H_e = H + 50\text{mm}$  (with 0.5kg/m fill weight)

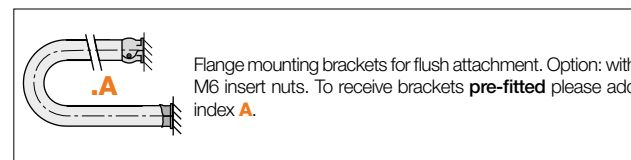
\*Radius available upon request. Please consult igus® for delivery time.

Mounting brackets, flange | Polymer, two-piece | Locking



Mounting brackets, flange | Locking

Width index	Part No. full set with tiewrap plates	Part No. full set without tiewrap plates	Number of teeth
140. ▶	Standard upon request	RX561.140.12	upon request

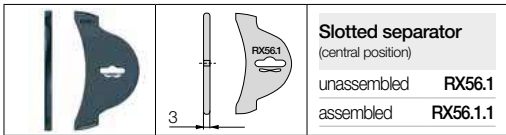
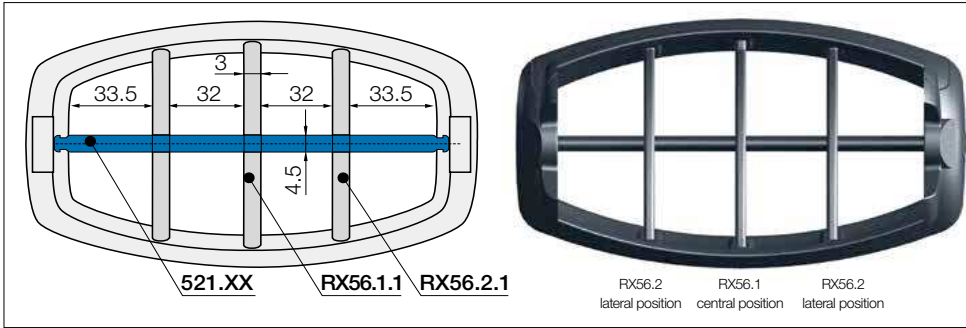


Flange mounting brackets for flush attachment. Option: with M6 insert nuts. To receive brackets pre-fitted please add index A.

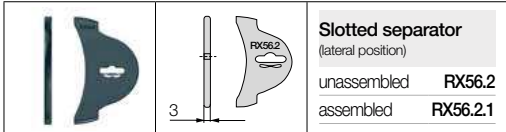


Strain relief e.g. clamps, tiewrap plates, nuggets and clips are available from stock. The complete chainfix range with ordering options ▶ From page 1392

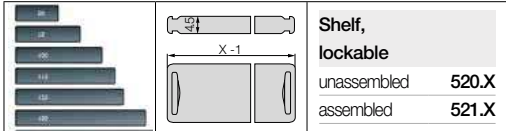
Interior separation



**Slotted separator**  
(central position)  
unassembled **RX56.1**  
assembled **RX56.1.1**



**Slotted separator**  
(lateral position)  
unassembled **RX56.2**  
assembled **RX56.2.1**



**Shelf, lockable**  
unassembled **520.X**  
assembled **521.X**



**Shelves**  
Width = X [mm]

X [mm]	unassembled	assembled	X [mm]	unassembled	assembled
039	520.39	521.39	109	520.109	521.109
074	520.74	521.74	144	520.144	521.144

**Vertical separation - slotted separators:**

**RX56.1** (central position)

**RX56.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2<sup>nd</sup> e-tube link!

**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.

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

- e-tubes 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.eu/HT](http://www.igus.eu/HT)**



**Steel support tray for support of the lower run**

- Simple one-piece support trays for the lower run
  - Guides the RX e-tube safely and lets the swarf pass through easily
  - Available in different lengths
- More information ► [www.igus.eu/RX](http://www.igus.eu/RX)**



**Strain relief block for flange mounting brackets**

- Strain relief block to match cable layout
  - Fast assembly
  - Can be integrated in the RX e-tube flange mounting bracket
- More information ► [www.igus.eu/RX56](http://www.igus.eu/RX56)**



The RX e-tube used in this compact turning machine has Reverse Bend Radius (**RBR**) and operates even with the very restricted space