Data sheet
MULTILINE MP 3000

murrplastik®
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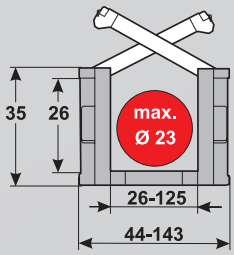
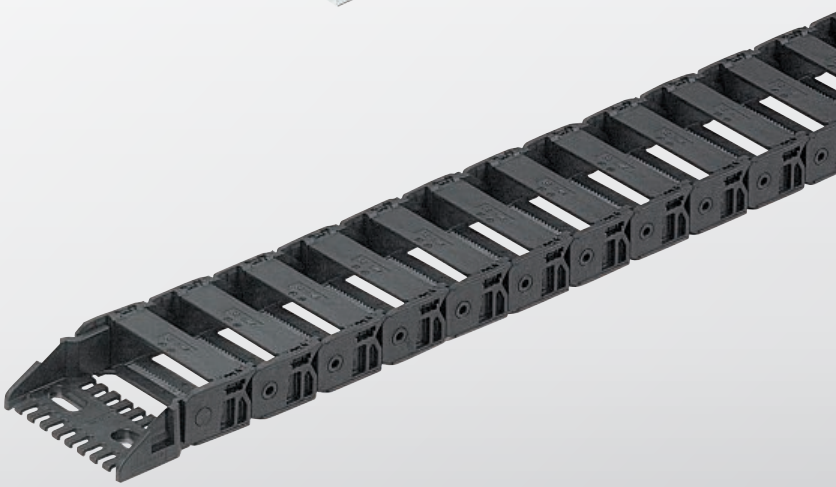
MULTILINE

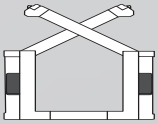
3000
OPEN

- LOW-COST VARIANT
- CHAIN BRACKET WITH STRAIN RELIEF

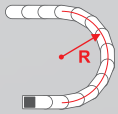




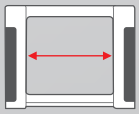
TECHNICAL DATA



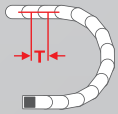
Loading side
Inside bend



Available radii
50.0 – 300.0 mm



Available interior widths
With plastic crossbar
26.0 – 125.0 mm



Grid
T = 45.0 mm

TECHNICAL SPECIFICATIONS

Travel distance gliding L_g max.	Not recommended
Travel distance self-supporting L_f max.	see diagram on page 5
Travel distance vertical, hanging L_{vh} max.	40.0 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.	6.0 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

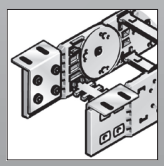
Standard material	Polyamide (PA) black
Service temperature	-30.0 – 120.0 °C (-76 to 176 °F)
Gliding friction factor	0.3
Static friction factor	0.45
Fire classification	UL 94 HB

Other material properties on request.

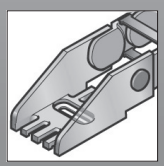
SHELVING SYSTEM

TR separator

CHAIN BRACKET



Chain bracket angle

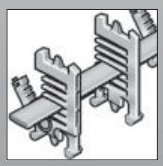


Chain bracket U-part

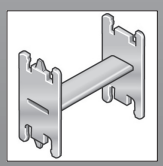
GUIDE CHANNELS

VAW steel galvanized / stainless steel

VAW aluminum



RS shelving system

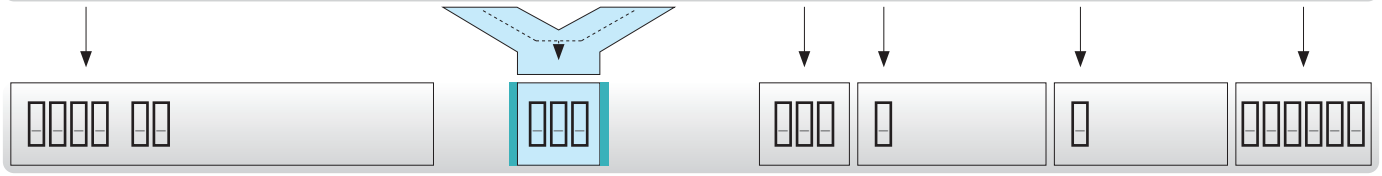


H-shaped shelving unit (RE)

ORDER KEY

Dimensions in mm [US inch]

