



# Cable drag chain systems



2004

# Contents

## Introduction

Perfect solutions . . .	6
Advantages	8
Overview: internal width/internal height	18
Overview: features	20
Overview: models/travel distances	22
Overview: assembling the chain links	24
Technical data: open cable drag chains	26
Technical data: closed cable drag chains	36
Information about ESD cable drag chains	38
Choosing a cable drag chain	40
Laying cables and conduits	42
Mounting options	44
Inquiry form	46

## Open cable drag chain systems

MP 10.1	49
MP 14	55
MP 15	61
MP 18.1	67
MP 18.2	73
MP 2000	79
MP 3000	85
MP 26	95
MP 32	103
MP 35	113
MP 44	123
MP 42	131
MP 41	141
MP 41.2	153
MP 52.1	165
MP 52.2	177
MP 66	189
MP 62.1	197
MP 62.2	209
MP 72	221
MP 82.2	233
MP 102	243

**QUALITY-MANAGEMENT**

We are certified



**Internet:** <http://www.murrplastik.de>  
**e-mail:** [info@murrplastik.de](mailto:info@murrplastik.de)



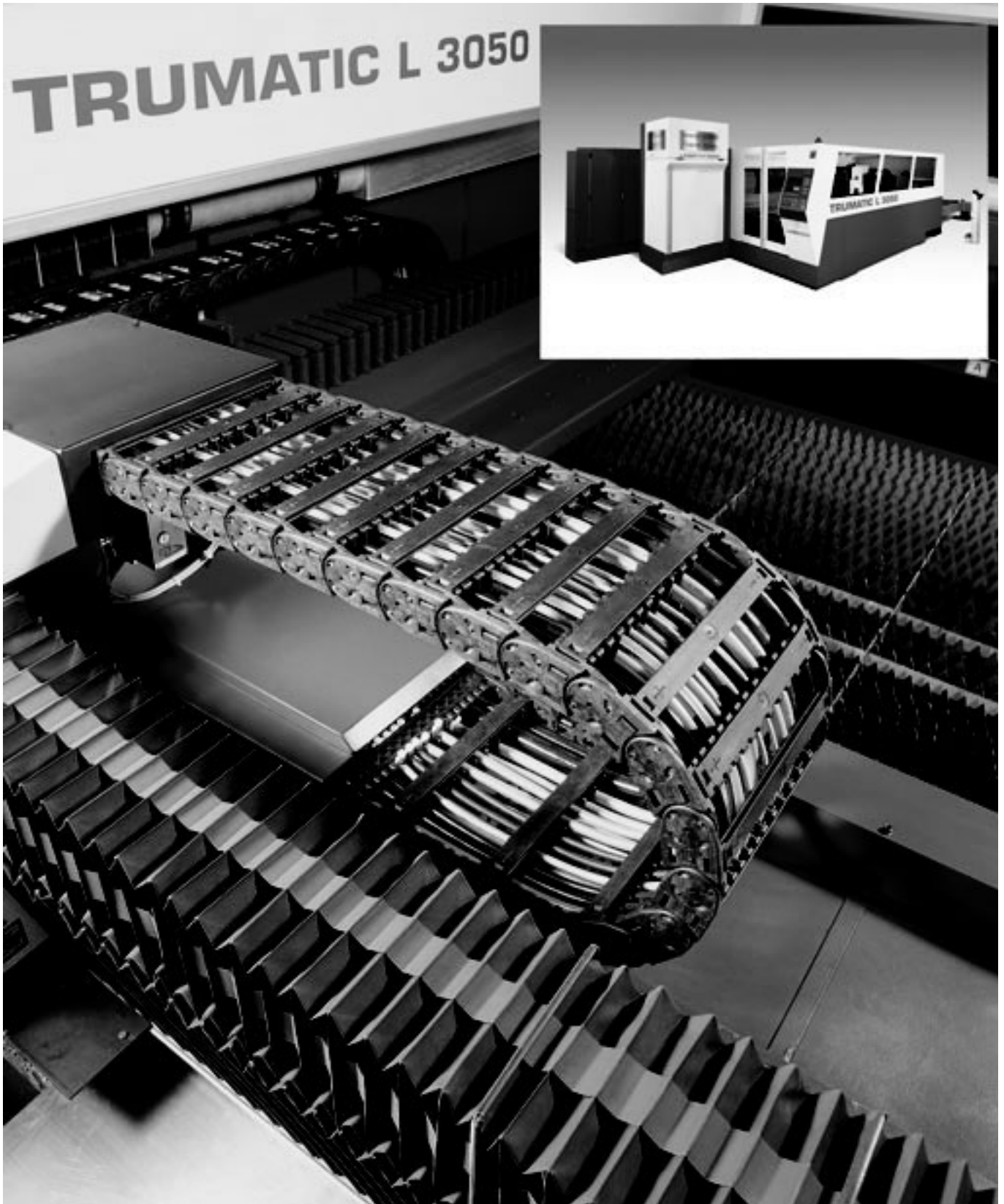
# Contents

## Enclosed cable drag chain systems

MP 25 G	253
MP 36 G	259
MP 43 G	267
MP 65 G	275

## Appendix

VAW variable guide channel systems	283
ZL strain relief system	305
Material Data	313
Technical support and service	319
Product range	320
Sales agencies	322





## Perfect solutions start with specific questions



murrplastik Systemtechnik has been supplying cable drag chains for many years. The constant exchange of information with our customers helps us to keep developing new innovative products and to keep expanding our product range.

This close relationship with the customer has enabled us to develop cable drag chains that are of great benefit to our customers. Our complete range of cable drag chains includes: Cable drag chains, guide channels, cables, strain relief plates and fabrication.

Our chains have demonstrated their quality under the most extreme permanent loads and environmental influences.

In consultation with our customers, our experts select the right solution from our varied and extensive range of systems to suit each customer's



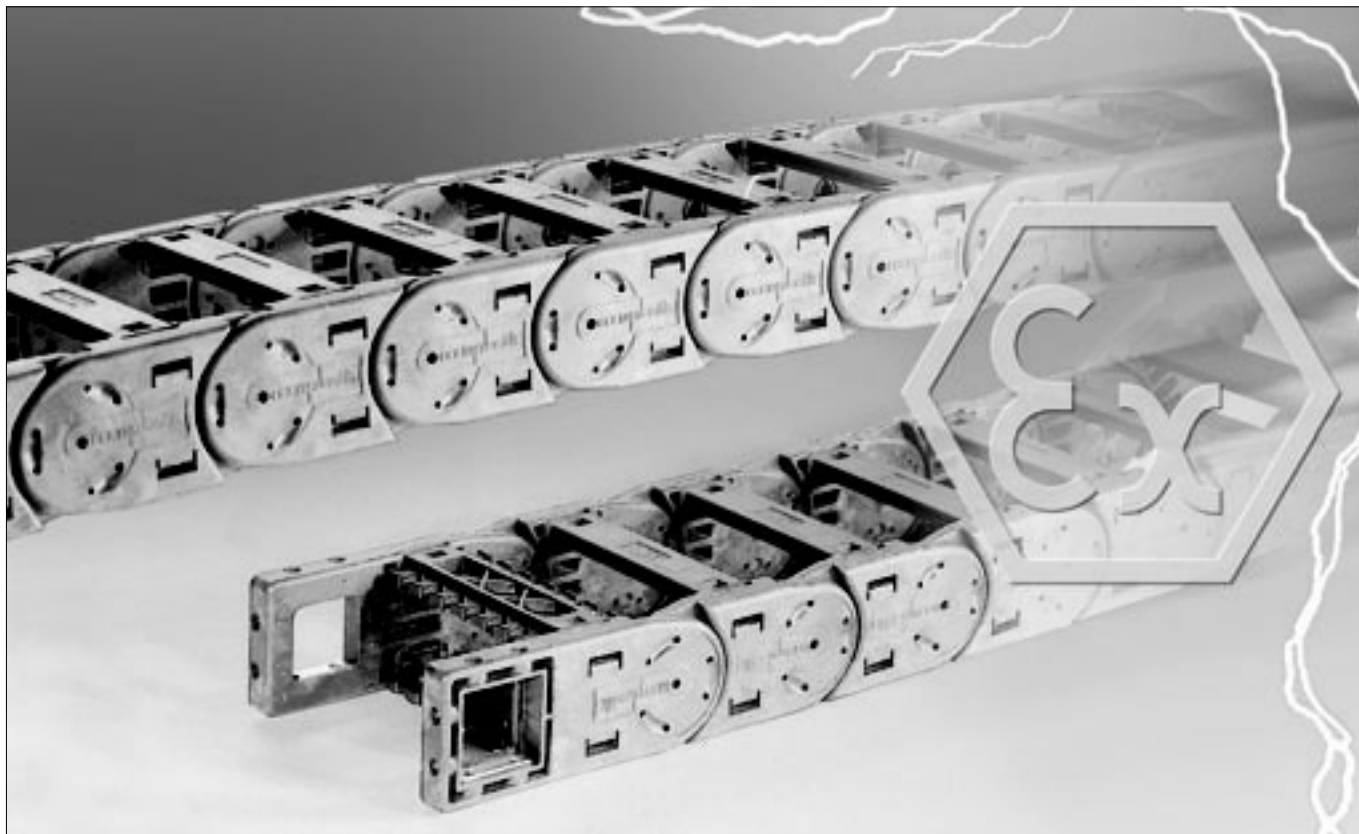
individual requirements. As such, we have developed a procedure whereby we can determine customer requirements quickly and precisely and find the right solution for the customer's specific application.

## Philosophy of cable drag chains

murrplastik Systemtechnik supplies cable drag chain systems with optimum mechanical features and outstanding benefits for the customer in terms of application technology.



## Atex chains



## Safety conforming to ATEX CE EX II 2GD

### Safety in motion

ESD cable drag chains have a high discharge capability and are used in potentially explosive areas and clean rooms. All mechanical parts have been subject to Atex standards since July 2003.

Our cable drag chains are entitled to carry the following labelling:  
**CE EX II 2GD**

The CE means that murrplastik has tested its chains as pieces of equipment. This has the following benefits: It is no longer necessary to have the chains accepted by an expert. If a chain needs replacing, work can be resumed immediately if the chain in question is the murrplastik CE chain. Considerable time and expense is saved by not having to go through the approval procedure.

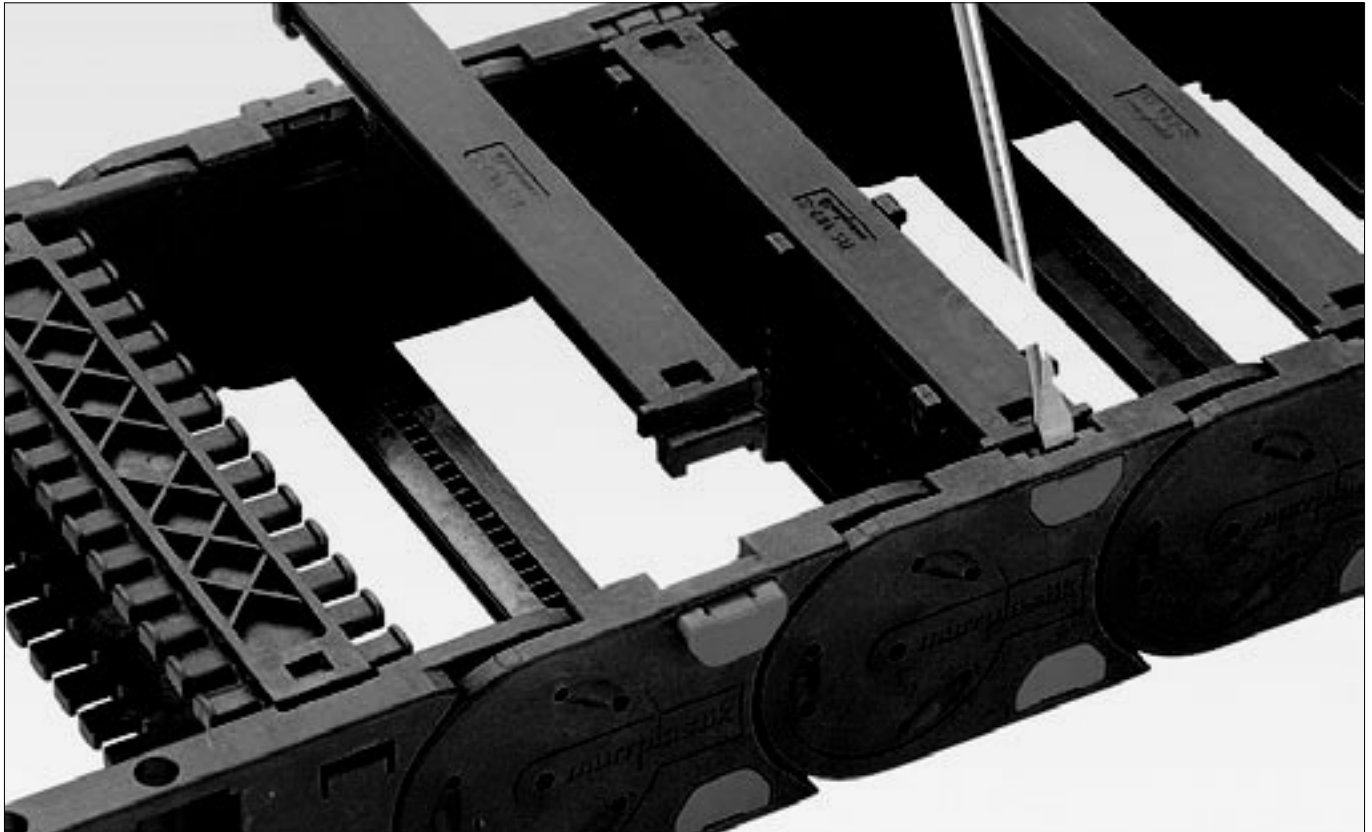
With our CE-certified chains there is no danger of being the weakest link!



### Advantages:

- Full ATEX certification  
CE EX II 2GD
- murrplastik assumes liability
- Simple to exchange Certification still stands
- For explosive areas 1, 2, 21, 22
- No need for additional acceptance by expert

## Click lock



## Click and go

### Quick and easy

The frame bridges can be fitted and removed quickly and with very little effort.

A slight turn of the screwdriver between the side link and the frame bridge and the click lock is open. Retrofitting a cable in the chain is also a quick and simple task.

Assembly is even simpler. Position the frame bridge in the side links and lock the click lock by hand.

With other chains retrofitting is virtually impossible. With the click lock it is child's play.

Fitting and removal are rarely quicker or simpler without compromising stability.

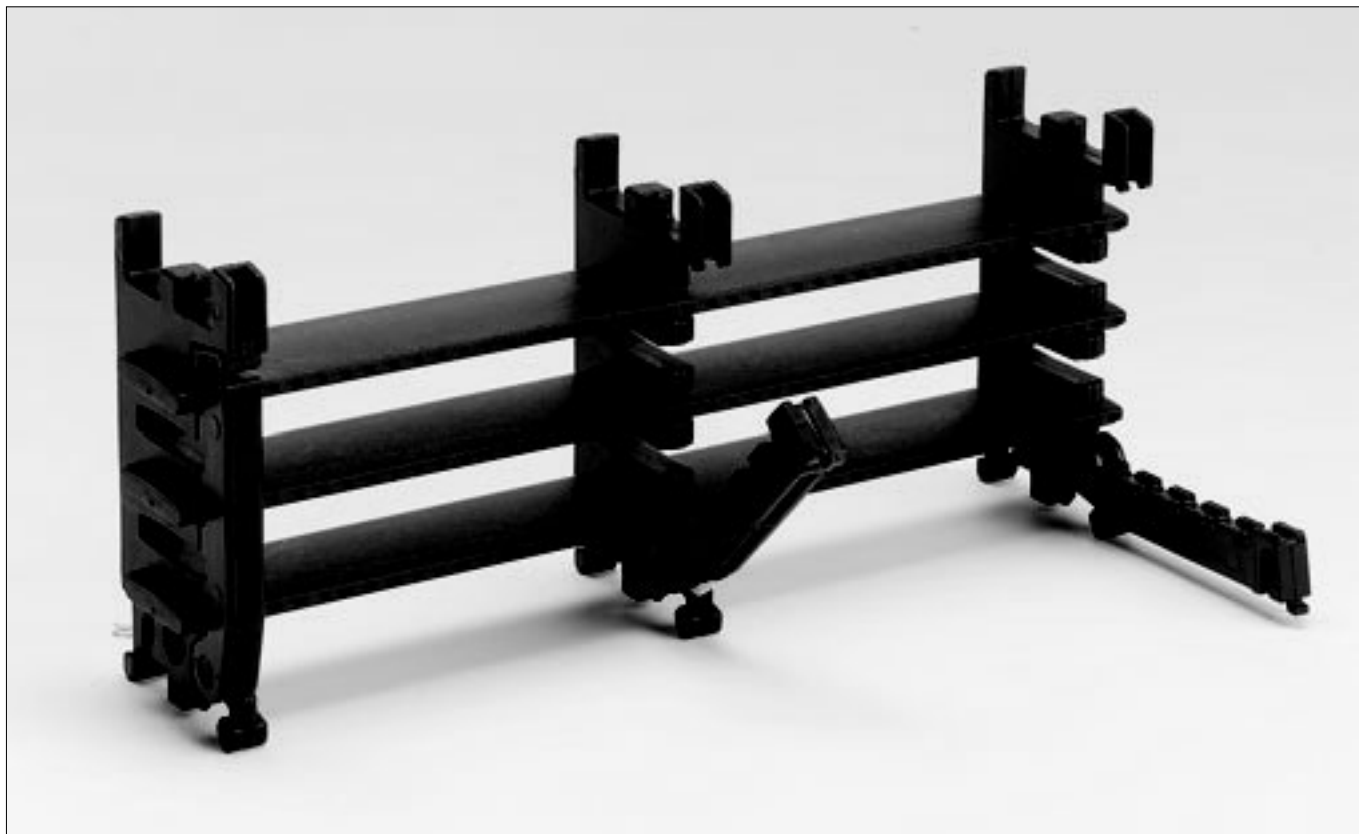


### Advantages:

- Rapid assembly:  
Click and go!
- Tool-free
- Easy assembly
- Incredibly simple to retrofit cables



## Foldable shelf system



## Extremely versatile

### Flexibility is the word

The possibilities are endless with the shelf system.

It is ridiculously easy to find the right configuration for each individual requirement. The combination of the click lock and the foldable shelf system even allows modifications to be made when installed.

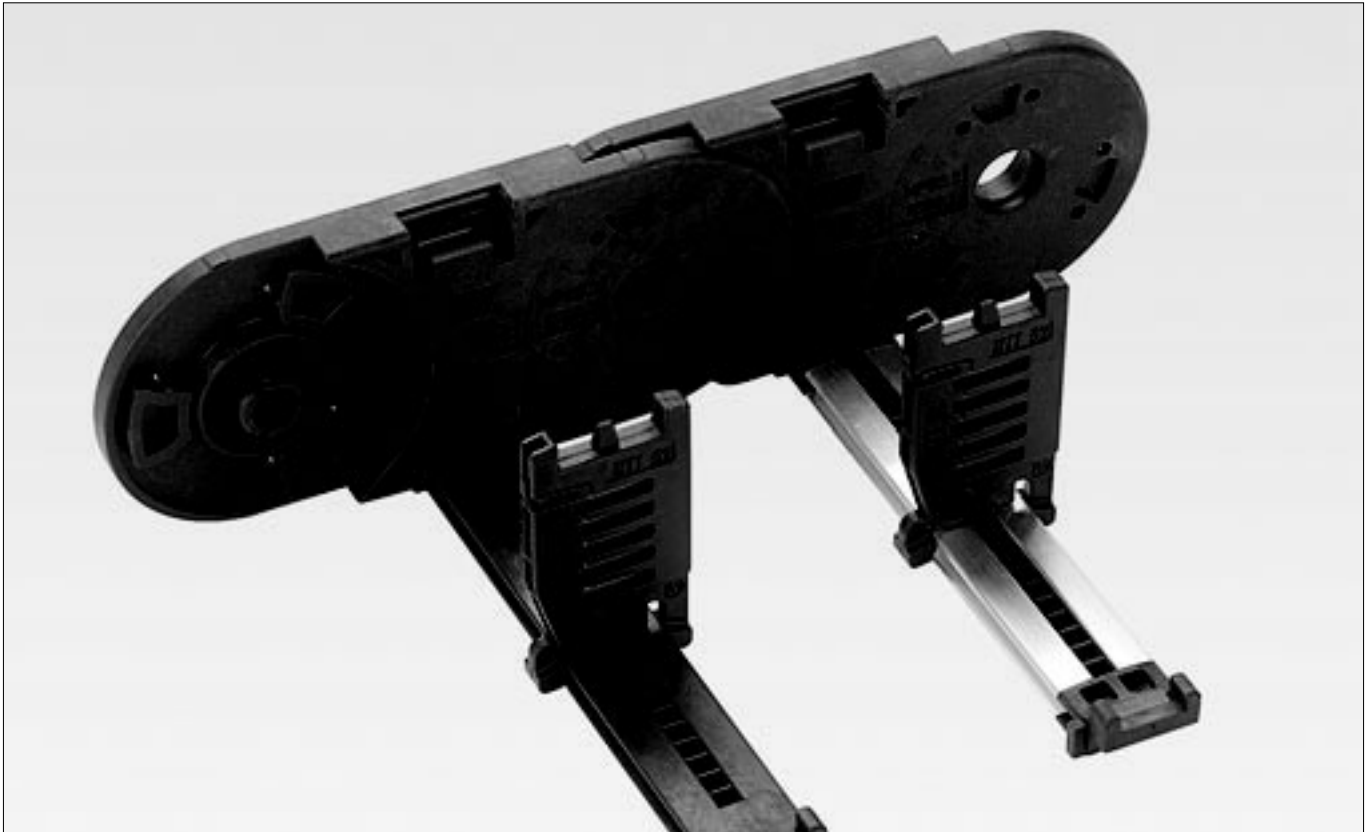
The shelf separators lock firmly into the frame ridges and, once in place, they cannot slip. No matter what type of installation – horizontal, backwards, etc. – the cables stay in the position that was originally intended. This means a long service life and no uneven wear to the chain.



### Advantages:

- Easy assembly
- Clip-action fastening separators  
Fixed position
- Rapid assembly
- Modifications possible  
when installed

## Variable frame ridges



## Variable fixed frame ridges

### Variable and yet fixed

Frame bridge come in two alternative versions: plastic or aluminium. The plastic version is standard and comes in several widths.

The aluminium version can be supplied in any width. It is especially popular for applications requiring widths of over 550 mm.

The separators, both the plastic and the aluminium ones, lock into the frame ridge and are thus fixed in place. The separators remain in their original position regardless of the type of installation and any movements. The frame ridges and separators form a stable unit.

The murrplastik frame bridges are variable and yet flexible.

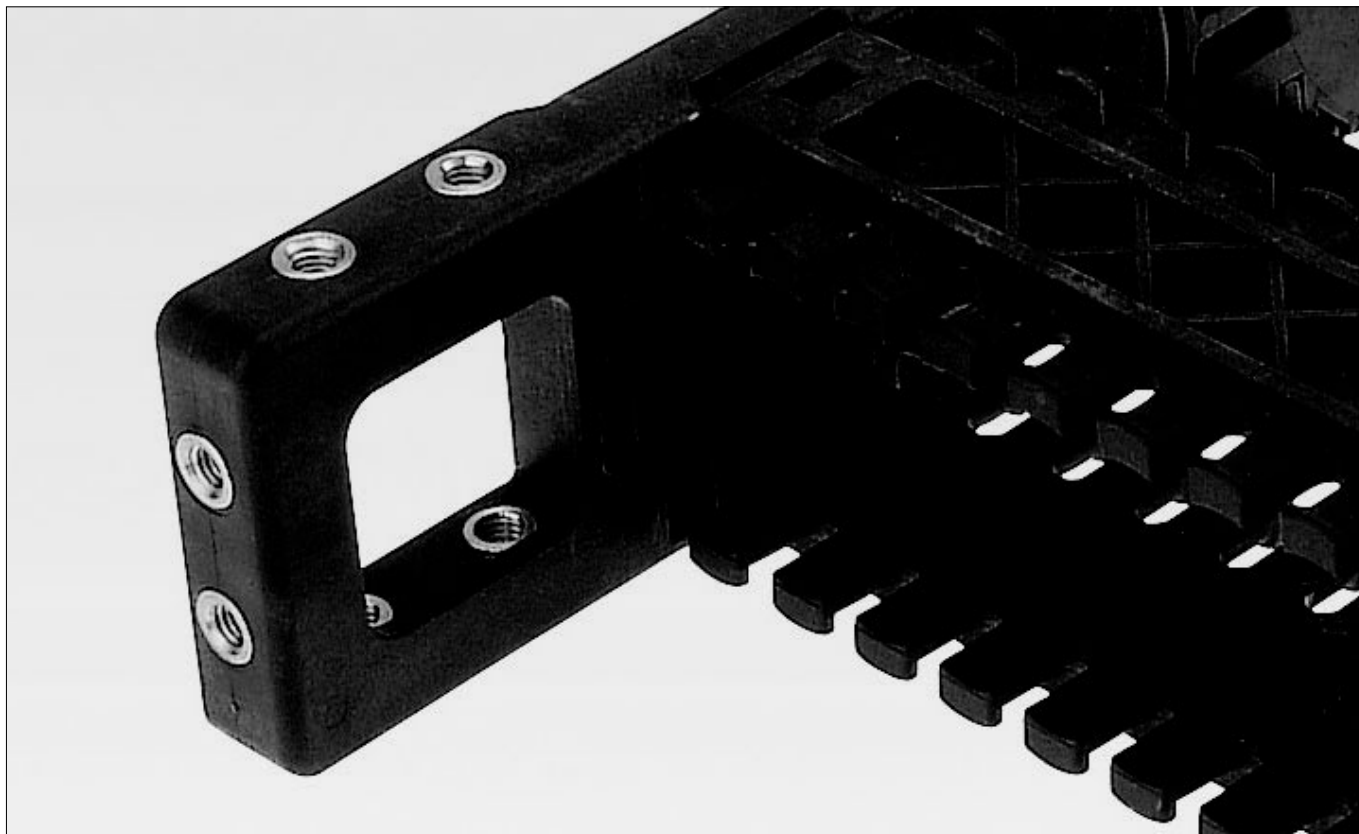


### Advantages:

- Flexible adjustment due to closely spaced lock tabs
- Fixed with lock tabs
- Variable length
- Extremely stable



## Chain bracket



## Best connections

### Quick and easy to assemble

Metal bushes are injected permanently into the plastic in the chain bracket. There are two types: a threaded bush and a normal bush. Both types of bush inhibit cold flow properties during screwing, thus effecting an extremely good fit. The threaded bush is screwed directly without a nut.

Safe and highly compact chain fastening with no fumbling.



### Advantages:

- No cold flow properties
- Fast
- Secure fastening
- Compact

## Integrated strain relief



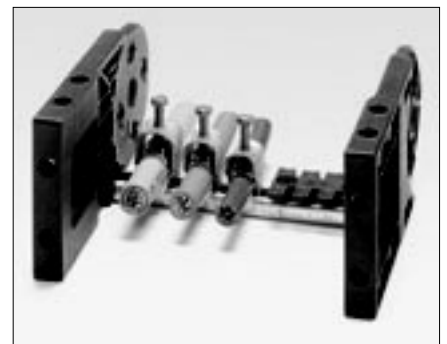
## Economic on time and space

### Simple and safe strain relief

No cumbersome special design for cable strain relief. Everything is quick and safe with the murrplastik cable drag chain system.

Special strain relief frame ridges are used on the chain bracket. The strain relief is effected by cable ties. The cable is fixed on the strain relief plate on two sides. It is impossible for the cable fixture to slip down because the cable tie is securely enclosed by the plate.

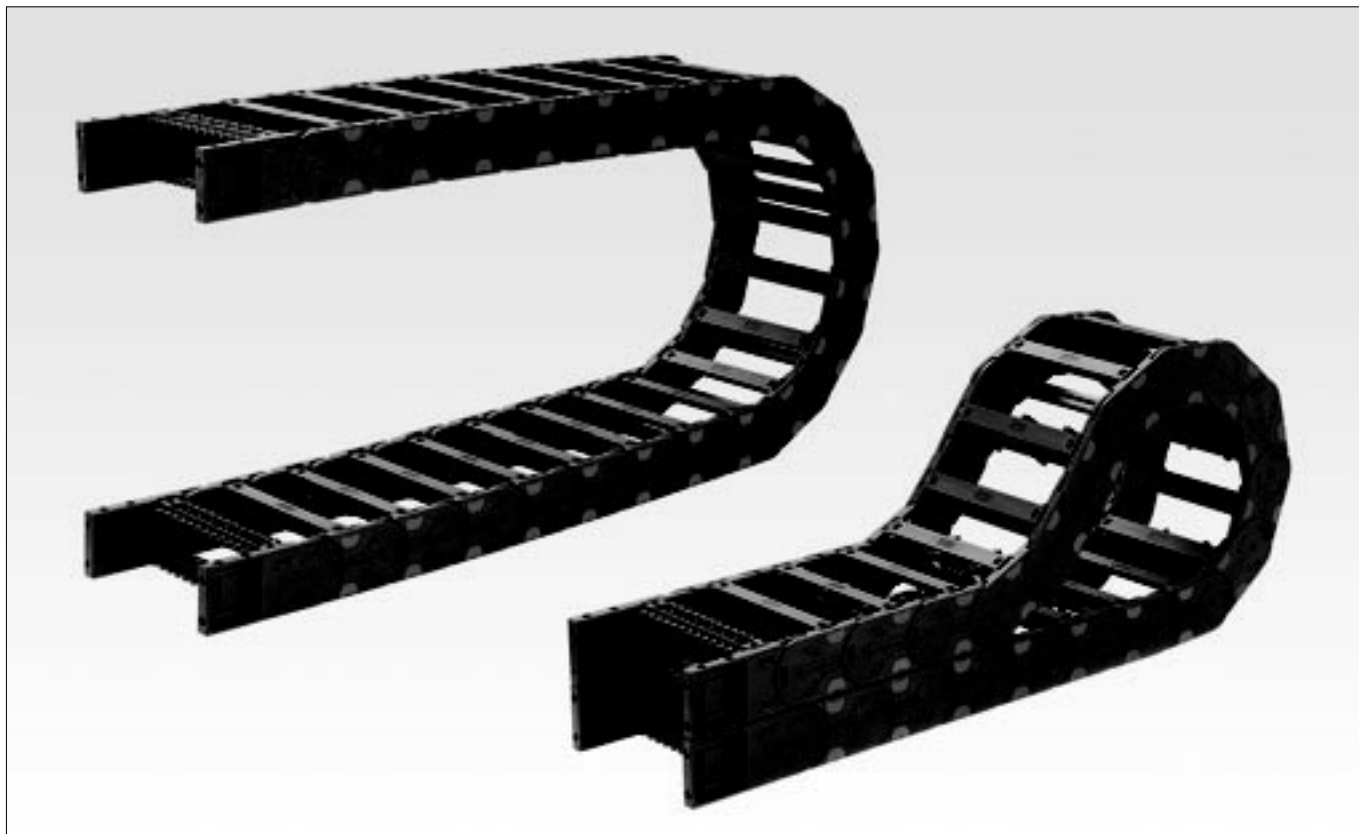
This integrated strain relief system is very quick to assemble and is extremely economical on space.



### Advantages:

- User-friendly
- Compact construction
- Economical
- Space-saving
- Safe strain relief

## Prestressing



## All types of stress

### Flexible with a range of options

Low installation height and narrow radii are becoming increasingly important.

These criteria are met by our back radii. This means a smaller radius and no restriction on the position of the chain bracket.

The design remains flexible and compact without compromising service life.



### Advantages:

- Installation space reduced (backwards)
- Self-supporting position increased (prestressing)
- Improved gliding (without prestressing)
- Service life prolonged

## High acceleration



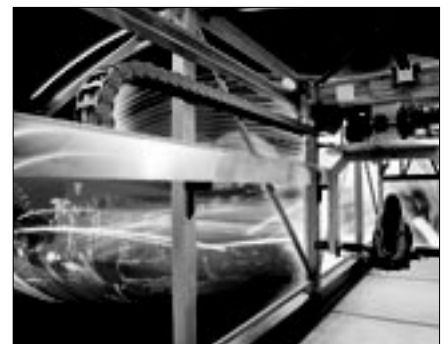
## Extreme stresses

### High acceleration - long service life

Are you looking for cable drag chains which can cope with extremely fast acceleration and yet still guarantee long service life? Then look no further than murrplastik Systemtechnik.

At the design stage the focus was on high acceleration rates and long service life. The cable drag chain should not pose any restriction in design.

Even in extreme cases we will be pleased to offer you chains which can withstand extreme stress along with expert advice on applications.



### Advantages:

- Extreme accelerations
- Long service life
- High continuous load

## VAW guide channels



## Guide channel system

### For maximum speed assembly

The **Variable AblegeWannen-System VAW** [Variable Guide Channel System] is tailored to the murrplastik cable drag chains. The aluminium guide channel system can be adapted quickly to various types and width of chain. Assembly is quick and easy.

The aluminium guide channel is secured with clamping pieces on the base.

No screwing or welding – simply press special plastic pieces into the groove provided and a perfectly aligned join is established between two sections.

This carefully designed guide channel system saves up to 70 % working time.



### Advantages:

- Easy and rapid assembly
- High quality
- Highly economical
- Tailored system

## Fabrication



## Fabrication

### Everything from one source

Reduce your labour costs and save time by taking advantage of our experience in chain systems gained over many years.

At the customer's request we assemble complete cable drag chains with cables. We handle the layout and assembly as well as ordering individual components. The customer is supplied with a ready-made assembly which only needs to be fitted.

Thanks to our experience of cable drag chains and cables acquired over many years, we can combine both elements in one system. This guarantees a long service life.



### Advantages:

- System guarantee
- Easy handling
- Saves time and hassle when ordering
- Reduced warehousing costs



## Overview: internal width/internal height

Inside chain  
heights in mm

10	MP 10	○	□	
14	MP 14		□	
14	MP 15	○	□	
18	MP 18	○	□	
20	MP 2000		□	
25	MP 25 G		■	
26	MP 26		□	
26	MP 3000	○	□	
32	MP 32		□	▲
34	MP 35		□	
36	MP 36 G		■	
38	MP 43 G		■	
40	MP 44		□	▲
42	MP 41	○	□	▲
42	MP 42		□	
52	MP 52	○	□	▲
60	MP 65 G		■	
60	MP 66		□	▲
62	MP 62	○	□	▲
72	MP 72		□	▲
82	MP 82	○	□	▲
102	MP 102		□	▲
ESD material ○				
open □				
closed ■				
variable width ▲				
variable width available				







546 518 496 468 446 418 396 368 346 343 318 296 293 268 246 243 225 220 218



**Inside chain widths in mm**



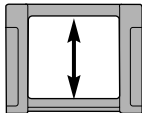
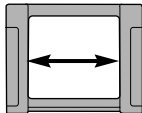
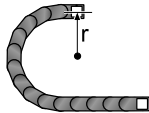
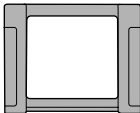
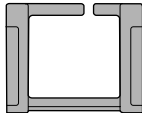
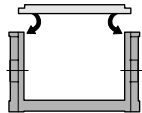
## Overview: features

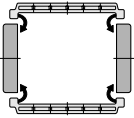
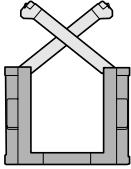
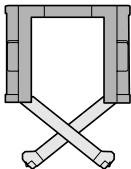
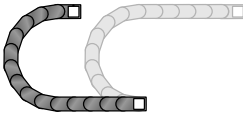
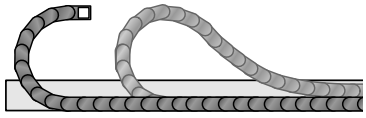
Type		Chain brackets										
												
		FL Flange connection for closed chains Stainless steel	FL Flange connection for closed chains Galvanised steel	KA Elbow fitting for chain bracket Galvanised steel	KA Elbow fitting for chain bracket Stainless steel	KA Steel U-shaped part U-shaped part for chain bracket Galvanised steel	KA Steel U-shaped part U-shaped part for chain bracket Stainless steel	KA-F Flexible chain bracket with stop with bush -FB or thread -FG	KAF Flexible chain bracket without stop with bush -FB or thread -FG	KA Standard chain bracket Plastic for chains with U-shaped parts	KA Chain bracket with elbow fitting, plas- tic/galvanised steel for sideband chains	KA Chain bracket with elbow fitting Plastic/stainless steel for sideband chains
										Standard	Standard	Stainless steel
10	MP 10											
14	MP 14											
14	MP 15											
18	MP 18.1											
18	MP 18.2											
20	MP 2000											
25	MP 25 G											
26	MP 26											
26	MP 3000											
32	MP 32											
34	MP 35											
36	MP 36 G											
38	MP 43 G											
40	MP 44						45 mm					
42	MP 41											
42	MP 41.2											
42	MP 42											
52	MP 52.1											
52	MP 52.2											
60	MP 65 G											
60	MP 66						45 mm					
62	MP 62.1											
62	MP 62.2											
72	MP 72											
82	MP 82.2											
102	MP 102											

[illegible]



## Overview: models/travel distances

Inside height Hi		Type	Inside widths Bi		Bend radius R		Opening variants/Bridge variants			
  mm							 Non-opening	 Easy mechanism	 Inside bend	
			from	to	from	to				
10	MP 10	6	41	18	58		■			
14	MP 14	16	40	25	75					
14	MP 15	16	40	25	75	■				
18	MP 18.1	18	70	28	78					
18	MP 18.2	18	70	28	78					
20	MP 2000	15	25	35	70					
25	MP 25 G	26	125	60	250					
26	MP 26	26	125	40	250					
26	MP 3000	26	101	50	300					
32	MP 32	45	546	80	250					
34	MP 35	62	150	70	300			■		
36	MP 36 G	62	125	80	200					
38	MP 43 G	62	182	125	250					
40	MP 44	45	182	90	250					
42	MP 41	45	546	75	300					
42	MP 41.2	45	546	75	300					
42	MP 42	70	225	75	300			■		
52	MP 52.1	45	546	100	350					
52	MP 52.2	45	546	100	350					
60	MP 65 G	84	144	200	350					
60	MP 66	45	182	150	350					
62	MP 62.1	118	518	150	500					
62	MP 62.2	118	518	150	500					
72	MP 72	118	518	150	500					
82	MP 82.2	118	518	150	500					
102	MP 102	118	518	250	500					

Opening variants/Bridge variants			Unsupported arrangement			Gliding arrangement		
								
Inside and outside bend	Inside bend opening	Outside bend opening	Travel distance $L_f$ m	Speed $v_f$ max m/s	Acceleration $a_f$ max m/s <sup>2</sup>	Travel distance $L_f$ m	Speed $v_f$ max m/s	Acceleration $a_f$ max m/s <sup>2</sup>
			1	4	2	10	2	2
		■	2	4	2	12	2	2
			2	4	2	12	2	2
		■	3	5	5	20	2	5
	■		3	5	5	-	-	-
	■		1.5	4	3	-	-	-
	■		3	6	15	40	3	10
	■		4	6	15	60	3	10
	■		4	6	15	60	3	10
■			4.5	20	30	100	5	25
			4.5	10	20	80	3	15
	■		4	10	20	60	3	15
■			5	15	20	50	5	15
■			5	15	20	50	5	15
■			7	20	30	120	5	25
■			7	20	30	120	5	25
			5	10	20	80	5	15
■			9	20	30	150	5	25
■			9	20	30	150	5	25
■			8	15	25	60	5	15
■			8	15	25	80	5	15
■			10	20	40	180	5	25
■			10	20	40	180	5	25
■			10	20	40	200	5	25
■			11	20	40	250	5	25
■			12	20	40	300	5	25



## Overview: assembling the chain links

			Side links									
			PowerLine				HeavyLine					
			SG 32 Side link for both side runs	SG 41 Side link for both side runs	SG 52.1 Different side links per side run	SG 52.2 with click lock Different side links per side run	SG 62.1 Different side links per side run	SG 62.2 with click lock Different side links per side run	SG 72 Different side links per side run	SG 82.2 with click lock Different side links per side run	SG 102 Different side links per side run	
32	MP 32		■									
38	MP 43 G											
40	MP 44											
42	MP 41			■								
42	MP 41.2			■								
52	MP 52.1				■							
52	MP 52.2					■						
60	MP 65 G											
60	MP 66											
62	MP 62.1						■					
62	MP 62.2							■				
72	MP 72								■			
82	MP 82.2									■		
102	MP 102										■	

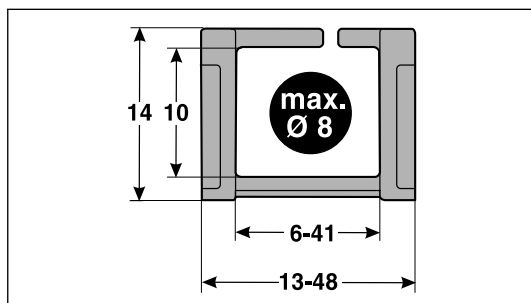
			Lock			Frame ridges						Cover	
MultiLine						Plastic			Aluminium			Plastic	
SG 44 with radial washer Side links for both side runs	SG 66 with radial washer Side links for both side runs		RS-5 lock, red	RS-6 lock, red	RS-8 lock, red	RS-5 Frame ridge in different lengths	RS-7 Frame ridge in different lengths	RL Frame ridge in different lengths	RS-Alu-5 Aluminium frame bridge in variable lengths	RS-Alu-7 Aluminium frame bridge in variable lengths	RS-Alu Aluminium frame bridge in variable lengths	A-43 Cover closed outside I-43 Cover closed inside	RA-65 Cover closed outside RI-65 Cover closed inside
						■			■				
	■											■	
	■							■			■		
						■			■				
			■			■			■				
			■			■			■				
		■											■
	■							■			■		
							■			■			
				■			■			■			
					■		■			■			
							■			■			
							■			■			
							■			■			
							■			■			



## Technical data: open cable drag chains

### MP 10.1

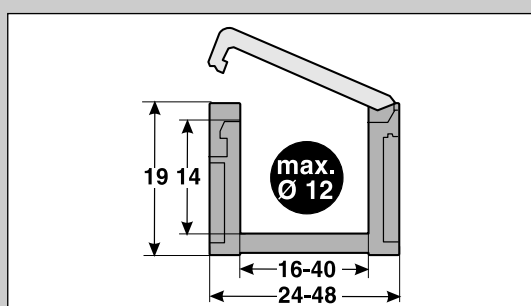
Page 49



- Inside height: 10 mm
- Inside widths: 6 - 41 mm
- Radii: 18 - 58 mm
- Pitch: 15 mm
- Links per metre: 67
- Loading side: Outside bend slotted
- ESD version available

### MP 14

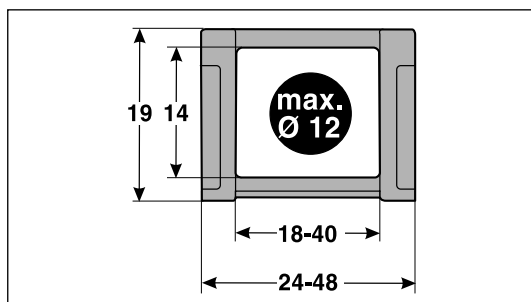
Page 55



- Inside height: 14 mm
- Inside widths: 16 - 40 mm
- Radii: 25 - 75 mm
- Pitch: 26 mm
- Links per metre: 38
- Loading side: Outside bend

### MP 15

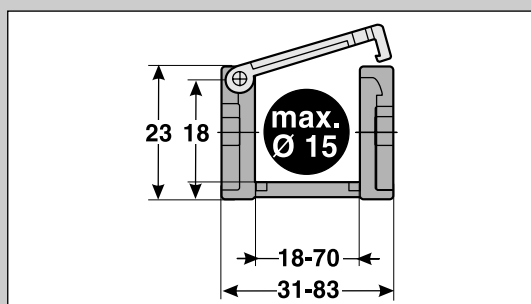
Page 61



- Inside height: 14 mm
- Inside widths: 16-40 mm
- Radii: 25 - 75 mm
- Pitch: 26 mm
- Links per metre: 38
- Loading side: Non-opening
- ESD version available

### MP 18.1

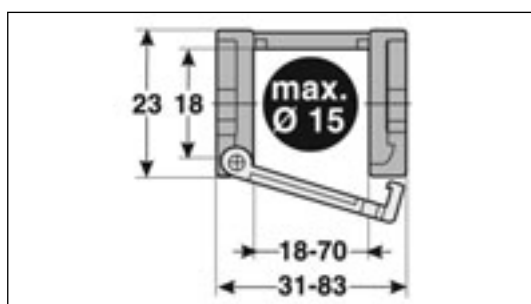
Page 67



- Inside height: 18 mm
- Inside widths: 18 - 70 mm
- Radii: 28 - 78 mm
- Pitch: 33 mm
- Links per metre: 30
- Loading side: Outside bend
- ESD version available

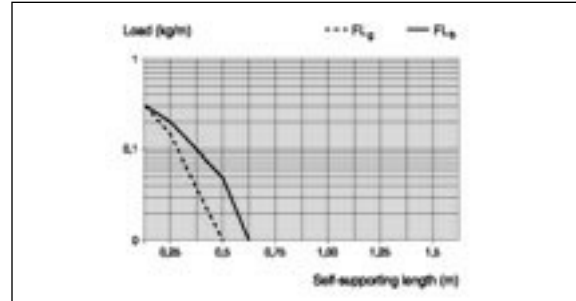
### MP 18.2

Page 73

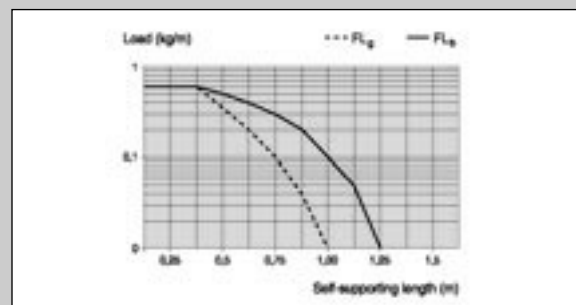


- Inside height: 18 mm
- Inside widths: 18 - 70 mm
- Radii: 28 - 78 mm
- Pitch: 33 mm
- Links per metre: 30
- Loading side: Inside bend
- ESD version available

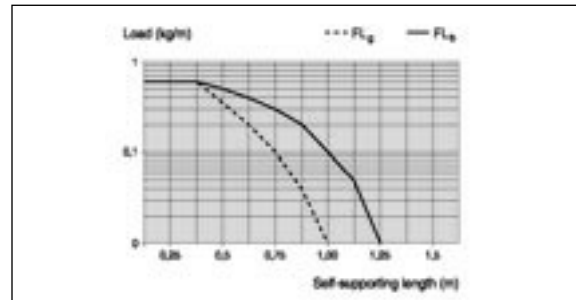
- Travel distance, gliding: 10 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 2 m
- Travel distance, vertical, upright: 1 m
- Rotated 90°, self-supporting: not recommended
- Speed, gliding: 2 m/s
- Speed, self-supported: 4 m/s
- Acceleration, gliding: 2 m/s<sup>2</sup>
- Acceleration, self-supported: 2 m/s<sup>2</sup>



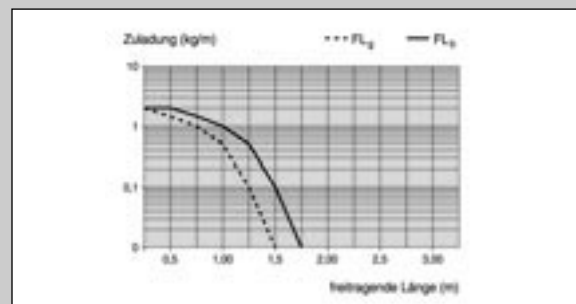
- Travel distance, gliding: 12 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 3 m
- Travel distance, vertical, upright: 2 m
- Rotated 90°, self-supporting: not recommended
- Speed, gliding: 2 m/s
- Speed, self-supported: 4 m/s
- Acceleration, gliding: 2 m/s<sup>2</sup>
- Acceleration, self-supported: 2 m/s<sup>2</sup>



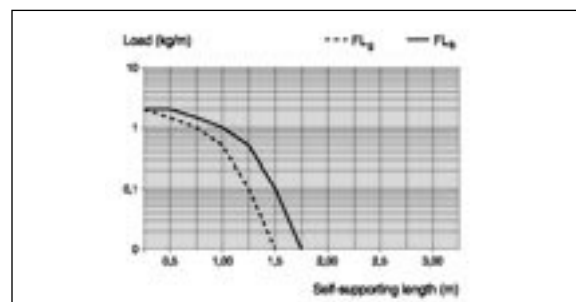
- Travel distance, gliding: 12 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 3 m
- Travel distance, vertical, upright: 2 m
- Rotated 90°, self-supporting: not recommended
- Speed, gliding: 2 m/s
- Speed, self-supported: 4 m/s
- Acceleration, gliding: 2 m/s<sup>2</sup>
- Acceleration, self-supported: 2 m/s<sup>2</sup>



- Travel distance, gliding: 20 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 8 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 0.5 m
- Speed, gliding: 2 m/s
- Speed, self-supported: 5 m/s
- Acceleration, gliding: 5 m/s<sup>2</sup>
- Acceleration, self-supported: 5 m/s<sup>2</sup>



- Travel distance, gliding: not recommended
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 8 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 0.5 m
- Speed, self-supported: 5 m/s
- Acceleration, self-supported: 5 m/s<sup>2</sup>

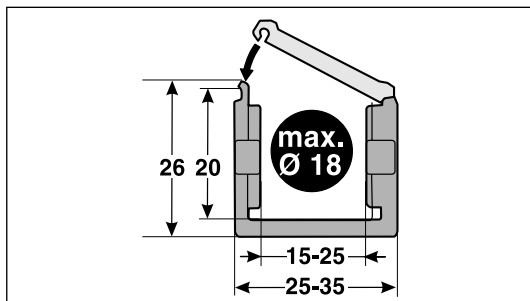




## Technical data: open cable drag chains

### MP 2000

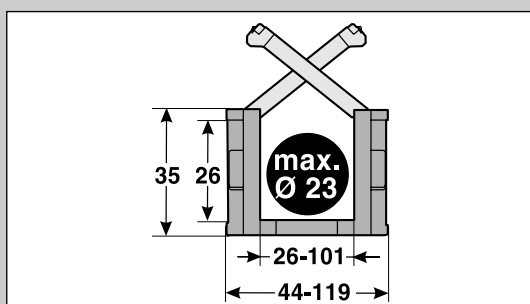
Page 79



- Inside height: 20 mm
- Inside widths: 15 - 25 mm
- Radii: 35 - 70 mm
- Pitch: 28 mm
- Links per metre: 35
- Loading side: Inside bend

### MP 3000

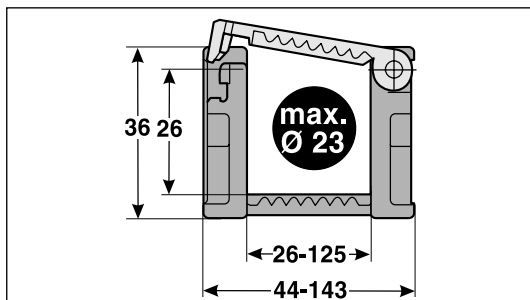
Page 85



- Inside height: 26 mm
- Inside widths: 26 - 101 mm
- Radii: 50 - 300 mm
- Pitch: 45 mm
- Links per metre: 22
- Loading side: Inside bend
- Shelf system available
- ESD version available

### MP 26

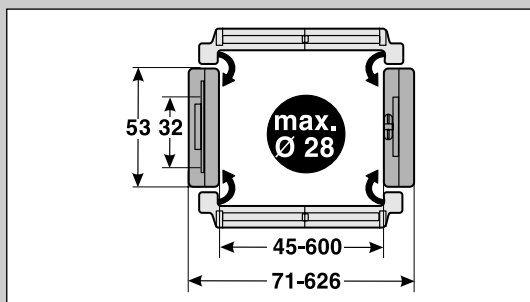
Page 95



- Inside height: 26 mm
- Inside widths: 26 - 125 mm
- Radii: 40 - 250 mm
- Pitch: 50 mm
- Links per metre: 20
- Loading side: Inside bend
- Shelf system available

### MP 32

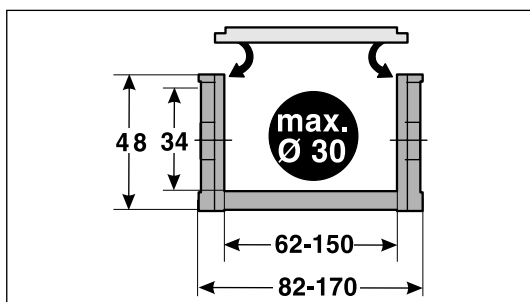
Page 103



- Inside height: 32 mm
- Inside widths: 45 - 600 mm
- Radii: 80 - 250 mm
- Pitch: 64.5 mm
- Links per metre: 16
- Loading side: Inside and outside bend
- Shelf system available

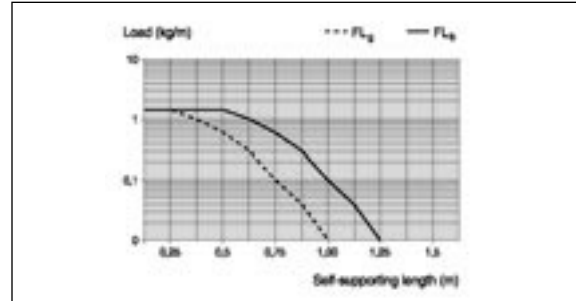
### MP 35

Page 113

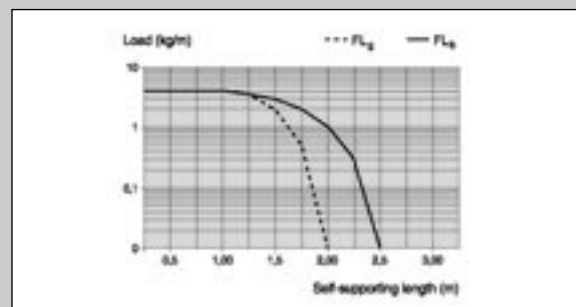


- Inside height: 34 mm
- Inside widths: 62 - 150 mm
- Radii: 70 - 300 mm
- Pitch: 58 mm
- Links per metre: 17
- Loading side: Inside bend
- Shelf system available

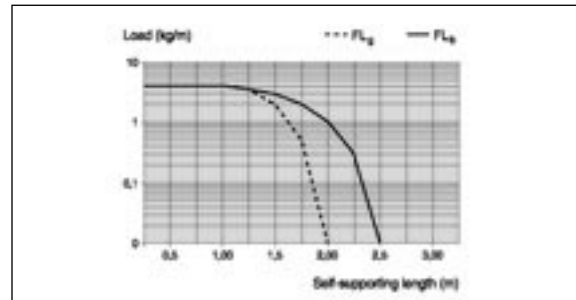
- Travel distance, gliding: not recommended
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 3 m
- Travel distance, vertical, upright: 1 m
- Speed, self-supported: 4 m/s
- Acceleration, self-supported: 3 m/s<sup>2</sup>



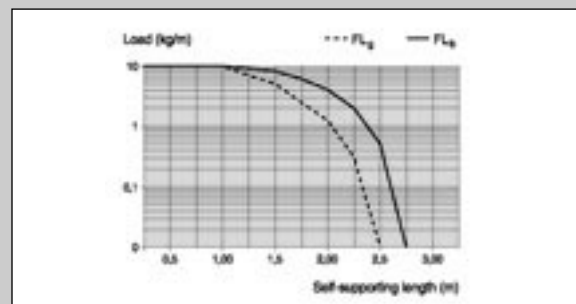
- Travel distance, gliding: 60 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 0.7 m
- Speed, gliding: 3 m/s
- Speed, self-supporting: 6 m/s
- Acceleration, gliding: 10 m/s<sup>2</sup>
- Acceleration, self-supporting: 15 m/s<sup>2</sup>



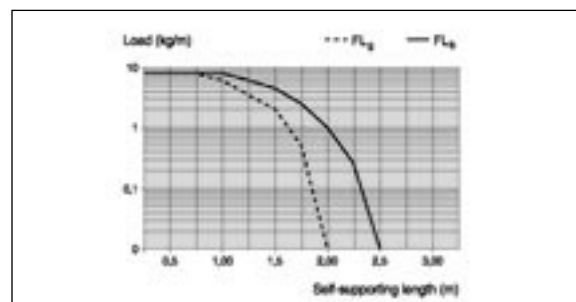
- Travel distance, gliding: 60 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 0.7 m
- Speed, gliding: 3 m/s
- Speed, self-supporting: 6 m/s
- Acceleration, gliding: 10 m/s<sup>2</sup>
- Acceleration, self-supporting: 15 m/s<sup>2</sup>



- Travel distance, gliding: 100 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 60 m
- Travel distance, vertical, upright: 5 m
- Rotated 90°, self-supporting: 2 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 30 m/s<sup>2</sup>



- Travel distance, gliding: 80 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 3 m/s
- Speed, self-supporting: 10 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 20 m/s<sup>2</sup>

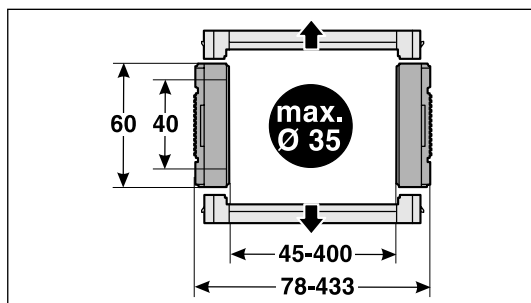




## Technical data: open cable drag chains

### MP 44

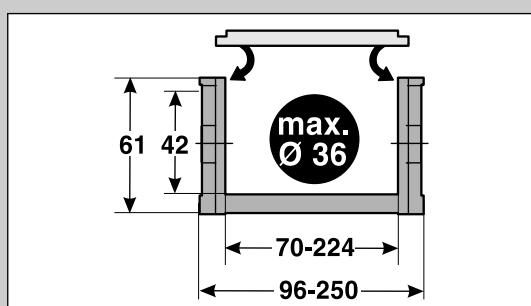
Page 123



- Inside height: 40 mm
- Inside widths: 45 - 400 mm
- Radii: 90 - 250 mm
- Pitch: 75.5 mm
- Links per metre: 13
- Loading side: Inside and outside bend
- Shelf system available

### MP 42

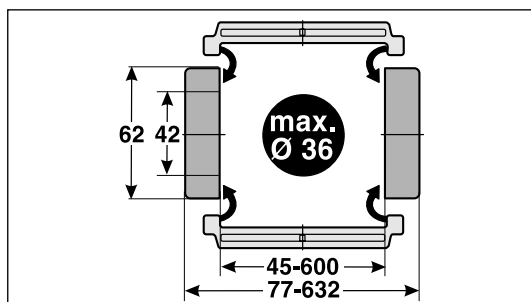
Page 131



- Inside height: 42 mm
- Inside widths: 70 - 225 mm
- Radii: 75 - 300 mm
- Pitch: 77 mm
- Links per metre: 13
- Loading side: Inside bend
- Shelf system available

### MP 41

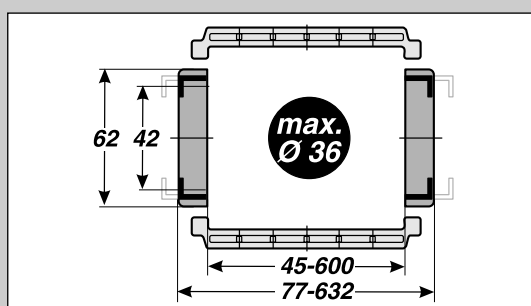
Page 141



- Inside height: 42 mm
- Inside widths: 45 - 600 mm
- Radii: 75 - 300 mm
- Pitch: 77 mm
- Links per metre: 13
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

### MP 41.2

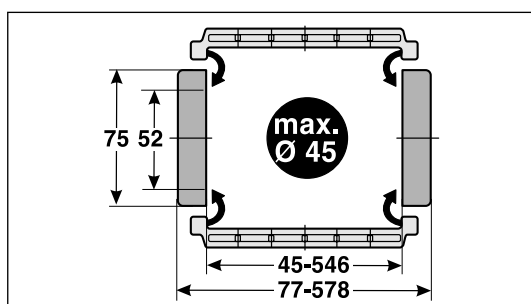
Page 153



- Inside height: 42 mm
- Inside widths: 45 - 600 mm
- Radii: 75 - 300 mm
- Pitch: 77 mm
- Links per metre: 13
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

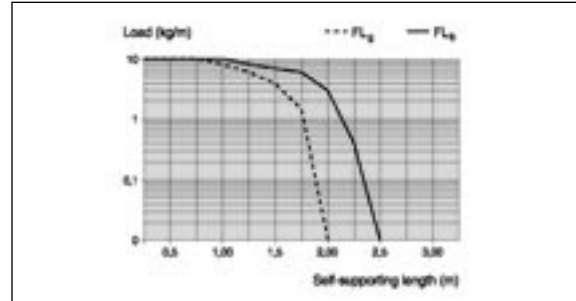
### MP 52.1

Page 165

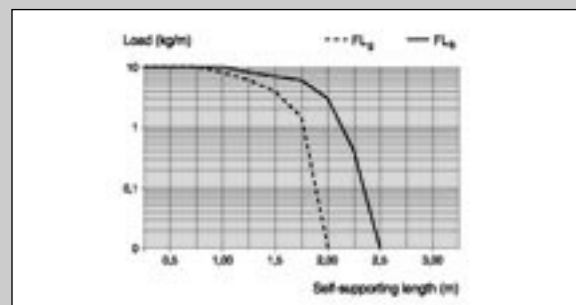


- Inside height: 52 mm
- Inside widths: 45 - 546 mm
- Radii: 100 - 350 mm
- Pitch: 91 mm
- Links per metre: 11
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

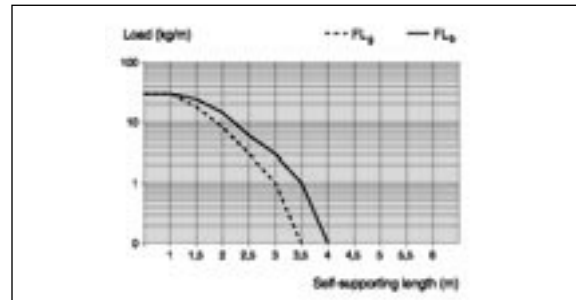
- Travel distance, gliding: 50 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 15 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 20 m/s<sup>2</sup>



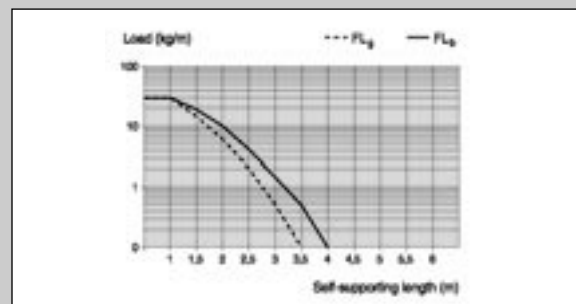
- Travel distance, gliding: 80 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 10 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 20 m/s<sup>2</sup>



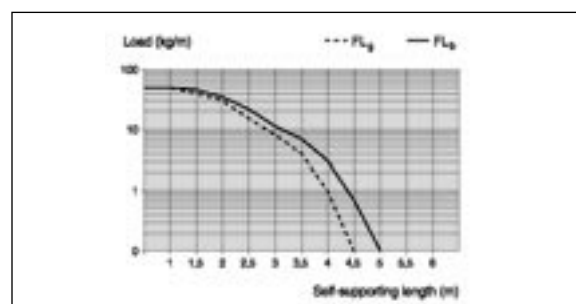
- Travel distance, gliding: 120 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 100 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 2 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 30 m/s<sup>2</sup>



- Travel distance, gliding: 120 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 100 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 30 m/s<sup>2</sup>



- Travel distance, gliding: 150 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 100 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 3 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 30 m/s<sup>2</sup>

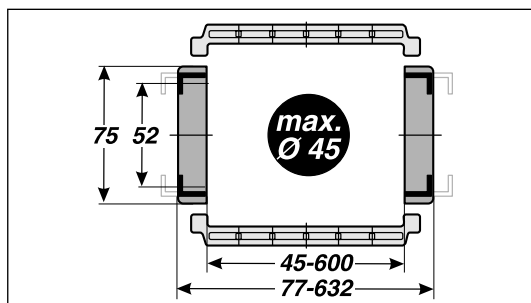




## Technical data: open cable drag chains

### MP 52.2

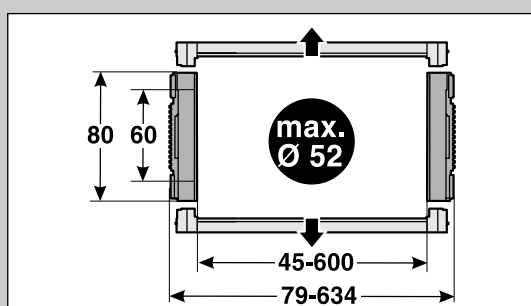
Page 177



- Inside height: 52 mm
- Inside widths: 45 - 600 mm
- Radii: 100 - 350 mm
- Pitch: 91 mm
- Links per metre: 11
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

### MP 66

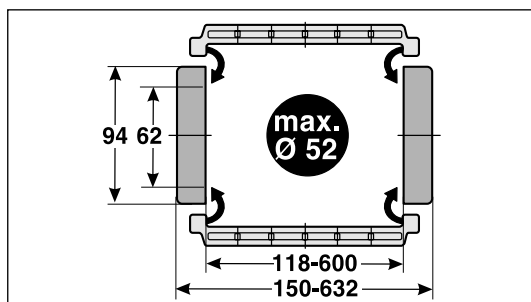
Page 189



- Inside height: 60 mm
- Inside widths: 45 - 600 mm
- Radii: 150 - 350 mm
- Pitch: 91.5 mm
- Links per metre: 11
- Loading side: Inside and outside bend
- Shelf system available

### MP 62.1

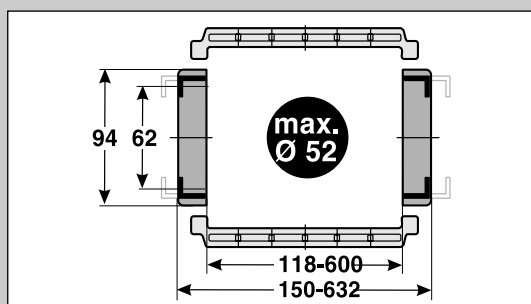
Page 197



- Inside height: 62 mm
- Inside widths: 118 - 518 mm
- Radii: 150 - 500 mm
- Pitch: 100 mm
- Links per metre: 10
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

### MP 62.2

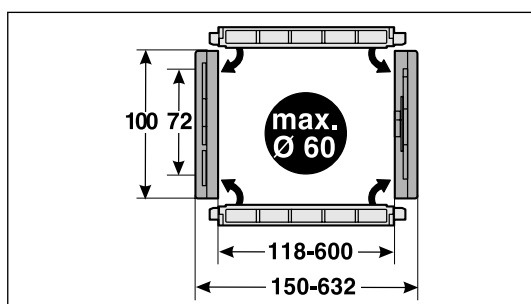
Page 209



- Inside height: 62 mm
- Inside widths: 118 - 518 mm
- Radii: 150 - 500 mm
- Pitch: 100 mm
- Links per metre: 10
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

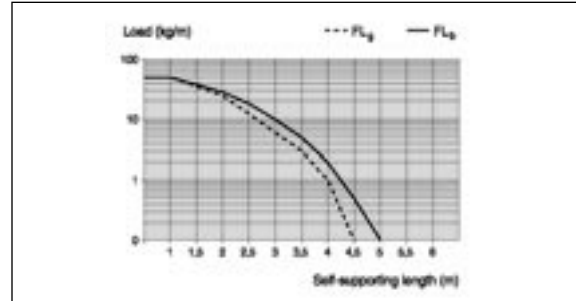
### MP 72

Page 221

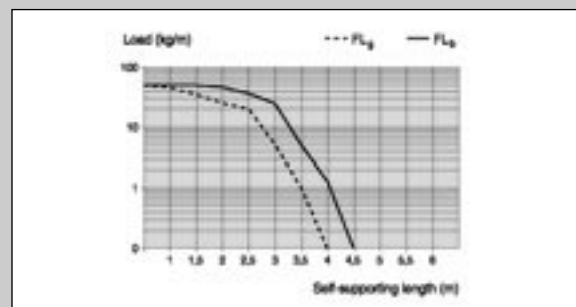


- Inside height: 72 mm
- Inside widths: 118 - 600 mm
- Radii: 150 - 500 mm
- Pitch: 100 mm
- Links per metre: 10
- Loading side: Inside and outside bend
- Shelf system available

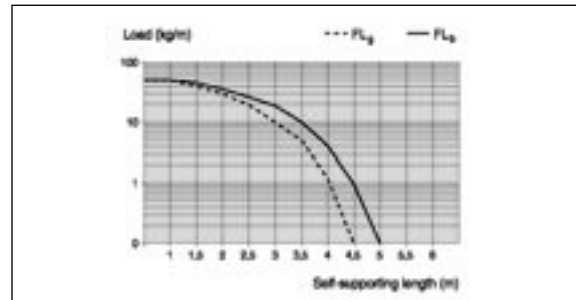
- Travel distance, gliding: 150 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 100 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 2 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 30 m/s<sup>2</sup>



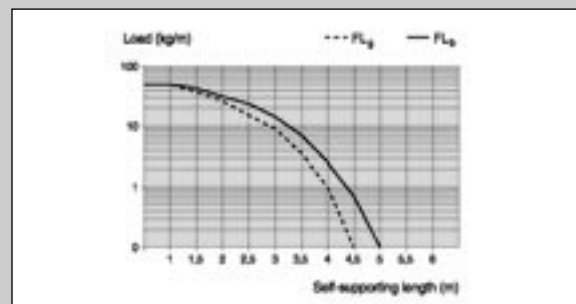
- Travel distance, gliding: 80 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 50 m
- Travel distance, vertical, upright: 5 m
- Rotated 90°, self-supporting: 2 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 15 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 25 m/s<sup>2</sup>



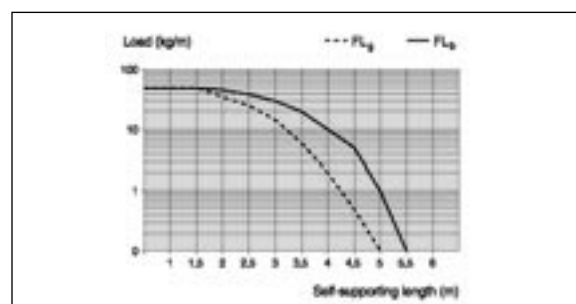
- Travel distance, gliding: 180 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 120 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 4 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 40 m/s<sup>2</sup>



- Travel distance, gliding: 180 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 120 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 4 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 40 m/s<sup>2</sup>



- Travel distance, gliding: 200 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 120 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 6 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 40 m/s<sup>2</sup>

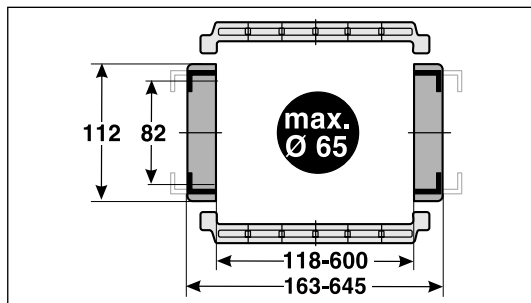




## Technical data: open cable drag chains

### MP 82.2

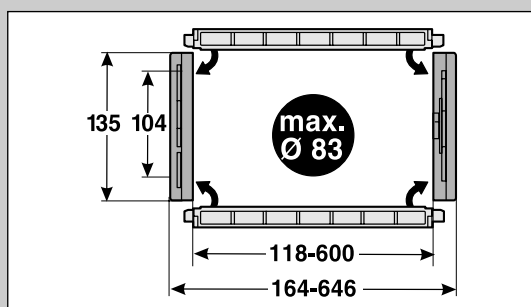
Page 233



- Inside height: 82 mm
- Inside widths: 118 - 518 mm
- Radii: 150 - 500 mm
- Pitch: 118 mm
- Links per metre: 9
- Loading side: Inside and outside bend
- Shelf system available
- ESD version available

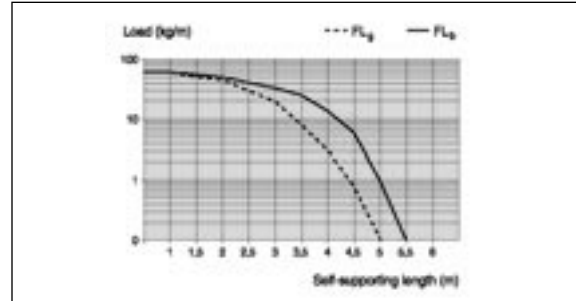
### MP 102

Page 243

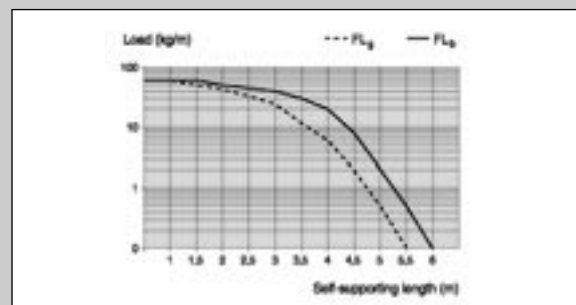


- Inside height: 104 mm
- Inside widths: 118 - 518 mm
- Radii: 250 - 500 mm
- Pitch: 141 mm
- Links per metre: 7
- Loading side: Inside and outside bend
- Shelf system available

- Travel distance, gliding: 250 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 120 m
- Travel distance, vertical, upright: 6 m
- Rotated 90°, self-supporting: 3 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 40 m/s<sup>2</sup>



- Travel distance, gliding: 300 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 150 m
- Travel distance, vertical, upright: 8 m
- Rotated 90°, self-supporting: 8 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 20 m/s
- Acceleration, gliding: 25 m/s<sup>2</sup>
- Acceleration, self-supporting: 40 m/s<sup>2</sup>

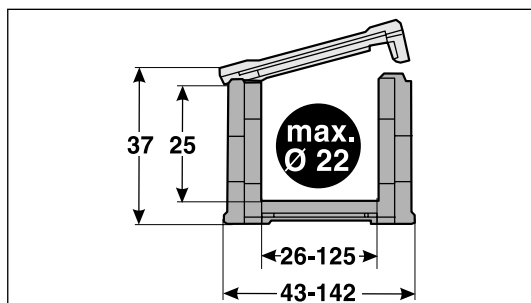




## Technical data: closed cable drag chains

### MP 25 G

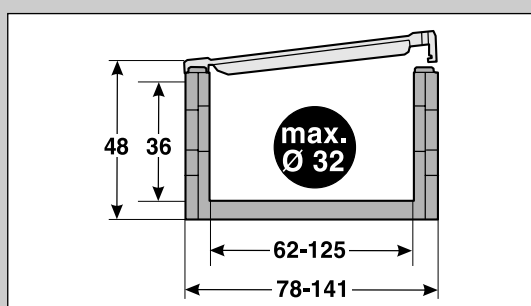
Page 253



- Inside height: 25 mm
- Inside widths: 26 - 125 mm
- Radii: 60 - 250 mm
- Pitch: 30 mm
- Links per metre: 33
- Loading side: Inside bend
- Shelf system available

### MP 36 G

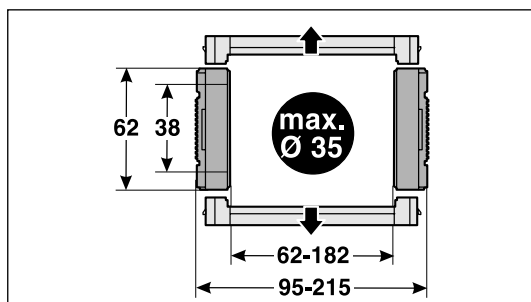
Page 259



- Inside height: 36 mm
- Inside widths: 62 - 125 mm
- Radii: 80 - 200 mm
- Pitch: 40 mm
- Links per metre: 25
- Loading side: Inside bend
- Shelf system available

### MP 43 G

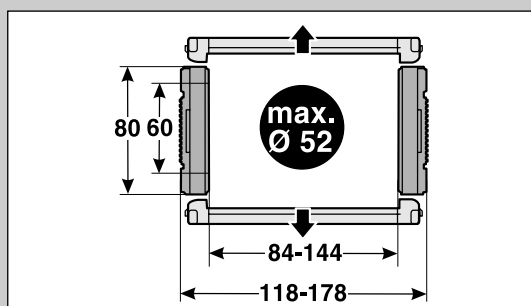
Page 267



- Inside height: 38 mm
- Inside widths: 62 - 182 mm
- Radii: 125 - 250 mm
- Pitch: 75.5 mm
- Links per metre: 13
- Loading side: Inside and outside bend
- Shelf system available

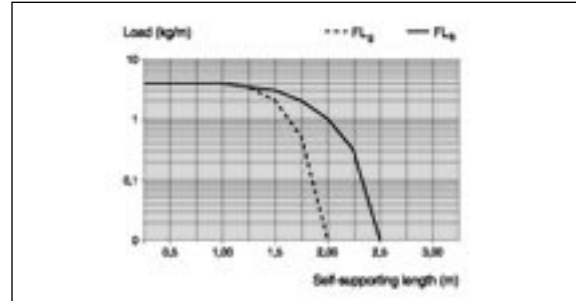
### MP 65 G

Page 275

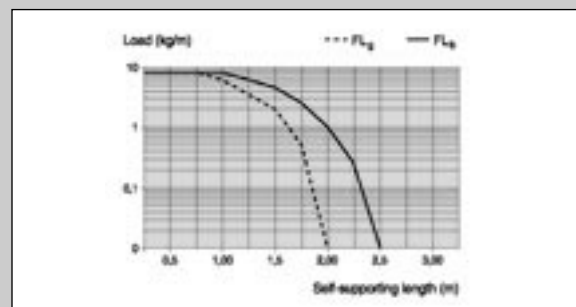


- Inside height: 60 mm
- Inside widths: 84 - 144 mm
- Radii: 200 - 350 mm
- Pitch: 91.5 mm
- Links per metre: 11
- Loading side: Inside and outside bend
- Shelf system available

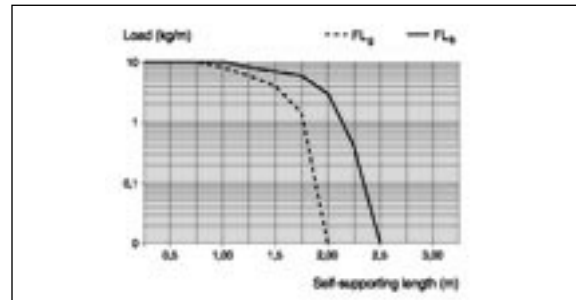
- Travel distance, gliding: 40 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 25 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 3 m/s
- Speed, self-supporting: 6 m/s
- Acceleration, gliding: 10 m/s<sup>2</sup>
- Acceleration, self-supporting: 15 m/s<sup>2</sup>



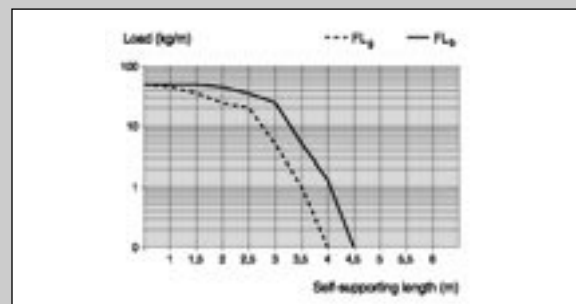
- Travel distance, gliding: 60 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 30 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 3 m/s
- Speed, self-supporting: 10 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 20 m/s<sup>2</sup>



- Travel distance, gliding: 50 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 40 m
- Travel distance, vertical, upright: 3 m
- Rotated 90°, self-supporting: 1 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 15 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 20 m/s<sup>2</sup>

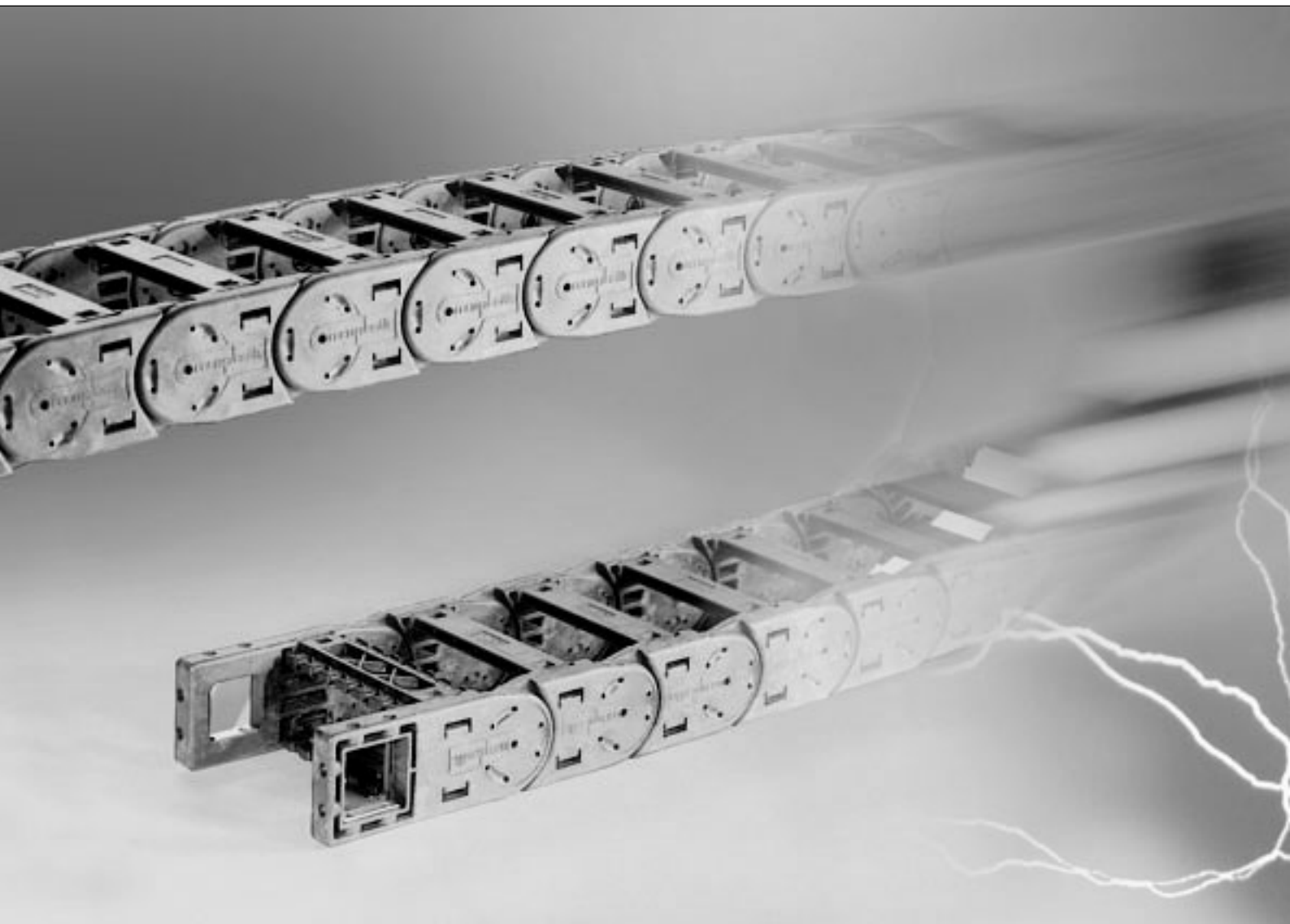


- Travel distance, gliding: 60 m
- Travel distance, self-supporting: see diagram
- Travel distance, vertical, hanging: 50 m
- Travel distance, vertical, upright: 5 m
- Rotated 90°, self-supporting: 2 m
- Speed, gliding: 5 m/s
- Speed, self-supporting: 15 m/s
- Acceleration, gliding: 15 m/s<sup>2</sup>
- Acceleration, self-supporting: 25 m/s<sup>2</sup>





## Information about ESD cable drag chains



murrplastik Systemtechnik GmbH has incorporated ESD cable drag chain systems into its range for use in potentially explosive areas.

