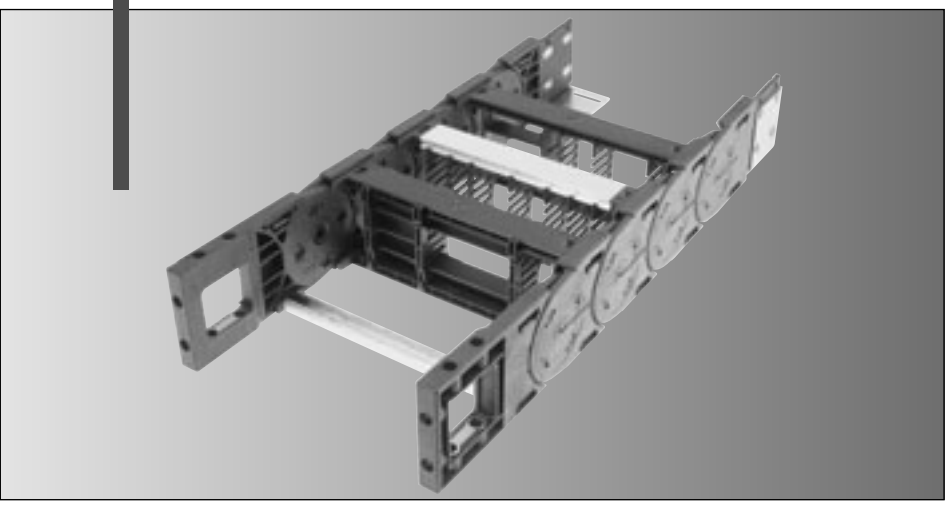
CABLE DRAG CHAIN SYSTEMS



HeavyLine

MP 72

MP 72 - 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
				MP 72 118
				MP 72 143
				MP 72 168
				MP 72 193
				MP 72 218
				MP 72 243
				MP 72 268
				MP 72 293
				MP 72 318
				MP 72 343
				MP 72 368
				MP 72 418
				MP 72 468
				MP 72 518
				MP 72 xxx
			118	150
			143	175
			168	200
			193	225
			218	250
			243	275
			268	300
			293	325
			318	350
			343	375
			368	400
			418	450
			468	500
			518	550
			ALU	Inside + 32
		150	150	>118-600
		200	200	
		250	250	
		300	300	
		400	400	
		500	500	
	0			
	2*			
	4			
	6			
	9			
0				
9				

Order number:	0720			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

0720 118 150 0000

Inside width = 118 mm
Radius = 150 mm
Configuration = 0
Style = 0

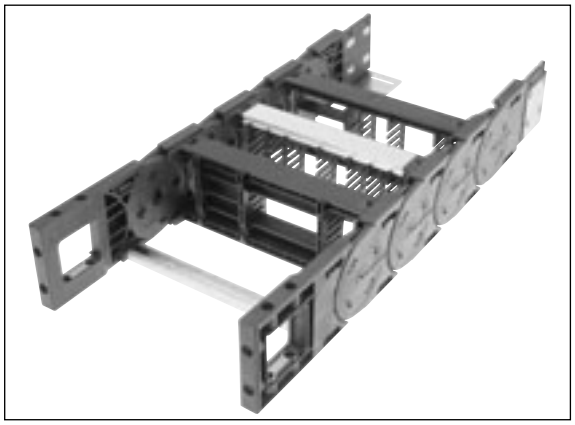
Ideal operating conditions

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

Alternative chain type

- MP 62.2 / MP 82.2 easier assembly

Features

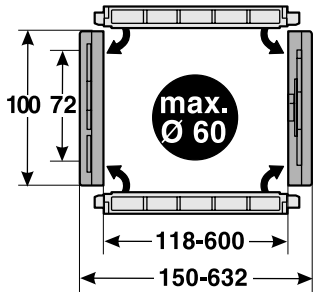


- Chain bracket with variably positionable metal bracket
- Frame ridge strain relief can be integrated into chain bracket
- Frame ridges / covers in inside and outside bend can be removed
- Radii with or without bias (RK/RV)
- Back radius combinations
- Aluminium frame ridges with integrated lock grid in variable lengths
- Foldable shelf system for reliable cable guidance
- Frame ridge connector for securing very wide frame ridges

