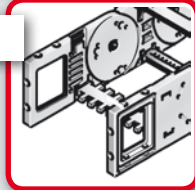


System overview

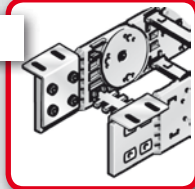
1

Chain bracket

Chain bracket flexible



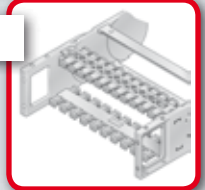
Chain bracket angle



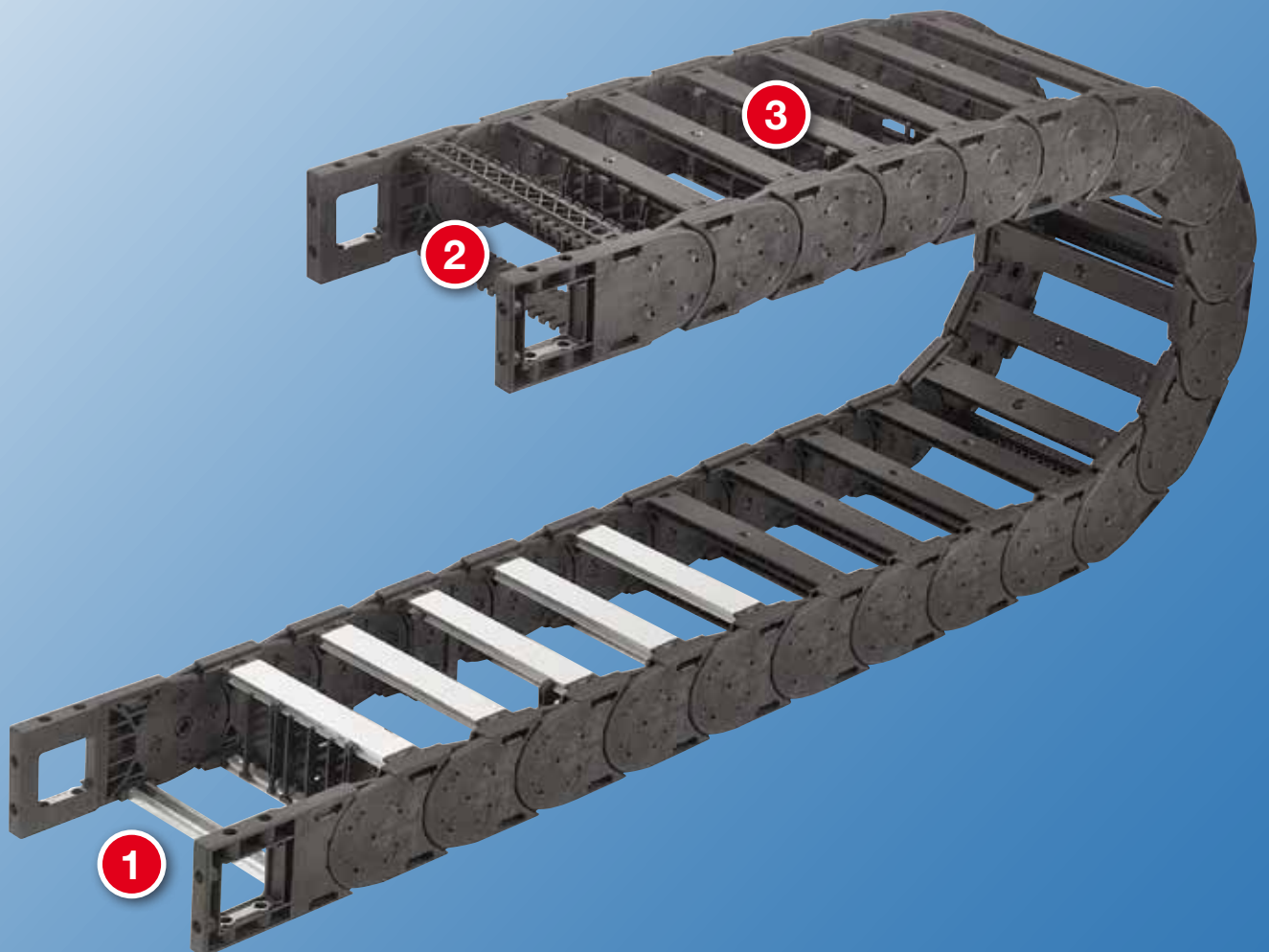
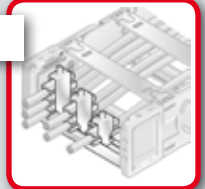
2