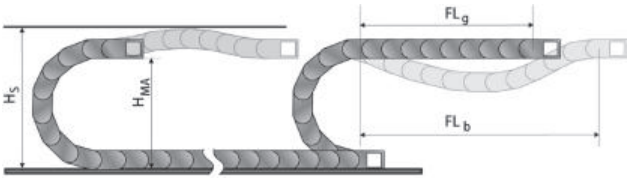
Type code	Variant	Inside width	Outside width	Inside width	Outside width	Radius	Crossbar variant	Material	Chain length
0300 02	Crossbar in outside bend Crossbar in inside bend Opens on inside bend	026 [1.02]	044 [1.73]			050 [1.97]	0 Plastic, full-ridged with bias	0 Polyamide (PA): standard (PA/black)	
		037 [1.46]	055 [2.17]						
		056 [2.20]	074 [2.91]			070 [2.76]	1 Plastic, full-ridged without bias	1 UL94 / V0 (PA/oxide red) (upon request)	
		062 [2.44]	080 [3.15]						
		076 [2.99]	094 [3.70]			095 [3.74]		5 Polypropylene (PP/blue) (upon request)	
		087 [3.43]	105 [4.13]						
		101 [3.98]	119 [4.69]			120 [4.72]		7 ESD (PA/light gray) (upon request)	
		125 [4.92]	143 [5.63]						
						150 [5.91]		9 Special version (upon request)	
						200 [7.87]			
						300 [11.81]			



ORDERING EXAMPLE: 0300 02 026 050 0 0 1215

Crossbar in outside bend, crossbar in inside bend, can be opened from inside bend
Inside width 26 mm; radius 50 mm
Plastic bridge, full-ridged with bias, material black-colored polyamide
Chain length 1215 mm (27 links)

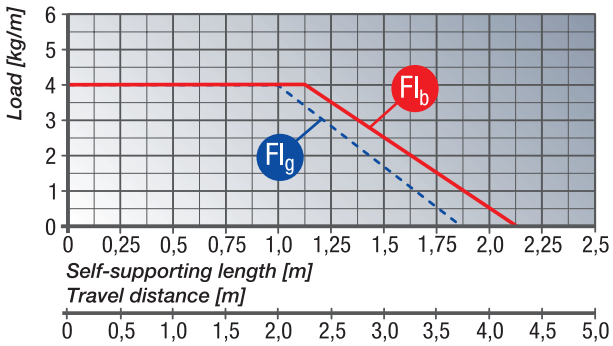
SELF-SUPPORTING LENGTH



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

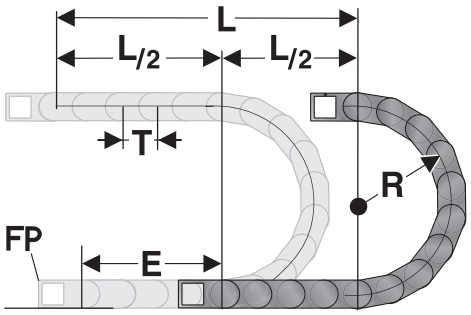
LOAD DIAGRAM FOR SELF-SUPPORTING APPLICATIONS



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.

DETERMINING THE CHAIN LENGTH

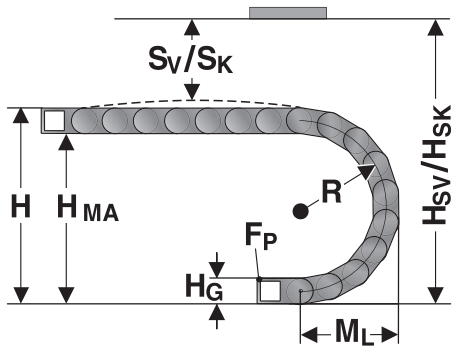


The fixed point of the energy chain should be connected in the middle of the travel distance.
This arrangement gives the shortest connection between the fixed point and the moving bracket and thus the most efficient chain length.