MP 72 - HeavyLine

Technical data

Chain link dimensions



Loading side: Inside and outside bend

Material properties

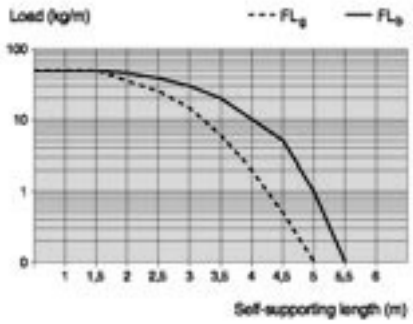
Service temperature:	-30 to +120 °C
Gliding friction factor:	0.30
Static friction factor:	0.45
Fire classification:	in conformity with UL94 HB

Other material properties on request

Technical specifications

Travel distance, gliding, L_g:	200 m
Travel distance, self-supporting, L_f:	see diagram
Travel distance, vertical, hanging, L_{vh}:	120 m
Travel distance, vertical, upright, L_{vs}:	6 m
Rotated 90°, self-supporting, L_{90f}:	6 m
Speed, gliding, V_g:	5 m/s
Speed, self-supporting, V_f:	20 m/s
Acceleration, gliding, a_g:	25 m/s²
Acceleration, self-supporting, a_f:	40 m/s²

Unsupported length

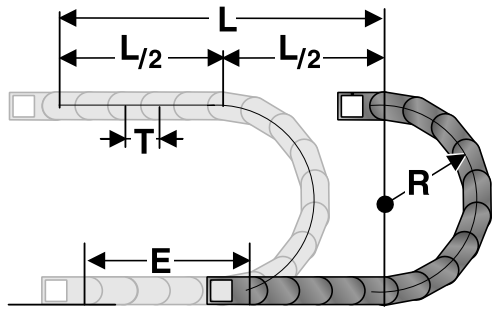


FL_g:
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

FL_b:
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_b, 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

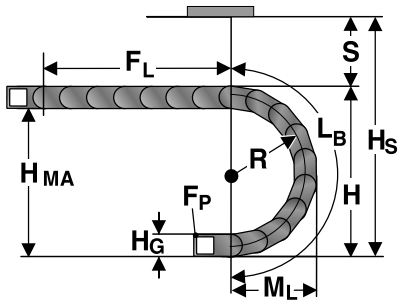
Determining the chain length

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

$\approx$ 1 m chain = 10 x 100 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.

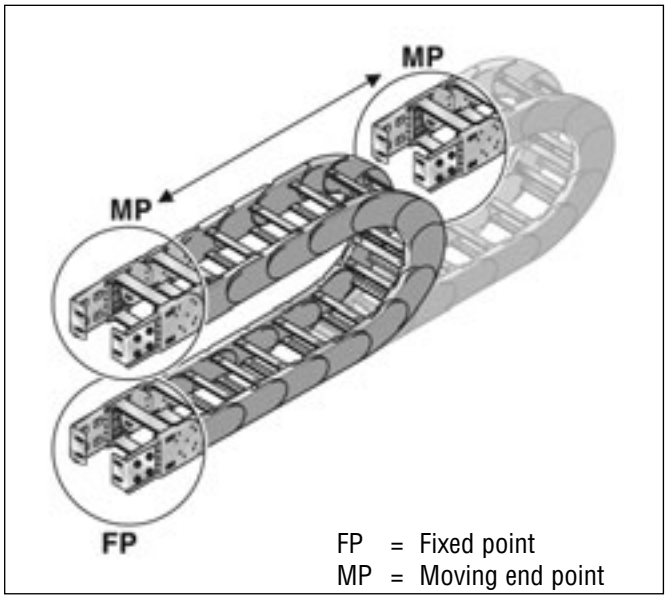
Installation dimensions (in mm)