Special versions of all the cable drag chains and accessories in the standard range can be supplied for areas subject to special explosion

protection measures. Made from a special material, these cable drag chains do not accumulate charge and also have a very high derivation ability for electrostatic charges; as such they not only meet, but largely exceed, the requirements of ATEX 94/9/EC.

As of June 2003, all components and machines used in potentially explosive areas must be approved under the ATEX directive.

murrplastik cable drag chains are certified as appliances which provide significant advantages for the user. In and of themselves, our



products are approved components conforming to ATEX 94/9/EC, thus obviating the need for acceptance of the entire machine.

## Additional information

- ATEX Operating Manual
- ESD chains brochure

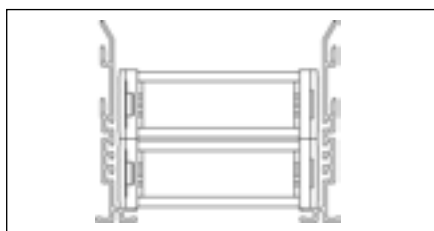
Please request



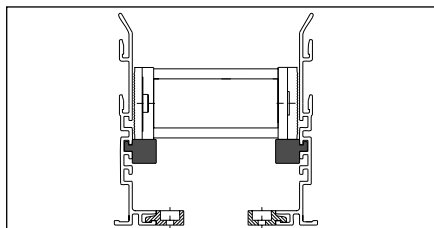
## Choosing a cable drag chain

**The layout of the cable drag chain is done by taking the following criteria into account:**

- 1) Determine the number and outside diameter of the cables or conduits that are to be installed.
- 2) Calculate the weight of all cables and conduits and establish chain type as per relevant diagram.
- 3) Select height and width of cable drag chain.
- 4) Consult the manufacturer's information to establish the minimum permissible bend radii of the cables or conduits and select the chain's radius of curvature on this basis.
- 5) Determine the chain length respective to the travel distance and the radius of curvature selected (see individual chain types).
- 6) Check whether a guide channel is required to accommodate the cable drag chain.



Section A-A: The cable drag chain glides on itself.



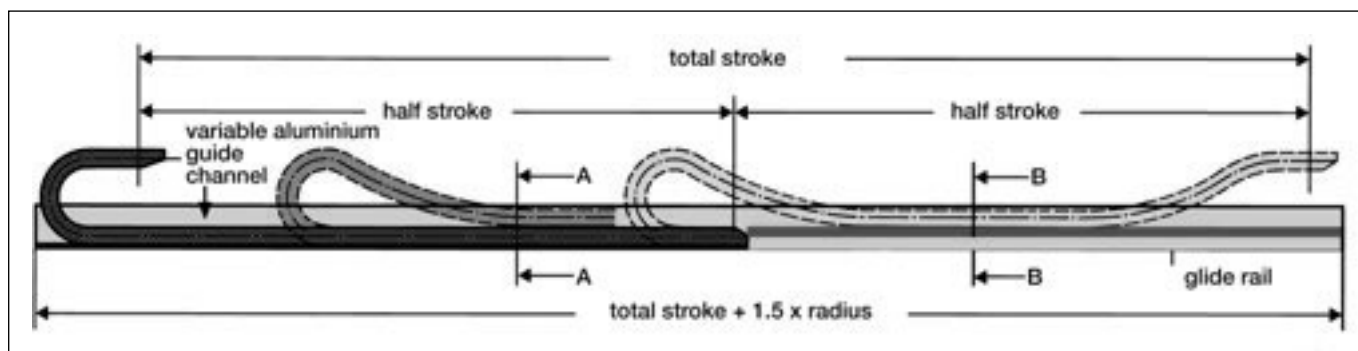
Section B-B: The cable drag chain runs on the glide rail.

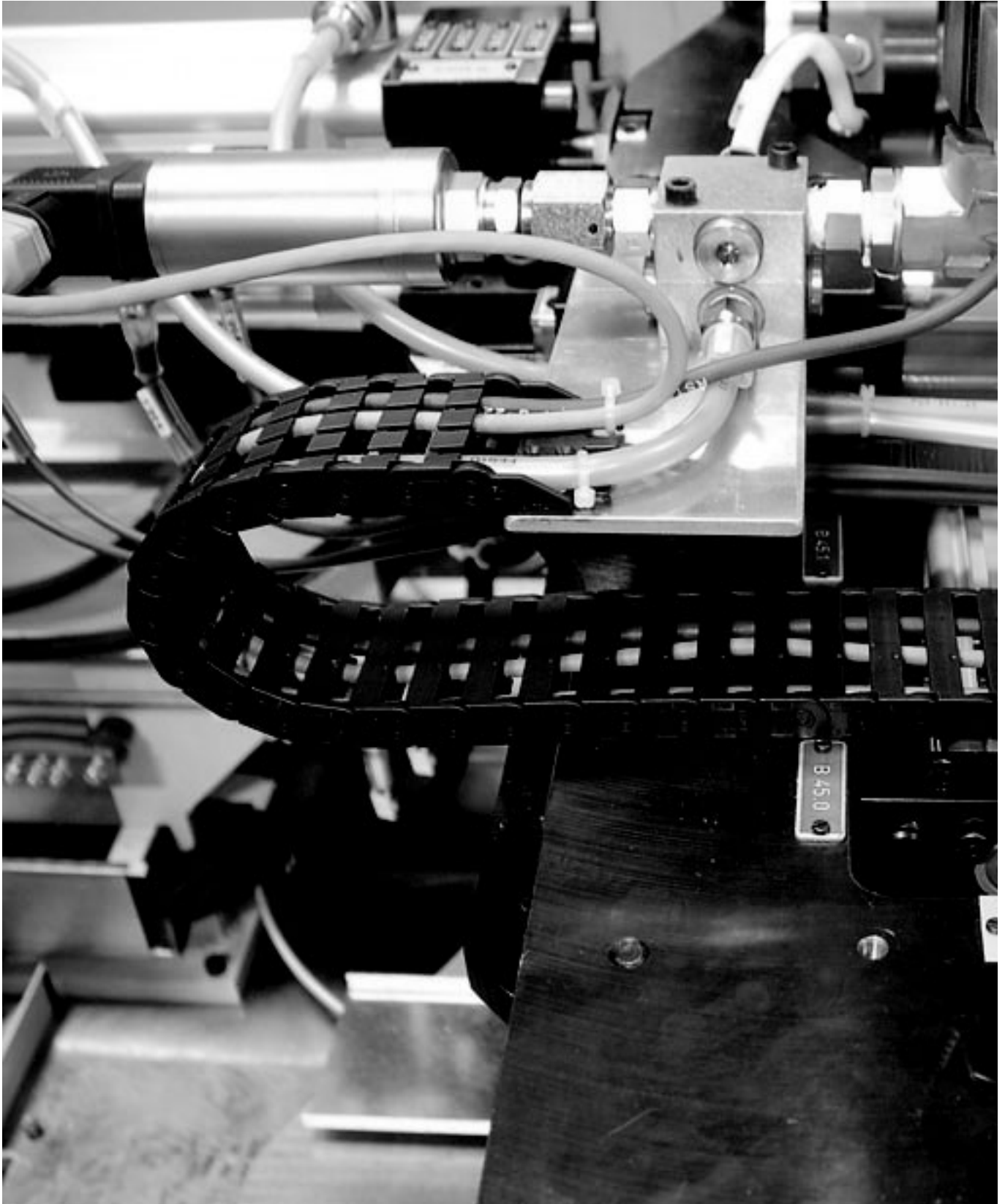
### Self-supporting lengths and travel distances

The self-supporting length is dependent on the travel distance and on the additional load. A level stacking surface or a guide channel is required for the cable drag chain to function smoothly.

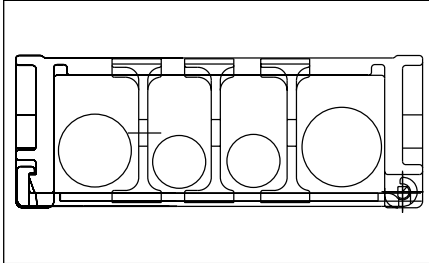
If the self-supporting length is exceeded, the chain upper run will sit on the lower run. Due to the excellent gliding properties of the plastic used, the operation is not hampered by the movement of the cable drag chain. The use of a guide channel is recommended as a general rule.

More information on our variable aluminium guide channel systems can be found on page 201 and following.

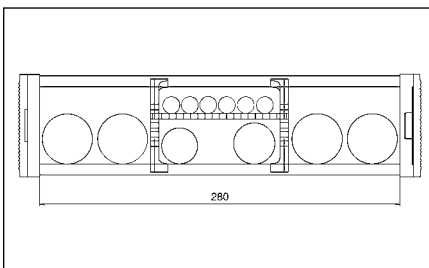




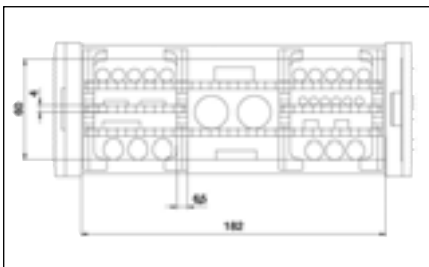
## Laying cables and conduits in cable drag chains



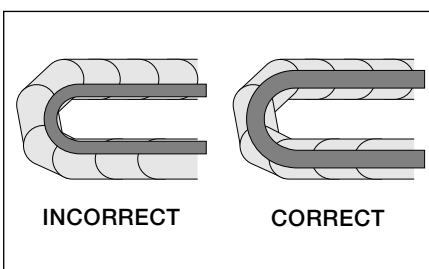
The cables and conduits must be able to move freely in the cable drag chain. There should be 10 - 15 % of the cable/conduit diameter available as clearance in the horizontal range. More clearance is required in the vertical range.



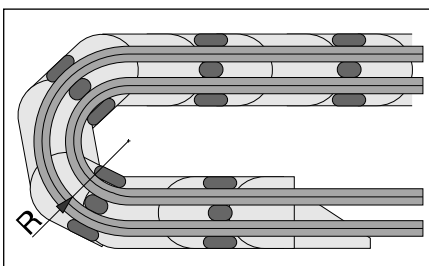
The weight should be distributed symmetrically in the cable drag chain. Heavy cables should be laid externally and lighter cables internally.



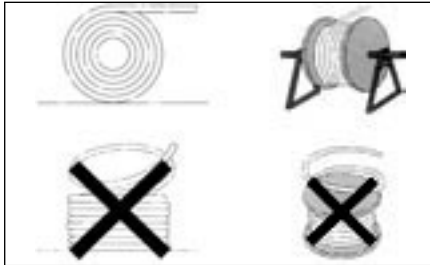
Cables (flat/round) and conduits should be laid individually where possible or loosely side by side. It is only advisable to lay several cables on top of each other or to lay round cables or conduits (with very different diameters) immediately next to each other in conjunction with the use of separators or a shelving system. Please consult our engineers.



Great care should be taken to ensure that cables and conduits pass through the radius of curvature without any strain.



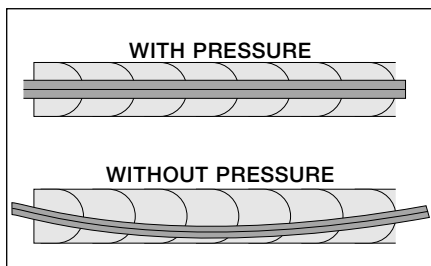
When laying cables in the cable drag chain in a multiple layer, it is essential for the cables to retain sufficient freedom of movement in relation to each other in the bend area (shelving system).



The cables must not be twisted when laid in the cable drag chain. Cables that are wound on reels or drums must be unwound from the reel rather than lifted off in loops.



Highly flexible cables with a diameter of less than 8 mm should be loosely twisted and inserted in a murrplastik polyamide cable protection conduit. The conduit cross-section selected should be considerably larger than the sum total of the individual cable cross-sections.



Hydraulic or other pressure hoses must be laid loosely in the drag chain, taking into account the change in length of the hose as the pressure increases and decreases. Information about the length of conduits should be obtained from the conduit manufacturer's documentation.



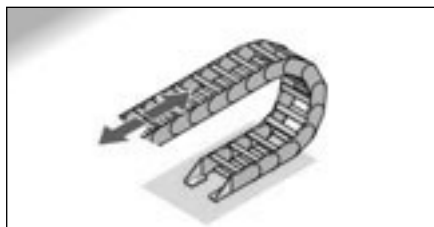
All electric cables must be relieved of strain at both the moving and fixed end. Where longer travel distances are involved (gliding application), one-sided strain relief on the moving end may be advisable. In this case, it is important to note that the pressure may only be applied to a wide surface of the outer jacket. The clamping procedure must be carried out carefully, rendering it impossible to move the cables but preventing the single wires in the cables from being squashed. Hydraulic and pneumatic conduits are only relieved of strain on one side. For details, refer to our strain relief system on page 151 and following.



When using murrplastik aluminium guide channels, the joint between individual channels is perfectly aligned and totally burr-free. There are no parts inside the guide channel, such as screws or rivets, which may affect the operation of the chain. For details, kindly refer to our variable aluminium guide channel systems from page 135 onwards.

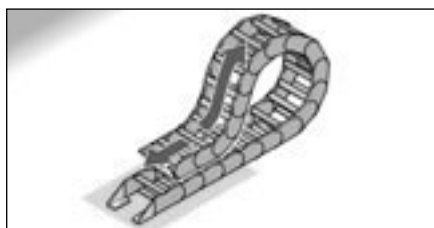


## Installation options



**1.**

**Horizontal, self-supporting**



**2.**

**Horizontal, gliding**



**3.**

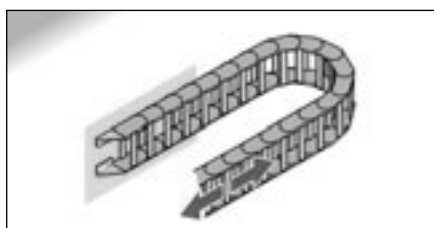
**Horizontal, self-supporting, projecting with support**



**4.**

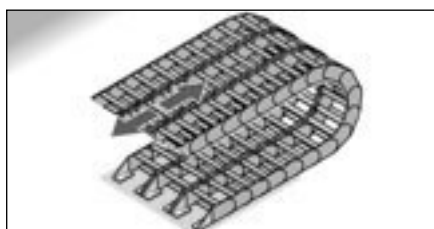
**Horizontal, circular movement**

Version with reverse bend radius



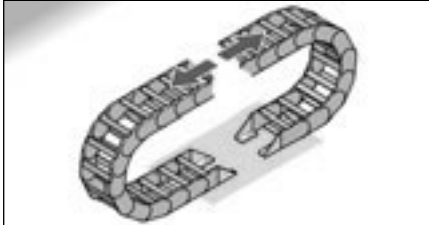
**5.**

**Horizontal, side-mounted, (rotated 90°)**



**6.**

**Horizontal, side by side**



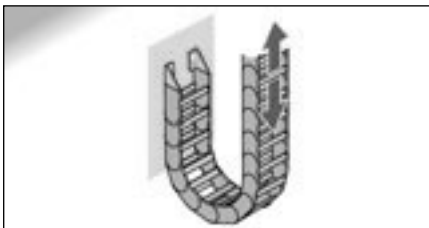
**7.**

**Horizontal, contradirectional**



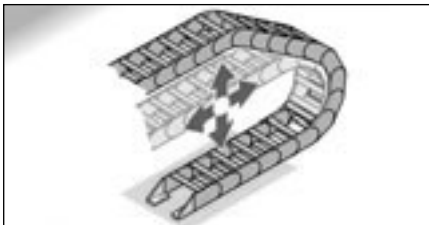
**8.**

**Vertical, upright**



**9.**

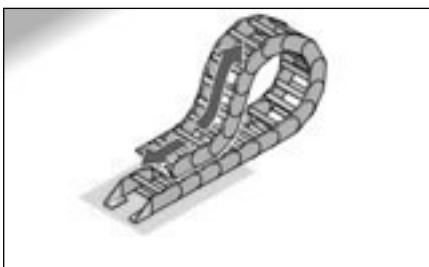
**Vertical, hanging**



**10.**

**Combined horizontal and vertical**

## Lowered moving end



With longer travel distances it may be advisable in some cases to lower the height of the moving attachment point.

Please consult our engineers.

In such cases changes to the chain layout should be noted (e.g. extension of chain and guide channel).



## ☐ Inquiry

Firm:

---



---

Contact person:

---

Direct dial:

---

## ☐ Order

Address/PO Box:

---



---

Date:

---

Trade:

---

☐ \_\_\_\_\_

Fax:

---

Department:

---

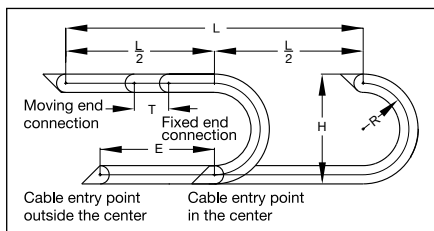
City/postcode:

---



---

## Application parameters



L = Travel distance, R = Radius,  
H = Installation height, T = Pitch,  
E = Distance of entry point to centre  
of travel distance

Travel distance:

---

 m

Speed of travel:

---

 m/s

Acceleration:

---

 m/s<sup>2</sup>

Travel frequency:

---

 x/h

Items carried:

---

 ☐ see appendix

Max. installation width:

---

 mm

Max. installation height:

---

 mm

Entry point:

---

 Travel distance centre ☐


---

 Travel distance start/end ☐


---

 ... .. m - from travel distance centre

Type of installation (see on right):

Environmental influences:

Ambient temperature:

Guide channel available:

---

 ☐ yes ☐ no

If so, state inner width

---

 mm

If so, state inside height

---

 mm

Chain bracket (see on right)

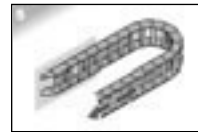
Moving end connection

---

Fixed connection

---

## Installation options



## Chain bracket

Inside/base



Inside/top



Outside/base



Outside/top



Flexible



Front



**Items to be carried by cable drag chain:**

[illegible]



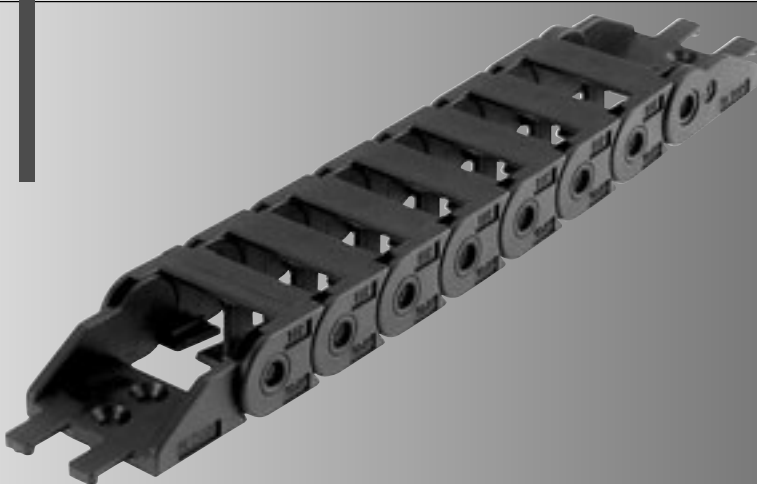
## Notes

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.

## CABLE DRAG CHAIN SYSTEMS

***EasyLine***

**MP 10.1**





# MP 10.1 - EasyLine

## Order variants

<b>Style (order code)</b>					
<b>Configuration (order code)</b>					
<b>Radius (order code)</b>					
in mm					
<b>Internal width (order code)</b>					
in mm					
<b>External width</b>					
in mm					
MP 10.1 006	13	6	006		
MP 10.1 016	16	9	009	18	018
MP 10.1 022	22	15	015	28	028
MP 10.1 028	28	21	021	38	038
MP 10.1 038	38	31	031	48	048
MP 10.1 048	48	41	041	58	058
					0
					7
					9
					0
					0
<b>Order number:</b>	<b>0101</b>			<b>0</b>	<b>0</b>

### Configuration:

0 crossbar every link; w/bias

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0101 006 018 0000

Inside width = 6 mm

Radius = 18 mm

Configuration = 0

Style = 0

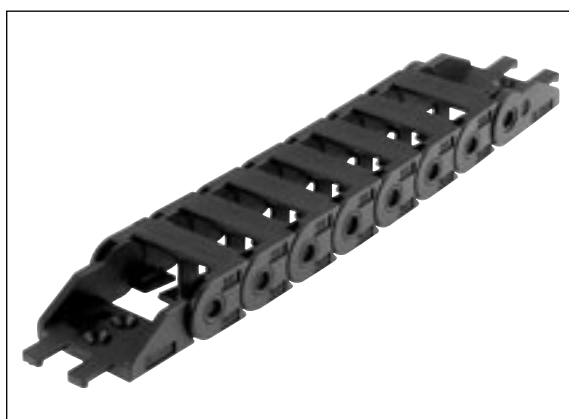
### Ideal operating conditions

- EASY mechanism for simple filling
- Quiet operation
- Unsupported arrangement
- Gliding arrangement

### Alternative chain type

- MP 14 / MP 15  
Longer unsupported lengths  
Higher level of stiffness and torsional strength

## Features



Radii with medium bias (R) for all applications



ESD cable drag chains for use in areas at risk of explosion



Cable insertion aid to simplify loading of EasyLine



EASY opening mechanism for easy loading



Permanently integrated separators for safe cable guidance



Chain bracket with integrated strain relief

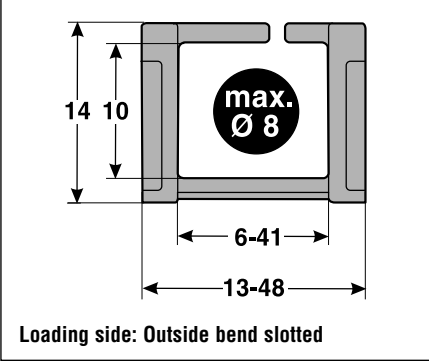


ESD cable drag chains for use in areas of electrostatic discharge

# MP 10.1 - EasyLine

## Technical data

### Chain link dimensions



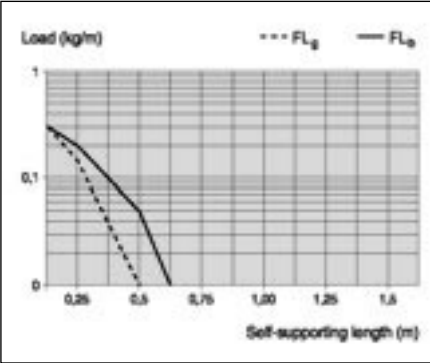
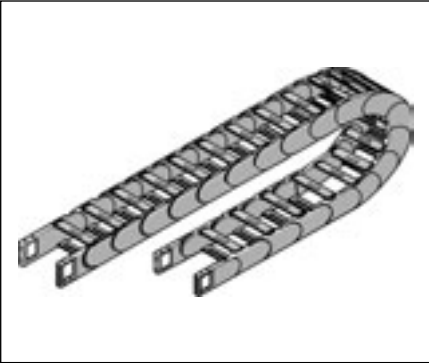
### Material properties

Service temperature:	-30 to 120 °C
Gliding friction factor:	0.30
Static friction factor:	0.45
Fire classification:	in conformity with UL94 HB
ESD material:	CE Ex II 2 GD
Other material properties on request	

### Technical specifications

Travel distance, gliding, $L_g$ :	10 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	2 m
Travel distance, vertical, upright, $L_{vu}$ :	1 m
Rotated 90°, self-supporting, $L_{sg}$ :	not recommended
Speed, gliding, $V_g$ :	2 m/s
Speed, self-supporting, $V_s$ :	4 m/s
Acceleration, gliding, $a_g$ :	2 m/s <sup>2</sup>
Acceleration, self-supporting $a_s$ :	2 m/s <sup>2</sup>

### Unsupported length

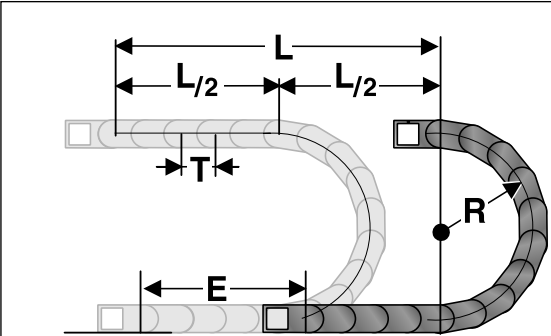


**$FL_g$ :**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**$FL_b$ :**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

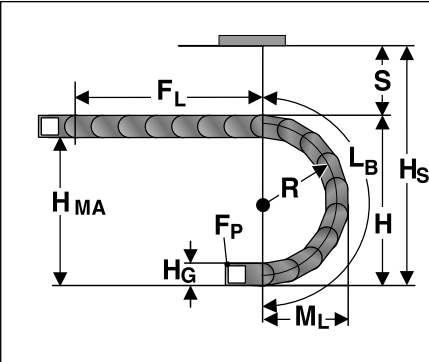
### Determining the chain length

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

$$\approx 1 \text{ m chain} = 67 \times 15 \text{ mm links}$$

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

### Installation dimensions (in mm)

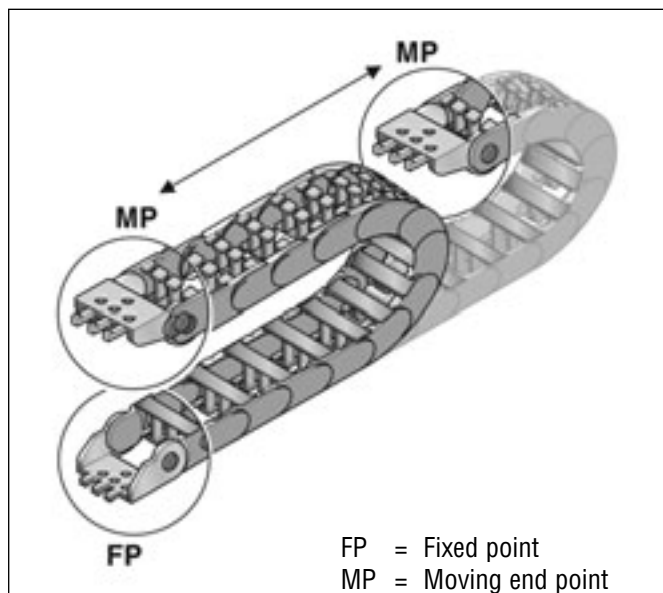


Radius R	18	28	38	48	58
Outside height of chain link ( $H_g$ )	14	14	14	14	14
Height of bend ( $H$ )	50	70	90	110	130
Height of moving end connection ( $H_{MA}$ )	36	56	76	96	116
Safety margin ( $S$ )	10	10	10	10	10
Installation height ( $H_s$ )	60	80	100	120	140
Arc projection ( $M_L$ )	40	50	60	70	80
Bend length ( $L_B$ )	94	125	156	188	219



# MP 10.1 - EasyLine

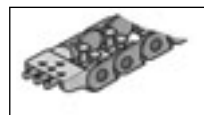
## Chain bracket



### Chain bracket



Bottom



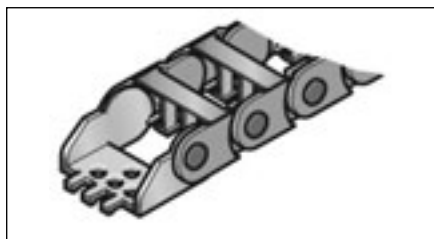
Top

## Chain bracket

Type

Order no.

Pack



KA 10.1 006 Female end	010100005000	1
KA 10.1 006 Male end	010100005100	1
KA 10.1 009 Female end	010100005200	1
KA 10.1 009 Male end	010100005300	1
KA 10.1 015 Female end	010100005400	1
KA 10.1 015 Male end	010100005500	1
KA 10.1 021 Female end	010100005600	1
KA 10.1 021 Male end	010100005700	1
KA 10.1 031 Female end	010100005800	1
KA 10.1 031 Male end	010100005900	1
KA 10.1 041 Female end	010100006000	1
KA 10.1 041 Male end	010100006100	1

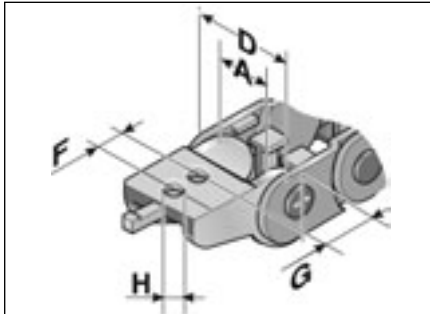
The chain bracket is an all plastics part. The bracket is precisely adjusted to the respective chain width and only needs to be snapped in at the chain link. Please order one male and one female end bracket for each chain. The brackets should be fastened with M3 screws.

The cables or conduits may be fastened with cable ties on the chain bracket's integrated strain relief.

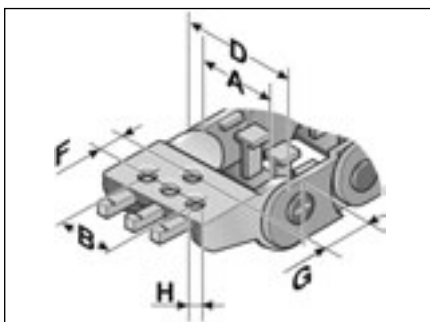
# MP 10.1 - EasyLine

## Chain bracket

Dimensions in mm



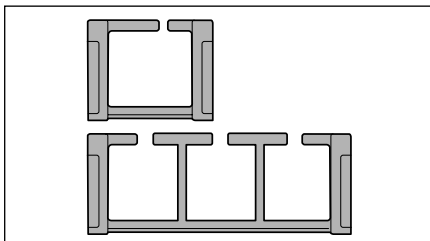
Type	A	D	F	G	H Ø
KA 10.1 006	6.0	13.5	8.0	11.0	3.2
KA 10.1 009	9.0	16.5	8.0	11.0	3.2
KA 10.1 015	15.0	22.5	8.0	11.0	3.2
KA 10.1 021	21.0	28.5	8.0	11.0	3.2



Type	A	B	D	F	G	H Ø
KA 10.1 031	31.0	22.0	38.5	8.0	11.0	3.2
KA 10.1 041	41.0	32.0	48.5	8.0	11.0	3.2

## Chamber size MP 10.1

Type      Number of chambers      Chamber width



Chamber size

10.1 006	1	6.5 mm
10.1 009	1	9.5 mm
10.1 015	1	15.5 mm
10.1 021	2	9.5 mm
10.1 031	3	9.5 mm
10.1 041	4	9.0 mm

## Wire insertion aid

Type      Order no.      Description      Pack



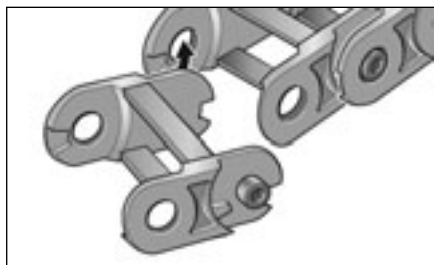
KE	83729010	KE wire insertion aid	1
----	----------	-----------------------	---

The wire insertion aid facilitates quick and simple installation of cables in the cable chain openings.

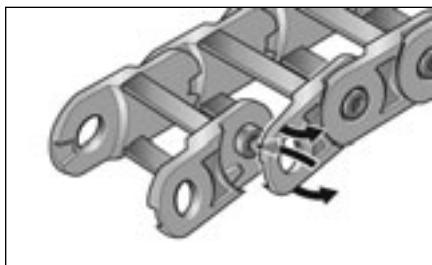


# MP 10.1 - EasyLine

## Assembly

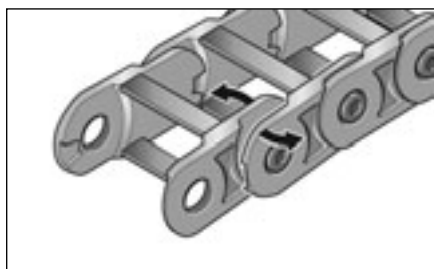


Step 1

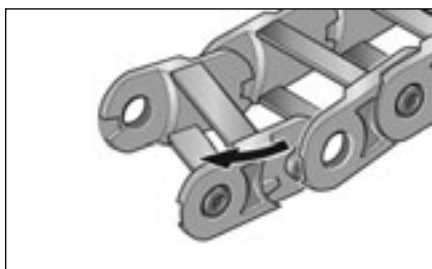


Step 2

## Disassembly

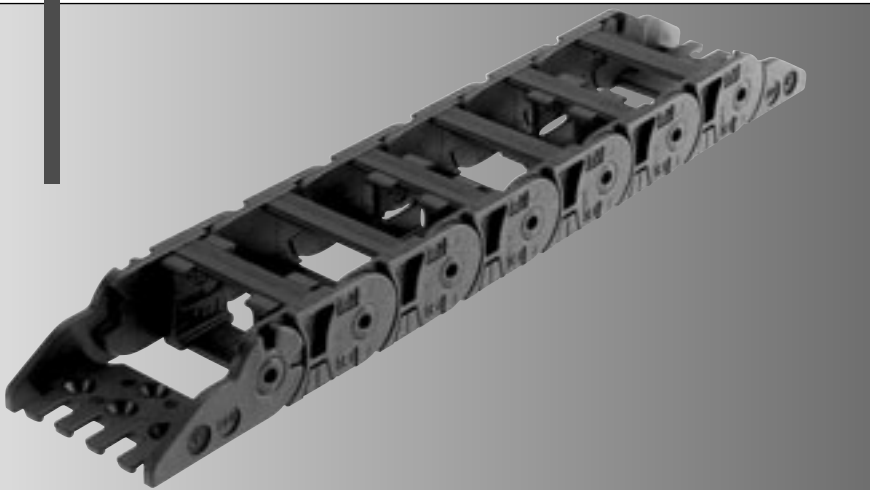


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 14**



# MP 14 - MultiLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code)</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP14 016	24	16	016	25	025				
MP14 020	28	20	020	38	038				
MP14 030	38	30	030	48	048				
MP14 040	48	40	040	75	075				
						0	9		
<b>Order number:</b> <div>0140</div> <div></div> <div></div> <div>0</div> <div></div> <div></div> <div>0</div>									

### Configuration:

0 crossbar every link; w/bias

### Style:

0 Standard (PA)  
9 Special version

### Sample order

0140 016 025 0000

Inside width = 16 mm

Radius = 25 mm

Configuration = 0

Style = 0

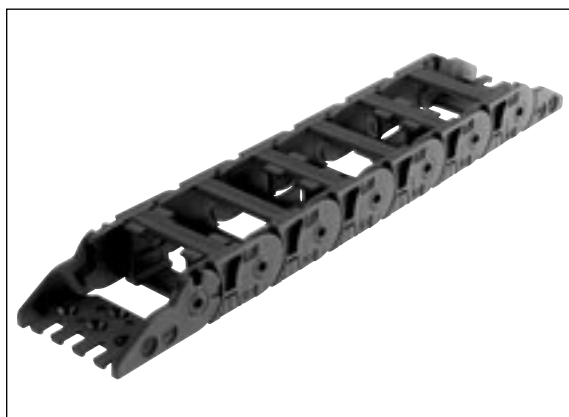
### Ideal operating conditions

- Compact dimensions with opening cover in outside bend
- Quiet operation
- Unsupported arrangement
- Gliding arrangement

### Alternative chain type

- MP 15  
Higher degree of stiffness and torsional strength
- MP 18.2  
Opening cover in inside bend
- MP 18.1 / MP 18.2  
Greater self-supported lengths

## Features



Radii with medium bias (R) for all applications



Integratable separator for cable separation



Chain bracket with integrated strain relief

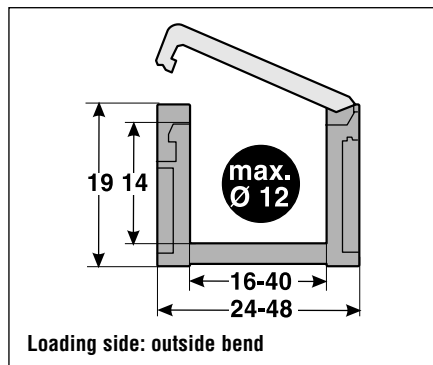


Frame ridges can be folded up on one side

# MP 14 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

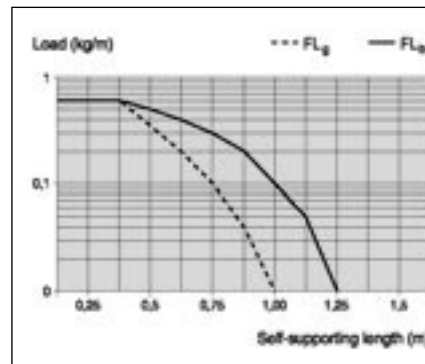
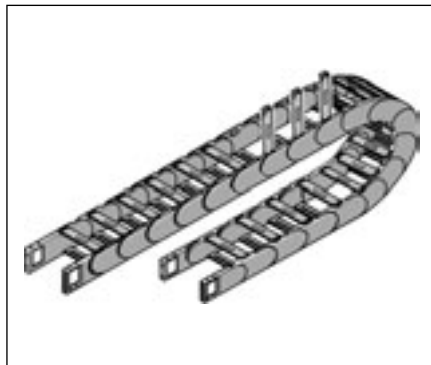
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 12 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 3 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 2 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : not recommended  
 Speed, gliding,  $V_g$ : 2 m/s  
 Speed, self-supporting,  $V_s$ : 4 m/s  
 Acceleration, gliding,  $a_g$ : 2 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 2 m/s<sup>2</sup>

### Unsupported length

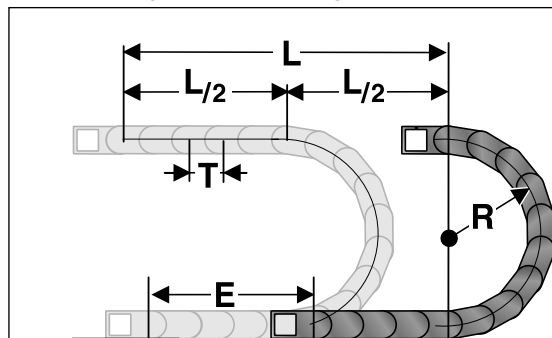


**$FL_g$ :**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**$FL_b$ :**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

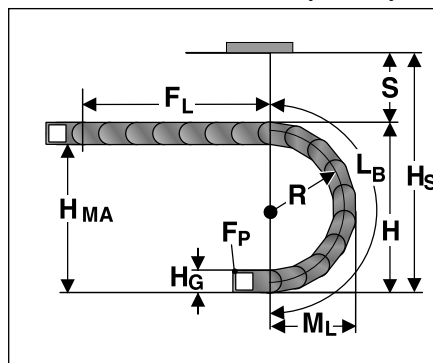
### Determining the chain length

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

$$\approx 1 \text{ m chain} = 38 \times 26 \text{ mm links}$$

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

### Installation dimensions (in mm)

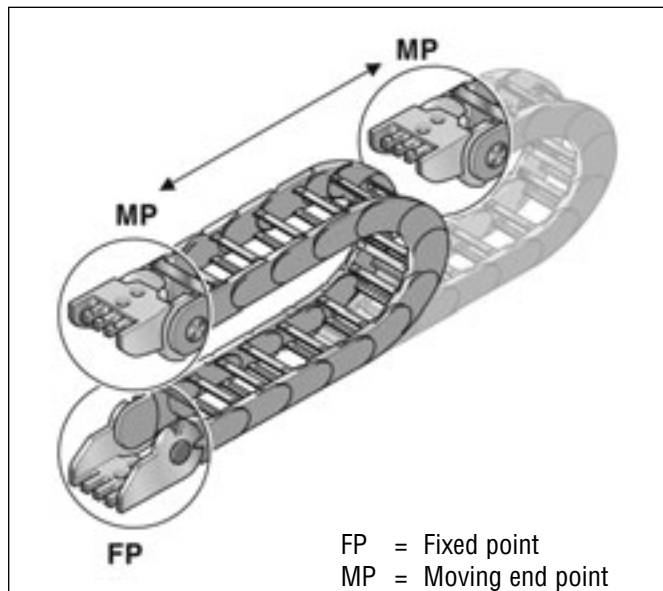


Radius R	25	38	48	75
Outside height of chain link ( $H_o$ )	19	19	19	19
Height of bend ( $H$ )	69	95	115	169
Height of moving end connection ( $H_{MA}$ )	50	76	96	150
Safety margin ( $S$ )	20	20	20	20
Installation height ( $H_g$ )	89	115	135	189
Arc projection ( $M_L$ )	60.5	73.5	83.5	110.5
Bend length ( $L_B$ )	134	175	207	291



# MP 14 - MultiLine

## Chain bracket



### Chain bracket



Top 0°



Bottom 0°



Top 90°



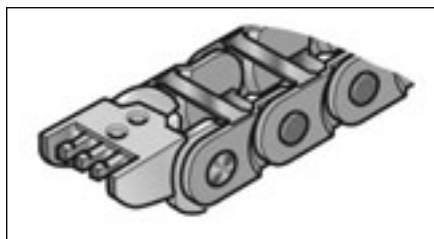
Bottom 90°

## Chain bracket

### Type

### Order no.

### Pack



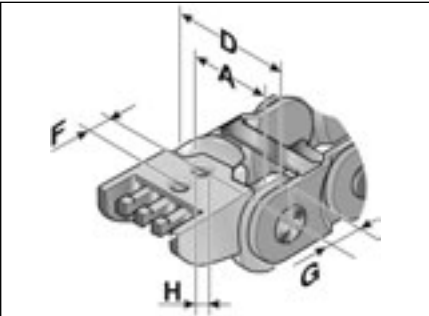
KA 14016 Female end	014000005000	1
KA 14016 Male end	014000005100	1
KA 14020 Female end	014000005200	1
KA 14020 Male end	014000005300	1
KA 14030 Female end	014000005400	1
KA 14030 Male end	014000005500	1
KA 14040 Female end	014000005600	1
KA 14040 Male end	014000005700	1

The chain bracket is an all plastics part. 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 M3 screws. The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

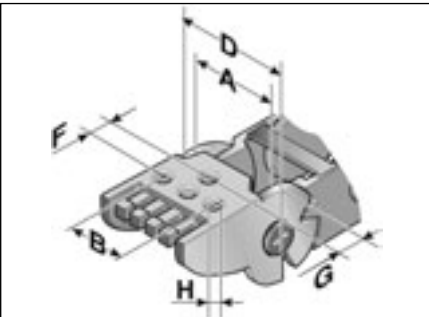
# MP 14 - MultiLine

Chain bracket

Dimensions in mm



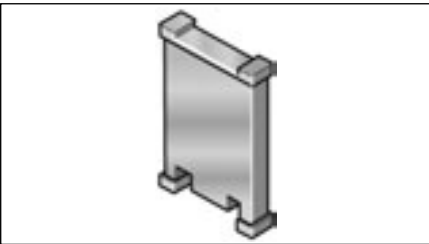
Type	A	D	F	G	H Ø
KA 14016 Female end	16.00	24.00	8.00	11.00	3.20
KA 14016 Male end	16.00	24.00	8.00	7.50	3.20
KA 14020 Female end	20.00	28.00	8.00	11.00	3.20
KA 14020 Male end	20.00	28.00	8.00	7.50	3.20



Type	A	B	D	F	G	H Ø
KA 14030 Female end	30.00	22.00	38.00	8.00	11.0	3.2
KA 14030 Male end	30.00	22.00	38.00	8.00	7.50	3.2
KA 14040 Female end	40.00	32.00	48.00	8.00	11.0	3.2
KA 14040 Male end	40.00	32.00	48.00	8.00	7.50	3.2

Separator

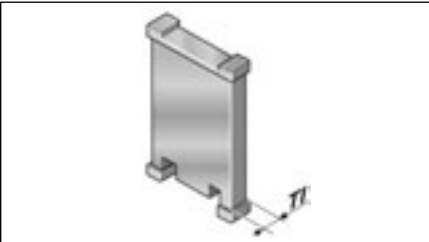
TypeOrder no.DescriptionPack



Separator

TR 14	014000009200	Separator	1
-------	--------------	-----------	---

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



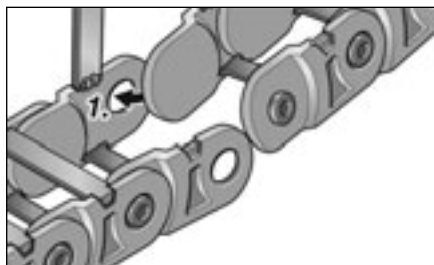
Separator

Type	TI	Dimensions in mm
TR 14	1.50	

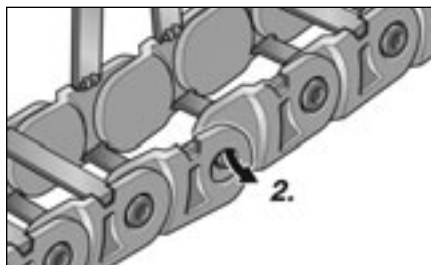


# MP 14 - MultiLine

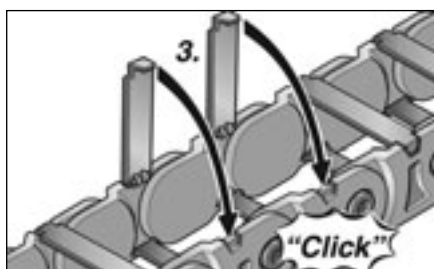
## Assembly



Step 1

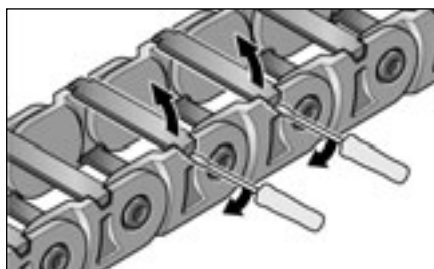


Step 2

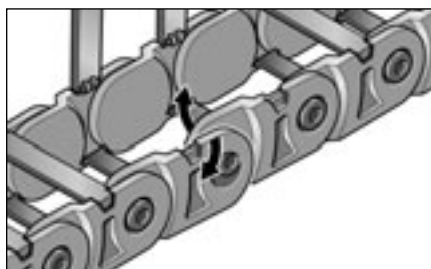


Step 3

## Disassembly

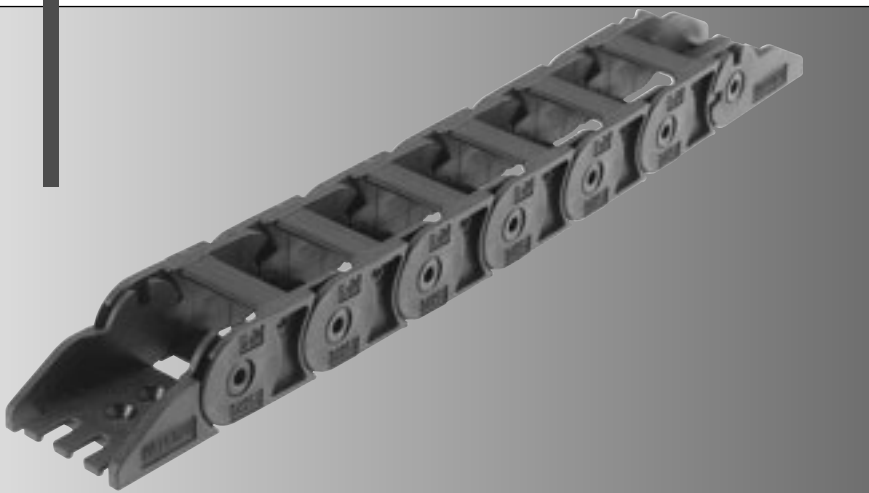


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 15**



# MP 15 - MultiLine

## Order variants

Style (order code)																																																	
Configuration (order code)																																																	
Radius (order code)																																																	
in mm																																																	
Internal width (order code)																																																	
in mm																																																	
External width																																																	
in mm																																																	
<table border="1"> <tr> <td>MP15 016</td> <td>24</td> <td>16</td> <td>016</td> <td>25</td> <td>025</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MP15 020</td> <td>28</td> <td>20</td> <td>020</td> <td>38</td> <td>038</td> <td></td> <td></td> <td></td> <td>0</td> </tr> <tr> <td>MP15 030</td> <td>38</td> <td>30</td> <td>030</td> <td>48</td> <td>048</td> <td></td> <td></td> <td></td> <td>7</td> </tr> <tr> <td>MP15 040</td> <td>48</td> <td>40</td> <td>040</td> <td>75</td> <td>075</td> <td></td> <td></td> <td>0</td> <td>9</td> </tr> </table>										MP15 016	24	16	016	25	025					MP15 020	28	20	020	38	038				0	MP15 030	38	30	030	48	048				7	MP15 040	48	40	040	75	075			0	9
MP15 016	24	16	016	25	025																																												
MP15 020	28	20	020	38	038				0																																								
MP15 030	38	30	030	48	048				7																																								
MP15 040	48	40	040	75	075			0	9																																								
<table border="1"> <tr> <td>Order number:</td> <td>0150</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>0</td> </tr> </table>										Order number:	0150			0				0																															
Order number:	0150			0				0																																									

### Configuration:

0 crossbar every link; w/bias

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0150 016 025 0000

Inside width = 16 mm

Radius = 25 mm

Configuration = 0

Style = 0

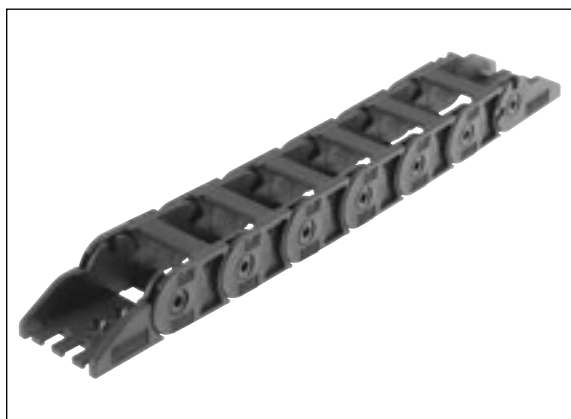
### Ideal operating conditions

- Closed structure gives high degree of stiffness and torsional strength
- Quiet operation
- Compact dimensions with high stability
- Unsupported arrangement
- Gliding arrangement

### Alternative chain type

- MP 14  
Cover variant for opening
- MP 18.1 / MP 18.2  
Greater self-supported lengths

## Features



Radii with medium bias (R) for all applications



ESD cable drag chains for use in areas at risk of explosion



Integratable separator for cable separation



Chain bracket with integrated strain relief

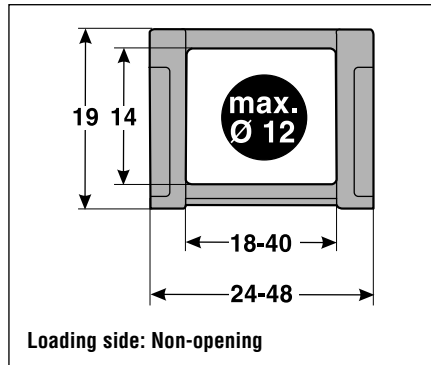


ESD cable drag chains for use in areas of electrostatic discharge

# MP 15 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

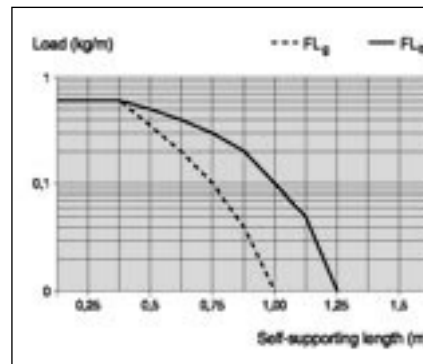
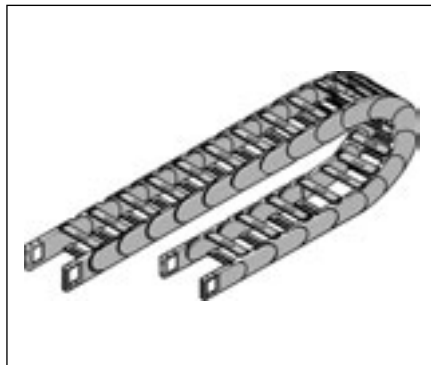
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB  
 ESD material: CE Ex II 2 GD

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 12 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 3 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 2 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : not recommended  
 Speed, gliding,  $V_g$ : 2 m/s  
 Speed, self-supporting,  $V_s$ : 4 m/s  
 Acceleration, gliding,  $a_g$ : 2 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 2 m/s<sup>2</sup>

### Unsupported length

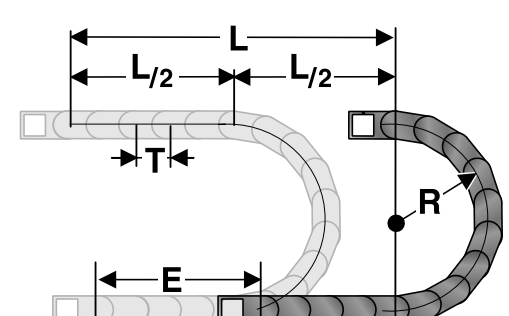


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 38 x 26 mm links

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

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

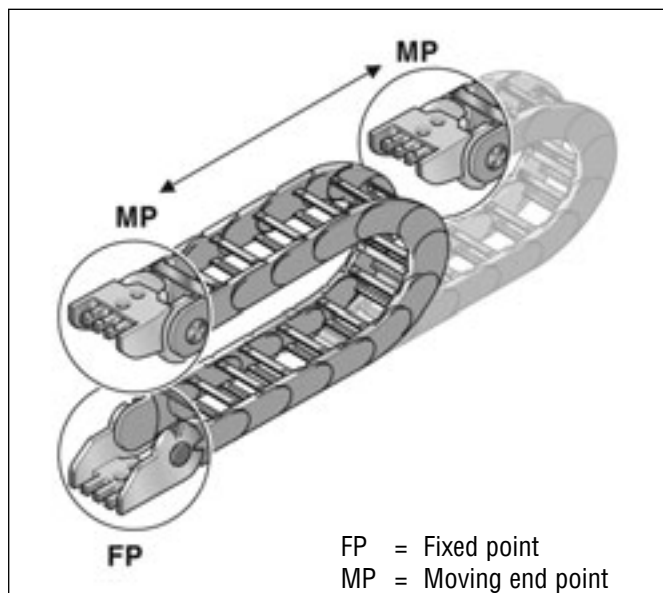
### Installation dimensions (in mm)

Radius R	25	38	48	75
Outside height of chain link ( $H_o$ )	19	19	19	19
Height of bend (H)	69	95	115	169
Height of moving end connection ( $H_{MA}$ )	50	76	96	150
Safety margin (S)	20	20	20	20
Installation height ( $H_g$ )	89	115	135	189
Arc projection ( $M_L$ )	61	74	84	111
Bend length ( $L_B$ )	134	175	207	291



# MP 15 - MultiLine

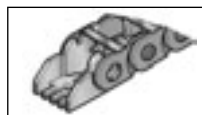
## Chain bracket



### Chain bracket



Top 0°



Bottom 0°



Top 90°



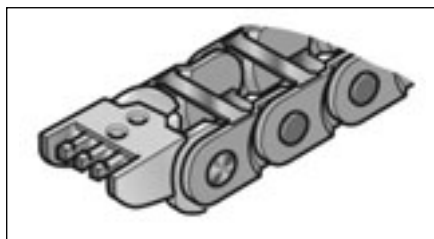
Bottom 90°

## Chain bracket

### Type

### Order no.

### Pack



KA 14016 Female end	014000005000	1
KA 14016 Male end	014000005100	1
KA 14020 Female end	014000005200	1
KA 14020 Male end	014000005300	1
KA 14030 Female end	014000005400	1
KA 14030 Male end	014000005500	1
KA 14040 Female end	014000005600	1
KA 14040 Male end	014000005700	1

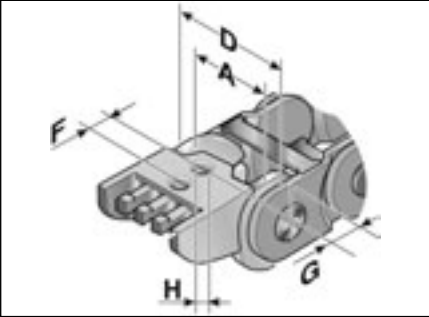
The chain bracket is an all plastics part. The bracket is precisely adjusted to the respective chain width and only needs to be snapped in at the chain link. Please order one male and one female end bracket for each chain. The brackets should be fastened with M3 screws.

The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

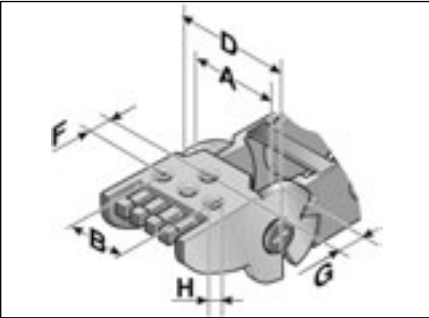
# MP 15 - MultiLine

Chain bracket

Dimensions in mm



Type	A	D	F	G	H Ø
KA 14016 Female end	16.00	24.00	8.00	11.00	3.20
KA 14016 Male end	16.00	24.00	8.00	7.50	3.20
KA 14020 Female end	20.00	28.00	8.00	11.00	3.20
KA 14020 Male end	20.00	28.00	8.00	7.50	3.20

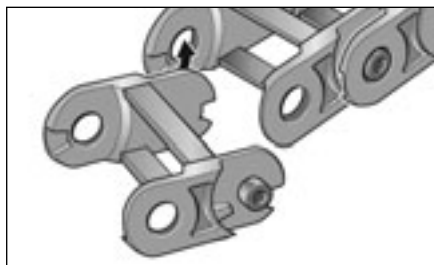


Type	A	B	D	F	G	H Ø
KA 14030 Female end	30.00	22.00	38.00	8.00	11.0	3.2
KA 14030 Male end	30.00	22.00	38.00	8.00	7.50	3.2
KA 14040 Female end	40.00	32.00	48.00	8.00	11.0	3.2
KA 14040 Male end	40.00	32.00	48.00	8.00	7.50	3.2

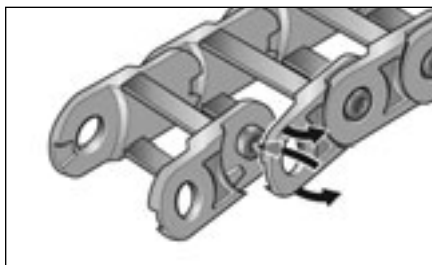


# MP 15 - MultiLine

## Assembly

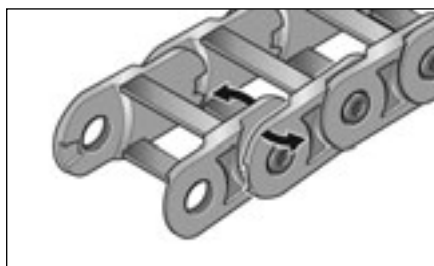


Step 1

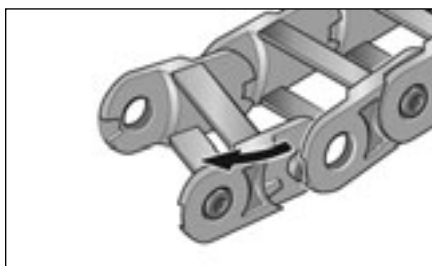


Step 2

## Disassembly

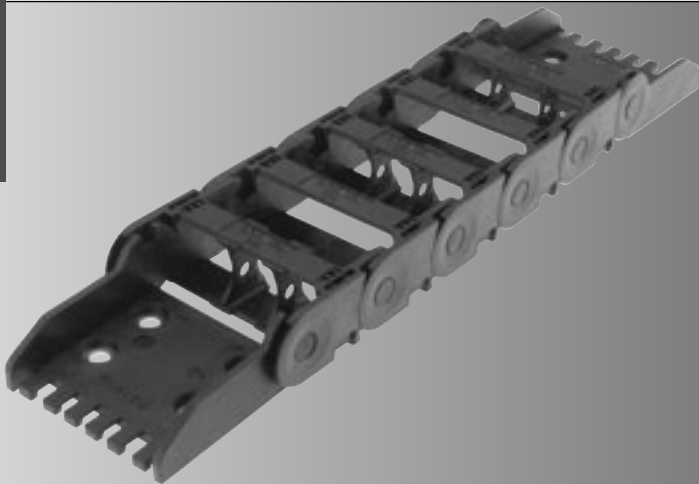


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 18.1**



# MP 18.1 - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP18.1 018	31	18	018						
MP18.1 025	38	25	025	28	028				
MP18.1 037	50	37	037	38	038				
MP18.1 050	63	50	050	48	048				
MP18.1 070	83	70	070	78	078				
								0	
								7	
								9	
									0

Order number: 0181 [ ] [ ] 0 [ ] [ ] 0

### Configuration:

0 crossbar every link; w/bias

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0181 018 028 0000

Inside width = 18 mm

Radius = 28 mm

Configuration = 0

Style = 0

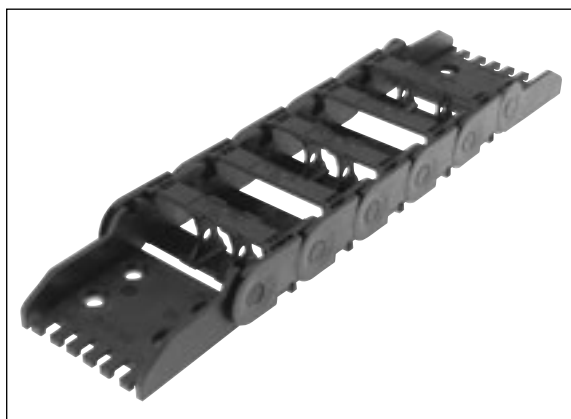
### Ideal operating conditions

- Compact dimensions with opening cover in outside bend
- Quiet operation
- High stability
- Flexible internal separation
- Gliding arrangement
- Unsupported arrangement
- Rotated 90°, unsupported

### Alternative chain type

- MP 18.2  
Opening cover in inside bend
- MP 2000 Easier to use
- MP 26 / MP 3000  
Greater self-supported lengths

## Features



Radii with medium bias (R) for all applications



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



Integratable separator for cable separation



ESD cable drag chains for use in areas of electrostatic discharge



Chain bracket with metal inserts and strain relief

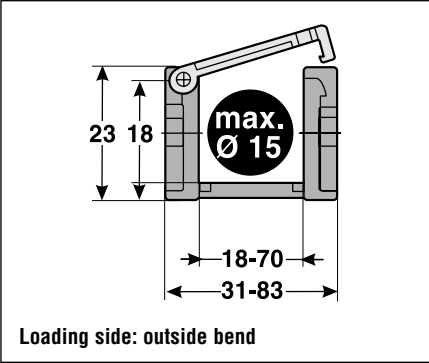


Frame ridges can be folded up on one side

# MP 18.1 - MultiLine

Technical data

### Chain link dimensions



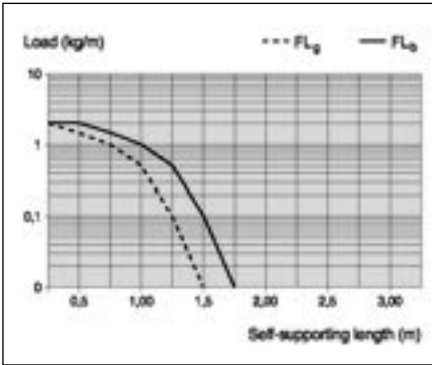
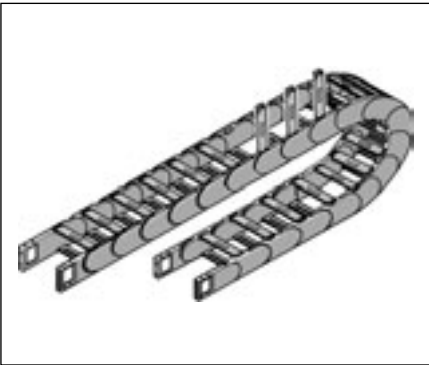
### Material properties

Service temperature:	-30 to +120 °C
Gliding friction factor:	0.30
Static friction factor:	0.45
Fire classification:	in conformity with UL94 HB
ESD material:	CE Ex II 2 GD
Other material properties on request	

### Technical specifications

Travel distance, gliding, $L_g$ :	20 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	8 m
Travel distance, vertical, upright, $L_{vu}$ :	3 m
Rotated 90°, self-supporting, $L_{sg}$ :	0.5 m
Speed, gliding, $V_g$ :	2 m/s
Speed, self-supporting, $V_s$ :	5 m/s
Acceleration, gliding, $a_g$ :	5 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	5 m/s <sup>2</sup>

### Unsupported length

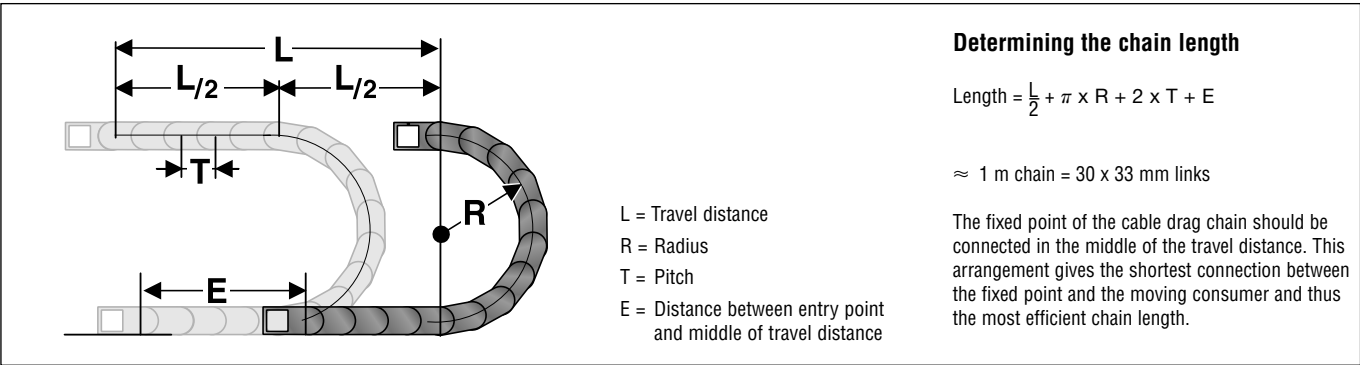


**FL<sub>g</sub>:**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>b</sub>:**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



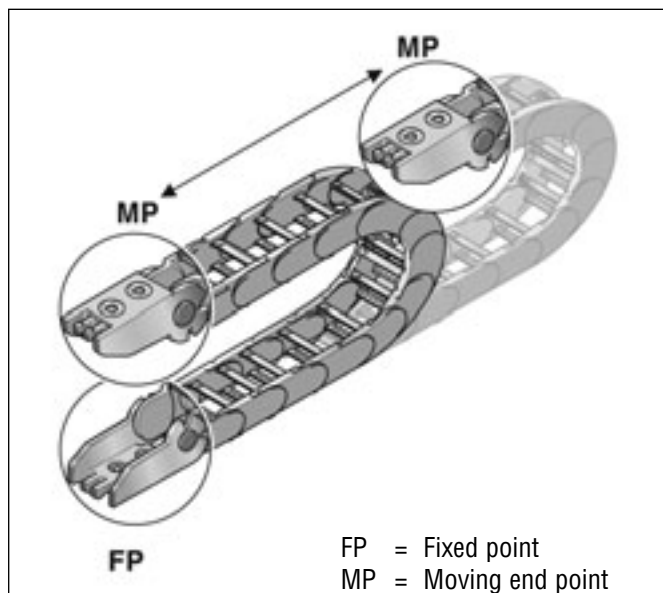
### Installation dimensions (in mm)

Radius R	28	38	48	78
Outside height of chain link ( $H_o$ )	23	23	23	23
Height of bend ( $H$ )	79	99	119	179
Height of moving end connection ( $H_{MA}$ )	56	76	96	156
Safety margin ( $S$ )	30	30	30	30
Installation height ( $H_g$ )	109	129	149	209
Arc projection ( $M_L$ )	73	83	93	123
Bend length ( $L_b$ )	157	188	220	314



# MP 18.1 - MultiLine

## Chain bracket



### Chain bracket



Top 0°



Bottom 0°



Top 90°



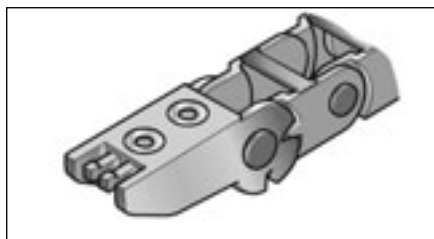
Bottom 90°

## Chain bracket

Type

Order no.

Pack



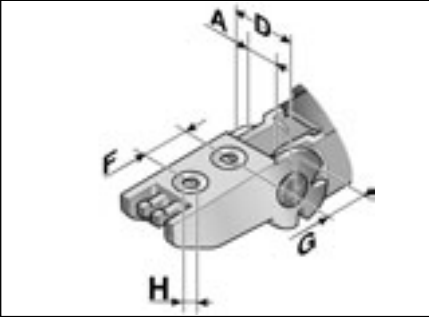
KA/Z 18018 Female end	018100005000	1
KA/Z 18018 Male end	018100005100	1
KA/Z 18025 Female end	018100005200	1
KA/Z 18025 Male end	018100005300	1
KA/Z 18037 Female end	018100005400	1
KA/Z 18037 Male end	018100005500	1
KA/Z 18050 Female end	018100005600	1
KA/Z 18050 Male end	018100005700	1
KA/Z 18070 Female end	018100005800	1
KA/Z 18070 Male end	018100005900	1

The chain bracket is an all plastics 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 M5 screws. The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

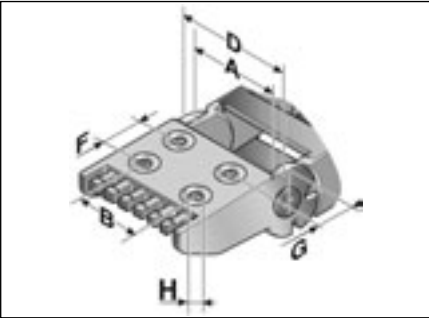
# MP 18.1 - MultiLine

Chain bracket

Dimensions in mm



Type	A	D	F	G	H Ø
KA/Z 18018 Female end	18.40	30.00	19.00	10.50	5.50
KA/Z 18018 Male end	18.40	30.00	19.00	8.50	5.50
KA/Z 18025 Female end	25.40	37.00	19.00	10.50	5.50
KA/Z 18025 Male end	25.40	37.00	19.00	8.50	5.50



Type	A	B	D	F	G	H Ø
KA/Z 18037 Female end	37.40	20.00	49.00	19.00	10.50	5.50
KA/Z 18037 Male end	37.40	20.00	49.00	19.00	8.50	5.50
KA/Z 18050 Female end	50.40	34.00	62.00	19.00	10.50	5.50
KA/Z 18050 Male end	50.40	34.00	62.00	19.00	8.50	5.50
KA/Z 18070 Female end	70.40	48.00	82.00	19.00	10.50	5.50
KA/Z 18070 Male end	70.40	48.00	82.00	19.00	8.50	5.50

Separator

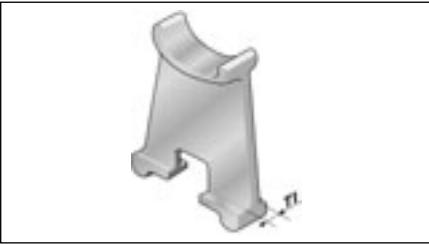
TypeOrder no.DescriptionPack



Separator

TR 14/18	018200009000	Separator	1
----------	--------------	-----------	---

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



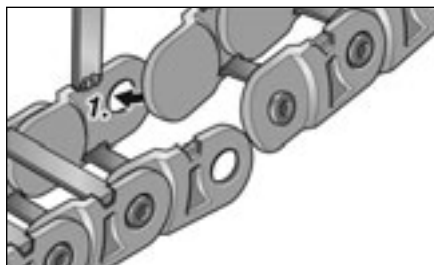
Separator

Type	TI	Dimensions in mm
TR 14/18	1.50	

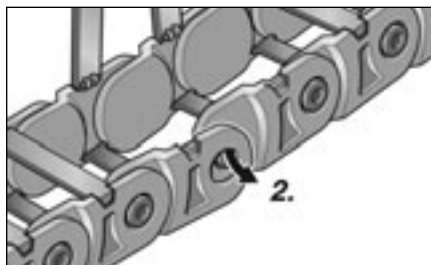


# MP 18.1 - MultiLine

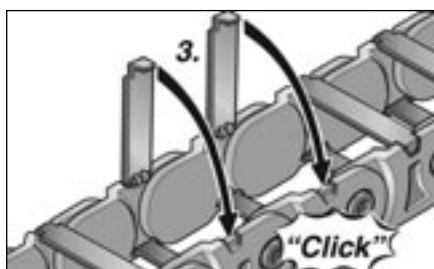
## Assembly



Step 1

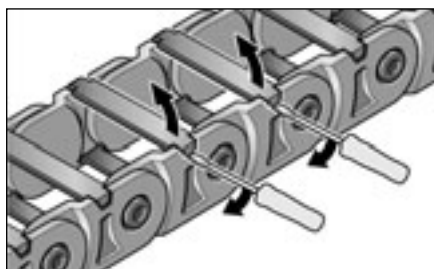


Step 2

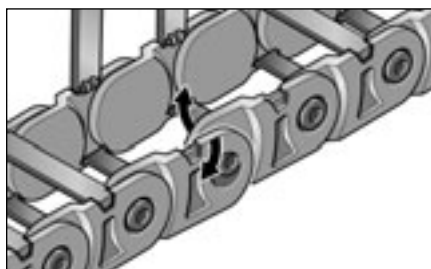


Step 3

## Disassembly

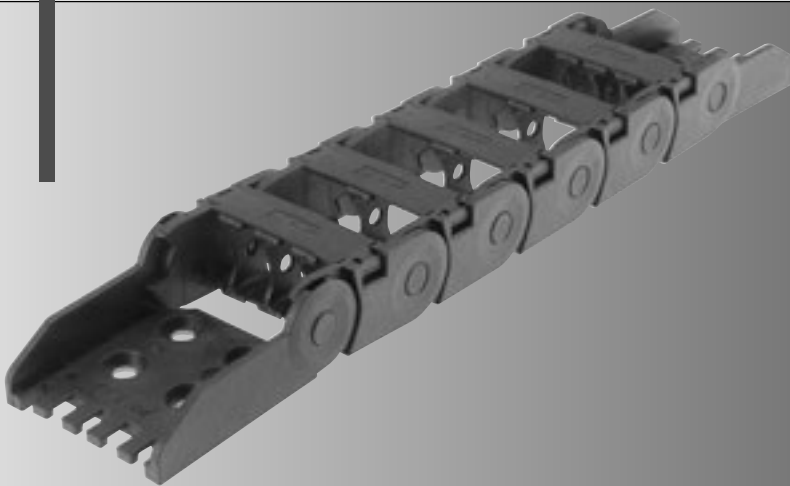


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 18.2**



# MP 18.2 - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP18.2 018	31	18	018						
MP18.2 025	38	25	025	28	028				
MP18.2 037	50	37	037	38	038				
MP18.2 050	63	50	050	48	048				
MP18.2 070	83	70	070	78	078				
								0	
								7	
								9	
									0

Order number: 0182 [ ] [ ] 0 [ ] [ ] 0

### Configuration:

0 crossbar every link; w/bias

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0182 018 028 0000

Inside width = 18 mm

Radius = 28 mm

Configuration = 0

Style = 0

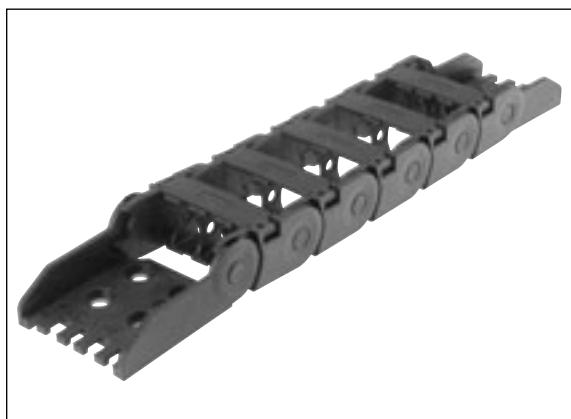
### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Quiet operation
- High stability
- Flexible internal separation
- Unsupported arrangement
- Rotated 90°, unsupported

### Alternative chain type

- MP 18.1  
Opening cover in outside bend, gliding application
- MP 2000 Easier to use
- MP 26 / MP 3000  
Greater self-supported lengths

## Features



Radii with medium bias (R) for all applications



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



Integratable separator for cable separation



ESD cable drag chains for use in areas of electrostatic discharge



Chain bracket with metal inserts and strain relief

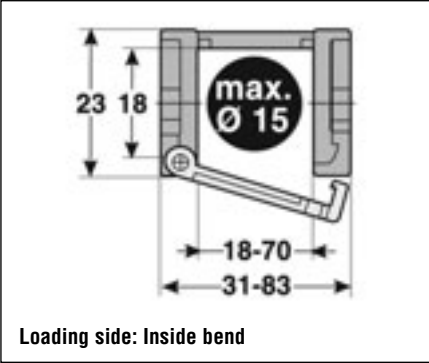


Frame ridges can be folded up on one side

# MP 18.2 - MultiLine

Technical data

### Chain link dimensions



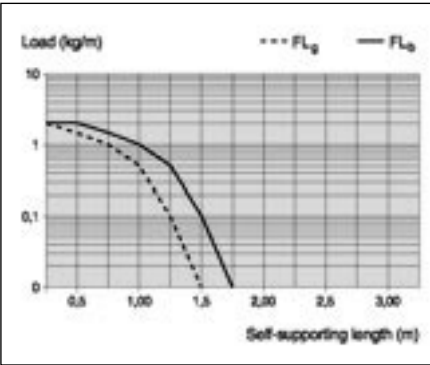
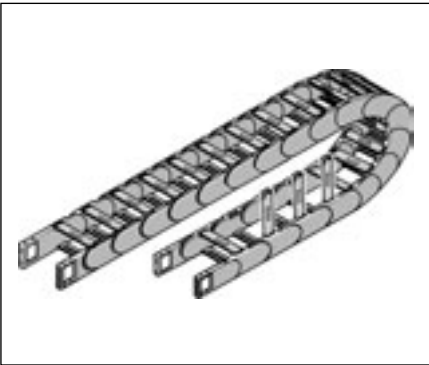
### Material properties

Service temperature:	-30 to +120 °C
Gliding friction factor:	0,30
Static friction factor:	0,45
Fire classification:	in conformity with UL94 HB
ESD material:	CE Ex II 2 GD
Other material properties on request	

### Technical specifications

Travel distance, gliding, $L_g$ :	not recommended
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	8 m
Travel distance, vertical, upright, $L_{vu}$ :	3 m
Rotated 90°, self-supporting, $L_{sg}$ :	0.5 m
Speed, self-supporting, $V_i$ :	5 m/s
Acceleration, self-supporting, $a_i$ :	5 m/s <sup>2</sup>

### Unsupported length



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

**$FL_b$ :**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length

$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

#### Determining the chain length

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

$\approx$  1 m chain = 30 x 33 mm links

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

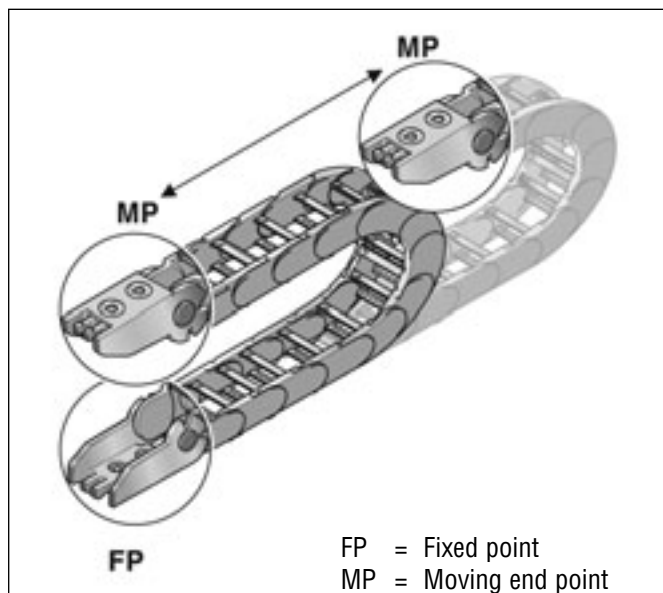
### Installation dimensions (in mm)

Radius R	28	38	48	78
Outside height of chain link ( $H_o$ )	23	23	23	23
Height of bend ( $H$ )	79	99	119	179
Height of moving end connection ( $H_{MA}$ )	56	76	96	156
Safety margin ( $S$ )	30	30	30	30
Installation height ( $H_i$ )	109	129	149	209
Arc projection ( $M_i$ )	73	83	93	123
Bend length ( $L_b$ )	157	188	220	314



