Data sheet

EVOCHAIN® MAX MP 420
MP 420 C

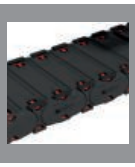
- **EVOLOCK®**
  Crossbar lock system
- **EVORACK®**
  Shelf support
- **EVOSILENCE®**
  Noise damping system
- **EVOSHOX®**
  Damping shoe
- **EVOCONTROL®**
  Gliding shoe

murrplastik®
Simply Smart Systems

murrplastik®
Simply Smart Systems

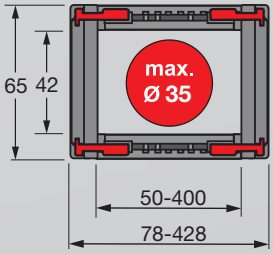
MP 420
OPEN

MP 420 C
CLOSED

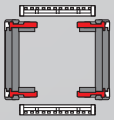


More information about the
EVOCHAIN® MAX MP 420
can be found on the internet at
https://murrplastik.digital/evochain
You will need an access code to enter:
9Ruk6JGz6knaTEhz

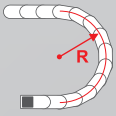
- **EASY TO ASSEMBLE WITH THE EVOLOCK® CROSSBAR LOCK SYSTEM**
- **FAST TOOL-FREE OPENING AND CLOSING OF THE SHELVING SYSTEM IN THE INSIDE AND OUTSIDE BEND WITH THE EVORACK® SHELF SUPPORT**
- **EXTREMELY DURABLE EVOSILENCE® NOISE DAMPING SYSTEM IN THE CHAIN LINK WITH A SPECIALLY DEVELOPED TPE**
- **QUIET AND LOW-VIBRATION UNROLLING WITH THE EVOSHOX® DAMPING SHOE**
- **GREATLY EXTENDED SERVICE LIFE WITH THE EVOCONTROL® GLIDING SHOE WITH INTEGRATED WEAR CONTROL INDICATOR**
- **PARTICULARLY HIGH SERVICE LIFE FOR APPLICATIONS WITH LATERAL ACCELERATION**



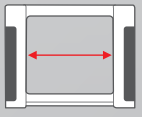
TECHNICAL DATA



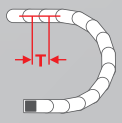
Loading side
Inside and outside bend



Available radii
75 – 350 mm



Available interior widths
With plastic crossbar
50 – 400 mm
With plastic cover
75 – 300 mm



Grid
T = 67 mm

EVOSILENCE®
Noise damping in side link
Reduction of the noise emission by up to 10 dB(A) by using damping elements in the chain links.

EVOSHOX®
Damping shoe
Reduction of the noise emission by up to 25 dB(A) by using damping elements in the chain links.

TECHNICAL SPECIFICATIONS

Travel distance gliding L_g max.	150 m
Travel distance self-supporting L_f max.	8 m
Travel distance vertical, hanging L_{vh} max.	100 m
Travel distance vertical, standing L_{vs} max.	6 m
Rotated 90°, self-supporting L_{90f} max.	2 m
Speed, gliding V_g max.	10 m/s
Speed, self-supporting V_f max.	20 m/s
Acceleration, gliding a_g max.	50 m/s^2
Acceleration, self-supporting a_f max.	50 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 – 120 °C (-76 to 176 °F)
Gliding friction factor	0.3
Static friction factor	0.45
Fire classification	UL 94 HB

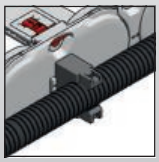
Other material properties on request.

ADDITIONAL INFORMATION MATERIAL

On our YouTube channel we provide video material on the topics of function, assembly and disassembly.
https://www.youtube.com/user/murrplastikTV

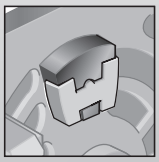
Murrplastik TV

EXTERNAL FASTENING



Lateral holder systems

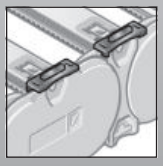
ACCESSORIES



Damping element
EVOSILENCE® in side link

LOCK

Lock
EVOLOCK®



Damping shoe
EVOSHOX®

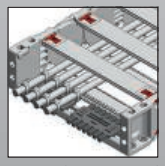
SHELVING SYSTEM

TR separator

GUIDE CHANNELS

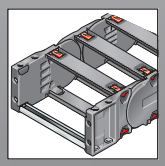
VAW steel galvanized / stainless steel

STRAIN RELIEF

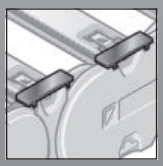


ZLS strain relief

CHAIN BRACKET



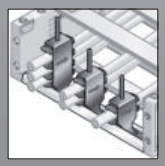
Flexible chain bracket



Gliding shoes
EVOCONTROL®

RS shelving system
EVORACK®

VAW aluminum

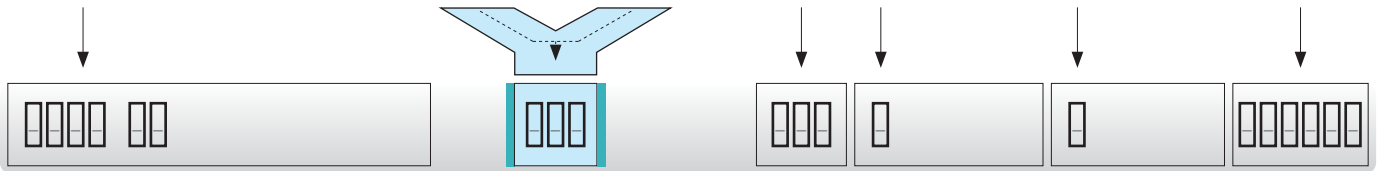


STF Steel Fix

ORDER KEY

Dimensions in mm [US inch]