Strain relief

Frame bridge RS-ZL



STF Steel Fix



3 Shelving system

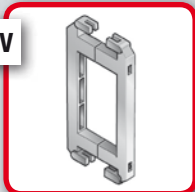
Separator TR



H-shaped shelf unit RE



Frame bridge connector RSV



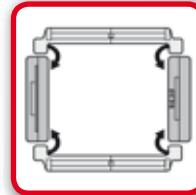
Guide channels

Aluminium VAW

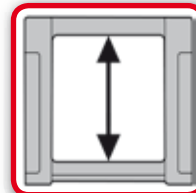
Stainless steel VAW-E



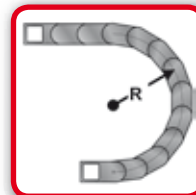
Technical data



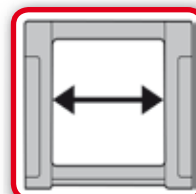
Loading side
inside and outside flexure curve



Available interior heights
72.0 mm



Available radii
150.0 – 500.0 mm



Available interior widths
118.0 – 518.0 mm
With aluminium frame bridge
118.0 – 600.0 mm

Ordering key

Type	Variation	Dimensions			Ridge version		Chain length mm
		Inside width mm	Outside width mm	Radius mm		Material	
0720	30	118 143 168 193 218 243 268 293 318 343 368 418 468 518	150 175 200 225 250 275 300 325 350 375 400 450 500 550	150 200 250 300 400 500	0 2 4 6 9	0 9	
Ordering key		[][][][]	[][][]	[][][]	[][]	[][][][][]	

Note on configuration

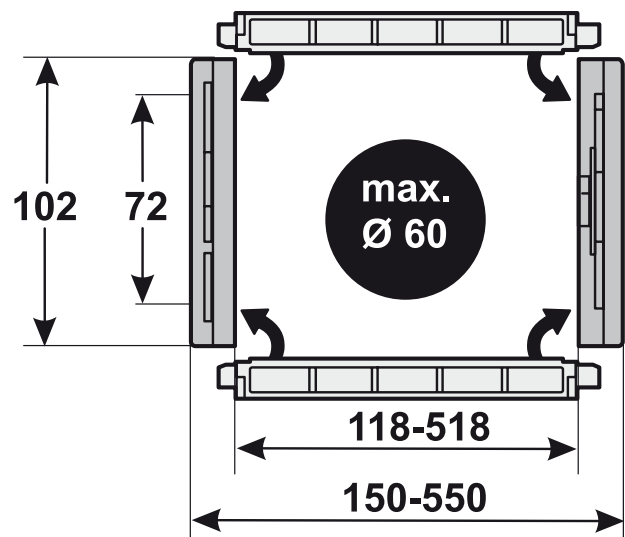
Frame bridges and cover from aluminium:
Aluminium frame bridges and covers can be supplied in 1 mm width sizes for inner widths from 118.0 mm – 600.0 mm.
If frame bridge strain relief plates (RS-ZL) are to be deployed, take standard widths into account.

Crossbar connector and frame bridge strain relief plate:
Once inner widths exceed 246 mm, we recommend the deployment of crossbar connectors (RSV).
Crossbar connectors cannot be used in conjunction with covers made from plastic or aluminium. If frame bridge strain relief plates (RS-ZL) are to be placed in the chain brackets, take the standard widths that can be supplied into account.

For detailed information, please consult the corresponding product documentation.