# MP 18.2 - MultiLine

## Chain bracket



### Chain bracket



Top 0°



Bottom 0°



Top 90°



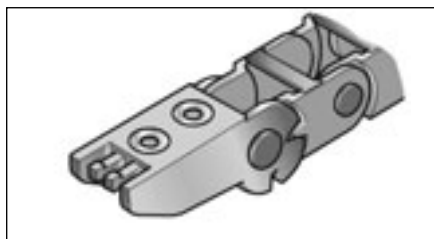
Bottom 90°

## Chain bracket

### Type

### Order no.

### Pack



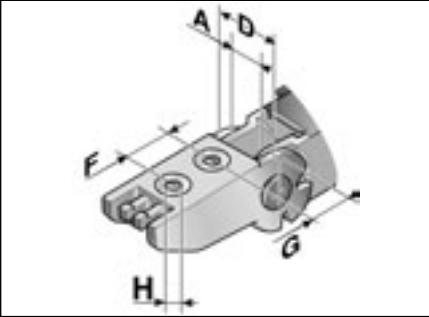
KA/Z 18018 Female end	018100005000	1
KA/Z 18018 Male end	018100005100	1
KA/Z 18025 Female end	018100005200	1
KA/Z 18025 Male end	018100005300	1
KA/Z 18037 Female end	018100005400	1
KA/Z 18037 Male end	018100005500	1
KA/Z 18050 Female end	018100005600	1
KA/Z 18050 Male end	018100005700	1
KA/Z 18070 Female end	018100005800	1
KA/Z 18070 Male end	018100005900	1

The chain bracket is an all plastics 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 M5 screws. The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

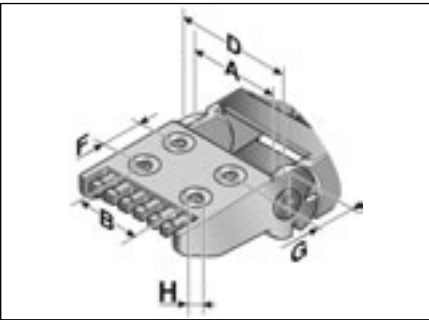
# MP 18.2 - MultiLine

Chain bracket

Dimensions in mm



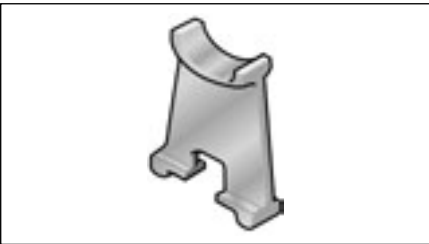
Type	A	D	F	G	H Ø
KA/Z 18018 Female end	18.40	30.00	19.00	10.50	5.50
KA/Z 18018 Male end	18.40	30.00	19.00	8.50	5.50
KA/Z 18025 Female end	25.40	37.00	19.00	10.50	5.50
KA/Z 18025 Male end	25.40	37.00	19.00	8.50	5.50



Type	A	B	D	F	G	H Ø
KA/Z 18037 Female end	37.40	20.00	49.00	19.00	10.50	5.50
KA/Z 18037 Male end	37.40	20.00	49.00	19.00	8.50	5.50
KA/Z 18050 Female end	50.40	34.00	62.00	19.00	10.50	5.50
KA/Z 18050 Male end	50.40	34.00	62.00	19.00	8.50	5.50
KA/Z 18070 Female end	70.40	48.00	82.00	19.00	10.50	5.50
KA/Z 18070 Male end	70.40	48.00	82.00	19.00	8.50	5.50

Separator

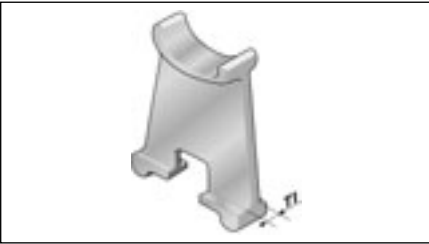
TypeOrder no.DescriptionPack



Separator

TR 14/18	018200009000	Separator	1
----------	--------------	-----------	---

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



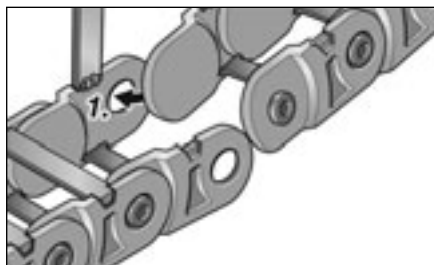
Separator

Type	TI	Dimensions in mm
TR 14/18	1.50	

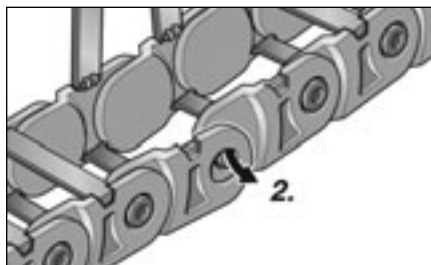


# MP 18.2 - MultiLine

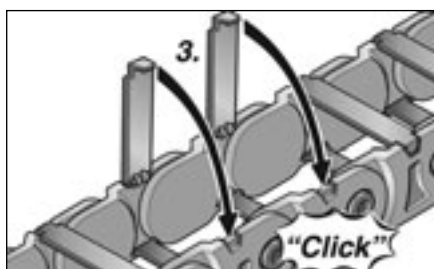
## Assembly



Step 1

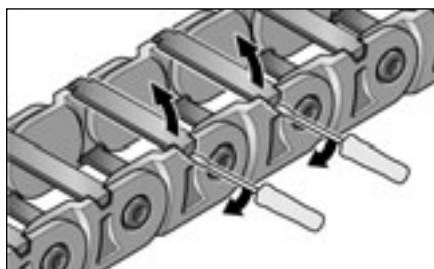


Step 2

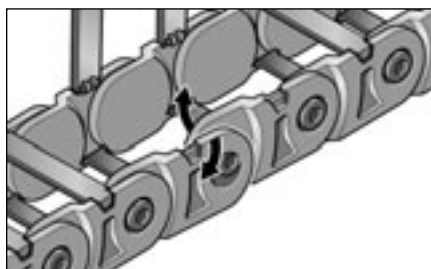


Step 3

## Disassembly

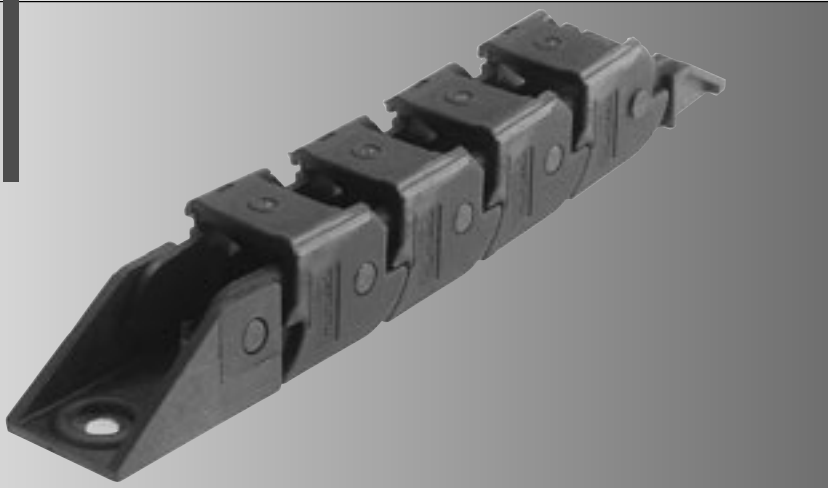


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 2000**



# MP 2000 - MultiLine

## Order variants

<b>Style (order code)</b>							
<b>Configuration (order code)</b>							
<b>Radius (order code)</b>							
in mm							
<b>Internal width (order code)</b>							
in mm							
<b>External width</b>							
in mm							
MP2001 MP2002	25 35	15 25	015 025	35 50 70	035 050 070	0	0 9
<b>Order number:</b> <div>0200</div> <div></div> <div></div> <div>0</div> <div></div> <div></div> <div>0</div>							

### Configuration:

0 crossbar every link; w/bias

### Style:

0 Standard (PA)  
9 Special version

### Sample order

0200 015 035 0000

Inside width = 15 mm

Radius = 35 mm

Configuration = 0

Style = 0

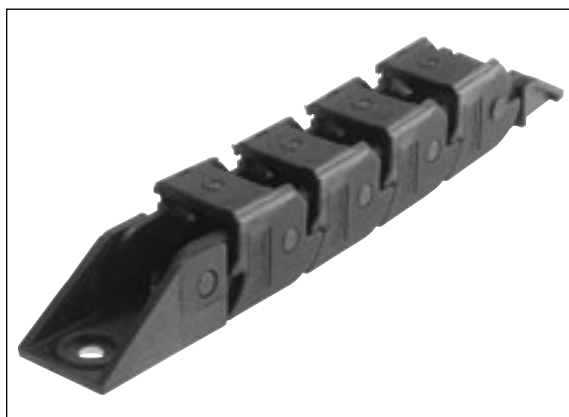
### Ideal operating conditions

- Opening cover in inside bend
- Quiet operation
- Unsupported arrangement

### Alternative chain type

- MP 18.1 Gliding arrangement
- MP 18.1 / MP 18.2  
90° Rotated application
- MP 26 / MP 3000  
Greater self-supported lengths

## Features



Radii with medium bias (R) for all applications



Chain bracket with metal inserts and strain relief

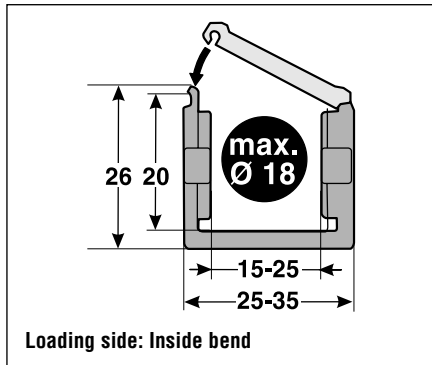


Frame ridges can be folded up on one side

# MP 2000 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

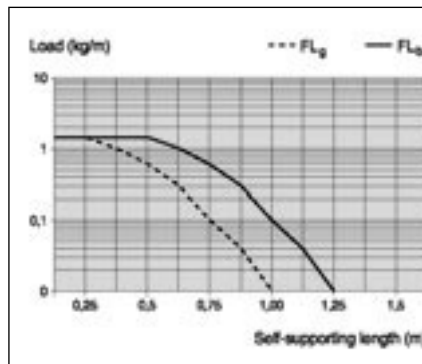
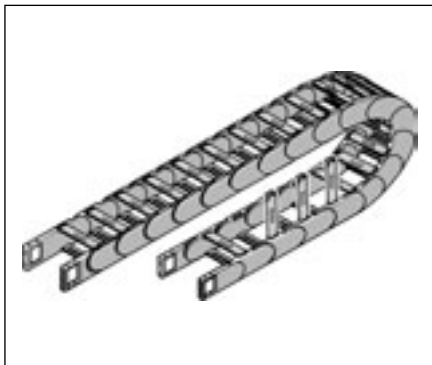
Service temperature: -30 to -120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : not recommended  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 3 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 1 m  
 Speed, self-supporting,  $V_s$ : 4 m/s  
 Acceleration, self-supporting,  $a_s$ : 3 m/s<sup>2</sup>

### Unsupported length



#### $FL_g$ :

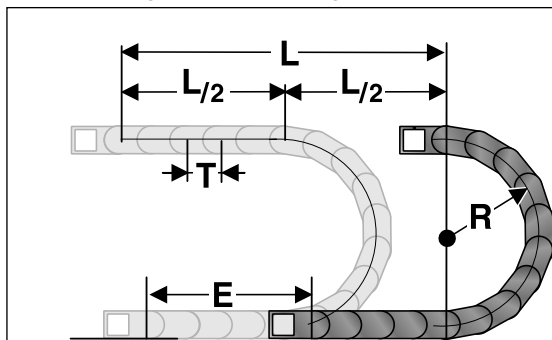
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

#### $FL_b$ :

Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

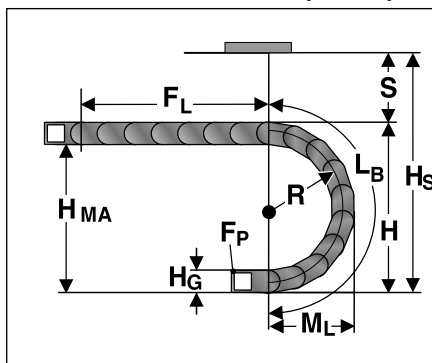
#### Determining the chain length

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

$$\approx 1 \text{ m chain} = 35 \times 28 \text{ mm links}$$

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

### Installation dimensions (in mm)

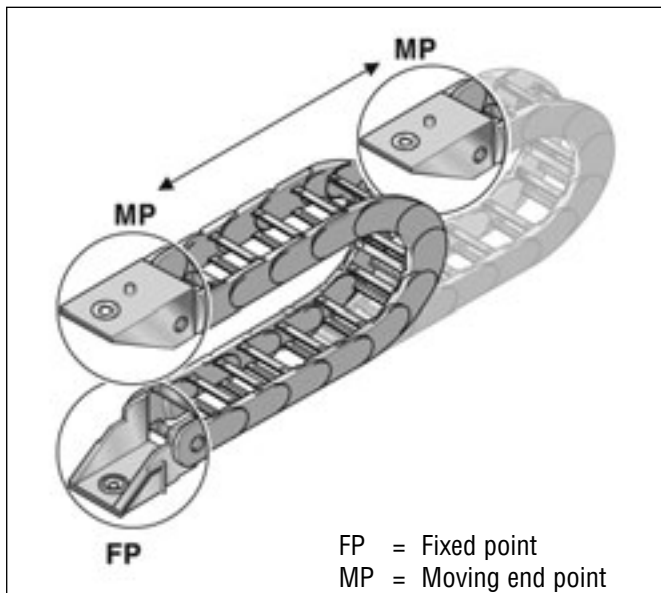


Radius R	35	50	70
Outside height of chain link ( $H_o$ )	26	26	26
Height of bend ( $H$ )	96	126	166
Height of moving end connection ( $H_{MA}$ )	70	100	140
Safety margin ( $S$ )	25	25	25
Installation height ( $H_s$ )	121	151	191
Arc projection ( $M_L$ )	76	91	111
Bend length ( $L_b$ )	179	226	289

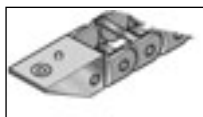


# MP 2000 - MultiLine

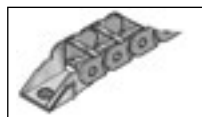
## Chain bracket



### Chain bracket



Top 0°



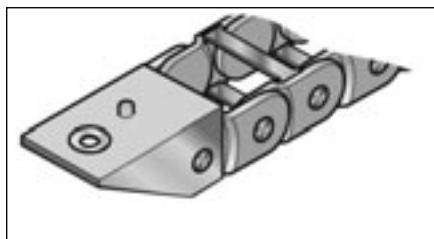
Bottom 0°

## Chain bracket

Type

Order no.

Pack

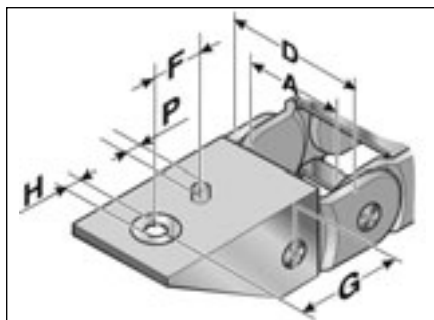


KA 2001 Female end	020000005000	for inside width 15 mm	1
KA 2001 Male end	020000005100	for inside width 15 mm	1
KA 2002 Female end	020000005200	for inside width 25 mm	1
KA 2002 Male end	020000005300	for inside width 25 mm	1

The chain bracket is an all plastics 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 M5 screws.

## Chain bracket

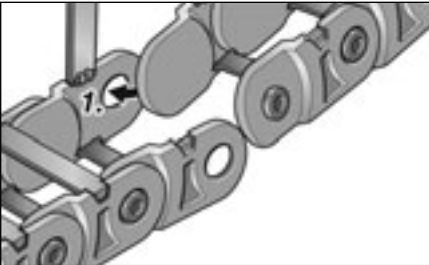
Dimensions in mm



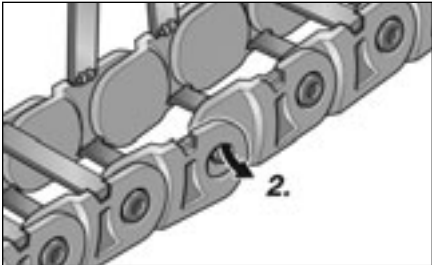
Type	A	D	G	F	H Ø	P Ø
KA 2001	15.00	25.00	23.50	12.50	5.50	4.00
KA 2002	25.00	35.00	23.50	12.50	5.50	4.00

# MP 2000 - MultiLine

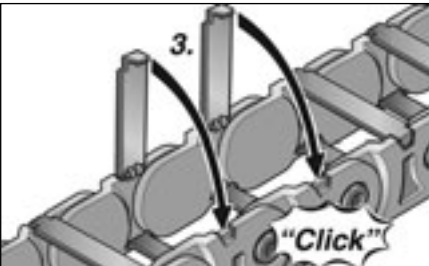
## Assembly



Step 1

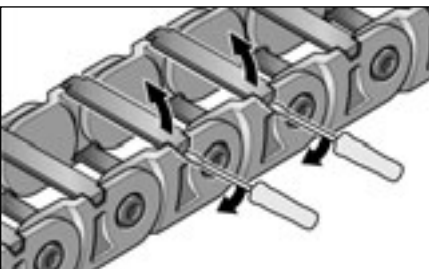


Step 2

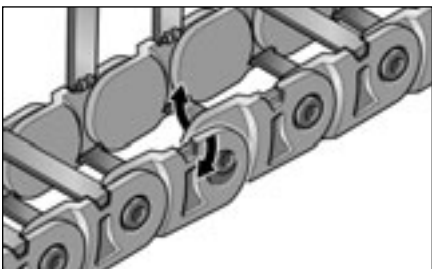


Step 3

## Disassembly



Step 1



Step 2



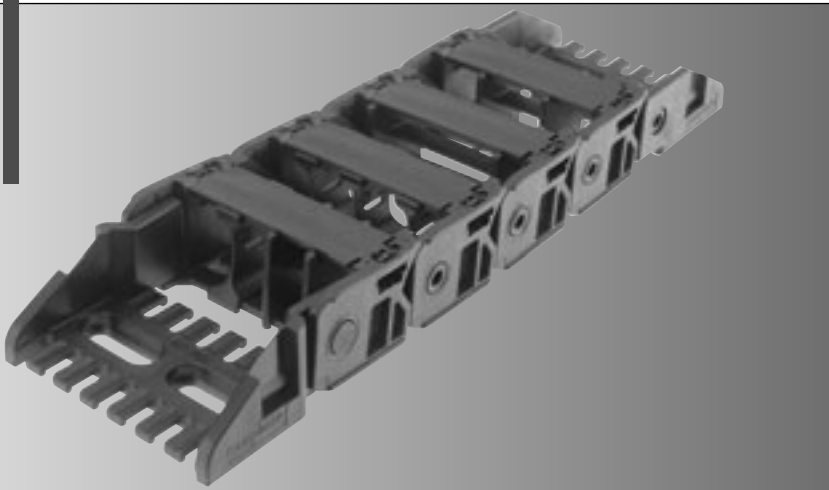
## MP 2000 - MultiLine



## CABLE DRAG CHAIN SYSTEMS

***MultiLine***

**MP 3000**





# MP 3000 - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP3001	44	26	026	50	050				
MP3002	55	37	037	70	070				
MP3002.5	74	56	056	95	095				
MP3003	80	62	062	120	120				
MP3003.5	94	76	076	150	150				
MP3004	105	87	087	200	200			0	7
MP3005	119	101	101	300	300			1	9

Order number:	0300			0			0

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0300 026 050 0000

Inside width = 26 mm

Radius = 50 mm

Configuration = 0

Style = 0

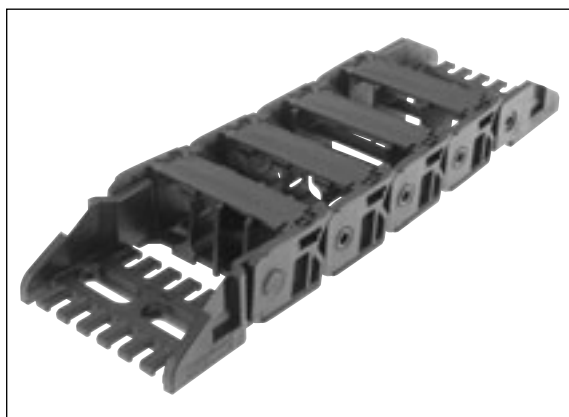
### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Quiet operation
- High stability
- Flexible internal separation
- Rotated 90°, unsupported
- Variant with bias (RV) for high unsupported lengths
- Variant without bias (RK) for gliding arrangements

### Alternative chain type

- MP 26 greater widths
- MP 25 G closed series
- MP 32
- opens on both sides
- variable widths
- greater stresses
- flange connection (KA-F)
- back radii

## Features



Radii with or without bias (RK/RV)



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



H-shelf for easy cable separation in the chain window



Integratable separator for cable separation



ESD cable drag chains for use in areas of electrostatic discharge



Chain bracket with metal inserts and strain relief



Frame ridges can be folded up on one side



Plug-in shelf system for reliable cable guidance

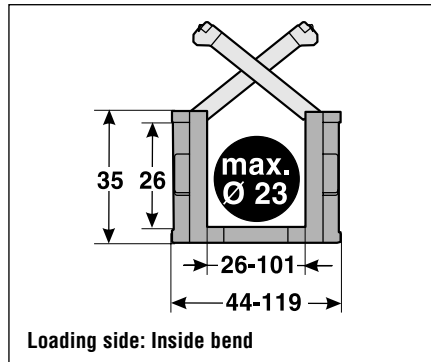


ZL strain relief plate

# MP 3000 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

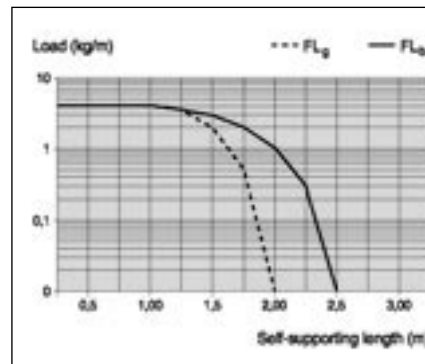
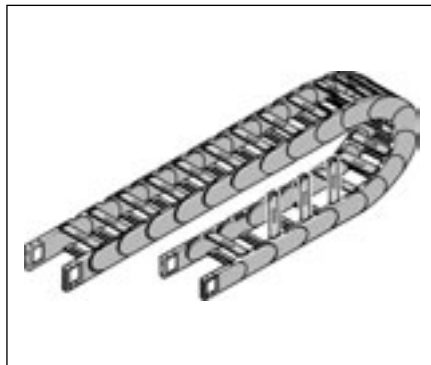
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB  
 ESD material: CE Ex II 2 GD

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 60 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 40 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 3 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 0.7 m  
 Speed, gliding,  $V_g$ : 3 m/s  
 Speed, self-supporting,  $V_s$ : 6 m/s  
 Acceleration, gliding,  $a_g$ : 10 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 15 m/s<sup>2</sup>

### Unsupported length

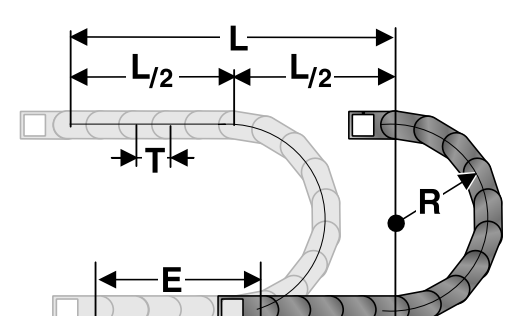


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 22 x 45 mm links

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

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

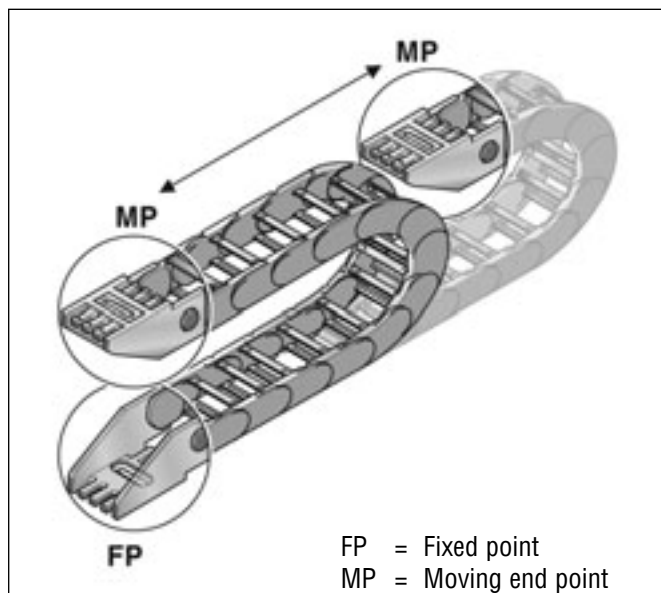
### Installation dimensions (in mm)

Radius R	50	70	95	120	150	200	300
Outside height of chain link ( $H_e$ )	35	35	35	35	35	35	35
Height of bend ( $H$ )	135	175	225	275	335	435	635
Height of moving end connection ( $H_{MA}$ )	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 ( $M_i$ )	113	133	158	183	213	163	363
Bend length ( $L_B$ )	257	320	398	477	571	728	1042

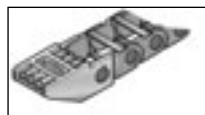


# MP 3000 - MultiLine

## Chain bracket



### Chain bracket U-part



Top



Bottom

### Chain bracket elbow fitting



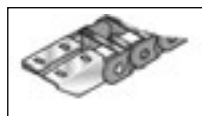
Bottom / Outside



Top / Inside



Top / Outside



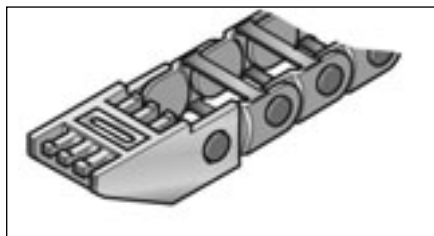
Top / Inside

## Chain bracket U-part

Type

Order no.

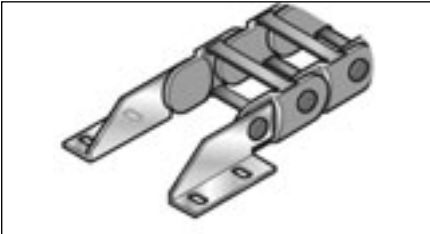
Pack



KA/Z 3001 Female end	030000008000	for inside width 26 mm	1
KA/Z 3001 Male end	030000008100	for inside width 26 mm	1
KA/Z 3002 Female end	030000008200	for inside width 37 mm	1
KA/Z 3002 Male end	030000008300	for inside width 37 mm	1
KA/Z 3002.5 Female end	030000007600	for inside width 56 mm	1
KA/Z 3002.5 Male end	030000007700	for inside width 56 mm	1
KA/Z 3003 Female end	030000008400	for inside width 62 mm	1
KA/Z 3003 Male end	030000008500	for inside width 62 mm	1
KA/Z 3003.5 Female end	030000007800	for inside width 76 mm	1
KA/Z 3003.5 Male end	030000007900	for inside width 76 mm	1
KA/Z 3004 Female end	030000008600	for inside width 87 mm	1
KA/Z 3004 Male end	030000008700	for inside width 87 mm	1
KA/Z 3005 Female end	030000008800	for inside width 101 mm	1
KA/Z 3005 Male end	030000008900	for inside width 101 mm	1

The chain bracket, type KA/Z 3001 - 3005, is an all plastics 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 should be fastened with cable ties on the integrated strain relief of the chain bracket.

# MP 3000 - MultiLine

Chain bracket elbow fitting	Type	Order no.	Material	Pack
	KA 3008 Female end	0300000052	Steel plate	1
	KA 3008 Male end	0300000053	Steel plate	1
	KA 3009 Female end	0300000054	Stainless steel 1.4301	1
	KA 3009 Male end	0300000055	Stainless steel 1.4301	1
Please order one female end (left hole + right hole) and one male end (left bolt + right bolt) for each chain.				

# Chain bracket U-part

Dimensions in mm

An isometric technical drawing of a chain bracket U-part. The part is shown from a perspective view. Dimension lines indicate the following measurements: 'A' is the width of the top flange, 'D' is the total width including the top flange, 'G' is the width of the base, 'H' is the height of the side wall, and 'I' is the length of the base.

Type	A	D	G	H Ø	I
KA/Z 3001	26.00	44.00	31.50	6.50	18.50

An isometric technical drawing of a chain bracket U-part, similar to the one above but with an additional dimension 'B'. Dimension lines indicate the following measurements: 'A' is the width of the top flange, 'B' is the width of the base, 'D' is the total width including the top flange, 'G' is the width of the base, 'H' is the height of the side wall, and 'I' is the length of the base.

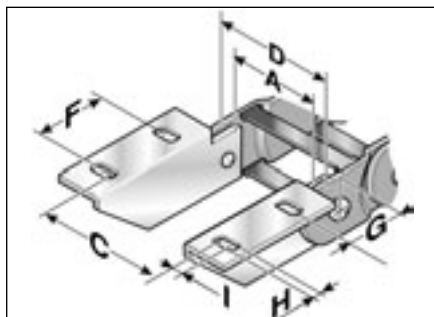
Type	A	B	D	G	H Ø	I
KA/Z 3002	37.00	30.00	55.00	31.50	6.50	7.50
KA/Z 3002.5	56.00	48.00	74.00	31.50	6.50	7.50
KA/Z 3003	62.00	55.00	80.00	31.50	6.50	18.50
KA/Z 3003.5	76.00	68.00	94.00	31.50	6.50	18.50
KA/Z 3004	87.00	80.00	105.00	31.50	6.50	18.50
KA/Z 3005	101.00	94.00	119.00	31.50	6.50	18.50



# MP 3000 - MultiLine

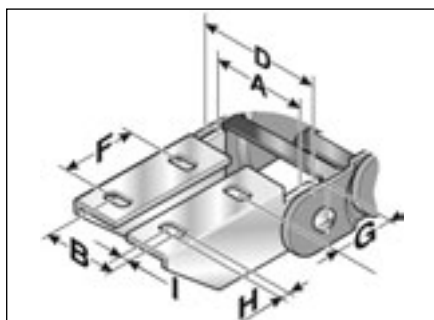
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 3008 Female end	26.00	48.50	44.00	25.00	21.00	6.50	4.50
KA 3008 Male end	26.00	57.00	44.00	25.00	21.00	6.50	4.50
KA 3008 Female end	37.00	59.50	55.00	25.00	21.00	6.50	4.50
KA 3008 Male end	37.00	68.00	55.00	25.00	21.00	6.50	4.50
KA 3008 Female end	56.00	78.50	74.00	25.00	21.00	6.50	4.50
KA 3008 Male end	56.00	87.00	74.50	25.00	21.00	6.50	4.50
KA 3008 Female end	62.00	84.50	80.00	25.00	21.00	6.50	4.50
KA 3008 Male end	62.00	93.00	80.00	25.00	21.00	6.50	4.50
KA 3008 Female end	76.00	98.50	94.00	25.00	21.00	6.50	4.50
KA 3008 Male end	76.00	107.00	94.00	25.00	21.00	6.50	4.50
KA 3008 Female end	87.00	109.50	105.50	25.00	21.00	6.50	4.50
KA 3008 Male end	87.00	118.00	105.00	25.00	21.00	6.50	4.50
KA 3008 Female end	101.00	123.50	119.50	25.00	21.00	6.50	4.50
KA 3008 Male end	101.00	132.00	119.00	25.00	21.00	6.50	4.50



Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 3008 Female end	37.00	28.50	55.00	25.00	21.00	6.50	4.50
KA 3008 Male end	37.00	33.50	55.00	25.00	21.00	6.50	4.50
KA 3008 Female end	56.00	47.50	74.00	25.00	21.00	6.50	4.50
KA 3008 Male end	56.00	52.50	74.00	25.00	21.00	6.50	4.50
KA 3008 Female end	62.00	53.50	80.00	25.00	21.00	6.50	4.50
KA 3008 Male end	62.00	58.50	80.00	25.00	21.00	6.50	4.50
KA 3008 Female end	76.00	67.50	94.00	25.00	21.00	6.50	4.50
KA 3008 Male end	76.00	72.50	94.00	25.00	21.00	6.50	4.50
KA 3008 Female end	87.00	78.50	105.00	25.00	21.00	6.50	4.50
KA 3008 Male end	87.00	83.50	105.00	25.00	21.00	6.50	4.50
KA 3008 Female end	101.00	92.50	119.00	25.00	21.00	6.50	4.50
KA 3008 Male end	101.00	97.50	119.00	25.00	21.00	6.50	4.50

# MP 3000 - Accessories

Separator	Type	Order no.	Description	Pack
	TR 3000	030000009000	Separator movable	1
	TR 3001	030000009200	Separator lockable	1
	Lock grid spacing 3.00 mm			

Separator

We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable. The fixed lockable separator must be used for side-mounted cable drag chains to prevent the separator from slipping down.

Type	TI	H	Dimensions in mm	
			H1	H2
TR 3000	1.50	2.50	12.90	12.90
TR 3001	1.50	2.50	12.90	12.90



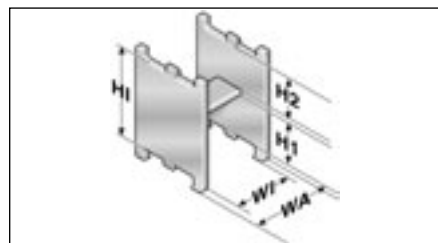
Separator

H-shaped shelf unit	Type	Order no.	Description	Pack
	RE 2615	100000261510	RE 2615 Shelf unit, H-shaped 1	
	RE 2627	100000262710	RE 2627 Shelf unit, H-shaped 1	
	RE 2651	100000265110	RE 2651 Shelf unit, H-shaped 1	
Lock grid spacing 3.00 mm				

H-shaped shelf unit

Insert to obtain additional levels in pre-defined distances.


Type	WA	WI	Dimensions in mm		
			H1	H2	HI
RE 2615	17.50	12.50	13.70	9.60	26.00
RE 2627	29.50	24.50	13.70	9.60	26.00
RE 2651	53.50	48.50	13.70	9.60	26.00



H-shaped shelf unit



# MP 3000 - Accessories

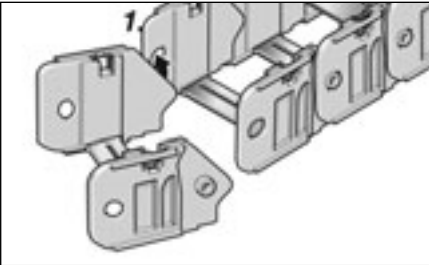
Shelving system	Type	Order no.	Description	Width in mm	Pack
	RBT 037	100000003700	RBT 037 Shelf	37	1
	RBT 062	100000006200	RBT 062 Shelf	62	1
	RBT 086	100000008600	RBT 086 Shelf	86	1
	RBT 101	100000010100	RBT 101 Shelf	101	1
	Lock grid spacing 3.00 mm				

Shelving system

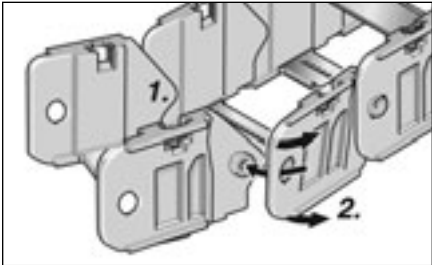
The shelf must be used with a minimum of two separators to create a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

# MP 3000 - MultiLine

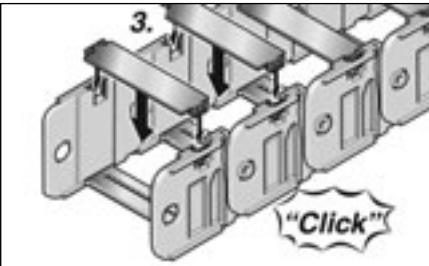
## Assembly



Step 1

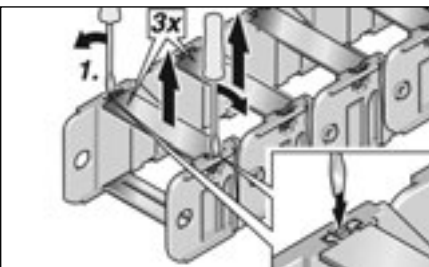


Step 2

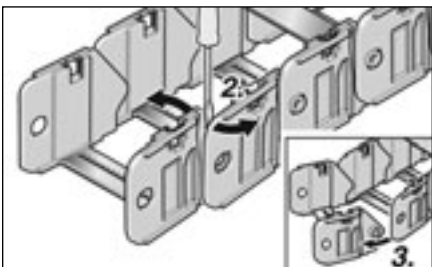


Step 3

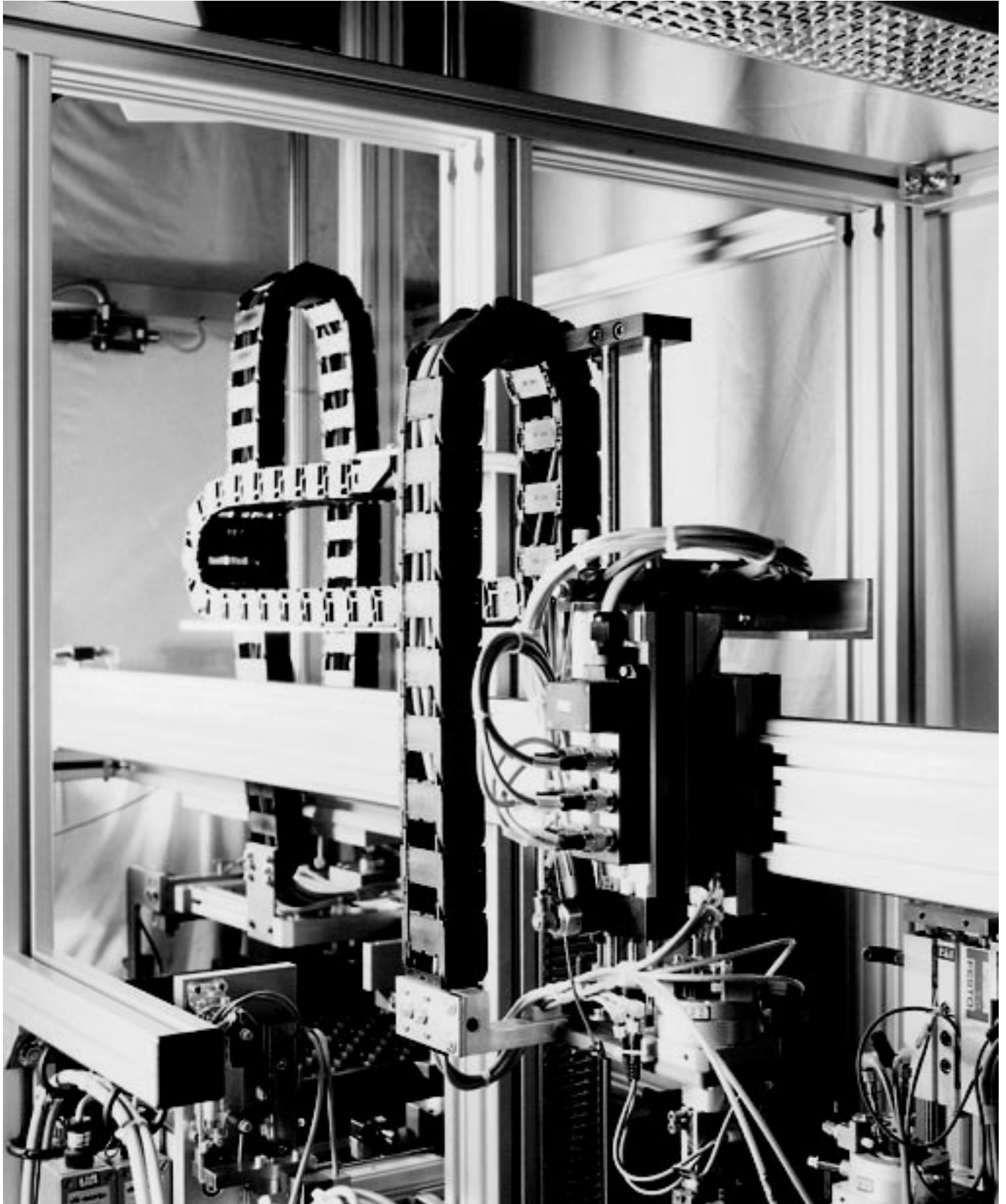
## Disassembly



Step 1



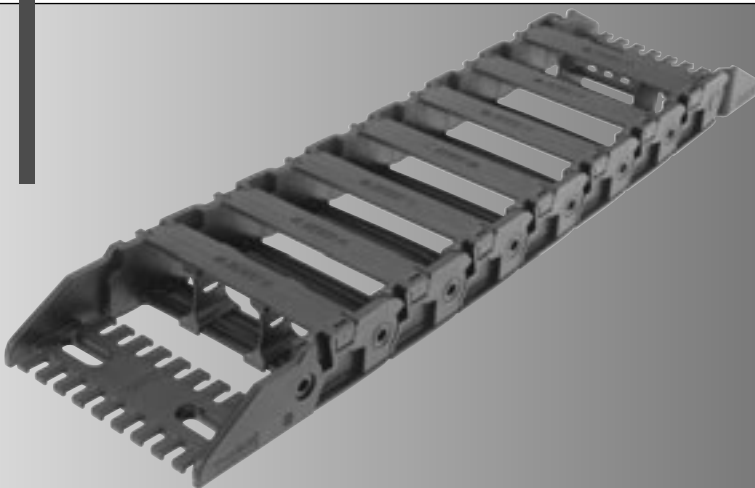
Step 2



## CABLE DRAG CHAIN SYSTEMS

***MultiLine***

**MP 26**



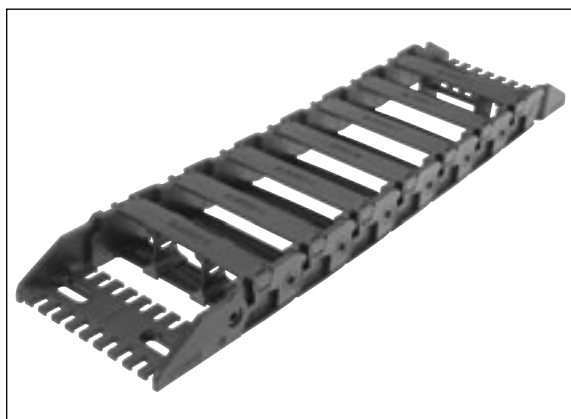


Style (order code)						
Configuration (order code)						
Radius (order code)						
in mm						
Internal width (order code)						
in mm						
External width						
in mm						
				40	040	
				50	050	
MP 26 026	44	26	026	70	070	
MP 26 037	55	37	037	95	095	
MP 26 062	80	62	062	120	120	
MP 26 087	105	87	087	150	150	
MP 26 101	119	101	101	200	200	
MP 26 125	143	125	125	250	250	
						0
						7
						9

- MP 3000  
Version with/without bias
- MP 25 G closed series
- MP 32  
opens on both sides  
variable widths  
greater stresses  
flange connection (KA-F)  
back radii

0

## Features



Radii with medium bias (R) for all applications



H-shelf for easy cable separation in the chain window



### Integratable separator for cable separation



### Chain bracket with metal inserts and strain relief



Frame ridges can be folded up on one side



## Plug-in shelf system for reliable cable guidance

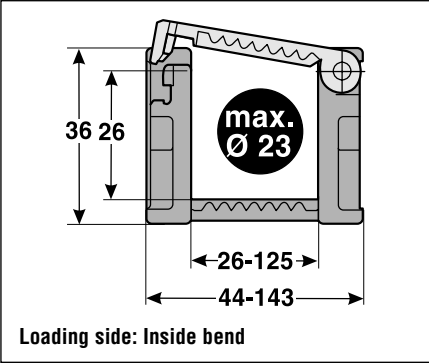


ZL strain relief plate

# MP 26 - MultiLine

Technical data

### Chain link dimensions



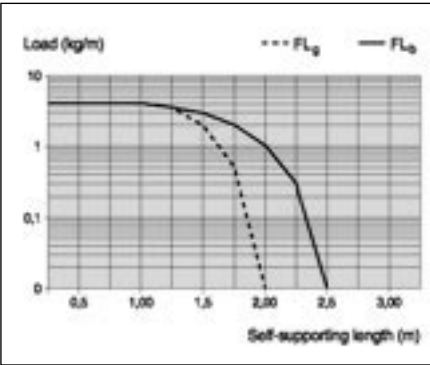
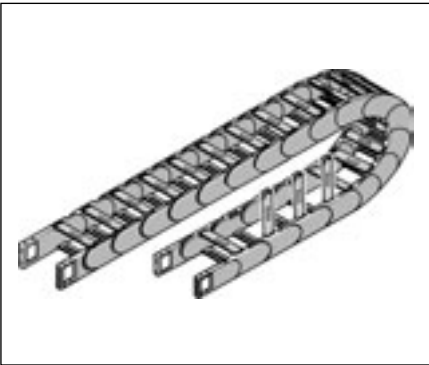
### Material properties

Service temperature:	-30 to +120 °C
Gliding friction factor:	0.30
Static friction factor:	0.45
Fire classification:	in conformity with UL94 HB
ESD material:	CE Ex II 2 GD
Other material properties on request	

### Technical specifications

Travel distance, gliding, $L_g$ :	60 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	40 m
Travel distance, vertical, upright, $L_{vu}$ :	3 m
Rotated 90°, self-supporting, $L_{sg}$ :	0.7 m
Speed, gliding, $V_g$ :	3 m/s
Speed, self-supporting, $V_s$ :	6 m/s
Acceleration, gliding, $a_g$ :	10 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	15 m/s <sup>2</sup>

### Unsupported length



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

**FL<sub>b</sub>:**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length

$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

#### Determining the chain length

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

$\approx$  1 m chain = 20 x 50 mm links

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

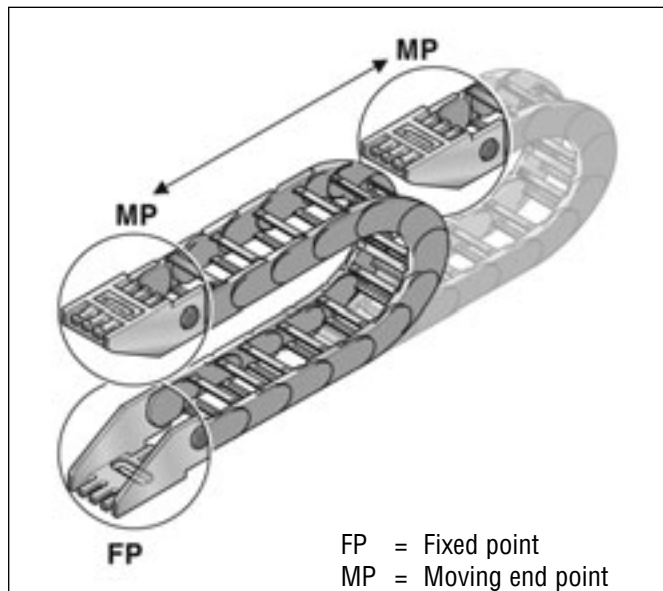
### Installation dimensions (in mm)

	Radius R	40	50	70	95	120	150	200	250
Outside height of chain link ( $H_e$ )		36	36	36	36	36	36	36	36
Height of bend ( $H$ )		116	136	176	226	276	336	436	536
Height of moving end connection ( $H_{MA}$ )		80	100	140	190	240	300	400	500
Safety margin ( $S$ )		70	70	70	70	70	70	70	70
Installation height ( $H_g$ )		186	206	246	296	346	406	506	606
Arc projection ( $M_L$ )		108	118	138	163	188	218	268	318
Bend length ( $L_b$ )		232	264	326	405	483	578	735	892



# MP 26 - MultiLine

## Chain bracket



### Chain bracket



Top



Bottom

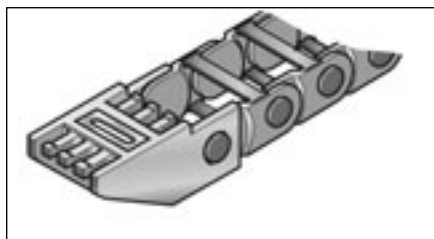
## Chain bracket

Type

Order no.

for inside width

Pack



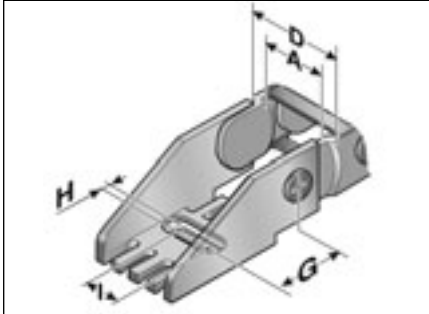
KA/Z 26026 Female end	026000005000	26	1
KA/Z 26026 Male end	026000005100	26	1
KA/Z 26037 Female end	026000005200	37	1
KA/Z 26037 Male end	026000005300	37	1
KA/Z 26062 Female end	026000005400	62	1
KA/Z 26062 Male end	026000005500	62	1
KA/Z 26087 Female end	026000005600	87	1
KA/Z 26087 Male end	026000005700	87	1
KA/Z 26101 Female end	026000005800	101	1
KA/Z 26101 Male end	026000005900	101	1
KA/Z 26125 Female end	026000006000	125	1
KA/Z 26125 Male end	026000006100	125	1

The chain bracket, type KA/Z, is an all plastics 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 should be fastened with cable ties on the integrated strain relief of the chain bracket.

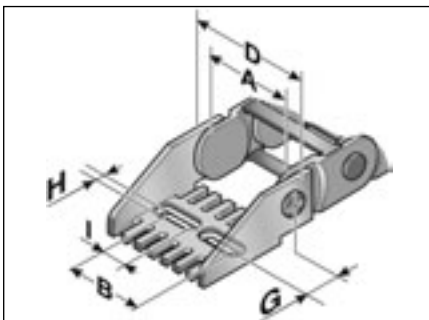
# MP 26 - MultiLine

## Chain bracket

Dimensions in mm



Type	A	D	G	H Ø	I
KA/Z 26026 Female end	26.00	44.00	34.50	6.50	18.00
KA/Z 26026 Male end	26.00	44.00	36.00	6.50	18.00



Type	A	B	D	G	H Ø	I
KA/Z 26037 Female end	37.00	30.00	55.00	34.50	6.50	7.50
KA/Z 26037 Male end	37.00	30.00	55.00	36.00	6.50	7.50
KA/Z 26062 Female end	62.00	55.00	80.00	34.50	6.50	18.50
KA/Z 26062 Male end	62.00	55.00	80.00	36.00	6.50	18.50
KA/Z 26087 Female end	87.00	80.00	105.00	34.50	6.50	18.50
KA/Z 26087 Male end	87.00	80.00	105.00	36.00	6.50	18.50
KA/Z 26101 Female end	101.00	94.00	119.00	34.50	6.50	18.50
KA/Z 26101 Male end	101.00	94.00	119.00	36.00	6.50	18.50
KA/Z 26125 Female end	125.00	118.00	143.00	34.50	6.50	18.50
KA/Z 26125 Male end	125.00	118.00	143.00	36.00	6.50	18.50



# MP 26 - Accessories

Separator	Type	Order no.	Description	Pack
	TR 3000	030000009000	Separator movable	1
	TR 3001	030000009200	Separator lockable	1
Lock grid spacing 3.00 mm				

Separator

We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable. The fixed lockable separator must be used for side-mounted cable drag chains to prevent the separator from slipping down.



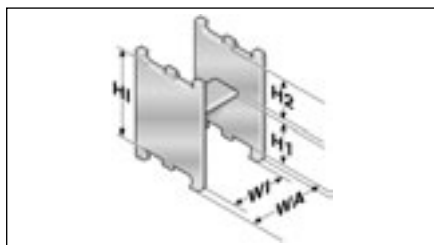
Separator

Type	TI	H	Dimensions in mm	
			H1	H2
TR 3000	1.50	2.50	12.90	12.90
TR 3001	1.50	2.50	12.90	12.90

H-shaped shelf unit	Type	Order no.	Description	Pack
	RE 2615	100000261510	RE 2615 Shelf unit, H-shaped	1
	RE 2627	100000262710	RE 2627 Shelf unit, H-shaped	1
	RE 2632	100000263210	RE 2632 Shelf unit, H-shaped	1
	RE 2651	100000265110	RE 2651 Shelf unit, H-shaped	1
Lock grid spacing 3.00 mm				

H-shaped shelf unit

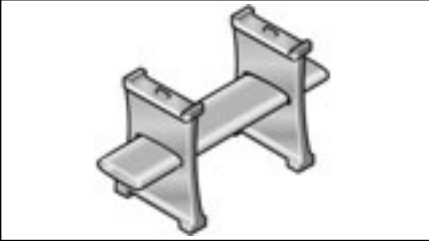
Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

Type	WA	WI	Dimensions in mm		
			H1	H2	H3
RE 2615	17.50	12.50	13.70	9.60	26.00
RE 2627	29.50	24.50	13.70	9.60	26.00
RE 2632	37.00	32.00	17.50	6.00	26.00
RE 2651	53.50	48.50	13.70	9.60	26.00

# MP 26 - Accessories

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 037	100000003700	RB 037 Shelf	37	1
	RB 062	100000006200	RB 062 Shelf	62	1
	RB 086	100000008600	RB 086 Shelf	86	1
	RB 101	100000010100	RB 101 Shelf	101	1
	RB 125	100000012500	RB 125 Shelf	125	1
	Lock grid spacing 3.00 mm				

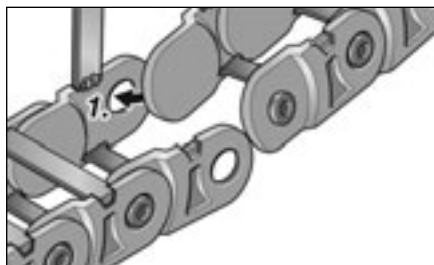
Shelving system

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 therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

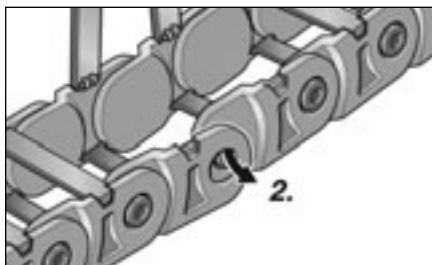


# MP 26 - MultiLine

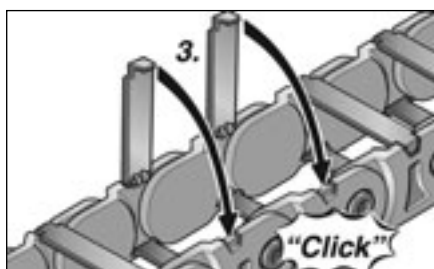
## Assembly



Step 1

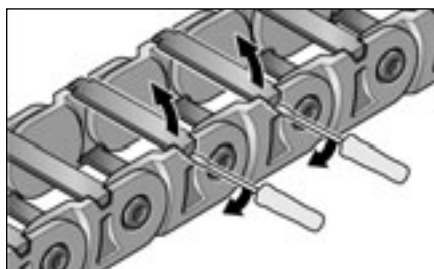


Step 2

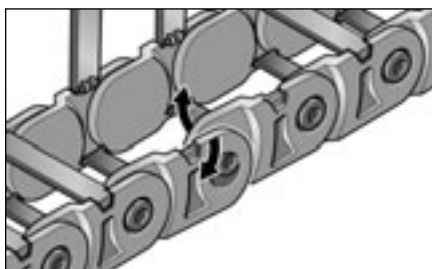


Step 3

## Disassembly

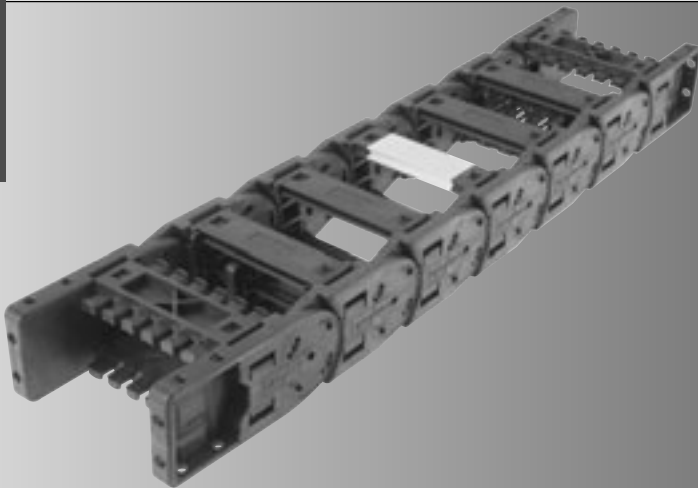


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***PowerLine***

**MP 32**



# MP 32 - PowerLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP32 045	71	45	045						
MP32 062	88	62	062						
MP32 071	97	71	071						
MP32 084	110	84	084						
MP32 096	122	96	096						
MP32 107	133	107	107						
MP32 121	147	121	121						
MP32 144	170	144	144						
MP32 146	172	146	146						
MP32 171	197	171	171						
MP32 182	208	182	182						
MP32 196	222	196	196						
MP32 220	246	220	220						
MP32 246	272	246	246						
MP32 296	322	296	296						
MP32 346	372	346	346						
MP32 396	422	396	396	80	080				
MP32 446	472	446	446	100	100	0			
MP32 496	522	496	496	120	120	2*			
MP32 546	572	546	546	150	150	4			
MP32 xxx	Inside	>80-	ALU	200	200	6	0		
	+ 26	600		250	250	9	9		

<b>Order number:</b>	0320			0			0
----------------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 2\* crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0320 045 080 0000

Inside width = 45 mm

Radius = 80 mm

Configuration = 0

Style = 0

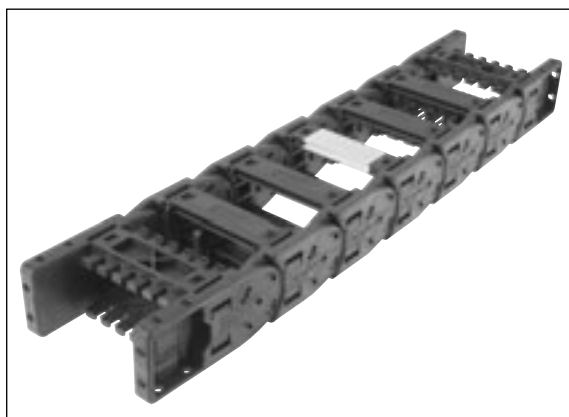
### Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Extreme unsupported lengths
- Very high additional loads
- Opens on both sides
- Variable widths thanks to aluminium ridge
- Flexible internal separation
- Rotated 90°, unsupported/flat

### Alternative chain type

- MP 36 G closed series
- MP 35  
opening cover in inside bend,  
easier to use

## Features



Chain bracket with fixing means on three sides



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with medium bias (R) for all applications



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths



Foldable shelf system for reliable cable guidance



Integratable separator for cable separation

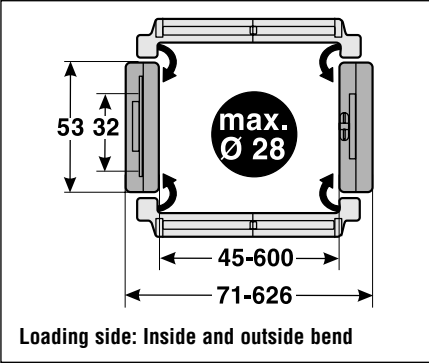


Frame ridge connector for securing very wide frame ridges

# MP 32 - PowerLine

Technical data

### Chain link dimensions



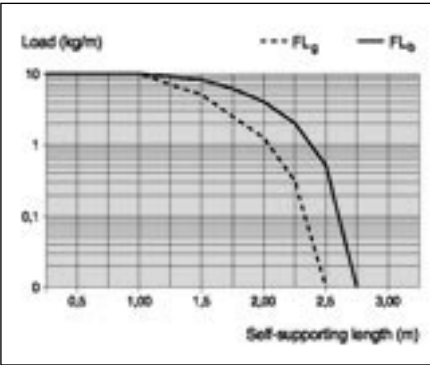
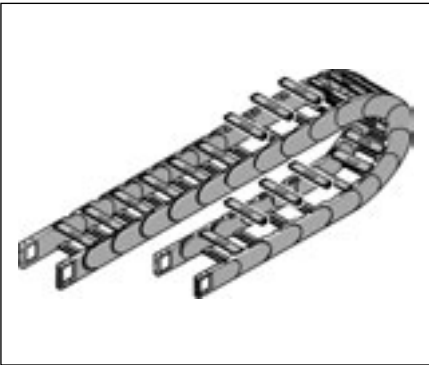
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	100 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	60 m
Travel distance, vertical, upright, $L_{vu}$ :	5 m
Rotated 90°, self-supporting, $L_{sg}$ :	2 m
Speed, gliding, $V_g$ :	5 m/s
Speed, self-supporting, $V_s$ :	20 m/s
Acceleration, gliding, $a_g$ :	25 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	30 m/s <sup>2</sup>

### Unsupported length

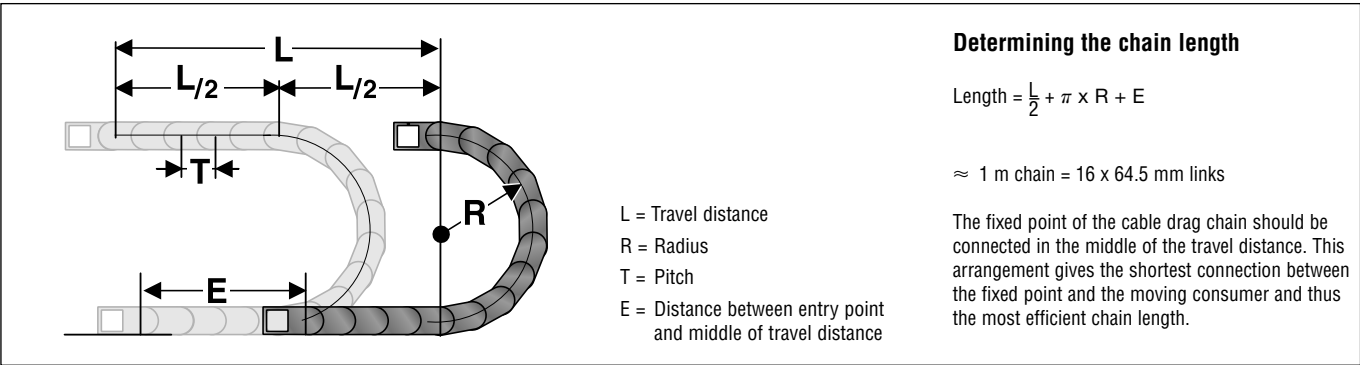


**FL<sub>g</sub>:**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>b</sub>:**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



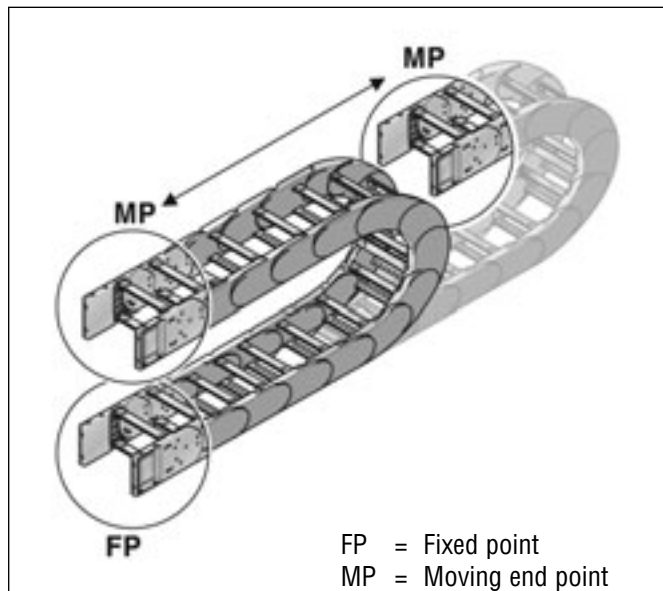
### Installation dimensions (in mm)

	Radius R					
	80	100	120	150	200	250
Outside height of chain link ( $H_e$ )	53	53	53	53	53	53
Height of bend ( $H$ )	213	253	293	353	453	553
Height of moving end connection ( $H_{MA}$ )	160	200	240	300	400	500
Safety margin ( $S$ )	30	30	30	30	30	30
Installation height ( $H_g$ )	243	283	323	383	483	583
Arc projection ( $M_L$ )	171	191	211	241	291	341
Bend length ( $L_B$ )	399	462	525	619	776	933



# MP 32 - PowerLine

## Chain bracket



## Chain bracket



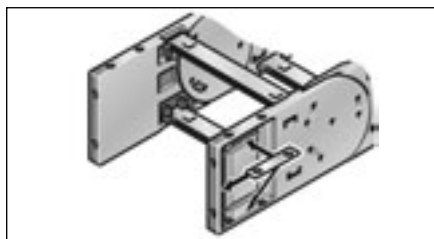
Flexible

## Chain bracket

Type

Order no.

Pack



KA 32-F

0320000050

1

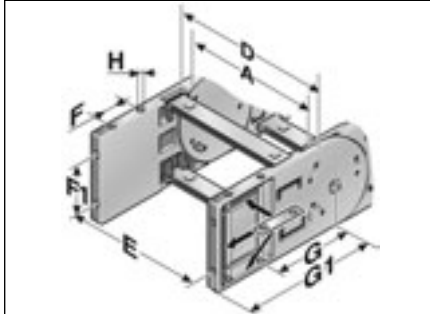
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires two chain brackets. The brackets should be fastened with M5 screws. Metal inserts (provided) are used to minimise the cold flow properties.

This is an enormous advantage, guaranteeing the smooth transfer of high loads to the chain.

# MP 32 - PowerLine

## Chain bracket


Dimensions in mm



Type	A	D	E	F	F1	G	G1	H Ø
KA 32-F	45.00	71.00	59.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	62.00	88.00	76.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	71.00	97.00	85.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	84.00	110.00	98.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	96.00	122.00	110.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	107.00	133.00	121.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	121.00	147.00	135.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	144.00	170.00	158.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	146.00	172.00	160.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	171.00	197.00	185.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	182.00	208.00	196.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	196.00	222.00	210.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	220.00	246.00	234.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	246.00	272.00	260.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	252.00	278.00	266.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	296.00	322.00	310.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	346.00	372.00	360.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	396.00	422.00	410.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	446.00	472.00	460.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	496.00	522.00	510.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	546.00	572.00	560.00	22.50	22.00	57.80	93.00	5.50
KA 32-F	Variable	A+26.00	A+14.00	22.50	22.00	57.80	93.00	5.50

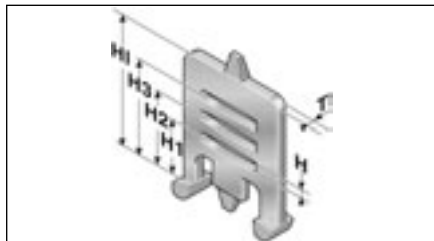


# MP 32 - Accessories


Separator	Type	Order no.	Description	Pack
	TR 32	032000009200	Separator	1
	Lock grid spacing 5.60 mm			
	We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable.			

Separator

Type	Dimensions in mm					
	TI	H	H1	H2	H3	HI
TR 32	3.00	4.20	10.40	16.20	22.00	32.40



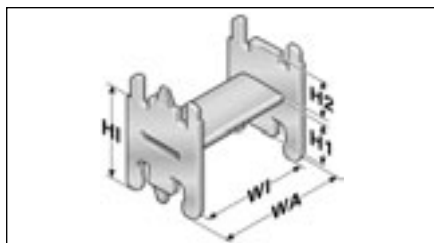
Separator

H-shaped shelf unit	Type	Order no.	Description	Pack
	RE 3235	100000322010	RE 3235 Shelf unit, H-shaped 1	
	RE 3252	100000323510	RE 3252 Shelf unit, H-shaped 1	
	RE 3275	100000327510	RE 3275 Shelf unit, H-shaped 1	
Lock grid spacing 5.60 mm				

H-shaped shelf unit

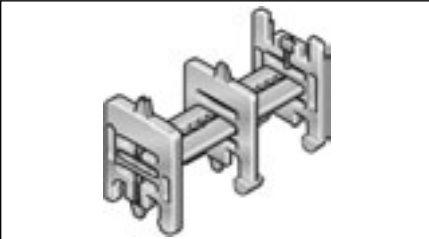
Insert to obtain additional levels in pre-defined distances.

Type	Dimensions in mm				
	WA	WI	H1	H2	HI
RE 3235	43.20	35.20	14.20	14.20	32.40
RE 3252	60.00	52.00	14.20	14.20	32.40
RE 3275	82.40	74.40	16.40	12.00	32.40



H-shaped shelf unit

# MP 32 - Accessories

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 031	100000003100	RB 031 Shelf	31	1
	RB 048	100000004800	RB 048 Shelf	48	1
	RB 070	100000007000	RB 070 Shelf	70	1
	RB 092	100000009200	RB 092 Shelf	92	1
	RB 128	100000012800	RB 128 Shelf	128	1
	RB 167	100000016700	RB 167 Shelf	167	1
	RB 218	100000021800	RB 218 Shelf	218	1
	RTA 32	1000910100	RTA 32 Shelf support, external, incl. pin		1
	RTI 32	1000911100	RTI 32 Shelf support, internal, incl. pin		1

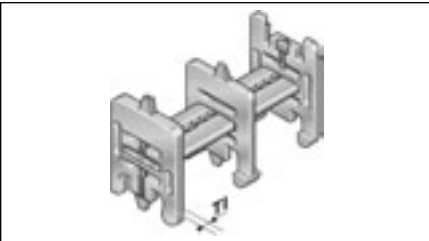
Shelving system

Lock grid spacing 5.60 mm

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

RTA shelf supports are positioned on the outer edge of the internal chain compartment. RTI shelf supports are positioned in the centre of the internal chain compartment in case the shelf system does not span the entire width.

Dimensions in mm		
Type	TI	
RTA / RTI	6.00	



Shelving system



## MP 32 - Accessories

### Frame ridge connector

Type	Order no.	Description	Pack
RSV 32	032000009600	RSV 32 Frame ridge connector	1
RSV 32 A	032000009800	RSV 32 Aluminium frame ridge connector	1



Frame ridge connector

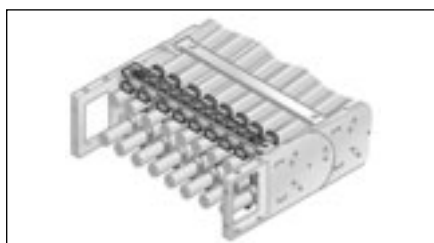
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.

Type	TI	Dimensions in mm
RSV 32	7.50	



### Strain relief RS-ZL

Type	Order no.	Description	Pack
RS-ZL 045-5	052004500010	RS-ZL 045-5 Frame ridge with strain relief	1
RS-ZL 062-5	052006200010	RS-ZL 062-5 Frame ridge with strain relief	1
RS-ZL 071-5	052007100010	RS-ZL 071-5 Frame ridge with strain relief	1
RS-ZL 084-5	052008400010	RS-ZL 084-5 Frame ridge with strain relief	1
RS-ZL 096-5	052009600010	RS-ZL 096-5 Frame ridge with strain relief	1
RS-ZL 107-5	052010700010	RS-ZL 107-5 Frame ridge with strain relief	1
RS-ZL 121-5	052012100010	RS-ZL 121-5 Frame ridge with strain relief	1
RS-ZL 144-5	052014400010	RS-ZL 144-5 Frame ridge with strain relief	1
RS-ZL 171-5	052017100010	RS-ZL 171-5 Frame ridge with strain relief	1
RS-ZL 182-5	052018200010	RS-ZL 182-5 Frame ridge with strain relief	1
RS-ZL 196-5	052019600010	RS-ZL 196-5 Frame ridge with strain relief	1
RS-ZL 220-5	052022000010	RS-ZL 220-5 Frame ridge with strain relief	1
RS-ZL 246-5	052024600010	RS-ZL 246-5 Frame ridge with strain relief	1

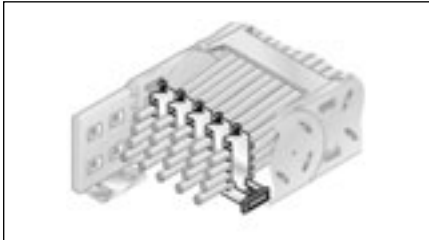


Strain relief RS-ZL

Frame ridges with strain relief that can be permanently integrated in the chain brackets.  
Tailored to all frame ridge widths up to 246 mm.  
May be mounted on the inside and outside bend on both ends of the chain.

# MP 32 - Accessories

## Strain relief with BAK



Strain relief with hooped clamps

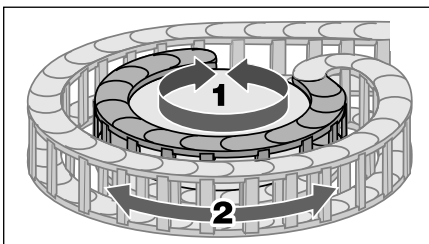
Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes.

Material: Galvanised steel

Please indicate chain type and inside width when ordering.

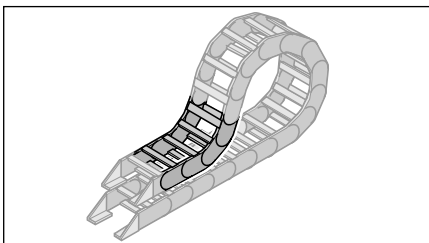
## Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 32 (RÜ200/R120)	32000008060	120 mm	200 mm	1
SR 32 (RÜ200/R135)	32000010060	135 mm	200 mm	1
SR 32 (RÜ200/R150)	32000012060	150 mm	200 mm	1
SR 32 (RÜ200/R170)	32000015060	170 mm	200 mm	1
SR 32 (RÜ200/R200)	32000020060	200 mm	200 mm	1
SR 32 (RÜ200/R250)	32000025060	250 mm	200 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets.



Low-lying chain connection

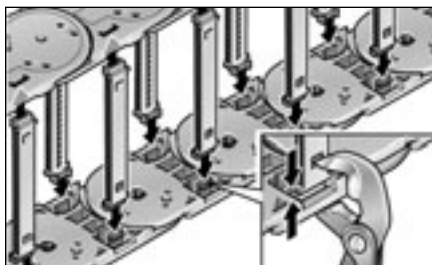


# MP 32 - PowerLine

## Assembly

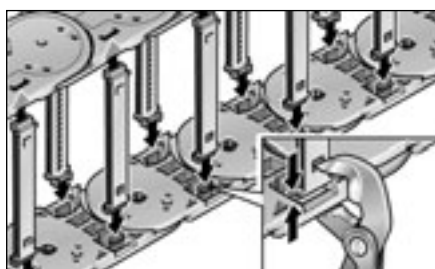


Step 1



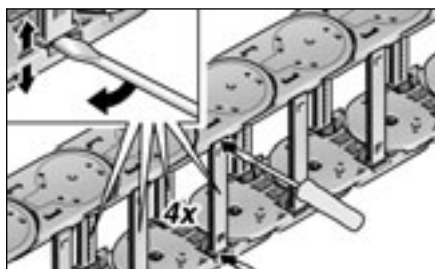
Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.

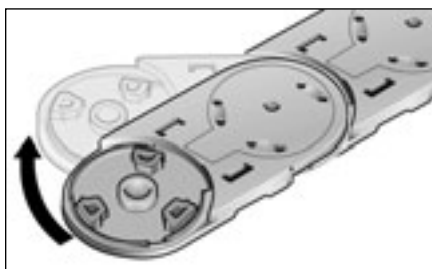


Step 3

## Disassembly

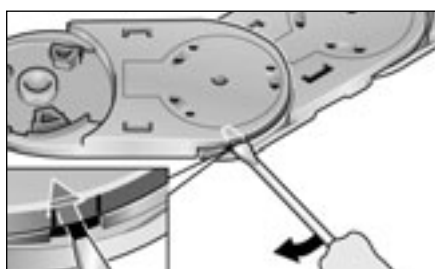


Step 1



Step 2

Disassembly is effected in the reverse sequence to assembly. First lever the ridges out of the side panel on one side, then on the other side.

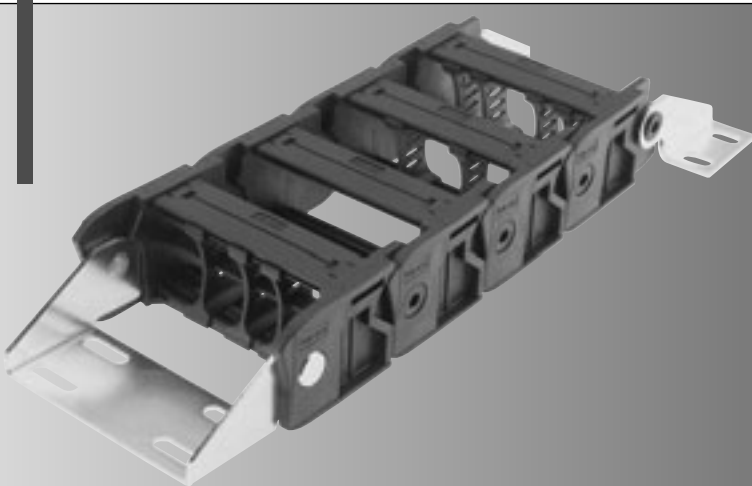


Step 3

## CABLE DRAG CHAIN SYSTEMS

***MultiLine***

**MP 35**





# MP 35 - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP35 062	82	62	062	70	070				
MP35 086	106	86	086	100	100				
MP35 102	122	102	102	150	150				
MP35 125	145	125	125	200	200				
MP35 150	170	150	150	300	300				
						0	0		
						1	9		
Order number: 0350									

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0350 062 070 0000

Inside width = 62 mm

Radius = 70 mm

Configuration = 0

Style = 0

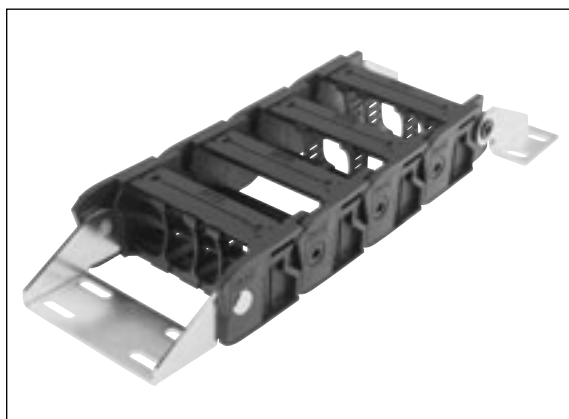
### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Quiet operation
- High stability
- Flexible internal separation
- Rotated 90°, unsupported
- Variant with bias (RV) for high unsupported lengths
- Variant without bias (RK) for gliding arrangements

### Alternative chain type

- MP 36 G closed series
- MP 32 opens on both sides variable widths greater stresses flange connection (KA-F) back radii

## Features



Chain bracket with variably positionable metal bracket



Radii with or without bias (RK/RV)



Back radius combinations



H-shelf for easy cable separation in the chain window



Integratable separator for cable separation



Frame ridges can be removed on one side



Plug-in shelf system for reliable cable guidance



ZL strain relief plate

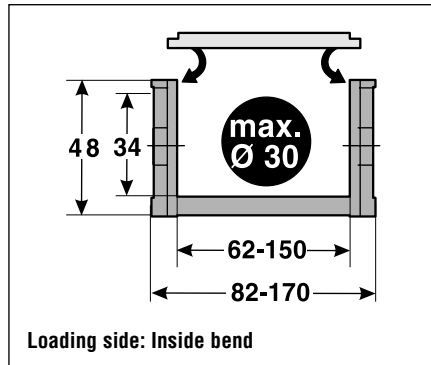


Chain bracket metal profile

# MP 35 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

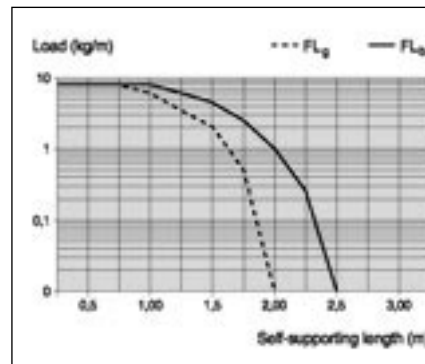
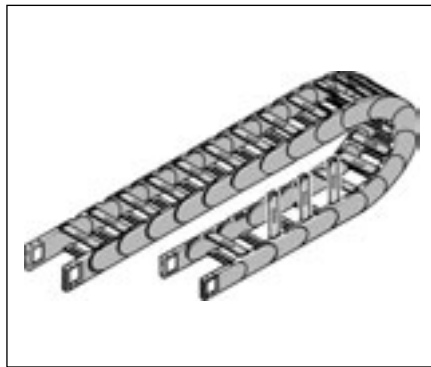
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0,45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 80 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 40 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 3 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 1 m  
 Speed, gliding,  $V_g$ : 3 m/s  
 Speed, self-supporting,  $V_s$ : 10 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 20 m/s<sup>2</sup>

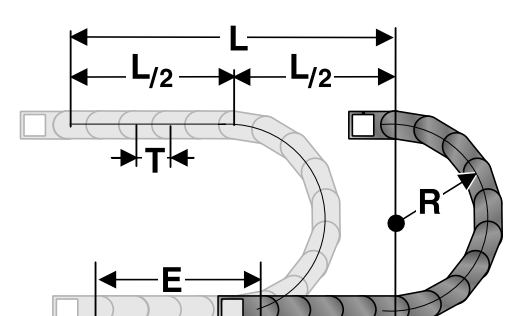
### Unsupported length



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

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but certainly less than the max. sag. If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 17 x 58 mm links

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

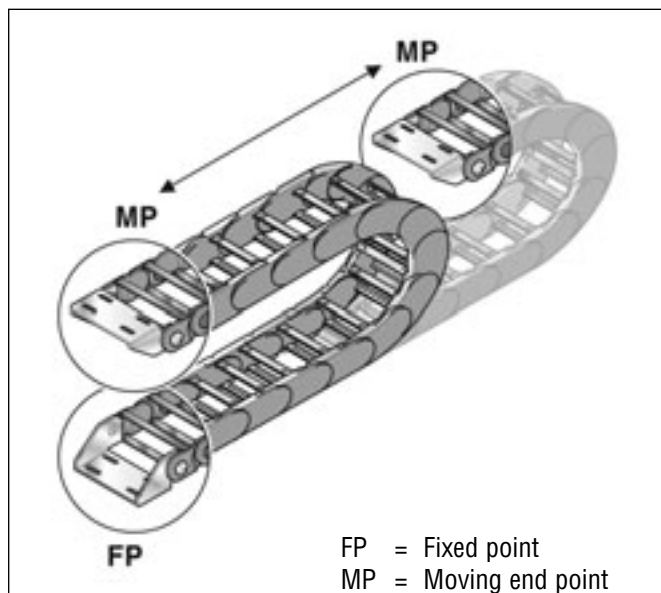
### Installation dimensions (in mm)

Radius R	70	100	150	200	300
Outside height of chain link ( $H_e$ )	48	48	48	48	48
Height of bend ( $H$ )	188	248	348	448	648
Height of moving end connection ( $H_{MA}$ )	140	200	300	400	600
Safety margin with bias ( $S_v$ )	40	40	40	40	40
Installation height with bias ( $H_{sv}$ )	228	288	388	488	688
Safety margin without bias ( $S_k$ )	15	15	15	15	15
Installation height without bias ( $H_{sk}$ )	203	263	363	463	663
Arc projection ( $M_L$ )	152	182	232	282	382
Bend length ( $L_B$ )	353	447	604	761	1075



# MP 35 - MultiLine

## Chain bracket



### Chain bracket U-part



Top



Bottom

### Chain bracket elbow fitting



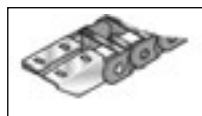
Bottom / outside



Top / inside

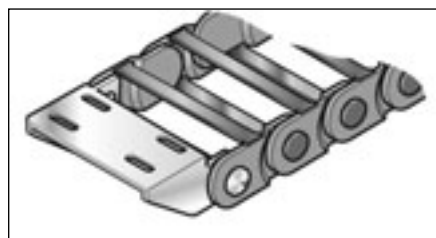


Top / outside



Top / inside

## Chain bracket U-part

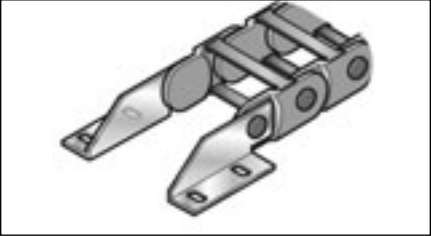


Type	Order no.	Material	Pack
KA 35062 Female end	035000007000	Steel plate	1
KA 35062 Male end	035000007100	Steel plate	1
KA 35086 Female end	035000007200	Steel plate	1
KA 35086 Male end	035000007300	Steel plate	1
KA 35102 Female end	035000007400	Steel plate	1
KA 35102 Male end	035000007500	Steel plate	1
KA 35125 Female end	035000007600	Steel plate	1
KA 35125 Male end	035000007700	Steel plate	1
KA 35150 Female end	035000007800	Steel plate	1
KA 35150 Male end	035000007900	Steel plate	1
KA 35062 Female end	035000008000	Stainless steel 1.4301	1
KA 35062 Male end	035000008100	Stainless steel 1.4301	1
KA 35086 Female end	035000008200	Stainless steel 1.4301	1
KA 35086 Male end	035000008300	Stainless steel 1.4301	1
KA 35102 Female end	035000008400	Stainless steel 1.4301	1
KA 35102 Male end	035000008500	Stainless steel 1.4301	1
KA 35125 Female end	035000008600	Stainless steel 1.4301	1
KA 35125 Male end	035000008700	Stainless steel 1.4301	1
KA 35150 Female end	035000008800	Stainless steel 1.4301	1
KA 35150 Male end	035000008900	Stainless steel 1.4301	1

The metal connection (U-shaped part) is precisely adjusted to the respective chain width.

