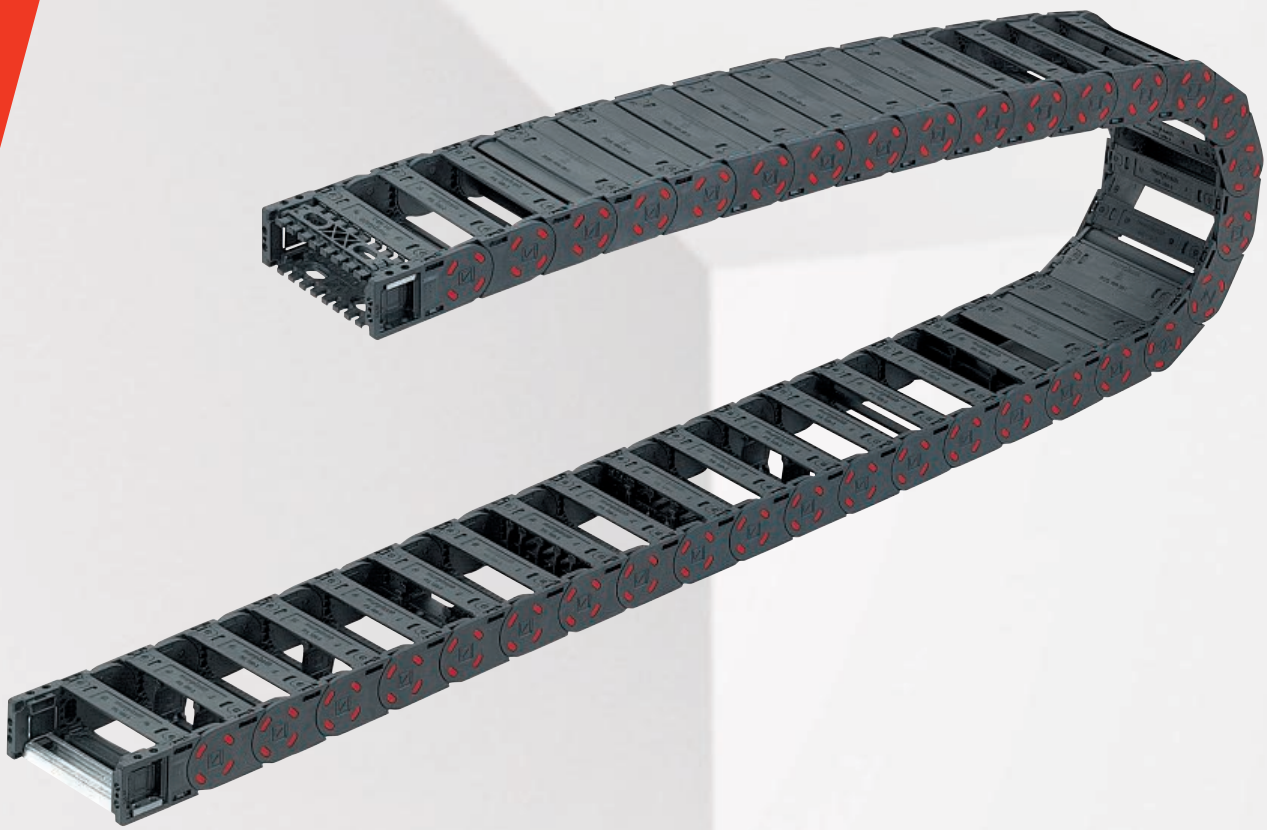
Data sheet

MODULLINE MP 30.1 / 30.2 MP 30.3 / 30.4



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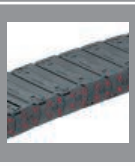
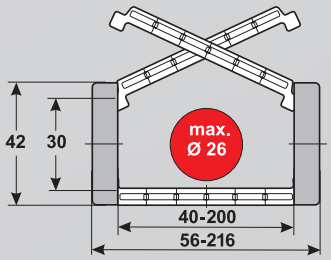
MODULLINE

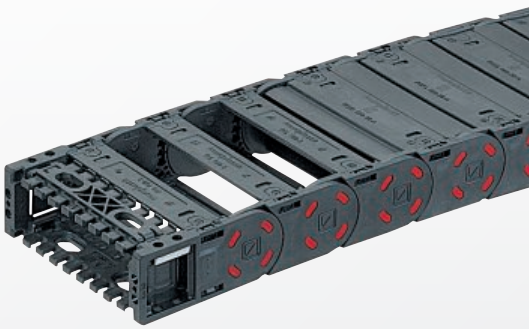
MP 30.1/.2
OPEN

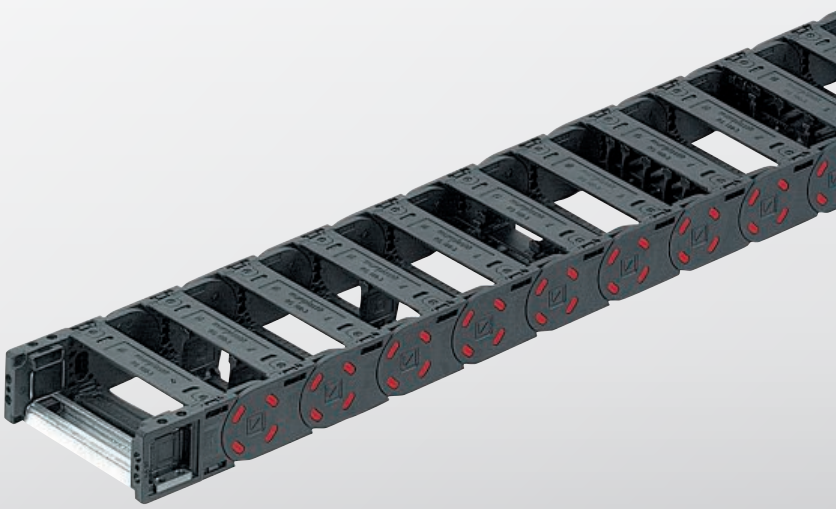
MP 30.3/.4
CLOSED



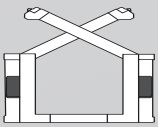
- BROAD INTERIOR LAYOUT
- BRUSH SUPPORT
- CHAIN BRACKET WITH STRAIN RELIEF
- UNIVERSAL USE