Chain link

Loading side: inside and outside flexure curve



Dimensions in mm

0 Standard (PA/black)
9 Special version

0 PA full-ridged with bias
2 PA half-ridged with bias
4 Aluminium full-ridged with bias
6 Aluminium half-ridged with bias
9 Special version

30 Frame bridge on outside of radius
Frame bridge on inside of radius
Opens on inside and outside of radius

Order sample: 0720 30 118 150 0 0 1600

Frame bridge in outside bend, frame bridge in inside bend, can be opened from inside and outside bend
Inside width 118 mm; radius 150 mm
Plastic bridge, full-ridged with bias, material black-coloured polyamide
Chain length 1600 mm (16 links)

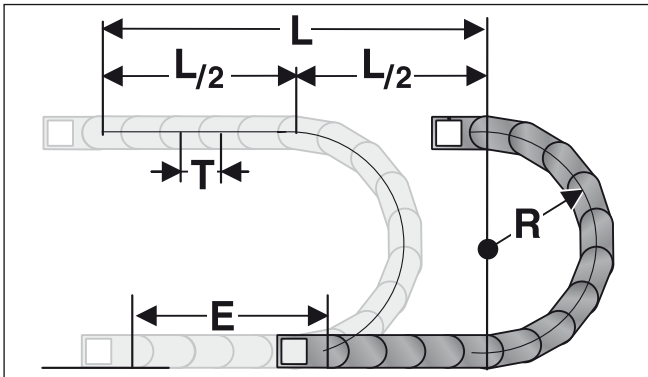
Technical specifications

Travel distance gliding L_g max.:	150.0 m
Travel distance self-supporting L_f max.:	see diagram
Travel distance vertical, hanging L_{vh} max.:	80.0 m
Travel distance vertical, upright L_{vs} max.:	6.0 m
Rotated 90°, unsupported L_{90f} max.:	6.0 m
Speed, gliding V_g max.:	5.0 m/s
Speed, self-supporting V_f max.:	20.0 m/s
Acceleration, gliding a_g max.:	25.0 m/s ²
Acceleration, self-supporting a_f max.:	40.0 m/s ²

Material properties

Standard material:	Polyamide (PA) black
Service temperature:	-30.0 – 120.0 °C
Gliding friction factor:	0.3
Static friction factor:	0.45
Fire classification:	UL 94 HB
Other material properties on request.	

Determining the chain length



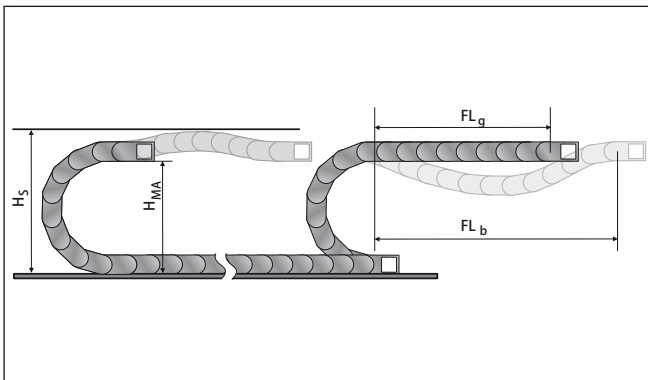
The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.

$$\text{Chain length calculation} = L/2 + \pi * R + E$$

$$\approx 1 \text{ m chain} = 10 \text{ qty.} \times 100.0 \text{ mm links.}$$

E = distance between entry point and middle of travel distance
L = travel distance
R = radius
P = Pitch

Self-supporting length



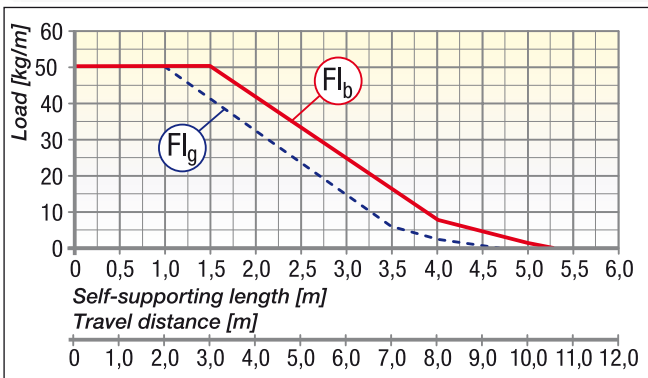
The self-supporting length is the distance between the chain bracket on the moving end and the start of the chain arch.