It only needs to be snapped in the chain link. Please order one male and one female end bracket for each chain. The brackets should be fastened with M6 screws.

# MP 35 - MultiLine

Chain bracket elbow fitting	Type	Order no.	Material	Pack
	KA 3508 Female end	0350000054	Steel plate	1
	KA 3508 Male end	0350000055	Steel plate	1
	KA 3509 Female end	0350000056	Stainless steel 1.4301	1
	KA 3509 Male end	0350000057	Stainless steel 1.4301	1

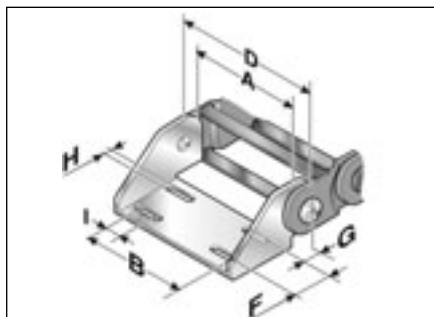
Please order one male and one female end bracket for each chain.



# MP 35 - MultiLine

## Chain bracket U-part

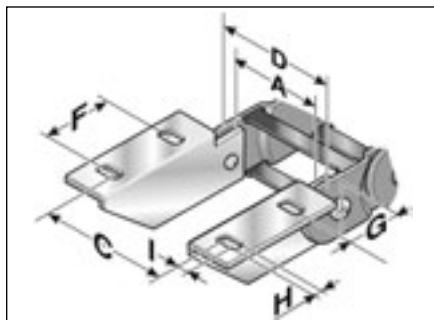
Dimensions in mm



Type	A	B	D	F	G	H Ø	I
KA 35062	62.00	53.50	82.00	25.00	20.00	7.00	15.00
KA 35086	86.00	77.50	106.00	25.00	20.00	7.00	15.00
KA 35102	102.00	93.50	122.00	25.00	20.00	7.00	15.00
KA 35125	125.00	116.5	145.00	25.00	20.00	7.00	15.00
KA 35150	150.00	142.00	170.00	25.00	20.00	7.00	15.00

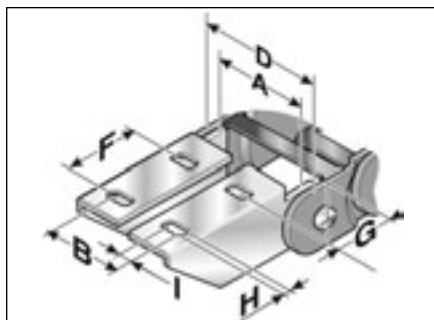
## Chain bracket elbow fitting

Dimensions in mm



Elbow fitting, outside

Type	A	C	D	F	G	H Ø	I
KA 3508/09 Female end	62.00	90.00	98.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	62.00	100.50	98.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	86.00	114.00	122.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	86.00	124.50	122.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	102.00	130.00	138.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	102.00	140.50	138.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	125.00	153.00	161.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	125.00	163.50	161.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	150.00	178.00	186.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	150.00	188.50	186.00	25.00	20.00	7.00	8.00



Elbow fitting, inside

Type	A	B	D	F	G	H Ø	I
KA 3508/09 Female end	62.00	55.00	98.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	62.00	50.00	98.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	86.00	79.00	122.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	86.00	74.00	122.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	102.00	95.00	138.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	102.00	90.00	138.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	125.00	118.00	161.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	125.00	113.00	161.00	25.00	20.00	7.00	8.00
KA 3508/09 Female end	150.00	143.00	186.00	25.00	20.00	7.00	8.00
KA 3508/09 Male end	150.00	138.00	186.00	25.00	20.00	7.00	8.00

# MP 35 - Accessories

Separator	Type	Order no.	Description	Pack
-----------	------	-----------	-------------	------



Separator

TR 35	035000009200	Separator	1
Lock grid spacing 3.00 mm			

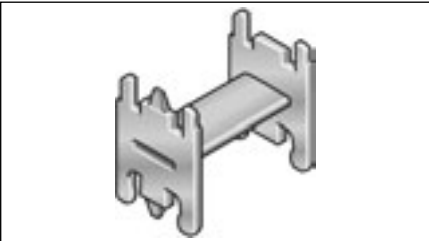
We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed.  
An offset configuration of the separators is advisable.



Separator

Type	Dimensions in mm					
	T1	H1	H2	H3	HI	H
TR 35	2.00	10.90	16.90	22.90	33.80	2.50

H-shaped shelf unit	Type	Order no.	Description	Pack
---------------------	------	-----------	-------------	------

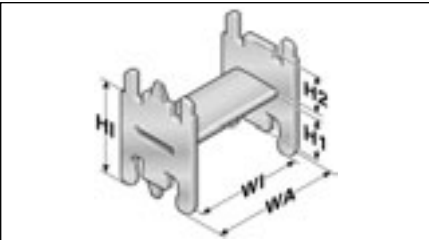


H-shaped shelf unit

RE 3533	100000353310	RE 3533 Shelf unit, H-shaped	1
RE 3548	100000354810	RE 3548 Shelf unit, H-shaped	1
RE 3557	100000353710	RE 3557 Shelf unit, H-shaped	1

Lock grid spacing 5.60 mm			
---------------------------	--	--	--

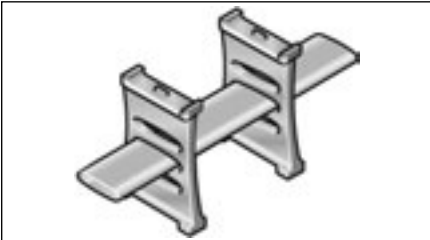
Insert to obtain additional levels in pre-defined distances.



Type	Dimensions in mm				
	WA	WI	H1	H2	HI
RE 3533	35.50	30.50	18.00	12.00	33.00
RE 3548	50.50	45.50	18.00	12.00	33.00
RE 3557	59.50	54.50	18.00	12.00	33.00



## MP 35 - Accessories

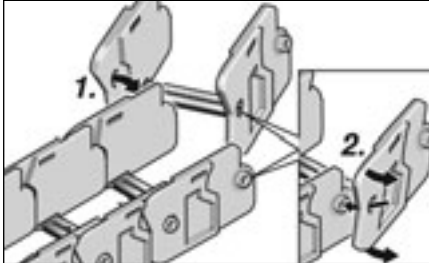
Shelving system	Type	Order no.	Description	Width in mm	Pack
	RBT 062	100000006200	RBT 062 Shelf	62	1
	RBT 086	100000008600	RBT 086 Shelf	86	1
	RBT 101	100000010100	RBT 101 Shelf	101	1
	RBT 125	100000012500	RBT 125 Shelf	125	1
	RBT 150	100000015000	RBT 150 Shelf	150	1
Lock grid spacing 3.00 mm					

Shelving system

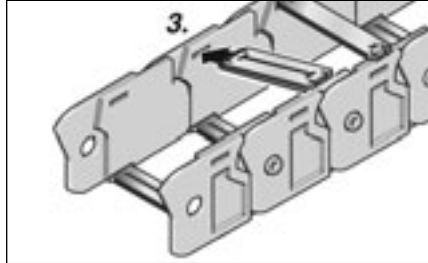
The shelf must be used with a minimum of two separators to create a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

# MP 35 - MultiLine

## Assembly

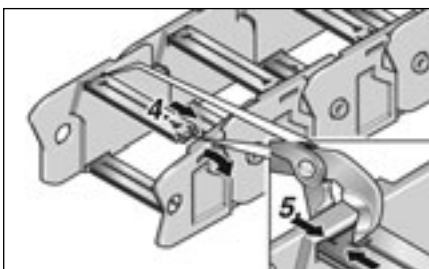


Step 1



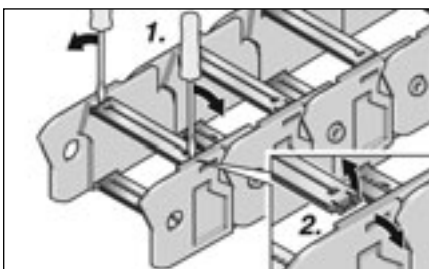
Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.

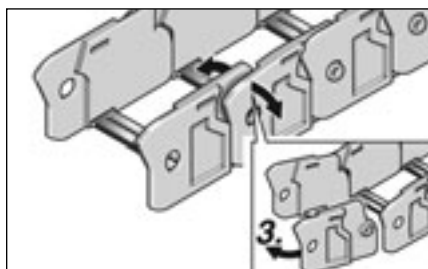


Step 3

## Disassembly



Step 1



Step 2

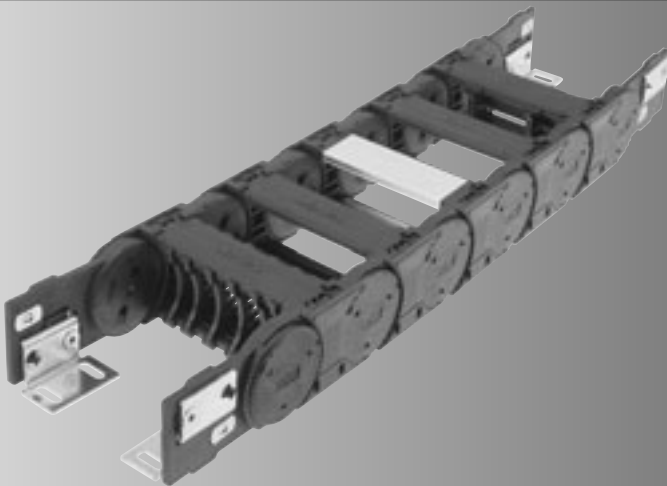
Disassembly is effected in the reverse sequence to assembly. First lever the ridges out of the side panel on one side, then on the other side.



## MP 35 - MultiLine



## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 44**



# MP 44 - MultiLine

## Order variants

Style (order code)									
Configuration (order code) *= standard									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP44 045	78	45	045					0*	
MP44 062	95	62	062					1*	
MP44 084	117	84	084					2	
MP44 105	138	105	105	90	090			3	
MP44 144	177	144	144	125	125			4	
MP44 182	215	182	182	150	150			5	
MP44 xxx	Inside	>118-		200	200			6	
	+ 33	600	ALU	250	250			7	0
								9	9
Order number: 0440 [ ] [ ] 0 [ ] [ ] 0									

### Configuration:

- 0\* crossbar every link; w/bias
- 1\* crossbar every link; w/o bias
- 2 crossbar EOL; w/bias
- 3 crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0440 045 090 00\*00

Inside width = 45 mm

Radius = 90 mm

Configuration = 0\*

Style = 0

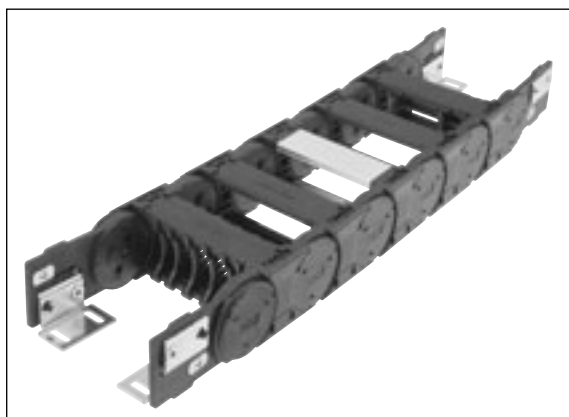
### Ideal operating conditions

- Opening cover on both sides
- Flexible internal separation
- Variable widths thanks to aluminium ridge
- Gliding arrangement
- Unsupported arrangement
- Quiet operation

### Alternative chain type

- MP 43 G closed series
- MP 41
- Higher stresses
- Flange connection (KA-F)
- back radii

## Features



Chain bracket with variably positionable metal bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Aluminium frame ridges with integrated lock grid in variable lengths



Plug-in shelf system for reliable cable guidance

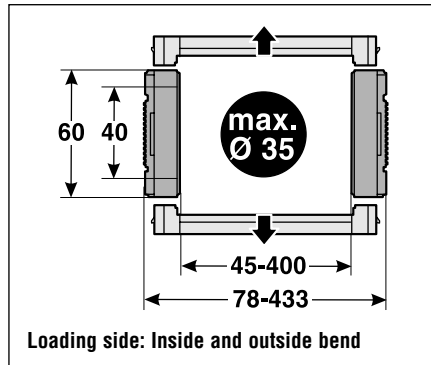


ZL strain relief plate

# MP 44 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

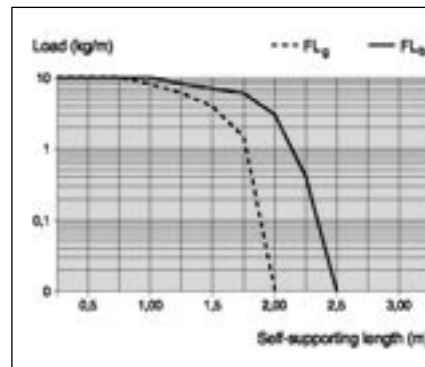
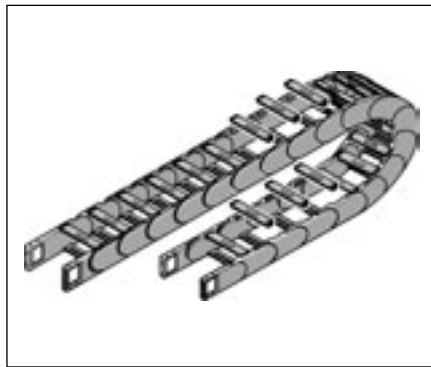
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 50 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 40 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 3 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 1 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 15 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 20 m/s<sup>2</sup>

### Unsupported length



#### FL<sub>g</sub>:

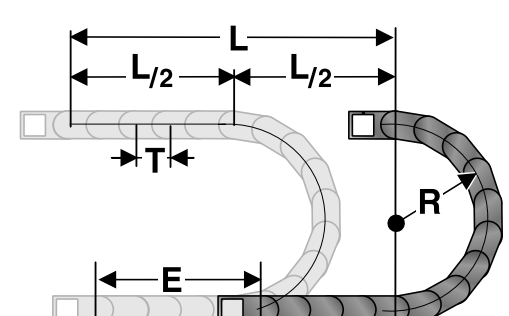
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

#### FL<sub>s</sub>:

Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 13 x 75.5 mm links

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

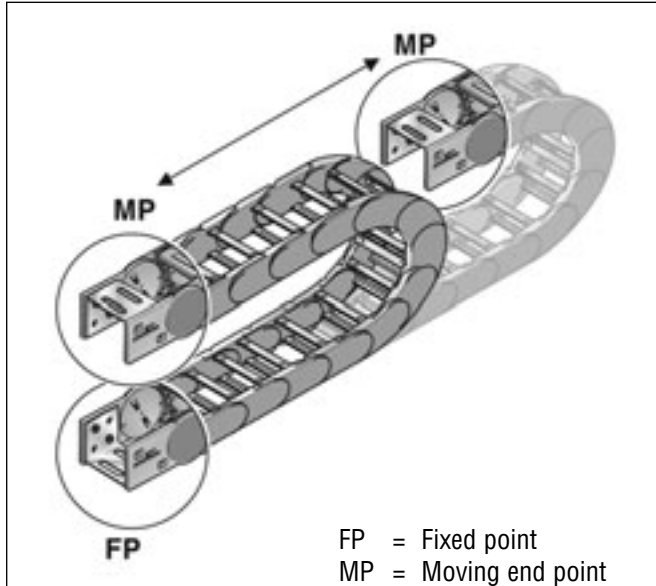
### Installation dimensions (in mm)

Radius R	90	125	150	200	250
Outside height of chain link ( $H_o$ )	60	60	60	60	60
Height of bend ( $H$ )	240	310	360	460	560
Height of moving end connection ( $H_{MA}$ )	180	250	300	400	500
Safety margin with bias ( $S_v$ )	38	38	38	38	38
Installation height with bias ( $H_{sv}$ )	278	348	398	498	598
Safety margin without bias ( $S_k$ )	13	13	13	13	13
Installation height without bias ( $H_{sk}$ )	253	323	373	473	573
Arc projection ( $M_L$ )	196	231	256	306	356
Bend length ( $L_B$ )	452	562	641	798	955



# MP 44 - MultiLine

## Chain bracket



### Chain bracket U-part



Top



Bottom

### Chain bracket elbow fitting



Bottom / outside



Top / inside



Top / outside



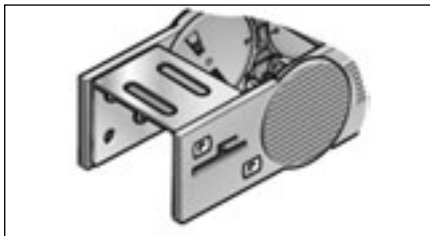
Top / inside

## Chain bracket U-part

Type

Order no.

Pack



KA 44 U

0440000054

1

This chain bracket is supplied as standard for 45 mm width. The bracket can be mounted at the top or bottom.

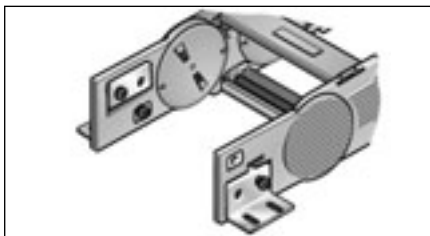
## Chain bracket elbow fitting

Type

Order no.

Material

Pack



KA 44

0440000050

Steel plate

1

KA 44

0440000052

Stainless steel 1.4301

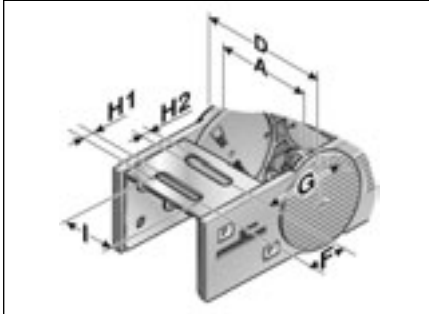
1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires two chain brackets. The brackets should be fastened with M6 screws.

# MP 44 - MultiLine

## Chain bracket U-part

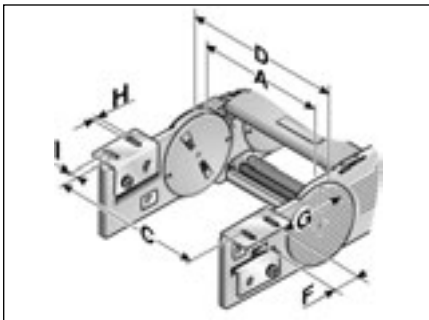
Dimensions in mm



Type	A	D	F	G	H1	H2	I
KA 44 U	45.00	78.00	28.00	45.00	6.50	8.50	33.00

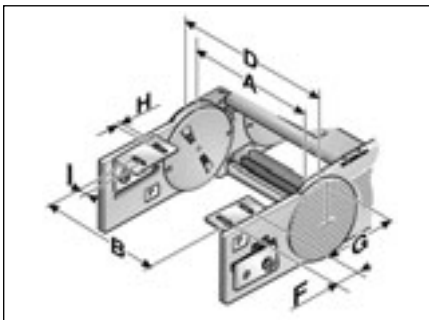
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 44	62.00	100.50	95.00	32.00	43.20	6.50	12.50
KA 44	84.00	122.50	117.00	32.00	43.20	6.50	12.50
KA 44	105.00	143.50	138.00	32.00	43.20	6.50	12.50
KA 44	144.00	182.50	177.00	32.00	43.20	6.50	12.50
KA 44	182.00	220.50	215.00	32.00	43.20	6.50	12.50
KA 44	Variable	A+38.50	A+33.00	32.00	43.20	6.50	12.50




Bottom and top / inside

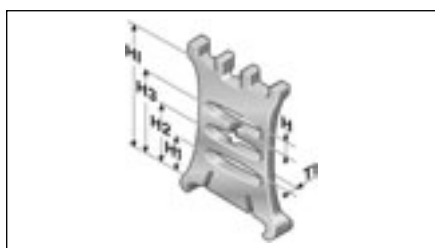
Type	A	B	D	F	G	H Ø	I
KA 44	62.00	47.50	95.00	32.00	43.20	6.50	12.50
KA 44	84.00	69.50	117.00	32.00	43.20	6.50	12.50
KA 44	105.00	90.50	138.00	32.00	43.20	6.50	12.50
KA 44	144.00	129.50	177.00	32.00	43.20	6.50	12.50
KA 44	182.00	167.50	215.00	32.00	43.20	6.50	12.50
KA 44	Variable	A-14.50	A+33.00	32.00	43.20	6.50	12.50



# MP 44 - Accessories


Separator		Type	Order no.	Description	Pack
	TF 44	044000009400	Separator		1
	TL 44	044000009200	Separator	for aluminium frame ridges	1
	Lock grid spacing 5.60 mm				
	<p>We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed.</p> <p>An offset configuration of the separators is advisable. The TL 44 should be used for applications with aluminium frame ridges or movable separators.</p>				

Separator

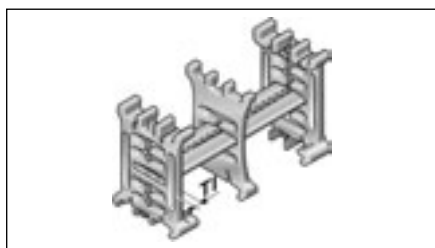


Separator

Type	Dimensions in mm					
	TI	H	H1	H2	H3	HI
TF 44	4.00	4.40	15.00	22.40	29.40	40.00
TL 44	4.00	4.40	15.20	22.30	29.40	40.00

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 031	100000003100	RB 031 Shelf	31	1
	RB 048	100000004800	RB 048 Shelf	48	1
	RB 070	100000007000	RB 070 Shelf	70	1
	RB 092	100000009200	RB 092 Shelf	92	1
	RB 128	100000012800	RB 128 Shelf	128	1
	RB 167	100000016700	RB 167 Shelf	167	1
	RT 44	1000902100	RT 44 Shelf support		1
	Lock grid spacing 5.60 mm				

Shelving system

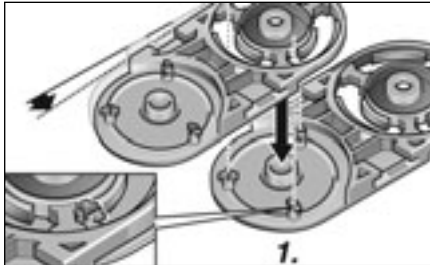


Shelving system

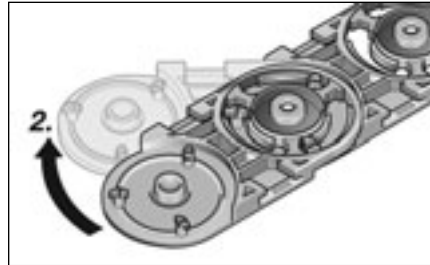
Type	Dimensions in mm	
	TI	
RT 44	6.50	

# MP 44 - Accessories

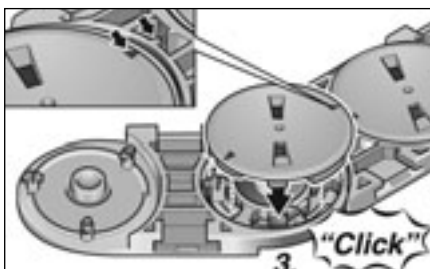
## Assembly



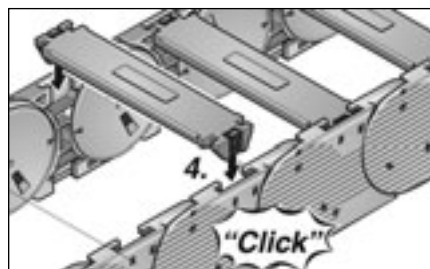
Step 1



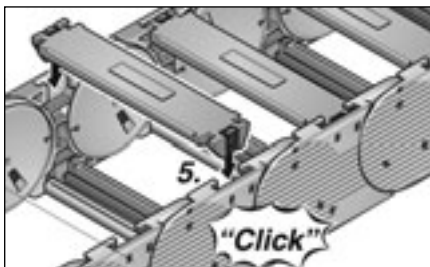
Step 2



Step 3

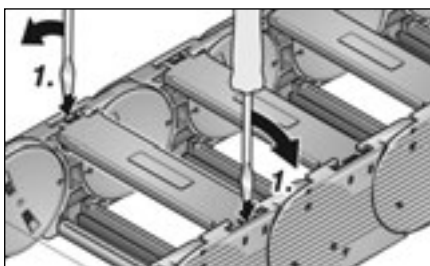


Step 4

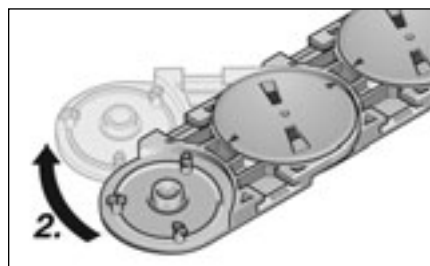


Step 5

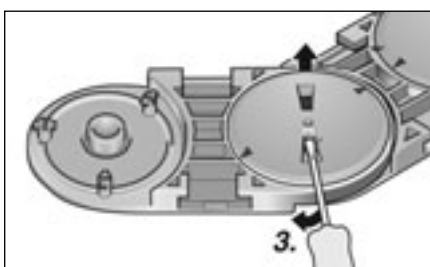
## Disassembly



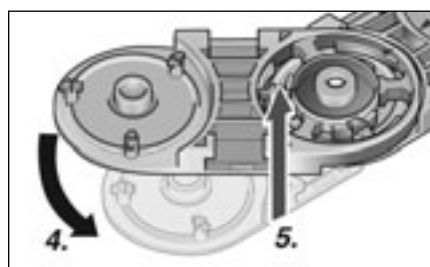
Step 1



Step 2



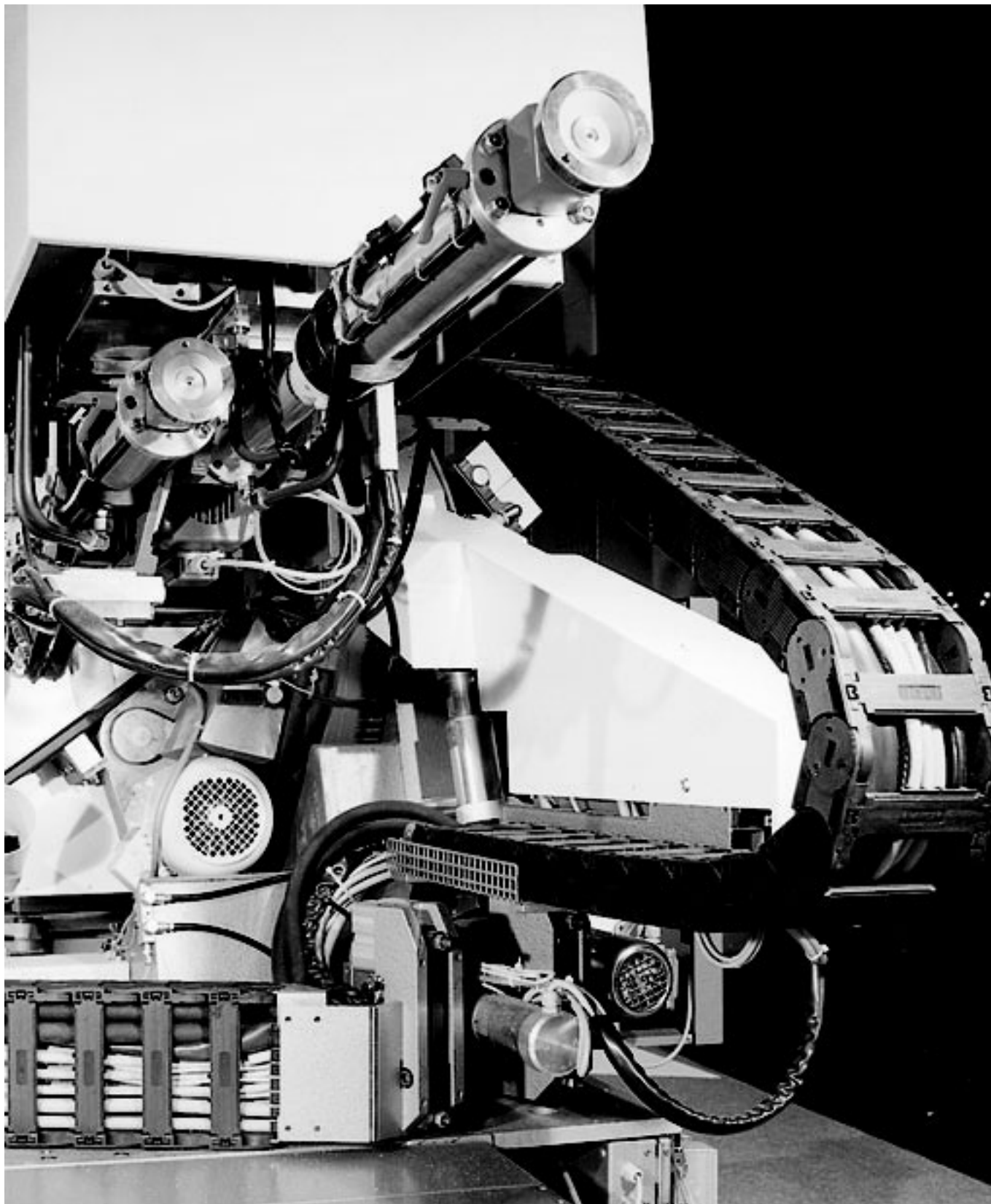
Step 3



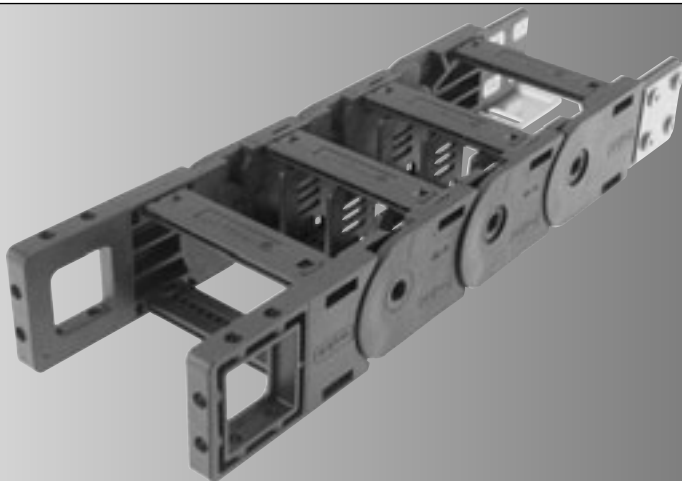
Step 4



## MP 44 - MultiLine



## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 42**



# MP 42 - MultiLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code)</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP42 070	96	70	070	75	075				
MP42 090	116	90	090	90	090				
MP42 115	141	115	115	120	120				
MP42 150	176	150	150	150	150				
MP42 190	216	190	190	200	200				
MP42 225	251	225	225	250	250				
				300	300			0	0
								9	9

<b>Order number:</b>	0420			0			0
----------------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0420 070 075 0000

Inside width = 70 mm

Radius = 75 mm

Configuration = 0

Style = 0

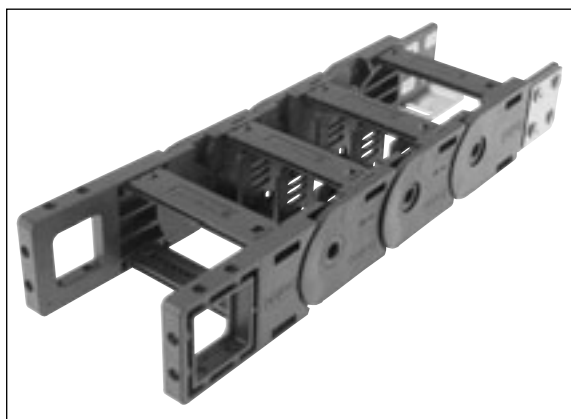
### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Flexible internal separation
- Rotated 90°, unsupported
- Gliding arrangement
- Unsupported arrangement

### Alternative chain type

- MP 43 G closed series
- MP 41  
opens on both sides  
variable widths  
greater stresses  
flange connection (KA-F)  
back radii

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Radii with medium bias (R) for all applications



Foldable shelf system for reliable cable guidance



H-shelf for easy cable separation in the chain window

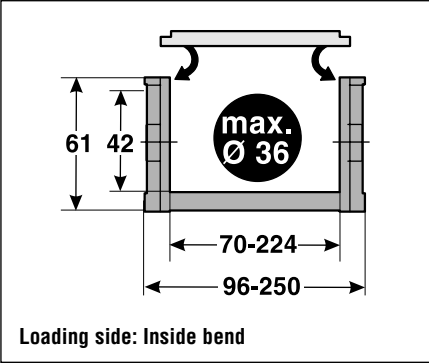


Frame ridges can be removed on one side

# MP 42 - MultiLine

Technical data

### Chain link dimensions



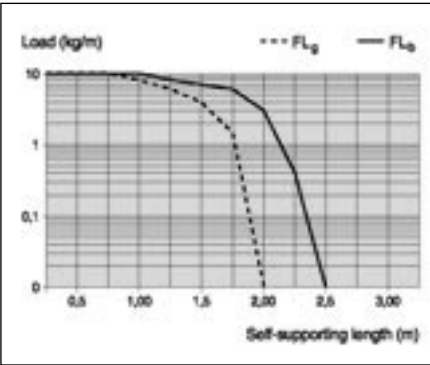
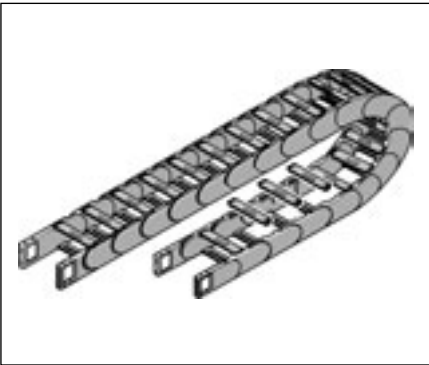
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	80 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	40 m
Travel distance, vertical, upright, $L_{vu}$ :	3 m
Rotated 90°, self-supporting, $L_{sg}$ :	1 m
Speed, gliding, $V_g$ :	5 m/s
Speed, self-supporting, $V_s$ :	10 m/s
Acceleration, gliding, $a_g$ :	15 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	20 m/s <sup>2</sup>

### Unsupported length

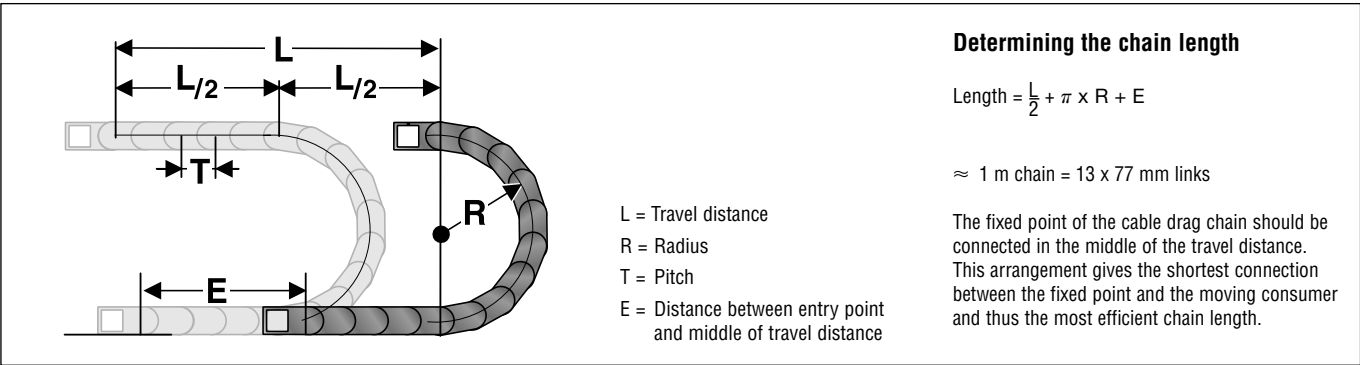


**$FL_g$ :**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**$FL_b$ :**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



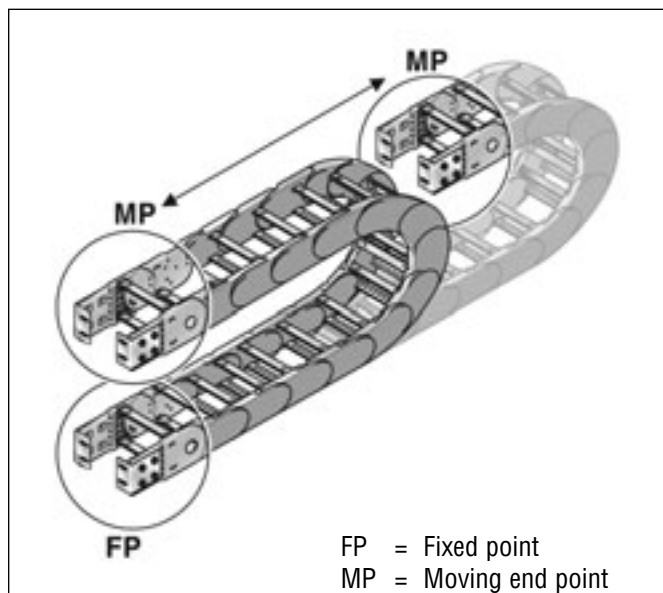
### Installation dimensions (in mm)

	Radius R						
	75	90	120	150	200	250	300
Outside height of chain link ( $H_e$ )	60	60	60	60	60	60	60
Height of bend ( $H$ )	210	240	300	360	460	560	660
Height of moving end connection ( $H_{MA}$ )	150	180	240	300	400	500	600
Safety margin ( $S$ )	40	40	40	40	40	40	40
Installation height ( $H_g$ )	250	280	340	400	500	600	700
Arc projection ( $M_L$ )	182	197	227	257	307	357	407
Bend length ( $L_b$ )	407	454	548	642	799	956	1113



# MP 42 - MultiLine

## Chain bracket

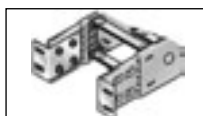


### Chain bracket flexible



Flexible

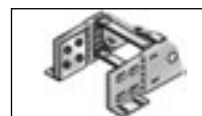
### Chain bracket elbow fitting



Front / outside



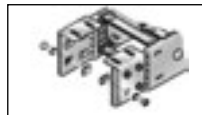
Top / outside



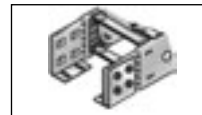
Bottom / outside



Front / inside



Top / inside



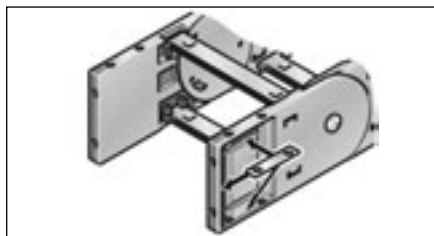
Bottom / inside

## Chain bracket flexible

Type

Order no.

Pack

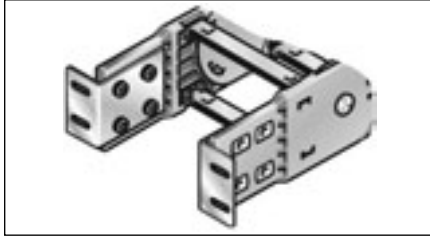


KA 42070-F Female end	0420070054	1
KA 42070-F Male end	0420070055	1
KA 42090-F Female end	0420090054	1
KA 42090-F Male end	0420090055	1
KA 42115-F Female end	0420115054	1
KA 42115-F Male end	0420115055	1
KA 42150-F Female end	0420150054	1
KA 42150-F Male end	0420150055	1
KA 42190-F Female end	0420190054	1
KA 42190-F Male end	0420190055	1
KA 42225-F Female end	0420225054	1
KA 42225-F Male end	0420225055	1

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M6 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.

# MP 42 - MultiLine

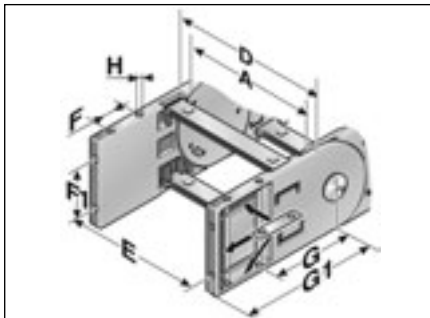
## Chain bracket elbow fitting



Type	Order no.	Pack
KA 42070 Female end	0420070050	1
KA 42070 Male end	0420070051	1
KA 42090 Female end	0420090050	1
KA 42090 Male end	0420090051	1
KA 42115 Female end	0420115050	1
KA 42115 Male end	0420115051	1
KA 42150 Female end	0420150050	1
KA 42150 Male end	0420150051	1
KA 42190 Female end	0420190050	1
KA 42190 Male end	0420190051	1
KA 42225 Female end	0420225050	1
KA 42225 Male end	0420225051	1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M6 screws.

## Chain bracket flexible



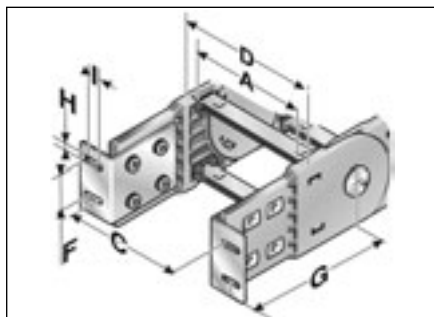
Type	A	D	E	F	F1	G	G1	H Ø
KA 42070-F	70.00	96.00	84.00	22.50	22.00	79.00	120.00	6.50
KA 42090-F	90.00	116.00	104.00	22.50	22.00	79.00	120.00	6.50
KA 42115-F	115.00	141.00	129.00	22.50	22.00	79.00	120.00	6.50
KA 42150-F	150.00	176.00	164.00	22.50	22.00	79.00	120.00	6.50
KA 42190-F	190.00	216.00	204.00	22.50	22.00	79.00	120.00	6.50
KA 42225-F	225.00	251.00	239.00	22.50	22.00	79.00	120.00	6.50



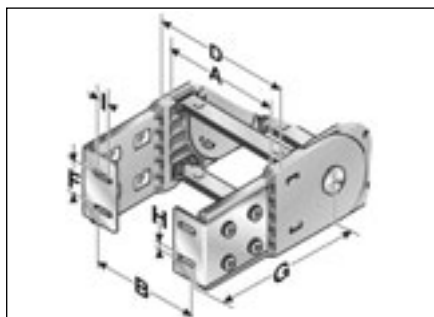
# MP 42 - MultiLine

## Chain bracket elbow fitting

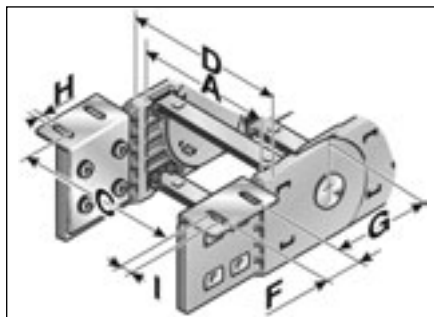
Dimensions in mm



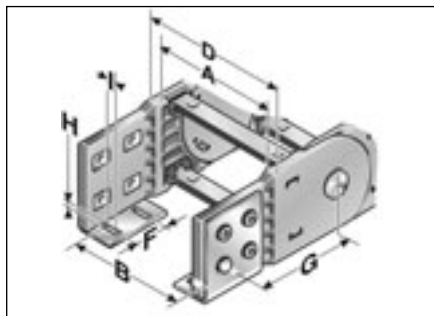
Front / outside



Front / inside



Bottom and top / outside



Bottom and top / inside

Type	A	C	D	F	G	H Ø	I
KA 42070	70.00	97.50	96.00	35.00	125.00	6.50	17.00
KA 42090	90.00	117.50	116.00	35.00	125.00	6.50	17.00
KA 42115	115.00	142.50	141.00	35.00	125.00	6.50	17.00
KA 42150	150.00	177.50	176.00	35.00	125.00	6.50	17.00
KA 42190	190.00	217.50	216.00	35.00	125.00	6.50	17.00
KA 42225	225.00	252.50	251.00	35.00	125.00	6.50	17.00

Type	A	B	D	F	G	H Ø	I
KA 42070	70.00	68.50	96.00	35.00	125.00	6.50	17.00
KA 42090	90.00	88.50	116.00	35.00	125.00	6.50	17.00
KA 42115	115.00	113.50	141.00	35.00	125.00	6.50	17.00
KA 42150	150.00	148.50	176.00	35.00	125.00	6.50	17.00
KA 42190	190.00	188.50	216.00	35.00	125.00	6.50	17.00
KA 42225	225.00	223.50	251.00	35.00	125.00	6.50	17.00

Type	A	C	D	F	G	H Ø	I
KA 42070	70.00	97.50	96.00	35.00	77.60	6.50	17.00
KA 42090	90.00	117.50	116.00	35.00	77.60	6.50	17.00
KA 42115	115.00	142.50	141.00	35.00	77.60	6.50	17.00
KA 42150	150.00	177.50	176.00	35.00	77.60	6.50	17.00
KA 42190	190.00	217.50	216.00	35.00	77.60	6.50	17.00
KA 42225	225.00	252.50	251.00	35.00	77.60	6.50	17.00

Type	A	B	D	F	G	H Ø	I
KA 42070	70.00	68.50	96.00	35.00	77.60	6.50	17.00
KA 42090	90.00	88.50	116.00	35.00	77.60	6.50	17.00
KA 42115	115.00	113.50	141.00	35.00	77.60	6.50	17.00
KA 42150	150.00	148.50	176.00	35.00	77.60	6.50	17.00
KA 42190	190.00	188.50	216.00	35.00	77.60	6.50	17.00
KA 42225	225.00	223.50	251.00	35.00	77.60	6.50	17.00

# MP 42 - Accessories

Separator	Type	Order no.	Description	Pack
-----------	------	-----------	-------------	------



Separator

TR 41	041000009200	Separator	1
Lock grid spacing 5.60 mm			

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



Separator

Type	Tl	H1	Dimensions in mm		
			H2	H3	HI
TR 41	3.00	16.10	22.90	28.90	41.50

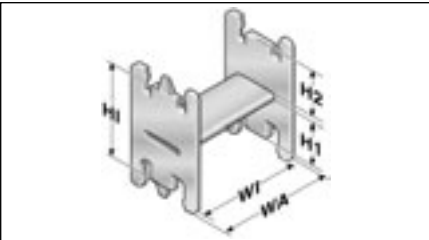
H-shaped shelf unit	Type	Order no.	Description	Pack
---------------------	------	-----------	-------------	------



H-shaped shelf unit

RE 36/11	100000361112	RE 36/11 Shelf unit, H-shaped	1
RE 59/18	100000591812	RE 59/18 Shelf unit, H-shaped	1
RE 81/11	100000811112	RE 81/11 Shelf unit, H-shaped	1
Lock grid spacing 5.60 mm			

Insert to obtain additional levels in pre-defined distances.



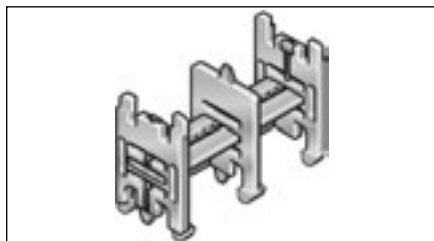
H-shaped shelf unit

Type	WA	WI	Dimensions in mm		
			H1	H2	HI
RE 36/11	42.50	36.50	26.20	11.50	42.00
RE 59/18	65.00	59.00	18.80	18.80	42.00
RE 81/11	87.50	81.50	26.20	11.50	42.00



## MP 42 - Accessories

### Shelving system



Shelving system

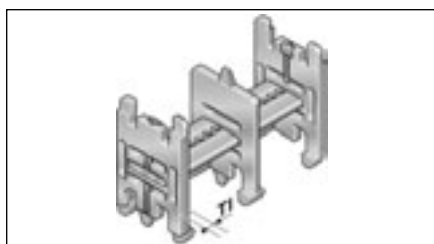
Type	Order no.	Description	Width in mm	Pack
RB 031	100000003100	RB 031 Shelf	31	1
RB 048	100000004800	RB 048 Shelf	48	1
RB 070	100000007000	RB 070 Shelf	70	1
RB 092	100000009200	RB 092 Shelf	92	1
RB 128	100000012800	RB 128 Shelf	128	1
RB 167	100000016700	RB 167 Shelf	167	1
RB 218	100000021800	RB 218 Shelf	218	1
RTA 41	1000810100	RTA 41 Shelf support, external, incl. pin		1
RTI 41	1000909100	RTI 41 Shelf support, internal, inc. pin		1

Lock grid spacing 5.60 mm

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

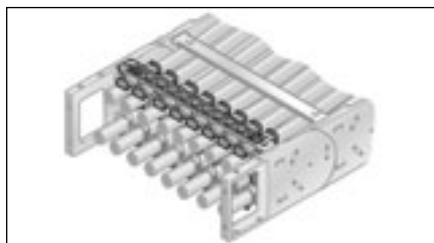
RTA shelf supports are positioned on the outer edge of the internal chain compartment. RTI shelf supports are positioned in the centre of the internal chain compartment in case the shelf system does not span the entire width.

Dimensions in mm	
Type	TI
RTA/RTI	6.00



Shelving system

### Strain relief RS-ZL



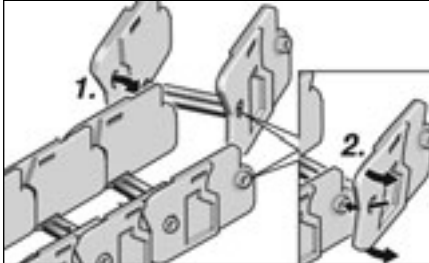
Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 070-42	042000907010	70 mm	1
RS-ZL 090-42	042000909010	90 mm	1
RS-ZL 115-42	042000911510	115 mm	1
RS-ZL 150-42	042000915010	150 mm	1
RS-ZL 190-42	042000919010	190 mm	1
RS-ZL 225-42	042000922510	225 mm	1

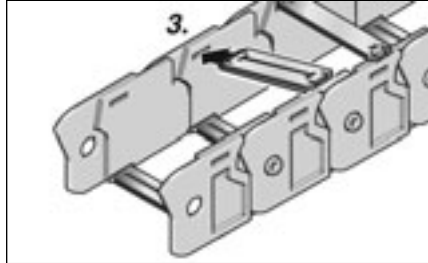
Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 225 mm. May be mounted on the inside and outside bend at both ends of the chain.

# MP 42 - Accessories

## Assembly

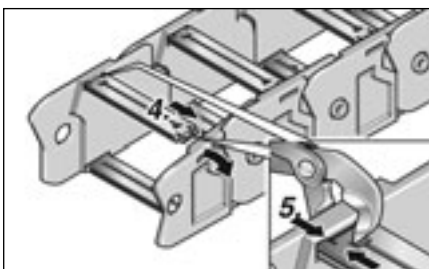


Step 1



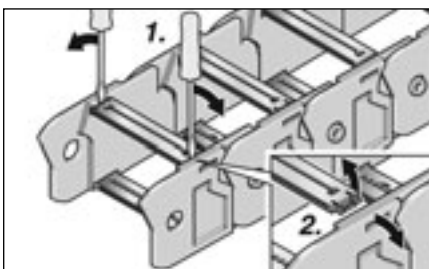
Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.

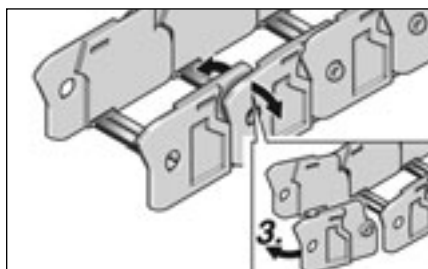


Step 3

## Disassembly



Step 1

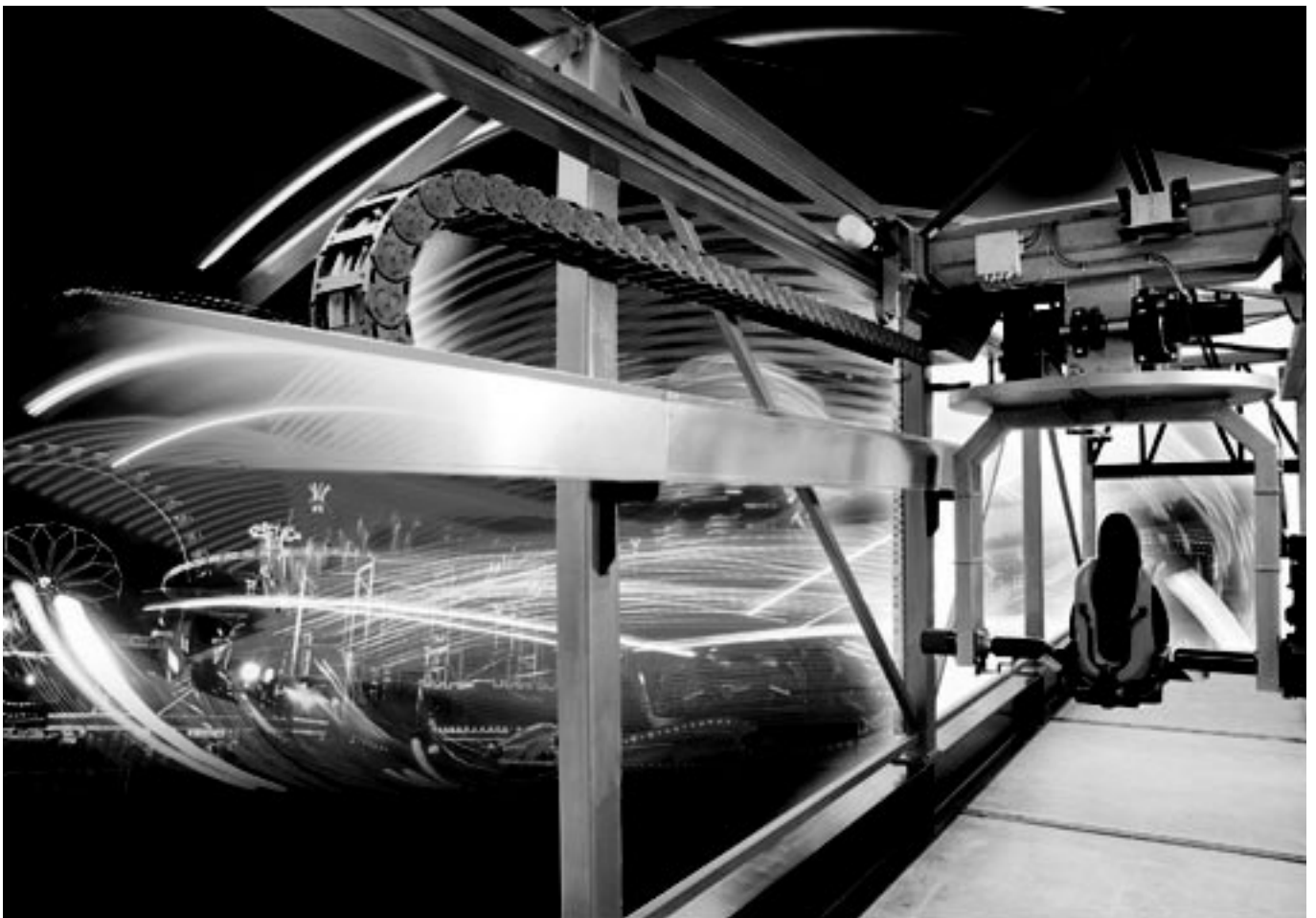


Step 2

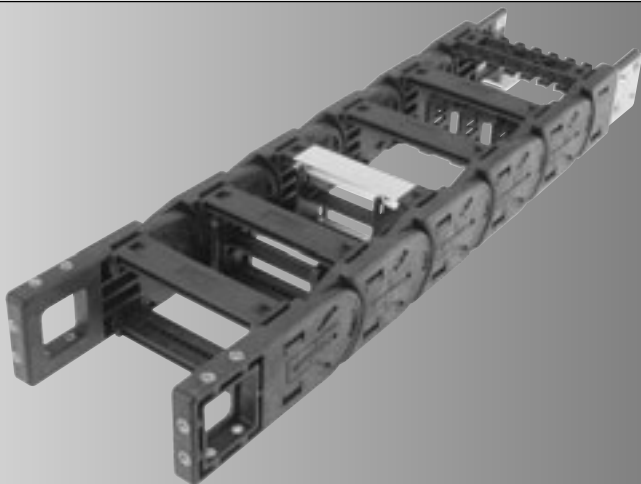
Disassembly is effected in the reverse sequence to assembly. First lever the ridges out of the side panel on one side, then on the other side.



## MP 42 - MultiLine



## CABLE DRAG CHAIN SYSTEMS



***PowerLine***

**MP 41**



# MP 41 - PowerLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) * = standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP41 045	77	45	045						
MP41 062	94	62	062						
MP41 071	103	71	071						
MP41 084	116	84	084						
MP41 096	128	96	096						
MP41 107	139	107	107						
MP41 121	153	121	121						
MP41 144	176	144	144						
MP41 146	178	146	146						
MP41 171	203	171	171						
MP41 182	214	182	182						
MP41 196	228	196	196						
MP41 220	252	220	220						
MP41 246	278	246	246						
MP41 296	328	296	296						
MP41 346	378	346	346	75	075				
MP41 396	428	396	396	90	090				
MP41 446	478	446	446	120	120			0	
MP41 496	528	496	496	150	150			2*	
MP41 546	578	546	546	200	200			4	
MP41 xxx	Inside	>80-	600	250	250			6	0
	+ 32	600	ALU	300	300			9	9

<b>Order number:</b>	0410			0			0
----------------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 2\* crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0410 045 075 0000

Inside width = 45 mm

Radius = 75 mm

Configuration = 0

Style = 0

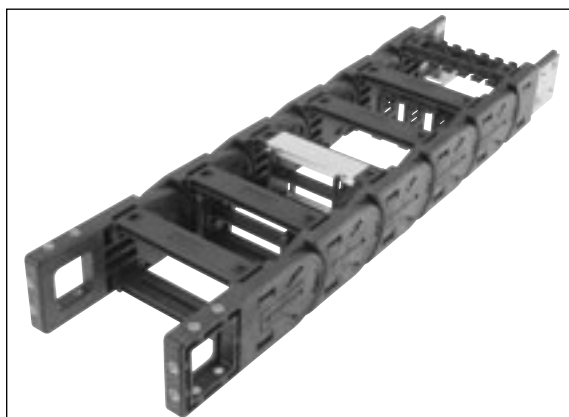
### Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Extreme unsupported lengths
- Very high additional loads
- Opens on both sides
- Variable widths thanks to aluminium ridge
- Flexible internal separation
- Rotated 90°, unsupported/flat

### Alternative chain type

- MP 43 G closed series
- MP 42 easier to use
- MP 44
- Version with/without prestress, easier to use
- MP 41.2 Easier assembly

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with medium bias (R) for all applications



Back radius combinations

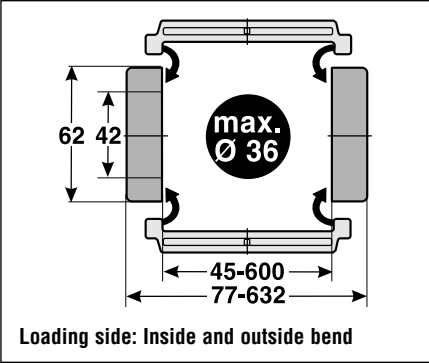


Aluminium frame ridges with integrated lock grid in variable lengths

# MP 41 - PowerLine

## Technical data

### Chain link dimensions



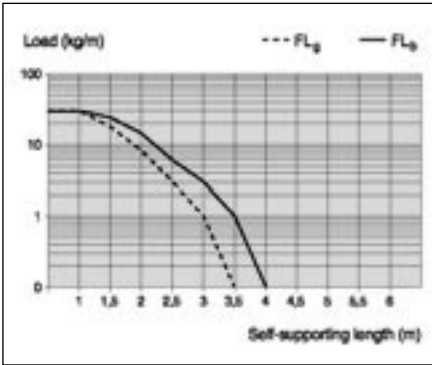
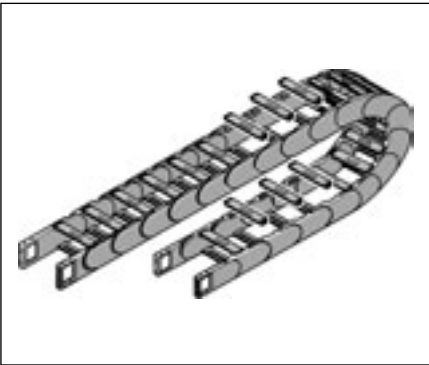
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	120 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	100 m
Travel distance, vertical, upright, $L_{vu}$ :	6 m
Rotated 90°, self-supporting, $L_{sg}$ :	2 m
Speed, gliding, $V_g$ :	5 m/s
Speed, self-supporting, $V_s$ :	20 m/s
Acceleration, gliding, $a_g$ :	25 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	30 m/s <sup>2</sup>

### Unsupported length

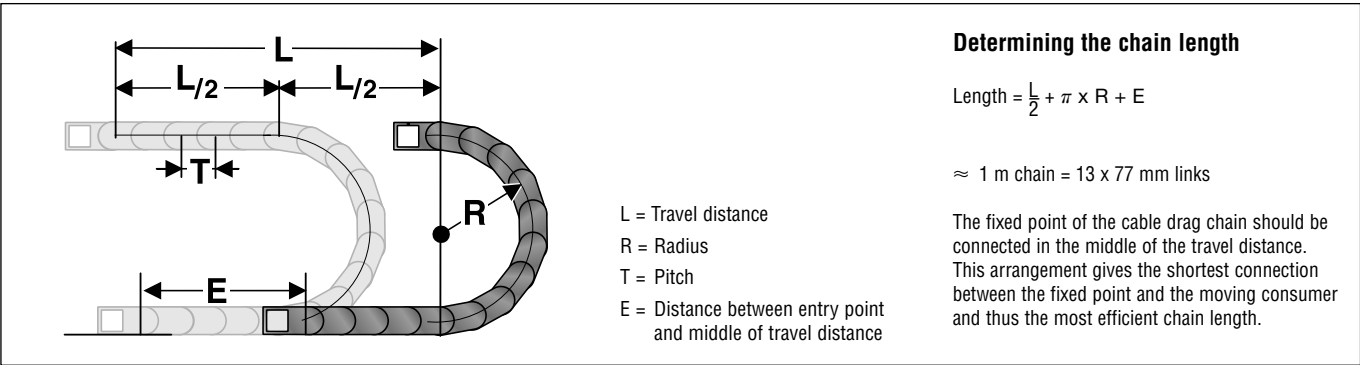


**FL<sub>g</sub>:**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



#### Determining the chain length

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

$$\approx 1 \text{ m chain} = 13 \times 77 \text{ mm links}$$

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

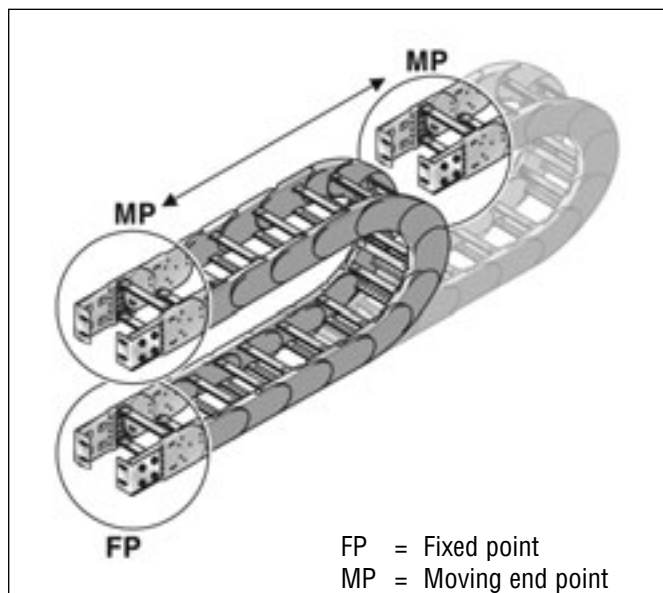
### Installation dimensions (in mm)

Radius R	75	90	120	150	200	250	300
	Outside height of chain link ( $H_o$ )	62	62	62	62	62	62
Outside height of chain link ( $H_o$ )	212	242	302	362	462	562	662
Height of bend ( $H$ )	150	180	240	300	400	500	600
Height of moving end connection ( $H_{MA}$ )	30	30	30	30	30	30	30
Safety margin ( $S$ )	242	272	332	392	492	592	692
Installation height ( $H_g$ )	183	198	228	258	308	358	408
Arc projection ( $M_L$ )	410	457	551	645	802	959	1116
Bend length ( $L_B$ )							

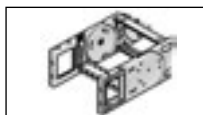


# MP 41 - PowerLine

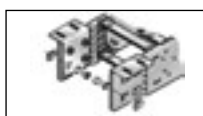
## Chain bracket



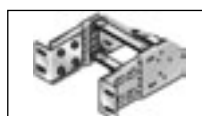
### Chain bracket flexible



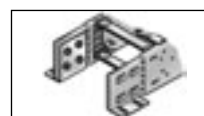
### Chain bracket elbow fitting



Top / outside



Front / outside



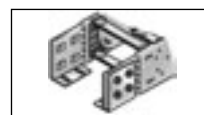
Bottom / outside



Top / inside



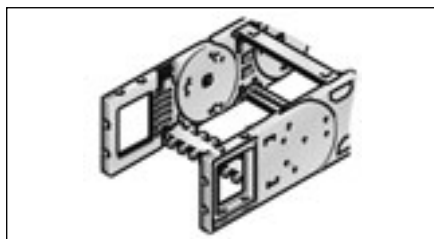
Front / inside



Bottom / inside

## Chain bracket flexible

Type	Order no.	Version	Pack
------	-----------	---------	------

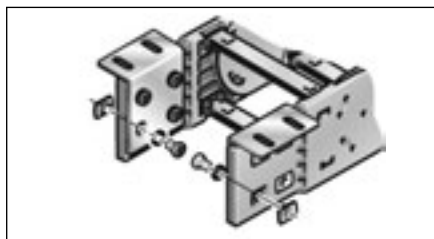


KA 41-FB	0411000054	with bush	1
KA 41-FG	0411000055	with thread	1

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M6 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type	Order no.	Pack
------	-----------	------



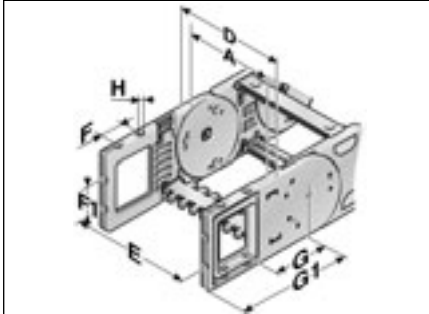
KA 41	0410000051	1
-------	------------	---

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires two chain brackets. The brackets should be fastened with M6 screws.

# MP 41 - PowerLine

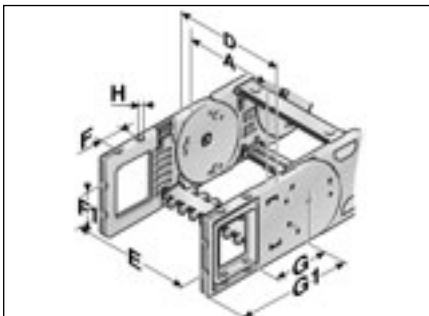
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 41-FB	45.00	79.00	65.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	62.00	96.00	82.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	71.00	105.00	91.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	84.00	118.00	104.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	96.00	130.00	116.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	107.00	141.00	127.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	121.00	155.00	141.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	144.00	178.00	164.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	146.00	180.00	166.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	171.00	205.00	191.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	182.00	226.00	202.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	196.00	230.00	216.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	220.00	254.00	240.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	246.00	280.00	266.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	252.00	290.00	272.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	296.00	330.00	316.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	346.00	380.00	366.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	396.00	430.00	416.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	446.00	480.00	466.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	496.00	530.00	516.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	546.00	580.00	566.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	Variable	A+34.00	A+20.00	22.50	22.00	79.00	120.00	6.50



Flexible with threaded bush

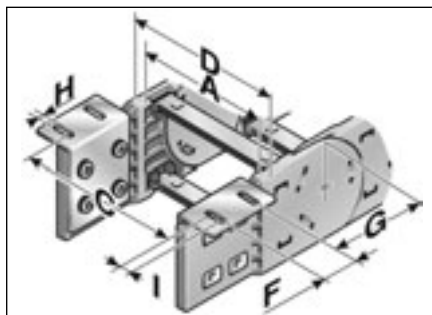
Type	A	D	E	F	F1	G	G1	H
KA 41-FG	45.00	79.00	65.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	62.00	96.00	82.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	71.00	105.00	91.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	84.00	118.00	104.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	96.00	130.00	116.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	107.00	141.00	127.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	121.00	155.00	141.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	144.00	178.00	164.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	146.00	180.00	166.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	171.00	205.00	191.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	182.00	226.00	202.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	196.00	230.00	216.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	220.00	254.00	240.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	246.00	280.00	266.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	252.00	290.00	272.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	296.00	330.00	316.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	346.00	380.00	366.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	396.00	430.00	416.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	446.00	480.00	466.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	496.00	530.00	516.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	546.00	580.00	566.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	Variable	A+34.00	A+20.00	22.50	22.00	79.00	120.00	M6



# MP 41 - PowerLine

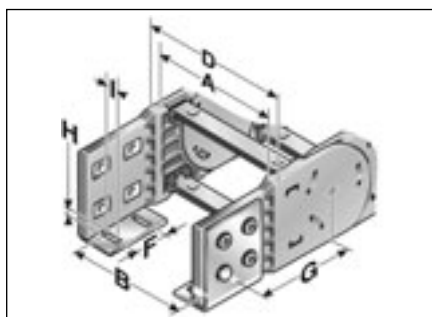
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 41	45.00	79.50	77.00	32.00	79.00	6.50	14.00
KA 41	62.00	96.50	94.00	32.00	79.00	6.50	14.00
KA 41	71.00	105.50	103.00	32.00	79.00	6.50	14.00
KA 41	84.00	118.50	116.00	32.00	79.00	6.50	14.00
KA 41	96.00	130.50	128.00	32.00	79.00	6.50	14.00
KA 41	107.00	141.50	139.00	32.00	79.00	6.50	14.00
KA 41	121.00	155.50	153.00	32.00	79.00	6.50	14.00
KA 41	144.00	178.50	176.00	32.00	79.00	6.50	14.00
KA 41	146.00	180.50	178.00	32.00	79.00	6.50	14.00
KA 41	171.00	205.50	203.00	32.00	79.00	6.50	14.00
KA 41	182.00	216.50	213.00	32.00	79.00	6.50	14.00
KA 41	196.00	230.50	228.00	32.00	79.00	6.50	14.00
KA 41	220.00	254.50	252.00	32.00	79.00	6.50	14.00
KA 41	246.00	280.50	278.00	32.00	79.00	6.50	14.00
KA 41	252.00	286.50	284.00	32.00	79.00	6.50	14.00
KA 41	296.00	330.50	328.00	32.00	79.00	6.50	14.00
KA 41	346.00	380.50	378.00	32.00	79.00	6.50	14.00
KA 41	396.00	430.50	428.00	32.00	79.00	6.50	14.00
KA 41	446.00	480.50	478.00	32.00	79.00	6.50	14.00
KA 41	496.00	530.50	528.00	32.00	79.00	6.50	14.00
KA 41	546.00	580.50	578.00	32.00	79.00	6.50	14.00
KA 41	Variable	A+34.50	A+32.00	32.00	79.00	6.50	14.00



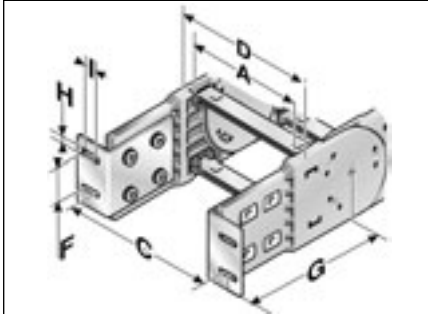
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 41	45.00	42.50	77.00	32.00	79.00	6.50	14.00
KA 41	62.00	59.50	94.00	32.00	79.00	6.50	14.00
KA 41	71.00	68.50	103.00	32.00	79.00	6.50	14.00
KA 41	84.00	81.50	116.00	32.00	79.00	6.50	14.00
KA 41	96.00	93.50	128.00	32.00	79.00	6.50	14.00
KA 41	107.00	104.50	139.00	32.00	79.00	6.50	14.00
KA 41	121.00	118.50	153.00	32.00	79.00	6.50	14.00
KA 41	144.00	141.50	176.00	32.00	79.00	6.50	14.00
KA 41	146.00	143.50	178.00	32.00	79.00	6.50	14.00
KA 41	171.00	168.50	203.00	32.00	79.00	6.50	14.00
KA 41	182.00	179.50	213.00	32.00	79.00	6.50	14.00
KA 41	196.00	193.50	228.00	32.00	79.00	6.50	14.00
KA 41	220.00	217.50	252.00	32.00	79.00	6.50	14.00
KA 41	246.00	243.50	278.00	32.00	79.00	6.50	14.00
KA 41	252.00	249.50	284.00	32.00	79.00	6.50	14.00
KA 41	296.00	293.50	328.00	32.00	79.00	6.50	14.00
KA 41	346.00	343.50	378.00	32.00	79.00	6.50	14.00
KA 41	396.00	393.50	428.00	32.00	79.00	6.50	14.00
KA 41	446.00	443.50	478.00	32.00	79.00	6.50	14.00
KA 41	496.00	493.50	528.00	32.00	79.00	6.50	14.00
KA 41	546.00	543.50	578.00	32.00	79.00	6.50	14.00
KA 41	Variable	A-2.50	A+32.00	32.00	79.00	6.50	14.00

# MP 41 - PowerLine

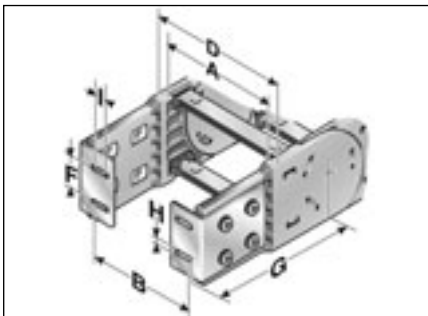
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 41	45.00	79.50	77.00	32.00	125.70	6.50	14.00
KA 41	62.00	96.50	94.00	32.00	125.70	6.50	14.00
KA 41	71.00	105.50	103.00	32.00	125.70	6.50	14.00
KA 41	84.00	118.50	116.00	32.00	125.70	6.50	14.00
KA 41	96.00	130.50	128.00	32.00	125.70	6.50	14.00
KA 41	107.00	141.50	139.00	32.00	125.70	6.50	14.00
KA 41	121.00	155.50	153.00	32.00	125.70	6.50	14.00
KA 41	144.00	178.50	176.00	32.00	125.70	6.50	14.00
KA 41	146.00	180.50	178.00	32.00	125.70	6.50	14.00
KA 41	171.00	205.50	203.00	32.00	125.70	6.50	14.00
KA 41	182.00	216.50	213.00	32.00	125.70	6.50	14.00
KA 41	196.00	230.50	228.00	32.00	125.70	6.50	14.00
KA 41	220.00	254.50	252.00	32.00	125.70	6.50	14.00
KA 41	246.00	280.50	278.00	32.00	125.70	6.50	14.00
KA 41	252.00	286.50	284.00	32.00	125.70	6.50	14.00
KA 41	296.00	330.50	328.00	32.00	125.70	6.50	14.00
KA 41	346.00	380.50	378.00	32.00	125.70	6.50	14.00
KA 41	396.00	430.50	428.00	32.00	125.70	6.50	14.00
KA 41	446.00	480.50	478.00	32.00	125.70	6.50	14.00
KA 41	496.00	530.50	528.00	32.00	125.70	6.50	14.00
KA 41	546.00	580.50	578.00	32.00	125.70	6.50	14.00
KA 41	Variable	A+34.50	A+32.00	32.00	125.70	6.50	14.00



Front / inside

Type	A	B	D	F	G	H Ø	I
KA 41	45.00	42.50	77.00	32.00	125.70	6.50	14.00
KA 41	62.00	59.50	94.00	32.00	125.70	6.50	14.00
KA 41	71.00	68.50	103.00	32.00	125.70	6.50	14.00
KA 41	84.00	81.50	116.00	32.00	125.70	6.50	14.00
KA 41	96.00	93.50	128.00	32.00	125.70	6.50	14.00
KA 41	107.00	104.50	139.00	32.00	125.70	6.50	14.00
KA 41	121.00	118.50	153.00	32.00	125.70	6.50	14.00
KA 41	144.00	141.50	176.00	32.00	125.70	6.50	14.00
KA 41	146.00	143.50	178.00	32.00	125.70	6.50	14.00
KA 41	171.00	168.50	203.00	32.00	125.70	6.50	14.00
KA 41	182.00	179.50	213.00	32.00	125.70	6.50	14.00
KA 41	196.00	193.50	228.00	32.00	125.70	6.50	14.00
KA 41	220.00	217.50	252.00	32.00	125.70	6.50	14.00
KA 41	246.00	243.50	278.00	32.00	125.70	6.50	14.00
KA 41	252.00	249.50	284.00	32.00	125.70	6.50	14.00
KA 41	296.00	293.50	328.00	32.00	125.70	6.50	14.00
KA 41	346.00	343.50	378.00	32.00	125.70	6.50	14.00
KA 41	396.00	393.50	428.00	32.00	125.70	6.50	14.00
KA 41	446.00	443.50	478.00	32.00	125.70	6.50	14.00
KA 41	496.00	493.50	528.00	32.00	125.70	6.50	14.00
KA 41	546.00	543.50	578.00	32.00	125.70	6.50	14.00
KA 41	Variable	A-2.50	A+32.00	32.00	125.70	6.50	14.00



# MP 41 - Accessories

## Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

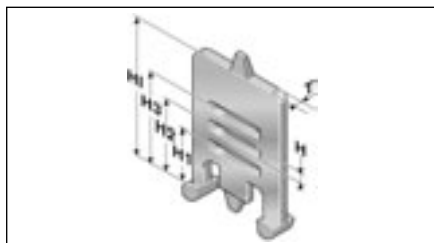


Separator

TR 41	041000009200	Separator	1
-------	--------------	-----------	---

Lock grid spacing 5.60 mm

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

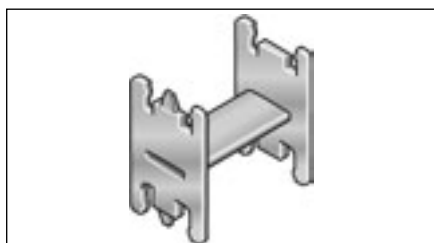


Separator

Type	Dimensions in mm				
	TI	H1	H2	H3	HI
TR 41	3.50	16.10	22.90	28.90	42.00

## H-shaped shelf unit

Type	Order no.	Description	Pack
------	-----------	-------------	------

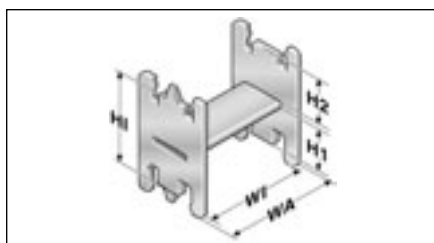


H-shaped shelf unit

RE 36/11	100000361112	RE 36/11 Shelf unit, H-shaped	1
RE 59/18	100000591812	RE 59/18 Shelf unit, H-shaped	1
RE 81/11	100000811112	RE 81/11 Shelf unit, H-shaped	1

Lock grid spacing 5.60 mm


Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

Type	Dimensions in mm				
	WA	WI	H1	H2	HI
RE 36/11	42.50	36.50	26.20	11.50	42.00
RE 59/18	65.00	59.00	18.80	18.80	42.00
RE 81/11	87.50	81.50	26.20	11.50	42.00

# MP 41 - Accessories

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 031	100000003100	RB 031 Shelf	31	1
	RB 048	100000004800	RB 048 Shelf	48	1
	RB 070	100000007000	RB 070 Shelf	70	1
	RB 092	100000009200	RB 092 Shelf	92	1
	RB 128	100000012800	RB 128 Shelf	128	1
	RB 167	100000016700	RB 167 Shelf	167	1
	RB 218	100000021800	RB 218 Shelf	218	1
	RTA 41	1000810100	RTA 41 Shelf support, external, incl. pin		1
	RTI 41	1000909100	RTI 41 Shelf support, internal, incl. pin		1

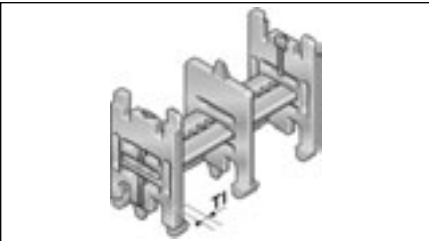
Shelving system

Lock grid spacing 5.60 mm

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

RTA shelf supports are positioned on the outer edge of the internal chain compartment. RTI shelf supports are positioned in the centre of the chain window in case the shelf system does not span the entire width.