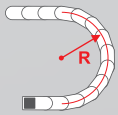




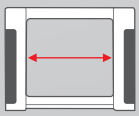
TECHNICAL DATA



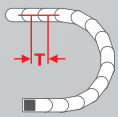
Loading side
Inside or outside bend



Available radii
60.0 – 300.0 mm



Available interior widths
With plastic crossbar
40.0 – 200.0 mm



Grid
T = 50.0 mm

TECHNICAL SPECIFICATIONS

Travel distance gliding L_g max.	40.0 m
Travel distance self-supporting L_f max.	see diagram on page 5
Travel distance vertical, hanging L_{vh} max.	30.0 m
Travel distance vertical standing L_{vs} max.	3.0 m
Rotated 90°, self-supporting L_{90f} max.	0.7 m
Speed, gliding V_g max.	3.0 m/s
Speed, self-supporting V_f max.	10.0 m/s
Acceleration, gliding a_g max.	10.0 m/s^2
Acceleration, self-supporting a_f max.	15.0 m/s^2

Contact our engineering department to meet any higher requirements: efk@murrplastik.de

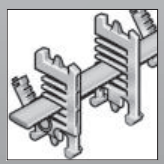
MATERIAL PROPERTIES

Standard material	Polyamide (PA) black
Service temperature	-30.0 – 120.0 °C (-76 to 176 °F)
Gliding friction factor	0.3
Static friction factor	0.45
Fire classification	UL 94 HB

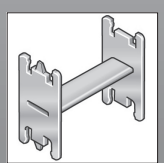
Other material properties on request.

SHELVING SYSTEM

TR separator



RS shelving system



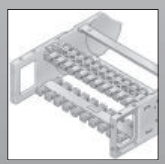
H-shaped shelving unit (RE)

GUIDE CHANNELS

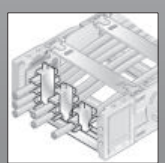
VAW steel galvanized / stainless steel

VAW aluminum

STRAIN RELIEF

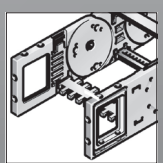


Crossbar RS-ZL



STF Steel Fix

CHAIN BRACKET

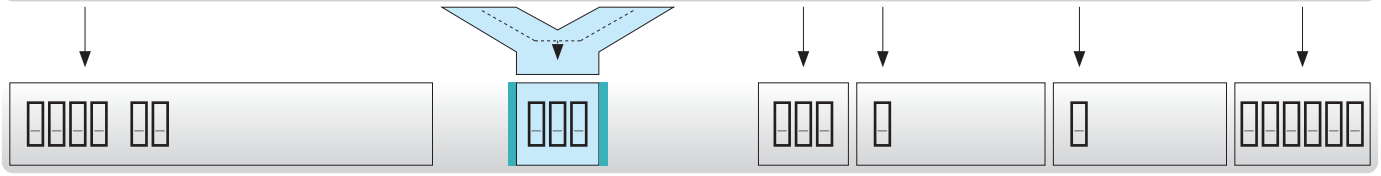


Flexible chain bracket

ORDER KEY

Dimensions in mm [US inch]

Type code	Variant	Inside width	Outside width	Inside width	Outside width	Radius	Crossbar variant	Material	Chain length
0030 01	Crossbar in outside bend Crossbar in inside bend Opens on outside bend	040 [1.57]	056 [2.20]			060[1)] [2.36]	0 Plastic, full-ridged with bias	0 Polyamide (PA): standard (PA/black)	
		050 [1.97]	066 [2.60]						
0030 02	Crossbar in outside bend Crossbar in inside bend Opens on inside bend	060 [2.36]	076 [2.99]			075[1)] [2.95]	1 Plastic, full-ridged without bias	7 ESD (PA/light gray) (upon request)	
		075 [2.95]	091 [3.58]						
0030 03	Cover in outside bend Cover in inside radius Opens on outside bend	085 [3.35]	101 [3.98]			100 [3.94]		9 Special version (on request)	
		100 [3.94]	116 [4.57]						
0030 04	Cover in outside bend Cover in inside radius Opens on inside bend	125 [4.92]	141 [5.55]			125 [4.92]			
		150 [5.91]	166 [6.54]						
0030 05	Cover in outside bend Crossbar in inside bend Opens on outside bend	200 [7.87]	216 [8.50]			150 [5.91]			
0030 06	Cover in outside bend Crossbar in inside bend Opens on inside bend					200 [7.87]			
0030 07	Crossbar in outside bend Cover in inside radius Opens on outside bend					250 [9.84]			
0030 08	Crossbar in outside bend Cover in inside radius Opens on inside bend					300 [11.81]			