The installation variant FL_g offers the lowest load and wear for the cable drag chain.

The maximum travel parameters (speed and acceleration) can be applied for this variant.

H_S = Installation height plus safety
 H_{MA} = Height of moving end connection
 FL_g = Self-supporting length, upper run straight
 FL_b = Self-supporting length, upper run bent

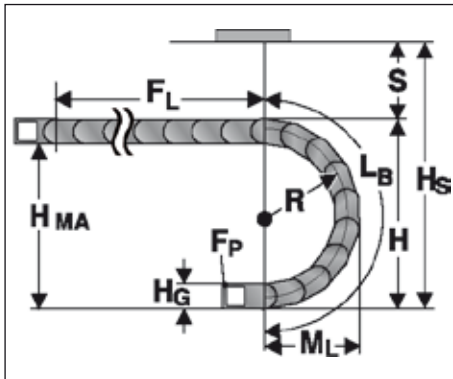
Load diagram for self-supporting applications



FL_g Self-supporting Length, upper run straight
In the FL_g range, the chain upper run still has a bias, is straight or has a maximum sag of

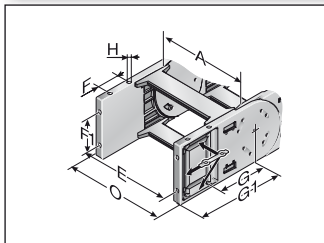
FL_b Self-supporting Length, upper run bent
In the FL_b range, the chain upper run has a sag of more than , but this is still less than the maximum sag. Where the sag is greater than that permitted in the FL_b range, the application is critical and should be avoided. The self-supporting length can be optimized by using a support for the upper run or a more stable cable drag chain.

Installation dimensions



Radius R	150	200	250	300	400	500
Outside height of chain link (H_o)	102	102	102	102	102	102
Height of bend (H)	422	522	622	722	922	1122
Height of moving end connection (H_{MA})	320	420	520	620	820	1020
Safety margin (S)	20	20	20	20	20	20
Installation height (H_i)	442	542	642	742	942	1142
Arc projection (M_L)	311	361	411	461	561	661
Bend length (L_b)	763	920	1077	1234	1548	1862

Chain bracket flexible

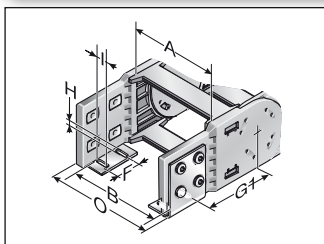


KA 72-F...

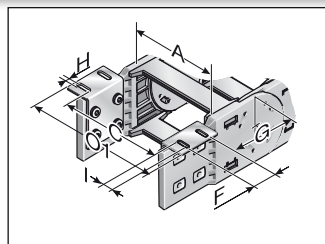
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M10 screws are used to secure the brackets in place. Metal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

Type	Order no.	Material	Version	Inside width							Outside width KA	
				A mm	E mm	F mm	F1 mm	G mm	G1 mm	HØ mm	O mm	
KA 72-F male	0720000054	Plastic	with bush	118.0 – 518.0	A+11.0	35.0	45.0	107.0	171.5	11.0	A+32.0	
KA 72-F female	0720000055	Plastic	with bush	118.0 – 518.0	A+11.0	35.0	45.0	107.0	171.5	11.0	A+32.0	

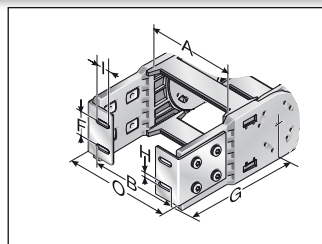
Chain bracket angle



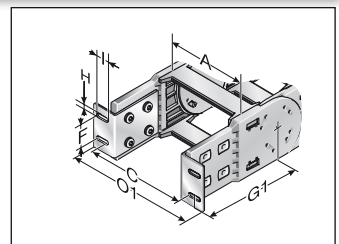
KA 72 (inside up / down)