Dimensions in mm		
Type	TI	
RTA / RTI	6.00	



Shelving system



# MP 41 - Accessories

## Frame ridge connector

Type	Order no.	Description	Pack
RSV 41	041000009600	RSV 41 Frame ridge connector	1
RSV 41 A	041000009800	RSV 41 Aluminium frame ridge connector	1



Frame ridge connector

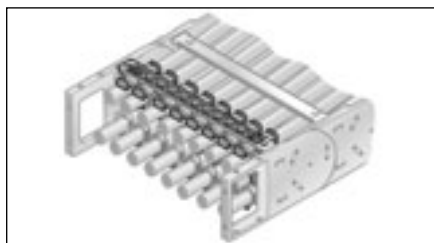
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.

Type	TI	Dimensions in mm
RSV 41	7.50	



## Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 045-5	052004500010	45 mm	1
RS-ZL 062-5	052006200010	62 mm	1
RS-ZL 071-5	052007100010	71 mm	1
RS-ZL 084-5	052008400010	84 mm	1
RS-ZL 096-5	052009600010	96 mm	1
RS-ZL 107-5	052010700010	107 mm	1
RS-ZL 121-5	052012100010	121 mm	1
RS-ZL 144-5	052014400010	144 mm	1
RS-ZL 171-5	052017100010	171 mm	1
RS-ZL 182-5	052018200010	182 mm	1
RS-ZL 196-5	052019600010	196 mm	1
RS-ZL 220-5	052022000010	220 mm	1
RS-ZL 246-5	052024600010	246 mm	1



Strain relief RS-ZL

Frame ridge strain relief plates that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 246 mm. May be mounted on the inside and outside bend at both ends of the chain.

# MP 41 - Accessories

## Strain relief with BAK



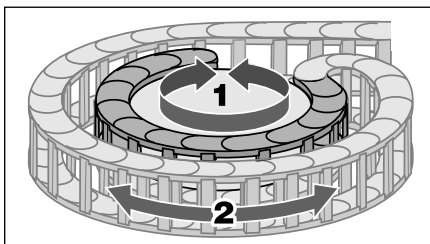
Strain relief with hooped clamp

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

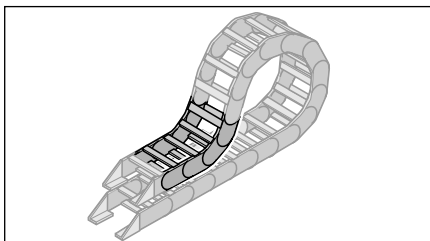
## Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 41 (RÜ200/R125)	41000009060	125 mm	200 mm	1
SR 41 (RÜ200/R160)	41000012060	160 mm	200 mm	1
SR 41 (RÜ200/R175)	41000015060	175 mm	200 mm	1
SR 41 (RÜ200/R200)	41000020060	200 mm	200 mm	1
SR 41 (RÜ200/R250)	41000025060	250 mm	200 mm	1
SR 41 (RÜ200/R300)	41000030060	300 mm	200 mm	1
SR 41 (RÜ200/R350)	41000035060	350 mm	200 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets.

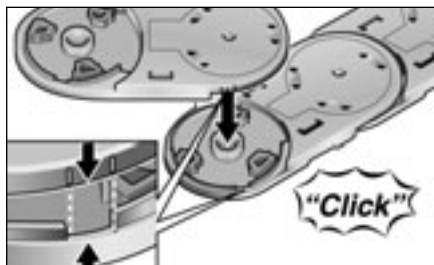


Low-lying chain bracket

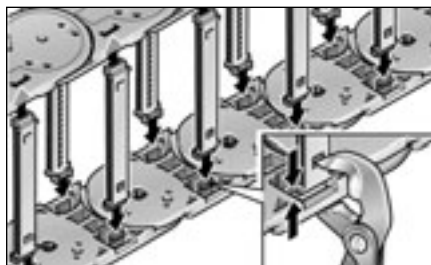


# MP 41 - PowerLine

## Assembly

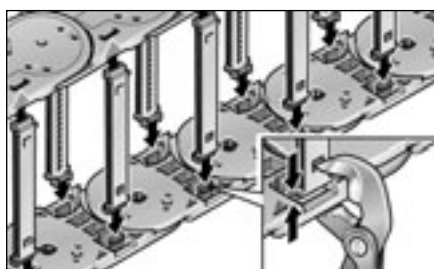


Step 1



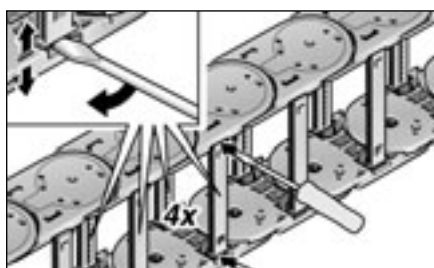
Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.



Step 3

## Disassembly

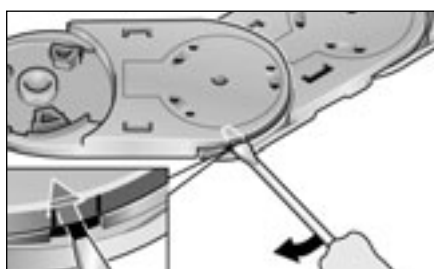


Step 1



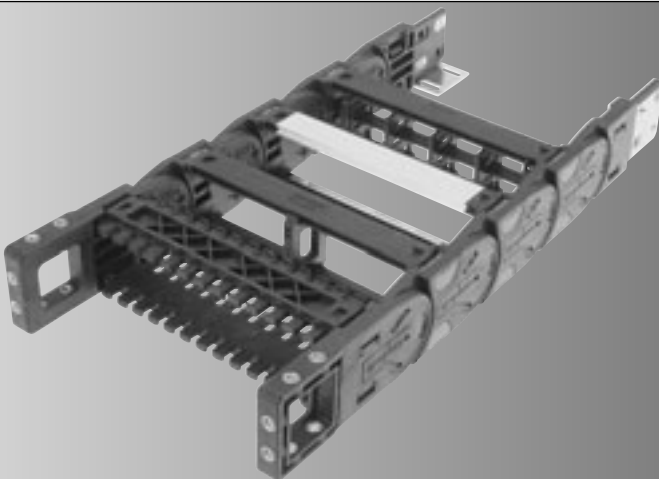
Step 2

Disassembly is effected in the reverse sequence to assembly. First lever the ridges out of the side panel on one side, then on the other side.



Step 3

## CABLE DRAG CHAIN SYSTEMS



***PowerLine***

**MP 41.2**



# MP 41.2 - PowerLine 2nd generation

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code)</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP41.2 045	77	45	045						
MP41.2 062	94	62	062						
MP41.2 071	103	71	071						
MP41.2 084	116	84	084						
MP41.2 096	128	96	096						
MP41.2 107	139	107	107						
MP41.2 121	153	121	121						
MP41.2 144	176	144	144						
MP41.2 146	178	146	146						
MP41.2 171	203	171	171						
MP41.2 182	214	182	182						
MP41.2 196	228	196	196						
MP41.2 220	252	220	220						
MP41.2 246	278	246	246						
MP41.2 296	328	296	296						
MP41.2 346	378	346	346	75	075				
MP41.2 396	428	396	396	90	090				
MP41.2 446	478	446	446	120	120	0			
MP41.2 496	528	496	496	150	150	2			
MP41.2 546	578	546	546	200	200	4		0	
MP41.2 xxx	Inside	>80-		250	250	6		7	
	+ 32	600	ALU	300	300	9		9	

<b>Order number:</b>	0412			0			0
----------------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 2 crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0412 045 075 0000

Inside width = 45 mm

Radius = 75 mm

Configuration = 0

Style = 0

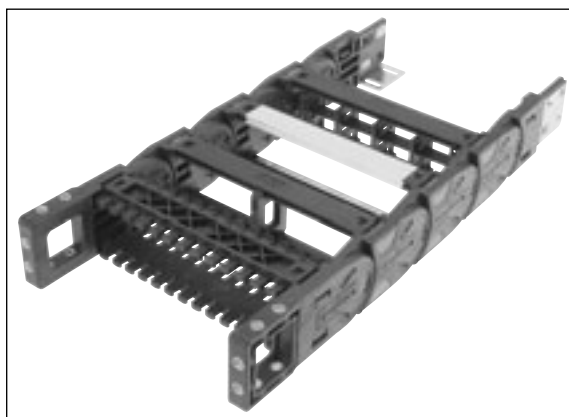
### Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Very high additional loads
- Opens on both sides
- Variable widths thanks to aluminium ridge
- Flexible internal separation

### Alternative chain type

- MP 43 G closed series
- MP 42  
opening cover in inside bend,  
easier to use
- MP 44  
Version with/without bias,  
easier to use
- MP 41  
Greater unsupported length

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Side links with CLICK lock for easy opening



Radii with medium bias (R) for all applications



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

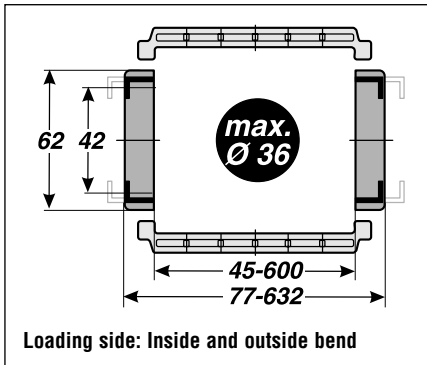


Foldable shelf system for reliable cable guidance

# MP 41.2 - PowerLine 2nd generation

## Technical data

### Chain link dimensions



### Material properties

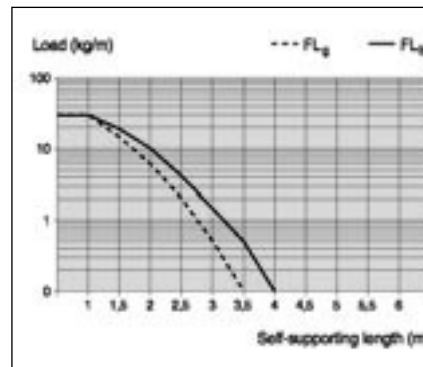
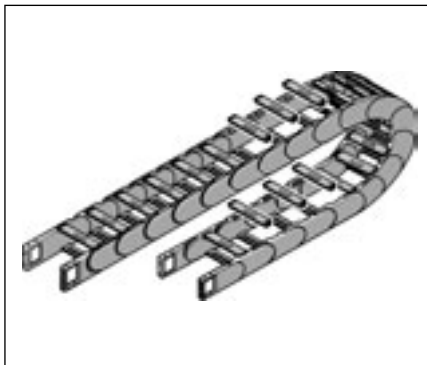
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 120 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 100 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 1 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 30 m/s<sup>2</sup>

### Unsupported length

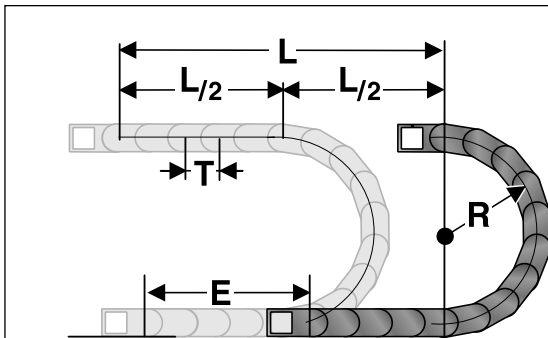


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



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

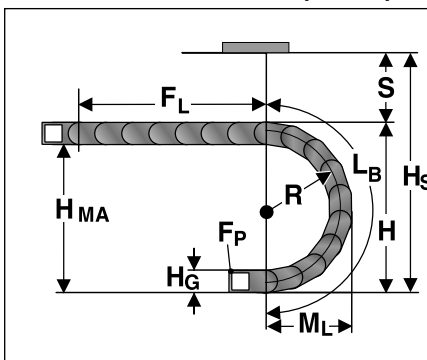
### Determining the chain length

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

≈ 1 m chain = 13 x 77 mm links

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

### Installation dimensions (in mm)

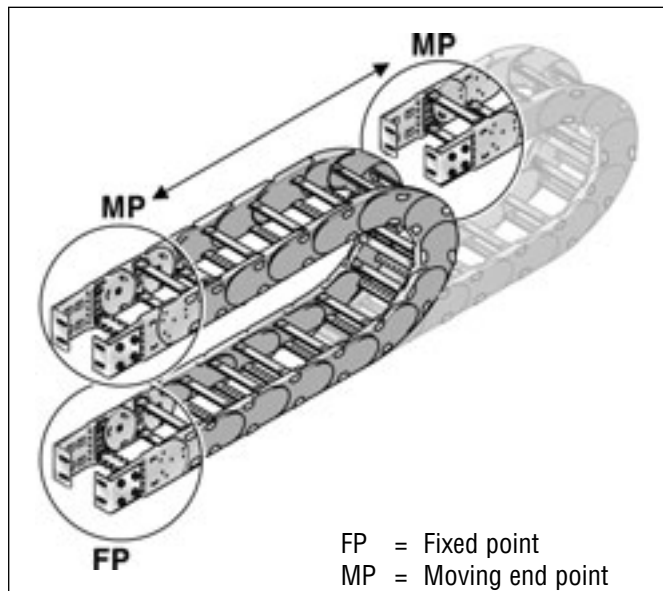


Radius R	75	90	120	150	200	250	300
Outside height of chain link ( $H_c$ )	62	62	62	62	62	62	62
Height of bend ( $H$ )	212	242	302	362	462	562	662
Height of moving end connection ( $H_{MA}$ )	150	180	240	300	400	500	600
Safety margin ( $S_v$ )	30	30	30	30	30	30	30
Installation height ( $H_{sv}$ )	242	272	332	392	492	592	692
Arc projection ( $M_b$ )	183	198	228	258	308	358	408
Bend length ( $L_b$ )	410	457	551	645	802	959	1116



# MP 41.2 - PowerLine 2nd generation

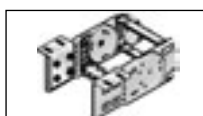
## Chain bracket



### Chain bracket flexible



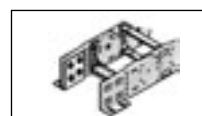
### Chain bracket elbow fitting



Top / outside



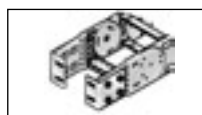
Front / outside



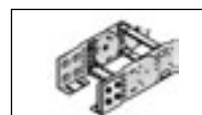
Bottom / outside



Top / inside



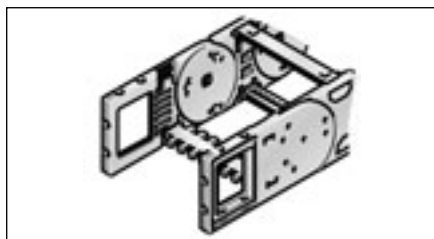
Front / inside



Bottom / inside

## Chain bracket flexible

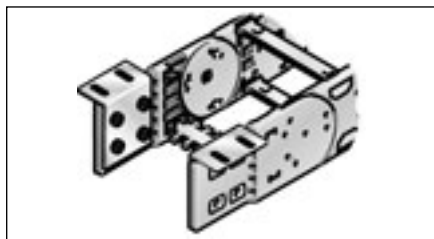
Type	Order no.	Version	Pack
KA 41-FB	0411000054	with bush	1
KA 41-FG	0411000055	with thread	1



This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M6 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type	Order no.	Pack
KA 41	0410000051	1

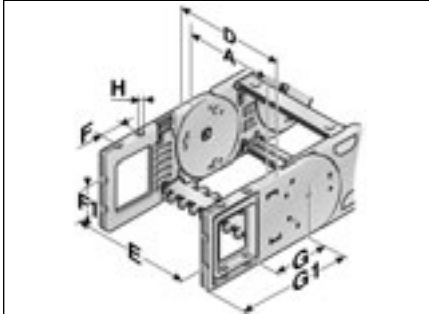


There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M6 screws.

# MP 41.2 - PowerLine 2nd generation

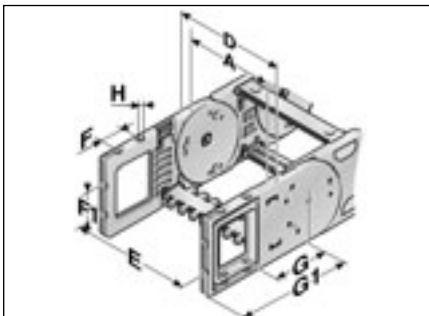
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 41-FB	45.00	79.00	65.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	62.00	96.00	82.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	71.00	105.00	91.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	84.00	118.00	104.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	96.00	130.00	116.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	107.00	141.00	127.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	121.00	155.00	141.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	144.00	178.00	164.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	146.00	180.00	166.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	171.00	205.00	191.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	182.00	226.00	202.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	196.00	230.00	216.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	220.00	254.00	240.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	246.00	280.00	266.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	252.00	290.00	272.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	296.00	330.00	316.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	346.00	380.00	366.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	396.00	430.00	416.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	446.00	480.00	466.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	496.00	530.00	516.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	546.00	580.00	566.00	22.50	22.00	79.00	120.00	6.50
KA 41-FB	Variable	A+34.00	A+20.00	22.50	22.00	79.00	120.00	6.50



Flexible with threaded bush

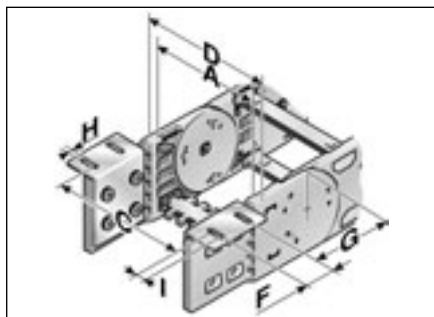
Type	A	D	E	F	F1	G	G1	H
KA 41-FG	45.00	79.00	65.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	62.00	96.00	82.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	71.00	105.00	91.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	84.00	118.00	104.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	96.00	130.00	116.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	107.00	141.00	127.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	121.00	155.00	141.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	144.00	178.00	164.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	146.00	180.00	166.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	171.00	205.00	191.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	182.00	226.00	202.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	196.00	230.00	216.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	220.00	254.00	240.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	246.00	280.00	266.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	252.00	290.00	272.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	296.00	330.00	316.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	346.00	380.00	366.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	396.00	430.00	416.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	446.00	480.00	466.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	496.00	530.00	516.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	546.00	580.00	566.00	22.50	22.00	79.00	120.00	M6
KA 41-FG	Variable	A+34.00	A+20.00	22.50	22.00	79.00	120.00	M6



# MP 41.2 - PowerLine 2nd generation

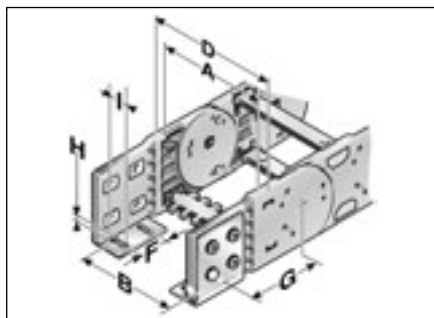
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 41	45.00	79.50	77.00	32.00	79.00	6.50	14.00
KA 41	62.00	96.50	94.00	32.00	79.00	6.50	14.00
KA 41	71.00	105.50	103.00	32.00	79.00	6.50	14.00
KA 41	84.00	118.50	116.00	32.00	79.00	6.50	14.00
KA 41	96.00	130.50	128.00	32.00	79.00	6.50	14.00
KA 41	107.00	141.50	139.00	32.00	79.00	6.50	14.00
KA 41	121.00	155.50	153.00	32.00	79.00	6.50	14.00
KA 41	144.00	178.50	176.00	32.00	79.00	6.50	14.00
KA 41	146.00	180.50	178.00	32.00	79.00	6.50	14.00
KA 41	171.00	205.50	203.00	32.00	79.00	6.50	14.00
KA 41	182.00	216.50	213.00	32.00	79.00	6.50	14.00
KA 41	196.00	230.50	228.00	32.00	79.00	6.50	14.00
KA 41	220.00	254.50	252.00	32.00	79.00	6.50	14.00
KA 41	246.00	280.50	278.00	32.00	79.00	6.50	14.00
KA 41	252.00	286.50	284.00	32.00	79.00	6.50	14.00
KA 41	296.00	330.50	328.00	32.00	79.00	6.50	14.00
KA 41	346.00	380.50	378.00	32.00	79.00	6.50	14.00
KA 41	396.00	430.50	428.00	32.00	79.00	6.50	14.00
KA 41	446.00	480.50	478.00	32.00	79.00	6.50	14.00
KA 41	496.00	530.50	528.00	32.00	79.00	6.50	14.00
KA 41	546.00	580.50	578.00	32.00	79.00	6.50	14.00
KA 41	Variable	A+34.50	A+32.00	32.00	79.00	6.50	14.00



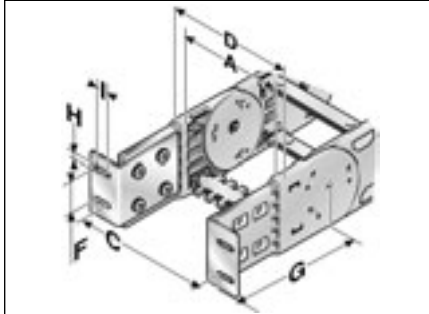
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 41	45.00	42.50	77.00	32.00	79.00	6.50	14.00
KA 41	62.00	59.50	94.00	32.00	79.00	6.50	14.00
KA 41	71.00	68.50	103.00	32.00	79.00	6.50	14.00
KA 41	84.00	81.50	116.00	32.00	79.00	6.50	14.00
KA 41	96.00	93.50	128.00	32.00	79.00	6.50	14.00
KA 41	107.00	104.50	139.00	32.00	79.00	6.50	14.00
KA 41	121.00	118.50	153.00	32.00	79.00	6.50	14.00
KA 41	144.00	141.50	176.00	32.00	79.00	6.50	14.00
KA 41	146.00	143.50	178.00	32.00	79.00	6.50	14.00
KA 41	171.00	168.50	203.00	32.00	79.00	6.50	14.00
KA 41	182.00	179.50	213.00	32.00	79.00	6.50	14.00
KA 41	196.00	193.50	228.00	32.00	79.00	6.50	14.00
KA 41	220.00	217.50	252.00	32.00	79.00	6.50	14.00
KA 41	246.00	243.50	278.00	32.00	79.00	6.50	14.00
KA 41	252.00	249.50	284.00	32.00	79.00	6.50	14.00
KA 41	296.00	293.50	328.00	32.00	79.00	6.50	14.00
KA 41	346.00	343.50	378.00	32.00	79.00	6.50	14.00
KA 41	396.00	393.50	428.00	32.00	79.00	6.50	14.00
KA 41	446.00	443.50	478.00	32.00	79.00	6.50	14.00
KA 41	496.00	493.50	528.00	32.00	79.00	6.50	14.00
KA 41	546.00	543.50	578.00	32.00	79.00	6.50	14.00
KA 41	Variable	A-2.50	A+32.00	32.00	79.00	6.50	14.00

# MP 41.2 - PowerLine 2nd generation

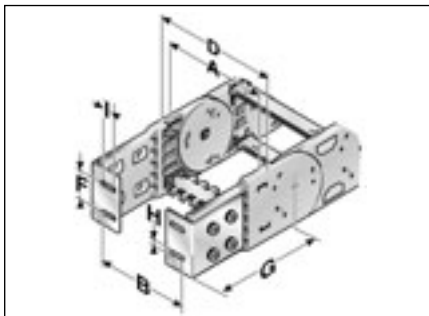
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 41	45.00	79.50	77.00	32.00	125.70	6.50	14.00
KA 41	62.00	96.50	94.00	32.00	125.70	6.50	14.00
KA 41	71.00	105.50	103.00	32.00	125.70	6.50	14.00
KA 41	84.00	118.50	116.00	32.00	125.70	6.50	14.00
KA 41	96.00	130.50	128.00	32.00	125.70	6.50	14.00
KA 41	107.00	141.50	139.00	32.00	125.70	6.50	14.00
KA 41	121.00	155.50	153.00	32.00	125.70	6.50	14.00
KA 41	144.00	178.50	176.00	32.00	125.70	6.50	14.00
KA 41	146.00	180.50	178.00	32.00	125.70	6.50	14.00
KA 41	171.00	205.50	203.00	32.00	125.70	6.50	14.00
KA 41	182.00	216.50	213.00	32.00	125.70	6.50	14.00
KA 41	196.00	230.50	228.00	32.00	125.70	6.50	14.00
KA 41	220.00	254.50	252.00	32.00	125.70	6.50	14.00
KA 41	246.00	280.50	278.00	32.00	125.70	6.50	14.00
KA 41	252.00	286.50	284.00	32.00	125.70	6.50	14.00
KA 41	296.00	330.50	328.00	32.00	125.70	6.50	14.00
KA 41	346.00	380.50	378.00	32.00	125.70	6.50	14.00
KA 41	396.00	430.50	428.00	32.00	125.70	6.50	14.00
KA 41	446.00	480.50	478.00	32.00	125.70	6.50	14.00
KA 41	496.00	530.50	528.00	32.00	125.70	6.50	14.00
KA 41	546.00	580.50	578.00	32.00	125.70	6.50	14.00
KA 41	Variable	A+34.50	A+32.00	32.00	125.70	6.50	14.00




Front / inside

Type	A	B	D	F	G	H Ø	I
KA 41	45.00	42.50	77.00	32.00	125.70	6.50	14.00
KA 41	62.00	59.50	94.00	32.00	125.70	6.50	14.00
KA 41	71.00	68.50	103.00	32.00	125.70	6.50	14.00
KA 41	84.00	81.50	116.00	32.00	125.70	6.50	14.00
KA 41	96.00	93.50	128.00	32.00	125.70	6.50	14.00
KA 41	107.00	104.50	139.00	32.00	125.70	6.50	14.00
KA 41	121.00	118.50	153.00	32.00	125.70	6.50	14.00
KA 41	144.00	141.50	176.00	32.00	125.70	6.50	14.00
KA 41	146.00	143.50	178.00	32.00	125.70	6.50	14.00
KA 41	171.00	168.50	203.00	32.00	125.70	6.50	14.00
KA 41	182.00	179.50	213.00	32.00	125.70	6.50	14.00
KA 41	196.00	193.50	228.00	32.00	125.70	6.50	14.00
KA 41	220.00	217.50	252.00	32.00	125.70	6.50	14.00
KA 41	246.00	243.50	278.00	32.00	125.70	6.50	14.00
KA 41	252.00	249.50	284.00	32.00	125.70	6.50	14.00
KA 41	296.00	293.50	328.00	32.00	125.70	6.50	14.00
KA 41	346.00	343.50	378.00	32.00	125.70	6.50	14.00
KA 41	396.00	393.50	428.00	32.00	125.70	6.50	14.00
KA 41	446.00	443.50	478.00	32.00	125.70	6.50	14.00
KA 41	496.00	493.50	528.00	32.00	125.70	6.50	14.00
KA 41	546.00	543.50	578.00	32.00	125.70	6.50	14.00
KA 41	Variable	A-2.50	A+32.00	32.00	125.70	6.50	14.00



# MP 41.2 - Accessories

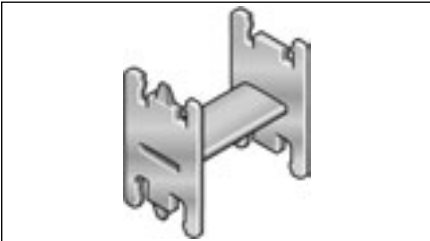
Separator	Type	Order no.	Description	Pack
	TR 41.1	041100009200	Separator	1
	Lock grid spacing 5.60 mm			
	We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable.			

Separator



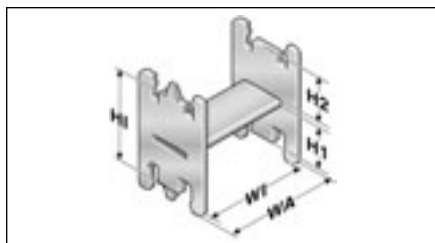
Separator

Type	Dimensions in mm					
	H	T1	H1	H2	H3	H4
TR 41	4.00	3.50	18.10	24.90	30.90	42.00

H-shaped shelf unit	Type	Order no.	Description	Pack
	RE 36/11	100000361112	RE 36/11 Shelf unit, H-shaped	1
	RE 59/18	100000591812	RE 59/18 Shelf unit, H-shaped	1
	RE 81/11	100000811112	RE 81/11 Shelf unit, H-shaped	1
Lock grid spacing 5.60 mm				

H-shaped shelf unit

Insert to obtain additional levels in pre-defined distances.

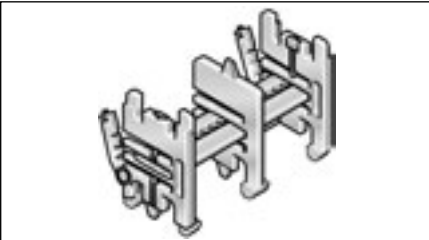


H-shaped shelf unit

Type	Dimensions in mm				
	WA	WI	H1	H2	H3
RE 36/11	42.50	36.50	26.20	11.50	42.00
RE 59/18	65.00	59.00	18.80	18.80	42.00
RE 81/11	87.50	81.50	26.20	11.50	42.00

# MP 41.2 - Accessories

Shelving system	Type	Order no.	Description	Width in mm	Pack
-----------------	------	-----------	-------------	-------------	------



Shelving system

RB 196-5	100000019600	RB 196-5 Shelf	196	1
RTT 41	100090412000	RTT 41 Shelf support, divisible		1

Lock grid spacing 5.60 mm

In connection with at least two shelf supports (RTT) the shelf becomes a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. Pre-assembly is not necessary as the shelf system and cabling can be assembled quickly and easily on site.

Type	TI	Dimensions in mm
------	----	------------------

RTT 41	7.00	
--------	------	--



Shelving system



## MP 41.2 - Accessories

### Frame ridge connector

Type	Order no.	Description	Pack
RSV 41	041000009600	RSV 41 Frame ridge connector	1
RSV 41 A	041000009800	RSV 41 Aluminium frame ridge connector	1



Frame ridge connector

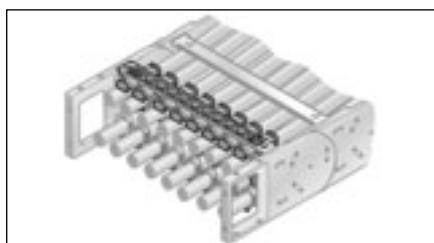
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.

Type	TI	Dimensions in mm
RSV 41	7.50	



### Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 045-5	052004500010	45 mm	1
RS-ZL 062-5	052006200010	62 mm	1
RS-ZL 071-5	052007100010	71 mm	1
RS-ZL 084-5	052008400010	84 mm	1
RS-ZL 096-5	052009600010	96 mm	1
RS-ZL 107-5	052010700010	107 mm	1
RS-ZL 121-5	052012100010	121 mm	1
RS-ZL 144-5	052014400010	144 mm	1
RS-ZL 171-5	052017100010	171 mm	1
RS-ZL 182-5	052018200010	182 mm	1
RS-ZL 196-5	052019600010	196 mm	1
RS-ZL 220-5	052022000010	220 mm	1
RS-ZL 246-5	052024600010	246 mm	1

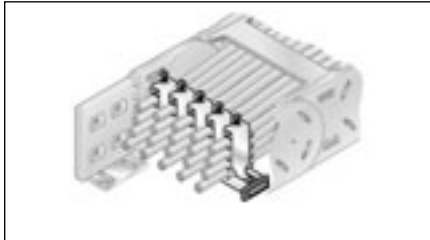


Strain relief RS-ZL

Frame ridge strain relief plates that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 246 mm. May be mounted on the inside and outside bend at both ends of the chain.

# MP 41.2 - Accessories

## Strain relief with BAK



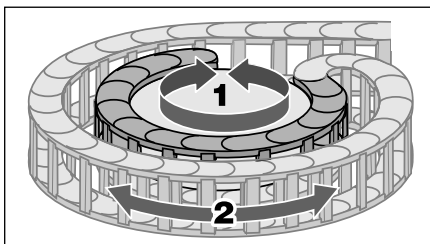
Strain relief with hooped clamp

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

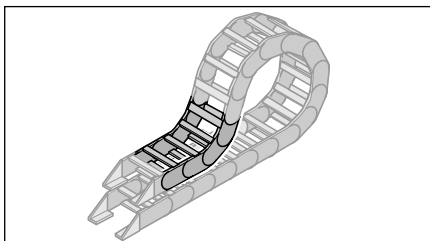
## Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 41.2 (RÜ200/R125)	41200009060	125 mm	200 mm	1
SR 41.2 (RÜ200/R160)	41200012060	160 mm	200 mm	1
SR 41.2 (RÜ200/R175)	41200015060	175 mm	200 mm	1
SR 41.2 (RÜ200/R200)	41200020060	200 mm	200 mm	1
SR 41.2 (RÜ200/R250)	41200025060	250 mm	200 mm	1
SR 41.2 (RÜ200/R300)	41200030060	300 mm	200 mm	1
SR 41.2 (RÜ200/R350)	41200035060	350 mm	200 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets.

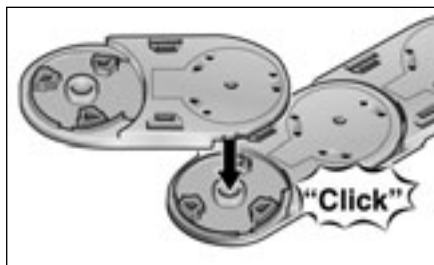


Low-lying chain bracket

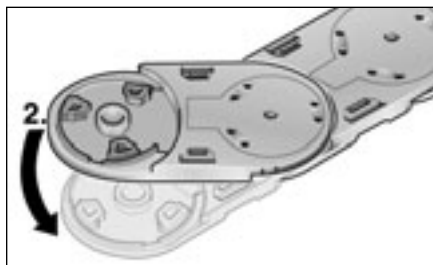


# MP 41.2 - PowerLine 2nd generation

## Assembly

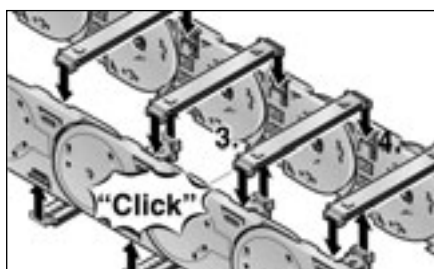


Step 1

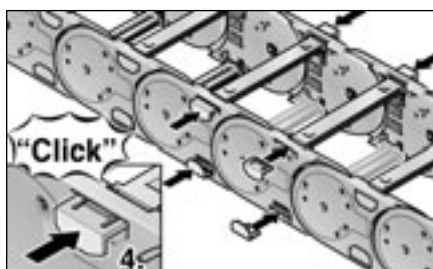


Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. Both ends of the frame ridges are introduced evenly into the slots in the side links. The ridges are held secure by pressing in the frame ridge locks. Forces are transmitted solely through the slots on the frame ridge end or side link.

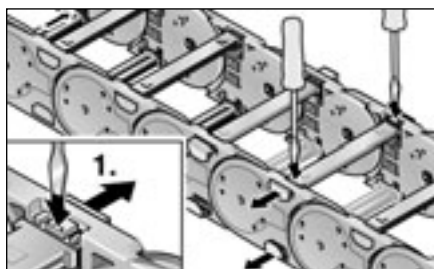


Step 3

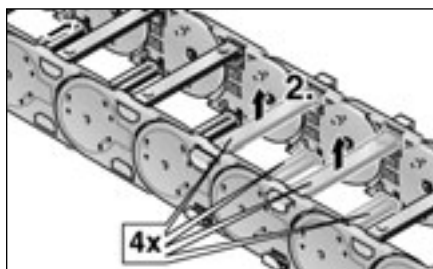


Step 4

## Disassembly

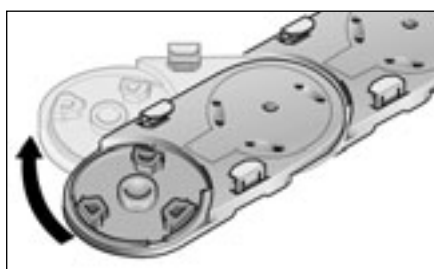


Step 1

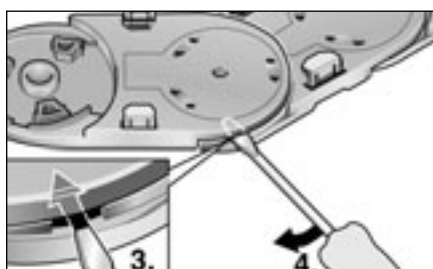


Step 2

Disassembly is effected in the reverse sequence to assembly. Loosen the locks until the frame ridges are released.

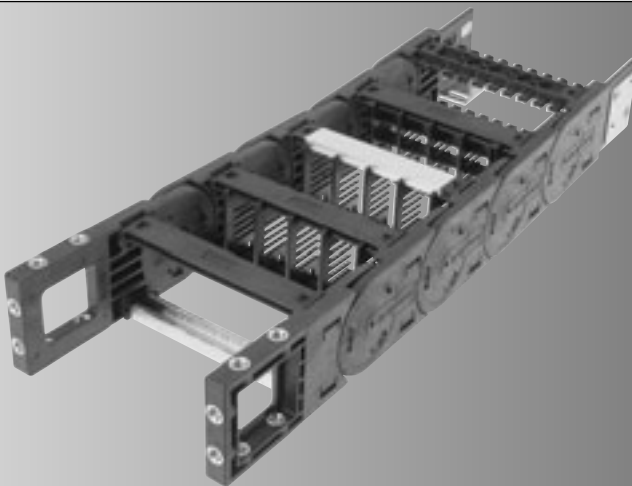


Step 3



Step 4

## CABLE DRAG CHAIN SYSTEMS



***PowerLine***

**MP 52.1**



# MP 52.1 - PowerLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP52.1 045	77	45	045						
MP52.1 062	94	62	062						
MP52.1 071	103	71	071						
MP52.1 084	116	84	084						
MP52.1 096	128	96	096						
MP52.1 107	139	107	107						
MP52.1 121	153	121	121						
MP52.1 144	176	144	144						
MP52.1 146	178	146	146						
MP52.1 171	203	171	171						
MP52.1 182	214	182	182						
MP52.1 196	228	196	196						
MP52.1 220	252	220	220						
MP52.1 246	278	246	246						
MP52.1 296	328	296	296						
MP52.1 346	378	346	346						
MP52.1 396	428	396	396	100	100				
MP52.1 446	478	446	446	150	150				
MP52.1 496	528	496	496	200	200				
MP52.1 546	578	546	546	250	250				
MP52.1 xxx	Inside	>80-		300	300				
	+ 32	600	ALU	350	350				
						0			
						1			
						2*			
						3*			
						4			
						5			
						6			
						7		0	
						9		9	
<b>Order number:</b>									
0521					0				0

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 2\* crossbar EOL; w/bias
- 3\* crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0521 045 100 0000

Inside width = 45 mm

Radius = 100 mm

Configuration = 0

Style = 0

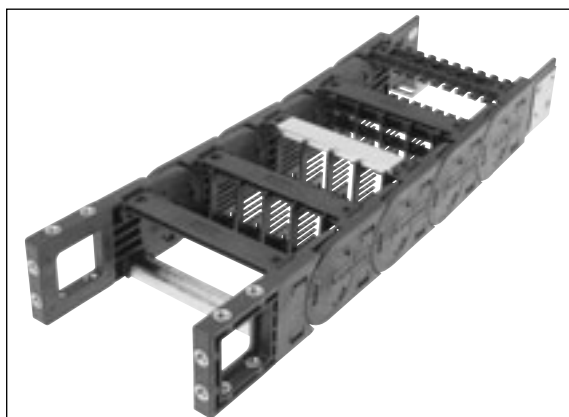
### Ideal operating conditions

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

### Alternative chain type

- MP 65 G closed series
- MP 66 easier to use
- MP 52.2 easier assembly

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

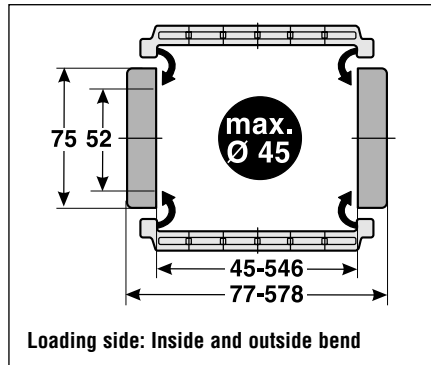


Foldable shelf system for reliable cable guidance

# MP 52.1 - PowerLine

## Technical data

### Chain link dimensions



### Material properties

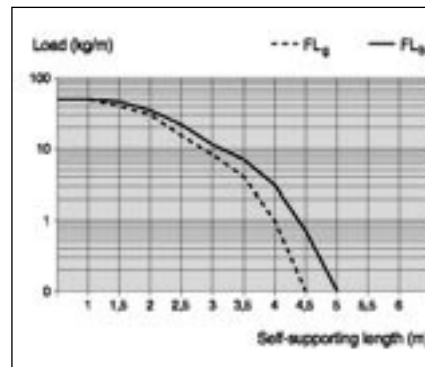
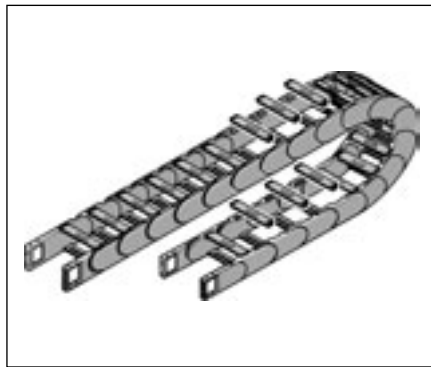
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 150 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 100 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 3 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 30 m/s<sup>2</sup>

### Unsupported length

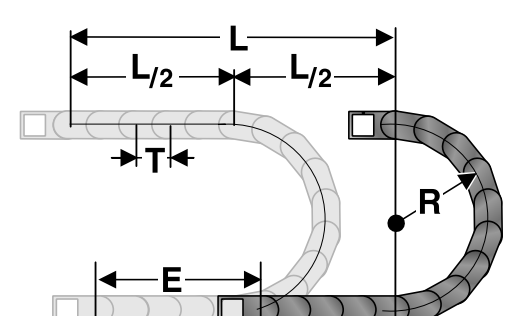


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 11 x 91 mm links

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

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

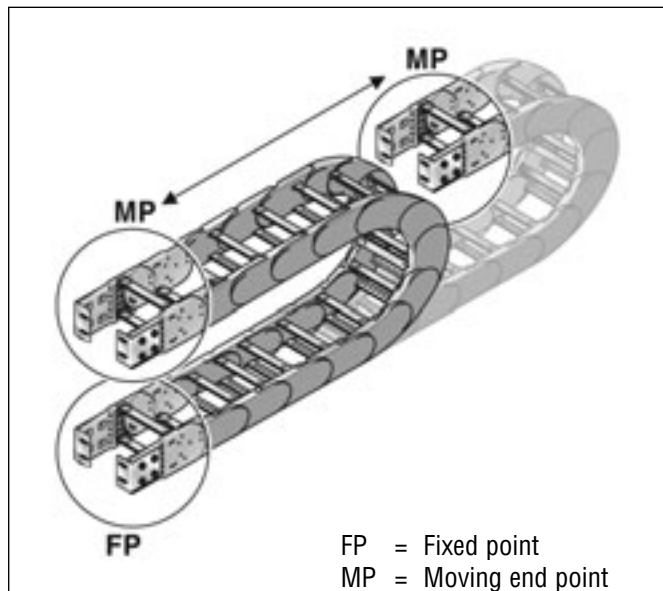
### Installation dimensions (in mm)

Radius R	100	150	200	250	300	350
Outside height of chain link ( $H_e$ )	74	74	74	74	74	74
Height of bend ( $H$ )	274	374	474	574	674	774
Height of moving end connection ( $H_{MA}$ )	200	300	400	500	600	700
Safety margin with bias ( $S_v$ )	46	46	46	46	46	46
Installation height with bias ( $H_{sv}$ )	320	420	520	620	720	820
Safety margin without bias ( $S_k$ )	16	16	16	16	16	16
Installation height without bias ( $H_{sk}$ )	290	390	490	590	690	790
Arc projection ( $M_i$ )	228	278	328	378	428	478
Bend length ( $L_B$ )	521	678	835	992	1149	1306



# MP 52.1 - PowerLine

## Chain bracket

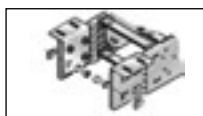


### Chain bracket flexible

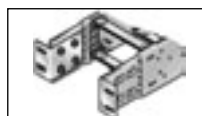


Flexible

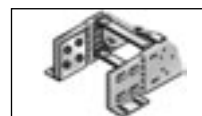
### Chain bracket elbow fitting



Top / outside



Front / outside



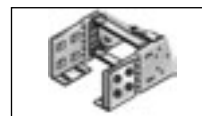
Bottom / outside



Top / inside



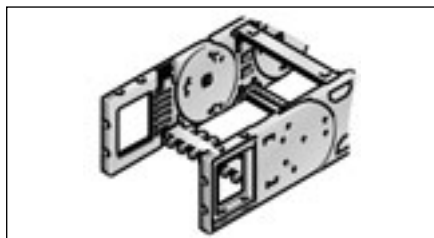
Front / inside



Bottom / inside

## Chain bracket flexible

Type	Order no.	Version	Pack
------	-----------	---------	------

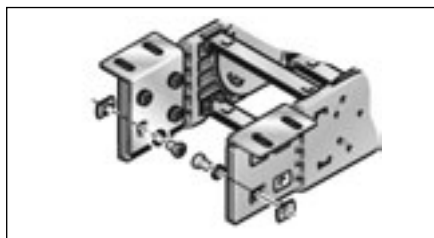


KA 52.1-FB Female end	0521000056	with bush	1
KA 52.1-FB Male end	0521000057	with bush	1
KA 52.1-FG Female end	0521000058	with thread	1
KA 52.1-FG Male end	0521000059	with thread	1

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M8 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type	Order no.	Pack
------	-----------	------



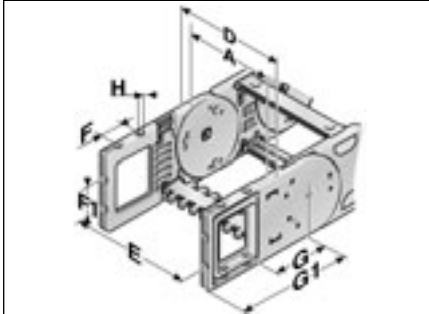
KA 52.1 Female end	0521000050	1
KA 52.1 Male end	0521000051	1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M6 screws.

# MP 52.1 - PowerLine

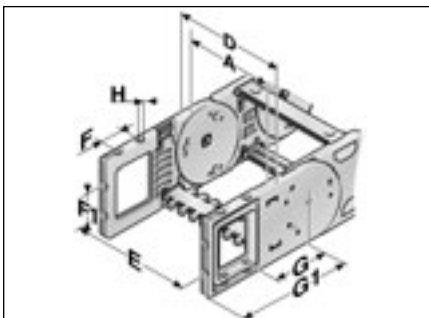
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 52.1-FB	45.00	81.00	61.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	62.00	98.00	78.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	71.00	107.00	87.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	84.00	120.00	100.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	96.00	132.00	112.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	107.00	143.00	123.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	121.00	157.00	137.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	144.00	180.00	160.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	146.00	182.00	162.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	171.00	207.00	187.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	182.00	218.00	198.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	196.00	232.00	212.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	220.00	256.00	236.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	246.00	282.00	262.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	296.00	340.00	312.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	346.00	382.00	362.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	396.00	432.00	412.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	446.00	482.00	462.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	496.00	532.00	512.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	546.00	582.00	562.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	Variable	A+36.00	A+16.00	35.00	30.00	89.00	144.00	8.50



Flexible with threaded bush

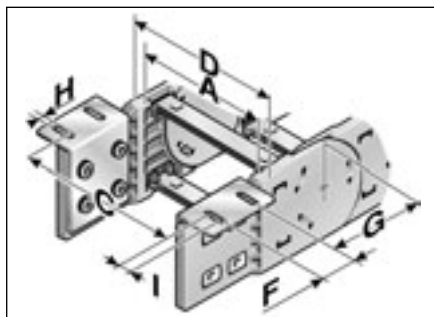
Type	A	D	E	F	F1	G	G1	H
KA 52.1-FG	45.00	81.00	61.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	62.00	98.00	78.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	71.00	107.00	87.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	84.00	120.00	100.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	96.00	132.00	112.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	107.00	143.00	123.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	121.00	157.00	137.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	144.00	180.00	160.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	146.00	182.00	162.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	171.00	207.00	187.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	182.00	218.00	198.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	196.00	232.00	212.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	220.00	256.00	236.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	246.00	282.00	262.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	296.00	340.00	312.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	346.00	382.00	362.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	396.00	432.00	412.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	446.00	482.00	462.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	496.00	532.00	512.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	546.00	582.00	562.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	Variable	A+36.00	A+16.00	35.00	30.00	89.00	144.00	M8



# MP 52.1 - PowerLine

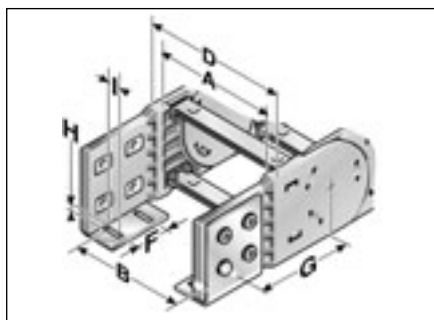
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 52.1	45.00	79.50	77.00	32.00	95.50	6.50	14.00
KA 52.1	62.00	96.50	94.00	32.00	95.50	6.50	14.00
KA 52.1	71.00	105.50	103.00	32.00	95.50	6.50	14.00
KA 52.1	84.00	118.50	116.00	32.00	95.50	6.50	14.00
KA 52.1	96.00	130.50	128.00	32.00	95.50	6.50	14.00
KA 52.1	107.00	141.50	139.00	32.00	95.50	6.50	14.00
KA 52.1	121.00	155.50	153.00	32.00	95.50	6.50	14.00
KA 52.1	144.00	178.50	176.00	32.00	95.50	6.50	14.00
KA 52.1	146.00	180.50	178.00	32.00	95.50	6.50	14.00
KA 52.1	171.00	205.50	203.00	32.00	95.50	6.50	14.00
KA 52.1	182.00	216.50	214.00	32.00	95.50	6.50	14.00
KA 52.1	196.00	230.50	228.00	32.00	95.50	6.50	14.00
KA 52.1	220.00	254.50	252.00	32.00	95.50	6.50	14.00
KA 52.1	246.00	280.50	278.00	32.00	95.50	6.50	14.00
KA 52.1	296.00	330.50	328.00	32.00	95.50	6.50	14.00
KA 52.1	346.00	380.50	378.00	32.00	95.50	6.50	14.00
KA 52.1	396.00	430.50	428.00	32.00	95.50	6.50	14.00
KA 52.1	446.00	480.50	478.00	32.00	95.50	6.50	14.00
KA 52.1	496.00	530.50	528.00	32.00	95.50	6.50	14.00
KA 52.1	546.00	580.50	578.00	32.00	95.50	6.50	14.00
KA 52.1	Variable	A+34.50	A+32.00	32.00	95.50	6.50	14.00



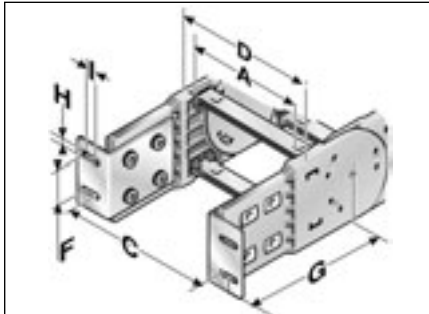
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 52.1	45.00	42.50	77.00	32.00	95.50	6.50	14.00
KA 52.1	62.00	59.50	94.00	32.00	95.50	6.50	14.00
KA 52.1	71.00	68.50	103.00	32.00	95.50	6.50	14.00
KA 52.1	84.00	81.50	116.00	32.00	95.50	6.50	14.00
KA 52.1	96.00	93.50	128.00	32.00	95.50	6.50	14.00
KA 52.1	107.00	104.50	139.00	32.00	95.50	6.50	14.00
KA 52.1	121.00	118.50	153.00	32.00	95.50	6.50	14.00
KA 52.1	144.00	141.50	176.00	32.00	95.50	6.50	14.00
KA 52.1	146.00	143.50	178.00	32.00	95.50	6.50	14.00
KA 52.1	171.00	168.50	203.00	32.00	95.50	6.50	14.00
KA 52.1	182.00	179.50	214.00	32.00	95.50	6.50	14.00
KA 52.1	196.00	193.50	228.00	32.00	95.50	6.50	14.00
KA 52.1	220.00	217.50	252.00	32.00	95.50	6.50	14.00
KA 52.1	246.00	243.50	278.00	32.00	95.50	6.50	14.00
KA 52.1	296.00	293.50	328.00	32.00	95.50	6.50	14.00
KA 52.1	346.00	343.50	378.00	32.00	95.50	6.50	14.00
KA 52.1	396.00	393.50	428.00	32.00	95.50	6.50	14.00
KA 52.1	446.00	443.50	478.00	32.00	95.50	6.50	14.00
KA 52.1	496.00	493.50	528.00	32.00	95.50	6.50	14.00
KA 52.1	546.00	543.50	578.00	32.00	95.50	6.50	14.00
KA 52.1	Variable	A-2.50	A+32.00	32.00	95.50	6.50	14.00

# MP 52.1 - PowerLine

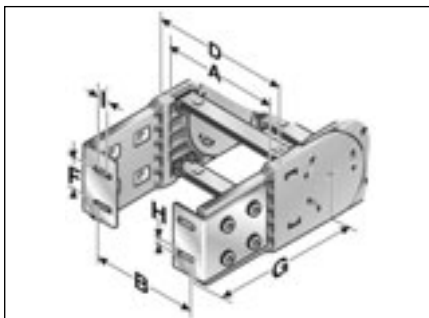
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 52.1	45.00	79.50	77.00	32.00	149.00	6.50	14.00
KA 52.1	62.00	96.50	94.00	32.00	149.00	6.50	14.00
KA 52.1	71.00	105.50	103.00	32.00	149.00	6.50	14.00
KA 52.1	84.00	118.50	116.00	32.00	149.00	6.50	14.00
KA 52.1	96.00	130.50	128.00	32.00	149.00	6.50	14.00
KA 52.1	107.00	141.50	139.00	32.00	149.00	6.50	14.00
KA 52.1	121.00	155.50	153.00	32.00	149.00	6.50	14.00
KA 52.1	144.00	178.50	176.00	32.00	149.00	6.50	14.00
KA 52.1	146.00	180.50	178.00	32.00	149.00	6.50	14.00
KA 52.1	171.00	205.50	203.00	32.00	149.00	6.50	14.00
KA 52.1	182.00	216.50	214.00	32.00	149.00	6.50	14.00
KA 52.1	196.00	230.50	228.00	32.00	149.00	6.50	14.00
KA 52.1	220.00	254.50	252.00	32.00	149.00	6.50	14.00
KA 52.1	246.00	280.50	278.00	32.00	149.00	6.50	14.00
KA 52.1	296.00	330.50	328.00	32.00	149.00	6.50	14.00
KA 52.1	346.00	380.50	378.00	32.00	149.00	6.50	14.00
KA 52.1	396.00	430.50	428.00	32.00	149.00	6.50	14.00
KA 52.1	446.00	480.50	478.00	32.00	149.00	6.50	14.00
KA 52.1	496.00	530.50	528.00	32.00	149.00	6.50	14.00
KA 52.1	546.00	580.50	578.00	32.00	149.00	6.50	14.00
KA 52.1	Variable	A+34.50	A+32.00	32.00	149.00	6.50	14.00




Front / inside

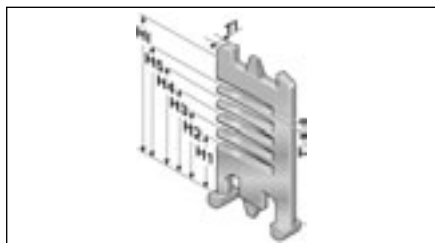
Type	A	B	D	F	G	H Ø	I
KA 52.1	45.00	42.50	77.00	32.00	149.00	6.50	14.00
KA 52.1	62.00	59.50	94.00	32.00	149.00	6.50	14.00
KA 52.1	71.00	68.50	103.00	32.00	149.00	6.50	14.00
KA 52.1	84.00	81.50	116.00	32.00	149.00	6.50	14.00
KA 52.1	96.00	93.50	128.00	32.00	149.00	6.50	14.00
KA 52.1	107.00	104.50	139.00	32.00	149.00	6.50	14.00
KA 52.1	121.00	118.50	153.00	32.00	149.00	6.50	14.00
KA 52.1	144.00	141.50	176.00	32.00	149.00	6.50	14.00
KA 52.1	146.00	143.50	178.00	32.00	149.00	6.50	14.00
KA 52.1	171.00	168.50	203.00	32.00	149.00	6.50	14.00
KA 52.1	182.00	179.50	214.00	32.00	149.00	6.50	14.00
KA 52.1	196.00	193.50	228.00	32.00	149.00	6.50	14.00
KA 52.1	220.00	217.50	252.00	32.00	149.00	6.50	14.00
KA 52.1	246.00	243.50	278.00	32.00	149.00	6.50	14.00
KA 52.1	296.00	293.50	328.00	32.00	149.00	6.50	14.00
KA 52.1	346.00	343.50	378.00	32.00	149.00	6.50	14.00
KA 52.1	396.00	393.50	428.00	32.00	149.00	6.50	14.00
KA 52.1	446.00	443.50	478.00	32.00	149.00	6.50	14.00
KA 52.1	496.00	493.50	528.00	32.00	149.00	6.50	14.00
KA 52.1	546.00	543.50	578.00	32.00	149.00	6.50	14.00
KA 52.1	Variable	A-2.50	A+32.00	32.00	149.00	6.50	14.00



# MP 52.1 - Accessories

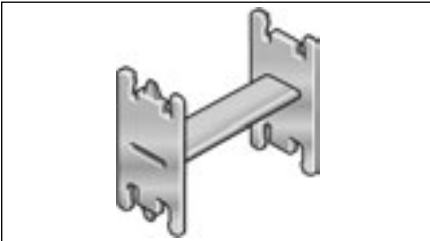
Separator	Type	Order no.	Description	Pack
	TR 52.1	052100009200	TR 52.1 Separator	1
	Lock grid spacing 5.60 mm			
	We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable.			

Separator



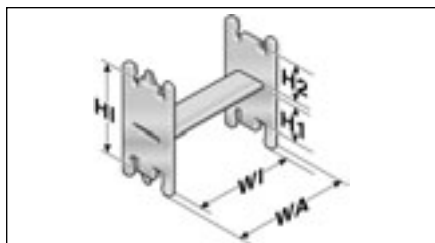
Separator

Type	Dimensions in mm							
	TI	H	H1	H2	H3	H4	H5	HI
TR 52.1	3.50	4.00	15.60	22.00	28.20	34.60	41.00	52.00

H-shaped shelf unit	Type	Order no.	Description	Pack
	RE 36/17	100000361714	RE 36/17 Shelf unit, H-shaped	1
	RE 59/24	100000592414	RE 59/24 Shelf unit, H-shaped	1
	RE 81/12	100000811214	RE 81/12 Shelf unit, H-shaped	1
Lock grid spacing 5.60 mm				

H-shaped shelf unit

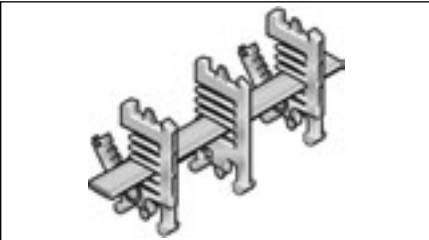
Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

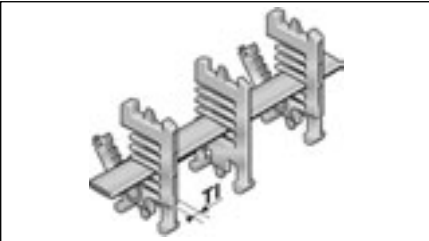
Type	Dimensions in mm				
	WA	WI	H1	H2	HI
RE 36/17	42.50	36.50	31.00	17.40	52.00
RE 59/24	65.00	59.00	24.20	24.20	52.00
RE 81/12	87.50	81.50	36.00	12.40	52.00

# MP 52.1 - Accessories

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 196-5	100000019600	RB 196-5 Shelf	196	1
	RTT 52	100090522000	RTT 52 Shelf support, divisible		1
	Lock grid spacing 5.60 mm				


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, whilst also avoiding excessive friction. Pre-assembly is not necessary as the shelf system and cabling can be assembled quickly and easily on site.



Shelving system

Type	TI	Dimensions in mm
RTT 52	7.00	

Frame ridge connector	Type	Order no.	Description	Pack
	RSV 52	052000009600	RSV 52 Frame ridge connector	1
	RSV 52 A	052000009800	RSV 52 Aluminium frame ridge connector	1
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.				

Frame ridge connector

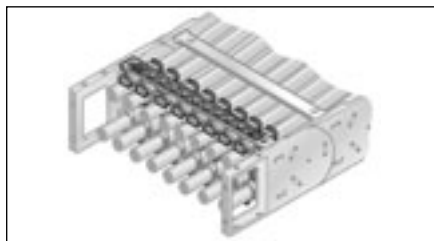


Type	TI	Dimensions in mm
RSV 52	7.50	



## MP 52.1 - Accessories

### Strain relief RS-ZL

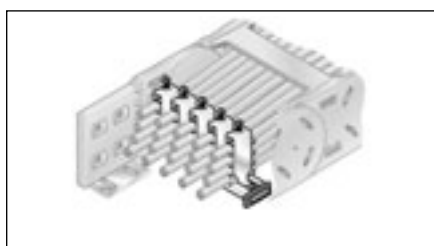


Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 045-5	052004500010	45 mm	1
RS-ZL 062-5	052006200010	62 mm	1
RS-ZL 071-5	052007100010	71 mm	1
RS-ZL 084-5	052008400010	84 mm	1
RS-ZL 096-5	052009600010	96 mm	1
RS-ZL 107-5	052010700010	107 mm	1
RS-ZL 121-5	052012100010	121 mm	1
RS-ZL 144-5	052014400010	144 mm	1
RS-ZL 171-5	052017100010	171 mm	1
RS-ZL 182-5	052018200010	182 mm	1
RS-ZL 196-5	052019600010	196 mm	1
RS-ZL 220-5	052022000010	220 mm	1
RS-ZL 246-5	052024600010	246 mm	1

Frame ridge strain relief plates that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 246 mm. May be mounted on the inside and outside bend at both ends of the chain.

### Strain relief with BAK



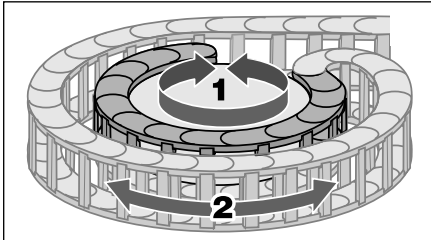
Strain relief with hooped clamp

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

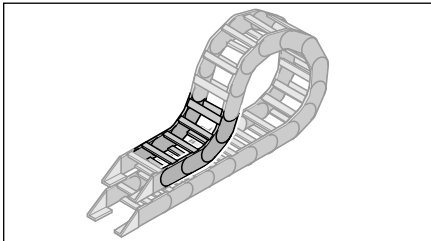
Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel  
Please indicate chain type and inside width when ordering.

# MP 52.1 - Accessories

Back radius



Rotary movement



Low-lying chain bracket

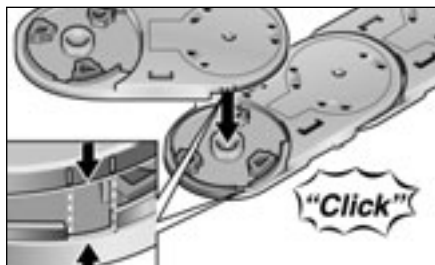
Type	Order no.	Radius	Back Radius	Pack
SR 52.1 (RÜ200/R135) left	52100010060	135 mm	200 mm	1
SR 52.1 (RÜ200/R135) right	52100010062	135 mm	200 mm	1
SR 52.1 (RÜ200/R170) left	52100015060	170 mm	200 mm	1
SR 52.1 (RÜ200/R170) right	52100015062	170 mm	200 mm	1
SR 52.1 (RÜ200/R200) left	52100020060	200 mm	200 mm	1
SR 52.1 (RÜ200/R200) right	52100020062	200 mm	200 mm	1
SR 52.1 (RÜ200/R250) left	52100025060	250 mm	200 mm	1
SR 52.1 (RÜ200/R250) right	52100025062	250 mm	200 mm	1
SR 52.1 (RÜ200/R300) left	52100030060	300 mm	200 mm	1
SR 52.1 (RÜ200/R300) right	52100020062	300 mm	200 mm	1
SR 52.1 (RÜ200/R350) left	52100035060	350 mm	200 mm	1
SR 52.1 (RÜ200/R350) right	52100035062	350 mm	200 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!

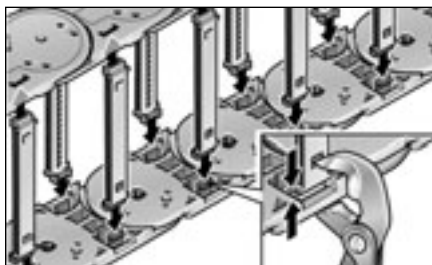


# MP 52.1 - PowerLine

## Assembly

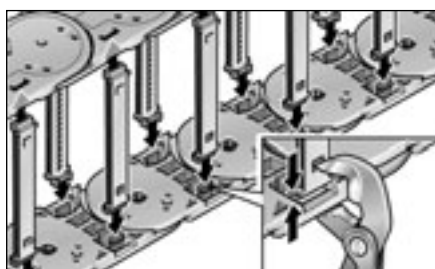


Step 1



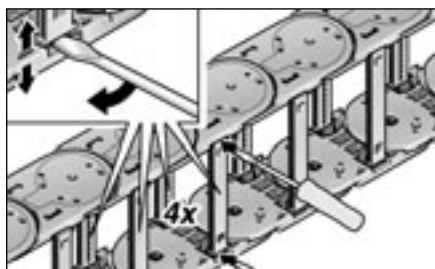
Step 2

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

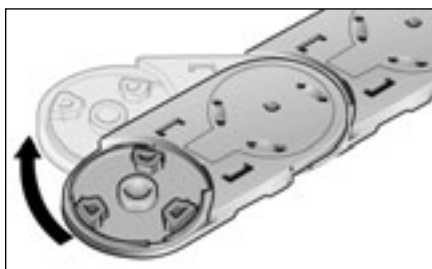


Step 3

## Disassembly

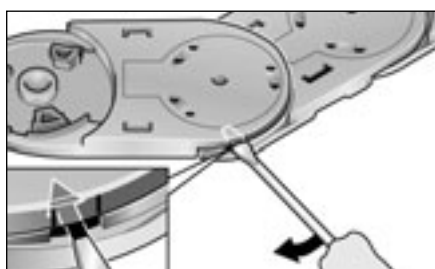


Step 1



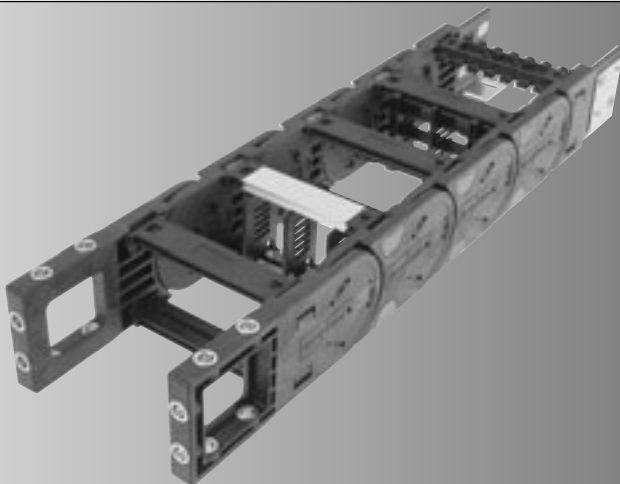
Step 2

Disassembly is effected in the reverse sequence to assembly. First lever the ridges out of the side panel on one side, then on the other side.



Step 3

# CABLE DRAG CHAIN SYSTEMS



***PowerLine***

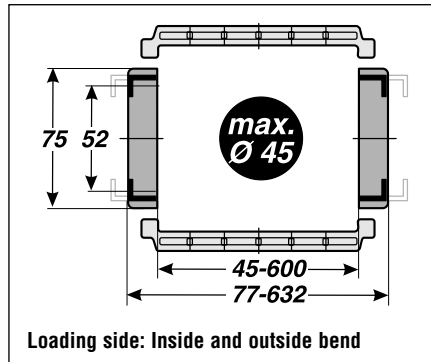
**MP 52.2**



# MP 52.2 - PowerLine 2nd generation

## Technical data

### Chain link dimensions



### Material properties

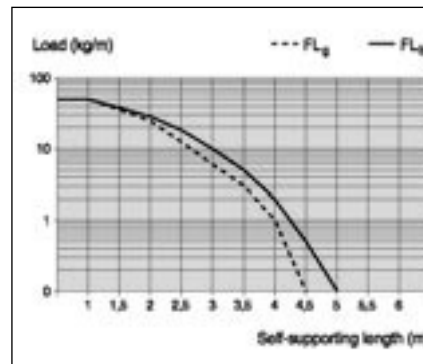
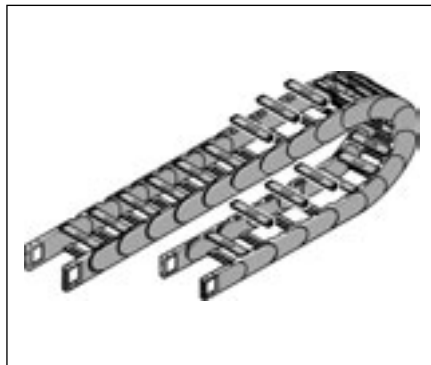
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB  
 ESD material: CE Ex II 2 GD

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 150 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 100 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 2 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 30 m/s<sup>2</sup>

### Unsupported length

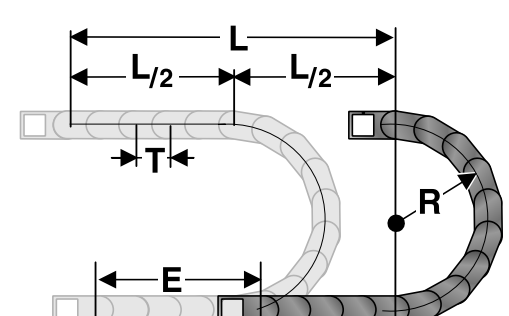


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>b</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 11 x 91 mm links

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

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

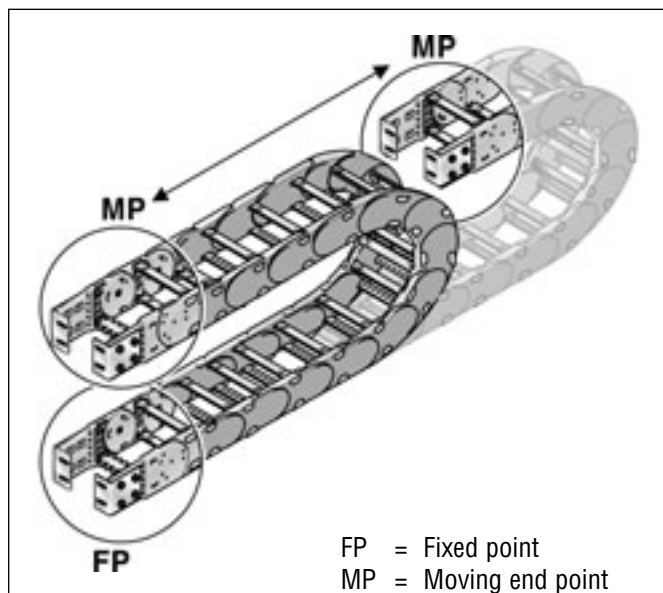
### Installation dimensions (in mm)

Radius R	100	150	200	250	300	350
Outside height of chain link ( $H_e$ )	74	74	74	74	74	74
Height of bend ( $H$ )	274	374	474	574	674	774
Height of moving end connection ( $H_{MA}$ )	200	300	400	500	600	700
Safety margin with bias ( $S_v$ )	46	46	46	46	46	46
Installation height with bias ( $H_{sv}$ )	320	420	520	620	720	820
Safety margin without bias ( $S_k$ )	16	16	16	16	16	16
Installation height without bias ( $H_{sk}$ )	290	390	490	590	690	790
Arc projection ( $M_L$ )	228	278	328	378	428	478
Bend length ( $L_B$ )	521	678	835	992	1149	1306



# MP 52.2 - PowerLine 2nd generation

## Chain bracket

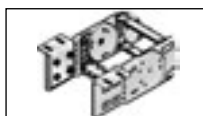


### Chain bracket flexible



Flexible

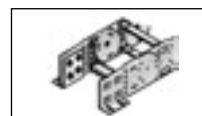
### Chain bracket elbow fitting



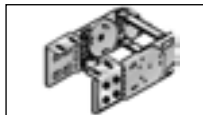
Top / outside



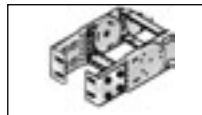
Front / outside



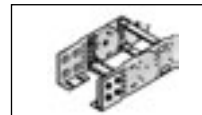
Bottom / outside



Top / inside



Front / inside



Bottom / inside

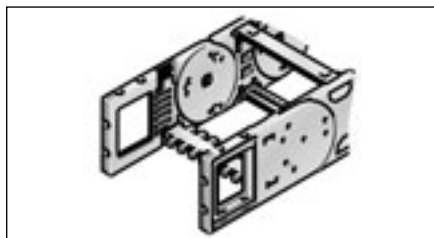
## Chain bracket flexible

Type

Order no.

Version

Pack



KA 52.1-FB Female end	0521000056	with bush	1
KA 52.1-FB Male end	0521000057	with bush	1
KA 52.1-FG Female end	0521000058	with thread	1
KA 52.1-FG Male end	0521000059	with thread	1

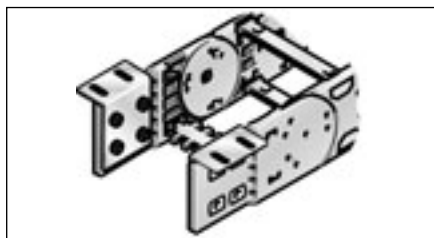
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M8 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type

Order no.

Pack



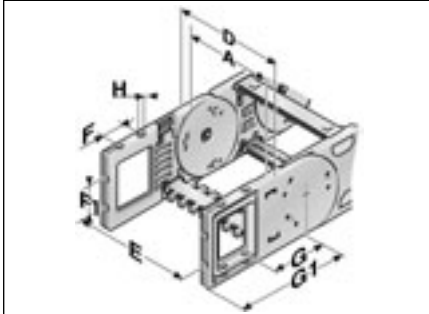
KA 52.1 Female end	0521000050	1
KA 52.1 Male end	0521000051	1

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M6 screws are used to secure the brackets in place.