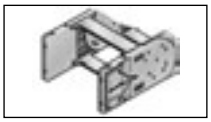
Radius R	150	200	250	300	400	500
Outside height of chain link (H_G)	102	102	102	102	102	102
Height of bend (H)	402	502	602	702	902	1102
Height of moving end connection (H_{MA})	300	400	500	600	800	1000
Safety margin (S)	20	20	20	20	20	20
Installation height (H_S)	422	522	622	722	922	1122
Arc projection (M_L)	301	351	401	451	551	651
Bend length (L_B)	731	888	1045	1202	1516	1830

MP 72 - HeavyLine

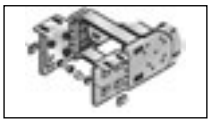
Chain bracket

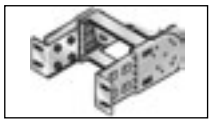


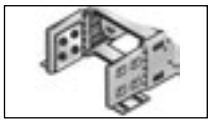
Chain bracket flexible

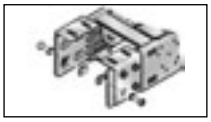

Flexible

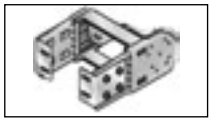
Chain bracket elbow fitting

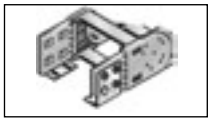

Top / outside


Front / outside


Bottom / outside

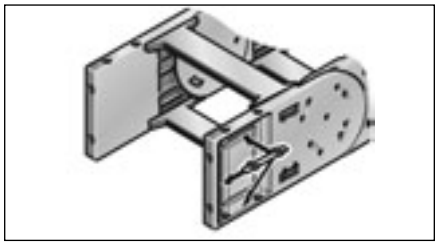

Top / inside


Front / inside


Bottom / inside

Chain bracket flexible

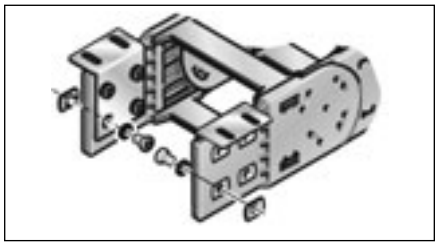
Type	Order no.	Pack
KA 72-F Female end	0720000054	1
KA 72-F Male end	0720000055	1



This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M10 screws should be used for securing the brackets in place. Metal inserts (supplied) help to minimise the cold flow properties. This is an enormous advantage, guaranteeing the smooth transfer of high loads to the chain.

Chain bracket elbow fitting

Type	Order no.	Pack
KA 72 Female end	0720000050	1
KA 72 Male end	0720000051	1

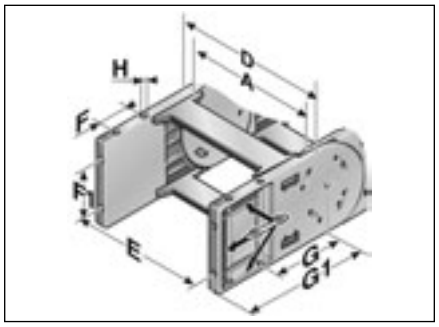


There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M8 screws.

MP 72 - HeavyLine

Chain bracket flexible

Dimensions in mm



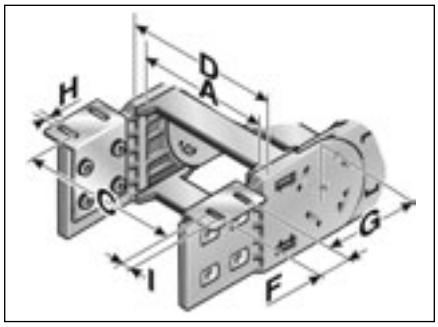
Flexible

Type	A	D	E	F	F1	G	G1	H Ø
KA 72-F	118.00	150.00	129.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	143.00	175.00	154.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	168.00	200.00	179.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	193.00	225.00	204.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	218.00	250.00	229.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	243.00	275.00	254.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	268.00	300.00	279.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	293.00	325.00	304.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	318.00	350.00	329.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	343.00	375.00	354.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	368.00	400.00	379.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	418.00	450.00	429.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	468.00	500.00	479.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	518.00	550.00	529.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	Variable	A+32.00	A+11.00	35.00	45.00	107.00	171.50	11.00