KA 72 (outside up / down)



KA 72 (Front page inside)

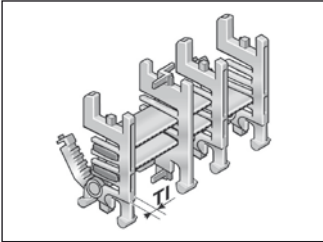


KA 72 (Front page exterior)

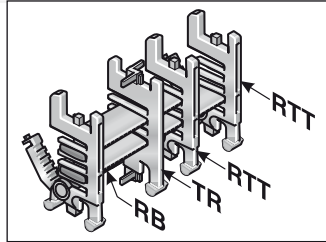
There are several options regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain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

Type	Order no.	Material	Inside width							Outside width KA		
			A mm	B mm	C mm	F mm	G mm	G1 mm	HØ mm	I mm	O mm	O1 mm
KA 72 male	0720000050	Sheet steel	118.0 – 518.0	A-16.0	A+48.0	45.0	106.0	179.5	9.0	32.0	A+32.0	A+126.0
KA 72 female	0720000051	Sheet steel	118.0 – 518.0	A-16.0	A+48.0	45.0	106.0	179.5	9.0	32.0	A+32.0	A+126.0

Shelving system



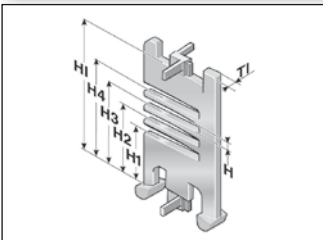
Shelving system



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, while also avoiding excessive friction. The shelving system may be pre-assembled on request.

Type	Order no.	Designation	Width mm	Pitch mm	TI mm
RB 056-7	100000005600	Shelf	56.0	5.0	
RB 066-7	100000006600	Shelf	66.0	5.0	
RB 081-7	100000008100	Shelf	81.0	5.0	
RB 106-7	100000010600	Shelf	106.0	5.0	
RB 116-7	100000011600	Shelf	116.0	5.0	
RB 166-7	100000016600	Shelf	166.0	5.0	
RB 216-7	100000021600	Shelf	216.0	5.0	
RTT 72	100090722000	Shelf support, divisible		5.0	8.0

Separator

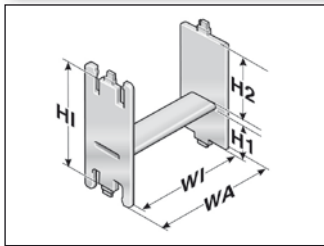


Separator

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

Type	Order no.	Designation	Pitch mm	TI mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm	H1 mm
TR 72	072000009200	Separator	5.0	3.5	5.5	25.5	36.0	46.5	57.0	72.0

Shelf unit

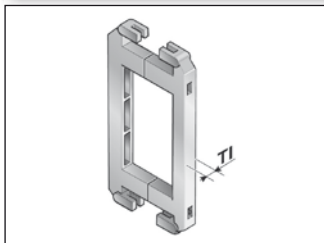


Shelf unit

Insert to obtain additional levels in pre-defined window distances.

Type	Order no.	Designation	Pitch mm	WA mm	WI mm	H1 mm	H2 mm	HI mm
RE 75/24	100000752418	H-shaped shelf unit	5.0	75.0	67.5	43.0	24.0	72.0
RE 75/36	100000753618	H-shaped shelf unit	5.0	75.0	67.5	33.5	33.5	72.0

Crossbar connector

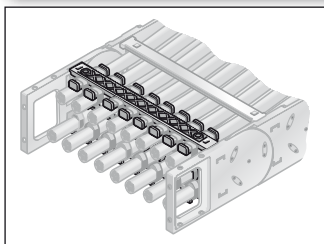


Crossbar connector

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

Type	Order no.	Designation	T1 mm
RSV 72	072000009600	Crossbar connector	8.0
RSV 72 Alu	072000009800	Crossbar connector for aluminium frame bridges	8.0