Type code	Variant	Inside width	Outside width	Inside width	Outside width	Radius	Crossbar variant	Material	Chain length
0420 30	**MP 420 open** Crossbar in outside bend Crossbar in inside bend Opens on inside and outside bend	050 [1.97]	078 [3.07]	287 [11.30]	315 [12.40]	075 [2] [2.95]	0 Plastic, full-ridged with bias (RV)	2 Polyamide without damper (PA/black)	
		068 [2.68]	096 [3.78]	300 [1] [11.81]	328 [12.91]				
0420 44	**MP 420 C closed** Cover in outside bend Cover in inside radius Opens on inside and outside bend	075 [1] [2.95]	103 [4.06]	312 [12.28]	340 [13.39]	100 [2] [3.94]	1 Plastic, full-ridged without bias (RK)	3 Polyamide with damper (PA/black)	
		087 [3.43]	115 [4.53]	325 [12.80]	353 [13.90]				
		097 [3.82]	125 [4.92]	337 [13.27]	365 [14.37]	115 [2] [4.53]	2 [2] Plastic, half-ridged with bias (RV)	9 Special version (on request)	
		100 [1] [3.94]	128 [5.04]	350 [13.78]	378 [14.88]				
		108 [4.25]	136 [5.35]	362 [14.25]	390 [15.35]	125 [4.92]	3 [2] Plastic, half-ridged without bias (RK)		
		112 [4.41]	140 [5.51]	375 [14.67]	403 [15.87]				
		125 [1] [4.92]	153 [6.02]	387 [15.24]	415 [16.34]	150 [5.91]	9 Special version (on request)		
		137 [5.39]	165 [6.50]	400 [15.75]	428 [16.85]				
		150 [1] [5.91]	178 [7.01]			160 [6.30]			
		162 [6.38]	190 [7.48]						
		168 [6.61]	196 [7.72]			175 [6.89]			
		175 [6.89]	203 [7.99]						
		187 [7.36]	215 [8.46]			200 [7.87]			
		200 [1] [7.87]	228 [8.98]						
		212 [8.35]	240 [9.45]			250 [9.84]			
		225 [8,862]	253 [9.96]						
		237 [9.33]	265 [10.43]			300 [11.81]			
		250 [1] [9.84]	278 [10.94]						
		262 [10.31]	290 [11.42]			350 [13.78]			
		275 [10.83]	303 [11.93]						



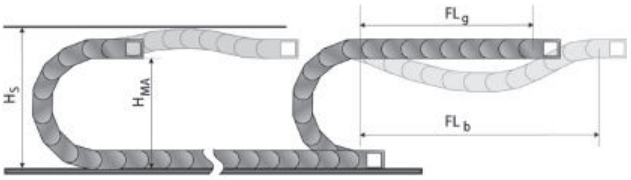
ORDERING EXAMPLE: 0420 30 200 100 0 2 1005

Crossbar in outside bend, crossbar in inside bend, can be opened from inside and outside bend
Inside width 200 mm, radius 3.93 in (100 mm)
Plastic crossbar, full-ridged with bias, material polyamide without damper (PA/black)
Chain length 1005 mm (15 links)

[1] MP 420 C also available with plastic cover
[2] for variant 30 only

EVOCHAIN® MAX

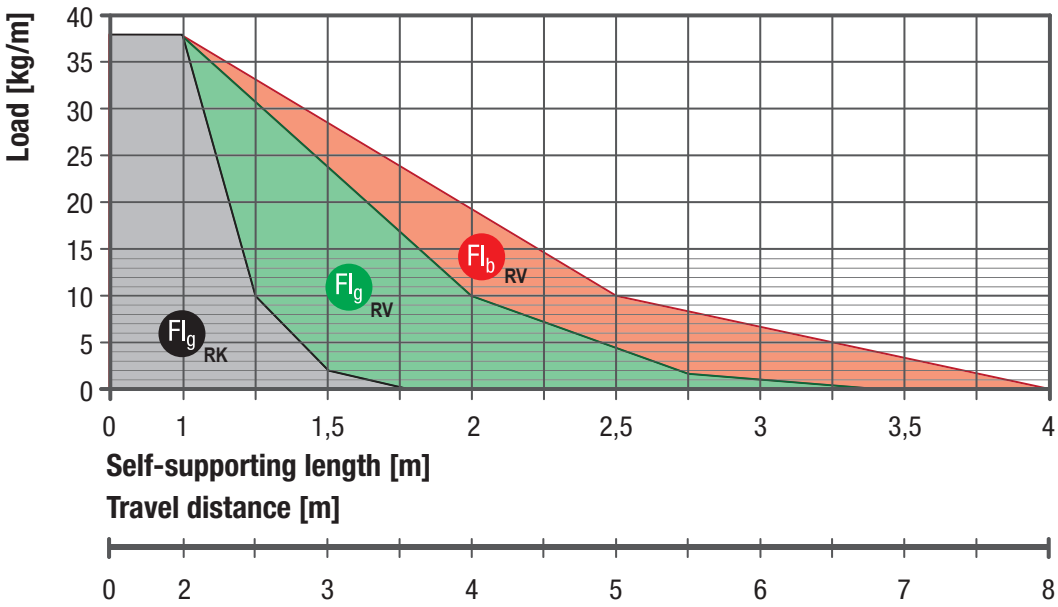
SELF-SUPPORTING LENGTH



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



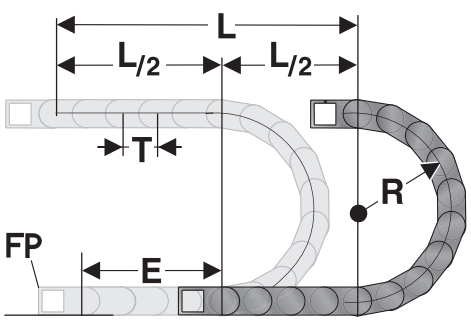
FL_g Self-supporting length, upper run straight
In the FL_g range, the chain upper run still has a bias, is straight or has a maximum sag of 70 mm.

FL_b Self-supporting length, upper run bent
In the FL_b range, the chain upper run has a sag of more than 70 mm, but still less than the maximum sag of 140 mm.

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 energy chains (with covers) have a higher self 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), 1.2 kg/m must be added for the higher weight of the closed covers.

DETERMINING THE CHAIN LENGTH

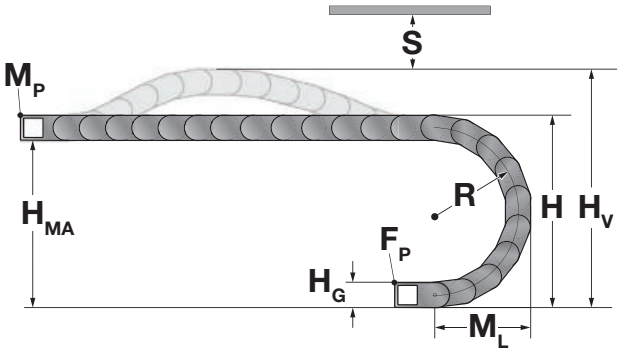


The fixed point of the energy chain should be connected in the middle of the travel distance.
This arrangement gives the shortest connection between the fixed point (FP) and the moving bracket and thus the most efficient chain length.

Chain length calculation = L/2 + π * R + E
≈ 1 m chain = 15 links, 67 mm each

E = Distance between entry point and middle of travel distance
L = Travel distance
R = Radius
T = Grid 67 mm

INSTALLATION DIMENSIONS



The installation dimensions are differentiated between applications without and with EVOSILENCE® damping elements. Due to their mode of functioning, the damping elements increase the installation height by 25 mm.

For self-supporting applications:
The moving end chain bracket is to be screw fixed at height H_{MA} for the respective radius. The pendular chain bracket is used as standard. For high acceleration values, we recommend the use of a one-sided pivotable moving end bracket, which is fixed 50 mm higher than the pendular chain bracket.