MP 72 - HeavyLine

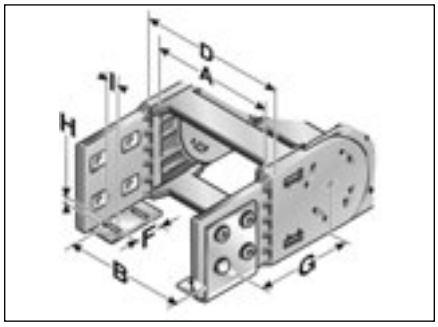
Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 72	118.00	166.00	150.00	45.00	106.00	9.00	32.00
KA 72	143.00	191.00	175.00	45.00	106.00	9.00	32.00
KA 72	168.00	216.00	200.00	45.00	106.00	9.00	32.00
KA 72	193.00	241.00	225.00	45.00	106.00	9.00	32.00
KA 72	218.00	266.00	250.00	45.00	106.00	9.00	32.00
KA 72	243.00	291.00	275.00	45.00	106.00	9.00	32.00
KA 72	268.00	316.00	300.00	45.00	106.00	9.00	32.00
KA 72	293.00	341.00	325.00	45.00	106.00	9.00	32.00
KA 72	318.00	366.00	350.00	45.00	106.00	9.00	32.00
KA 72	343.00	391.00	375.00	45.00	106.00	9.00	32.00
KA 72	368.00	416.00	400.00	45.00	106.00	9.00	32.00
KA 72	418.00	466.00	450.00	45.00	106.00	9.00	32.00
KA 72	468.00	516.00	500.00	45.00	106.00	9.00	32.00
KA 72	518.00	566.00	550.00	45.00	106.00	9.00	32.00
KA 72	Variable	A+48.00	A+32.00	45.00	106.00	9.00	32.00



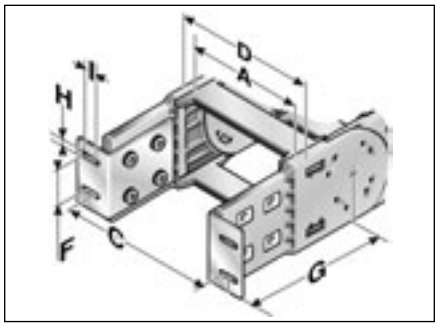
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 72	118.00	102.00	150.00	45.00	106.00	9.00	32.00
KA 72	143.00	127.00	175.00	45.00	106.00	9.00	32.00
KA 72	168.00	152.00	200.00	45.00	106.00	9.00	32.00
KA 72	193.00	177.00	225.00	45.00	106.00	9.00	32.00
KA 72	218.00	202.00	250.00	45.00	106.00	9.00	32.00
KA 72	243.00	227.00	275.00	45.00	106.00	9.00	32.00
KA 72	268.00	252.00	300.00	45.00	106.00	9.00	32.00
KA 72	293.00	277.00	325.00	45.00	106.00	9.00	32.00
KA 72	318.00	302.00	350.00	45.00	106.00	9.00	32.00
KA 72	343.00	327.00	375.00	45.00	106.00	9.00	32.00
KA 72	368.00	352.00	400.00	45.00	106.00	9.00	32.00
KA 72	418.00	402.00	450.00	45.00	106.00	9.00	32.00
KA 72	468.00	452.00	500.00	45.00	106.00	9.00	32.00
KA 72	518.00	502.00	550.00	45.00	106.00	9.00	32.00
KA 72	Variable	A-16.00	A+32.00	45.00	106.00	9.00	32.00