Frame bridge strain relief plate

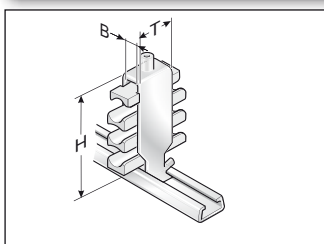


Frame bridge strain relief plate

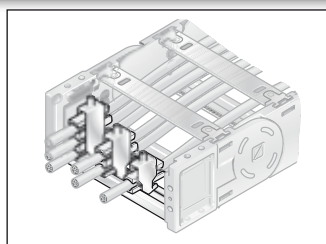
Fixed integrated frame bridge strain relief plates in the chain brackets. Accommodated to all widths of the frame bridges, up to 243 mm in size. May be assembled on the inside and outside flexure curves at both chain endings.

Type	Order no.	Designation	For internal width mm
RS-ZL 118-7	072011800010	Frame bridge strain relief plate	118.0
RS-ZL 143-7	072014300010	Frame bridge strain relief plate	143.0
RS-ZL 168-7	072016800010	Frame bridge strain relief plate	168.0
RS-ZL 193-7	072019300010	Frame bridge strain relief plate	193.0
RS-ZL 218-7	072021800010	Frame bridge strain relief plate	218.0
RS-ZL 243-7	072024300010	Frame bridge strain relief plate	243.0

Strain relief



Strain relief with Steel Fix



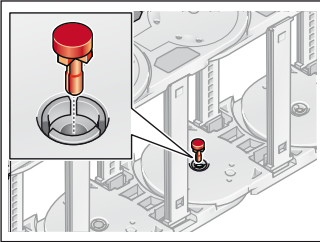
Strain relief with Steel Fix

C-rails (cathodic dipped) for permanent integration, for accommodating the Steel Fix bow clamps in the chain brackets. The bow clamps can take up to 3 cables and are suitable for C-rails with a groove width of 11 mm. Due to the design of the trough elements a cable preserving cable guidance is ensured. Adjusted to all inside widths up to 200 mm. May be assembled on the inside and outside flexure curves at both chain endings. The entire height entered is a guide only. The actual height is,

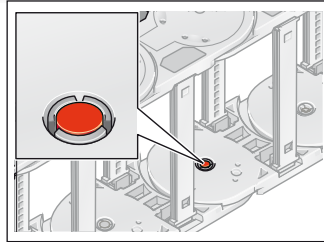
amongst other things, dependent on the diameter and the quality of the cable. A safety distance of 10 mm at the fixed point above the strain relief must be kept during gliding applications.