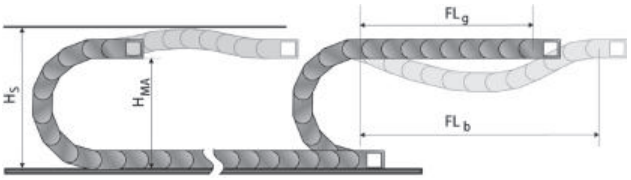


ORDERING EXAMPLE: 0030 01 040 060 0 0 1250

Crossbar in outside bend, crossbar in inside bend, can be opened from outside bend
Inside width 40 mm; radius 60 mm
Plastic bridge, full-ridged with bias, material black-colored polyamide
Chain length 1250 mm (25 links)

[1)] only for Version 01 and 02

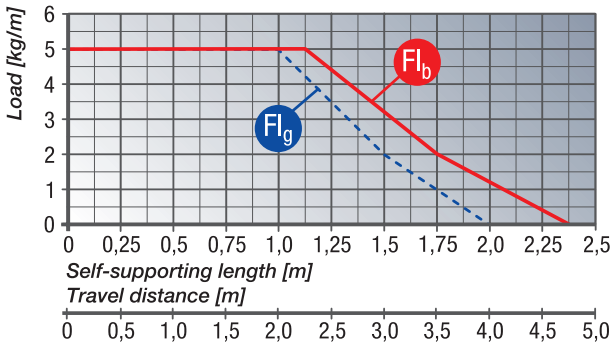
SELF-SUPPORTING LENGTH



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 energy 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 bracket
FL_g = Self-supporting length, upper run straight
FL_b = Self-supporting length, upper run bent

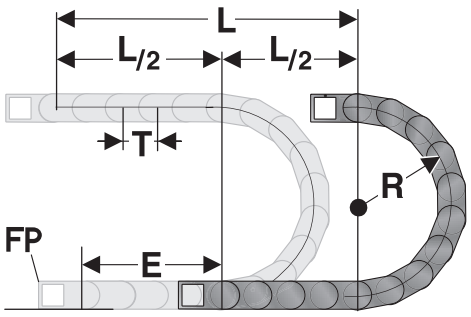
LOAD DIAGRAM FOR SELF-SUPPORTING APPLICATIONS



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 60.0 mm.

FL_b Self-supporting length, upper run bent
In the FL_b range, the chain upper run has a sag of more than 60.0 mm, 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 energy chain.
Closed cable drag chains (with covers) have a higher unit weight than open chains (with crossbars). This higher weight must be taken into account when calculating the self-supporting length. To the weight of the cables (payload, in kg/m), 0.3 kg/m must be added for the higher weight of the closed covers.

DETERMINING THE CHAIN LENGTH

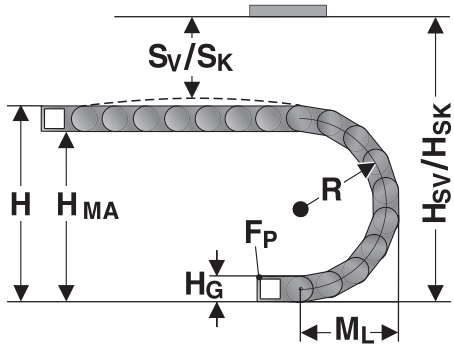


The fixed point of the energy chain should be connected in the middle of the travel distance.
This arrangement gives the shortest connection between the fixed point (FP) and the moving bracket and thus the most efficient chain length.

Chain length calculation = L/2 + π * R + E
≈ 1 m chain = 20 links, 50.0 mm each

E = Distance between entry point and middle of travel distance
L = Travel distance
R = Radius
T = Grid 50.0 mm

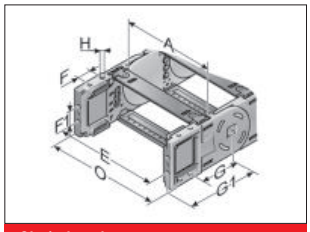
INSTALLATION DIMENSIONS



The moving end chain bracket is to be screw fixed at height H_{MA} for the respective radius.
Concerning the installed dimensions, you must take into account whether the chain links are equipped with or without bias.
For chain links without bias, the "installed height without bias H_{SK}" has to be taken into account.
If the chain links are equipped with a bias, the "installed height with bias H_{SV}" has to be taken into account.

Radius R	60	75	100	125	150	200	250	300
Outside height of chain link (H_G)	42	42	42	42	42	42	42	42
Height of bend (H)	182	212	262	312	362	462	562	662
Height of moving end bracket (H_{MA})	140	170	220	270	320	420	520	620
Safety margin with bias (S_V)	38	38	38	38	38	38	38	38
Installation height with bias (H_{SV})	220	250	300	350	400	500	600	700
Safety margin without bias (S_K)	18	18	18	18	18	18	18	18
Installation height without bias(H_{SK})	200	230	280	330	380	480	580	680
Arc projection (M_L)	141	156	181	206	231	281	331	381

KA 30 FLEXIBLE CHAIN BRACKET



Chain bracket

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. M5 screws and insert panels are used to secure the brackets in place.
By default, the chain bracket is supplied with crossbars.
The chain bracket can then be optionally fitted with crossbar strain relief plates (RS-ZL) or with strain relief using C-rails and type STF bow clamps.