MP 72 - HeavyLine

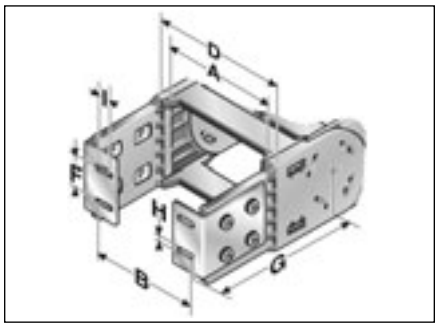
Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 72	118.00	166.00	150.00	45.00	179.50	9.00	32.00
KA 72	143.00	191.00	175.00	45.00	179.50	9.00	32.00
KA 72	168.00	216.00	200.00	45.00	179.50	9.00	32.00
KA 72	193.00	241.00	225.00	45.00	179.50	9.00	32.00
KA 72	218.00	266.00	250.00	45.00	179.50	9.00	32.00
KA 72	243.00	291.00	275.00	45.00	179.50	9.00	32.00
KA 72	268.00	316.00	300.00	45.00	179.50	9.00	32.00
KA 72	293.00	341.00	325.00	45.00	179.50	9.00	32.00
KA 72	318.00	366.00	350.00	45.00	179.50	9.00	32.00
KA 72	343.00	391.00	375.00	45.00	179.50	9.00	32.00
KA 72	368.00	416.00	400.00	45.00	179.50	9.00	32.00
KA 72	418.00	466.00	450.00	45.00	179.50	9.00	32.00
KA 72	468.00	516.00	500.00	45.00	179.50	9.00	32.00
KA 72	518.00	566.00	550.00	45.00	179.50	9.00	32.00
KA 72	Variable	A+48.00	A+32.00	45.00	179.50	9.00	32.00



Front / inside

Type	A	B	D	F	G	H Ø	I
KA 72	118.00	94.00	150.00	45.00	179.50	9.00	32.00
KA 72	143.00	119.00	175.00	45.00	179.50	9.00	32.00
KA 72	168.00	144.00	200.00	45.00	179.50	9.00	32.00
KA 72	193.00	169.00	225.00	45.00	179.50	9.00	32.00
KA 72	218.00	194.00	250.00	45.00	179.50	9.00	32.00
KA 72	243.00	219.00	275.00	45.00	179.50	9.00	32.00
KA 72	268.00	244.00	300.00	45.00	179.50	9.00	32.00
KA 72	293.00	269.00	325.00	45.00	179.50	9.00	32.00
KA 72	318.00	294.00	350.00	45.00	179.50	9.00	32.00
KA 72	343.00	319.00	375.00	45.00	179.50	9.00	32.00
KA 72	368.00	344.00	400.00	45.00	179.50	9.00	32.00
KA 72	418.00	394.00	450.00	45.00	179.50	9.00	32.00
KA 72	468.00	444.00	500.00	45.00	179.50	9.00	32.00
KA 72	518.00	494.00	550.00	45.00	179.50	9.00	32.00
KA 72	Variable	A-24.00	A+32.00	45.00	179.50	9.00	32.00

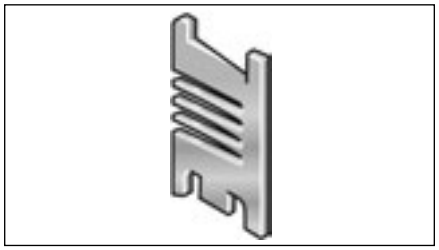
MP 72 - Accessories

Separator

Type	Order no.	Description	Pack
TR 72	072000009200	Separator	1

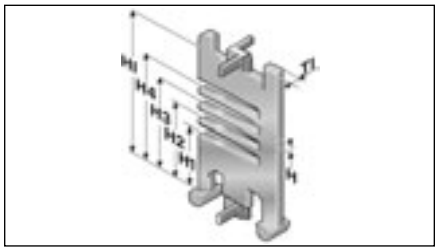
Lock grid spacing 5.00 mm

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.