Chain length calculation = L/2 + π * R + 2 * T + E
≈ 1 m chain = 22 links, 45.0 mm each

E = Distance between entry point and middle of travel distance
L = Travel distance
R = Radius
T = Grid 45.0 mm

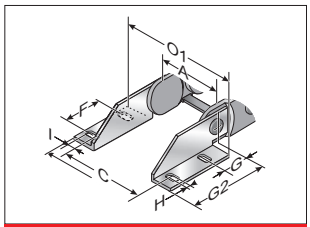
INSTALLATION DIMENSIONS

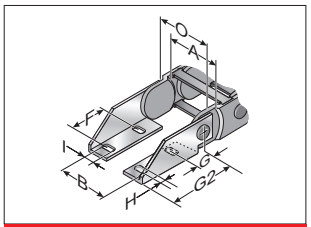


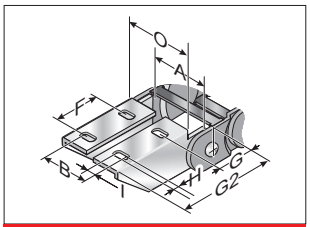
The moving end chain bracket is to be screw fixed at height H_{MA} for the respective radius.
Concerning the installed dimensions, you must take into account whether the chain links are equipped with or without bias.
For chain links without bias, the "installed height without bias H_{SK}" has to be taken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

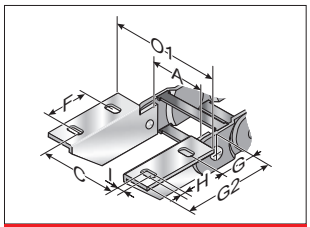
Radius R	50	70	95	120	150	200	300
Outside height of chain link (H_G)	35	35	35	35	35	35	35
Height of bend (H)	135	175	225	275	335	435	635
Height of moving end bracket (H_{MA})	100	140	190	240	300	400	600
Safety margin with bias (S_V)	45	45	45	45	45	45	45
Installation height with bias (H_{SV})	180	220	270	320	380	480	680
Safety margin without bias (S_K)	10	10	10	10	10	10	10
Installation height without bias(H_{SK})	145	185	235	285	345	445	645
Arc projection (M_L)	113	133	158	183	213	263	363

KA 3000 ANGLE CHAIN BRACKET


KA 300... (Outside down)


KA 300... (Inside down)

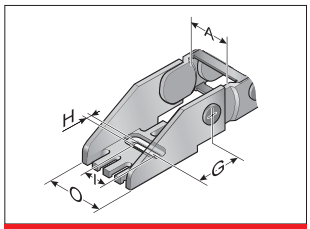

KA 300... (Inside up)


KA 300... (Outside up)

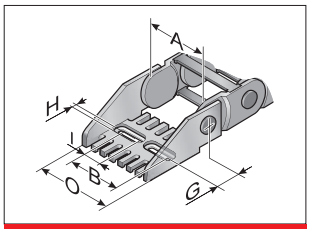
The chain bracket can be supplied either in galvanized sheet steel or stainless steel. To secure an cable drag chain, you will need two angle brackets (left and right) with drilled holes and two angle brackets (left and right) with bolts. The order numbers given below each comprise a left and right angle bracket.

Type	Order No.	Material	Inside width A mm	B mm	C mm	F mm	G mm	G2 mm	HØ mm	I mm	Outside width KA O mm	Outside width KA O1 mm
KA 3008 female	0300000052	Sheet steel	26.0 – 125.0	A-8.5	A+22.5	25.0	21.0	58.0	6.5	4.5	A+18.0	A+40.0
KA 3008 male	0300000053	Sheet steel	26.0 – 125.0	A-3.5	A+31.0	25.0	21.0	58.0	6.5	4.5	A+9.0	A+40.0
KA 3009 female	0300000054	Stainless steel 1.4301	26.0 – 125.0	A-8.5	A+22.5	25.0	21.0	58.0	6.5	4.5	A+18.0	A+40.0
KA 3009 male	0300000055	Stainless steel 1.4301	26.0 – 125.0	A-3.5	A+31.0	25.0	21.0	58.0	6.5	4.5	A+9.0	A+40.0

KA 3000 U-PART CHAIN BRACKET



KA/Z 3001

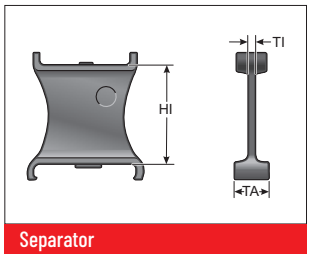


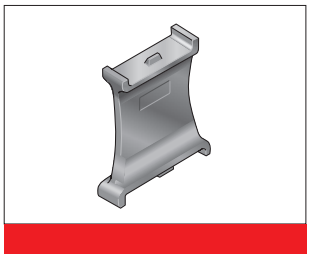
KA/Z 3002 – 3006

The chain bracket, type KA/Z 3001 – 3006, is a plastic part with extrusion-coated metal insert. The bracket is precisely adjusted to the respective chain width and only needs to be snapped in at the chain link. Please order one male and one female end bracket for each chain. The brackets should be fastened with M6 screws. The cables or conduits may be fastened with cable ties at the integrated strain relief of the chain bracket.