# MP 52.2 - PowerLine 2nd generation

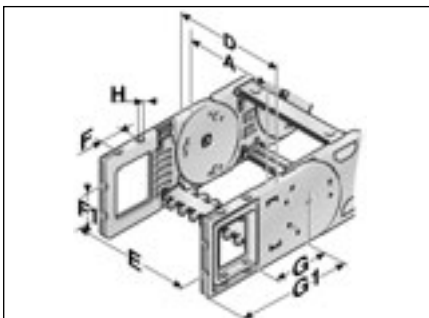
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 52.1-FB	45.00	81.00	61.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	62.00	98.00	78.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	71.00	107.00	87.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	84.00	120.00	100.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	96.00	132.00	112.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	107.00	143.00	123.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	121.00	157.00	137.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	144.00	180.00	160.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	146.00	182.00	162.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	171.00	207.00	187.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	182.00	218.00	198.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	196.00	232.00	212.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	220.00	256.00	236.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	246.00	282.00	262.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	296.00	332.00	312.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	346.00	382.00	362.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	396.00	432.00	412.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	446.00	482.00	462.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	496.00	532.00	512.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	546.00	582.00	562.00	35.00	30.00	89.00	144.00	8.50
KA 52.1-FB	Variable	A+36.00	A+16.00	35.00	30.00	89.00	144.00	8.50



Flexible with threaded bush

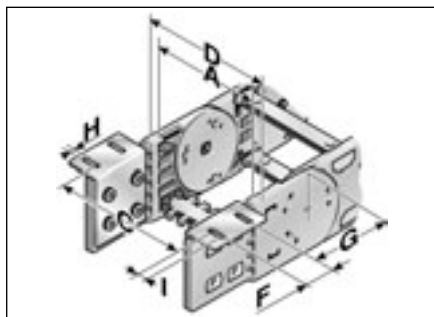
Type	A	D	E	F	F1	G	G1	H
KA 52.1-FG	45.00	81.00	61.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	62.00	98.00	78.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	71.00	107.00	87.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	84.00	120.00	100.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	96.00	132.00	112.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	107.00	143.00	123.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	121.00	157.00	137.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	144.00	180.00	160.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	146.00	182.00	162.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	171.00	207.00	187.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	182.00	218.00	198.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	196.00	232.00	212.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	220.00	256.00	236.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	246.00	282.00	262.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	296.00	332.00	312.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	346.00	382.00	362.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	396.00	432.00	412.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	446.00	482.00	462.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	496.00	532.00	512.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	546.00	582.00	562.00	35.00	30.00	89.00	144.00	M8
KA 52.1-FG	Variable	A+36.00	A+16.00	35.00	30.00	89.00	144.00	M8



# MP 52.2 - PowerLine 2nd generation

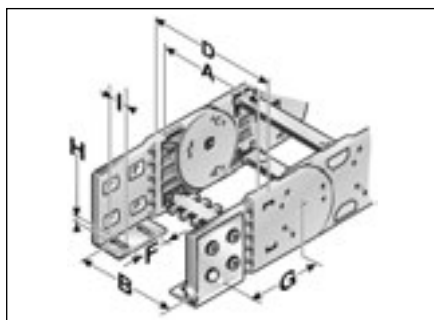
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 52.1	45.00	79.50	77.00	32.00	95.50	6.50	14.00
KA 52.1	62.00	96.50	94.00	32.00	95.50	6.50	14.00
KA 52.1	71.00	105.50	103.00	32.00	95.50	6.50	14.00
KA 52.1	84.00	118.50	116.00	32.00	95.50	6.50	14.00
KA 52.1	96.00	130.50	128.00	32.00	95.50	6.50	14.00
KA 52.1	107.00	141.50	139.00	32.00	95.50	6.50	14.00
KA 52.1	121.00	155.50	153.00	32.00	95.50	6.50	14.00
KA 52.1	144.00	178.50	176.00	32.00	95.50	6.50	14.00
KA 52.1	146.00	180.50	178.00	32.00	95.50	6.50	14.00
KA 52.1	171.00	205.50	203.00	32.00	95.50	6.50	14.00
KA 52.1	182.00	216.50	214.00	32.00	95.50	6.50	14.00
KA 52.1	196.00	230.50	228.00	32.00	95.50	6.50	14.00
KA 52.1	220.00	254.50	252.00	32.00	95.50	6.50	14.00
KA 52.1	246.00	280.50	278.00	32.00	95.50	6.50	14.00
KA 52.1	296.00	330.50	328.00	32.00	95.50	6.50	14.00
KA 52.1	346.00	380.50	378.00	32.00	95.50	6.50	14.00
KA 52.1	396.00	430.50	428.00	32.00	95.50	6.50	14.00
KA 52.1	446.00	480.50	478.00	32.00	95.50	6.50	14.00
KA 52.1	496.00	530.50	528.00	32.00	95.50	6.50	14.00
KA 52.1	546.00	580.50	578.00	32.00	95.50	6.50	14.00
KA 52.1	Variable	A+34.50	A+32.00	32.00	95,50	6.50	14.00



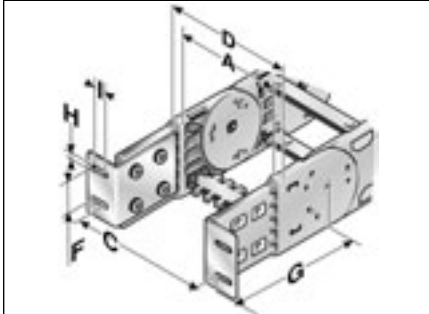
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 52.1	45.00	42.50	77.00	32.00	95.50	6.50	14.00
KA 52.1	62.00	59.50	94.00	32.00	95.50	6.50	14.00
KA 52.1	71.00	68.50	103.00	32.00	95.50	6.50	14.00
KA 52.1	84.00	81.50	116.00	32.00	95.50	6.50	14.00
KA 52.1	96.00	93.50	128.00	32.00	95.50	6.50	14.00
KA 52.1	107.00	104.50	139.00	32.00	95.50	6.50	14.00
KA 52.1	121.00	118.50	153.00	32.00	95.50	6.50	14.00
KA 52.1	144.00	141.50	176.00	32.00	95.50	6.50	14.00
KA 52.1	146.00	143.50	178.00	32.00	95.50	6.50	14.00
KA 52.1	171.00	168.50	203.00	32.00	95.50	6.50	14.00
KA 52.1	182.00	179.50	214.00	32.00	95.50	6.50	14.00
KA 52.1	196.00	193.50	228.00	32.00	95.50	6.50	14.00
KA 52.1	220.00	217.50	252.00	32.00	95.50	6.50	14.00
KA 52.1	246.00	243.50	278.00	32.00	95.50	6.50	14.00
KA 52.1	296.00	293.50	328.00	32.00	95.50	6.50	14.00
KA 52.1	346.00	343.50	378.00	32.00	95.50	6.50	14.00
KA 52.1	396.00	393.50	428.00	32.00	95.50	6.50	14.00
KA 52.1	446.00	443.50	478.00	32.00	95.50	6.50	14.00
KA 52.1	496.00	493.50	528.00	32.00	95.50	6.50	14.00
KA 52.1	546.00	543.50	578.00	32.00	95.50	6.50	14.00
KA 52.1	Variable	A-2.50	A+32.00	32.00	95.50	6.50	14.00

# MP 52.2 - PowerLine 2nd generation

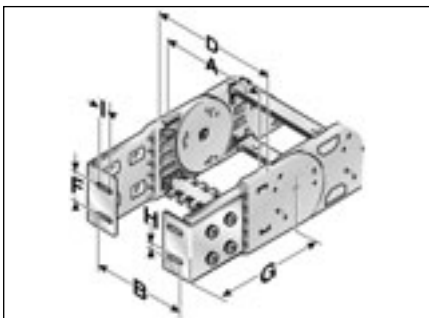
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 52.1	45.00	79.50	77.00	32.00	149.00	6.50	14.00
KA 52.1	62.00	96.50	94.00	32.00	149.00	6.50	14.00
KA 52.1	71.00	105.50	103.00	32.00	149.00	6.50	14.00
KA 52.1	84.00	118.50	116.00	32.00	149.00	6.50	14.00
KA 52.1	96.00	130.50	128.00	32.00	149.00	6.50	14.00
KA 52.1	107.00	141.50	139.00	32.00	149.00	6.50	14.00
KA 52.1	121.00	155.50	153.00	32.00	149.00	6.50	14.00
KA 52.1	144.00	178.50	176.00	32.00	149.00	6.50	14.00
KA 52.1	146.00	180.50	178.00	32.00	149.00	6.50	14.00
KA 52.1	171.00	205.50	203.00	32.00	149.00	6.50	14.00
KA 52.1	182.00	216.50	214.00	32.00	149.00	6.50	14.00
KA 52.1	196.00	230.50	228.00	32.00	149.00	6.50	14.00
KA 52.1	220.00	254.50	252.00	32.00	149.00	6.50	14.00
KA 52.1	246.00	280.50	278.00	32.00	149.00	6.50	14.00
KA 52.1	296.00	330.50	328.00	32.00	149.00	6.50	14.00
KA 52.1	346.00	380.50	378.00	32.00	149.00	6.50	14.00
KA 52.1	396.00	430.50	428.00	32.00	149.00	6.50	14.00
KA 52.1	446.00	480.50	478.00	32.00	149.00	6.50	14.00
KA 52.1	496.00	530.50	528.00	32.00	149.00	6.50	14.00
KA 52.1	546.00	580.50	578.00	32.00	149.00	6.50	14.00
KA 52.1	Variable	A+34.50	A+32.00	32.00	149.00	6.50	14.00



Front / inside

Type	A	B	D	F	G	H Ø	I
KA 52.1	45.00	42.50	77.00	32.00	149.00	6.50	14.00
KA 52.1	62.00	59.50	94.00	32.00	149.00	6.50	14.00
KA 52.1	71.00	68.50	103.00	32.00	149.00	6.50	14.00
KA 52.1	84.00	81.50	116.00	32.00	149.00	6.50	14.00
KA 52.1	96.00	93.50	128.00	32.00	149.00	6.50	14.00
KA 52.1	107.00	104.50	139.00	32.00	149.00	6.50	14.00
KA 52.1	121.00	118.50	153.00	32.00	149.00	6.50	14.00
KA 52.1	144.00	141.50	176.00	32.00	149.00	6.50	14.00
KA 52.1	146.00	143.50	178.00	32.00	149.00	6.50	14.00
KA 52.1	171.00	168.50	203.00	32.00	149.00	6.50	14.00
KA 52.1	182.00	179.50	214.00	32.00	149.00	6.50	14.00
KA 52.1	196.00	193.50	228.00	32.00	149.00	6.50	14.00
KA 52.1	220.00	217.50	252.00	32.00	149.00	6.50	14.00
KA 52.1	246.00	243.50	278.00	32.00	149.00	6.50	14.00
KA 52.1	296.00	293.50	328.00	32.00	149.00	6.50	14.00
KA 52.1	346.00	343.50	378.00	32.00	149.00	6.50	14.00
KA 52.1	396.00	393.50	428.00	32.00	149.00	6.50	14.00
KA 52.1	446.00	443.50	478.00	32.00	149.00	6.50	14.00
KA 52.1	496.00	493.50	528.00	32.00	149.00	6.50	14.00
KA 52.1	546.00	543.50	578.00	32.00	149.00	6.50	14.00
KA 52.1	Variable	A-2.50	A+32.00	32.00	149.00	6.50	14.00



## MP 52.2 - Accessories

### Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

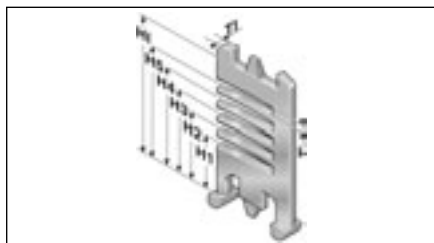


Separator

TR 52.1	052100009200	TR 52.1 Separator	1
---------	--------------	-------------------	---

Lock grid spacing 5.60 mm

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



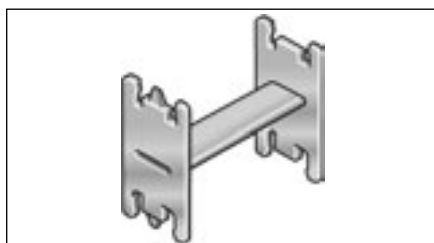
Separator

Type	TI	H	Dimensions in mm					
			H1	H2	H3	H4	H5	HI

TR 52.1	3.50	4.00	15.60	22.00	28.20	34.60	41.00	52.00
---------	------	------	-------	-------	-------	-------	-------	-------

### H-shaped shelf unit

Type	Order no.	Description	Pack
------	-----------	-------------	------



H-shaped shelf unit

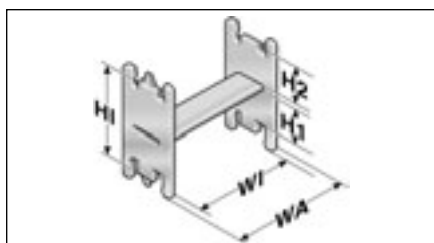
RE 36/17	100000361714	RE 36/17 Shelf unit, H-shaped	1
----------	--------------	-------------------------------	---

RE 59/24	100000592414	RE 59/24 Shelf unit, H-shaped	1
----------	--------------	-------------------------------	---

RE 81/12	100000811214	RE 81/12 Shelf unit, H-shaped	1
----------	--------------	-------------------------------	---

Lock grid spacing 5.60 mm

Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

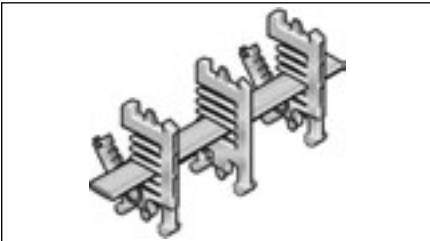
Type	WA	WI	Dimensions in mm		
			H1	H2	HI

RE 36/17	42.50	36.50	31.00	17.40	52.00
----------	-------	-------	-------	-------	-------

RE 59/24	65.00	59.00	24.20	24.20	52.00
----------	-------	-------	-------	-------	-------

RE 81/12	87.50	81.50	36.00	12.40	52.00
----------	-------	-------	-------	-------	-------

## MP 52.2 - Accessories


Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 196-5	100000019600	RB 196-5 Shelf	196	1
	RTT 52	100090522000	RTT 52.1 Shelf support, divisible		1
	Lock grid spacing 5.60 mm				
In connection with at least two shelf supports (RTT) the shelf becomes a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. Pre-assembly is not necessary as the shelf system and cabling can be assembled quickly and easily on site.					

Shelving system

Type	TI	Dimensions in mm
RTT 52	7.00	



Shelving system

Frame ridge connector	Type	Order no.	Description	Pack
	RSV 52	052000009600	RSV 52 Frame ridge connector	1
	RSV 52 A	052000009800	RSV 52 Aluminium frame ridge connector	1
<p>For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.</p>				

Frame ridge connector

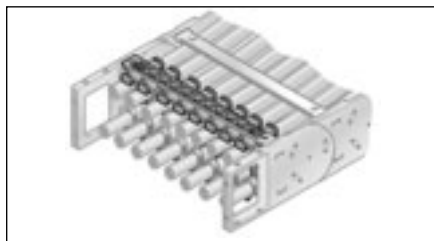
Type	TI	Dimensions in mm
RSV 52	7.50	





## MP 52.2 - Accessories

### Strain relief RS-ZL

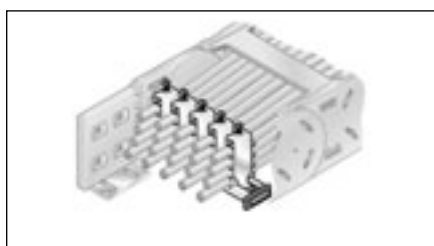


Strain relief RS-ZL

Type	Order no.	for inside width	Pack
RS-ZL 045-5	052004500010	45 mm	1
RS-ZL 062-5	052006200010	62 mm	1
RS-ZL 071-5	052007100010	71 mm	1
RS-ZL 084-5	052008400010	84 mm	1
RS-ZL 096-5	052009600010	96 mm	1
RS-ZL 107-5	052010700010	107 mm	1
RS-ZL 121-5	052012100010	121 mm	1
RS-ZL 144-5	052014400010	144 mm	1
RS-ZL 171-5	052017100010	171 mm	1
RS-ZL 182-5	052018200010	182 mm	1
RS-ZL 196-5	052019600010	196 mm	1
RS-ZL 220-5	052022000010	220 mm	1
RS-ZL 246-5	052024600010	246 mm	1

Frame ridge strain relief plates that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 246 mm. May be mounted on the inside and outside bend at both ends of the chain.

### Strain relief with BAK

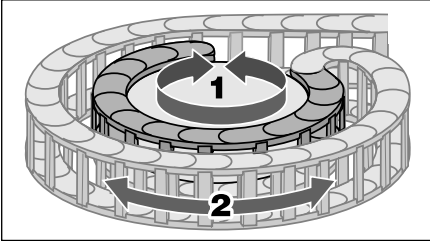
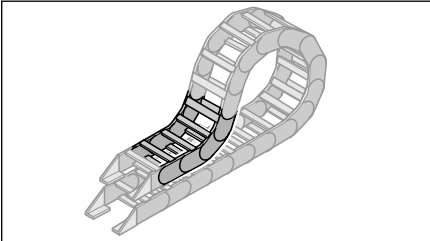


Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel  
Please indicate chain type and inside width when ordering.

# MP 52.2 - Accessories

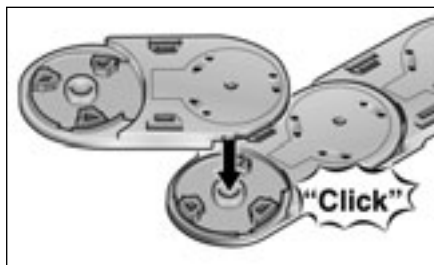
Back radius	Type	Order no.	Radius	Back Radius	Pack
	SR 52.2 (RÜ200/R135) left	52200010060	135 mm	200 mm	1
	SR 52.2 (RÜ200/R135) right	52200010062	135 mm	200 mm	1
	SR 52.2 (RÜ200/R170) left	52200015060	170 mm	200 mm	1
	SR 52.2 (RÜ200/R170) right	52200015062	170 mm	200 mm	1
	SR 52.2 (RÜ200/R200) left	52200020060	200 mm	200 mm	1
	SR 52.2 (RÜ200/R200) right	52200020062	200 mm	200 mm	1
	SR 52.2 (RÜ200/R250) left	52200025060	250 mm	200 mm	1
	SR 52.2 (RÜ200/R250) right	52200025062	250 mm	200 mm	1
	SR 52.2 (RÜ200/R300) left	52200030060	300 mm	200 mm	1
	SR 52.2 (RÜ200/R300) right	52200030062	300 mm	200 mm	1
	SR 52.2 (RÜ200/R350) left	52200035060	350 mm	200 mm	1
	SR 52.2 (RÜ200/R350) right	52200035062	350 mm	200 mm	1
	Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!				

Low-lying chain bracket

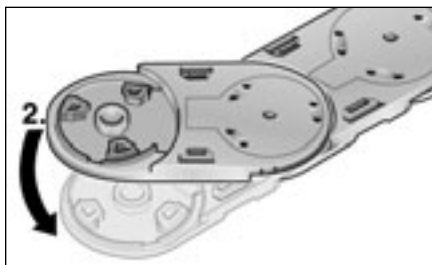


# MP 52.2 - PowerLine 2nd generation

## Assembly

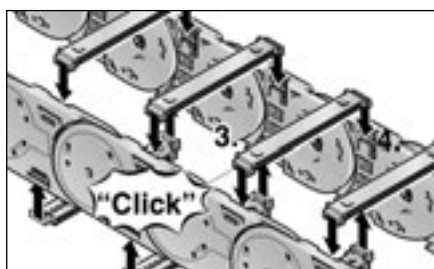


Step 1

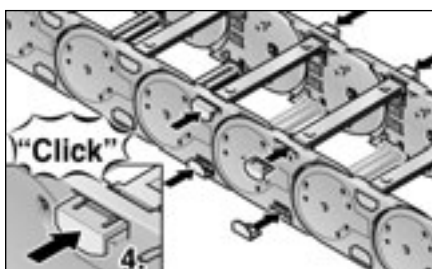


Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. Both ends of the frame ridges are introduced evenly into the slots in the side links. The ridges are held secure by pressing in the frame ridge locks. Forces are transmitted solely through the slots on the ridge end or side link.

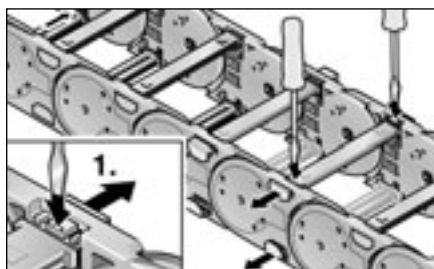


Step 3

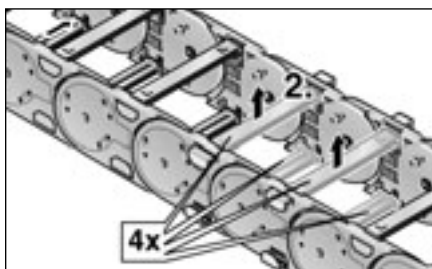


Step 4

## Disassembly



Step 1

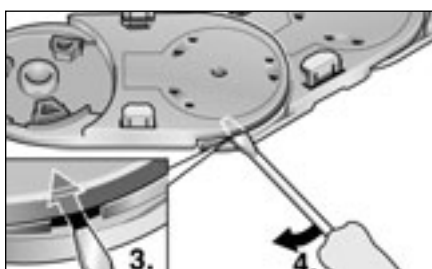


Step 2

Disassembly is effected in the reverse sequence to assembly. Loosen the locks until the frame ridges are released.

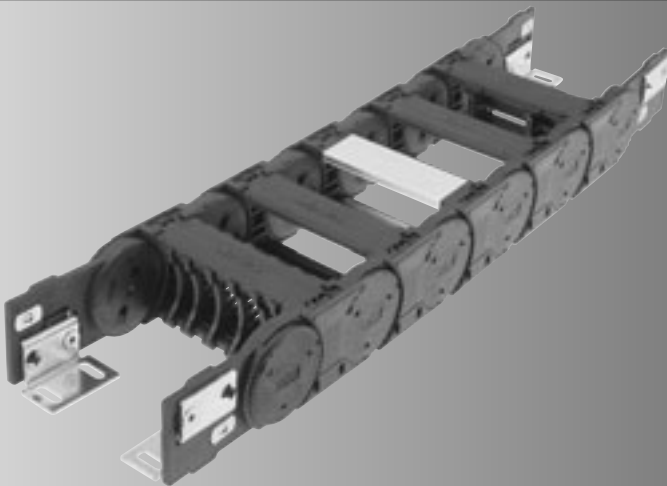


Step 3



Step 4

## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 66**



# MP 66 - MultiLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP66 045	79	45	045					0*	
MP66 062	96	62	062					1*	
MP66 084	118	84	084					2	
MP66 105	139	105	105	150	150			3	
MP66 144	178	144	144	200	200			4	
MP66 182	216	182	182	240	240			5	
MP66 xxx	Inside	>45-	600	280	280			6	
	+ 34	600	ALU	350	350			7	0
								9	9
<b>Order number:</b>									
0660 <input type="text"/> <input type="text"/> <input type="text"/> 0 <input type="text"/> <input type="text"/> 0									

### Configuration:

- 0\* crossbar every link; w/bias
- 1\* crossbar every link; w/o bias
- 2 crossbar EOL; w/bias
- 3 crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0660 045 150 00\*00

Inside width = 45 mm  
Radius = 150 mm  
Configuration = 0\*  
Style = 0

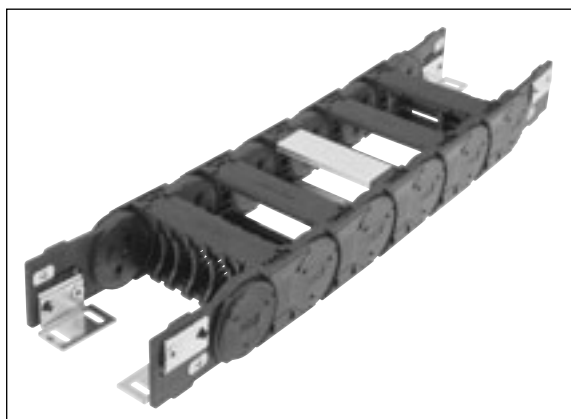
### Ideal operating conditions

- Opening cover on both sides
- Flexible internal separation
- Variable widths (aluminium frame ridge)
- Gliding arrangement
- Unsupported arrangement
- Quiet operation

### Alternative chain type

- MP 65 G closed series
- MP 62.1 / MP 62.2
- Higher stresses
- Flange connection (KA-F)

## Features



Chain bracket with variably positionable metal bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Aluminium frame ridges with integrated lock grid in variable lengths



Plug-in shelf system for reliable cable guidance

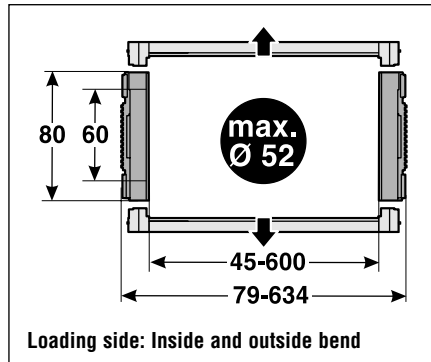


ZL strain relief plate

# MP 66 - MultiLine

## Technical data

### Chain link dimensions



### Material properties

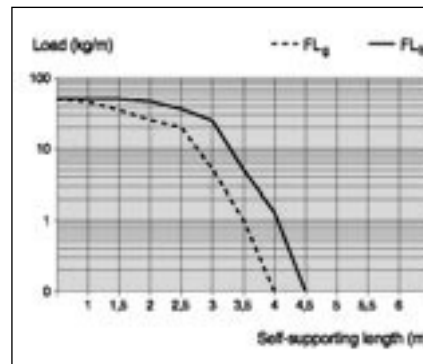
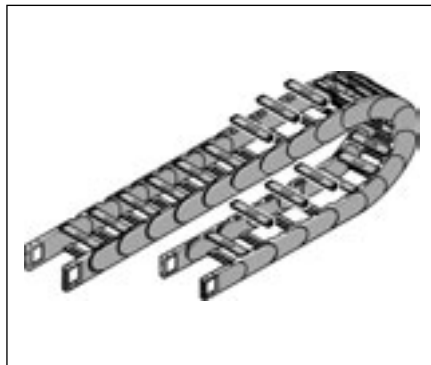
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 80 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 50 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 5 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 2 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 15 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 25 m/s<sup>2</sup>

### Unsupported length

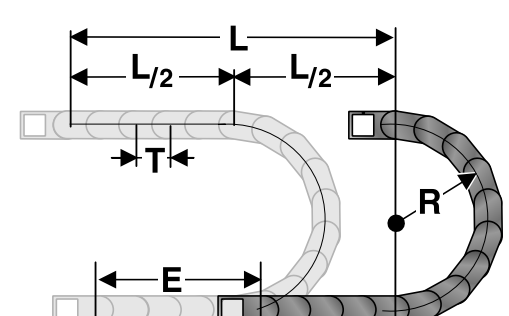


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 11 x 91.5 mm links

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

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

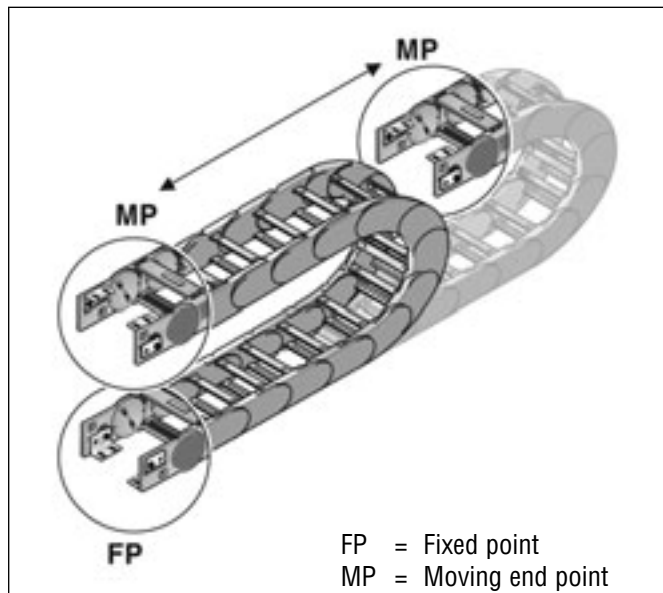
### Installation dimensions (in mm)

Radius R	150	200	240	280	350
Outside height of chain link ( $H_o$ )	80	80	80	80	80
Height of bend ( $H$ )	380	480	560	640	780
Height of moving end connection ( $H_{MA}$ )	300	400	480	560	700
Safety margin with bias ( $S_v$ )	50	50	50	50	50
Installation height with bias ( $H_{sv}$ )	430	530	610	690	830
Safety margin without bias ( $S_k$ )	15	15	15	15	15
Installation height without bias ( $H_{sk}$ )	395	495	575	655	795
Arc projection ( $M_L$ )	282	332	372	412	482
Bend length ( $L_B$ )	688	845	971	1096	1316



# MP 66 - MultiLine

## Chain bracket



### Chain bracket U-part



Top



Bottom

### Chain bracket elbow fitting



Bottom / outside



Bottom / inside



Top / outside



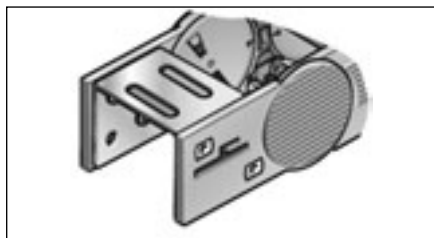
Top / inside

## Chain bracket U-part

Type

Order no.

Pack



KA 66 U

0660000054

1

This chain bracket is supplied as standard for 45 mm width. The bracket can be mounted at the top or bottom.

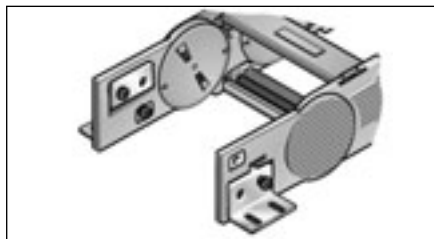
## Chain bracket elbow fitting

Type

Order no.

Material

Pack



KA 66

0660000050

Steel plate

1

KA 66

0660000060

Stainless steel 1.4301

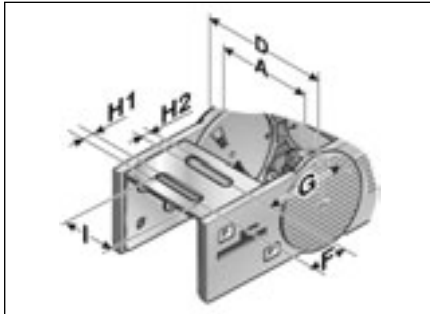
1

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

# MP 66 - MultiLine

## Chain bracket U-part

Dimensions in mm

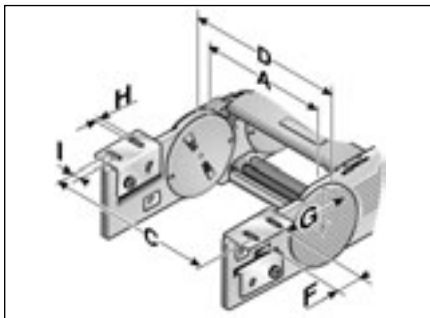


U-part

Type	A	D	F	G	H1	H2	I
KA 66 U	45.00	79.00	28.00	58.50	6.50	8.50	33.00

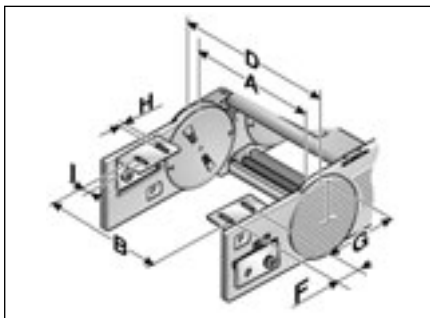
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 66	62.00	113.00	96.00	45.00	50.50	9.00	10.00
KA 66	84.00	135.00	117.50	45.00	50.50	9.00	10.00
KA 66	105.00	156.00	139.00	45.00	50.50	9.00	10.00
KA 66	144.00	195.00	177.50	45.00	50.50	9.00	10.00
KA 66	182.00	233.00	216.00	45.00	50.50	9.00	10.00
KA 66	Variable	A+51.00	A+34.00	45.00	50.50	9.00	10.00



Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 66	62.00	45.00	96.00	45.00	50.50	9.00	10.00
KA 66	84.00	67.00	117.50	45.00	50.50	9.00	10.00
KA 66	105.00	88.00	139.00	45.00	50.50	9.00	10.00
KA 66	144.00	127.00	177.50	45.00	50.50	9.00	10.00
KA 66	182.00	165.00	216.00	45.00	50.50	9.00	10.00
KA 66	Variable	A-17.00	A+34.00	45.00	50.50	9.00	10.00



# MP 66 - Accessories

## Separator



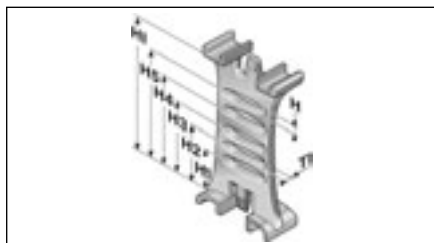
Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

TV 66	066000009000	Separator	1
-------	--------------	-----------	---

Lock grid spacing 1.60 mm

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

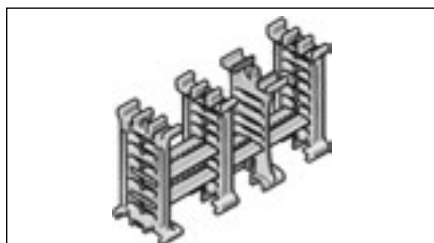


Separator

Type	TI	H	Dimensions in mm					
			H1	H2	H3	H4	H5	H6

TV 66	3.50	4.40	18.00	25.10	32.20	39.30	46.40	60.00
-------	------	------	-------	-------	-------	-------	-------	-------

## Shelving system



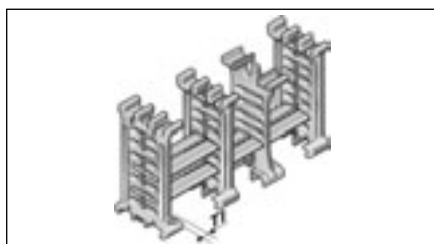
Shelving system

Type	Order no.	Description	Width in mm	Pack
------	-----------	-------------	-------------	------

RB 031	100000003100	RB 031 Shelf	31	1
RB 048	100000004800	RB 048 Shelf	48	1
RB 070	100000007000	RB 070 Shelf	70	1
RB 092	100000009200	RB 092 Shelf	92	1
RB 128	100000012800	RB 128 Shelf	128	1
RB 167	100000016700	RB 167 Shelf	167	1
RT 66	1000900100	RTA 66 Shelf support, incl. pin		1

Lock grid spacing 1.60 mm

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



Shelving system

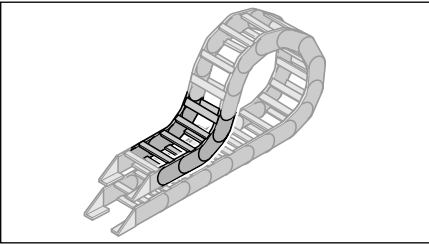
Type	TI	Dimensions in mm	

RT 66	6.50		
-------	------	--	--

# MP 66 - Accessories

Back radius	Type	Order no.	Radius	Back Radius	Pack
	SR 66 (RÜ240/R150)	66000000060	150 mm	240 mm	1
	SR 66 (RÜ240/R200)	66000000060	200 mm	240 mm	1
	SR 66 (RÜ240/R240)	66000000060	240 mm	240 mm	1
	SR 66 (RÜ240/R280)	66000000060	280 mm	240 mm	1
	SR 66 (RÜ240/R350)	66000000060	350 mm	240 mm	1

Rotary movement



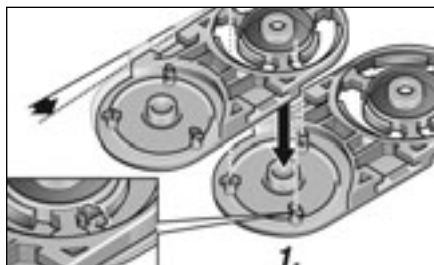
Low-lying chain bracket

Side links with forward radius (R – through radius washer) and back radius (Rü – side link provided) permit movement in two directions.  
 Areas of application include rotary movements and low-lying chain brackets.

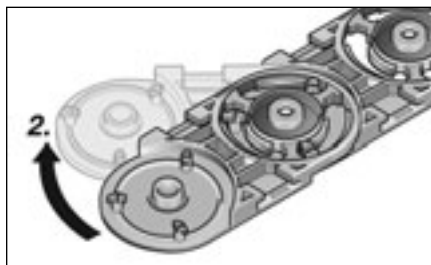


# MP 66 - MultiLine

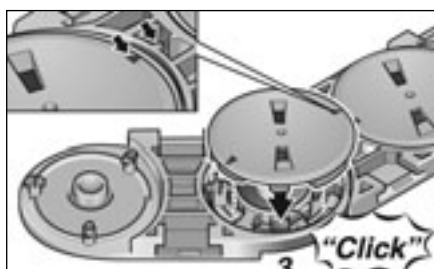
## Assembly



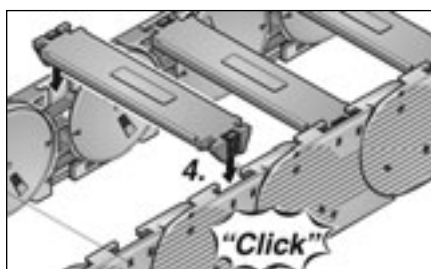
Step 1



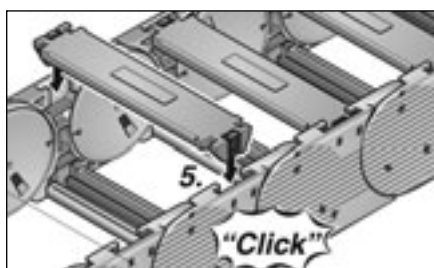
Step 2



Step 3

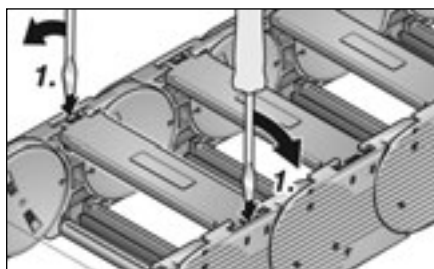


Step 4

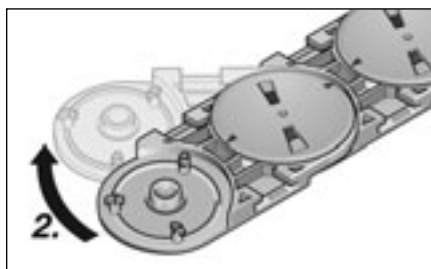


Step 5

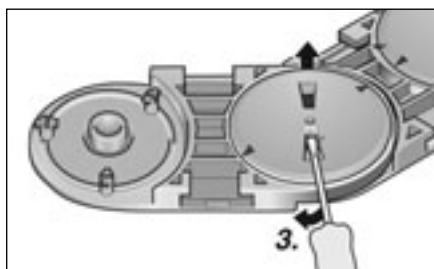
## Disassembly



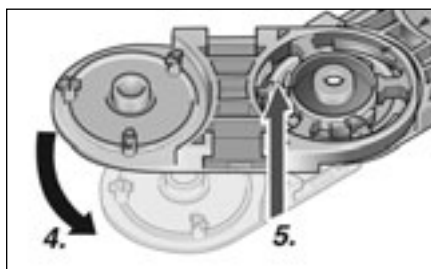
Step 1



Step 2

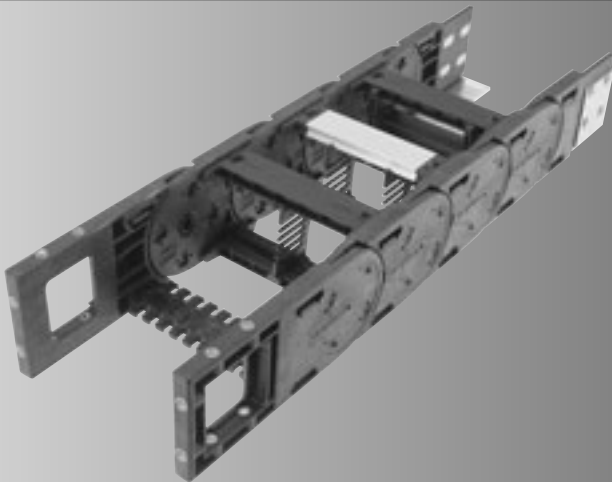


Step 3



Step 4

## CABLE DRAG CHAIN SYSTEMS



***HeavyLine***

**MP 62.1**



# MP 62.1 - HeavyLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) * = standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP 62.1 118	150	118	118						
MP 62.1 143	175	143	143						
MP 62.1 168	200	168	168						
MP 62.1 193	225	193	193						
MP 62.1 218	250	218	218						
MP 62.1 243	275	243	243						
MP 62.1 268	300	268	268						
MP 62.1 293	325	293	293						
MP 62.1 318	350	318	318						
MP 62.1 343	375	343	343						
MP 62.1 368	400	368	368	150	150				
MP 62.1 418	450	418	418	200	200				
MP 62.1 468	500	468	468	250	250				
MP 62.1 518	550	518	518	300	300				
MP 62.1 xxx	Inside	>118-		400	400				
	+ 32	600	ALU	500	500				
						0			
						1			
						2*			
						3*			
						4			
						5			
						6			
						7			
						9			
							0		
							9		
<b>Order number:</b>	<b>0620</b>					<b>0</b>			<b>0</b>

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 2\* crossbar EOL; w/bias
- 3\* crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0620 118 150 0000

Inside width = 118 mm

Radius = 150 mm

Configuration = 0

Style = 0

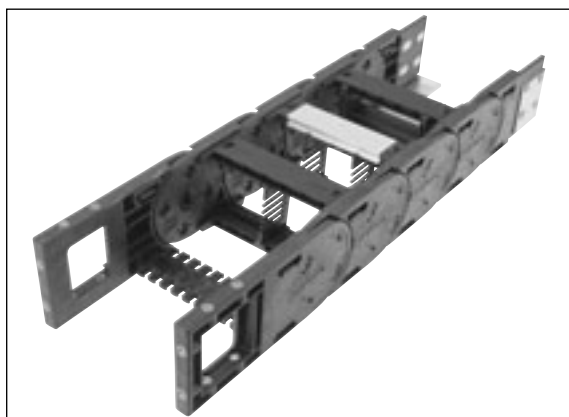
### Ideal operating conditions

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

### Alternative chain type

- MP 65 G closed series
- MP 66 easier to use
- MP 62.2 easier assembly

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

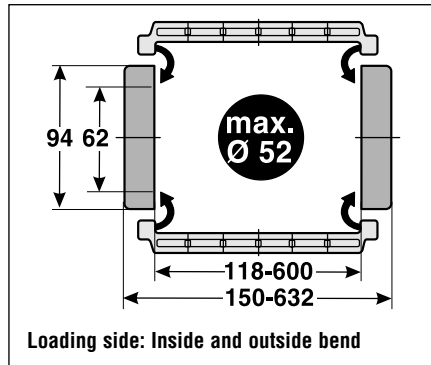


Foldable shelf system for reliable cable guidance

# MP 62.1 - HeavyLine

## Technical data

### Chain link dimensions



### Material properties

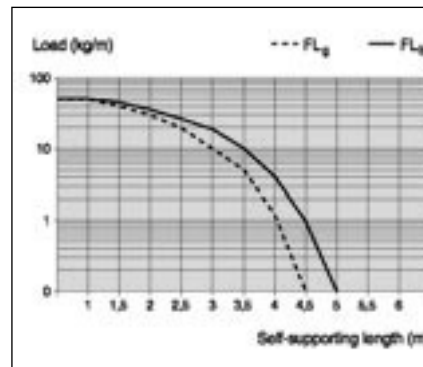
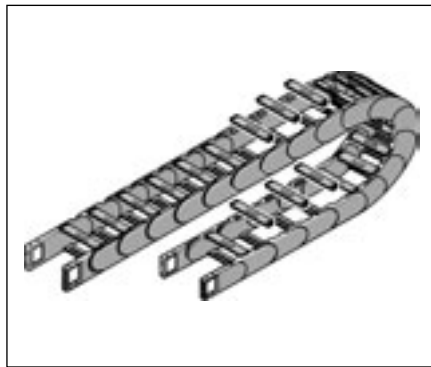
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: VDE 0304 IIC; UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 180 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 120 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 4 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 40 m/s<sup>2</sup>

### Unsupported length



#### FL<sub>g</sub>:

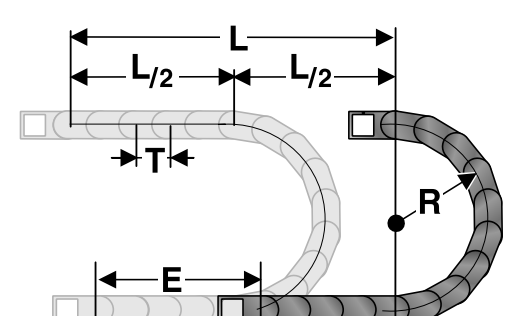
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

#### FL<sub>s</sub>:

Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 10 x 100 mm links

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

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

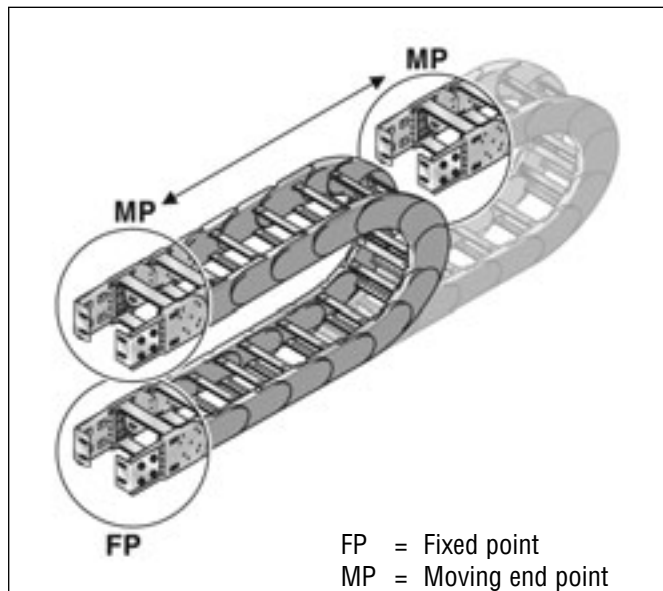
### Installation dimensions (in mm)

Radius R	150	200	250	300	400	500
Outside height of chain link ( $H_e$ )	94	94	94	94	94	94
Height of bend ( $H$ )	394	494	594	694	894	1094
Height of moving end connection ( $H_{MA}$ )	300	400	500	600	800	1000
Safety margin with bias ( $S_v$ )	50	50	50	50	50	50
Installation height with bias ( $H_{sv}$ )	444	544	644	744	944	1144
Safety margin without bias ( $S_k$ )	20	20	20	20	20	20
Installation height without bias ( $H_{sk}$ )	414	514	614	714	914	1114
Arc projection ( $M_i$ )	297	347	397	447	547	647
Bend length ( $L_B$ )	719	876	1033	1190	1504	1818

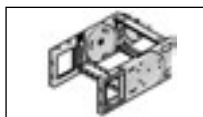


# MP 62.1 - HeavyLine

## Chain bracket

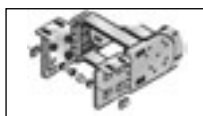


### Chain bracket flexible

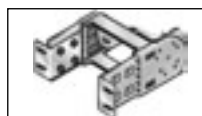


Flexible

### Chain bracket elbow fitting



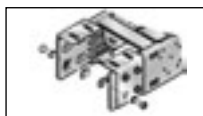
Top / outside



Front / outside



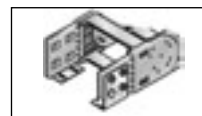
Bottom / outside



Top / inside



Front / inside



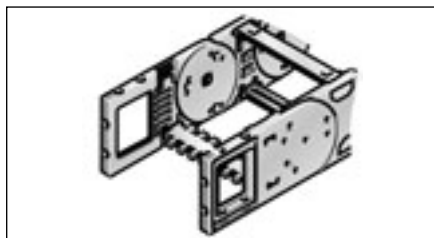
Bottom / inside

## Chain bracket flexible

Type

Order no.

Pack



KA 62-FB Female end	0620000056	with bush	1
KA 62-FB Male end	0620000057	with bush	1
KA 62-FG Female end	0620000058	with thread	1
KA 62-FG Male end	0620000059	with thread	1

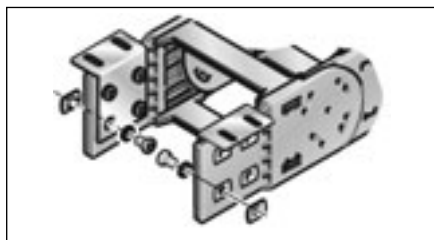
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M8 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type

Order no.

Pack



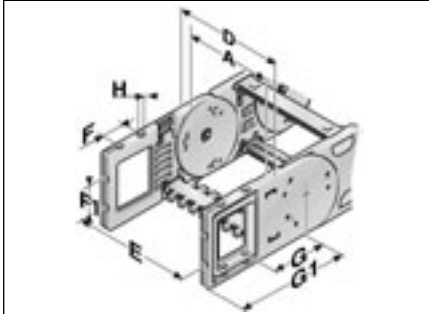
KA 62 Female end	0620000050	1
KA 62 Male end	0620000051	1

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

# MP 62.1 - HeavyLine

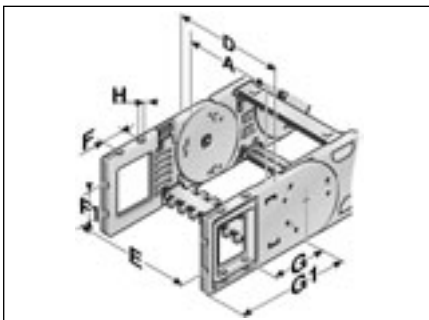
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 62-FB	118.00	150.00	135.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	143.00	175.00	160.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	168.00	200.00	185.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	193.00	225.00	210.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	218.00	250.00	235.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	243.00	275.00	260.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	268.00	300.00	285.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	293.00	325.00	310.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	318.00	350.00	335.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	343.00	375.00	360.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	368.00	400.00	385.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	418.00	450.00	435.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	468.00	500.00	485.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	518.00	550.00	535.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	Variable	A+32.00	A+17.00	35.00	45.00	107.00	171.50	8.50



Flexible with threaded bush

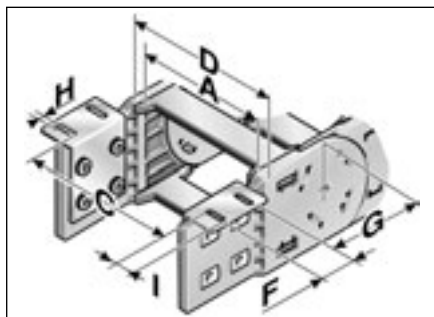
Type	A	D	E	F	F1	G	G1	H
KA 62-FG	118.00	150.00	135.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	143.00	175.00	160.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	168.00	200.00	185.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	193.00	225.00	210.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	218.00	250.00	235.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	243.00	275.00	260.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	268.00	300.00	285.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	293.00	325.00	310.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	318.00	350.00	335.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	343.00	375.00	360.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	368.00	400.00	385.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	418.00	450.00	435.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	468.00	500.00	485.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	518.00	550.00	535.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	Variable	A+32.00	A+17.00	35.00	45.00	107.00	171.50	M8



# MP 62.1 - HeavyLine

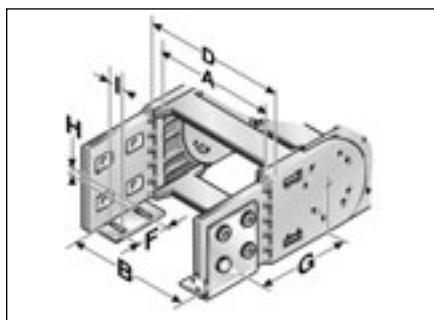
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 62	118.00	162.00	150.00	45.00	102.00	9.00	15.00
KA 62	143.00	187.00	175.00	45.00	102.00	9.00	15.00
KA 62	168.00	212.00	200.00	45.00	102.00	9.00	15.00
KA 62	193.00	237.00	225.00	45.00	102.00	9.00	15.00
KA 62	218.00	262.00	250.00	45.00	102.00	9.00	15.00
KA 62	243.00	287.00	275.00	45.00	102.00	9.00	15.00
KA 62	268.00	312.00	300.00	45.00	102.00	9.00	15.00
KA 62	293.00	337.00	325.00	45.00	102.00	9.00	15.00
KA 62	318.00	362.00	350.00	45.00	102.00	9.00	15.00
KA 62	343.00	387.00	375.00	45.00	102.00	9.00	15.00
KA 62	368.00	412.00	400.00	45.00	102.00	9.00	15.00
KA 62	418.00	462.00	450.00	45.00	102.00	9.00	15.00
KA 62	468.00	512.00	500.00	45.00	102.00	9.00	15.00
KA 62	518.00	562.00	550.00	45.00	102.00	9.00	15.00
KA 62	Variable	A+44.00	A+32.00	45.00	102.00	9.00	15.00



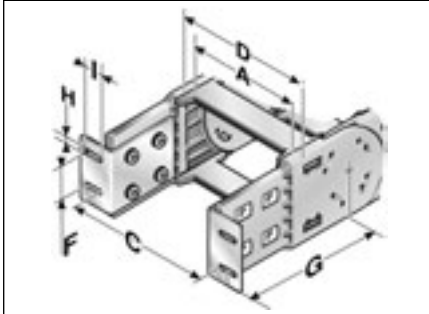
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 62	118.00	106.00	150.00	45.00	102.00	9.00	15.00
KA 62	143.00	131.00	175.00	45.00	102.00	9.00	15.00
KA 62	168.00	156.00	200.00	45.00	102.00	9.00	15.00
KA 62	193.00	181.00	225.00	45.00	102.00	9.00	15.00
KA 62	218.00	206.00	250.00	45.00	102.00	9.00	15.00
KA 62	243.00	231.00	275.00	45.00	102.00	9.00	15.00
KA 62	268.00	256.00	300.00	45.00	102.00	9.00	15.00
KA 62	293.00	281.00	325.00	45.00	102.00	9.00	15.00
KA 62	318.00	308.00	350.00	45.00	102.00	9.00	15.00
KA 62	343.00	331.00	375.00	45.00	102.00	9.00	15.00
KA 62	368.00	356.00	400.00	45.00	102.00	9.00	15.00
KA 62	418.00	406.00	450.00	45.00	102.00	9.00	15.00
KA 62	468.00	456.00	500.00	45.00	102.00	9.00	15.00
KA 62	518.00	506.00	550.00	45.00	102.00	9.00	15.00
KA 62	Variable	A-12.00	A+32.00	45.00	102.00	9.00	15.00

# MP 62.1 - HeavyLine

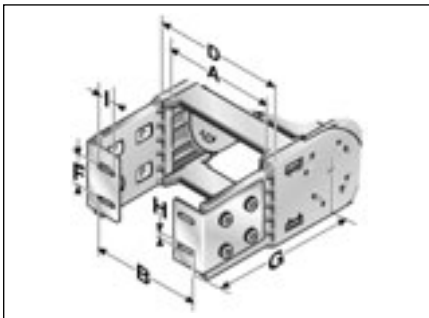
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 62	118.00	162.00	150.00	45.00	171.50	9.00	15.00
KA 62	143.00	187.00	175.00	45.00	171.50	9.00	15.00
KA 62	168.00	212.00	200.00	45.00	171.50	9.00	15.00
KA 62	193.00	237.00	225.00	45.00	171.50	9.00	15.00
KA 62	218.00	262.00	250.00	45.00	171.50	9.00	15.00
KA 62	243.00	287.00	275.00	45.00	171.50	9.00	15.00
KA 62	268.00	312.00	300.00	45.00	171.50	9.00	15.00
KA 62	293.00	337.00	325.00	45.00	171.50	9.00	15.00
KA 62	318.00	362.00	350.00	45.00	171.50	9.00	15.00
KA 62	343.00	387.00	375.00	45.00	171.50	9.00	15.00
KA 62	368.00	412.00	400.00	45.00	171.50	9.00	15.00
KA 62	418.00	462.00	450.00	45.00	171.50	9.00	15.00
KA 62	468.00	512.00	500.00	45.00	171.50	9.00	15.00
KA 62	518.00	562.00	550.00	45.00	171.50	9.00	15.00
KA 62	Variable	A+44.00	A+32.00	45.00	171.50	9.00	15.00



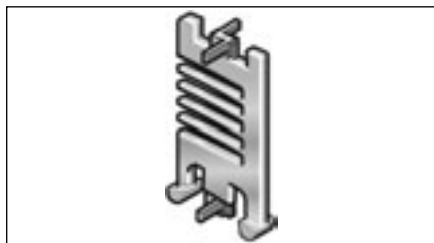
Front / inside

Type	A	B	D	F	G	H Ø	I
KA 62	118.00	106.00	150.00	45.00	171.50	9.00	15.00
KA 62	143.00	131.00	175.00	45.00	171.50	9.00	15.00
KA 62	168.00	156.00	200.00	45.00	171.50	9.00	15.00
KA 62	193.00	181.00	225.00	45.00	171.50	9.00	15.00
KA 62	218.00	206.00	250.00	45.00	171.50	9.00	15.00
KA 62	243.00	231.00	275.00	45.00	171.50	9.00	15.00
KA 62	268.00	256.00	300.00	45.00	171.50	9.00	15.00
KA 62	293.00	281.00	325.00	45.00	171.50	9.00	15.00
KA 62	318.00	308.00	350.00	45.00	171.50	9.00	15.00
KA 62	343.00	331.00	375.00	45.00	171.50	9.00	15.00
KA 62	368.00	356.00	400.00	45.00	171.50	9.00	15.00
KA 62	418.00	406.00	450.00	45.00	171.50	9.00	15.00
KA 62	468.00	456.00	500.00	45.00	171.50	9.00	15.00
KA 62	518.00	506.00	550.00	45.00	171.50	9.00	15.00
KA 62	Variable	A-12.00	A+32.00	45.00	171.50	9.00	15.00



## MP 62.1 - Accessories

### Separator



Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

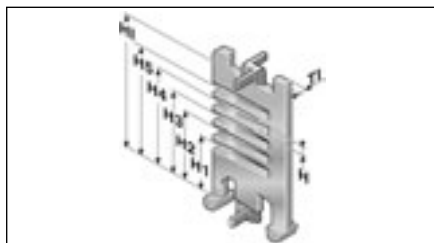
TR 62	062000009200	Separator	1
-------	--------------	-----------	---

Lock grid spacing 5.00 mm

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

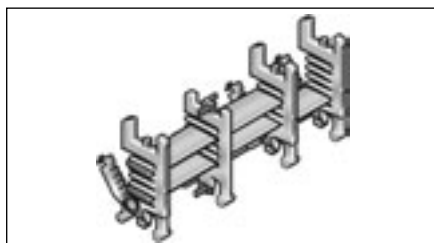
Type	TI	H	Dimensions in mm					
			H1	H2	H3	H4	H5	HI

TR 62	3.50	5.50	14.80	23.10	31.40	39.70	48.00	62.00
-------	------	------	-------	-------	-------	-------	-------	-------



Separator

### Shelving system



Shelving system

Type	Order no.	Description	Width in mm	Pack
------	-----------	-------------	-------------	------

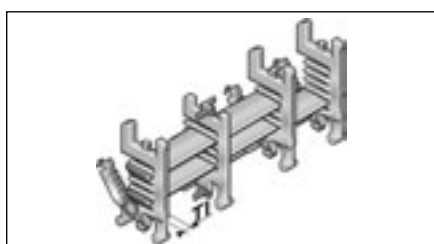
RB 056-7	100000005600	RB 056-7 Shelf	56	1
RB 066-7	100000006600	RB 066-7 Shelf	66	1
RB 081-7	100000008100	RB 081-7 Shelf	81	1
RB 106-7	100001006600	RB 106-7 Shelf	106	1
RB 116-7	100001001600	RB 116-7 Shelf	116	1
RB 216-7	100002001600	RB 216-7 Shelf	216	1
RB 166-7	100001006600	RB 166-7 Shelf	166	1
RTT 62	100090622000	RTT 62 Shelf support, divisible		1

Lock grid spacing 5.00 mm

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


Type	TI	Dimensions in mm	

RTT 62	8.00		
--------	------	--	--



Shelving system

# MP 62.1 - Accessories

Frame ridge connector	Type	Order no.	Description	Pack
	RSV 62	062000009600	RSV 62 Frame ridge connector	1
	RSV 62 A	062000009800	RSV 62 Aluminium frame ridge connector	1

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

Frame ridge connector



Type	TI	Dimensions in mm
RSV 62	8.00	

Strain relief RS-ZL	Type	Order no.	for inside width	Pack
	RS-ZL 118-7	072011800010	118 mm	1
	RS-ZL 143-7	072014300010	143 mm	1
	RS-ZL 168-7	072016800010	168 mm	1
	RS-ZL 193-7	072019300010	193 mm	1
	RS-ZL 218-7	072021800010	218 mm	1
	RS-ZL 243-7	072024300010	243 mm	1

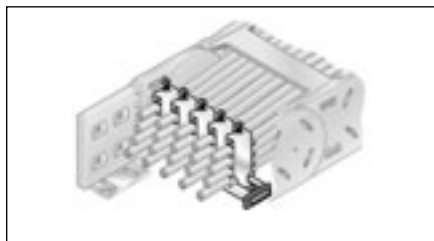
Strain relief RS-ZL

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.



## MP 62.1 - Accessories

### Strain relief with BAK



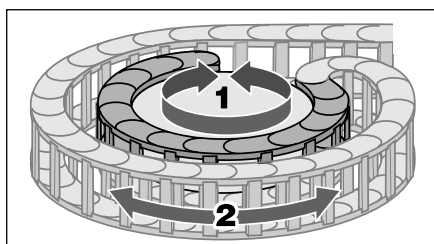
Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

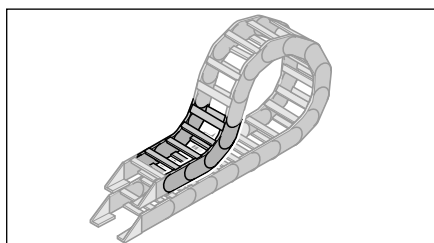
### Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 62.1 (RÜ300/R300) left	62100030060	300 mm	300 mm	1
SR 62.1 (RÜ300/R300) right	62100030062	300 mm	300 mm	1

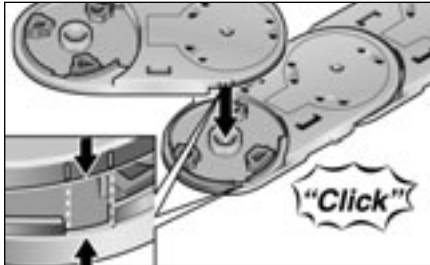
Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!



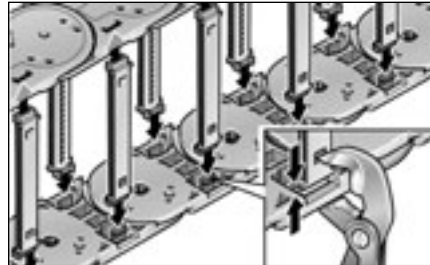
Low-lying chain bracket

# MP 62.1 - Accessories

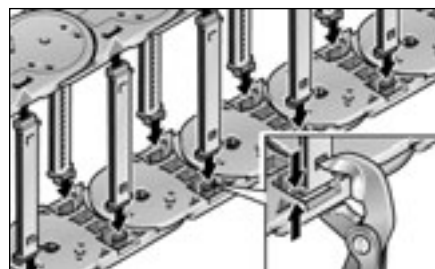
## Assembly



Step 1



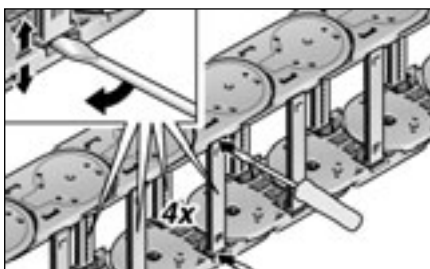
Step 2



Step 3

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

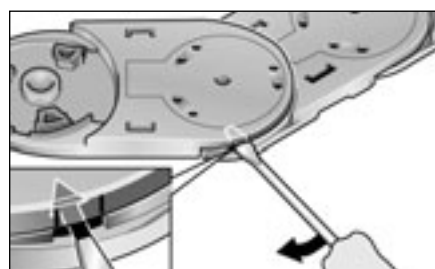
## Disassembly



Step 1



Step 2



Step 3

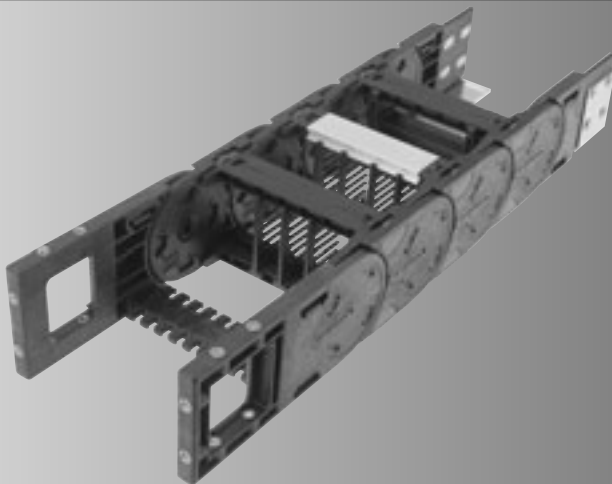
Disassembly is effected in the reverse sequence to assembly. First lever the frame ridges out of the side panel on one side, then on the other side.



## MP 62.1 - HeavyLine



## CABLE DRAG CHAIN SYSTEMS



***HeavyLine***

**MP 62.2**



# MP 62.2 - HeavyLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) * = standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP 62.2 118	150	118	118						
MP 62.2 143	175	143	143						
MP 62.2 168	200	168	168						
MP 62.2 193	225	193	193						
MP 62.2 218	250	218	218						
MP 62.2 243	275	243	243						
MP 62.2 268	300	268	268						
MP 62.2 293	325	293	293						
MP 62.2 318	350	318	318						
MP 62.2 343	375	343	343						
MP 62.2 368	400	368	368	150	150				
MP 62.2 418	450	418	418	200	200				
MP 62.2 468	500	468	468	250	250				
MP 62.2 518	550	518	518	300	300				
MP 62.2 xxx	Inside	>118-	518	400	400				
	+ 32	600	ALU	500	500				
						0			
						1			
						2*			
						3*			
						4			
						5			
						6		0	
						7		7	
						9		9	
<b>Order number:</b>									
0622					0				0

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 2\* crossbar EOL; w/bias
- 3\* crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0622 118 150 0000

Inside width = 118 mm

Radius = 150 mm

Configuration = 0

Style = 0

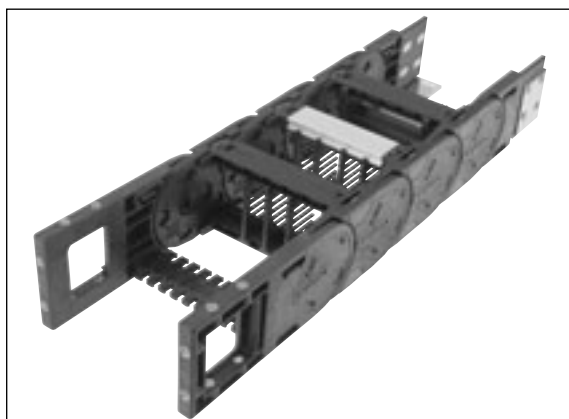
### Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Very high additional loads
- Opens on both sides
- Variable widths thanks to aluminium ridge
- Flexible internal separation
- Variant with/without bias

### Alternative chain type

- MP 65 G closed series
- MP 66 easier to use
- MP 62.1 higher unsupported length

## Features



Chain bracket with fixing means on three sides



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Side links with CLICK lock for easy opening



Radii with or without bias (RK/RV)



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

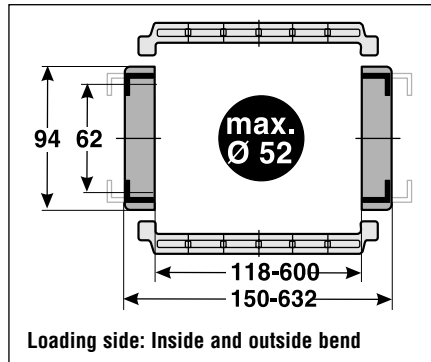


Foldable shelf system for reliable cable guidance

# MP 62.2 - HeavyLine

## Technical data

### Chain link dimensions



### Material properties

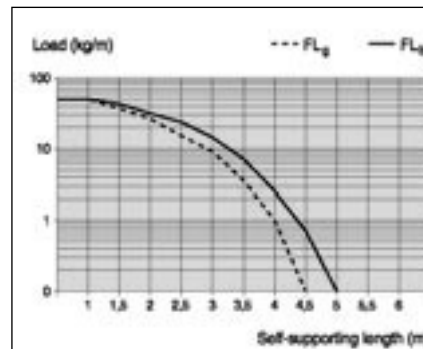
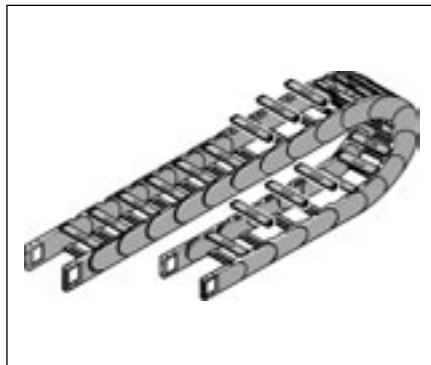
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: VDE 0304 IIC; UL94 HB  
 ESD material: CE Ex II 2 GD

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 180 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 120 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 4 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 40 m/s<sup>2</sup>

### Unsupported length

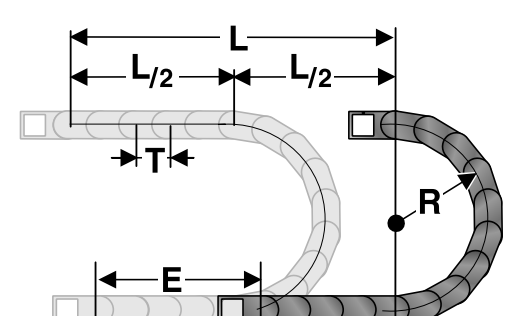


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 10 x 100 mm links

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

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

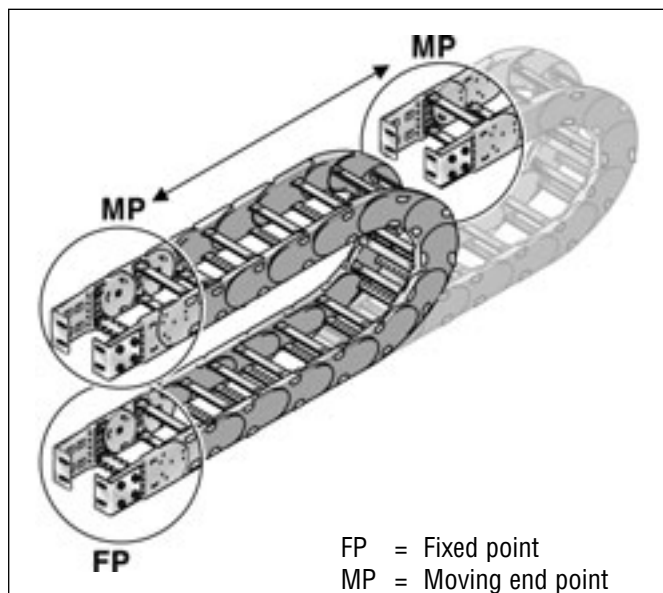
### Installation dimensions (in mm)

Radius R	150	200	250	300	400	500
Outside height of chain link ( $H_e$ )	94	94	94	94	94	94
Height of bend ( $H$ )	394	494	594	694	894	1094
Height of moving end connection ( $H_{MA}$ )	300	400	500	600	800	1000
Safety margin with bias ( $S_v$ )	50	50	50	50	50	50
Installation height with bias ( $H_{sv}$ )	444	544	644	744	944	1144
Safety margin without bias ( $S_k$ )	20	20	20	20	20	20
Installation height without bias ( $H_{sk}$ )	414	514	614	714	914	1114
Arc projection ( $M_L$ )	297	347	397	447	547	647
Bend length ( $L_B$ )	719	876	1033	1190	1504	1818



# MP 62.2 - HeavyLine

## Chain bracket

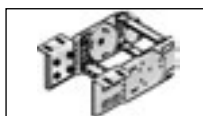


### Chain bracket flexible



Flexible

### Chain bracket elbow fitting



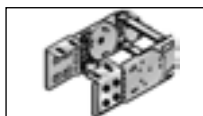
Top / outside



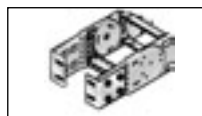
Front / outside



Bottom / outside



Top / inside



Front / inside



Bottom / inside

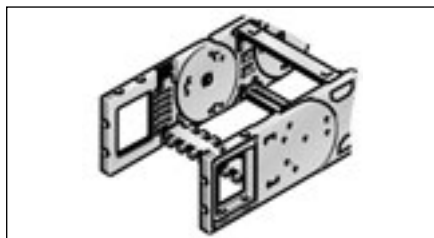
## Chain bracket flexible

Type

Order no.

Version

Pack



KA 62-FB Female end

0620000056

with bush

1

KA 62-FB Male end

0620000057

with bush

1

KA 62-FG Female end

0620000058

with thread

1

KA 62-FG Male end

0620000059

with thread

1

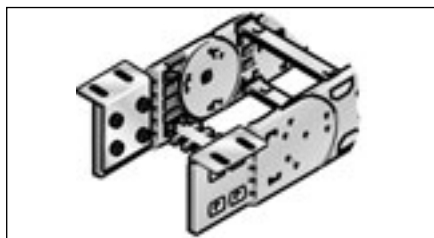
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M8 screws are used to secure the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

## Chain bracket elbow fitting

Type

Order no.

Pack



KA 62 Female end

0620000050

1

KA 62 Male end

0620000051

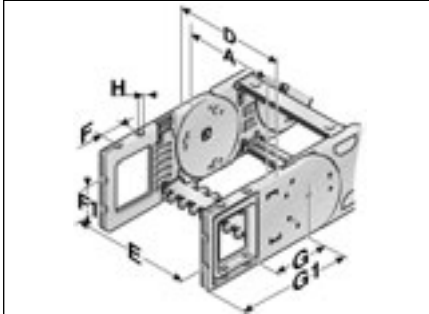
1

This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M8 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.

# MP 62.2 - HeavyLine

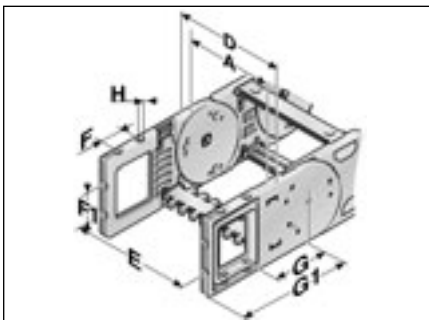
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 62-FB	118.00	150.00	135.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	143.00	175.00	160.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	168.00	200.00	185.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	193.00	225.00	210.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	218.00	250.00	235.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	243.00	275.00	260.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	268.00	300.00	285.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	293.00	325.00	310.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	318.00	350.00	335.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	343.00	375.00	360.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	368.00	396.00	385.00	35.00	45.00	107.00	171.50	8.50
KA 62-FB	418.00	450.00	435.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	468.00	500.00	485.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	518.00	550.00	535.00	35.00	45.00	107.00	171.40	8.50
KA 62-FB	Variable	A+32.00	A+17.00	35.00	45.00	107.00	171.50	8.50



Flexible with threaded bush

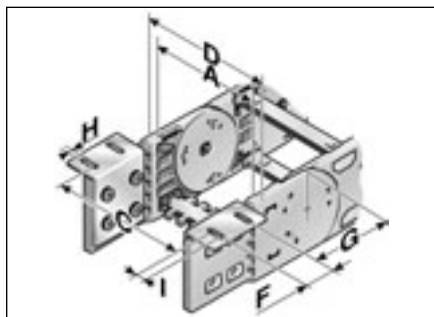
Type	A	D	E	F	F1	G	G1	H
KA 62-FG	118.00	150.00	135.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	143.00	175.00	160.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	168.00	200.00	185.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	193.00	225.00	210.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	218.00	250.00	235.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	243.00	275.00	260.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	268.00	300.00	285.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	293.00	325.00	310.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	318.00	350.00	335.00	35.00	45.00	107.00	171.50	M8
KA 62-FG	343.00	375.00	360.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	368.00	396.00	385.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	418.00	450.00	435.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	468.00	500.00	485.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	518.00	550.00	535.00	35.00	45.00	107.00	171.40	M8
KA 62-FG	Variable	A+32.00	A+17.00	35.00	45.00	107.00	171.50	M8



# MP 62.2 - HeavyLine

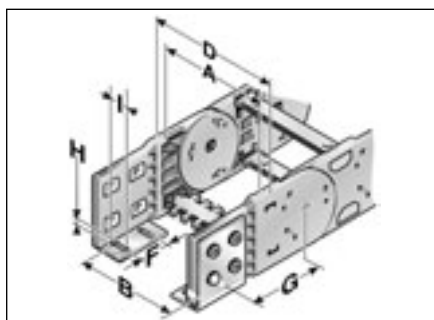
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 62	118.00	162.00	150.00	45.00	102.00	9.00	15.00
KA 62	143.00	187.00	175.00	45.00	102.00	9.00	15.00
KA 62	168.00	212.00	200.00	45.00	102.00	9.00	15.00
KA 62	193.00	237.00	225.00	45.00	102.00	9.00	15.00
KA 62	218.00	262.00	250.00	45.00	102.00	9.00	15.00
KA 62	243.00	287.00	275.00	45.00	102.00	9.00	15.00
KA 62	268.00	312.00	300.00	45.00	102.00	9.00	15.00
KA 62	293.00	337.00	325.00	45.00	102.00	9.00	15.00
KA 62	318.00	362.00	350.00	45.00	102.00	9.00	15.00
KA 62	343.00	387.00	375.00	45.00	102.00	9.00	15.00
KA 62	368.00	412.00	400.00	45.00	102.00	9.00	15.00
KA 62	418.00	462.00	450.00	45.00	102.00	9.00	15.00
KA 62	468.00	512.00	500.00	45.00	102.00	9.00	15.00
KA 62	518.00	562.00	550.00	45.00	102.00	9.00	15.00
KA 62	Variable	A+44.00	A+32.00	45.00	102.00	9.00	15.00



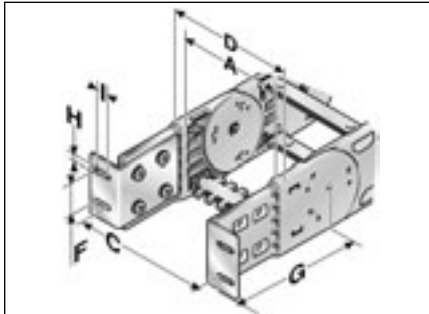
Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 62	118.00	106.00	150.00	45.00	102.00	9.00	15.00
KA 62	143.00	131.00	175.00	45.00	102.00	9.00	15.00
KA 62	168.00	156.00	200.00	45.00	102.00	9.00	15.00
KA 62	193.00	181.00	225.00	45.00	102.00	9.00	15.00
KA 62	218.00	206.00	250.00	45.00	102.00	9.00	15.00
KA 62	243.00	231.00	275.00	45.00	102.00	9.00	15.00
KA 62	268.00	256.00	300.00	45.00	102.00	9.00	15.00
KA 62	293.00	281.00	325.00	45.00	102.00	9.00	15.00
KA 62	318.00	308.00	350.00	45.00	102.00	9.00	15.00
KA 62	343.00	331.00	375.00	45.00	102.00	9.00	15.00
KA 62	368.00	356.00	400.00	45.00	102.00	9.00	15.00
KA 62	418.00	406.00	450.00	45.00	102.00	9.00	15.00
KA 62	468.00	456.00	500.00	45.00	102.00	9.00	15.00
KA 62	518.00	506.00	550.00	45.00	102.00	9.00	15.00
KA 62	Variable	A-12.00	A+32.00	45.00	102.00	9.00	15.00

# MP 62.2 - HeavyLine

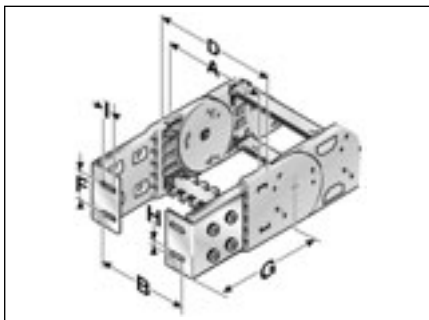
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 62	118.00	162.00	150.00	45.00	171.50	9.00	15.00
KA 62	143.00	187.00	175.00	45.00	171.50	9.00	15.00
KA 62	168.00	212.00	200.00	45.00	171.50	9.00	15.00
KA 62	193.00	237.00	225.00	45.00	171.50	9.00	15.00
KA 62	218.00	262.00	250.00	45.00	171.50	9.00	15.00
KA 62	243.00	287.00	275.00	45.00	171.50	9.00	15.00
KA 62	268.00	312.00	300.00	45.00	171.50	9.00	15.00
KA 62	293.00	337.00	325.00	45.00	171.50	9.00	15.00
KA 62	318.00	362.00	350.00	45.00	171.50	9.00	15.00
KA 62	343.00	387.00	375.00	45.00	171.50	9.00	15.00
KA 62	368.00	412.00	400.00	45.00	171.50	9.00	15.00
KA 62	418.00	462.00	450.00	45.00	171.50	9.00	15.00
KA 62	468.00	512.00	500.00	45.00	171.50	9.00	15.00
KA 62	518.00	562.00	550.00	45.00	171.50	9.00	15.00
KA 62	Variable	A+44.00	A+32.00	45.00	171.50	9.00	15.00



Front / inside

Type	A	B	D	F	G	H Ø	+I
KA 62	118.00	106.00	150.00	45.00	171.50	9.00	15.00
KA 62	143.00	131.00	175.00	45.00	171.50	9.00	15.00
KA 62	168.00	156.00	200.00	45.00	171.50	9.00	15.00
KA 62	193.00	181.00	225.00	45.00	171.50	9.00	15.00
KA 62	218.00	206.00	250.00	45.00	171.50	9.00	15.00
KA 62	243.00	231.00	275.00	45.00	171.50	9.00	15.00
KA 62	268.00	256.00	300.00	45.00	171.50	9.00	15.00
KA 62	293.00	281.00	325.00	45.00	171.50	9.00	15.00
KA 62	318.00	308.00	350.00	45.00	171.50	9.00	15.00
KA 62	343.00	331.00	375.00	45.00	171.50	9.00	15.00
KA 62	368.00	356.00	400.00	45.00	171.50	9.00	15.00
KA 62	418.00	406.00	450.00	45.00	171.50	9.00	15.00
KA 62	468.00	456.00	500.00	45.00	171.50	9.00	15.00
KA 62	518.00	506.00	550.00	45.00	171.50	9.00	15.00
KA 62	Variable	A-12.00	A+32.00	45.00	171.50	9.00	15.00



## MP 62.2 - Accessories

### Separator



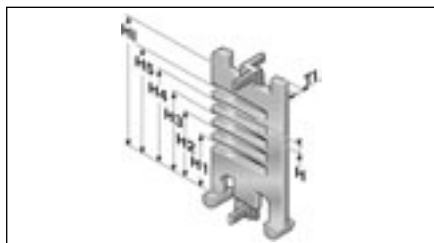
Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

TR 62	062000009200	Separator	1
-------	--------------	-----------	---

Lock grid spacing 5.00 mm

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

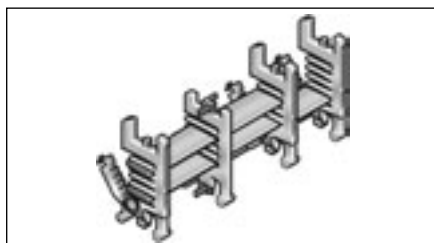


Separator

Type	TI	H	Dimensions in mm					
			H1	H2	H3	H4	H5	HI

TR 62	3.50	5.50	12.10	20.10	28.70	37.00	45.30	62.80
-------	------	------	-------	-------	-------	-------	-------	-------

### Shelving system



Shelving system

Type	Order no.	Description	Width in mm	Pack
------	-----------	-------------	-------------	------

RB 056-7	100000005600	RB 056-7 Shelf	56	1
----------	--------------	----------------	----	---

RB 066-7	100000006600	RB 066-7 Shelf	66	1
----------	--------------	----------------	----	---

RB 081-7	100000008100	RB 081-7 Shelf	81	1
----------	--------------	----------------	----	---

RB 106-7	100001000600	RB 106-7 Shelf	106	1
----------	--------------	----------------	-----	---

RB 116-7	100001001600	RB 116-7 Shelf	116	1
----------	--------------	----------------	-----	---

RB 166-7	100001006600	RB 166-7 Shelf	166	1
----------	--------------	----------------	-----	---

RB 216-7	100002001600	RB 216-7 Shelf	216	1
----------	--------------	----------------	-----	---

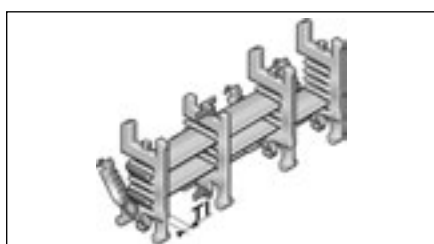
RTT 62	100090622000	RTT 62 Shelf support, divisible		1
--------	--------------	---------------------------------	--	---

Lock grid spacing 5.00 mm

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

Type	TI	Dimensions in mm	

RTT 62	8.00		
--------	------	--	--



Shelving system

# MP 62.2 - Accessories

Frame ridge connector

Type

Order no.

Description

Pack



Frame ridge connector

RSV 62	062000009600	RSV 62 Frame ridge connector	1
RSV 62 A	062000009800	RSV 62 Aluminium frame ridge connector	1

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



Frame ridge connector

Type	TI	Dimensions in mm	
RSV 62	8.00		

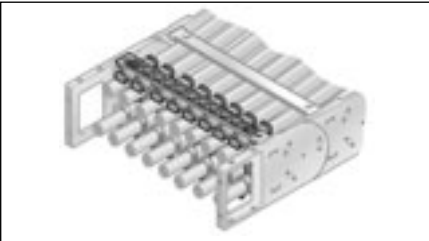
Strain relief RS-ZL

Type

Order no.

for inside width

Pack



Strain relief RS-ZL

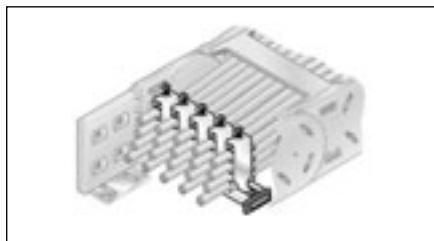
RS-ZL 118-7	072011800010	118 mm	1
RS-ZL 143-7	072014300010	143 mm	1
RS-ZL 168-7	072016800010	168 mm	1
RS-ZL 193-7	072019300010	193 mm	1
RS-ZL 218-7	072021800010	218 mm	1
RS-ZL 243-7	072024300010	243 mm	1

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.



## MP 62.2 - Accessories

### Strain relief with BAK



Strain relief with hooped clamps

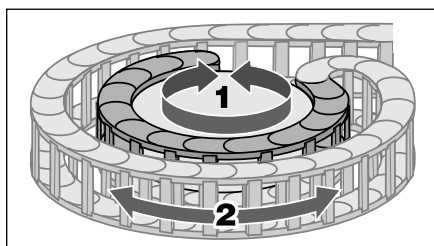
Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

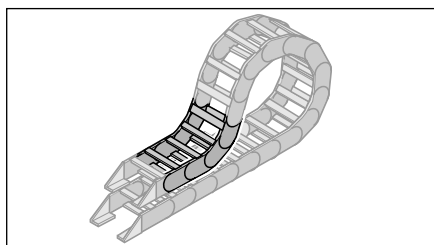
### Back radius

Type	Order no.	Radius	Back Radius	Pack
SR 62.2 (RÜ300/R300) left	62200030060	300 mm	300 mm	1
SR 62.2 (RÜ300/R300) right	62200030062	300 mm	300 mm	1



Rotary movement

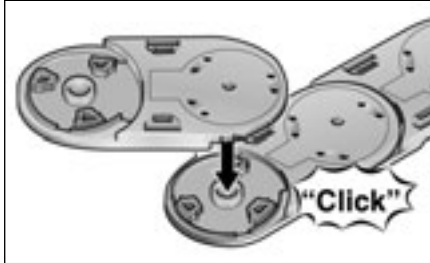
Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!



