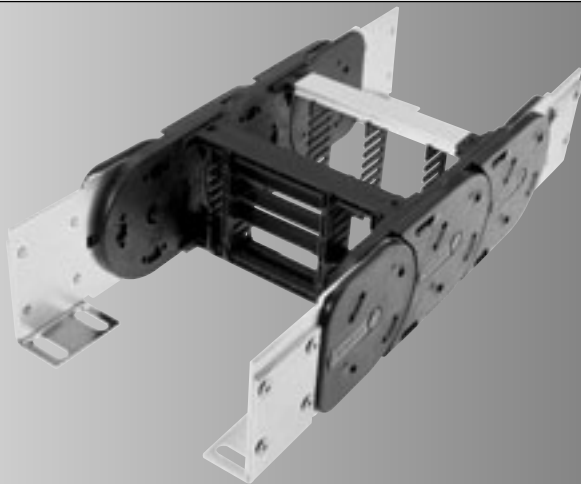


CABLE DRAG CHAIN SYSTEMS



HeavyLine

MP 102



MP 102 - HeavyLine

Order variants

Style (order code)									
Configuration (order code) * = standard									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP102 118	164	118	118						
MP102 143	189	143	143						
MP102 168	214	168	168						
MP102 192	239	193	193						
MP102 218	264	218	218						
MP102 243	289	243	243						
MP102 268	314	268	268						
MP102 293	339	293	293						
MP102 318	364	318	318						
MP102 343	389	343	343						
MP102 368	414	368	368						
MP102 418	464	418	418					0	
MP102 468	514	468	468	250	250			2*	
MP102 518	564	518	518	300	300			4	
MP102 xxx	Inside	>118-		400	400			6	0
	+ 46	600	ALU	500	500			9	9
Order number:	1020			0					0

Configuration:

- 0 crossbar every link; w/bias
- 2* crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

Style:

- 0 Standard (PA)
- 9 Special version

Sample order

1020 118 250 0000

Inside width = 118 mm

Radius = 250 mm

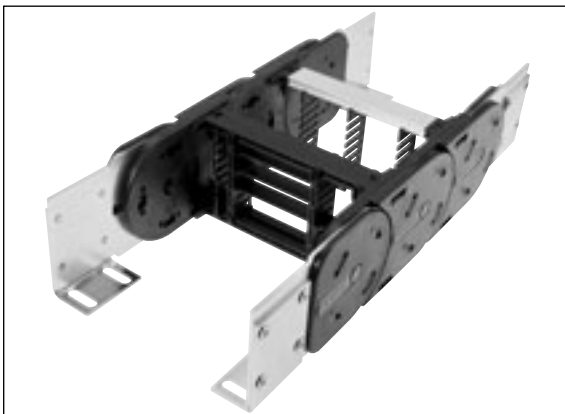
Configuration = 0

Style = 0

Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Extreme unsupported lengths
- Very high additional loads
- Opens on both sides
- Variable widths (aluminium frame ridge)
- Flexible internal separation
- Rotated 90°, unsupported/flat
- Variant with/without bias