Type	Order no.	Designation	Ø mm	Seats qty.
Single clamp (for one cable)				
STF 12-1 Steel Fix	81661801	Hooped clamp	6.0 – 12.0	1
STF 14-1 Steel Fix	81661802	Hooped clamp	12.0 – 14.0	1
STF 16-1 Steel Fix	81661803	Hooped clamp	14.0 – 16.0	1
STF 18-1 Steel Fix	81661804	Hooped clamp	16.0 – 18.0	1
STF 20-1 Steel Fix	81661805	Hooped clamp	18.0 – 20.0	1
STF 22-1 Steel Fix	81661806	Hooped clamp	20.0 – 22.0	1
STF 26-1 Steel Fix	81661807	Hooped clamp	22.0 – 26.0	1
STF 30-1 Steel Fix	81661808	Hooped clamp	22.0 – 26.0	1
STF 34-1 Steel Fix	81661809	Hooped clamp	26.0 – 30.0	1
STF 38-1 Steel Fix	81661810	Hooped clamp	34.0 – 38.0	1
STF 42-1 Steel Fix	81661811	Hooped clamp	38.0 – 42.0	1
Double clamp (for two cables)				
STF 12-2 Steel Fix	81661821	Hooped clamp	6.0 – 12.0	2
STF 14-2 Steel Fix	81661822	Hooped clamp	12.0 – 14.0	2
STF 16-2 Steel Fix	81661823	Hooped clamp	14.0 – 16.0	2
STF 18-2 Steel Fix	81661824	Hooped clamp	16.0 – 18.0	2
STF 20-2 Steel Fix	81661825	Hooped clamp	18.0 – 20.0	2
STF 22-2 Steel Fix	81661826	Hooped clamp	20.0 – 22.0	2
STF 26-2 Steel Fix	81661827	Hooped clamp	22.0 – 26.0	2
STF 30-2 Steel Fix	81661828	Hooped clamp	26.0 – 30.0	2
STF 34-2 Steel Fix	81661829	Hooped clamp	26.0 – 30.0	2
Triple clamp (for three cables)				
STF 12-3 Steel Fix	81661841	Hooped clamp	6.0 – 12.0	3
STF 14-3 Steel Fix	81661842	Hooped clamp	12.0 – 14.0	3
STF 16-3 Steel Fix	81661843	Hooped clamp	14.0 – 16.0	3
STF 18-3 Steel Fix	81661844	Hooped clamp	16.0 – 18.0	3
STF 20-3 Steel Fix	81661845	Hooped clamp	18.0 – 20.0	3
STF 22-3 Steel Fix	81661846	Hooped clamp	20.0 – 22.0	3

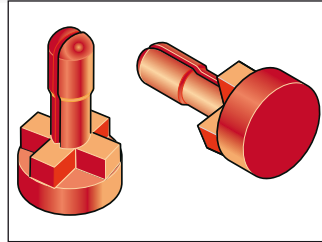
Lock button



Lock button



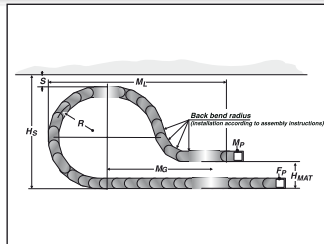
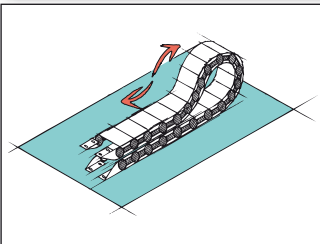
Lock button



To increase the side stability, we recommend the use of lock buttons during strong lateral acceleration or when installed „laying on the side (turned 90°) without support“.

Type	Order no.
MP52/62/72 lock button	0520000080

Lowered fixing point



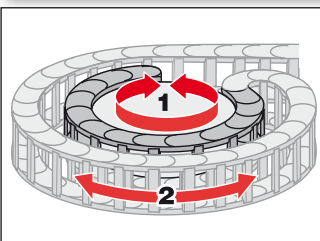
It is sometimes necessary to lower the height of the moving attachment point.

In such cases, modifications to the chain layout should be noted (e.g. extension of chain).

Please contact our application engineers.

Radius R	Height of moving end connection	Safety margin	Installation height incl. safety	Projection	Additional links	of which additional back chain links
mm	(H _{MA}) mm	(S) mm	(H _S) mm	(M _L) mm	qty.	qty.
200.0	240.0	60.0	580.0	850.0	9.0	2.0
250.0	260.0	60.0	680.0	1010.0	12.0	3.0
300.0	290.0	60.0	780.0	1150.0	13.0	3.0
400.0	350.0	60.0	980.0	1360.0	16.0	3.0
500.0	400.0	60.0	1180.0	1620.0	20.0	3.0

Back radii

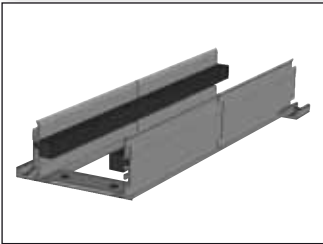


Rotating movement

Side links with radius forward (R) and radius backward (R_ü) allow for movement in two directions. This is intended for rotating movements and lowered chain brackets. Note: This type of chain has different chain links for the left or right side!