Type	Order No.	Material	Inside width A mm	E mm	F mm	F1 mm	G mm	G1 mm	H	HØ mm	Outside width KA O mm
KA30	KA30ML	Plastic	40.0 – 200.0	A+9.0	12.0	12.0	45.0	72.0	M5	5.5	A+18.0

Configurator chain bracket KA 30
Configurator for chain brackets:

Type KA	Inside width mm	Radius mm	RS-ZL number of pieces	C-profile number of pieces	No. of EB** pieces
KA 30*	085	250	2	0	2

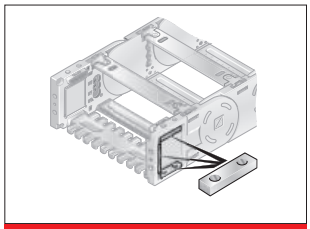
Ordering example:

Type	= KA 30 = Flexible chain bracket for MP 30
Internal width	= 085 mm
Radius	= 250 mm
Crossbar-strain relief (RS-ZL)	= 2 pieces
C-rail	= 0 pieces
Insert panel (EB)	= 2 pieces

* One set of chain brackets is required per chain, containing female and male end
** Two insert panels (EB) are required for each connection element

Note:
For an exact determination of the chain bracket, the inside width and radius are absolutely essential. Optionally, crossbar strain relief plates (RS-ZL), C-sections and insert panels (EB) can be chosen.

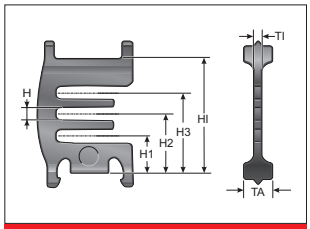
EB 25/30 INSERT PANEL


Insert panel

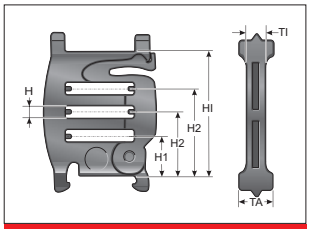
To fix the chain connection, the insert panels can be inserted above, below or on the side and are available with threads or through-holes.

Type	Order No.	Description	Length mm	Width mm	Height mm	Hole mm	Thread
EB 25/30-FG V2A	030100005502	Insert panel with thread	22.5	8.0	4.0		M5x0.8
EB 25/30-FB V2A	030100005500	Insert panel with through-hole	22.5	8.0	4.0	5.5	

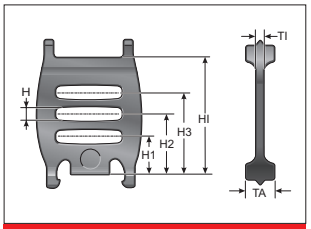
MP 30 SEPARATOR / SHELF SUPPORT



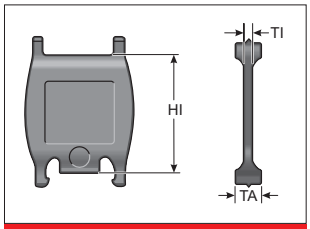
TRT 30



RTT 30



TR 30-1

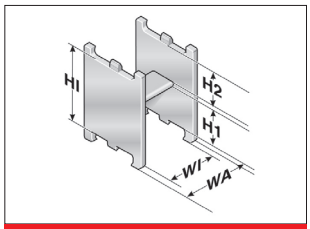


TR 30-0

We recommend that separators be used if multiple round cables or conduits with differing diameters are to be installed.

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 30-0	030100009300	Separator, closed	lockable	2.2	8.0					30.0
TR 30-1	030100009400	Separator, open	lockable	2.2	8.0	3.3	9.5	15.0	20.5	30.0
TRT 30	030100009200	Separator, divisible	lockable	2.2	8.0	3.3	9.5	15.0	20.5	30.0
RTT 30	030100006500	Shelf support divisible	lockable	4.5	8.0	3.3	9.5	15.0	20.5	30.0

RE 30 H-SHAPED SHELF UNIT

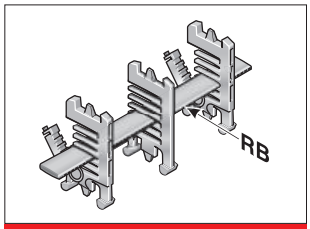


Shelf unit

One-piece shelving system, the shelf cannot be varied in height.

Type	Order No.	Description	WA mm	WI mm	H1 mm	H2 mm	HI mm
RE 30/15	100000301510	H-shaped shelf unit	20.0	15.0	15.8	11.8	29.7
RE 30/32 K5	100000303210	H-shaped shelf unit	37.4	32.6	15.8	11.8	29.7

RB-3 SHELF



Shelf

The shelf RBD creates a horizontal division over the entire inner width of the chain link. When used together with the TRT separator, an additional vertical division can be realized.

Type	Order No.	Description	Width mm	for inside width mm
RB 039-3	030100003900	Shelf	38.6	40.0
RB 041-3	1000004103	Shelf	41.1	50.0
RB 044-3	1000004403	Shelf	43.6	50.0
RB 046-3	1000004603	Shelf	46.1	50.0
RB 049-3	030100004900	Shelf	48.6	50.0
RB 051-3	1000005103	Shelf	51.1	60.0
RB 054-3	1000005403	Shelf	53.6	60.0
RB 056-3	1000005603	Shelf	56.1	60.0
RB 059-3	030100005900	Shelf	58.6	60.0
RB 061-3	1000006103	Shelf	61.1	75.0
RB 064-3	1000006403	Shelf	63.6	75.0
RB 066-3	1000006603	Shelf	66.1	75.0
RB 069-3	1000006903	Shelf	68.6	75.0
RB 071-3	1000007103	Shelf	71.1	75.0
RB 074-3	030100007400	Shelf	73.6	75.0
RB 076-3	1000007603	Shelf	76.1	85.0
RB 079-3	1000007903	Shelf	78.6	85.0
RB 081-3	1000008103	Shelf	81.1	85.0
RB 084-3	030100008400	Shelf	83.6	85.0
RB 086-3	1000008603	Shelf	86.1	100.0
RB 089-3	1000008903	Shelf	88.6	100.0
RB 091-3	1000009103	Shelf	91.1	100.0
RB 094-3	1000009403	Shelf	93.6	100.0
RB 096-3	1000009603	Shelf	96.1	100.0
RB 099-3	030100009900	Shelf	98.6	100.0
RB 101-3	1000010103	Shelf	101.1	115.0
RB 104-3	1000010403	Shelf	103.6	115.0
RB 106-3	1000010603	Shelf	106.1	115.0
RB 109-3	1000010903	Shelf	108.6	115.0
RB 111-3	1000011103	Shelf	111.1	115.0
RB 114-3	030100011400	Shelf	113.6	115.0
RB 116-3	1000011603	Shelf	116.1	125.0
RB 119-3	1000011903	Shelf	118.6	125.0
RB 121-3	1000012103	Shelf	121.1	125.0
RB 124-3	030100012400	Shelf	123.6	125.0
RB 126-3	1000012603	Shelf	126.1	150.0
RB 129-3	1000012903	Shelf	128.6	150.0