Features



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

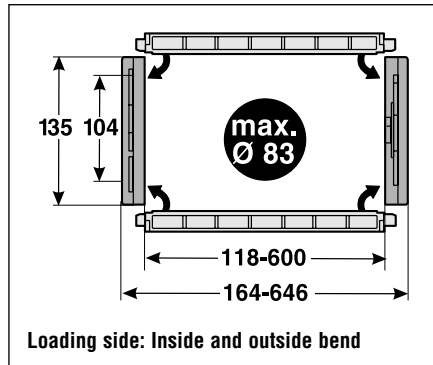


Foldable shelf system for reliable cable guidance

MP 102 - HeavyLine

Technical data

Chain link dimensions



Material properties

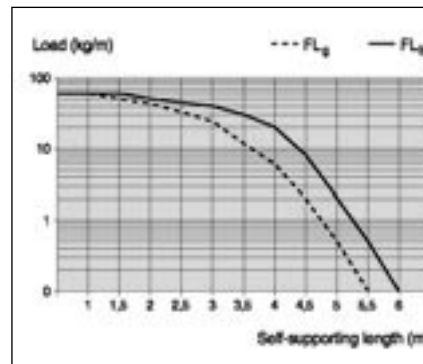
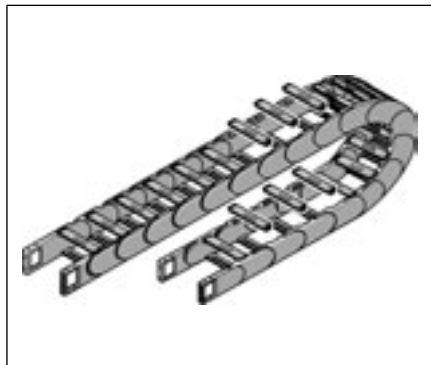
Service temperature: -30 to +120 °C
 Gliding friction factor: 0.30
 Static friction factor: 0.45
 Fire classification: in conformity with UL94 HB

Other material properties on request

Technical specifications

Travel distance, gliding, L_g : 300 m
 Travel distance, self-supporting, L_s : see diagram
 Travel distance, vertical, hanging, L_{vh} : 150 m
 Travel distance, vertical, upright, L_{vu} : 8 m
 Rotated 90°, self-supporting, L_{sg} : 8 m
 Speed, gliding, V_g : 5 m/s
 Speed, self-supporting, V_s : 20 m/s
 Acceleration, gliding, a_g : 25 m/s²
 Acceleration, self-supporting, a_s : 40 m/s²

Unsupported length

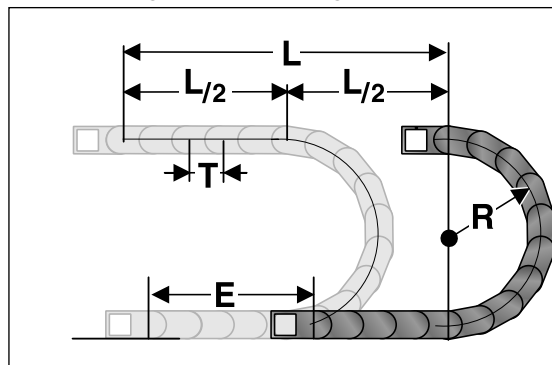


FL_g :
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

FL_s :
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL_s , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

Determining the chain length



L = Travel distance
 R = Radius
 T = Pitch
 E = Distance between entry point and middle of travel distance

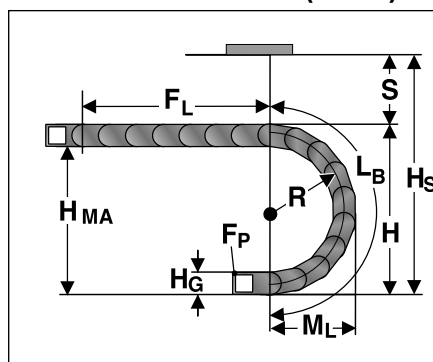
Determining the chain length

$$\text{Length} = \frac{L}{2} + \pi \times R + E$$

≈ 1 m chain = 7 x 141 mm links

The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.

Installation dimensions (in mm)

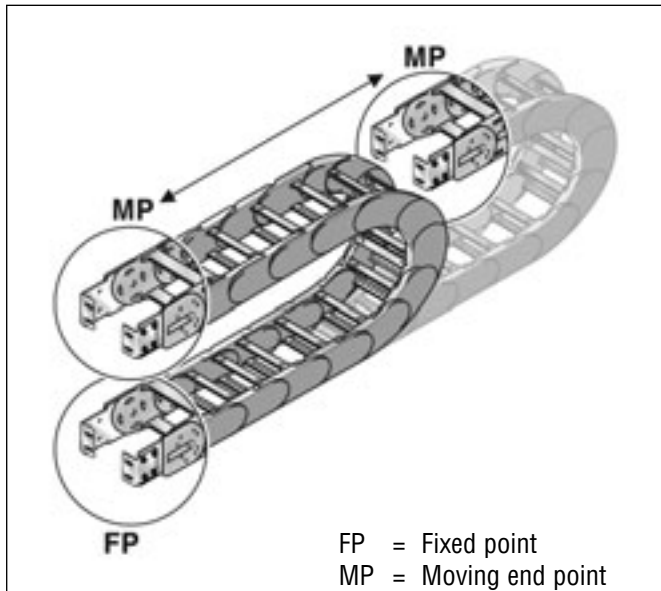


Radius R	250	300	400	500
Outside height of chain link (H_o)	135	135	135	135
Height of bend (H)	635	735	935	1135
Height of moving end connection (H_{MA})	500	600	800	1000
Safety margin (S)	50	50	50	50
Installation height (H_s)	685	785	985	1185
Arc projection (M_L)	459	509	609	709
Bend length (L_b)	1138	1295	1609	1923