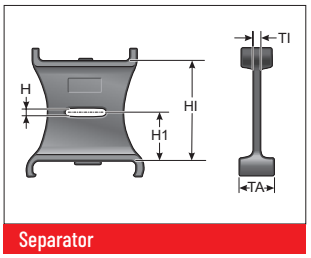
Type	Order No.	Material	Inside width A mm	B mm	G mm	G1 mm	HØ mm	I mm	Outside width KA O mm
KA/Z 3001 Female end	030000008000	Plastic with metal inserts	26.0		31.5	57.0	6.5	18.5	A+18.0
KA/Z 3001 Male end	030000008100	Plastic with metal inserts	26.0		31.5	57.0	6.5	18.5	A+18.0
KA/Z 3002 Female end	030000008200	Plastic with metal inserts	37.0	A-7,0	31.5	57.0	6.5	7.5	A+18.0
KA/Z 3002 Male end	030000008300	Plastic with metal inserts	37.0	A-7,0	31.5	57.0	6.5	7.5	A+18.0
KA/Z 3002.5 Female end	030000007600	Plastic with metal inserts	56.0	A-8,0	31.5	57.0	6.5	7.5	A+18.0
KA/Z 3002.5 Male end	030000007700	Plastic with metal inserts	56.0	A-8,0	31.5	57.0	6.5	7.5	A+18.0
KA/Z 3003 Female end	030000008400	Plastic with metal inserts	62.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3003 Male end	030000008500	Plastic with metal inserts	62.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3003.5 Female end	030000007800	Plastic with metal inserts	76.0	A-8,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3003.5 Male end	030000007900	Plastic with metal inserts	76.0	A-8,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3004 Female end	030000008600	Plastic with metal inserts	87.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3004 Male end	030000008700	Plastic with metal inserts	87.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3005 Female end	030000008800	Plastic with metal inserts	101.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3005 Male end	030000008900	Plastic with metal inserts	101.0	A-7,0	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3006 Female end	030000009300	Plastic with metal inserts	125.0	A-6,5	31.5	57.0	6.5	18.5	A+18.0
KA/Z 3006 Male end	030000009400	Plastic with metal inserts	125.0	A-6,5	31.5	57.0	6.5	18.5	A+18.0

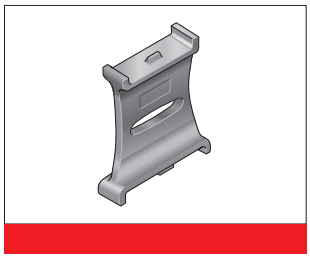
TR 3000 SEPARATOR





Separator



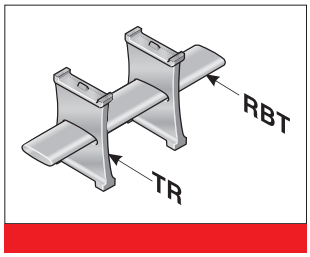


Separator

We recommend that separators be used if multiple round cables or conduits with differing diameters are to be installed. The lockable (unmovable) separator must be used for energy chains that need to be side mounted.

Type	Order No.	Description	Version	TI mm	TA mm	H mm	H1 mm	H2 mm	HI mm
TR 3000	030000009000	Separator	movable	1.5	13.0	2.5	12.9	12.9	26.0
TR 3001	030000009200	Separator	lockable	1.5	13.0	2.5	12.9	12.9	26.0
TR 3002	030000009500	Separator, closed	lockable	1.5	13.0				26.0

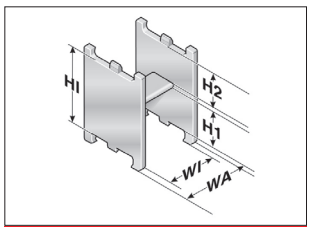
SHELVING SYSTEM MP 3000



The shelf must be used with a minimum of two separators to create a shelving system. The additional levels prevent cables from criss-crossing and minimize the friction between them. The shelves are matched to the available chain widths.