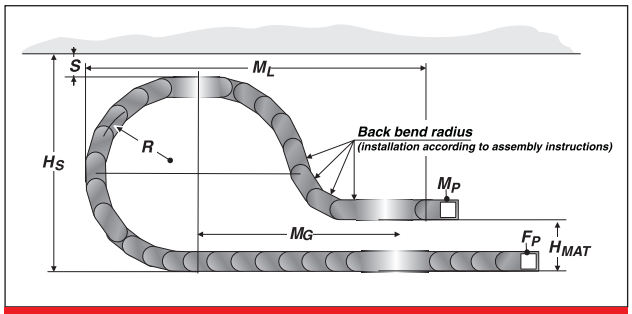
Concerning the installed dimensions, it has to be differentiated whether the chain links are equipped with or without bias:
For chain links without bias, the "installed height (H) without bias" has to be taken into account. If the chain links are equipped with a bias, the "installed height (H_V) with increase due to bias" has to be taken into account. In both cases we recommend to include a safety margin S of 20 mm.

For standing or hanging applications:
The moving end chain bracket is to be screw fixed at height H_{MA} for the respective radius. The chain bracket which is pivotable on one side is used as standard. The chain links are without bias, therefore the "installed height (H) without bias" has to be taken into account.

Energy chain without damping element											
Radius R	**75**	**100**	**115**	**125**	**150**	**160**	**175**	**200**	**250**	**300**	**350**
Outside height of chain link (H_G)	65	65	65	65	65	65	65	65	65	65	65
Height of moving end bracket (H_{MA}) for KA pendular	150	200	230	250	300	320	350	400	500	600	700
Height of moving end bracket (H_{MA}) for KA pivotable on one side	200	250	280	300	350	370	400	450	550	650	750
Increase due to bias (V) for 2.0 kg/m payload	60	60	60	60	60	60	60	60	60	60	60
Installation height (H_V) with increase due to bias	275	325	355	375	425	445	475	525	625	725	825
Installation height (H) without bias	215	265	295	315	365	385	415	465	565	665	765
Arc projection ($M_L = H_G/2$ + Radius + Grid)	175	200	215	225	250	260	275	300	350	400	450

Energy chain with EVOSILENCE® damping element											
Radius R	**75**	**100**	**115**	**125**	**150**	**160**	**175**	**200**	**250**	**300**	**350**
Outside height of chain link (H_G)	65	65	65	65	65	65	65	65	65	65	65
Height of moving end bracket (H_{MA}) for KA pendular	150	200	230	250	300	320	350	400	500	600	700
Height of moving end bracket (H_{MA}) for KA pivotable on one side	200	250	280	300	350	370	400	450	550	650	750
Increase due to bias (V) for 2.0 kg/m payload	60	60	60	60	60	60	60	60	60	60	60
Increase due to damper for 2,0 kg/m payload	25	25	25	25	25	25	25	25	25	25	25
Installation height (H_V) with increase due to bias and damper	300	350	380	400	450	470	500	550	650	750	850
Installation height (H) without bias, with increase due to damper	240	290	320	340	390	410	440	490	590	690	790
Arc projection ($M_L = H_G/2$ + Radius + Grid)	175	200	215	225	250	260	275	300	350	400	450

LOWERED MOVING END BRACKET MP 420



Lowered fixing point at moving end

For gliding applications with a radius of 175 mm or more, it is necessary to lower the moving end bracket.

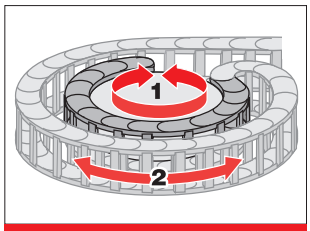
In this case, the majority of links from the table must be added to the calculated chain length.

The back radius chain link is mounted as the second chain link after the pendular moving end bracket

Please contact our application engineers.

Radius R mm	Height of moving end bracket (H_{MAT}) 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.
175	180	50	465	625	12	1
200	210	50	515	715	14	1
250	240	50	615	875	17	1
300	270	50	715	1000	20	1
350	300	50	815	1160	24	1

REARWARD RADII MP 420

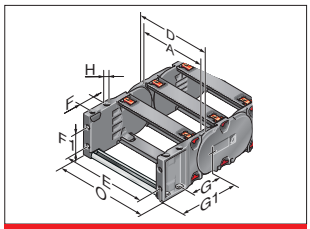


Rotation movement

Side links with rearward radius allow movements in both directions. This is intended for rotating movements and lowered chain brackets. Rotation movements are only possible with open variants.

Type	Order No.	Radius mm	Rearward Radius mm
SR 420 RÜ125/R125	042012512500	125	125
SR 420 RÜ200/200	042020020000	200	200

KA 420 FLEXIBLE CHAIN BRACKET



KA 420 Flexible chain bracket

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the energy chain. This allows the chain to move right up to the bracket.

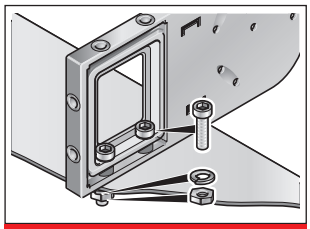
If the number of chain links is even, each energy chain requires one male and one female bracket. If the number of chain links is uneven, each energy chain requires two female brackets. At the moving end there is always a female bracket.

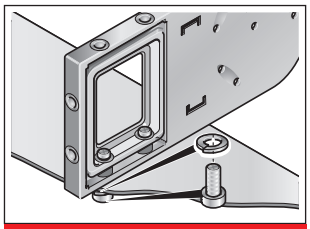
M6 screws are used to secure the brackets in place. Press-in metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent and high-strength transmission of even extreme forces onto the energy chain.

Optionally the chain bracket can be equipped with C-rail and strain relief ZLS or with bow clamps type STF MP.

Type	Order No.	Material	Inside width A mm	D mm	E mm	F mm	F1 mm	G mm	G1 mm	H	HØ mm	KA outside width O mm
KA 420-FB female, complete	0420000050	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0		6.5	A+32.0
KA 420-FB female, pendular, complete	0420000056	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0		6.5	A+32.0
KA 420-FB male, complete	0420000051	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0		6.5	A+32.0
KA 420-FG female, complete	0420000053	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0	M6		A+32.0
KA 420-FG female, pendular, complete	0420000055	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0	M6		A+32.0
KA 420-FG male, complete	0420000054	Plastic	50-400	A+28.0	A+16.0	22.5	22.0	59.5	97.0	M6		A+32.0

ASSEMBLY INSTRUCTION FB/FG FLEXIBLE CHAIN BRACKET


FB chain bracket


FG chain bracket

Metal bushings guarantee long-lasting fastening without cold flow in the plastic.

Type KA-FB:
Integrated through-hole fastened down using screw and nut.

Type KA-FG:
Built-in threads allow for quick and easy on-site mounting, since a screw, including a retaining washer where necessary, is sufficient.

MP 420 PLASTIC CROSSBAR

Crossbar

The crossbars connect the two side runs of the energy chains. The crossbar length is synonymous with the inside width of the energy chain.