Type	Order no.	Radius mm	Back radius mm
SR 72 (RÜ300/R300) left	72000030060	300.0	300.0
SR 72 (RÜ300/R300) right	72000030062	300.0	300.0

Guide channels (VAW)



VAW

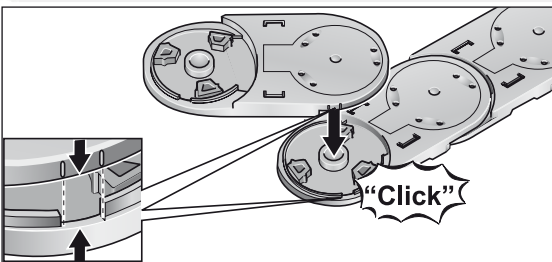


VAW-E

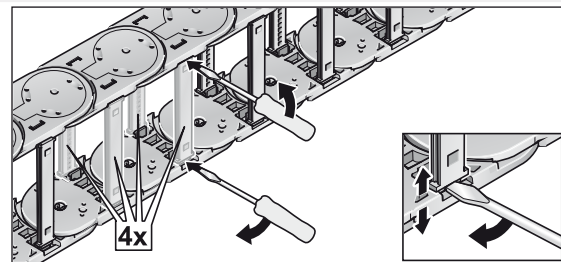
For this cable drag chain, a range of variable guide channel systems are available, constructed from aluminium or stainless steel sections. The variable guide channel ensures that the cable drag chain is supported and guided securely. For help on choosing, please consult the chapter „Variable Guide Channel System“.

Assembly

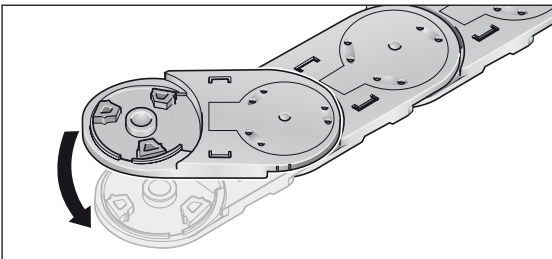
Disassembly



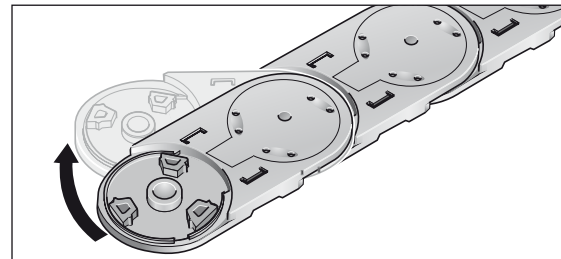
Step 1



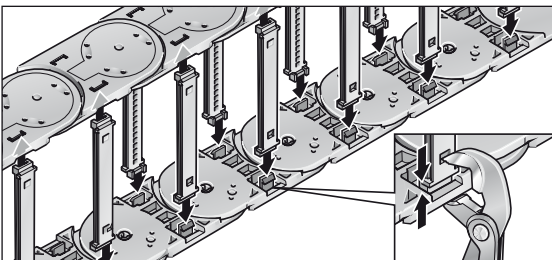
Step 1



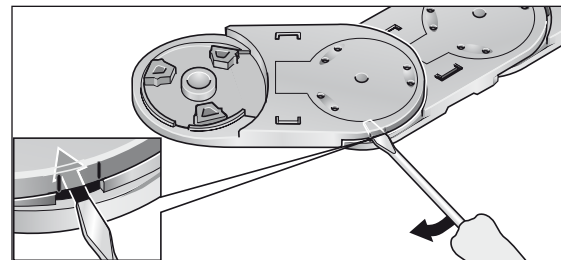
Step 2



Step 2

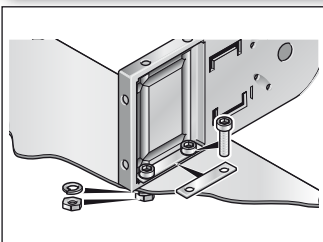


Step 3



Step 3

Assembly instruction flexible chain bracket



Chain bracket EB

The flexible chain bracket is delivered with insert panels to prevent cold flow by the plastic.