RB-3 SHELF

Type	Order No.	Description	Width mm	for inside width mm
RB 131-3	1000013103	Shelf	131.1	150.0
RB 134-3	1000013403	Shelf	133.6	150.0
RB 136-3	1000013603	Shelf	136.1	150.0
RB 139-3	1000013903	Shelf	138.6	150.0
RB 141-3	1000014103	Shelf	141.1	150.0
RB 144-3	1000014403	Shelf	143.6	150.0
RB 146-3	1000014603	Shelf	146.1	150.0
RB 149-3	030100014900	Shelf	148.6	150.0
RB 151-3	1000015103	Shelf	151.1	175.0
RB 154-3	1000015403	Shelf	153.6	175.0
RB 156-3	1000015603	Shelf	156.1	175.0
RB 159-3	1000015903	Shelf	158.6	175.0
RB 161-3	1000016103	Shelf	161.1	175.0
RB 164-3	1000016403	Shelf	163.6	175.0
RB 166-3	1000016603	Shelf	166.1	175.0
RB 169-3	1000016903	Shelf	168.6	175.0
RB 174-3	030100017400	Shelf	173.6	175.0
RB 176-3	1000017603	Shelf	176.1	200.0
RB 179-3	1000017903	Shelf	178.6	200.0
RB 181-3	1000018103	Shelf	181.1	200.0
RB 184-3	1000018403	Shelf	183.6	200.0
RB 186-3	1000018603	Shelf	186.1	200.0
RB 189-3	1000018903	Shelf	188.6	200.0
RB 191-3	1000019103	Shelf	191.1	200.0
RB 194-3	1000019403	Shelf	193.6	200.0
RB 196-3	1000019603	Shelf	196.1	200.0
RB 199-3	030100019900	Shelf	198.6	200.0

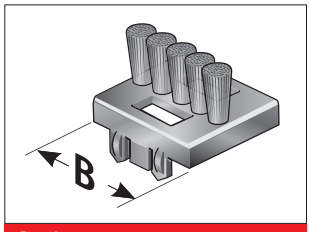
RBD-3 SOLID SHELF

Shelf, end-to-end RBD

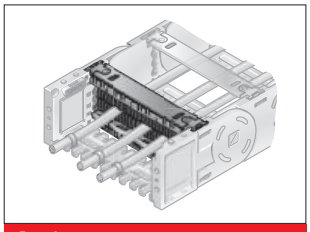
The shelf RBD creates a horizontal separation over the entire width of the chain link. When used together with the TRT 30 separator, an additional, vertical division can be realized.

Type	Order No.	Description	Width mm	for inside width mm
RBD 040-3	030100004001	Shelf, end-to-end	40.0	40.0
RBD 050-3	030100005001	Shelf, end-to-end	50.0	50.0
RBD 060-3	030100006001	Shelf, end-to-end	60.0	60.0
RBD 075-3	030100007501	Shelf, end-to-end	75.0	75.0
RBD 085-3	030100008501	Shelf, end-to-end	85.0	85.0
RBD 100-3	030100010001	Shelf, end-to-end	100.0	100.0

MP 30 BRUSH SUPPORT



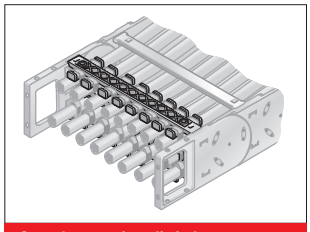
Brush support


Brush support

The cables in the neutral axis are routed through the brush supports. This innovative solution was developed especially for applications where cables are subjected to higher levels of wear from cyclical movement.

Type	Order No.	Description	Width mm
BT 20-30, complete	030100009702	Brush support	20.0
BT 25-30, complete	030100009802	Brush support	25.0

RS-ZL-3 CROSSBAR STRAIN RELIEF


Crossbar strain relief plate

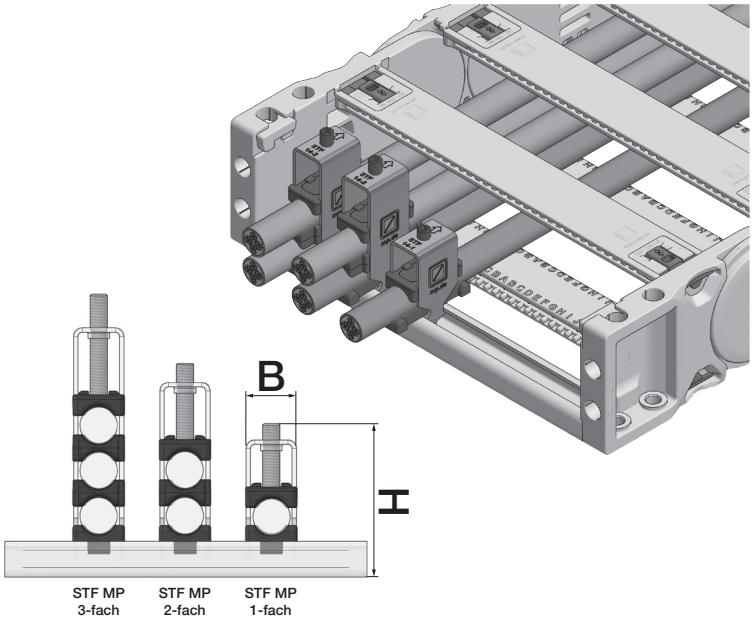
Fixed integrated crossbar strain relief plates in the chain brackets. Tailored to all crossbars widths up to 200 mm. May be assembled on the inside and outside bends at both chain endings.