Separator

	Dimensions in mm						
Type	TI	H	H1	H2	H3	H4	HI
TR 72	3.50	5.50	25.50	36.00	46.50	57.00	72.00



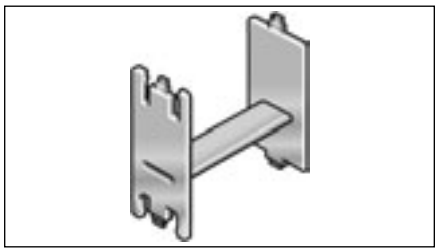
Separator

H-shaped shelf unit

Type	Order no.	Description	Pack
RE 7524	100000752418	RE 75/24 Shelf unit, H-shaped	1
RE 7536	100000753618	RE 75/36 Shelf unit, H-shaped	1

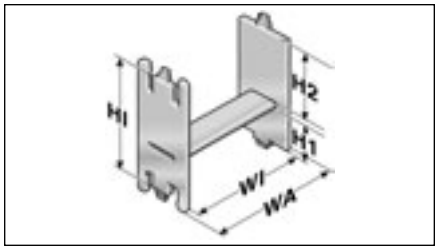
Lock grid spacing 5.00 mm

Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

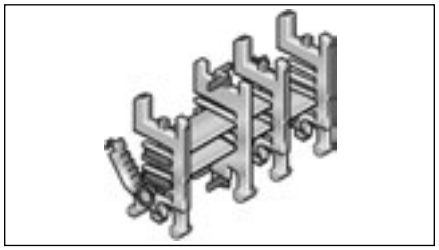
	Dimensions in mm				
Type	WA	WI	H1	H2	HI
RE 7224	75.00	67.50	43.00	24.00	72.00
RE 7236	75.00	67.50	33.50	33.50	72.00



H-shaped shelf unit

MP 72 - Accessories

Shelving system

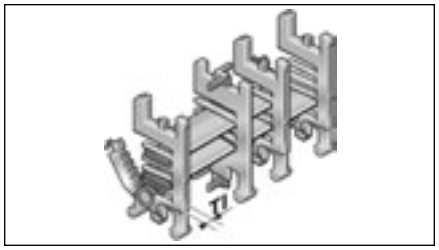


Shelving system

Type	Order no.	Description	Width in mm	Pack
RB 056-7	0100000005600	RB 056-7 Shelf	56	1
RB 066-7	0100000006600	RB 066-7 Shelf	66	1
RB 081-7	0100000008100	RB 081-7 Shelf	81	1
RB 106-7	0100000010600	RB 106-7 Shelf	106	1
RB 116-7	0100000011600	RB 116-7 Shelf	116	1
RB 166-7	0100000016600	RB 166-7 Shelf	166	1
RB 216-7	0100002001600	RB 216-7 Shelf	216	1
RTT 72	0100090722000	RTT 72 Shelf support, divisible		1
Lock grid spacing 5.00 mm				

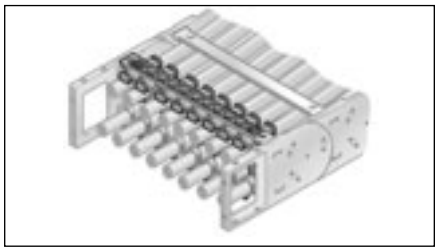
In connection with at least two shelf supports (RTT) the shelf becomes a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelving system can be pre-assembled on request.

	Dimensions in mm
Type	TI
RTT 72	8.00



Shelving system

Strain relief RS-ZL



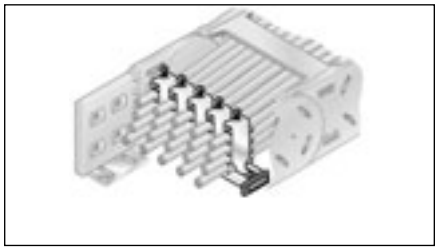
Strain relief RS-ZL

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

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 72 - Accessories

Strain relief with BAK

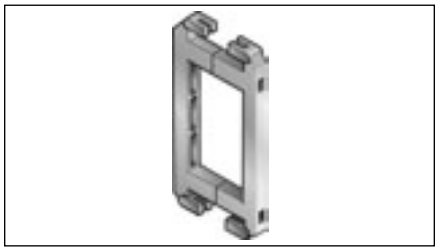


Strain relief with hooped clamps

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.