Type	Order No.	Description	Inside width mm
RS 050-40	040000005000	Crossbar	50
RS 068-40	040000006800	Crossbar	68
RS 075-40	040000007500	Crossbar	75
RS 087-40	040000008700	Crossbar	87
RS 097-40	040000009700	Crossbar	97
RS 100-40	040000010000	Crossbar	100
RS 108-40	040000010800	Crossbar	108
RS 112-40	040000011200	Crossbar	112
RS 125-40	040000012500	Crossbar	125
RS 137-40	040000013700	Crossbar	137
RS 150-40	040000015000	Crossbar	150
RS 162-40	040000016200	Crossbar	162
RS 168-40	040000016800	Crossbar	168
RS 175-40	040000017500	Crossbar	175
RS 187-40	040000018700	Crossbar	187
RS 200-40	040000020000	Crossbar	200
RS 212-40	040000021200	Crossbar	212
RS 225-40	040000022500	Crossbar	225
RS 237-40	040000023700	Crossbar	237
RS 250-40	040000025000	Crossbar	250
RS 262-40	040000026200	Crossbar	262
RS 275-40	040000027500	Crossbar	275
RS 287-40	040000028700	Crossbar	287
RS 300-40	040000030000	Crossbar	300
RS 312-40	040000031200	Crossbar	312
RS 325-40	040000032500	Crossbar	325
RS 337-40	040000033700	Crossbar	337
RS 350-40	040000035000	Crossbar	350
RS 362-40	040000036200	Crossbar	362
RS 375-40	040000037500	Crossbar	375
RS 387-40	040000038700	Crossbar	387
RS 400-40	040000040000	Crossbar	400

PLASTIC COVER FOR MP 420 C

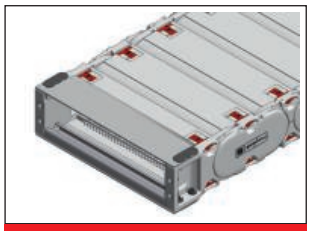
mp 420 C

Plastic cover

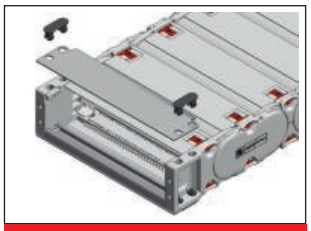
The covers connect the two side runs of the energy chain. The cover length is synonymous with the inside width of the energy chain.

Type	Order No.	Description	Installation site	Inside width mm
A-420075, outside	042007501000	Cover	Outside bend	75
I-420075, inside	04200750200	Cover	Inside bend	75
A-420100, outside	042010001000	Cover	Outside bend	100
I-420100, inside	042010002000	Cover	Inside bend	100
A-420125, outside	042012501000	Cover	Outside bend	125
I-420125, inside	0420102502000	Cover	Inside bend	125
A-420150, outside	042015001000	Cover	Outside bend	150
I-420150, inside	042015002000	Cover	Inside bend	150
A-420200, outside	042020001000	Cover	Outside bend	200
I-420200, inside	042020002000	Cover	Inside bend	200
A-420250, outside	042025001000	Cover	Outside bend	250
I-4200250, inside	042025002000	Cover	Inside bend	250
A-420300, outside	042030001000	Cover	Outside bend	300
I-420300, inside	042030002000	Cover	Inside bend	300

CHAIN BRACKET COVER



Chain bracket cover



Assembly ZS-KA EVOCHAIN

The aluminum covers for the flexible chain bracket (KA-FB/FG) are black anodized and provide a fully closed version for energy chains with covers.
They can be mounted in the inside and outside bend. One set consists of one cover and two locks.
If necessary, the lock can be removed and reinserted.

Type	Order No.	Description	Inside width mm
ZS-KA 420 IB 075 Set	0420075502	Chain bracket cover	75
ZS-KA 420 IB 100 Set	0420100502	Chain bracket cover	100
ZS-KA 420 IB 125 Set	0420125502	Chain bracket cover	125
ZS-KA 420 IB 150 Set	0420150502	Chain bracket cover	150
ZS-KA 420 IB 200 Set	0420200502	Chain bracket cover	200
ZS-KA 420 IB 250 Set	0420250502	Chain bracket cover	250
ZS-KA 420 IB 300 Set	0420300502	Chain bracket cover	300

EVOLOCK® RS 420 LOCK

lock

The EVOLOCK® lock allows an extremely easy and quick locking of the crossbars and covers due the innovative locking slide.

The standard color is red, RAL 3020. Further colors on request.

Type	Order No.	Color
RS-420 lock, red	042000004270	RAL 3020
RS-420 lock, blue	042000004271	RAL 5015
RS-420 lock, black	042000004272	RAL 9005

EVOCONTROL® GS 420 GLIDING SHOE

Gliding shoe in inside bend

In the case of energy chains, gliding shoes are used in a horizontally sliding installation mode (the upper run of the chain glides on the lower run).

The gliding shoes are set onto the side links on the inside bend (no tools necessary). This forces the chain to slide on the gliding shoes instead on the side links of the chain. Depending on the application, the service life of the energy chain may be extended five-fold, by using gliding shoes.

The gliding shoes can be optionally equipped with the EVOCONTROL® wear indicator. This indicates the on-time replacement of the gliding shoes.

Type	Order No.	Description	Installation site	Min. radius mm	Gliding shoe height mm
GS 420 gliding shoe	042090400300	Gliding shoes	Inside bend	125	4.5
GS 420 Gliding shoe EVOCONTROL®	0420400350	Gliding shoe with wear control indicator	Inside bend	125	4.5

EVOSILENCE® DAMPING ELEMENT IN SIDE LINK

Damping elements for the side links

The EVOSILENCE® damping element is an extremely durable noise damping system in the chain link, which works through a specially developed TPE (thermoplastic elastomer) (optional).

Due to the large and almost wear-free damping element in the chain link, the energy chains roll up to 10 dB(A) quieter.

Type	Order No.	Description
Damping element MP 420	800099131275	Damping element

EVOSHOX® DS 420 DAMPING SHOE

Damping shoe in outside bend

The EVOSHOX® damping shoes significantly reduce the noise emission when the energy chain is rolling.

When using the damping elements in the chain link in connection with the EVOSHOX® damping shoes, the noise emission is reduced by up to 25 dB (A).

Additional distance plates are required for height compensation at the chain bracket.

Type	Order No.	Description	Installation site	Min. radius mm	Outside damper height mm
DS 420 damping shoe	0420400450	Damping shoe	Outside bend	75	5.0
Distance plate for damping shoe DS 420	042090400410	Distance plate	Chain bracket outside bend		

LATERAL HOLDER SYSTEMS

Lateral holder systems

Lateral external fastening KS-fix 10-60 with hook-and-loop tape for self-supporting, hanging and standing applications with low dynamics.