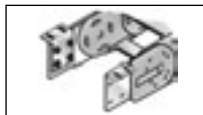


MP 102 - HeavyLine

Chain bracket



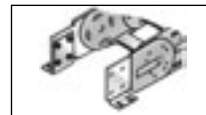
Chain bracket



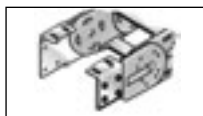
Top / outside



Front / outside



Bottom / outside



Top / inside



Front / inside



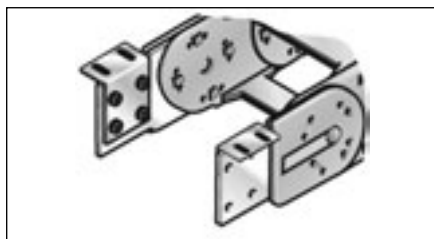
Bottom / inside

Chain bracket

Type

Order no.

Pack



KA 102 Female end 102000050 1

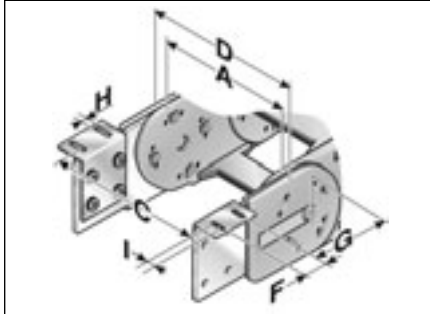
KA 102 Male end 102000051 1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M12 screws.

MP 102 - HeavyLine

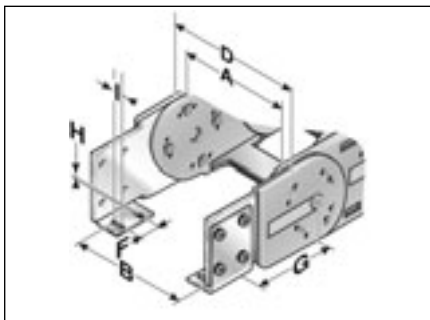
Chain bracket

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 102	118.00	156.00	164.00	50.00	90.00	13.00	25.00
KA 102	143.00	181.00	189.00	50.00	90.00	13.00	25.00
KA 102	168.00	206.00	214.00	50.00	90.00	13.00	25.00
KA 102	193.00	231.00	239.00	50.00	90.00	13.00	25.00
KA 102	218.00	256.00	264.00	50.00	90.00	13.00	25.00
KA 102	243.00	281.00	289.00	50.00	90.00	13.00	25.00
KA 102	268.00	306.00	314.00	50.00	90.00	13.00	25.00
KA 102	293.00	331.00	339.00	50.00	90.00	13.00	25.00
KA 102	318.00	356.00	364.00	50.00	90.00	13.00	25.00
KA 102	343.00	381.00	389.00	50.00	90.00	13.00	25.00
KA 102	368.00	406.00	414.00	50.00	90.00	13.00	25.00
KA 102	418.00	456.00	464.00	50.00	90.00	13.00	25.00
KA 102	468.00	506.00	489.00	50.00	90.00	13.00	25.00
KA 102	518.00	556.00	564.00	50.00	90.00	13.00	25.00
KA 102	Variable	A+38.00	A+46.00	50.00	90.00	13.00	25.00