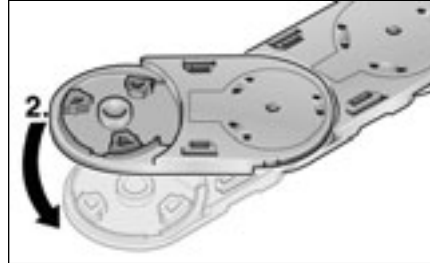
Low-lying chain bracket

# MP 62.2 - Accessories

## Assembly

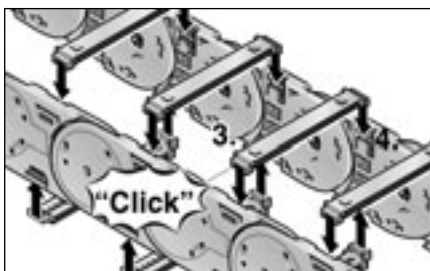


Step 1

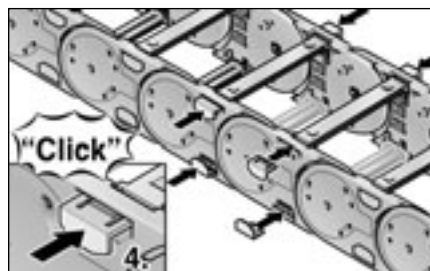


Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. Both ends of the frame ridges are introduced evenly into the slots in the side links. The frame ridges are held secure by pressing in the frame ridge locks. Forces are transmitted solely through the slots on the frame ridge end or on the side link.

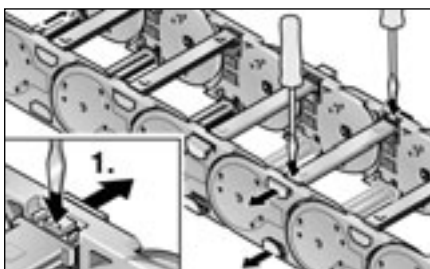


Step 3

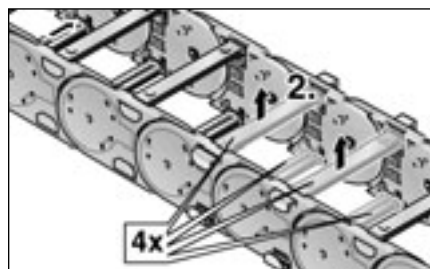


Step 4

## Disassembly

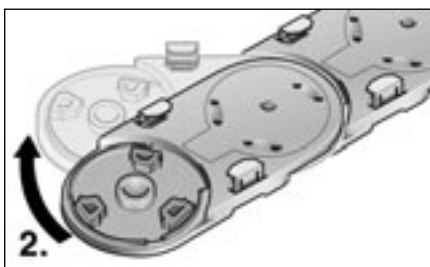


Step 1

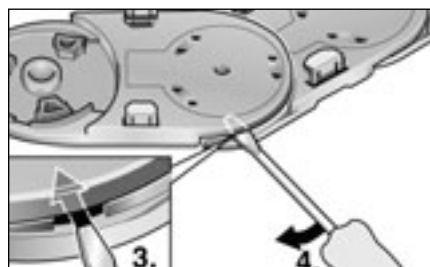


Step 2

Disassembly is effected in the reverse sequence to assembly. Loosen the locks until the frame ridges are released.



Step 3



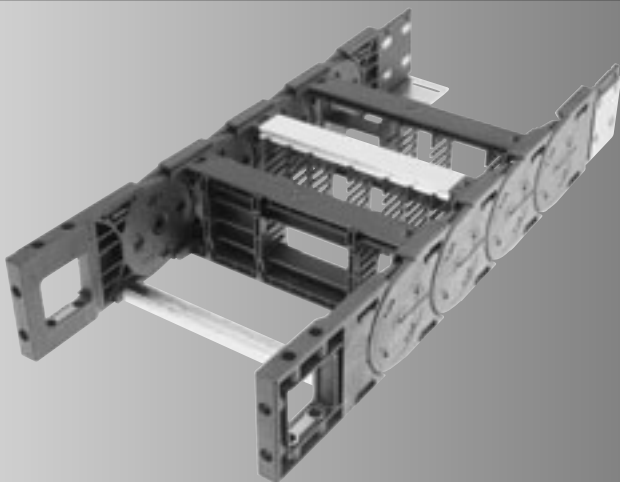
Step 4



## MP 62.2 - HeavyLine



## CABLE DRAG CHAIN SYSTEMS



***HeavyLine***

**MP 72**



# MP 72 - HeavyLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP 72 118	150	118	118						
MP 72 143	175	143	143						
MP 72 168	200	168	168						
MP 72 193	225	193	193						
MP 72 218	250	218	218						
MP 72 243	275	243	243						
MP 72 268	300	268	268						
MP 72 293	325	293	293						
MP 72 318	350	318	318						
MP 72 343	375	343	343						
MP 72 368	400	368	368	150	150				
MP 72 418	450	493	418	200	200	0			
MP 72 468	500	468	468	250	250	2*			
MP 72 518	550	518	518	300	300	4			
MP 72 xxx	Inside	>118-	518	400	400	6			0
	+ 32	600	ALU	500	500	9			9

<b>Order number:</b>	0720			0			0
----------------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 2\* crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0720 118 150 0000

Inside width = 118 mm

Radius = 150 mm

Configuration = 0

Style = 0

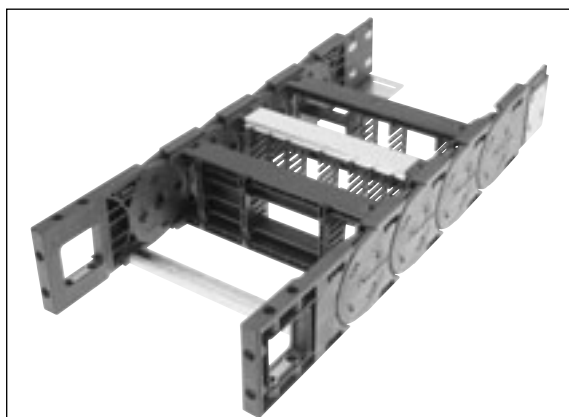
### Ideal operating conditions

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

### Alternative chain type

- MP 62.2 / MP 82.2  
easier assembly

## Features



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths



Foldable shelf system for reliable cable guidance

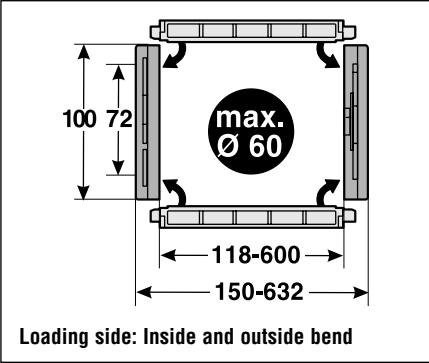


Frame ridge connector for securing very wide frame ridges

# MP 72 - HeavyLine

## Technical data

### Chain link dimensions



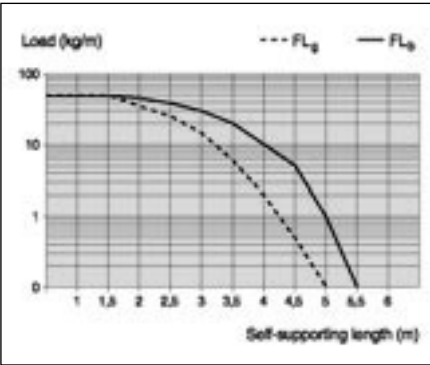
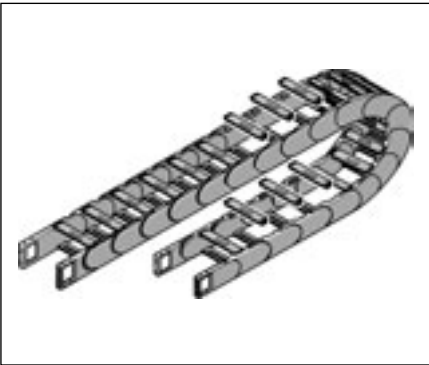
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	200 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	120 m
Travel distance, vertical, upright, $L_{vu}$ :	6 m
Rotated 90°, self-supporting, $L_{sg90}$ :	6 m
Speed, gliding, $V_g$ :	5 m/s
Speed, self-supporting, $V_s$ :	20 m/s
Acceleration, gliding, $a_g$ :	25 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	40 m/s <sup>2</sup>

### Unsupported length

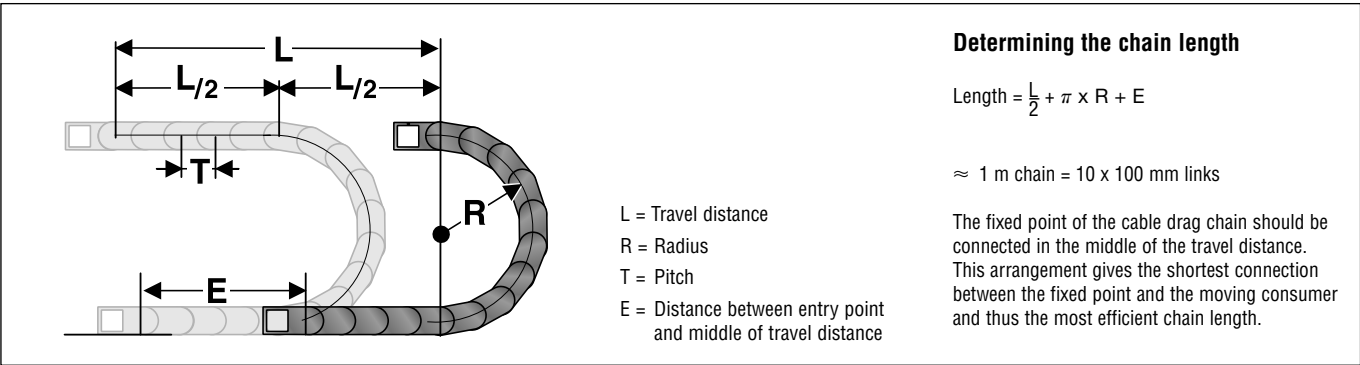


**FL<sub>g</sub>:**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

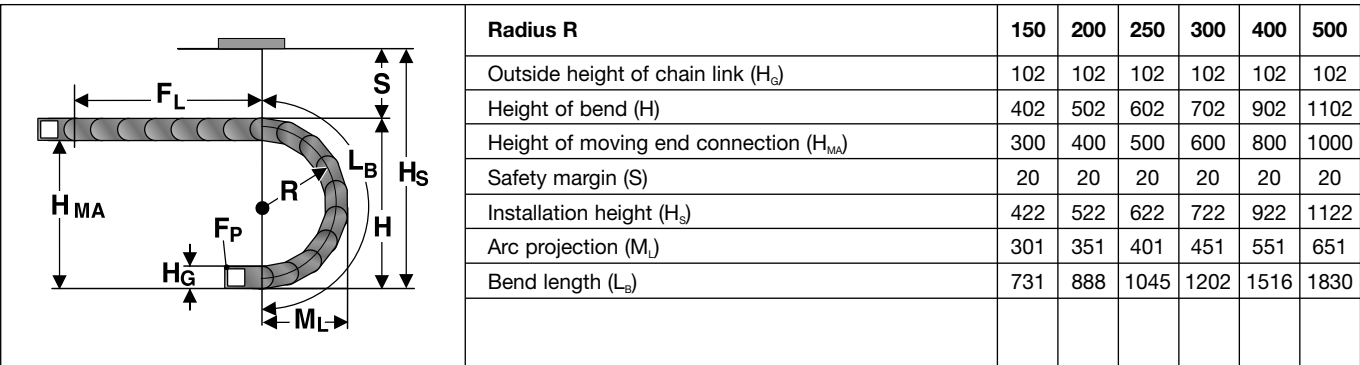
**FL<sub>s</sub>:**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



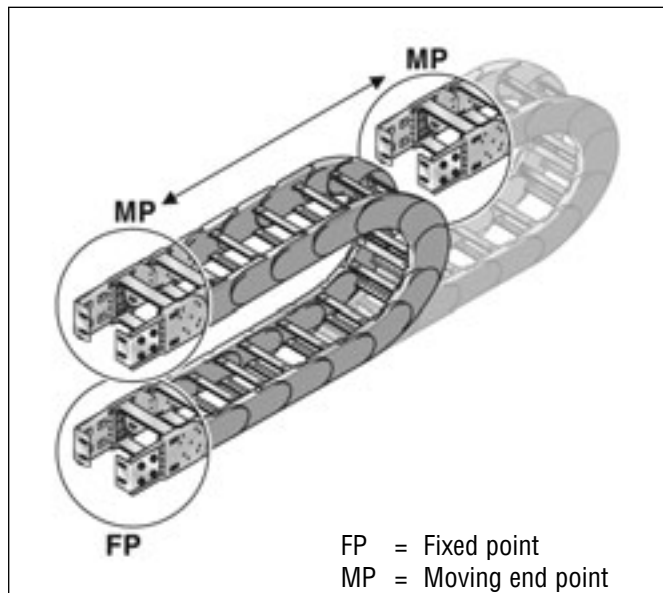
### Installation dimensions (in mm)



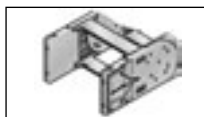


# MP 72 - HeavyLine

## Chain bracket

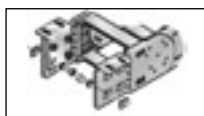


### Chain bracket flexible



Flexible

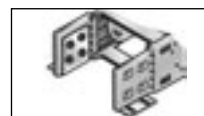
### Chain bracket elbow fitting



Top / outside



Front / outside



Bottom / outside



Top / inside



Front / inside



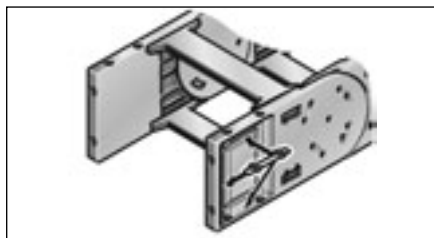
Bottom / inside

## Chain bracket flexible

Type

Order no.

Pack



KA 72-F Female end 0720000054

1

KA 72-F Male end 0720000055

1

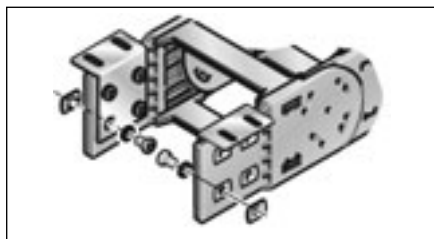
This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M10 screws should be used for securing the brackets in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

## Chain bracket elbow fitting

Type

Order no.

Pack



KA 72 Female end 0720000050

1

KA 72 Male end 0720000051

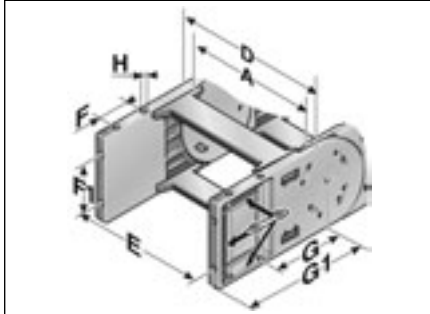
1

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

# MP 72 - HeavyLine

## Chain bracket flexible

Dimensions in mm



Flexible

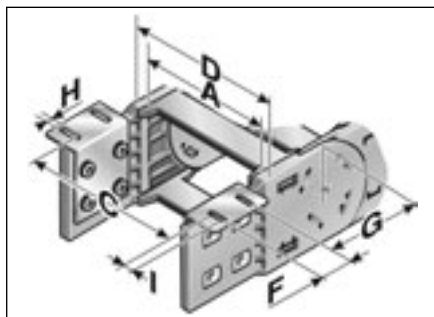
Type	A	D	E	F	F1	G	G1	H Ø
KA 72-F	118.00	150.00	129.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	143.00	175.00	154.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	168.00	200.00	179.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	193.00	225.00	204.00	35.00	45.00	107.00	171.50	11.00
KA 72-F	218.00	250.00	229.00	35.00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



# MP 72 - HeavyLine

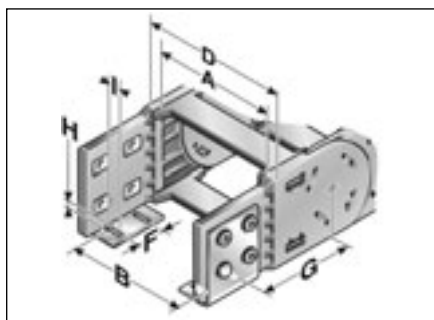
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

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



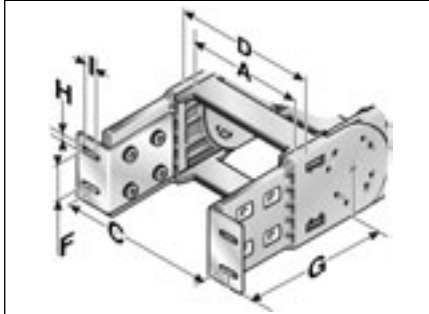
Bottom and top / inside

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

# MP 72 - HeavyLine

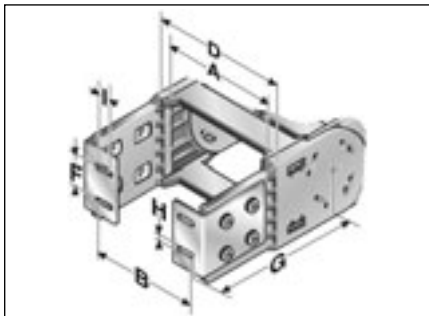
## Chain bracket elbow fitting

Dimensions in mm



Front / outside

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



Front / inside

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



# MP 72 - Accessories

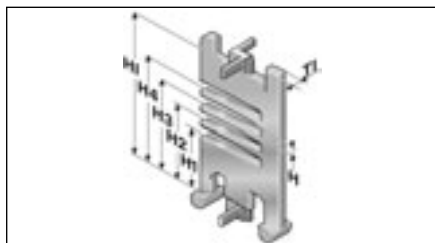
Separator	Type	Order no.	Description	Pack
-----------	------	-----------	-------------	------



Separator

TR 72	072000009200	Separator	1
Lock grid spacing 5.00 mm			

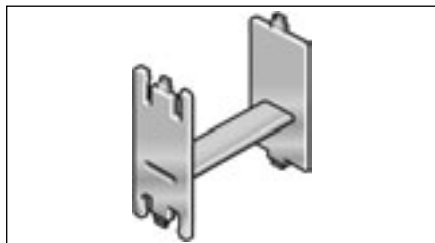
We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed.  
An offset configuration of the separators is advisable.



Separator

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

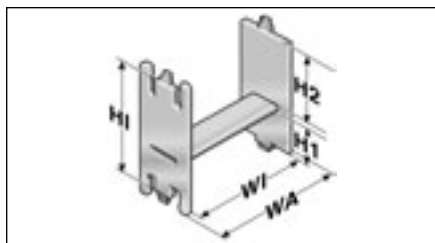
H-shaped shelf unit	Type	Order no.	Description	Pack
---------------------	------	-----------	-------------	------



H-shaped shelf unit

RE 7524	100000752418	RE 75/24 Shelf unit, H-shaped	1
RE 7536	100000753618	RE 75/36 Shelf unit, H-shaped	1
Lock grid spacing 5.00 mm			

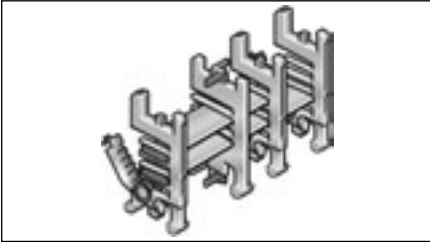
Insert to obtain additional levels in pre-defined distances.



H-shaped shelf unit

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

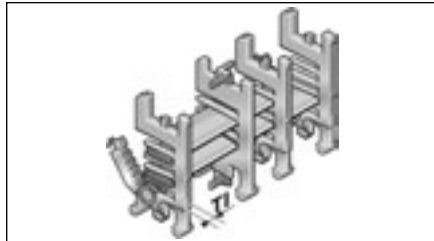
# MP 72 - Accessories

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

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, whilst also avoiding excessive friction. The shelving system can be pre-assembled on request.

Type	TI	Dimensions in mm
RTT 72	8.00	



Shelving system

Strain relief RS-ZL	Type	Order no.	for inside width	Pack
	RS-ZL 118-7	072011800010	118 mm	1
	RS-ZL 143-7	072014300010	143 mm	1
	RS-ZL 168-7	072016800010	168 mm	1
	RS-ZL 193-7	072019300010	193 mm	1
	RS-ZL 218-7	072021800010	218 mm	1
	RS-ZL 243-7	072024300010	243 mm	1

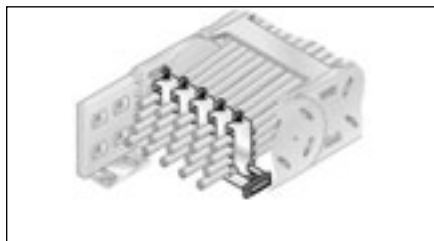
Strain relief RS-ZL

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.



## MP 72 - Accessories

### Strain relief with BAK



Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel  
Please indicate chain type and inside width when ordering.

### Frame ridge connector



Frame ridge connector

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

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



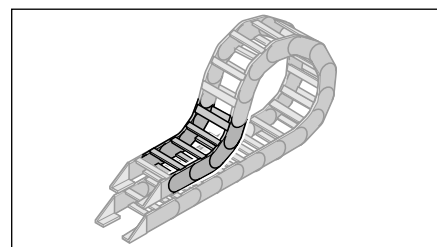
Type	Dimension T1	Dimensions in mm
RSV 72	8.00	

# MP 72 - Accessories

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

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!

Rotary movement



Low-lying chain bracket

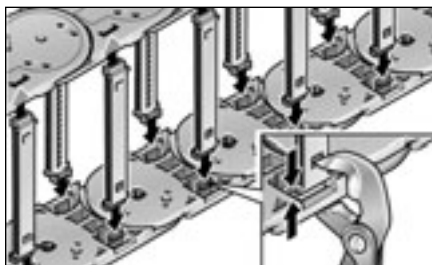


# MP 72 - HeavyLine

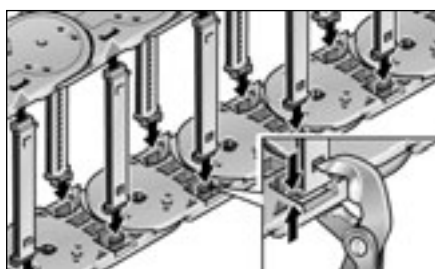
## Assembly



Step 1



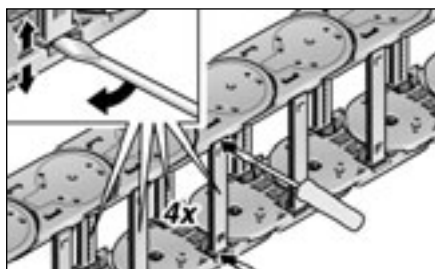
Step 2



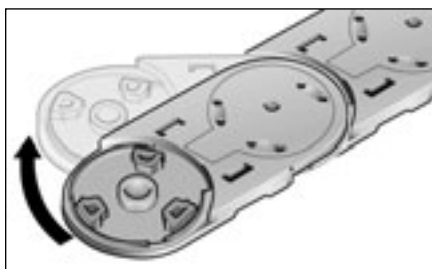
Step 3

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

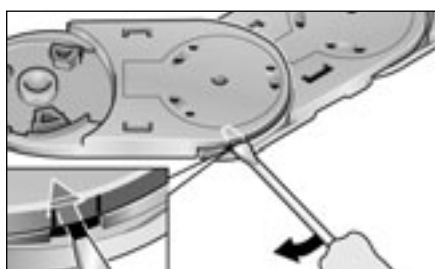
## Disassembly



Step 1



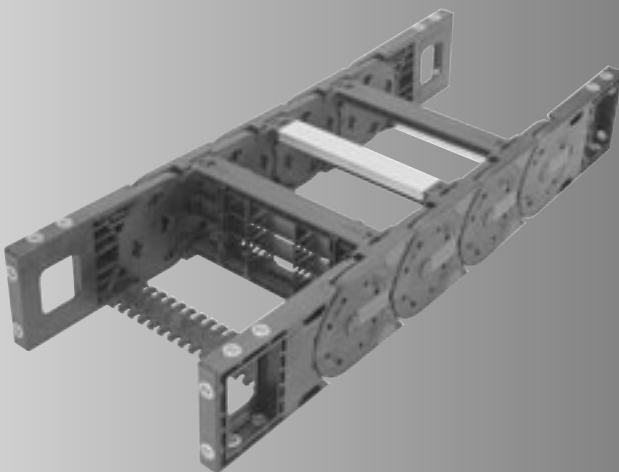
Step 2



Step 3

Disassembly is effected in the reverse sequence to assembly. First lever the frame ridges out of the side panel at one side and then on the opposite side.

## CABLE DRAG CHAIN SYSTEMS



***HeavyLine***

**MP 82.2**



# MP 82.2 - HeavyLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP 82.2 118	163	118	118						
MP 82.2 143	188	143	143						
MP 82.2 168	213	168	168						
MP 82.2 193	238	193	193						
MP 82.2 218	263	218	218						
MP 82.2 243	288	243	243						
MP 82.2 268	313	268	268						
MP 82.2 293	338	293	293						
MP 82.2 318	363	318	318						
MP 82.2 343	388	343	343						
MP 82.2 368	413	368	368	150	150				
MP 82.2 418	463	418	418	200	200				
MP 82.2 468	513	468	468	250	250				
MP 82.2 518	563	518	518	300	300				
MP 82.2 xxx	Inside	>118-		400	400				
	+ 32	600	ALU	500	500				
						0			
						1			
						2*			
						3*			
						4			
						5			
						6		0	
						7		7	
						9		9	
<b>Order number:</b>									
0822					0				0

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 2\* crossbar EOL; w/bias
- 3\* crossbar EOL; w/o bias
- 4 AL crossbar every link; w/bias
- 5 AL crossbar every link; w/o bias
- 6 AL crossbar EOL; w/bias
- 7 AL crossbar EOL; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 7 ESD (PA)
- 9 Special version

### Sample order

0822 118 150 0000

Inside width = 118 mm

Radius = 150 mm

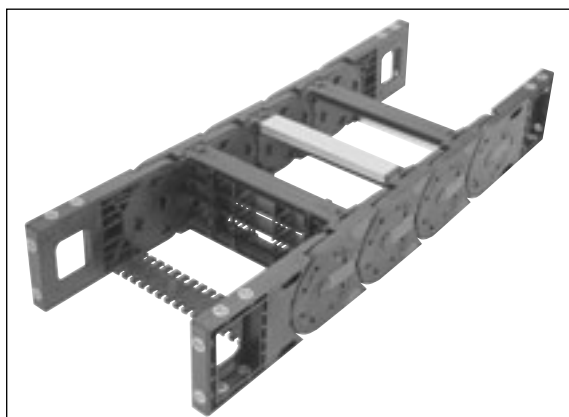
Configuration = 0

Style = 0

### Ideal operating conditions

- Extreme accelerations
- Extreme speeds
- Very high additional loads
- Opens on both sides
- Variable widths thanks to aluminium ridge
- Flexible internal separation
- Variant with/without bias

## Features



Chain bracket with fixing means on three sides



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Side links with CLICK lock for easy opening



Radii with or without bias (RK/RV)



ESD cable drag chains for use in areas at risk of explosion



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

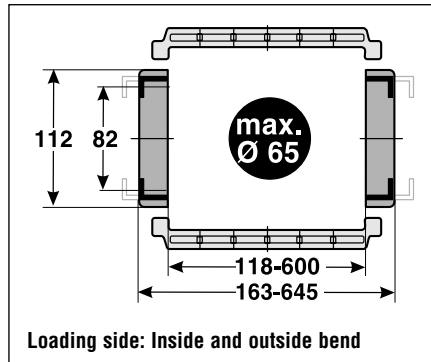


Foldable shelf system for reliable cable guidance

# MP 82.2 - HeavyLine

## Technical data

### Chain link dimensions



### Material properties

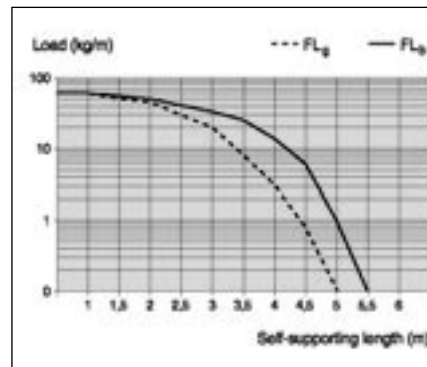
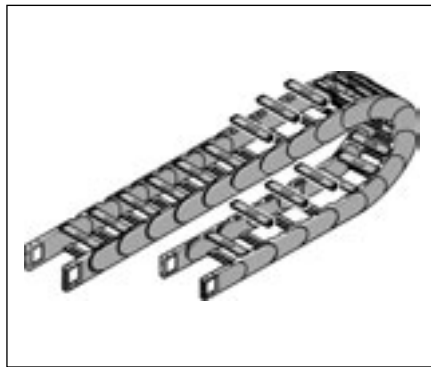
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB  
 ESD material: CE Ex II 2 GD

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 250 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 120 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 6 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 3 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 20 m/s  
 Acceleration, gliding,  $a_g$ : 25 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 40 m/s<sup>2</sup>

### Unsupported length

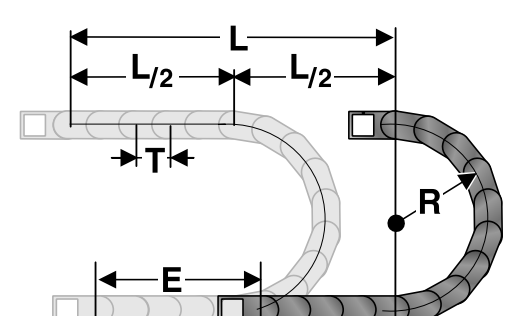


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>b</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 9 x 118 mm links

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

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

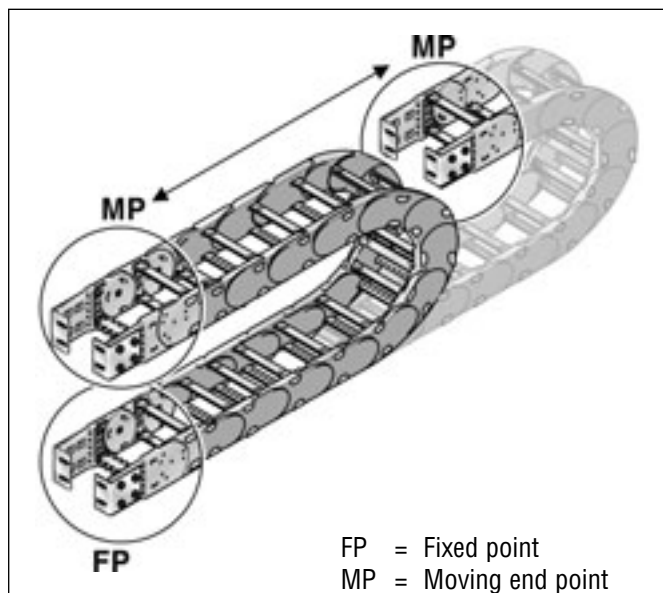
### Installation dimensions (in mm)

Radius R	150	200	250	300	400	500
Outside height of chain link ( $H_o$ )	112	112	112	112	112	112
Height of bend ( $H$ )	412	512	612	712	912	1112
Height of moving end connection ( $H_{MA}$ )	300	400	500	600	800	1000
Safety margin with bias ( $S_v$ )	50	50	50	50	50	50
Installation height with bias ( $H_{sv}$ )	462	562	662	762	962	1162
Safety margin without bias ( $S_k$ )	30	30	30	30	30	30
Installation height without bias ( $H_{sk}$ )	442	542	642	742	942	1142
Arc projection ( $M_L$ )	324	374	424	474	574	674
Bend length ( $L_B$ )	765	922	1079	1236	1550	1864



# MP 82.2 - HeavyLine

## Chain bracket



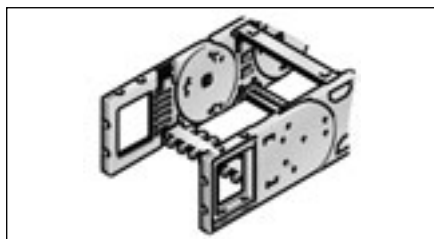
## Chain bracket flexible



Flexible

## Chain bracket flexible

Type	Order no.	Version	Pack
KA 82-FB Female end	0820000056	with bush	1
KA 82-FB Male end	0820000057	with bush	1
KA 82-FG Female end	0820000058	with thread	1
KA 82-FG Male end	0820000059	with thread	1

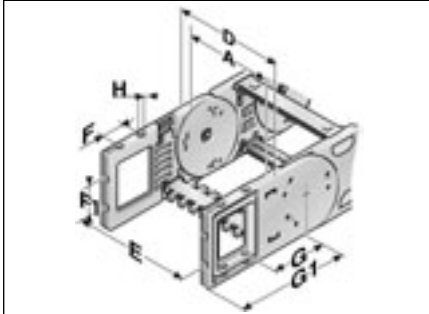


This chain bracket offers universal connection options (top, bottom and front) and is attached to the ends of the chain like a side link. This allows the chain to move right up to the bracket. Each chain requires one male and one female bracket. M10 screws should be used for securing the brackets in place. Extrusion coated metal bushes with either a through-hole (-FB) or a threaded hole (-FG) ensure the permanent, high-strength transmission of even extreme forces onto the cable drag chain.

# MP 82.2 - HeavyLine

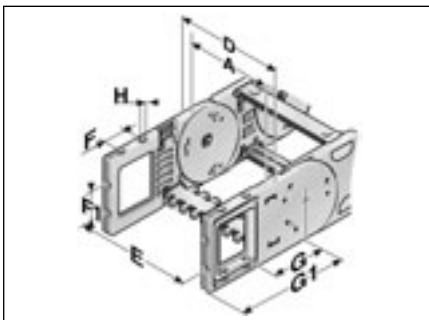
## Chain bracket flexible

Dimensions in mm



Flexible with through-hole

Type	A	D	E	F	F1	G	G1	H Ø
KA 82-FB	118.00	163.00	141.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	143.00	188.00	166.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	168.00	213.00	191.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	193.00	238.00	216.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	218.00	263.00	241.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	243.00	288.00	266.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	268.00	313.00	291.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	293.00	338.00	316.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	318.00	363.00	341.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	343.00	388.00	366.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	368.00	413.00	391.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	418.00	463.00	441.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	468.00	513.00	491.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	518.00	563.00	541.00	35.00	66.00	117.00	182.00	11.00
KA 82-FB	Variable	A+45.00	A+23.00	35.00	66.00	117.00	182.00	11.00



Flexible with threaded bush

Type	A	D	E	F	F1	G	G1	H
KA 82-FG	118.00	163.00	141.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	143.00	188.00	166.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	168.00	213.00	191.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	193.00	238.00	216.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	218.00	263.00	241.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	243.00	288.00	266.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	268.00	313.00	291.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	293.00	338.00	316.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	318.00	363.00	341.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	343.00	388.00	366.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	368.00	413.00	391.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	418.00	463.00	441.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	468.00	513.00	491.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	518.00	563.00	541.00	35.00	66.00	117.00	182.00	M 10
KA 82-FG	Variable	A+45.00	A+23.00	35.00	66.00	117.00	182.00	M 10



## MP 82.2 - Accessories

### Separator



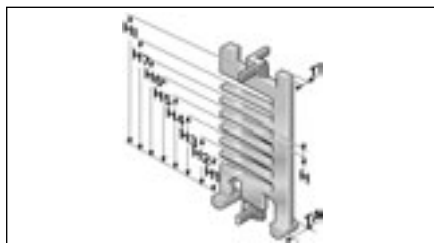
Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

TR 82	082000009200	Separator	1
-------	--------------	-----------	---

Lock grid spacing 5.00 mm

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

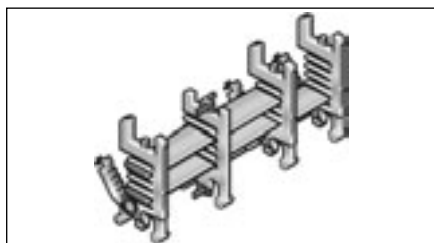


Separator

Type	TI	H	Dimensions in mm							
			H1	H2	H3	H4	H5	H6	H7	HI

TR 82	3.50	5.40	12.20	20.50	28.80	37.00	45.40	53.70	62.00	79.50
-------	------	------	-------	-------	-------	-------	-------	-------	-------	-------

### Shelving system



Shelving system

Type	Order no.	Description	Width in mm	Pack
------	-----------	-------------	-------------	------

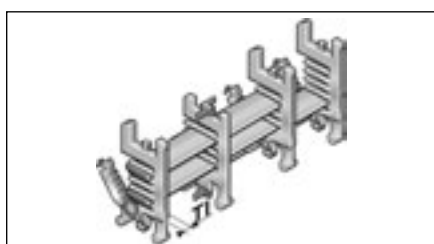
RB 056-7	100000005600	RB 056-7 Shelf	56	1
RB 066-7	100000006600	RB 066-7 Shelf	66	1
RB 081-7	100000008100	RB 081-7 Shelf	81	1
RB 106-7	100001006600	RB 106-7 Shelf	106	1
RB 116-7	100001001600	RB 116-7 Shelf	116	1
RB 166-7	100001006600	RB 166-7 Shelf	166	1
RB 216-7	100002001600	RB 216-7 Shelf	216	1
RTT 82	100090822000	RTT 82 Shelf support, divisible		1

Lock grid spacing 5.00 mm

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


Type	TI	Dimensions in mm							

RTT 82	8.00								
--------	------	--	--	--	--	--	--	--	--



Shelving system

## MP 82.2 - Accessories

Frame ridge connector	Type	Order no.	Description	Pack
	RSV 82	082000009600	RSV 82 Frame ridge connector	1
	RSV 82 A	082000009800	RSV 82 Aluminium frame ridge connector	1

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

Frame ridge connector



Type	TI	Dimensions in mm
RSV 82	8.00	

Strain relief RS-ZL	Type	Order no.	for inside width	Pack
	RS-ZL 118-7	072011800010	118 mm	1
	RS-ZL 143-7	072014300010	143 mm	1
	RS-ZL 168-7	072016800010	168 mm	1
	RS-ZL 193-7	072019300010	193 mm	1
	RS-ZL 218-7	072021800010	218 mm	1
	RS-ZL 243-7	072024300010	243 mm	1

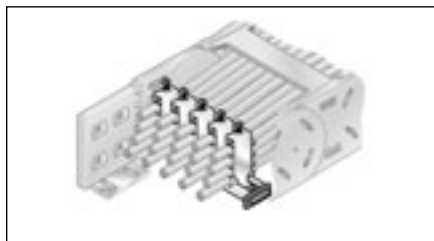
Strain relief RS-ZL

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.



## MP 82.2 - Accessories

### Strain relief with BAK



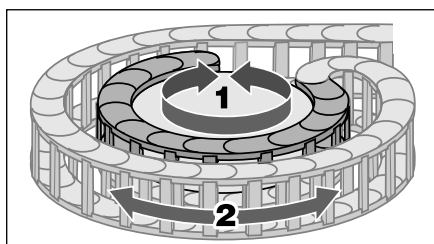
Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

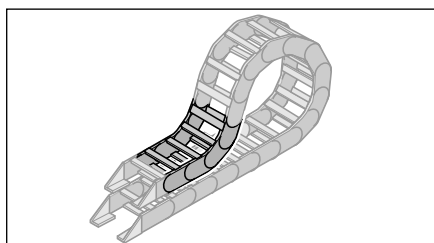
### Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 82.2 (RÜ300/R300) left	82200030060	300 mm	300 mm	1
SR 82.2 (RÜ300/R300) right	82200030062	300 mm	300 mm	1

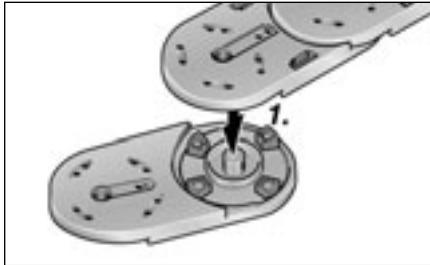
Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!



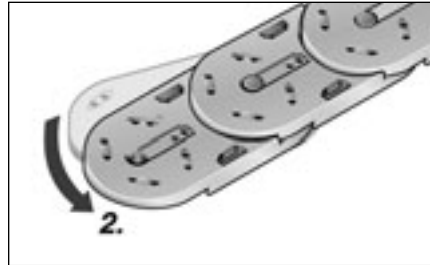
Low-lying chain bracket

# MP 82.2 - HeavyLine

## Assembly



Step 1

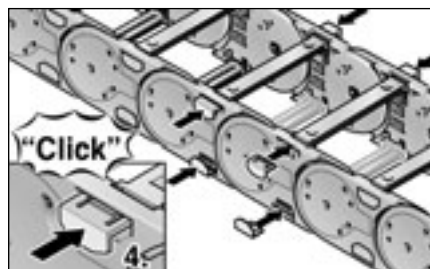


Step 2

The heavy-duty connection between the frame ridge and side wall has a positive fit. Both ends of the frame ridges are introduced evenly into the slots in the side links. The ridges are held secure by pressing in the frame ridge locks. Forces are transmitted solely through the slots on the ridge end or side link.

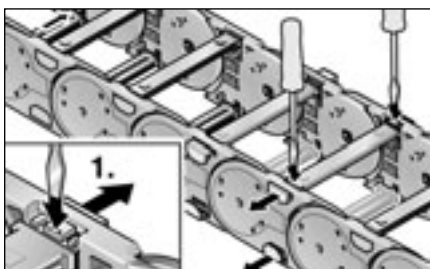


Step 3

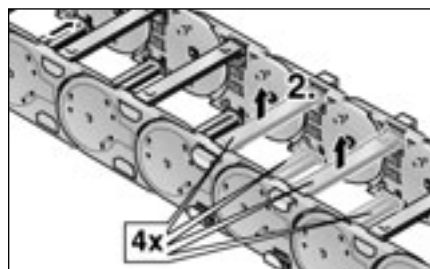


Step 4

## Disassembly



Step 1

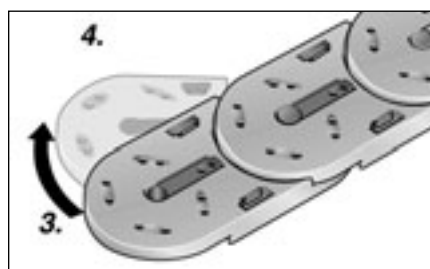


Step 2

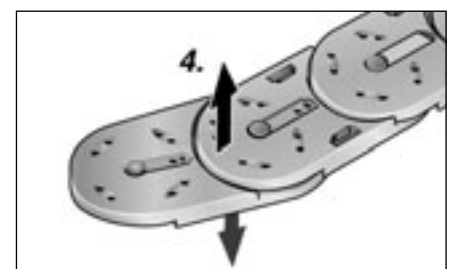
Disassembly is effected in the reverse sequence to assembly. Loosen the locks until the frame ridges are released.



Step 3



Step 4



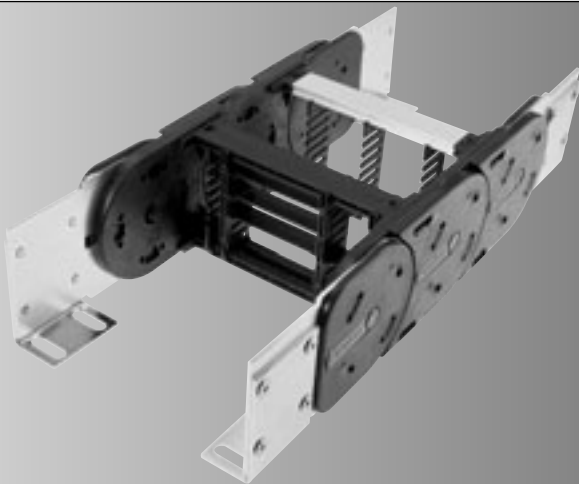
Step 5



## MP 82.2 - HeavyLine



## CABLE DRAG CHAIN SYSTEMS



***HeavyLine***

**MP 102**



# MP 102 - HeavyLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code) *= standard</b>									
<b>Radius (order code)</b>									
in mm									
<b>Internal width (order code)</b>									
in mm									
<b>External width</b>									
in mm									
MP102 118	164	118	118						
MP102 143	189	143	143						
MP102 168	214	168	168						
MP102 192	239	193	193						
MP102 218	264	218	218						
MP102 243	289	243	243						
MP102 268	314	268	268						
MP102 293	339	293	293						
MP102 318	364	318	318						
MP102 343	389	343	343						
MP102 368	414	368	368						
MP102 418	464	418	418					0	
MP102 468	514	468	468	250	250			2*	
MP102 518	564	518	518	300	300			4	
MP102 xxx	Inside	>118-		400	400			6	0
	+ 46	600	ALU	500	500			9	9
<b>Order number:</b>				1020			0		0

### Configuration:

- 0 crossbar every link; w/bias
- 2\* crossbar EOL; w/bias
- 4 AL crossbar every link; w/bias
- 6 AL crossbar EOL; w/bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

1020 118 250 0000

Inside width = 118 mm

Radius = 250 mm

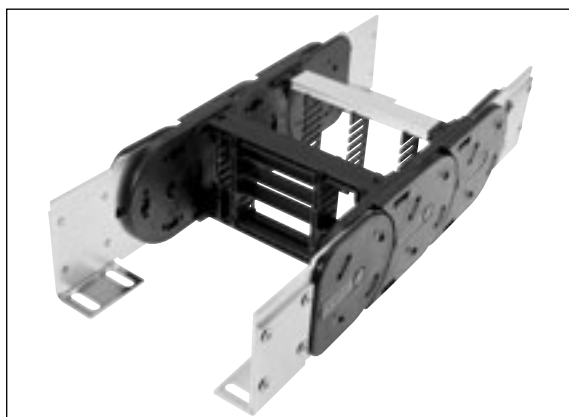
Configuration = 0

Style = 0

### Ideal operating conditions

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

## Features



Chain bracket with variably positionable metal bracket



Frame ridge strain relief can be integrated into chain bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Back radius combinations



Aluminium frame ridges with integrated lock grid in variable lengths

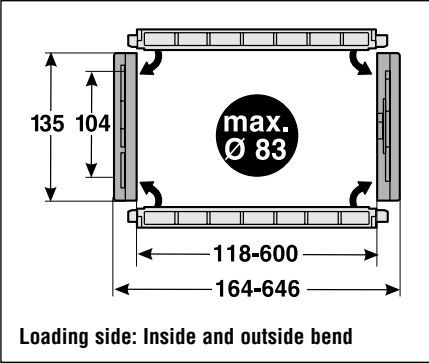


Foldable shelf system for reliable cable guidance

# MP 102 - HeavyLine

## Technical data

### Chain link dimensions



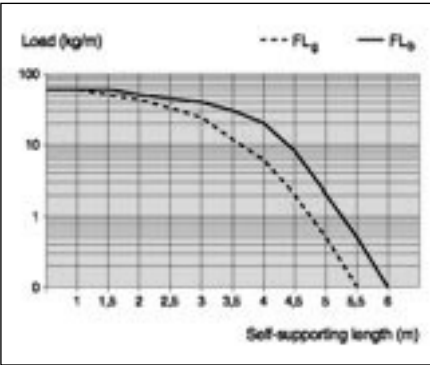
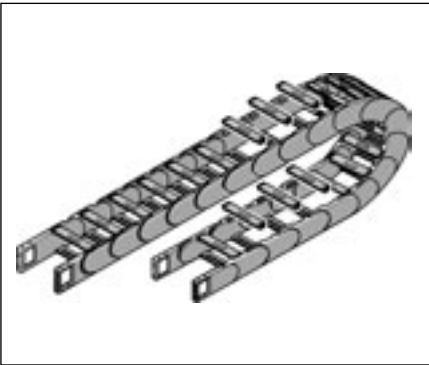
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	300 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	150 m
Travel distance, vertical, upright, $L_{vu}$ :	8 m
Rotated 90°, self-supporting, $L_{sg}$ :	8 m
Speed, gliding, $V_g$ :	5 m/s
Speed, self-supporting, $V_s$ :	20 m/s
Acceleration, gliding, $a_g$ :	25 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	40 m/s <sup>2</sup>

### Unsupported length

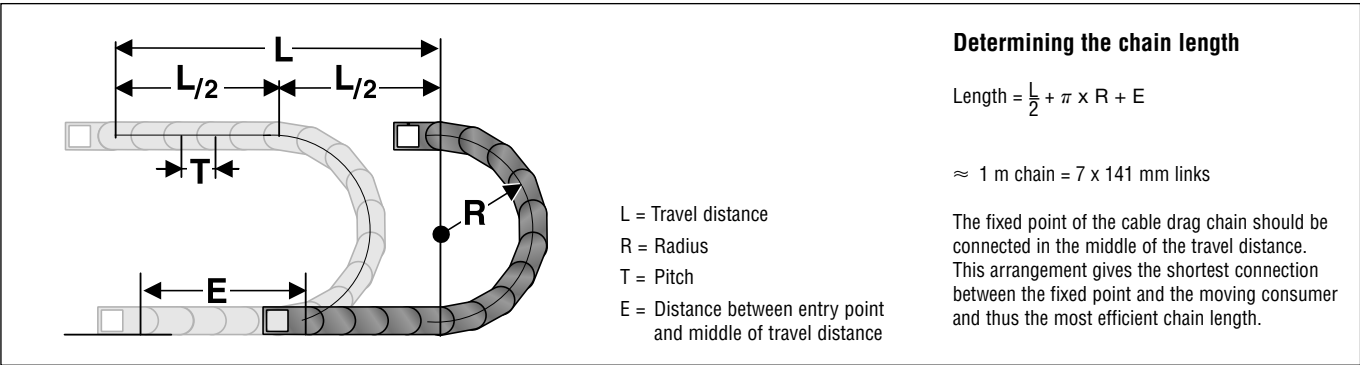


**$FL_g$ :**  
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

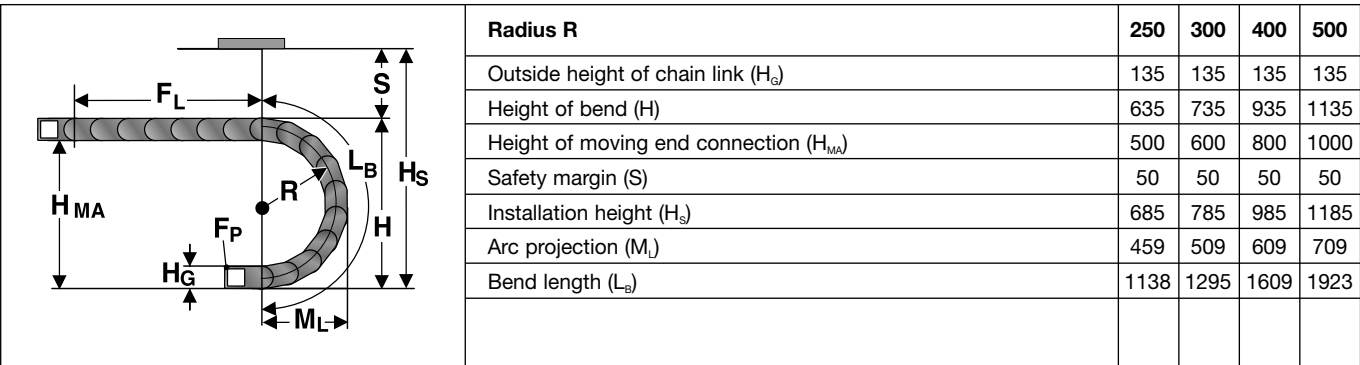
**$FL_b$ :**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



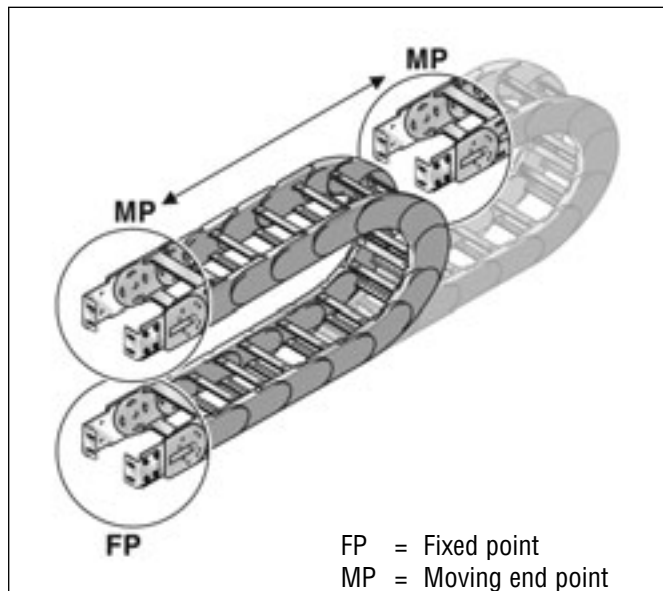
### Installation dimensions (in mm)



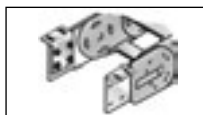


# MP 102 - HeavyLine

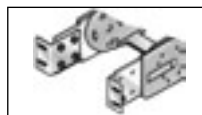
## Chain bracket



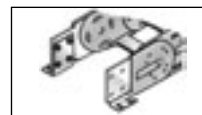
### Chain bracket



Top / outside



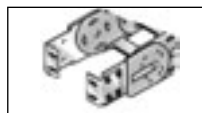
Front / outside



Bottom / outside



Top / inside



Front / inside



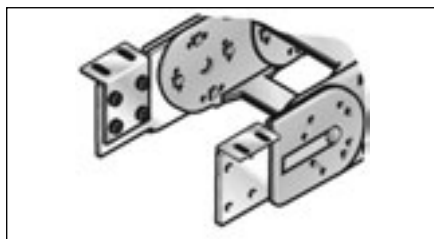
Bottom / inside

## Chain bracket

### Type

### Order no.

### Pack



KA 102 Female end 1020000050

1

KA 102 Male end 1020000051

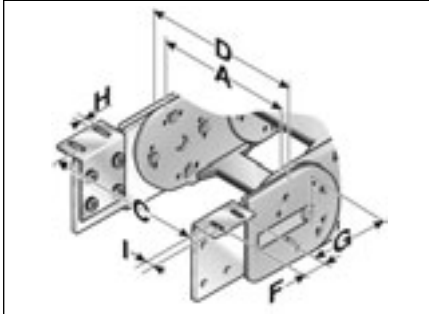
1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires one male and one female bracket. The brackets should be fastened with M12 screws.

# MP 102 - HeavyLine

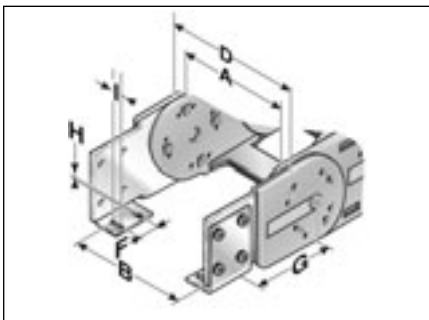
## Chain bracket

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 102	118.00	156.00	164.00	50.00	236.00	13.00	25.00
KA 102	143.00	181.00	189.00	50.00	236.00	13.00	25.00
KA 102	168.00	206.00	214.00	50.00	236.00	13.00	25.00
KA 102	193.00	231.00	239.00	50.00	236.00	13.00	25.00
KA 102	218.00	256.00	264.00	50.00	236.00	13.00	25.00
KA 102	243.00	281.00	289.00	50.00	236.00	13.00	25.00
KA 102	268.00	306.00	314.00	50.00	236.00	13.00	25.00
KA 102	293.00	331.00	339.00	50.00	236.00	13.00	25.00
KA 102	318.00	356.00	364.00	50.00	236.00	13.00	25.00
KA 102	343.00	381.00	389.00	50.00	236.00	13.00	25.00
KA 102	368.00	406.00	414.00	50.00	236.00	13.00	25.00
KA 102	418.00	456.00	464.00	50.00	236.00	13.00	25.00
KA 102	468.00	506.00	489.00	50.00	236.00	13.00	25.00
KA 102	518.00	556.00	564.00	50.00	236.00	13.00	25.00
KA 102	Variable	A+38.00	A+46.00	50.00	236.00	13.00	25.00



Bottom and top / inside

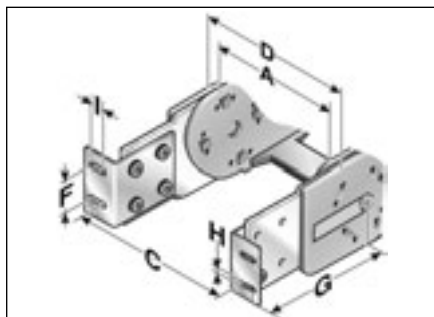
Type	A	B	D	F	G	H Ø	I
KA 102	118.00	120.00	164.00	50.00	236.00	13.00	25.00
KA 102	143.00	145.00	189.00	50.00	236.00	13.00	25.00
KA 102	168.00	170.00	214.00	50.00	236.00	13.00	25.00
KA 102	193.00	195.00	239.00	50.00	236.00	13.00	25.00
KA 102	218.00	218.00	264.00	50.00	236.00	13.00	25.00
KA 102	243.00	245.00	289.00	50.00	236.00	13.00	25.00
KA 102	268.00	270.00	314.00	50.00	236.00	13.00	25.00
KA 102	293.00	295.00	339.00	50.00	236.00	13.00	25.00
KA 102	318.00	320.00	364.00	50.00	236.00	13.00	25.00
KA 102	343.00	345.00	389.00	50.00	236.00	13.00	25.00
KA 102	368.00	370.00	414.00	50.00	236.00	13.00	25.00
KA 102	418.00	420.00	464.00	50.00	236.00	13.00	25.00
KA 102	468.00	470.00	489.00	50.00	236.00	13.00	25.00
KA 102	518.00	520.00	564.00	50.00	236.00	13.00	25.00
KA 102	Variable	A+2	A+46.00	50.00	236.00	13.00	25.00



# MP 102 - HeavyLine

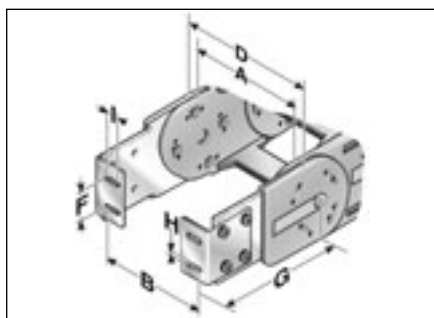
## Chain bracket

Dimensions in mm



Front / outside

Type	A	C	D	F	G	H Ø	I
KA 102	118.00	156.00	164.00	50.00	187.50	13.00	25.00
KA 102	143.00	181.00	189.00	50.00	187.50	13.00	25.00
KA 102	168.00	206.00	214.00	50.00	187.50	13.00	25.00
KA 102	193.00	231.00	239.00	50.00	187.50	13.00	25.00
KA 102	218.00	256.00	264.00	50.00	187.50	13.00	25.00
KA 102	243.00	281.00	289.00	50.00	187.50	13.00	25.00
KA 102	268.00	306.00	314.00	50.00	187.50	13.00	25.00
KA 102	293.00	331.00	339.00	50.00	187.50	13.00	25.00
KA 102	318.00	356.00	364.00	50.00	187.50	13.00	25.00
KA 102	343.00	381.00	389.00	50.00	187.50	13.00	25.00
KA 102	368.00	406.00	414.00	50.00	187.50	13.00	25.00
KA 102	418.00	456.00	464.00	50.00	328.50	13.00	25.00
KA 102	468.00	506.00	489.00	50.00	328.50	13.00	25.00
KA 102	518.00	556.00	564.00	50.00	328.50	13.00	25.00
KA 102	Variable	A+38.00	A+46.00	50.00	187.50	13.00	25.00

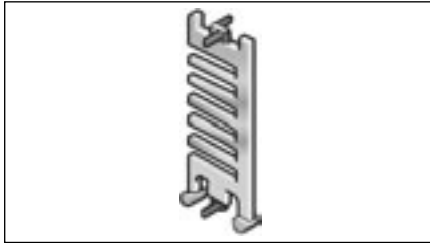


Front / inside

Type	A	B	D	F	G	H Ø	I
KA 102	118.00	120.00	164.00	50.00	187.50	13.00	25.00
KA 102	143.00	145.00	189.00	50.00	187.50	13.00	25.00
KA 102	168.00	170.00	214.00	50.00	187.50	13.00	25.00
KA 102	193.00	195.00	239.00	50.00	187.50	13.00	25.00
KA 102	218.00	218.00	264.00	50.00	187.50	13.00	25.00
KA 102	243.00	245.00	289.00	50.00	187.50	13.00	25.00
KA 102	268.00	270.00	314.00	50.00	187.50	13.00	25.00
KA 102	293.00	295.00	339.00	50.00	187.50	13.00	25.00
KA 102	318.00	320.00	364.00	50.00	187.50	13.00	25.00
KA 102	343.00	345.00	389.00	50.00	187.50	13.00	25.00
KA 102	368.00	370.00	414.00	50.00	187.50	13.00	25.00
KA 102	418.00	420.00	464.00	50.00	187.50	13.00	25.00
KA 102	468.00	470.00	489.00	50.00	187.50	13.00	25.00
KA 102	518.00	520.00	564.00	50.00	187.50	13.00	25.00
KA 102	Variable	A+2	A+46.00	50.00	187.50	13.00	25.00

# MP 102 - Accessories

Separator	Type	Order no.	Description	Pack
-----------	------	-----------	-------------	------

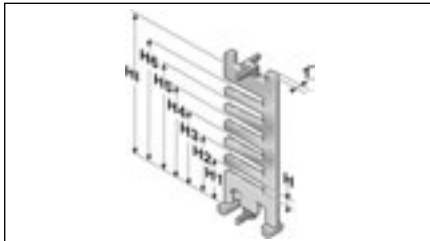


Separator

TR 102	1020000092	Separator	1
--------	------------	-----------	---

Lock grid spacing 5.00 mm

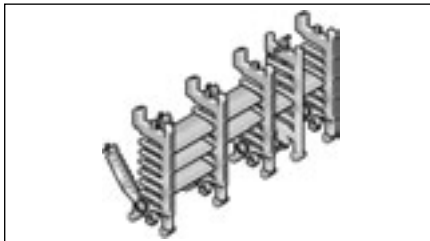
We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed.  
An offset configuration of the separators is advisable.



Separator

Type	TI	H	Dimensions in mm						
			H1	H2	H3	H4	H5	H6	HI
TR 102	4.00	5.50	27.40	39.70	52.00	64.30	76.60	88.90	104

Shelving system	Type	Order no.	Description	Width in mm	Pack
-----------------	------	-----------	-------------	-------------	------

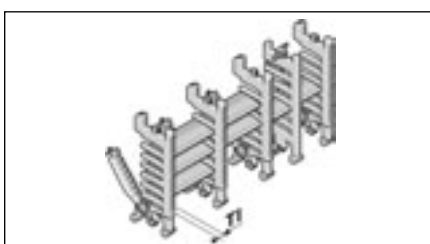


Shelving system

RB 056-7	100000005600	RB 056-7 Shelf	56	1
RB 066-7	100000006600	RB 066-7 Shelf	66	1
RB 081-7	100000008100	RB 081-7 Shelf	81	1
RB 106-7	100000010600	RB 106-7 Shelf	106	1
RB 116-7	100000011600	RB 116-7 Shelf	116	1
RB 216-7	100000021600	RB 216-7 Shelf	216	1
RB 166-7	100000016600	RB 166-7 Shelf	166	1
RTT 102	100091022000	RTT 102 Shelf support, divisible		1

Lock grid spacing 5.00 mm

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



Shelving system

Type	TI	Dimensions in mm		
RTT 102	8.00			



# MP 102 - Accessories

Frame ridge connector	Type	Order no.	Description	Pack
-----------------------	------	-----------	-------------	------



Frame ridge connector

RSV 102	1020000096	RSV 102 Frame ridge connector	1
RSV 102 A	1020000098	RSV 102 Aluminium frame ridge connector	1

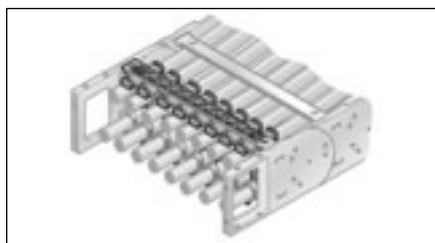
For frame ridges wider than 246 mm, we recommend the use of frame ridge connectors. These prevent deformation to the frame ridge under large amounts of additional weight of the chain assembly.

Type	TI	Dimensions in mm
------	----	------------------

RSV 102	8.00	
---------	------	--



Strain relief RS-ZL	Type	Order no.	for inside width	Pack
---------------------	------	-----------	------------------	------



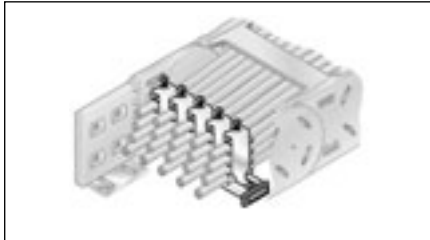
Strain relief RS-ZL

RS-ZL 118-7	072011800010	118 mm	1
RS-ZL 143-7	072014300010	143 mm	1
RS-ZL 168-7	072016800010	168 mm	1
RS-ZL 193-7	072019300010	193 mm	1
RS-ZL 218-7	072021800010	218 mm	1
RS-ZL 243-7	072024300010	243 mm	1

Frame ridge strain relief that can be permanently integrated in the chain brackets. Tailored to all frame ridge widths up to 243 mm. May be mounted on the inside and outside bend at both ends of the chain.

# MP 102 - Accessories

## Strain relief with BAK



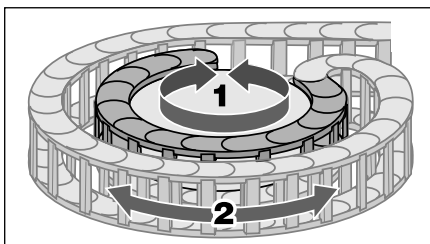
Strain relief with hooped clamps

Type	Order no.	Description	Ø in mm	Pack
C-rail	81661610	C-profile rail		1
BAK 14	81661002	BAK 14 Hooped clamp	6-14	1
BAK 18	81661004	BAK 18 Hooped clamp	14-18	1
BAK 22	81661006	BAK 22 Hooped clamp	18-22	1
BAK 26	81661008	BAK 26 Hooped clamp	22-26	1
BAK 30	81661010	BAK 30 Hooped clamp	26-30	1
BAK 14/2	81661012	BAK 14/2 Hooped clamp	10-14	1
BAK 18/2	81661014	BAK 18/2 Hooped clamp	14-18	1
BAK 22/2	81661016	BAK 22/2 Hooped clamp	18-22	1
BAK 26/2	81661018	BAK 26/2 Hooped clamp	22-26	1
BAK 12/3	81661020	BAK 12/3 Hooped clamp	9-12	1
BAK 14/3	81661022	BAK 14/3 Hooped clamp	12-14	1
BAK 16/3	81661024	BAK 16/3 Hooped clamp	14-16	1
BAK 18/3	81661026	BAK 18/3 Hooped clamp	16-18	1
BAK 20/3	81661028	BAK 20/3 Hooped clamp	18-20	1
BAK 22/3	81661030	BAK 22/3 Hooped clamp	20-22	1

Strain relief plates that can be permanently integrated in the chain brackets. Available in all widths (including individual widths in aluminium frame ridges). May be mounted on the inside and outside bend at both ends of the chain. The chain configuration can be fixed using hooped clamps that are available in different sizes. Material: Galvanised steel

Please indicate chain type and inside width when ordering.

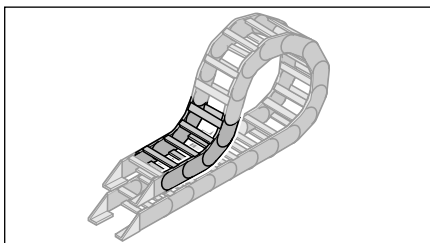
## Back radius



Rotary movement

Type	Order no.	Radius	Back Radius	Pack
SR 102 (RÜ400/R400) left	10200040060	400 mm	400 mm	1
SR 102 (RÜ400/R400) right	10200040062	400 mm	400 mm	1

Side links with forward radius (R) and back radius (Rü) permit movement in two directions. Areas of application include rotary movements and low-lying chain brackets. Please note the different side links for the left and right side run!

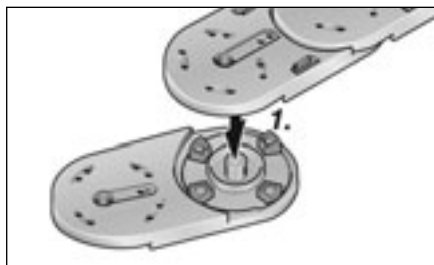


Low-lying chain bracket

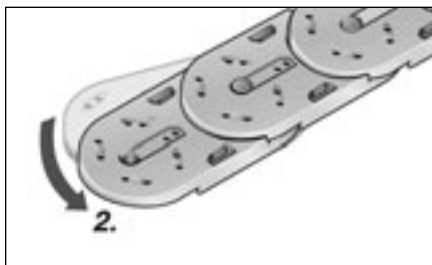


# MP 102 - HeavyLine

## Assembly



Step 1



Step 2



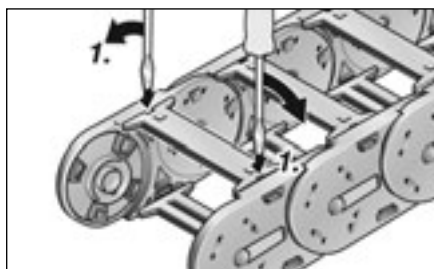
Step 3



Step 4

This type of chain has different chain links for the left or right side run. The marking must be observed when assembling, e.g. R250.1 for one side and R250.2 for the opposite side. Only side links with the same marking will fit together. This also concerns the chain brackets. The heavy-duty connection between the frame ridge and side wall has a positive fit. For this reason the frame ridges are fixed on one side over the entire chain length on one side panel first before being inserted into the opposite side panel.

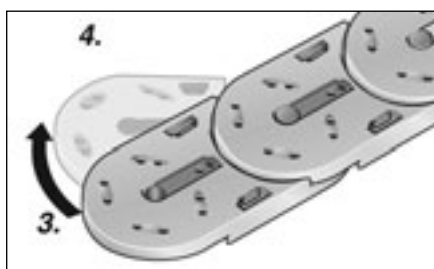
## Disassembly



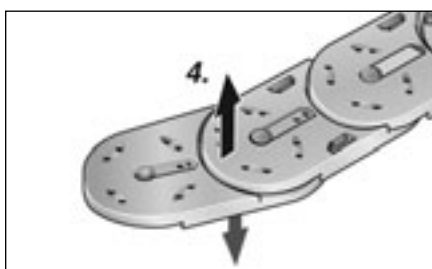
Step 1



Step 2



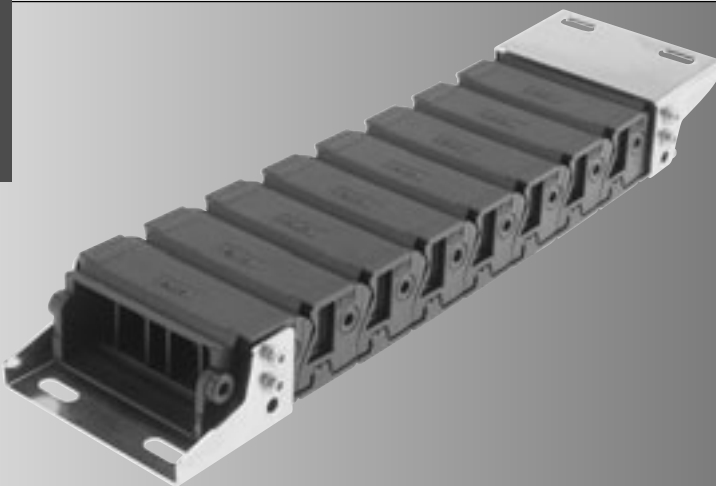
Step 3



Step 4

Disassembly is effected in the reverse sequence to assembly. First lever the frame ridges out of the side panel at one side and then on the opposite side.

## CABLE DRAG CHAIN SYSTEMS



***SafeLine***

**MP 25 G**



# MP 25 G - SafeLine

## Order variants

<b>Style (order code)</b>									
<b>Configuration (order code)</b>									
<b>Radius (order code)</b>									
<b>in mm</b>									
<b>Internal width (order code)</b>									
<b>in mm</b>									
<b>External width</b>									
<b>in mm</b>									
MP25 026	44	26	026	60	060				
MP25 037	55	37	037	75	075				
MP25 062	80	62	062	100	100				
MP25 087	105	87	087	125	125				
MP25 101	119	101	101	150	150				
MP25 125	143	125	125	200	200				
				250	250				
					0	0			
<b>Order number:</b>									
0250				0				0	

### Configuration:

0 crossbar every link; w/bias

### Style:

0 Standard (PA)  
9 Special version

### Sample order

0250 026 060 0000

Inside width = 26 mm

Radius = 60 mm

Configuration = 0

Style = 0

### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Quiet operation
- High stability
- Flexible internal separation

### Alternative chain type

- MP 3000 / MP 26 Open version
- MP 36 G Flange connection

## Features



Folding cover for closed cable drag chains



Radii with medium bias (R) for all applications



Integratable separator for cable separation



ZL strain relief plate

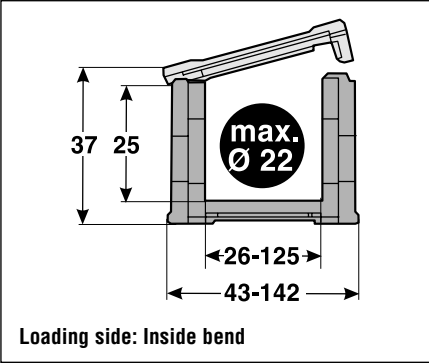


Chain bracket metal profile

# MP 25 G - SafeLine

Technical data

### Chain link dimensions



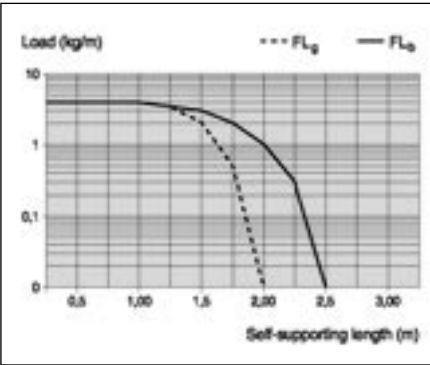
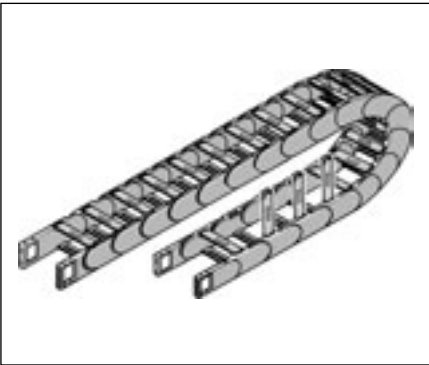
### Material properties

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

### Technical specifications

Travel distance, gliding, $L_g$ :	40 m
Travel distance, self-supporting, $L_s$ :	see diagram
Travel distance, vertical, hanging, $L_{vh}$ :	25 m
Travel distance, vertical, upright, $L_{vu}$ :	3 m
Rotated 90°, self-supporting, $L_{sg}$ :	1 m
Speed, gliding, $V_g$ :	3 m
Speed, self-supporting, $V_s$ :	6 m/s
Acceleration, gliding, $a_g$ :	10 m/s <sup>2</sup>
Acceleration, self-supporting, $a_s$ :	15 m/s <sup>2</sup>

### Unsupported length



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

**$FL_b$ :**  
Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than  $FL_b$ , the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length

$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

#### Determining the chain length

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

≈ 1 m chain = 33 x 30 mm links

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

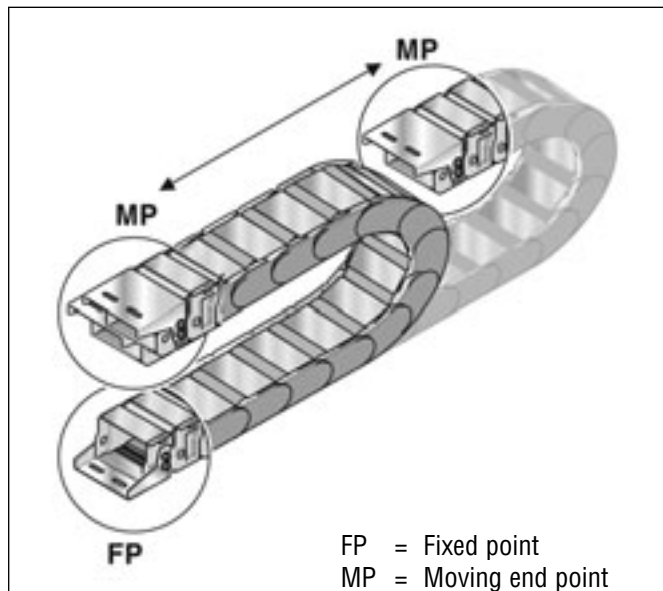
### Installation dimensions (in mm)

	Radius R						
	60	75	100	125	150	200	250
Outside height of chain link ( $H_e$ )	37	37	37	37	37	37	37
Height of bend ( $H$ )	157	187	237	287	337	437	537
Height of moving end connection ( $H_{MA}$ )	120	150	200	250	300	400	500
Safety margin ( $S$ )	33	33	33	33	33	33	33
Installation height ( $H_g$ )	190	220	270	320	370	470	570
Arc projection ( $M_i$ )	109	124	149	174	199	249	299
Bend length ( $L_b$ )	276	324	402	481	559	716	873



# MP 25 G - SafeLine

## Chain bracket



## Chain bracket



Top

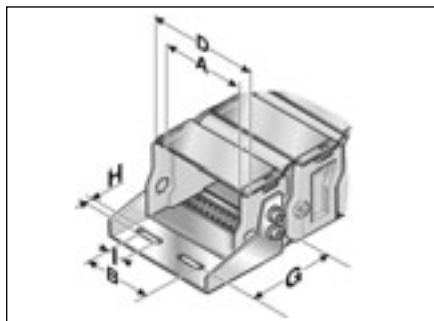


Bottom

## Chain bracket

Type	Order no.	Material	Pack
KA 25026	0250026050	Steel plate	1
KA 25037	0250037050	Steel plate	1
KA 25062	0250062050	Steel plate	1
KA 25087	0250087050	Steel plate	1
KA 25101	0250101050	Steel plate	1
KA 25125	0250125050	Steel plate	1
KA 25026	0250026052	Stainless steel 1.4301	1
KA 25037	0250037052	Stainless steel 1.4301	1
KA 25062	0250062052	Stainless steel 1.4301	1
KA 25087	0250087052	Stainless steel 1.4301	1
KA 25101	0250101052	Stainless steel 1.4301	1
KA 25125	0250125052	Stainless steel 1.4301	1

A cable drag chain requires two chain brackets.  
The U-shaped bracket offers two different fastening options.



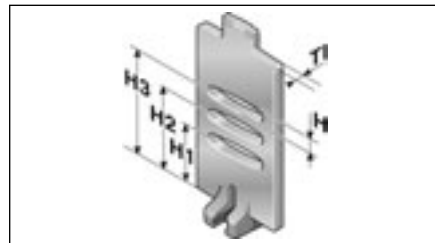
Type	A	B	D	G	H Ø	I
KA 25026 Female end	26.00	23.00	46.00	43.60	6.60	5.00
KA 25026 Male end	26.00	23.00	46.00	50.40	6.60	5.00
KA 25037 Female end	37.00	34.00	57.00	43.60	6.60	5.00
KA 25037 Male end	37.00	34.00	57.00	50.40	6.60	5.00
KA 25062 Female end	62.00	59.00	82.00	43.60	6.60	10.00
KA 25062 Male end	62.00	59.00	82.00	50.40	6.60	10.00
KA 25087 Female end	87.00	84.00	107.00	43.60	6.60	10.00
KA 25087 Male end	87.00	84.00	107.00	50.40	6.60	10.00
KA 25101 Female end	101.00	98.00	121.00	43.60	6.60	10.00
KA 25101 Male end	101.00	98.00	121.00	50.40	6.60	10.00
KA 25125 Female end	125.00	122.00	145.00	43.60	6.60	10.00
KA 25125 Male end	125.00	122.00	145.00	50.40	6.60	10.00

# MP 25 G - SafeLine

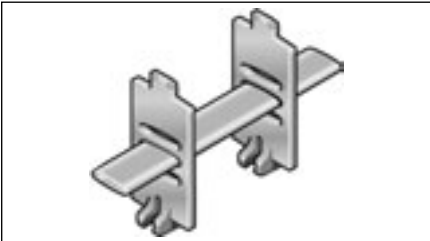
Separator	Type	Order no.	Description	Pack
	TR 25G	025000009200	Separator	1
	Lock grid spacing 2.50 mm			
	We recommend that separators are used if multiple round cables or conduits with differing diameters are to be installed. An offset configuration of the separators is advisable.			