Type	Order No.	Description	Width mm	Grid mm
RBT 037	100000003700	Shelf	37.0	3.0
RBT 062	100000006200	Shelf	62.0	3.0
RBT 086	100000008600	Shelf	86.0	3.0
RBT 101	100000010100	Shelf	101.0	3.0
RBT 125	100000012500	Shelf	125.0	3.0

RE 26 H-SHAPED SHELF UNIT



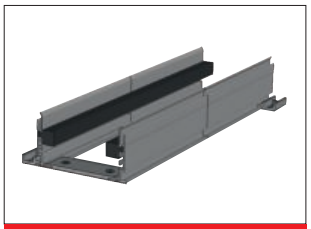
Shelf unit

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 26/15	100000261510	H-shaped shelf unit	17.5	12.5	13.7	9.6	26.0
RE 26/27	100000262710	H-shaped shelf unit	29.5	24.5	13.7	9.6	26.0
RE 26/51	100000265110	H-shaped shelf unit	53.5	48.5	13.7	9.6	26.0

VAW GUIDE CHANNEL (ALUMINUM / STAINLESS STEEL)

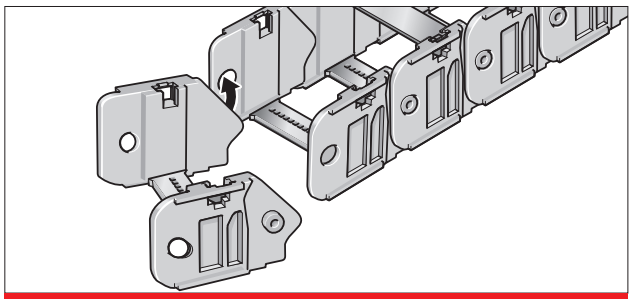
VAW steel galvanized/stainless steel



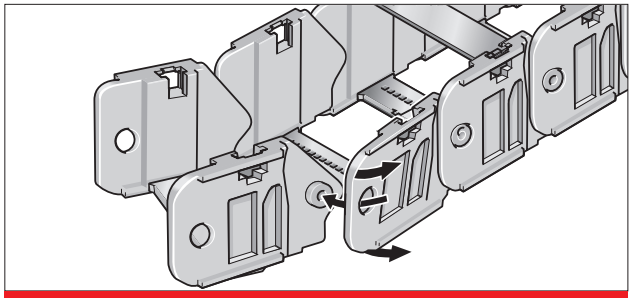
VAW aluminum

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.

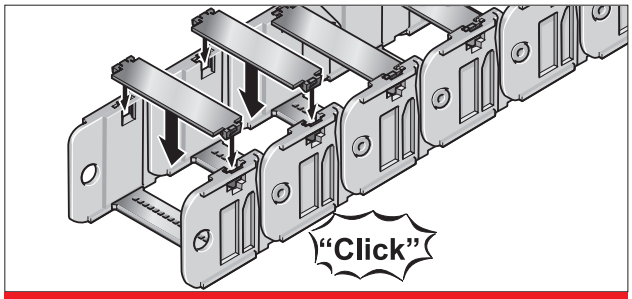
ASSEMBLY



Step 1

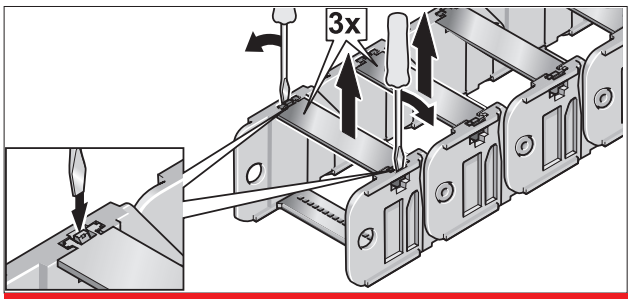


Step 2

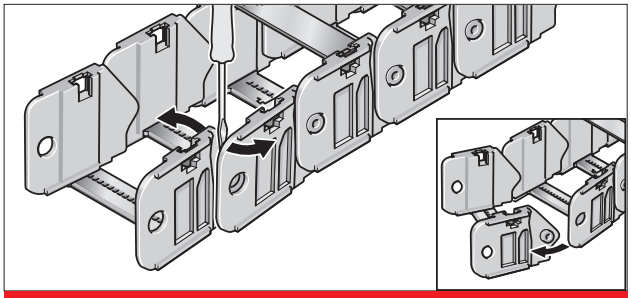


Step 3

DISASSEMBLY



Step 1



Step 2

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