Bottom and top / inside

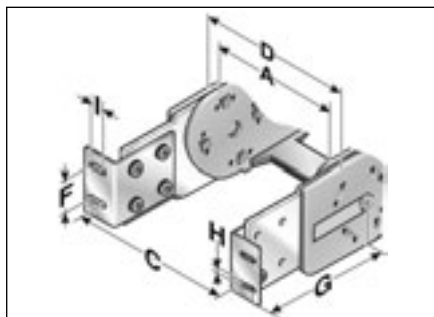
Type	A	B	D	F	G	H Ø	I
KA 102	118.00	120.00	164.00	50.00	90.00	13.00	25.00
KA 102	143.00	145.00	189.00	50.00	90.00	13.00	25.00
KA 102	168.00	170.00	214.00	50.00	90.00	13.00	25.00
KA 102	193.00	195.00	239.00	50.00	90.00	13.00	25.00
KA 102	218.00	218.00	264.00	50.00	90.00	13.00	25.00
KA 102	243.00	245.00	289.00	50.00	90.00	13.00	25.00
KA 102	268.00	270.00	314.00	50.00	90.00	13.00	25.00
KA 102	293.00	295.00	339.00	50.00	90.00	13.00	25.00
KA 102	318.00	320.00	364.00	50.00	90.00	13.00	25.00
KA 102	343.00	345.00	389.00	50.00	90.00	13.00	25.00
KA 102	368.00	370.00	414.00	50.00	90.00	13.00	25.00
KA 102	418.00	420.00	464.00	50.00	90.00	13.00	25.00
KA 102	468.00	470.00	489.00	50.00	90.00	13.00	25.00
KA 102	518.00	520.00	564.00	50.00	90.00	13.00	25.00
KA 102	Variable	A+2	A+46.00	50.00	90.00	13.00	25.00



MP 102 - HeavyLine

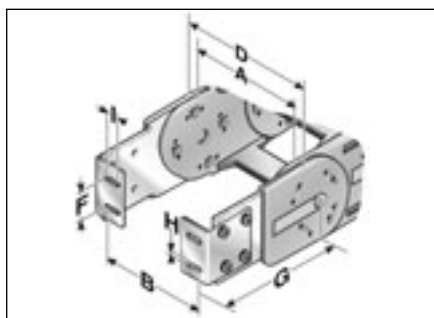
Chain bracket

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 102	118.00	156.00	164.00	50.00	187.50	13.00	25.00
KA 102	143.00	181.00	189.00	50.00	187.50	13.00	25.00
KA 102	168.00	206.00	214.00	50.00	187.50	13.00	25.00
KA 102	193.00	231.00	239.00	50.00	187.50	13.00	25.00
KA 102	218.00	256.00	264.00	50.00	187.50	13.00	25.00
KA 102	243.00	281.00	289.00	50.00	187.50	13.00	25.00
KA 102	268.00	306.00	314.00	50.00	187.50	13.00	25.00
KA 102	293.00	331.00	339.00	50.00	187.50	13.00	25.00
KA 102	318.00	356.00	364.00	50.00	187.50	13.00	25.00
KA 102	343.00	381.00	389.00	50.00	187.50	13.00	25.00
KA 102	368.00	406.00	414.00	50.00	187.50	13.00	25.00
KA 102	418.00	456.00	464.00	50.00	187.50	13.00	25.00
KA 102	468.00	506.00	489.00	50.00	187.50	13.00	25.00
KA 102	518.00	556.00	564.00	50.00	187.50	13.00	25.00
KA 102	Variable	A+38.00	A+46.00	50.00	187.50	13.00	25.00

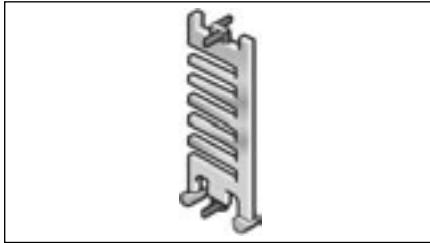


Front / inside

Type	A	B	D	F	G	H Ø	I
KA 102	118.00	120.00	164.00	50.00	187.50	13.00	25.00
KA 102	143.00	145.00	189.00	50.00	187.50	13.00	25.00
KA 102	168.00	170.00	214.00	50.00	187.50	13.00	25.00
KA 102	193.00	195.00	239.00	50.00	187.50	13.00	25.00
KA 102	218.00	218.00	264.00	50.00	187.50	13.00	25.00
KA 102	243.00	245.00	289.00	50.00	187.50	13.00	25.00
KA 102	268.00	270.00	314.00	50.00	187.50	13.00	25.00
KA 102	293.00	295.00	339.00	50.00	187.50	13.00	25.00
KA 102	318.00	320.00	364.00	50.00	187.50	13.00	25.00
KA 102	343.00	345.00	389.00	50.00	187.50	13.00	25.00
KA 102	368.00	370.00	414.00	50.00	187.50	13.00	25.00
KA 102	418.00	420.00	464.00	50.00	187.50	13.00	25.00
KA 102	468.00	470.00	489.00	50.00	187.50	13.00	25.00
KA 102	518.00	520.00	564.00	50.00	187.50	13.00	25.00
KA 102	Variable	A+2	A+46.00	50.00	187.50	13.00	25.00