Type	Order No.	Description	for inside width mm
RS-ZL 040-3	030104000010	Crossbar strain relief plate	40.0
RS-ZL 050-3	030105000010	Crossbar strain relief plate	50.0
RS-ZL 060-3	030106000010	Crossbar strain relief plate	60.0
RS-ZL 075-3	030107500010	Crossbar strain relief plate	75.0
RS-ZL 085-3	030108500010	Crossbar strain relief plate	85.0
RS-ZL 100-3	030110000010	Crossbar strain relief plate	100.0
RS-ZL 125-3	030112500010	Crossbar strain relief plate	125.0
RS-ZL 150-3	030115000010	Crossbar strain relief plate	150.0
RS-ZL 200-3	030120000010	Crossbar strain relief plate	200.0

Product information

Steel Fix bow clamps for secure strain relief of cables at the C-rail at high accelerations, loads and long travel distances. The indication of the total height is indicative.
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.

- Up to 3 cables on top of each other
- Suitable for C-rails with a slot width of 11 mm
- Plastic channels in specially developed design for strain relief that is gentle on cables
- May be assembled on the inside and outside bends at both ends of the energy chain

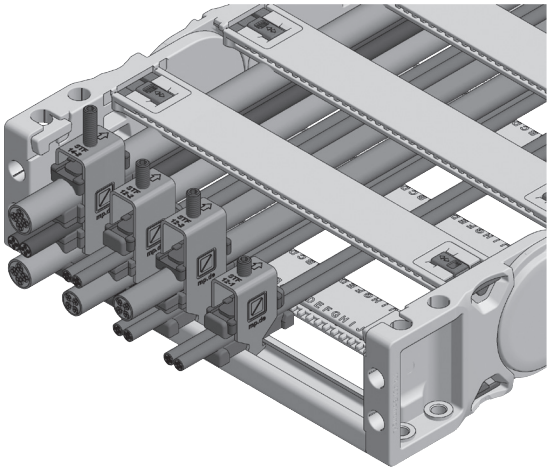


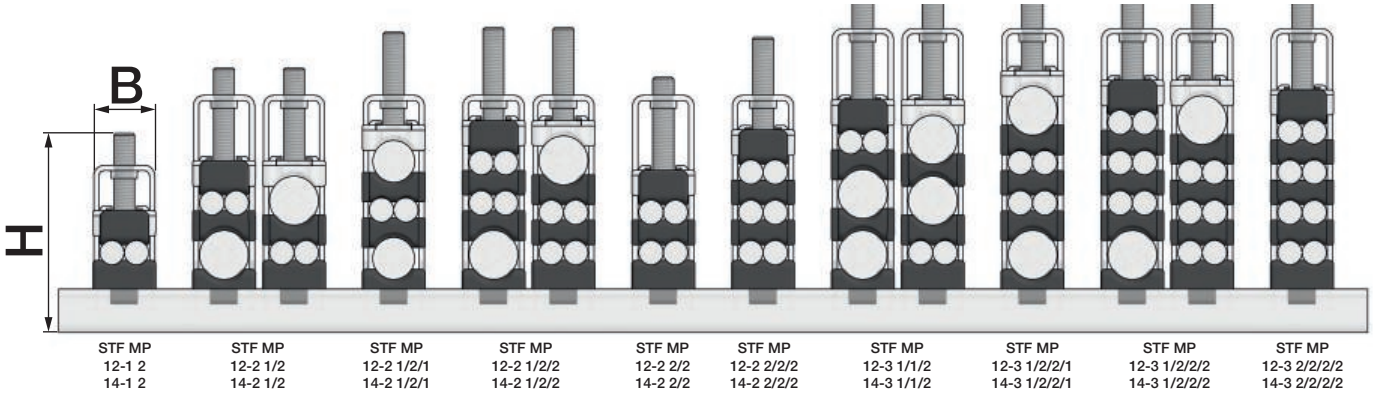
Type	Order No.	Description	Holders pieces	Cable Ø mm	Width (B) mm	Total height (H) mm
Single clamp (for one cable)						
STF MP 12-1 Steel Fix	80661801	Bow clamp	1	6 – 12	16	53
STF MP 14-1 Steel Fix	80661802	Bow clamp	1	12 – 14	18	53
STF MP 16-1 Steel Fix	80661803	Bow clamp	1	14 – 16	20	55
STF MP 18-1 Steel Fix	80661804	Bow clamp	1	16 – 18	22	57
STF MP 20-1 Steel Fix	80661805	Bow clamp	1	18 – 20	24	60
STF MP 22-1 Steel Fix	80661806	Bow clamp	1	20 – 22	26	62
STF MP 26-1 Steel Fix	80661807	Bow clamp	1	22 – 26	30	70
STF MP 30-1 Steel Fix	80661808	Bow clamp	1	26 – 30	34	74
STF MP 34-1 Steel Fix	80661809	Bow clamp	1	30 – 34	38	78
STF MP 38-1 Steel Fix	80661810	Bow clamp	1	34 – 38	42	82
STF MP 42-1 Steel Fix	80661811	Bow clamp	1	38 – 42	46	87
Double clamp (for two cables)						
STF MP 12-2 Steel Fix	80661821	Bow clamp	2	6 – 12	16	73
STF MP 14-2 Steel Fix	80661822	Bow clamp	2	12 – 14	18	74
STF MP 16-2 Steel Fix	80661823	Bow clamp	2	14 – 16	20	81
STF MP 18-2 Steel Fix	80661824	Bow clamp	2	16 – 18	22	85
STF MP 20-2 Steel Fix	80661825	Bow clamp	2	18 – 20	24	89
STF MP 22-2 Steel Fix	80661826	Bow clamp	2	20 – 22	26	93
STF MP 26-2 Steel Fix	80661827	Bow clamp	2	22 – 26	30	110
STF MP 30-2 Steel Fix	80661828	Bow clamp	2	26 – 30	34	118
STF MP 34-2 Steel Fix	80661829	Bow clamp	2	30 – 34	38	126
Triple clamp (for three cables)						
STF MP 12-3 Steel Fix	80661841	Bow clamp	3	6 – 12	16	96
STF MP 14-3 Steel Fix	80661842	Bow clamp	3	12 – 14	18	100
STF MP 16-3 Steel Fix	80661843	Bow clamp	3	14 – 16	20	106
STF MP 18-3 Steel Fix	80661844	Bow clamp	3	16 – 18	22	113
STF MP 20-3 Steel Fix	80661845	Bow clamp	3	18 – 20	24	120
STF MP 22-3 Steel Fix	80661846	Bow clamp	3	20 – 22	26	126