Lateral external fastening with the holder system type UH (universal holder) and cable protection conduit EW-PAE / EW-PAE-LS for dynamic self-supporting, hanging and standing applications with sensitive cables such as fiber optic cables.

Type	Order No.	Description
SG 420 RV SH/UH	0420300200	SG 420 outside flap RV with system holder type UH
SG 420 RK SH/UH	0420310200	SG 420 outside flap RK with system holder type UH
SG 420 RV SH/KS-fix	0420700200	SG 420 outside flap RV with system holder type KS-fix
SG 420 RK SH/KS-fix	0420710200	SG 420 outside flap RK with system holder type KS-fix

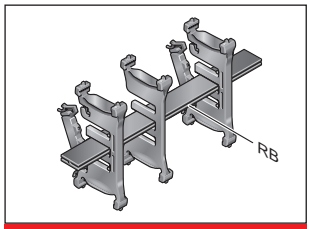
For system holder type KS-fix order separately:

Type	Order No.	Color	PU m
KB-fix 20-V2, black	87661806	black	25

For system holder type UH order separately:

Type	Order No.	Color	PU m
EW-PAE M20/P16	83181658	black	50
EW-PAE-LS M20/P16 (slit)	83988298	black	50

RB-K SHELF



Shelf

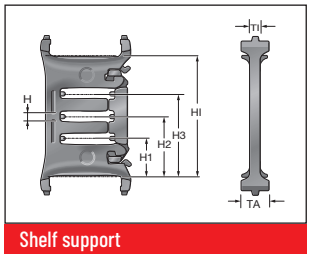
The shelf in combination with at least two shelf supports that can be opened on both sides forms the innovative EVORACK® shelf support system.
The additional levels prevent cables from twisting and minimize the friction between them.

Type	Order No.	Description	Width mm
RB 19-K	100000001900	Shelf	19.0
RB 23-K *	100000002300	Shelf	23.0
RB 28-K	1000002804	Shelf	28.0
RB 33-K *	100000003300	Shelf	33.1
RB 38-K	1000003804	Shelf	38.1
RB 43-K	1000004304	Shelf	43.1
RB 48-K	1000004804	Shelf	48.1
RB 53-K	1000005304	Shelf	53.2
RB 58-K	1000005804	Shelf	58.2
RB 63-K	1000006304	Shelf	63.2
RB 68-K	1000006804	Shelf	68.2
RB 73-K	1000007304	Shelf	73.3
RB 78-K	1000007804	Shelf	78.3
RB 83-K	1000008304	Shelf	83.3
RB 88-K	1000008804	Shelf	88.3
RB 93-K	1000009304	Shelf	93.4
RB 98-K	1000098804	Shelf	98.4
RB 103-K	1000010304	Shelf	103.5
RB 108-K	1000010804	Shelf	108.5
RB 113-K	1000011304	Shelf	113.5
RB 118-K	1000011804	Shelf	118.5
RB 123-K	100000012300	Shelf	123.5
RB 128-K	1000012804	Shelf	128.6
RB 133-K	1000013304	Shelf	133.6
RB 138-K	1000013804	Shelf	138.6
RB 143-K	1000014304	Shelf	143.6
RB 148-K	1000014804	Shelf	148.7
RB 153-K	1000015304	Shelf	153.7
RB 158-K	1000015804	Shelf	158.7
RB 163-K	1000016304	Shelf	163.8
RB 168-K	1000016804	Shelf	168.8
RB 173-K	1000017304	Shelf	173.8
RB 178-K	1000017804	Shelf	178.8
RB 183-K	1000018304	Shelf	183.8
RB 188-K	1000018804	Shelf	188.8

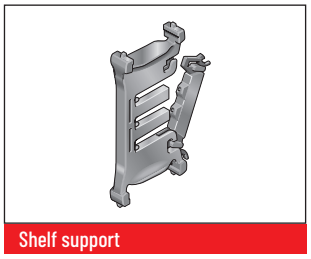
Type	Order No.	Description	Width mm
RB 193-K	1000019304	Shelf	193.9
RB 198-K	1000019804	Shelf	198.9
RB 203-K	1000020304	Shelf	203.9
RB 208-K	1000020804	Shelf	208.9
RB 213-K	1000021304	Shelf	213.9
RB 218-K	1000021804	Shelf	218.9
RB 223-K	1000022304	Shelf	223.9
RB 228-K	1000022804	Shelf	229.0
RB 233-K	1000023304	Shelf	234.0
RB 238-K	1000023804	Shelf	239.0
RB 243-K	1000024304	Shelf	244.0
RB 248-K	100000024800	Shelf	249.2

* grid = 2 mm

EVORACK® RTT 420 SHELF SUPPORT WITH FLAP



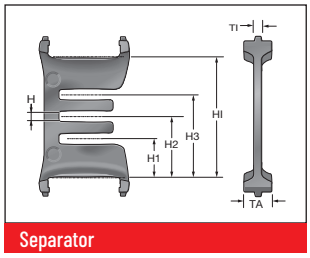
Shelf support


Shelf support

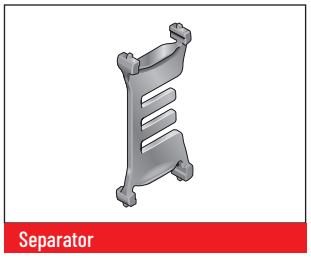
Two shelf supports that can be opened on both sides (RTT) in combination with at least one shelf (RB) provide an easy to fill EVORACK® shelf support system.
The additional levels prevent cables from criss-crossing and minimize the friction between them.

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
RTT 420 shelf support, with flap	042000004000	Shelf support	lockable	5.0	10.0	3.8	13.6	21.2	28.8	42.4

TR 420.1 SEPARATOR



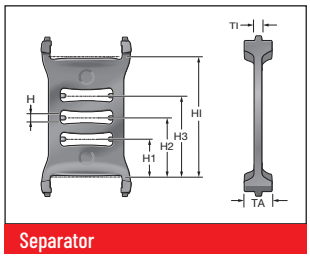
Separator


Separator

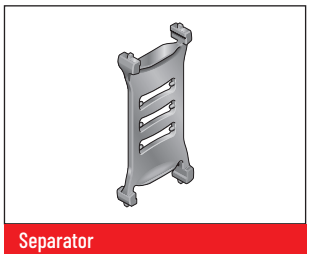
The lockable separator TR 420.1 is required, when a shelving system with separable shelf supports and shelves is used.

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 420.1, open, lockable	042000004100	Separator	lockable	3.0	10.0	3.8	13.6	21.2	28.8	42.4

TR 420.3 SEPARATOR



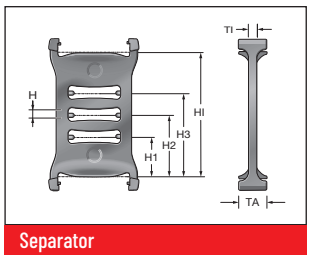
Separator


Separator

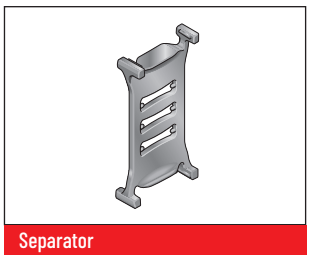
The lockable separator TR 420.3 is particularly required for gliding applications if only vertical partitions with grids are used.