MP 102 - Accessories

Separator



Separator

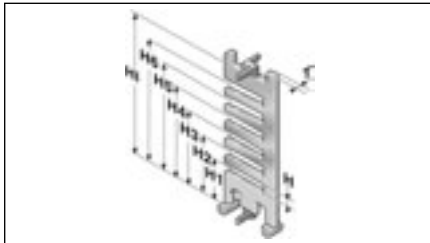
Type	Order no.	Description	Pack
TR 102	1020000092	Separator	1

Lock grid spacing 5.00 mm

We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed.
An offset configuration of the separators is advisable.

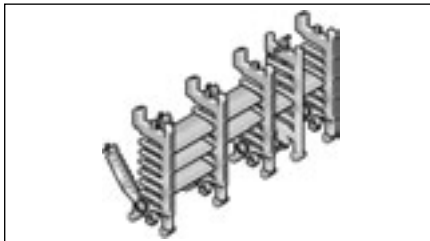
Type	Dimensions in mm								
	TI	H	H1	H2	H3	H4	H5	H6	HI

TR 102	4.00	5.50	27.40	39.70	52.00	64.30	76.60	88.90	104
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Separator

Shelving system



Shelving system

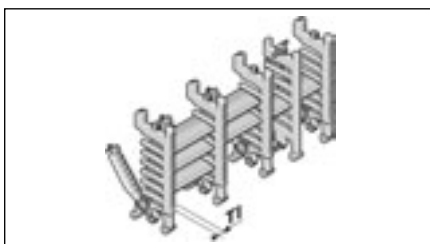
Type	Order no.	Description	Width in mm	Pack
RB 056-7	10000005600	RB 056-7 Shelf	56	1
RB 066-7	10000006600	RB 066-7 Shelf	66	1
RB 081-7	10000008100	RB 081-7 Shelf	81	1
RB 106-7	10000010600	RB 106-7 Shelf	106	1
RB 116-7	10000011600	RB 116-7 Shelf	116	1
RB 216-7	10000021600	RB 216-7 Shelf	216	1
RB 166-7	10000016600	RB 166-7 Shelf	166	1
RTT 102	100091022000	RTT 102 Shelf support, divisible		1

Lock grid spacing 5.00 mm

In connection with at least two shelf supports (RTT) the shelf becomes a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelving system can be pre-assembled on request.

Type	Dimensions in mm	
	TI	

RTT 102	8.00	
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Shelving system



MP 102 - Accessories

Frame ridge connector

Type	Order no.	Description	Pack
RSV 102	1020000096	RSV 102 Frame ridge connector	1
RSV 102 A	1020000098	RSV 102 Aluminium frame ridge connector	1



Frame ridge connector

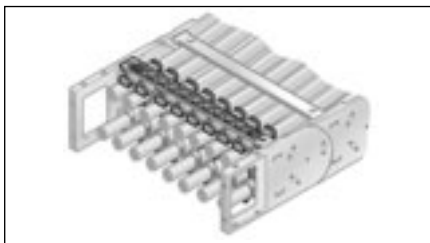
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.

Type	TI	Dimensions in mm
RSV 102	8.00	



Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 118-7	072011800010	118 mm	1
RS-ZL 143-7	072014300010	143 mm	1
RS-ZL 168-7	072016800010	168 mm	1
RS-ZL 193-7	072019300010	193 mm	1
RS-ZL 218-7	072021800010	218 mm	1
RS-ZL 243-7	072024300010	243 mm	1

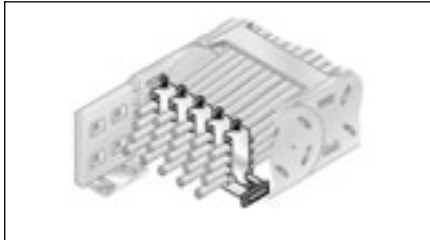


Strain relief RS-ZL

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.