Frame ridge connector



Frame ridge connector

Type	Order no.	Description	Pack
RSV 72	072000009600	RSV 72 Frame ridge connector	1
RSV 72	072000009800	RSV 72 Aluminium frame ridge connector	1

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.

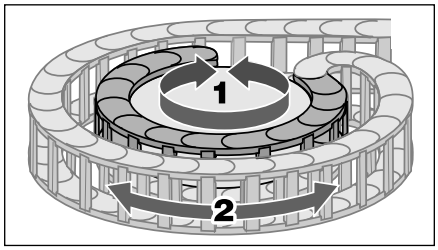
	Dimensions in mm
Type	Dimension TI
RSV 72	8.00

MP 72 - Accessories

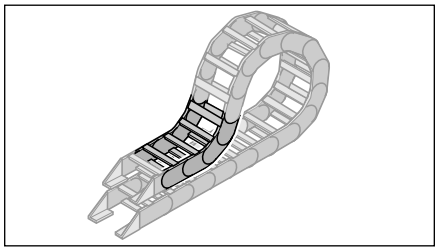
Back radius

Type	Order no.	Radius	Back Radius	Pack
SR 72 (RÜ300/R300) left	72000030060	300 mm	300 mm	1
SR 72 (RÜ300/R300) right	72000030062	300 mm	300 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!

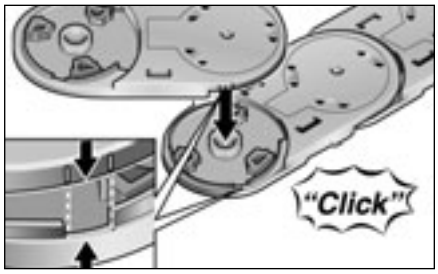


Rotary movement

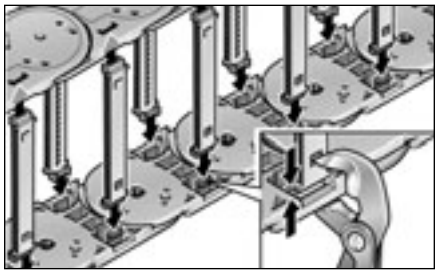

Low-lying chain bracket

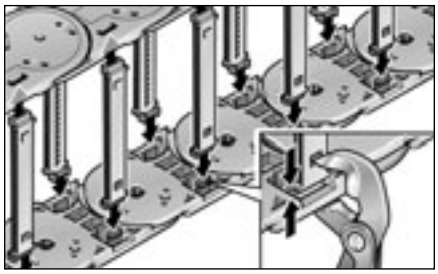
MP 72 - HeavyLine

Assembly



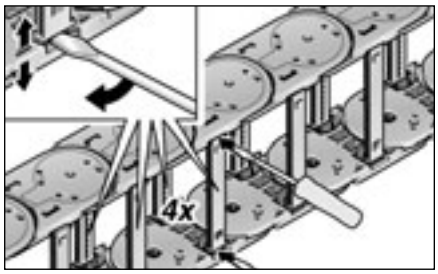
Step 1


Step 2

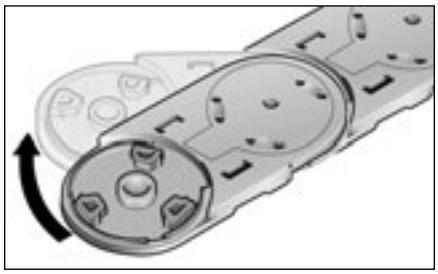

Step 3

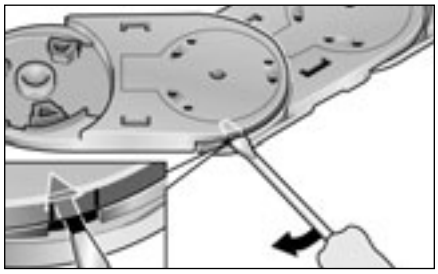
This type of chain has different chain links for the left or right side run. The marking must be observed when assembling, e.g. R150.1 for one side and R150.2 for the opposite side. Only side links with the same marking will fit together. This also concerns the chain brackets. The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.

Disassembly



Step 1


Step 2


Step 3

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.