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 420.3 lockable	042000004300	Separator	lockable	3.0	10.0	3.8	13.6	21.2	28.8	42.4

TR 420.5-V SEPARATOR



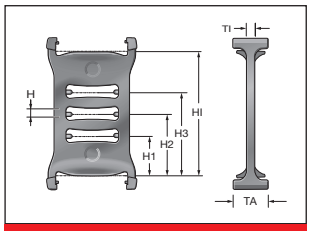
Separator


Separator

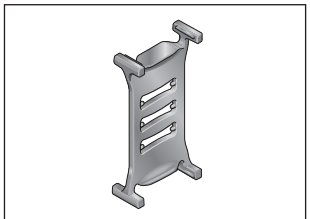
With the movable separators TR 420.5, TR 420.6 and TR 420.7 different chamber widths can be created using the width of the foot contour (dimension TA).

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 420.5, movable	042000004500	Separator	movable	3.0	10.0	3.8	13.6	21.2	28.8	42.4

TR 420.6-V SEPARATOR



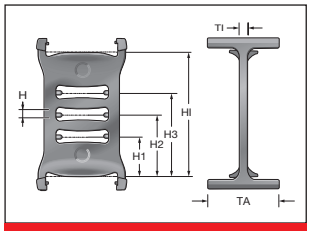
Separator


Separator

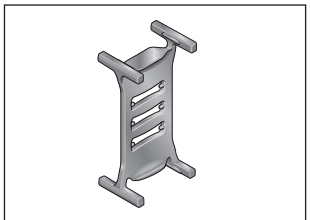
With the movable separators TR 420.5, TR 420.6 and TR 420.7 different chamber widths can be created using the width of the foot contour (dimension TA).

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 420.6, movable	042000004600	Separator	movable	3.0	14.0	3.8	13.6	21.2	28.8	42.4

TR 420.7-V SEPARATOR



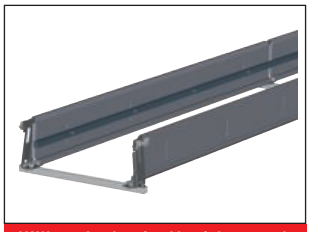
Separator

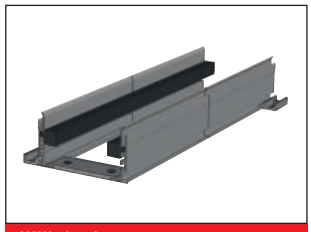

Separator

With the movable separators TR 420.5, TR 420.6 and TR 420.7 different chamber widths can be created using the width of the foot contour (dimension TA).

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	H3 mm	HI mm
TR 420.7, movable	042000004700	Separator	movable	3.0	27.0	3.8	13.6	21.2	28.8	42.4

VAW GUIDE CHANNEL (ALUMINUM / STAINLESS STEEL)

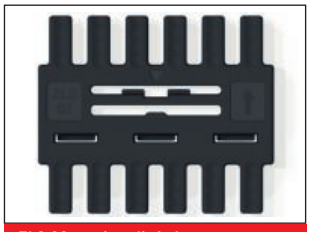

VAW steel galvanized/stainless steel


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.

STRAIN RELIEF WITH C-RAIL AND ZLS STRAIN RELIEF PLATE


ZLS 62 strain relief plate

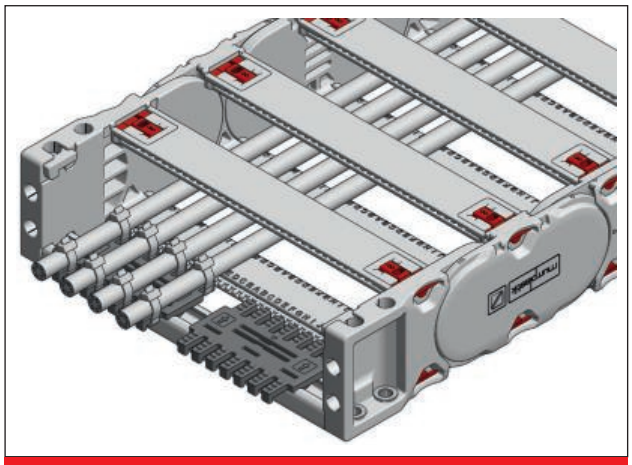

ZLS 62 strain relief plate

The strain relief ZLS can be easily mounted without tools by clipping it onto the C-rail.
Combinations with the STF MP Steel Fix are possible.

Suitable combinations of C-rails and ZLS-Sets for all inside widths: See table on next page

Type	Order No.	Description	Width mm	Quantity teeth
ZLS 50	042090405000	Strain relief	50	5
ZLS 62	042090406200	Strain relief	62	6
ZLS 75	042090407500	Strain relief	75	7

STRAIN RELIEF WITH C-RAIL AND ZLS STRAIN RELIEF PLATE



Strain relief with C-rail and ZLS strain relief plate

For the strain relief with C-rail and strain relief plate ZLS the C-rail for the suitable inside width must be chosen. One C-rail per chain bracket side is required.

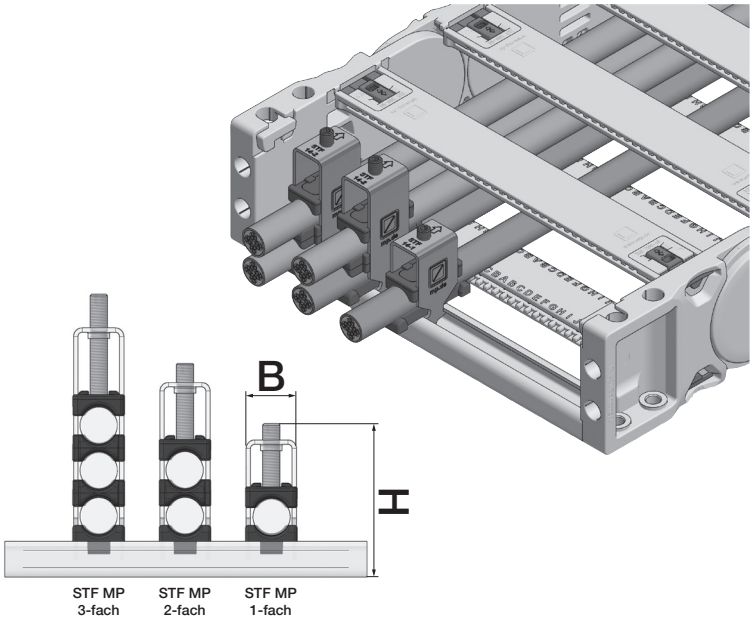
The combination of the ZLS for each inner width is shown in the table below. The corresponding order numbers can be found on the previous page.