MP 102 - Accessories

Strain relief with BAK

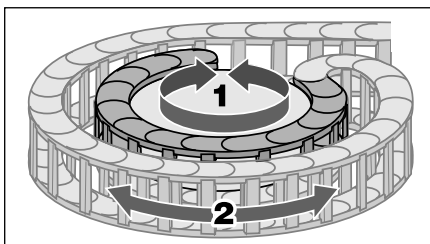


Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel
Please indicate chain type and inside width when ordering.

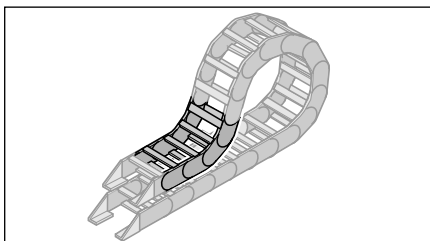
Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 102 (RÜ400/R400) left	10200040060	400 mm	400 mm	1
SR 102 (RÜ400/R400) right	10200040062	400 mm	400 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!

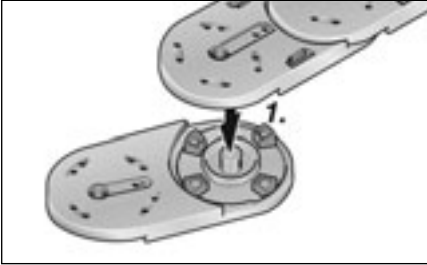


Low-lying chain bracket

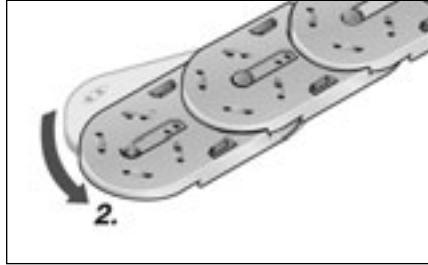


MP 102 - HeavyLine

Assembly



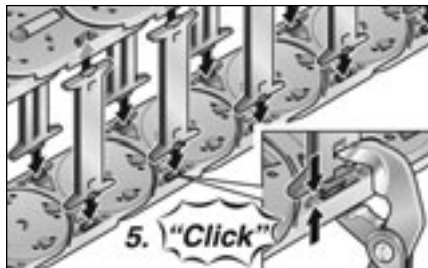
Step 1



Step 2



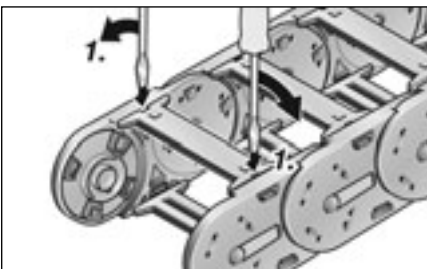
Step 3



Step 4

This type of chain has different chain links for the left or right side run. The marking must be observed when assembling, e.g. R250.1 for one side and R250.2 for the opposite side. Only side links with the same marking will fit together. This also concerns the chain brackets. The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side panel first before being inserted into the opposite side panel.

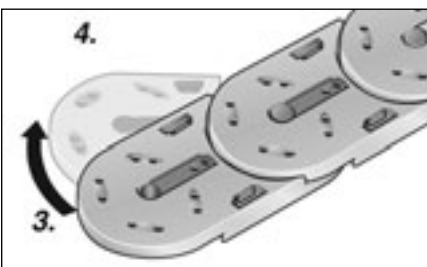
Disassembly



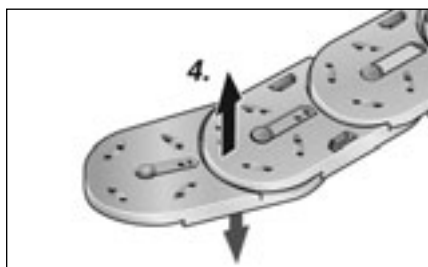
Step 1



Step 2



Step 3



Step 4

Disassembly is effected in the reverse sequence to assembly. First lever the frame ridges out of the side panel at one side and then on the opposite side.