Product information

Compact strain relief for pneumatic hoses and signal cables. The indication of the total height is indicative. 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.

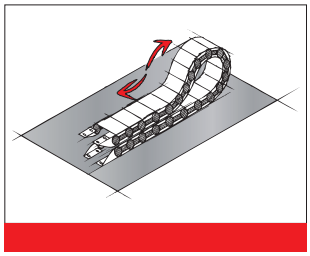
- For 2 cables side by side with max. Ø 7 mm
- Up to 4 cables on top of each other
- Suitable for C-rails with a slot width of 11 mm
- Plastic channels in specially developed design for strain relief that is gentle on cables
- May be assembled on the inside and outside bends at both ends of the energy chain

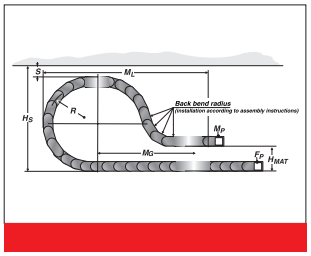




Type	Order No.	Description	Holders pieces	Cable Ø 2 x / 1 x mm	Width (B) mm	Total height (H) mm
Bow clamp multiple size 12 (for two cables side by side)						
STF MP 12-1 2	80662001	Bow clamp	2	3-6 / -	16	54
STF MP 12-2 1/2	80662025	Bow clamp	3	3-6 / 6-12	16	74
STF MP 12-2 1/2/1	80662029	Bow clamp	4	3-6 / 6-10	16	83
STF MP 12-2 1/2/2	80662027	Bow clamp	5	3-6 / 6-12	16	73
STF MP 12-2 2/2	80662021	Bow clamp	4	3-6 / -	16	70
STF MP 12-2 2/2/2	80662023	Bow clamp	6	3-6 / -	16	80
STF MP 12-3 1/1/2	80662045	Bow clamp	4	3-6 / 6-12	16	97
STF MP 12-3 1/2/2/1	80662047	Bow clamp	6	3-6 / 6-12	16	104
STF MP 12-3 1/2/2/2	80662043	Bow clamp	7	3-6 / 6-12	16	101
STF MP 12-3 2/2/2/2	80662041	Bow clamp	8	3-6 / -	16	97
Bow clamp multiple size 14 (for two cables side by side)						
STF MP 14-1 2	80662002	Bow clamp	2	5-7 / -	18	57
STF MP 14-2 1/2	80662026	Bow clamp	3	5-7 / 12-14	18	76
STF MP 14-2 1/2/1	80662030	Bow clamp	4	5-7 / 12	18	86
STF MP 14-2 1/2/2	80662028	Bow clamp	5	5-7 / 12-14	18	87
STF MP 14-2 2/2	80662022	Bow clamp	4	6-7 / -	18	73
STF MP 14-2 2/2/2	80662024	Bow clamp	6	5-7 / 12-14	18	85
STF MP 14-3 1/1/2	80662046	Bow clamp	4	5-7 / 12-14	18	104
STF MP 14-3 1/2/2/1	80662048	Bow clamp	6	5-7 / 12-14	18	112
STF MP 14-3 1/2/2/2	80662044	Bow clamp	7	5-7 / 12-14	18	109
STF MP 14-3 2/2/2/2	80662042	Bow clamp	8	5-7 / -	18	107

LOWERED MOVING END BRACKET MP 30





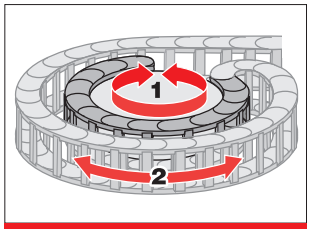
It is sometimes necessary to lower the height of the moving end bracket.

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

Please contact our application engineers.