Type C-rail	Order No.	Inside width mm	Length C-rail mm	Recommended ZL combinations	Quantity teeth
C-RAIL KA EVOCHAIN 050	0420050090	50	53	ZLS 50	5
C-RAIL KA EVOCHAIN 068	0420068090	68	71	ZLS 62	6
C-RAIL KA EVOCHAIN 075	0420075090	75	78	ZLS 75	7
C-RAIL KA EVOCHAIN 087	0420087090	87	90	ZLS 75	7
C-RAIL KA EVOCHAIN 097	0420097090	97	100	ZLS 75	7
C-RAIL KA EVOCHAIN 100	0420100090	100	103	2 x ZLS 50	10
C-RAIL KA EVOCHAIN 108	0420108090	108	111	2 x ZLS 50	10
C-RAIL KA EVOCHAIN 112	0420112090	112	115	1 x ZLS 62 + 1 x ZLS 50	11
C-RAIL KA EVOCHAIN 125	0420125090	125	128	1 x ZLS 75 + 1 x ZLS 50	12
C-RAIL KA EVOCHAIN 137	0420137090	137	140	1 x ZLS 75 + 1 x ZLS 62	13
C-RAIL KA EVOCHAIN 150	0420150090	150	153	2 x ZLS 75	14
C-RAIL KA EVOCHAIN 162	0420162090	162	165	1 x ZLS 62 + 2 x ZLS 50	16
C-RAIL KA EVOCHAIN 168	0420168090	168	171	1 x ZLS 62 + 2 x ZLS 50	16
C-RAIL KA EVOCHAIN 175	0420175090	175	178	1 x ZLS 75 + 2 x ZLS 50	17
C-RAIL KA EVOCHAIN 187	0420187090	187	190	1 x ZLS 75 + 1 x ZLS 62 + 1 x ZLS 50	18
C-RAIL KA EVOCHAIN 200	0420200090	200	203	2 x ZLS 75 + 1 x ZLS 50	19
C-RAIL KA EVOCHAIN 212	0420212090	212	215	2 x ZLS 75 + 1 x ZLS 62	20
C-RAIL KA EVOCHAIN 225	0420225090	225	228	3 x ZLS 75	21
C-RAIL KA EVOCHAIN 237	0420237090	237	240	1 x ZLS 75 + 1 x ZLS 62 + 2 x ZLS 50	23
C-RAIL KA EVOCHAIN 250	0420250090	250	253	2 x ZLS 75 + 2 x ZLS 50	24
C-RAIL KA EVOCHAIN 262	0420262090	262	265	2 x ZLS 75 + 1 x ZLS 62 + 1 x ZLS 50	25
C-RAIL KA EVOCHAIN 275	0420275090	275	278	3 x ZLS 75 + 1 x ZLS 50	26
C-RAIL KA EVOCHAIN 287	0420287090	287	290	3 x ZLS 75 + 1 x ZLS 62	27
C-RAIL KA EVOCHAIN 300	0420300090	300	303	4 x ZLS 75	28
C-RAIL KA EVOCHAIN 312	0420312090	312	315	2 x ZLS 75 + 1 x ZLS 62 + 2 x ZLS 50	30
C-RAIL KA EVOCHAIN 325	0420325090	325	328	3 x ZLS 75 + 2 x ZLS 50	31
C-RAIL KA EVOCHAIN 337	0420337090	337	340	3 x ZLS 75 + 1 x ZLS 62 + 1 x ZLS 50	32
C-RAIL KA EVOCHAIN 350	0420350090	350	353	4 x ZLS 75 + 1 x ZLS 50	33
C-RAIL KA EVOCHAIN 362	0420362090	362	365	4 x ZLS 75 + 1 x ZLS 62	34
C-RAIL KA EVOCHAIN 375	0420375090	375	378	5 x ZLS 75	35
C-RAIL KA EVOCHAIN 387	0420387090	387	390	3 x ZLS 75 + 1 x ZLS 62 + 2 x ZLS 50	37
C-RAIL KA EVOCHAIN 400	0420400090	400	403	4 x ZLS 75 + 2 x ZLS 50	38

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 specification 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

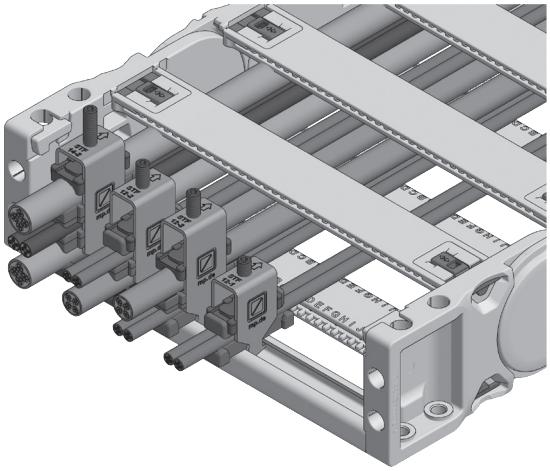


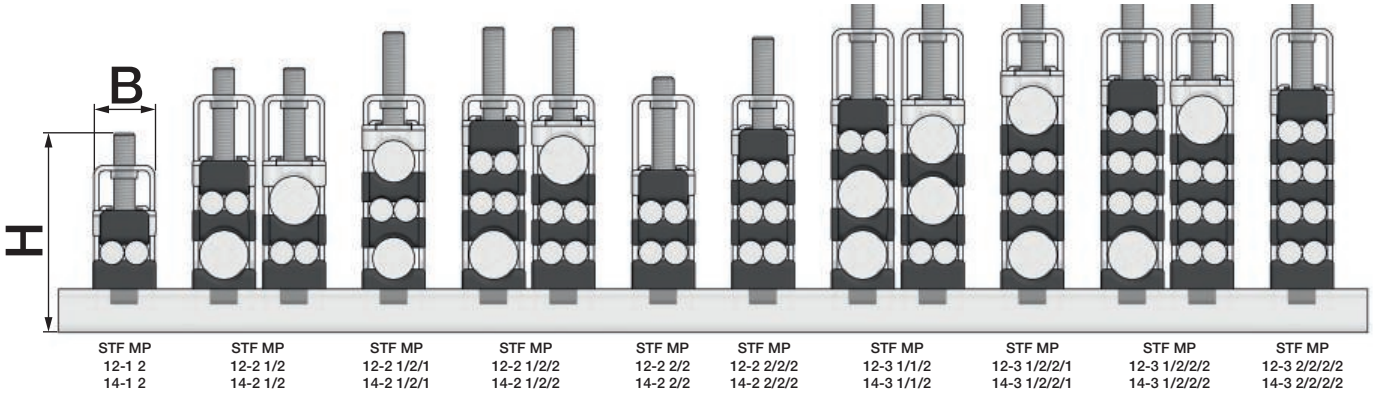
Type	Order No.	Description	Holders pieces	Cable Ø mm	Width (B) mm	Total height (H) mm
Single clamp (for one cable)						
STF MP 12-1 Steel Fix	80661801	Bow clamp	1	6 – 12	16	53
STF MP 14-1 Steel Fix	80661802	Bow clamp	1	12 – 14	18	53
STF MP 16-1 Steel Fix	80661803	Bow clamp	1	14 – 16	20	55
STF MP 18-1 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 specification 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.

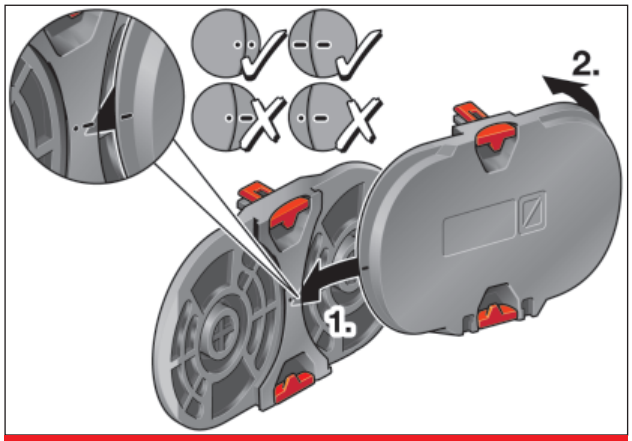
- For 2 cables side by side with max. Ø 7 mm
- Up to 4 cables on top of each other
- Suitable for C-rails with a slot width of 11 mm
- Plastic channels in specially developed design for strain relief that is gentle on cables
- May be assembled on the inside and outside bends at both ends of the energy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



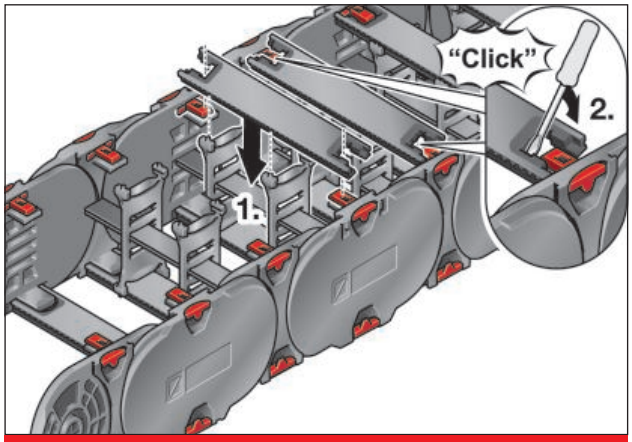


Type	Order No.	Description	Holders pieces	Cable Ø 2 x / 1 x mm	Width (B) mm	Total height (H) mm
Bow clamp multiple size 12 (for two cables side by side)						
STF MP 12-1 2	80662001	Bow clamp	2	3-6 / -	16	54
STF MP 12-2 1/2	80662025	Bow clamp	3	3-6 / 6-12	16	74
STF MP 12-2 1/2/1	80662029	Bow clamp	4	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
Bracket 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

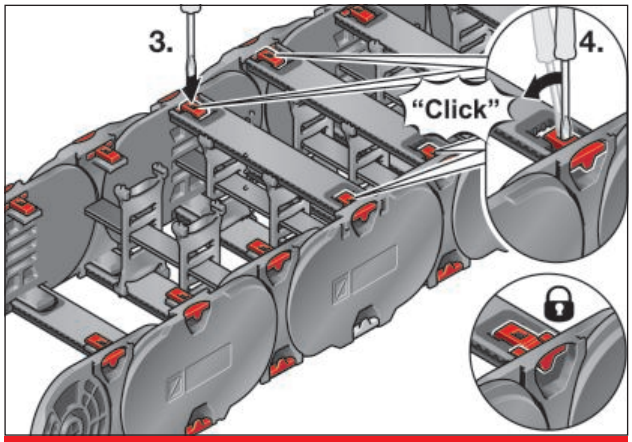
ASSEMBLY



Step 1

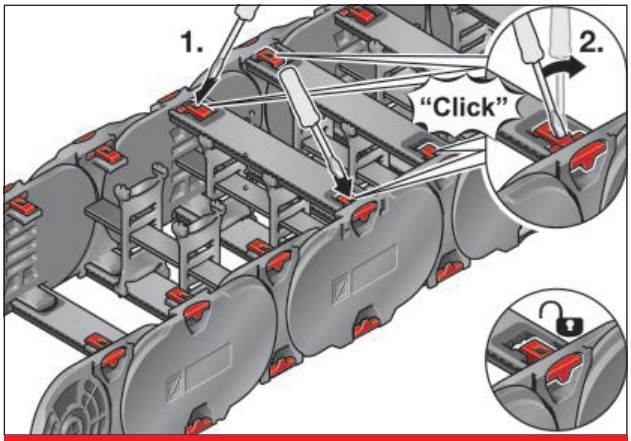


Step 2

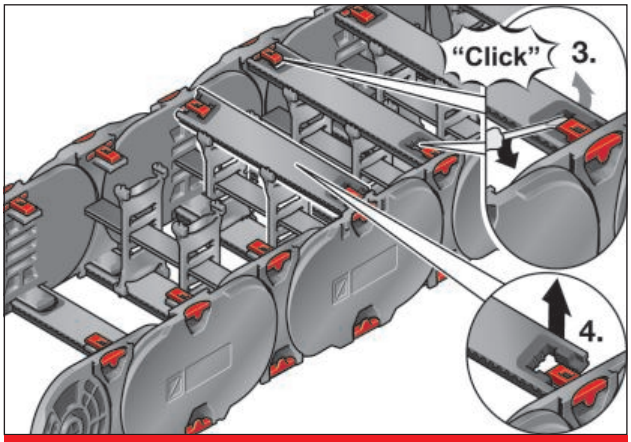


Step 3

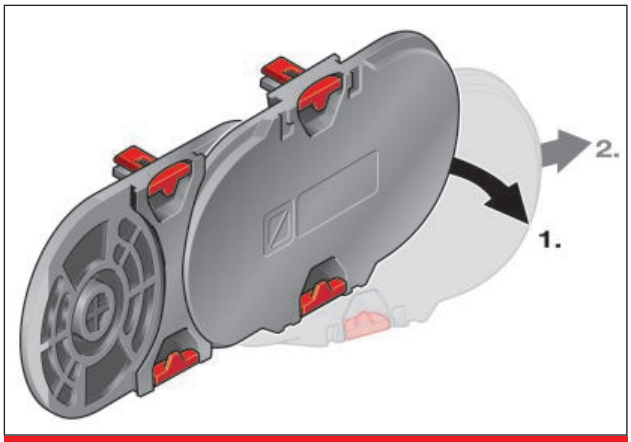
DISASSEMBLY



Step 1



Step 2



Step 3

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