Radius R mm	Height of moving end bracket (H_{MA}) mm	Safety margin (S) mm	Installation height incl. safety (H_S) mm	Projection (M_L) mm	Additional links pcs.	of which additional rearward chain links pcs.
100.0	100.0	50.0	292.0	300.0	4	3
125.0	100.0	50.0	342.0	345.0	5	3
150.0	100.0	50.0	392.0	470.0	8	5
200.0	100.0	50.0	492.0	605.0	10	6
250.0	100.0	50.0	592.0	680.0	12	7
300.0	100.0	50.0	692.0	805.0	15	7

MP 30.1/.2 REARWARD RADII

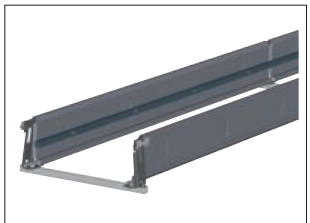


Rotating movement

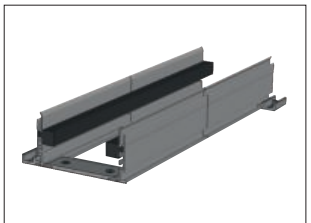
Side links with rearward radius allow movements in both directions. This is intended for rotating movements and lowered chain brackets. The appropriate number of washer discs have to be placed into the side links to achieve the rearward radius.

Type	Order No.
AS 30 (RÜ100/R100) left	030100010060
AS 30 RÜ100/R100 right	030100010062
AS 30 (RÜ150/R150) left	030100015060
AS 30 RÜ150/R150 right	030100015062

VAW GUIDE CHANNEL (ALUMINUM / STAINLESS STEEL)



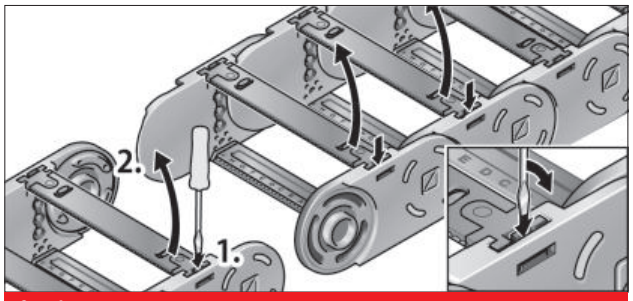
VAW steel galvanized/stainless steel



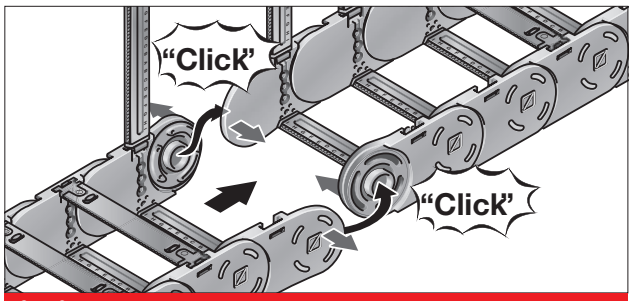
VAW aluminum

A range of variable guide channel systems, constructed from aluminum or stainless steel sections, is available for this energy chain. The variable guide channel ensures that the energy chain is supported and guided securely.

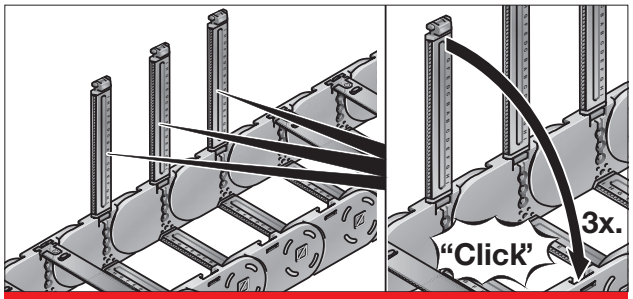
ASSEMBLY



Step 1

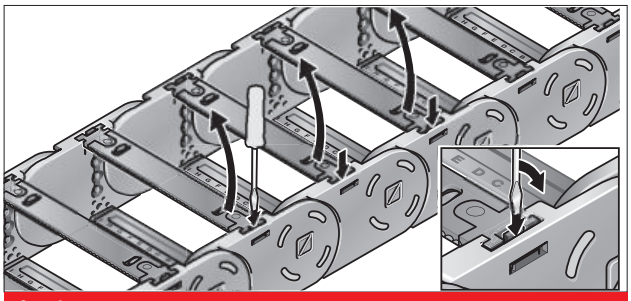


Step 2

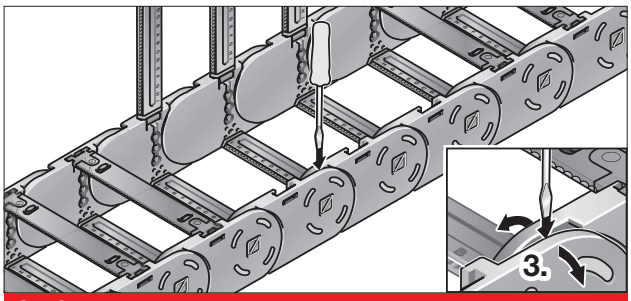


Step 3

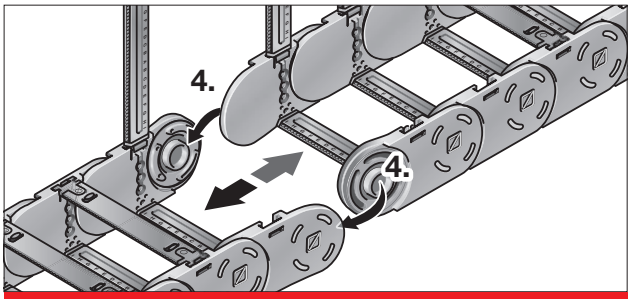
DISASSEMBLY



Step 1



Step 2



Step 3

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