Separator

Type	TI	H	Dimensions in mm		
			H1	H2	H3
TR 25G	2.00	2.50	8.30	12.80	17.3



Separator

Shelving system	Type	Order no.	Description	Width in mm	Pack
	RBT 037	100000003700	RBT 037 Shelf	37	1
	RBT 062	100000006200	RBT 062 Shelf	62	1
	RBT 086	100000008600	RBT 086 Shelf	86	1
	RBT 101	100000010100	RBT 101 Shelf	101	1
	RBT 125	100000012500	RBT 125 Shelf	125	1
	Lock grid spacing 2.50 mm				

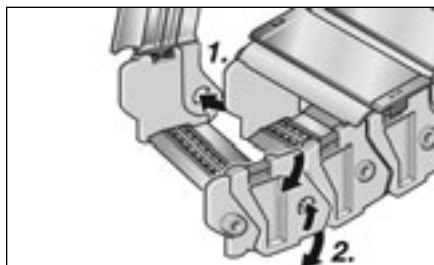
Shelving system

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 therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

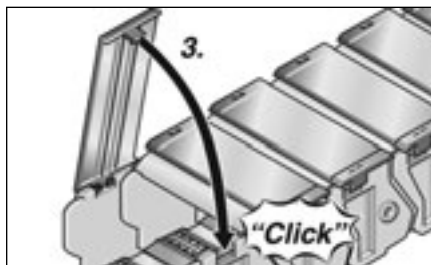


# MP 25 G - Accessories

## Assembly



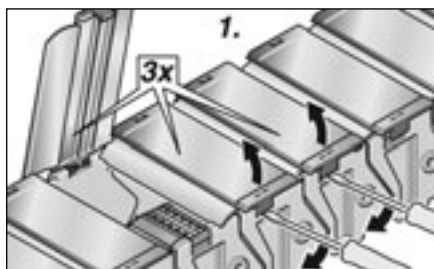
Step 1



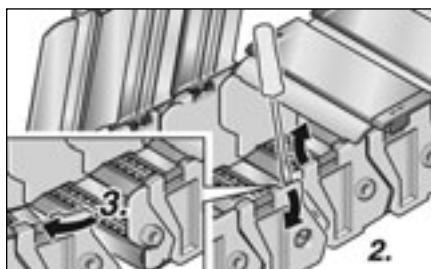
Step 2

The covers overlap with closed cable drag chains. Opening of the chain can only start from the end of the chain.

## Disassembly

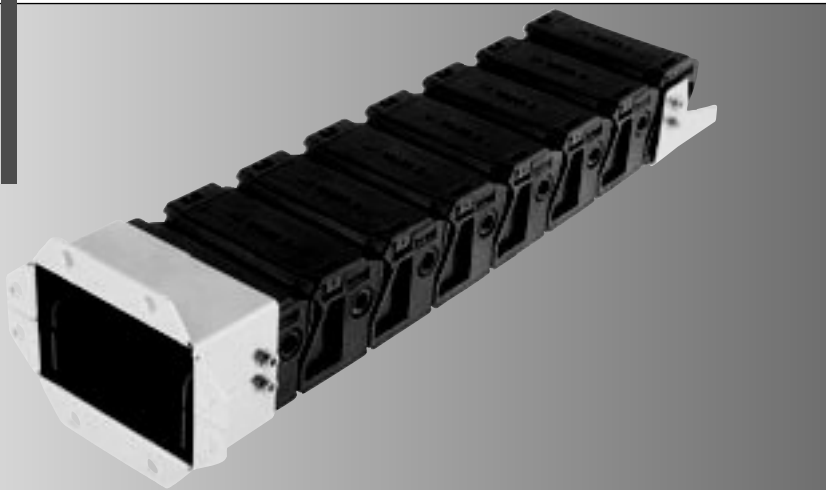


Step 1



Step 2

## CABLE DRAG CHAIN SYSTEMS



***SafeLine***

**MP 36 G**



# MP 36 G - SafeLine

## Order variants

Style (order code)																																																											
Configuration (order code)																																																											
Radius (order code)																																																											
in mm																																																											
Internal width (order code)																																																											
in mm																																																											
External width in mm																																																											
<table border="1"> <tr> <td>MP36 062</td> <td>82</td> <td>62</td> <td>062</td> <td>80</td> <td>080</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MP36 086</td> <td>106</td> <td>86</td> <td>086</td> <td>100</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MP36 102</td> <td>122</td> <td>102</td> <td>102</td> <td>125</td> <td>125</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MP36 125</td> <td>145</td> <td>125</td> <td>125</td> <td>150</td> <td>150</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>200</td> <td>200</td> <td></td> <td></td> <td>0</td> <td>9</td> </tr> </table>										MP36 062	82	62	062	80	080					MP36 086	106	86	086	100	100					MP36 102	122	102	102	125	125					MP36 125	145	125	125	150	150									200	200			0	9
MP36 062	82	62	062	80	080																																																						
MP36 086	106	86	086	100	100																																																						
MP36 102	122	102	102	125	125																																																						
MP36 125	145	125	125	150	150																																																						
				200	200			0	9																																																		
<table border="1"> <tr> <td>Order number:</td> <td>0360</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>0</td> </tr> </table>										Order number:	0360			0				0																																									
Order number:	0360			0				0																																																			

### Configuration:

0 crossbar every link; w/bias

### Style:

0 Standard (PA)  
9 Special version

### Sample order

0360 062 080 0000

Inside width = 62 mm

Radius = 80 mm

Configuration = 0

Style = 0

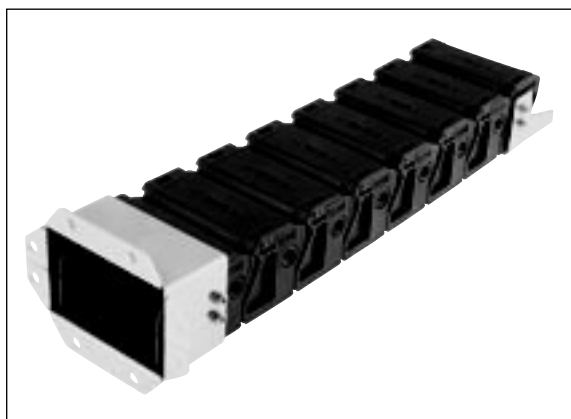
### Ideal operating conditions

- Compact dimensions with opening cover in inside bend
- Quiet operation
- High stability
- Flexible internal separation

### Alternative chain type

- MP 35 Open version

## Features



Folding cover for closed cable drag chains



Radii with medium bias (R) for all applications



Integratable separator for cable separation



Flange connection for closed cable drag chains



Plug-in shelf system for reliable cable guidance



ZL strain relief plate

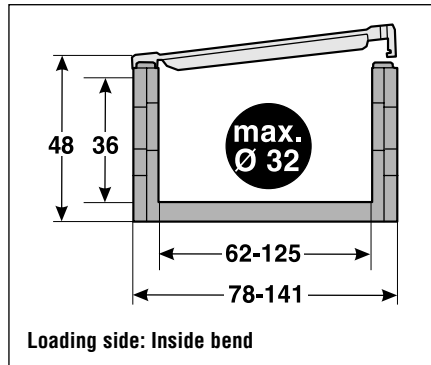


Chain bracket metal profile

# MP 36 G - SafeLine

## Technical data

### Chain link dimensions



### Material properties

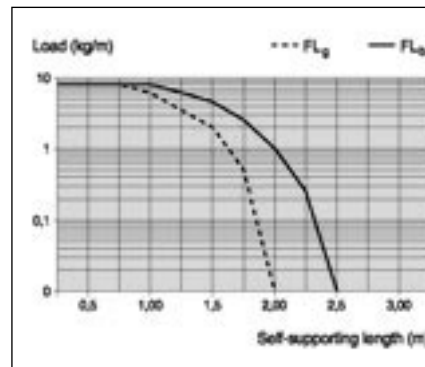
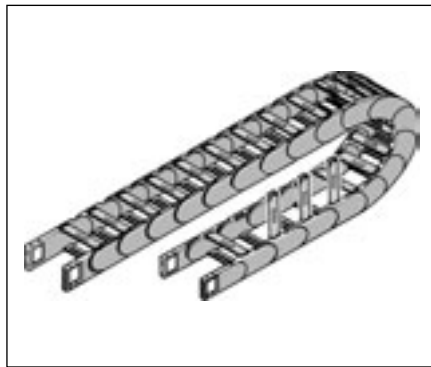
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 60 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 30 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 3 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 1 m  
 Speed, gliding,  $V_g$ : 3 m/s  
 Speed, self-supporting,  $V_s$ : 10 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 20 m/s<sup>2</sup>

### Unsupported length

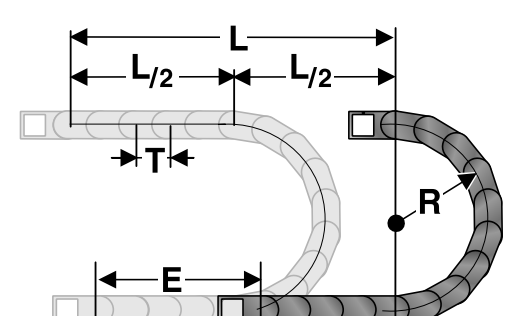


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>s</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

**Determining the chain length**

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

$\approx 1 \text{ m chain} = 25 \times 40 \text{ mm links}$

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

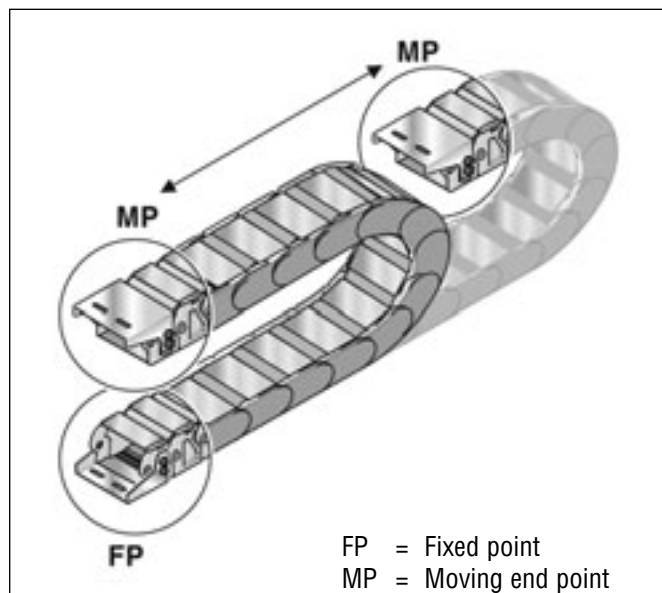
### Installation dimensions (in mm)

Radius R	80	100	125	150	200
Outside height of chain link ( $H_c$ )	48	48	48	48	48
Height of bend ( $H$ )	208	248	298	348	448
Height of moving end connection ( $H_{MA}$ )	160	200	250	300	400
Safety margin ( $S$ )	32	32	32	32	32
Installation height ( $H_g$ )	240	280	330	380	480
Arc projection ( $M_L$ )	144	164	189	214	264
Bend length ( $L_B$ )	367	429	508	586	743



# MP 36 G - SafeLine

## Chain bracket



### Chain bracket U-part



Top

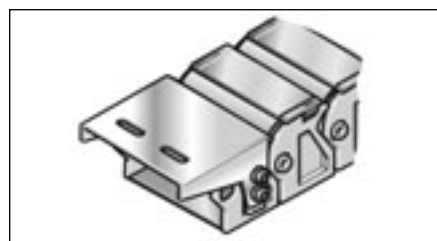


Bottom

### Chain bracket flange



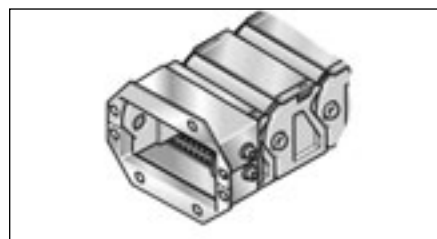
## Chain bracket U-part



Type	Order no.	Material	Pack
KA 36062	0360062050	Steel plate	1
KA 36086	0360086050	Steel plate	1
KA 36102	0360102050	Steel plate	1
KA 36125	0360125050	Steel plate	1
KA 36062	0360062052	Stainless steel 1.4301	1
KA 36086	0360086052	Stainless steel 1.4301	1
KA 36102	0360102052	Stainless steel 1.4301	1
KA 36125	0360125052	Stainless steel 1.4301	1

A cable drag chain requires two chain brackets.  
The U-shaped bracket offers two different fastening options.

## Chain bracket flange



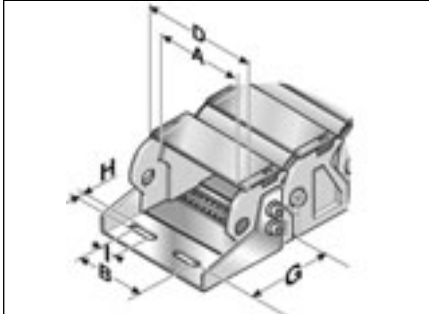
Type	Order no.	Material	Pack
FL 36062	0360062054	Steel plate	1
FL 36086	0360086054	Steel plate	1
FL 36102	0360102054	Steel plate	1
FL 36125	0360125054	Steel plate	1
FL 36062	0360062056	Stainless steel 1.4301	1
FL 36086	0360086056	Stainless steel 1.4301	1
FL 36102	0360102056	Stainless steel 1.4301	1
FL 36125	0360125056	Stainless steel 1.4301	1

A cable drag chain requires two chain brackets. The flange connection is divisible for the purposes of operation and re-installation. This design keeps the chain secured in the installed position.

# MP 36 G - SafeLine

## Chain bracket U-part

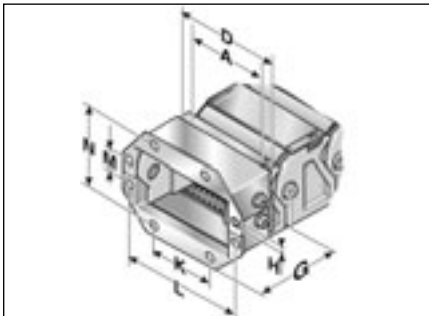
Dimensions in mm



Type	A	B	D	G	H Ø	I
KA 36062 Female end	62.00	53.90	80.90	55.60	6.60	15.00
KA 36062 Male end	62.00	53.90	80.90	64.40	6.60	15.00
KA 36086 Female end	86.00	77.90	104.90	55.60	6.60	15.00
KA 36086 Male end	86.00	77.90	104.90	64.40	6.60	15.00
KA 36102 Female end	102.00	93.90	120.90	55.60	6.60	15.00
KA 36102 Male end	102.00	93.90	120.90	64.40	6.60	15.00
KA 36125 Female end	125.00	116.90	143.90	55.60	6.60	15.00
KA 36125 Male end	125.00	116.90	143.90	64.40	6.60	15.00

## Chain bracket flange

Dimensions in mm



Type	A	D	G	H Ø	K	L	M	N
FL 36062 Female end	62.00	81.00	51.60	7.00	40.00	97.90	18.00	68.50
FL 36062 Male end	62.00	81.00	60.40	7.00	40.00	97.90	18.00	68.50
FL 36086 Female end	86.00	105.00	51.60	7.00	64.00	121.90	18.00	68.50
FL 36086 Male end	86.00	105.00	60.40	7.00	64.00	121.90	18.00	68.50
FL 36102 Female end	102.00	121.00	51.60	7.00	80.00	137.90	18.00	68.50
FL 36102 Male end	102.00	121.00	60.40	7.00	80.00	137.90	18.00	68.50
FL 36125 Female end	125.00	144.00	51.60	7.00	103.00	160.90	18.00	68.50
FL 36125 Male end	125.00	144.00	60.40	7.00	103.00	160.90	18.00	68.50

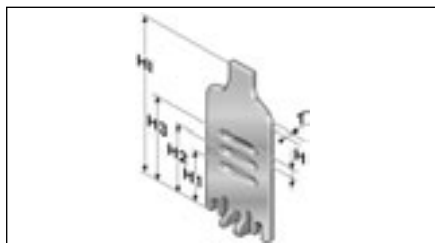


# MP 36 G - Accessories

Separator	Type	Order no.	Description	Pack
	TR 36G	036000009200	Separator	1
	Lock grid spacing 2.50 mm			


Separator

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



Separator

Type	Dimensions in mm					
	TI	H	H1	H2	H3	H4
TR 36G	2.50	2.50	13.50	19.50	25.50	36.50

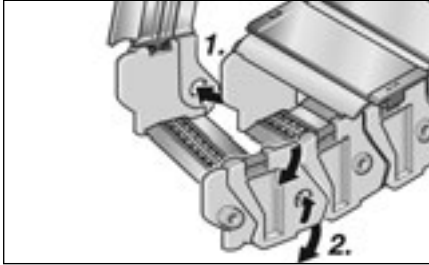
Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 062	100000006200	RB 062 Shelf	62	1
	RB 086	100000008600	RB 086 Shelf	86	1
	RB 101	100000010100	RB 101 Shelf	101	1
	RB 125	100000012500	RB 125 Shelf	125	1
	Lock grid spacing 2.50 mm				

Shelving system

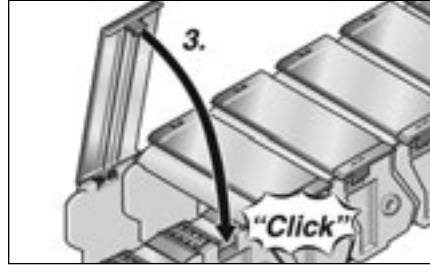
The shelf must be used with a minimum of two separators to create a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

# MP 36 G - SafeLine

## Assembly



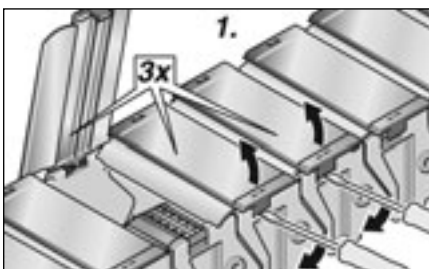
Step 1



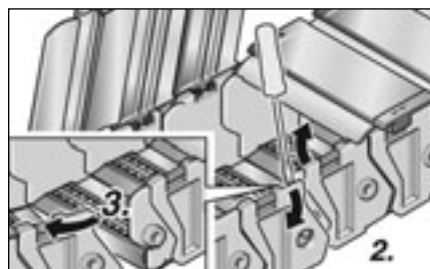
Step 2

The covers overlap with closed cable drag chains. Opening of the chain can only start from the chain's end.

## Disassembly



Step 1



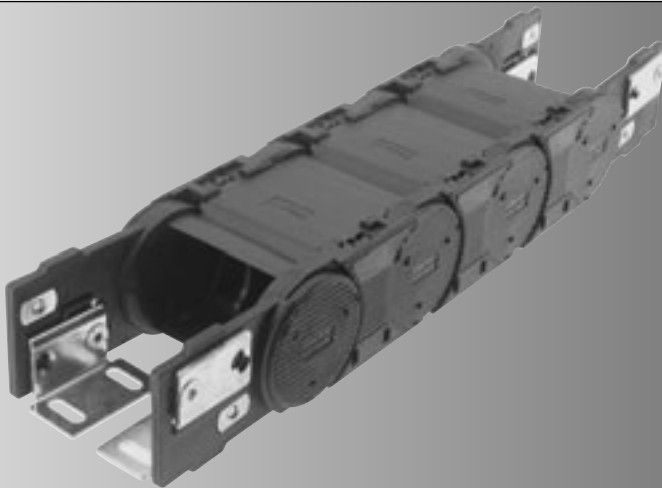
Step 2



## MP 36 G - SafeLine



## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 43 G**



# MP 43 G - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP43 062	95	62	062						
MP43 084	117	84	084	125	125				
MP43 105	138	105	105	150	150			0	
MP43 144	177	144	144	200	200			1	0
MP43 182	215	182	182	250	250			9	9

Order number:	0430			0			0
---------------	------	--	--	---	--	--	---

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0430 062 125 0000

Inside width = 62 mm  
 Radius = 125 mm  
 Configuration = 0  
 Style = 0

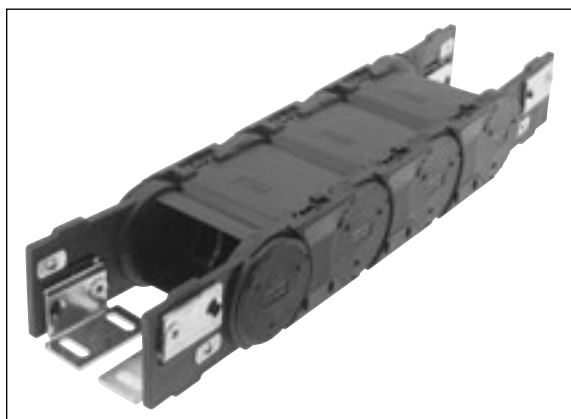
### Ideal operating conditions

- Compact dimensions with opening cover on both sides
- Quiet operation
- High stability
- Flexible internal separation

### Alternative chain type

- MP 44 Open version
- MP 36 G / MP 65 G  
 Flange connection

## Features



Chain bracket with variably positionable metal bracket



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Plug-in shelf system for reliable cable guidance

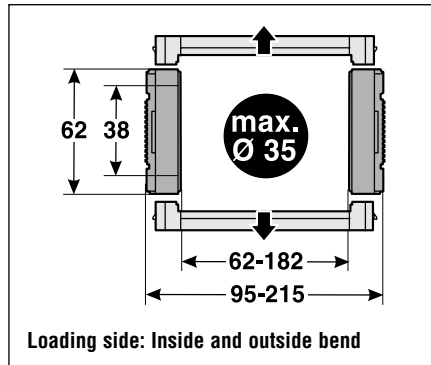


ZL strain relief plate

# MP 43 G - MultiLine

## Technical data

### Chain link dimensions



### Material properties

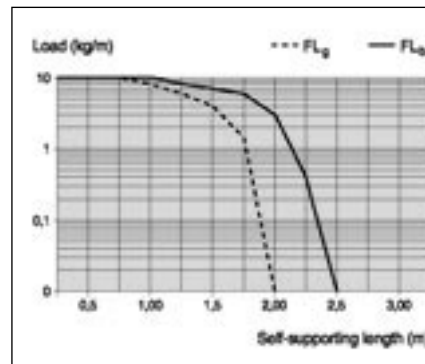
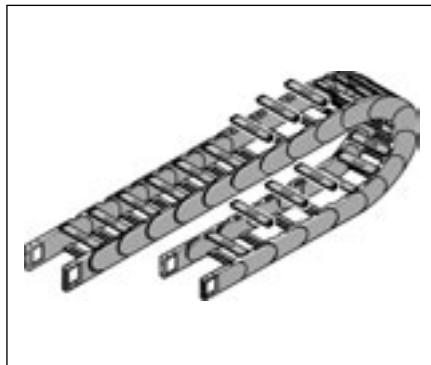
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 50 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 40 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 3 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 1 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 15 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 20 m/s<sup>2</sup>

### Unsupported length



#### FL<sub>g</sub>:

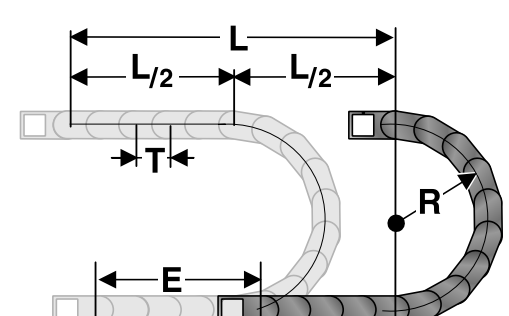
Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

#### FL<sub>s</sub>:

Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>s</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



$L$  = Travel distance  
 $R$  = Radius  
 $T$  = Pitch  
 $E$  = Distance between entry point and middle of travel distance

#### Determining the chain length

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

≈ 1 m chain = 13 x 75.5 mm links

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

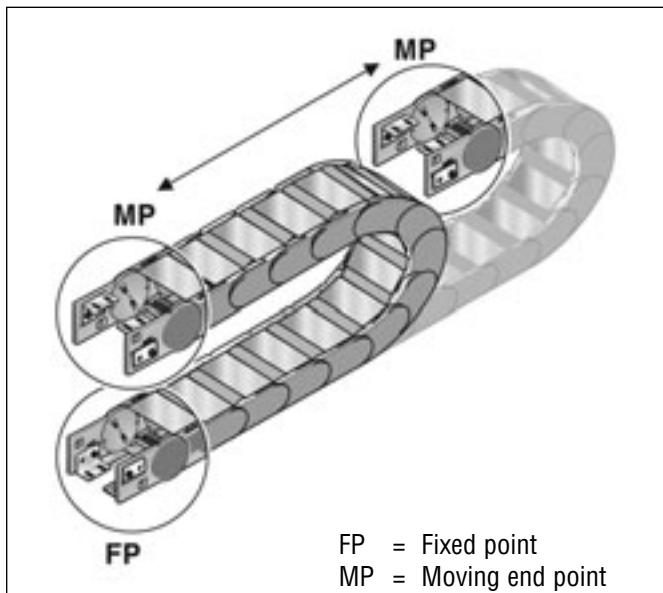
### Installation dimensions (in mm)

Radius R	125	150	200	250
Outside height of chain link ( $H_e$ )	62	62	62	62
Height of bend ( $H$ )	312	362	462	562
Height of moving end connection ( $H_{MA}$ )	250	300	400	500
Safety margin with bias ( $S_v$ )	38	38	38	38
Installation height with bias ( $H_{sv}$ )	350	400	500	600
Safety margin without bias ( $S_k$ )	13	13	13	13
Installation height without bias ( $H_{sk}$ )	325	375	475	575
Arc projection ( $M_L$ )	232	257	307	357
Bend length ( $L_B$ )	565	644	801	958



# MP 43 G - MultiLine

## Chain bracket



## Chain bracket



Bottom / outside



Bottom / inside



Top / outside



Top / inside

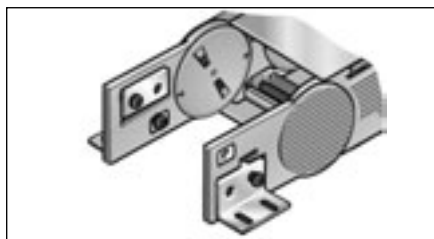
## Chain bracket

Type

Order no.

Material

Pack



KA 44

0440000050

Steel plate

1

KA 44

0440000052

Stainless steel 1.4301

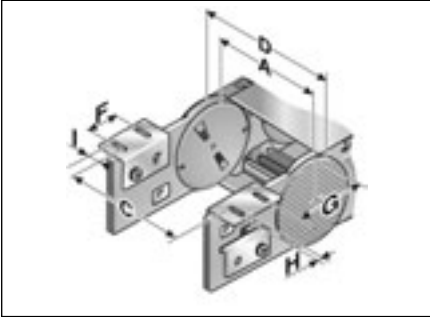
1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires two chain brackets. The brackets should be fastened with M6 screws.

# MP 43 G - MultiLine

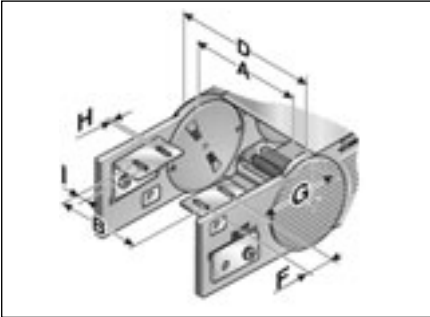
Chain bracket

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 44	62.00	100.50	96.00	32.00	43.20	6.50	12.50
KA 44	84.00	122.50	118.00	32.00	43.20	6.50	12.50
KA 44	105.00	143.50	139.00	32.00	43.20	6.50	12.50
KA 44	144.00	182.50	177.00	32.00	43.20	6.50	12.50
KA 44	182.00	220.50	215.00	32.00	43.20	6.50	12.50



Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 44	62.00	47.50	96.00	32.00	43.20	6.50	12.50
KA 44	84.00	69.50	118.00	32.00	43.20	6.50	12.50
KA 44	105.00	90.50	139.00	32.00	43.20	6.50	12.50
KA 44	144.00	129.50	177.00	32.00	43.20	6.50	12.50
KA 44	182.00	167.50	215.00	32.00	43.20	6.50	12.50

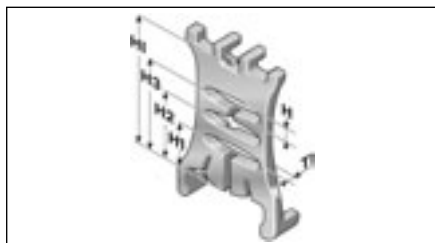


# MP 43 G - Accessories


Separator	Type	Order no.	Description	Pack
	TR 43	0430000090	Separator	1
	Lock grid spacing 1.60 mm			
	We recommend the use of movable separators if multiple round cables or tubes with differing diameters are to be installed. An offset configuration of the separators is advisable. When the frame ridge is opened, the separator is guaranteed to remain solidly mounted on one side.			

Separator

Type	Dimensions in mm					
	TI	H	H1	H2	H3	HI
TR 43	4.00	4.30	12.30	19.50	26.50	38.00



Separator

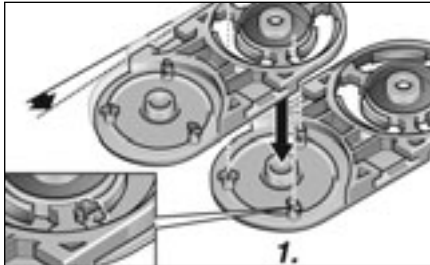
Shelving system	Type	Order no.	Description	Width in mm	Pack
	RB 031	100000003100	RB 031 Shelf	31	1
	RB 048	100000004800	RB 048 Shelf	48	1
	RB 070	100000007000	RB 070 Shelf	70	1
	RB 092	100000009200	RB 092 Shelf	92	1
	RB 128	100000012800	RB 128 Shelf	128	1
	RB 167	100000016700	RB 167 Shelf	167	1
	Lock grid spacing 1.60 mm				

Shelving system

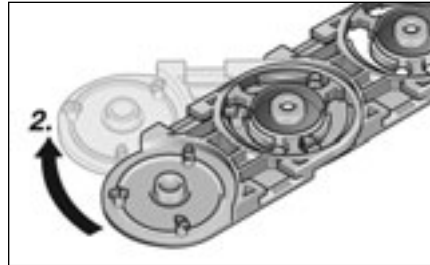
The shelf must be used with a minimum of two separators to create a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, whilst also avoiding excessive friction. The shelves are matched to the available chain widths.

# MP 43 G - MultiLine

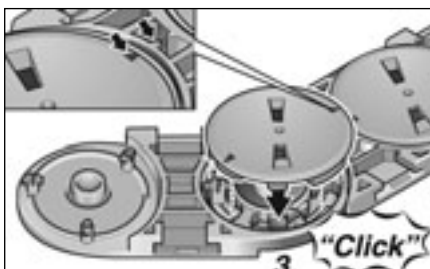
## Assembly



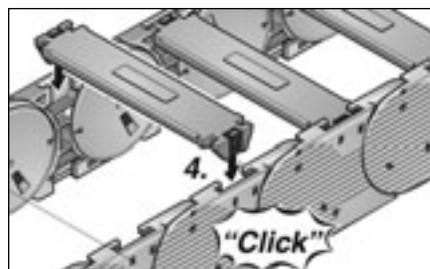
Step 1



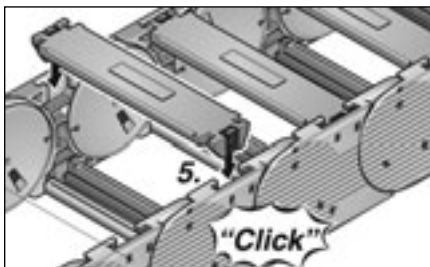
Step 2



Step 3

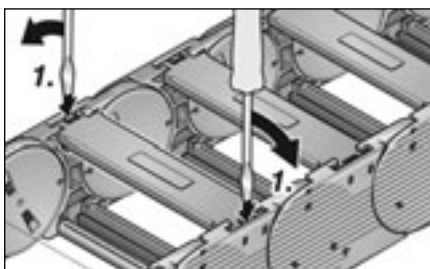


Step 4

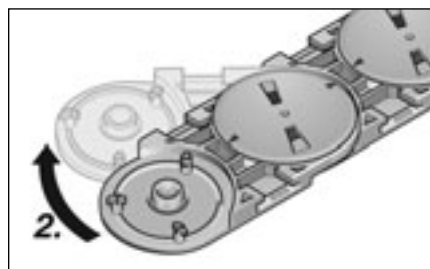


Step 5

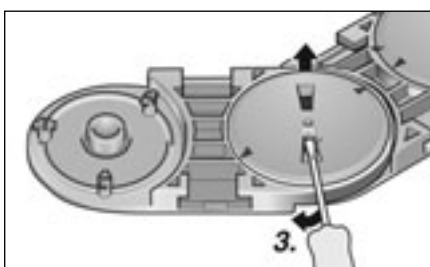
## Disassembly



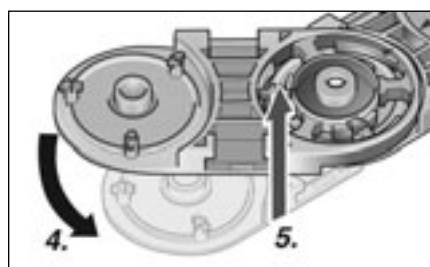
Step 1



Step 2



Step 3



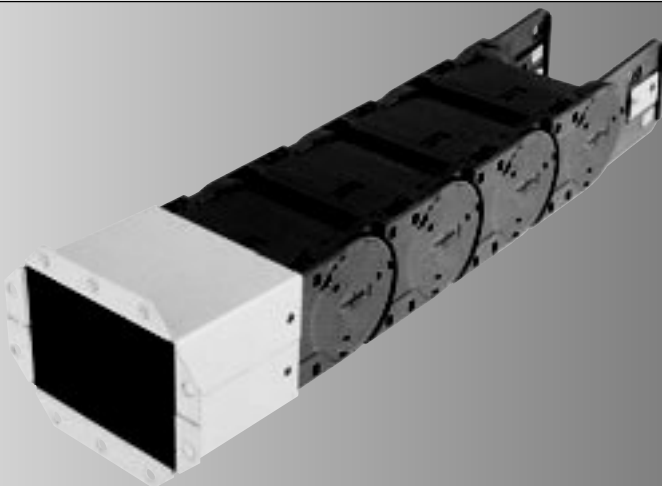
Step 4



## MP 43 G - MultiLine



## CABLE DRAG CHAIN SYSTEMS



***MultiLine***

**MP 65 G**



# MP 65 G - MultiLine

## Order variants

Style (order code)									
Configuration (order code)									
Radius (order code)									
in mm									
Internal width (order code)									
in mm									
External width									
in mm									
MP65 084	118	84	084	200	200	0			
MP65 105	139	105	105	240	240	1			0
MP65 144	178	144	144	280	280	9			9
				350	350				
Order number: 0650									

### Configuration:

- 0 crossbar every link; w/bias
- 1 crossbar every link; w/o bias
- 9 Customer order

### Style:

- 0 Standard (PA)
- 9 Special version

### Sample order

0650 084 200 0000

Inside width = 84 mm

Radius = 200 mm

Configuration = 0

Style = 0

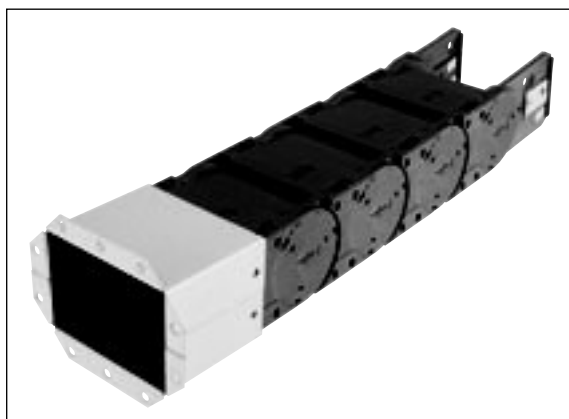
### Ideal operating conditions

- Compact dimensions with opening cover on both sides
- Quiet operation
- High stability
- Flexible internal separation

### Alternative chain type

- MP 66 Open version

## Features



Frame ridges / covers in inside and outside bend can be removed



Radii with or without bias (RK/RV)



Flange connection for closed cable drag chains



Plug-in shelf system for reliable cable guidance

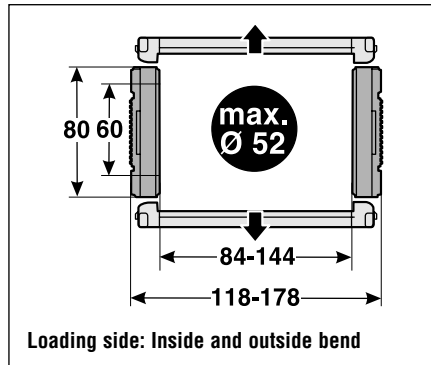


ZL strain relief plate

# MP 65 G - MultiLine

## Technical data

### Chain link dimensions



### Material properties

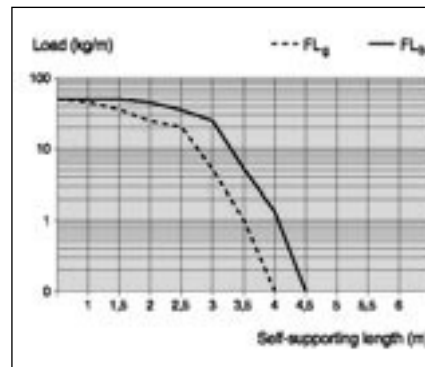
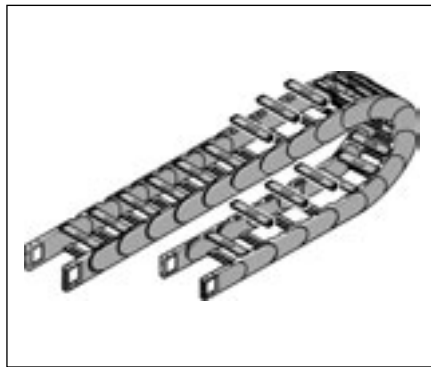
Service temperature: -30 to +120 °C  
 Gliding friction factor: 0.30  
 Static friction factor: 0.45  
 Fire classification: in conformity with UL94 HB

Other material properties on request

### Technical specifications

Travel distance, gliding,  $L_g$ : 60 m  
 Travel distance, self-supporting,  $L_s$ : see diagram  
 Travel distance, vertical, hanging,  $L_{vh}$ : 50 m  
 Travel distance, vertical, upright,  $L_{vu}$ : 5 m  
 Rotated 90°, self-supporting,  $L_{sg}$ : 2 m  
 Speed, gliding,  $V_g$ : 5 m/s  
 Speed, self-supporting,  $V_s$ : 15 m/s  
 Acceleration, gliding,  $a_g$ : 15 m/s<sup>2</sup>  
 Acceleration, self-supporting,  $a_s$ : 25 m/s<sup>2</sup>

### Unsupported length

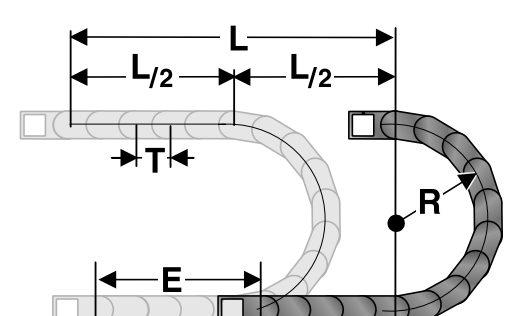


**FL<sub>g</sub>:**  
 Ideal installation situation for high stresses at the limit of the max. travel parameters. In this range the chain upper run is still biased, straight or has a max. sag of 10 – 50 mm depending on the type of chain.

**FL<sub>b</sub>:**  
 Satisfactory installation position for many applications working in the lower to middle range of the max. travel parameters. Depending on the chain type, the sag of the chain upper run is > 10 – 50 mm but less than the max. sag.

If the sag is greater than FL<sub>b</sub>, the arrangement is unsuitable and should be avoided. Please choose a more stable murrplastik cable drag chain.

### Determining the chain length



**Determining the chain length**

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

≈ 1 m chain = 11 x 91.5 mm links

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

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

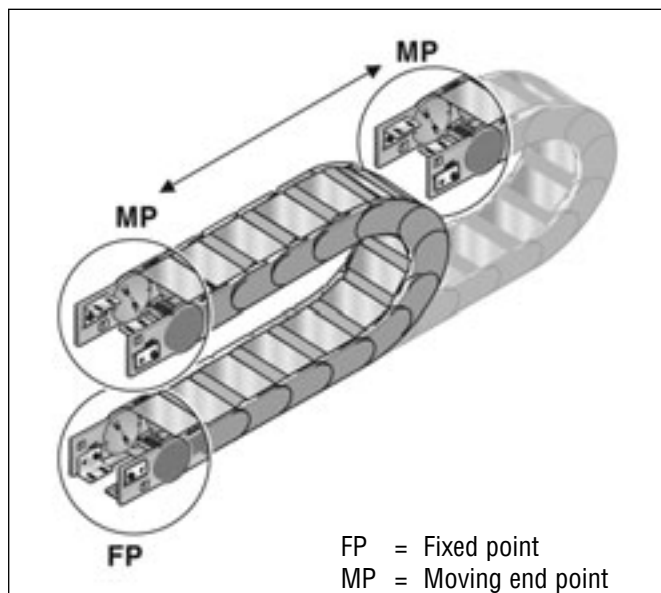
### Installation dimensions (in mm)

Radius R	200	240	280	350
Outside height of chain link ( $H_e$ )	80	80	80	80
Height of bend (H)	480	560	640	780
Height of moving end connection ( $H_{MA}$ )	400	480	560	700
Safety margin with bias ( $S_v$ )	50	50	50	50
Installation height with bias ( $H_{sv}$ )	530	610	690	830
Safety margin without bias ( $S_k$ )	15	15	15	15
Installation height without bias ( $H_{sk}$ )	495	575	655	795
Arc projection ( $M_L$ )	332	372	412	482
Bend length ( $L_B$ )	845	971	1096	1316



# MP 65 G - MultiLine

## Chain bracket



### Chain bracket flange



### Chain bracket elbow fitting



Top / outside



Bottom / outside

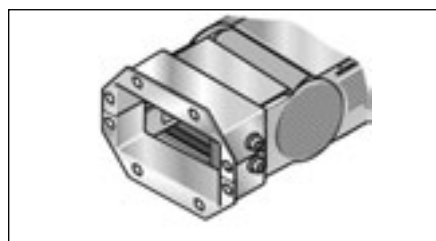


Top / inside



Bottom / inside

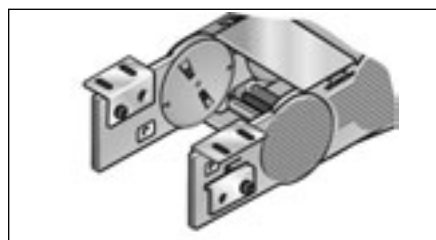
### Chain bracket flange



Type	Order no.	Material	Pack
FL 082	0650000070	Steel plate	1
FL 107	0650000072	Steel plate	1
FL 142	0650000074	Steel plate	1
FL 082	0650000080	Stainless steel 1.4301	1
FL 107	0650000082	Stainless steel 1.4301	1
FL 142	0650000084	Stainless steel 1.4301	1

A cable drag chain requires two chain brackets. The flange connection is divisible for the purposes of operation and re-installation. This design keeps the chain secured in the installed position.

### Chain bracket elbow fitting



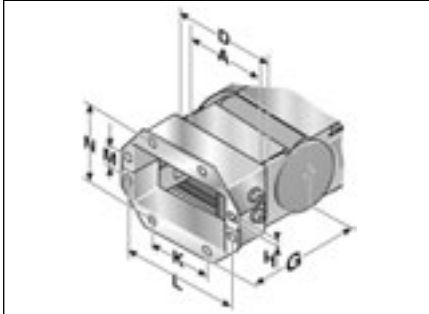
Type	Order no.	Material	Pack
KA 66	0660000050	Steel plate	1
KA 66	0660000060	Stainless steel 1.4301	1

There are several options as regarding the chain bracket. The fixed-point bracket (inside/bottom) and the moving end bracket (inside/top) are supplied as standard. However, any other combination can be supplied upon request. The chain bracket is fastened at the end like a side link. This enables the chain to move right up to the bracket. Each chain requires two chain brackets. The brackets should be fastened with M6 screws.

# MP 65 G - MultiLine

## Chain bracket flange

Dimensions in mm

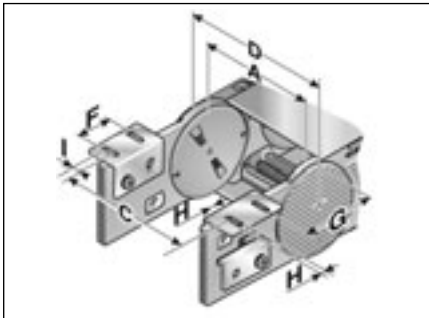


Flange

Type	A	D	G	H Ø	K	L	M	N
FL 082	86.00	105.00	60.40	7.00	78.00	141.50	40.00	105.00
FL 107	102.00	121.00	60.40	7.00	100.00	163.50	40.00	105.00
FL 142	125.00	144.00	60.40	7.00	138.00	201.50	40.00	105.00

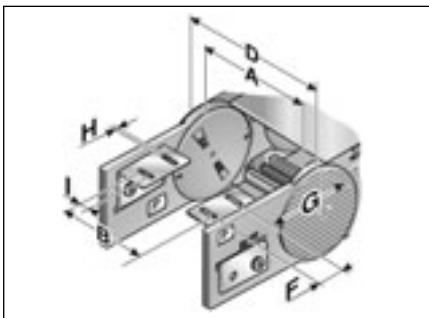
## Chain bracket elbow fitting

Dimensions in mm



Bottom and top / outside

Type	A	C	D	F	G	H Ø	I
KA 66	84.00	135.00	117.50	45.00	50.50	9.00	10.00
KA 66	105.00	156.00	139.00	45.00	50.50	9.00	10.00
KA 66	144.00	195.00	177.50	45.00	50.50	9.00	10.00



Bottom and top / inside

Type	A	B	D	F	G	H Ø	I
KA 66	84.00	67.00	117.50	45.00	50.50	9.00	10.00
KA 66	105.00	88.00	139.00	45.00	50.50	9.00	10.00
KA 66	144.00	127.00	177.50	45.00	50.50	9.00	10.00



# MP 65 G - Accessories

## Separator



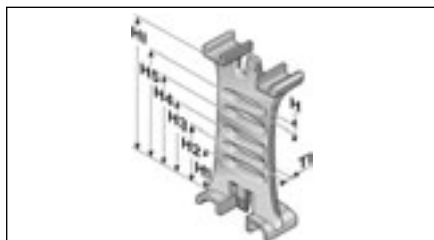
Separator

Type	Order no.	Description	Pack
------	-----------	-------------	------

TV 66	066000009000	Separator	1
-------	--------------	-----------	---

Lock grid spacing 1.60 mm

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

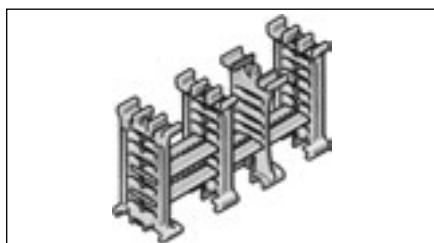


Separator

Type	Dimensions in mm							
	TI	H	H1	H2	H3	H4	H5	HI

TV 66	3.50	4.40	18.00	25.10	32.20	39.30	46.40	60.00
-------	------	------	-------	-------	-------	-------	-------	-------

## Shelving system



Shelving system

Type	Order no.	Description	Width in mm	Pack
------	-----------	-------------	-------------	------

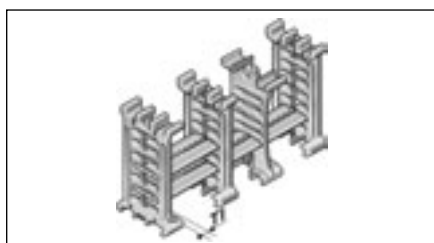
RB 031	100000003100	RB 031 Shelf	31	1
RB 048	100000004800	RB 048 Shelf	48	1
RB 070	100000007000	RB 070 Shelf	70	1
RB 092	100000009200	RB 092 Shelf	92	1
RB 128	100000012800	RB 128 Shelf	128	1
RT 66	1000900100	RT 66 Shelf support incl. pin		1

Lock grid spacing 1.60 mm

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

Type	Dimensions in mm	
	TI	

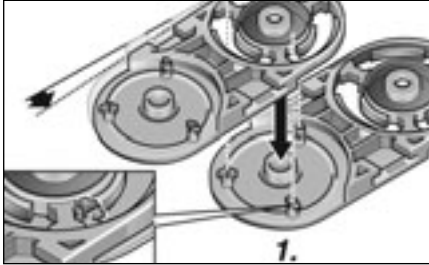
RT 66	6.50	
-------	------	--



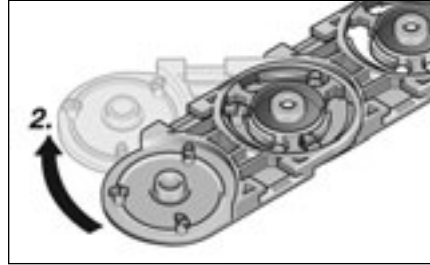
Shelving system

# MP 65 G - MultiLine

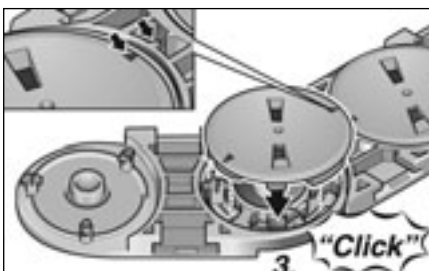
## Assembly



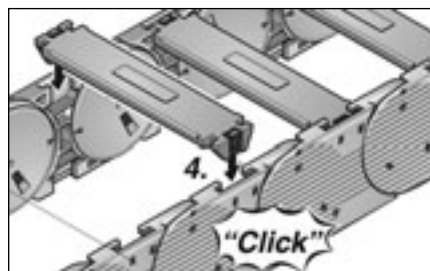
Step 1



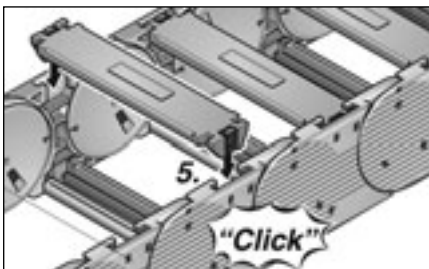
Step 2



Step 3

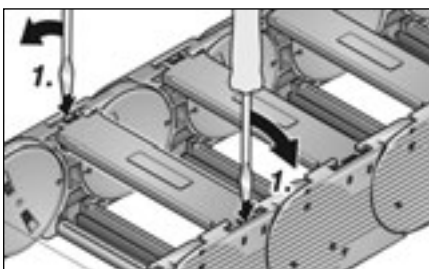


Step 4

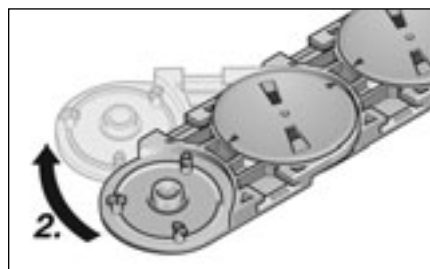


Step 5

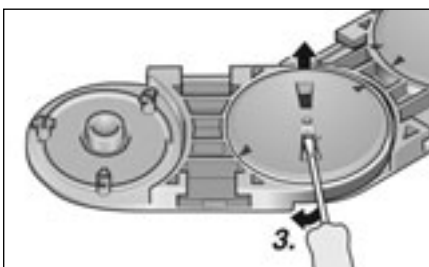
## Disassembly



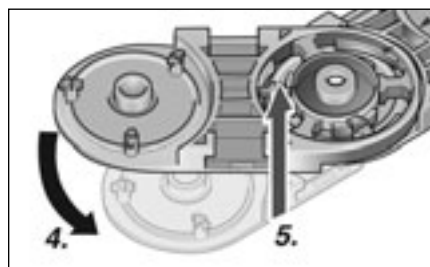
Step 1



Step 2



Step 3



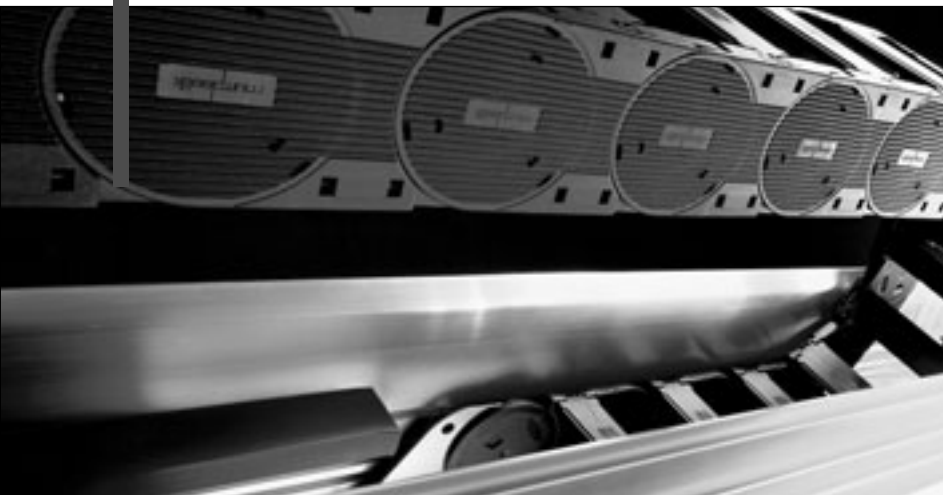
Step 4



## MP 65 G - MultiLine



## VARIABLE ALUMINIUM GUIDE CHANNEL SYSTEMS





## Variable guide channel systems

**We steer you in the right direction!**

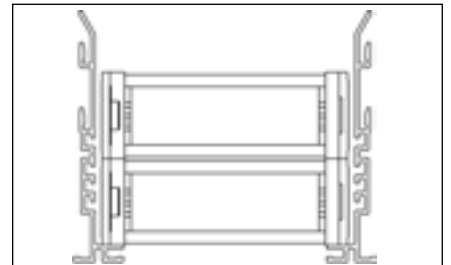


Guide channel systems for cable drag chains double up as stacking if short travel distances are involved and as guides if long travel distances are involved. If guide channels are not used, the chain links cannot be guaranteed to stack properly. This is especially true with large bend radii as there is no lateral guide in this

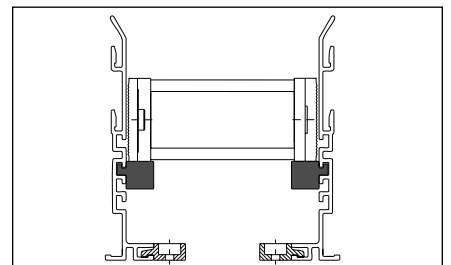
case. In most applications the cables enter the chain at a position central to the travel. This results in the shortest length of chain. In this case the chain is about half as long as the travel distance. If the chain is moved to the left (see illustration on page 285) it simply rolls in the channel. If it is moved to the right, then it

stacks on top of itself once the unsupported length has been exceeded. If the travel veers further to the right, then the glide rail adjusts the height difference of the chain link, thus ensuring low friction.

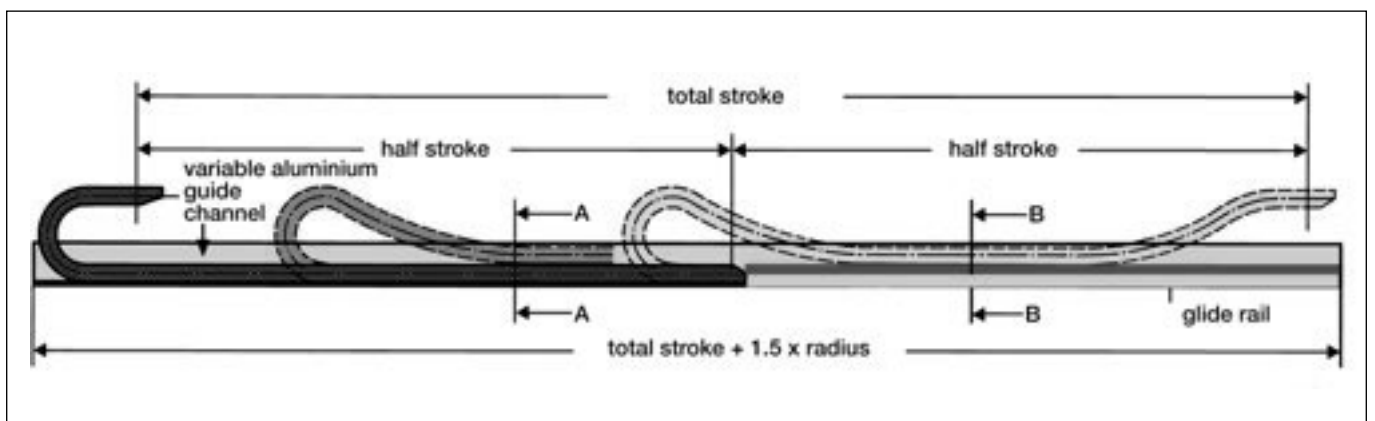
As such, optimal running of the cable drag chain is guaranteed.



Section A-A: The cable drag chain glides on itself.

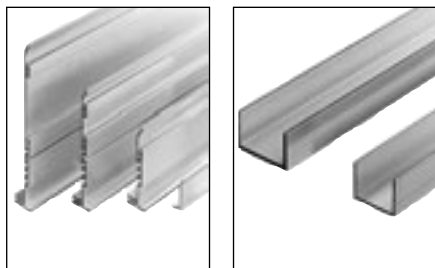


Section B-B: The cable drag chain runs on the glide rail.



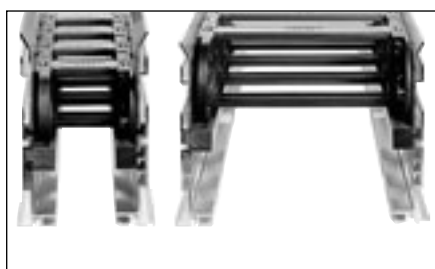


# System advantages of VAW



## Compatible aluminium profile

The variable aluminium guide channel systems consist of different aluminium sections. Each one is structurally tailored to the murrplastik cable drag chain systems.



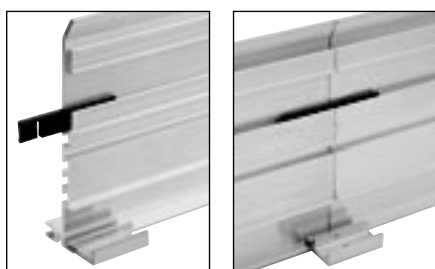
## Variable widths and heights of chains

The aluminium guide channel sections fit different chain types and widths. They can be modified quickly on site.



## Small footprint required for the variable aluminium guide channel systems

Space is saved when using the variable aluminium guide channel systems. The complete system is barely wider than the chain itself.



## Accurate alignment

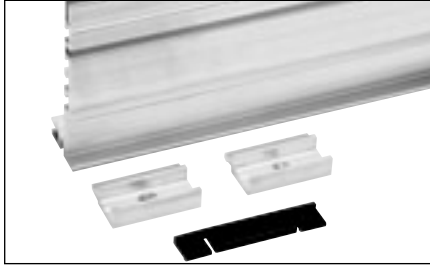
No screwing or welding is required for the individual sections in the variable aluminium guide channel system. The channel sections are perfectly aligned thanks to special plastic connectors which are placed in a groove specially provided for that purpose.



## Fast installation

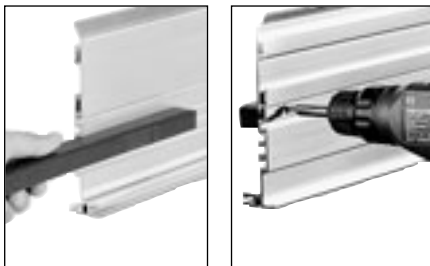
The variable aluminium guide channel systems are fixed in place with special clamping pieces. The mounting holes of the clamping pieces are used as drill templates. The clamping pieces double up as stacking for the chain brackets. The clamping pieces should be mounted on the inside of the guide channel. It is also advisable to fit additional clamping pieces on the outside of the guide channel.

# System advantages of VAW



## Installation set included

The correct quantity of parts required for joining and mounting is delivered with all variable aluminium guide channel systems. The parts are included in the channel system price.



## Simple handling

The glide rail is simply slid into the guide channel section. Securing them into position only requires a screw in the first and last guide rail.

A variable aluminium guide channel system is required when the self-supporting length is exceeded.



## New: VAW-MT

The use of the guide channel middle section allows cable drag chains of similar and varying sizes to run parallel and also independently of each other.

The cable drag chains are securely separated from each other.



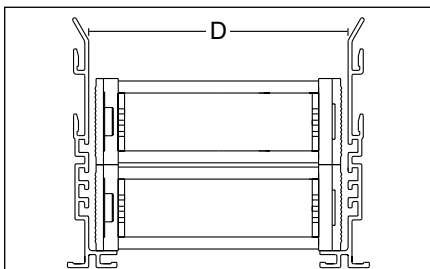
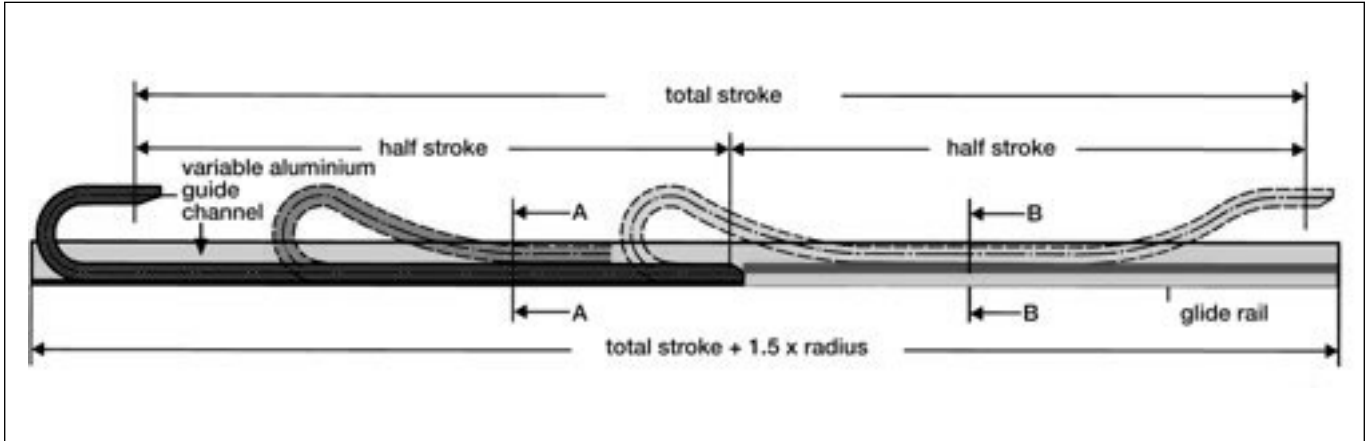
## Low noise level

A level surface for the chain to run on is created by the T-slot in the glide rail. This ensures that the cable drag chain systems run smoothly. The noise level is decreased.

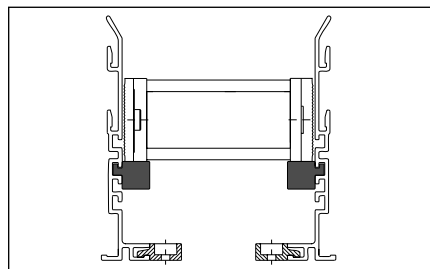


## Cost effective

The use of standard components saves cost in this case. Up to 70 % cheaper than conventional systems.

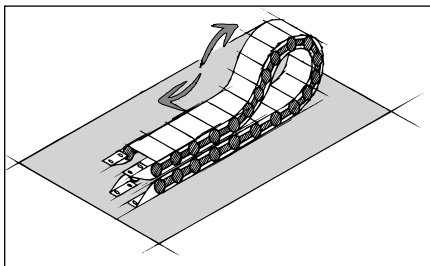


Section A-A: The cable drag chain glides on itself.



Section B-B: The cable drag chain runs on the glide section.

## Lowered moving end bracket



With longer travel distances it may be advisable in some cases 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 consult our engineers.

## Selection criteria

Information on the following parameters is required for the layout of a variable aluminium guide channel system:

- Cable drag chain type (width, radius, installation)
- Travel distance
- Items carried or weight per meter
- Speed of travel
- Acceleration/deceleration
- Lateral acceleration yes/no
- Environmental influences

For detailed information see pages 290 - 296.



## Determining the length of the variable aluminium guide channel system

It is advisable to use a guide channel system for the entire travel distance.

If the cable entry is at the centre of the travel distance, then a glide rail is also required for half of the travel distance.

### Example:

Travel distance: 20,000 mm  
 Entry point: Centre  
 Chain type: MP 35086 R 100 without prestress  
 with 176 links  
 = 10,208 mm

**20 m guide channel VAW 80106**

**10 m glide rail GSP 20/20**

## Installation guidelines

A level surface is required to install the variable aluminium guide channel. The channel elements (standard 2 m) are arranged one after the other. The guide channels are connected to each other on the outside contour by means of longitudinal connectors. This eliminates any offset and impact. The method of assembly also prevents any inherent deformation of the channel.

The distance between the two side walls (D) of the guide channels should be the chain outside width + 3 to 10 mm (dependent on the

type of chain). Clamping pieces are used to secure the guide channel sections to the base construction (e.g. base or support arms).

The sections should be clamped from the inside, but from the outside as well if necessary. The holes in the clamping pieces are used as drill templates. They are easily accessible with a hand drill. If the unsupported area of the cable drag chain is exceeded, then a glide rail is required for height adjustment on the guide channel side where the chain upper run cannot

glide on the chain lower run (see Section B-B).

The GSP glide rail does not require any time-consuming screwing or adjusting. Depending on the type of chain, the glide rail section is inserted into the guide channel groove provided. The guide along the full length of the channel (T-slot) provides an even surface. This enables the chain system to run smoothly, even at high travel speeds.



# Selecting self-supporting variable guide channels

## Which guide channel should I use and when?

### Variable in the chain widths and heights

The basic idea behind the VAW variable aluminium guide channel system was to develop a section that would fit several types and

widths of cable drag chains. In addition, the whole installation procedure was to be as simple as possible. The system consists of aluminium sections. Each section contains various grooves which can accommodate gliding rails. The type

of cable drag chain determines into which groove the glide rail must be inserted.

The table below indicates which variable guide channel system is suitable for which type of cable drag chain.

EFK MP...	Inside width	Radius R	Unsupported	Article number Guide channel	Guide channel fastening with distance fixing plate	Article number Fastening
10	—	—	—			
14	16	All	VAW 25	111410190700	DBP 14016	111212220000
	20	All	VAW 25	111410190700	DBP 14016/18018	111212240000
	30	All	VAW 25	111410190700	DBP 14030/18025	111212260000
	40	All	VAW 25	111410190700	DBP 14040/18037	111212280000
15	16	All	VAW 25	111410190700	DBP 14016	111212220000
	20	All	VAW 25	111410190700	DBP 14016/18018	111212240000
	30	All	VAW 25	111410190700	DBP 14030/18025	111212260000
	40	All	VAW 25	111410190700	DBP 14040/18037	111212280000
18	18	All	VAW 25	111410190700	DBP 14016/18018	111212240000
	25	All	VAW 25	111410190700	DBP 14030/18025	111212260000
	37	All	VAW 25	111410190700	DBP 14040/18037	111212280000
	50	All	VAW 25	111410190700	DBP 14050/18050	111212300000
	70	All	VAW 25	111410190700	DBP 18070	111212320000
2000	20	All	VAW 25	111410190700	DBP 14016	111212220000
	25	All	VAW 25	111410190700	DBP 14030/18025	111212260000
3001	26	All	VAW 35	111420100700	DBP 3001	111212100000
3002	37	All	VAW 35	111420100700	DBP 3002	111212120000
3002.5	56	All	VAW 35	111420100700	DBP 3002.5	111212130000
3003	62	All	VAW 35	111420100700	DBP 3003/35062	111212140000
3003.5	76	All	VAW 35	111420100700	DBP 3003.5	111212150000
3004	87	All	VAW 35	111420100700	DBP 3004/35086	111212160000
3005	101	All	VAW 35	111420100700	DBP 3005/35102	111212180000
26026	26	All	VAW 35	111420100700	DBP 3001	111212100000
26037	37	All	VAW 35	111420100700	DBP 3002	111212120000
26062	62	All	VAW 35	111420100700	DBP 3003/35062	111212140000
26087	87	All	VAW 35	111420100700	DBP 3004/35086	111212160000
26101	101	All	VAW 35	111420100700	DBP 3005/35102	111212180000
26125	125	All	VAW 35	111420100700	2 x DBP 3001 for internal clamping	111212100000
25026 G	26	All	VAW 35	111420100700	DBP 3001	111212100000

# Selecting self-supporting variable guide channels



EFK MP...	Inside width	Radius R	Unsupported	Article number Guide channel	Guide channel fastening with distance fixing plate	Article number Fastening
25037 G	37	All	VAW 35	111420100700	DBP 3002	111212120000
25062 G	62	All	VAW 35	111420100700	DBP 3003/35062	111212140000
25087 G	87	All	VAW 35	111420100700	DBP 3004/35086	111212160000
25101 G	101	All	VAW 35	111420100700	DBP 3005/35102	111212180000
25125 G	125	All	VAW 35	111420100700	2 x DBP 3001 for internal clamping	111212100000
32	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
35	62	All	VAW 35	111420100700	DBP 3003/35062	111212140000
35	86	All	VAW 35	111420100700	DBP 3004/35086	111212160000
35	102	All	VAW 35	111420100700	DBP 3005/35102	111212180000
35	125	All	VAW 35	111420100700	2 x DBP 3001 for internal clamping	111212100000
35	150	All	VAW 35	111420100700	2 x DBP 3001 for internal clamping	111212100000
36062 G	62	All	VAW 35	111420100700	DBP 3003/35062	111212140000
36086 G	86	All	VAW 35	111420100700	DBP 3004/35086	111212160000
36102 G	102	All	VAW 35	111420100700	DBP 3005/35102	111212180000
36125 G	125	All	VAW 35	111420100700	2 x DBP 3001 for internal clamping	111212100000
44	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
43 G	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
42 U	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
41	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
52	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
66	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
65 G	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
62	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
72	All	All	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000
102	All	All	VAW 122	111440100700	KL 50	111210300000



# Selecting gliding variable guide channels

EFK MP...	Inside width	Radius R	VAW gliding	Article number Guide channel	Guide channel fastening with	Article number Fastening	Glide rail GSP	Article number GSP
10	—	—	—				—	
14	16	—	—				—	
	20	—	—				—	
	30	—	—				—	
	40	—	—				—	
15	16	—	—				—	
	20	—	—				—	
	30	—	—				—	
	40	—	—				—	
18	18	All	VAW 80	111430100700	KL 50 for external clamping	111210300000	GSP 20/20	111010100000
							one-sided	
	25	All	VAW 80	111430100700	KL 50 for external clamping	111210300000	GSP 20/20	111010100000
	37	All	VAW 80	111430100700	KL 50 for external clamping	111210300000	GSP 20/20	111010100000
	50	All	VAW 80	111430100700	KL 50 for external clamping	111210300000	GSP 20/20	111010100000
	70	All	VAW 80	111430100700	KL 50 for external clamping	111210300000	GSP 20/20	111010100000
2000	20	All	—				—	
	25	All	—				—	
3001	26	up to R 95	VAW 80	111430100700	DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
	R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000	
3002	37	up to R 95	VAW 80	111430100700	DBP 3002 for internal clamping	111212120000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
	R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000	
3002.5	56	up to R 95	VAW 80	111430100700	DBP 3002.5 for internal clamping	111212130000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
	R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000	
3003	62	up to R 95	VAW 80	111430100700	DBP 3003/35062 for internal clamping	111212140000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
	R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000	
	R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000	
3003.5	76	up to R 95	VAW 80	111430100700	DBP 3003.5 for internal clamping	111212150000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		

# Selecting gliding variable guide channels



EFK MP...	Inside width	Radius R	VAW gliding	Article number Guide channel	Guide channel fastening with	Article number Fastening	Glide rail GSP	Article number GSP
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
3004	87	up to R 95	VAW 80	111430100700	DBP 3004/35086 for internal clamping	111212160000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
3005	101	up to R 95	VAW 80	111430100700	DBP 3005/35102 for internal clamping	111212180000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
26026	26	up to R 95	VAW 80	111430100700	DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
26037	37	up to R 95	VAW 80	111430100700	DBP 3002 for internal clamping	111212120000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
26062	62	up to R 95	VAW 80	111430100700	DBP 3003/35062 for internal clamping	111212140000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
26087	87	up to R 95	VAW 80	111430100700	DBP 3004/35086 for internal clamping	111212160000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
26101	101	up to R 95	VAW 80	111430100700	DBP 3005/35102 for internal clamping	111212180000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
26125	125	up to R 95	VAW 80	111430100700	2 x DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		



# Selecting gliding variable guide channels

EFK MP...	Inside width	Radius R	VAW gliding	Article number Guide channel	Guide channel fastening with	Article number Fastening	Glide rail GSP	Article number GSP
		R 120 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25026 G	26	up to R 100	VAW 80	111430100700	DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25037 G	37	up to R 100	VAW 80	111430100700	DBP 3002 for internal clamping KL 50 for external clamping	111212120000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25062 G	62	up to R 100	VAW 80	111430100700	DBP 3003/35062 for internal clamping KL 50 for external clamping	111212140000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25087 G	87	up to R 100	VAW 80	111430100700	DBP 3004/35086 for internal clamping KL 50 for external clamping	111212160000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25101 G	101	up to R 100	VAW 80	111430100700	DBP 3005/35102 for internal clamping KL 50 for external clamping	111212180000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
25125 G	125	up to R 100	VAW 80	111430100700	2 x DBP 3001 for internal clamping KL 50 for external clamping	111212100000 111210300000	GSP 20/20	111010100000
		R 125 to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
32	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/24	111010140000
		R 200 to R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/24	111010140000
35	62	up to R 100	VAW 80	111430100700	DBP 3003/35062 for internal clamping KL 50 for external clamping	111212140000 111210300000	GSP 20/20	111010100000
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000

# Selecting gliding variable guide channels



EFK MP...	Inside width	Radius R	VAW gliding	Article number Guide channel	Guide channel fastening with	Article number Fastening	Glide rail GSP	Article number GSP
35	86	up to R 100	VAW 80	111430100700	DBP 3004/35086 for internal clamping	111212160000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
35	102	up to R 100	VAW 80	111430100700	DBP 3005/35102 for internal clamping	111212180000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
35	125	up to R 100	VAW 80	111430100700	2 x DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
35	150	up to R 100	VAW 80	111430100700	2 x DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
36062 G	62	up to R 100	VAW 80	111430100700	DBP 3003/35062 for internal clamping	111212140000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
36086 G	86	up to R 100	VAW 80	111430100700	DBP 3004/35086 for internal clamping	111212160000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
36102 G	102	up to R 100	VAW 80	111430100700	DBP 3005/35102 for internal clamping	111212180000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
36125 G	125	up to R 100	VAW 80	111430100700	2 x DBP 3001 for internal clamping	111212100000	GSP 20/20	111010100000
					KL 50 for external clamping	111210300000		
		R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
44	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
			VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
			VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000



# Selecting gliding variable guide channels

EFK MP...	Inside width	Radius R	VAW gliding	Article number Guide channel	Guide channel fastening with	Article number Fastening	Glide rail GSP	Article number GSP
43 G	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
42 U	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
41	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/20	111010100000
		R 200	VAW 150	111470100700	KL 50	111210300000	GSP 20/20	111010100000
		R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
52	All	up to R 150	VAW 122	111440100700	KL 50	111210300000	GSP 20/29	111010120000
		R 200 to R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/29	111010120000
		R 300	VAW 248	111480100700	KL 50	111210300000	GSP 5/15	111010180000
66	All	up to R 240	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
		R 280 to R 350	VAW 248	111480100700	KL 50	111210300000	GSP 9/11	111010220000
65 G	All	up to R 240	VAW 177	111450100700	KL 50	111210300000	GSP 20/20	111010100000
		R 280 to R 350	VAW 248	111480100700	KL 50	111210300000	GSP 9/11	111010220000
62	All	up to R 250	VAW 177	111450100700	KL 50	111210300000	GSP 20/29	111010120000
		R300 to R 500	VAW 248	111480100700	KL 50	111210300000	GSP 7/13	111010200000
72	All	up to R 500	VAW 248	111480100700	KL 50	111210300000	GSP 9/11	111010220000
82	All	up to R 500	VAW 248	111480100700	KL 50	111210300000	GSP 9/13	111010200000
102	All	up to R 500	VAW MT 248					
				111480140700	KL 50	111210300000	GSP 33/9	111010240000

VAW standard lengths 2 m. Also available in 5 m length on request. Please state of guide channel system when your order.

# Variable guide channel accessories

## Simple, quick and secure installation...

### ... of the murrplastik Systemtechnik guide channel system.

The combination of the groove system on the individual aluminium channel sides and the glide rail sections forms an extremely variable guide channel system which provides a safe, stable and very attractive chain guide system requiring few accessories.

The glide rails are simply pushed into the groove provided in the aluminium section. The only fastening required is a screw at the beginning and the end of the last glide rail.

It is incredibly simple to install the channel. Special clamping pieces (see separate table) are used to secure the system as and where required. The channel sections are perfectly aligned thanks to special plastic longitudinal connectors which are placed in a groove specially provided for that purpose.

There are no welded seams or screw parts jutting out into the chain's area of movement with the murrplastik guide channel system.

The use of highly durable aluminium obviates the need for any corrosion prevention.

## Economic solution

**The use of standard components saves cost in this case. Design and manufacture are entirely taken care of. This would generally involve the following:**

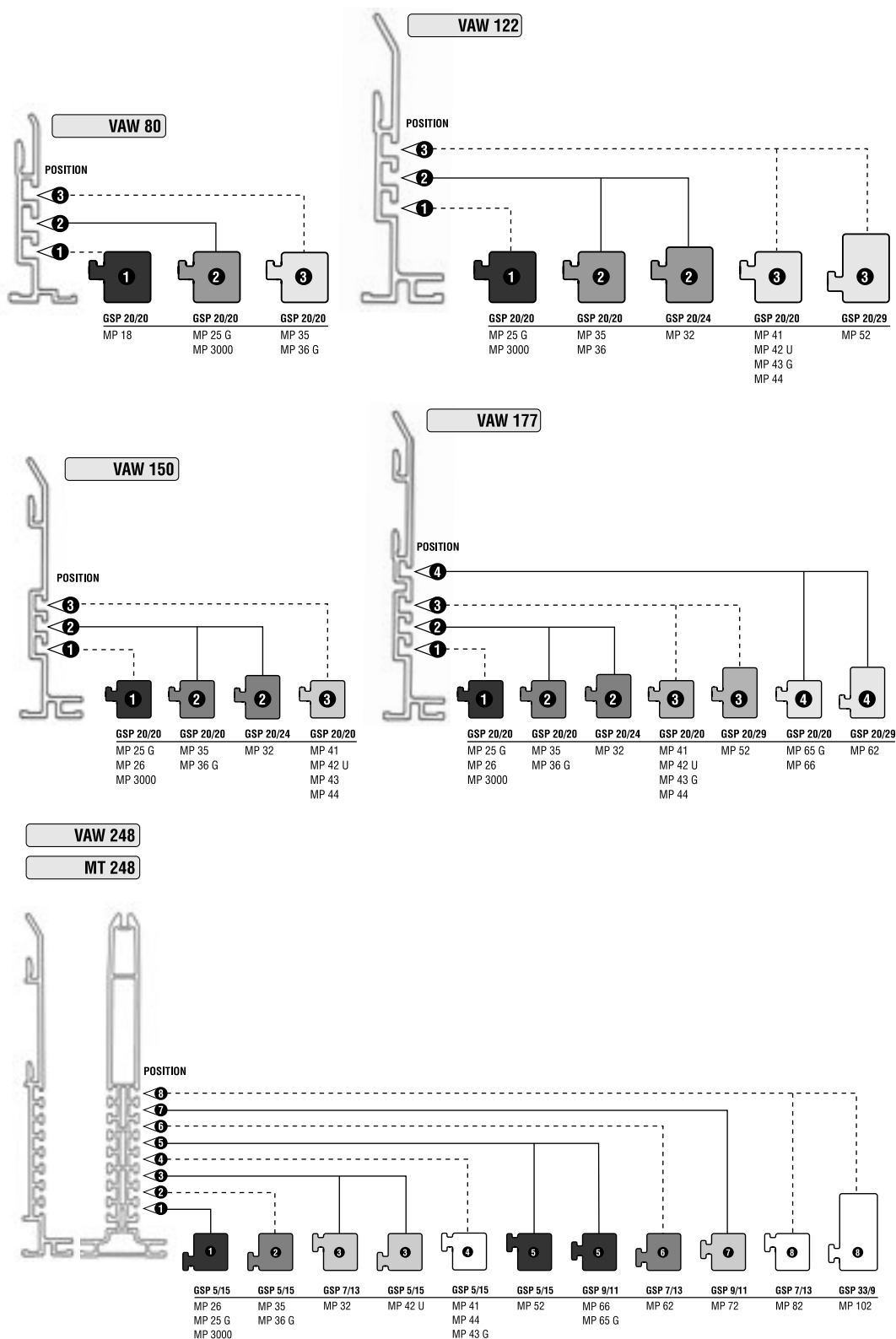
- Design, drawing or sketch
- Obtaining the various components
- Cutting the plate to size
- Punching the plate
- Plate-edge bending
- Drilling the attachment holes
- Mounting the channel
- Welding and sanding down channel connections
- Lacquering

When all the costs of the components and assembly time are added together, it soon becomes apparent that the murrplastik VAW variable aluminium guide channel system is a very cost-effective solution.



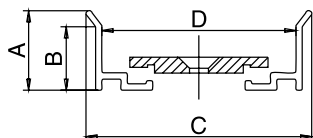
# Positioning variable guide channels Glide rail section

## Positioning the variable guide channel glide rail section



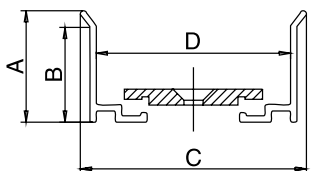
# Variable guide channel dimension tables

## VAW 25 guide channel with DBP distance plate



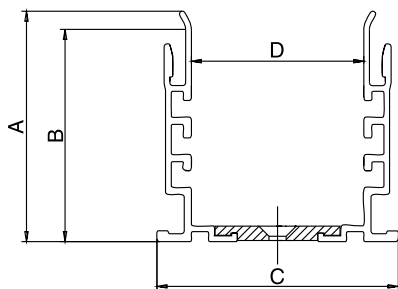
Guide channel	Fastening	Dimensions in mm			
		D	C	A	B
VAW 25	DBP 14016	26	36	25	20
VAW 25	DBP 14020/18018	31	41	25	20
VAW 25	DBP 14030/18025	39	49	25	20
VAW 25	DBP 14040/18037	50	60	25	20
VAW 25	DBP 14050/18050	64	74	25	20
VAW 25	DBP 18070	84	94	25	20

## VAW 35 guide channel with DBP distance plate



Guide channel	Fastening	Dimensions in mm			
		D	C	A	B
VAW 35	DBP 3001	46	56	35	30
VAW 35	DBP 3002	60	70	35	30
VAW 35	DBP 3002.5	79	89	35	30
VAW 35	DBP 3003.5	99	109	35	30
VAW 35	DBP 3003/35062	84	94	35	30
VAW 35	DBP 3004/35086	106	116	35	30
VAW 35	DBP 3005/35102	121	131	35	30

## VAW 80 guide channel with DBP distance plate

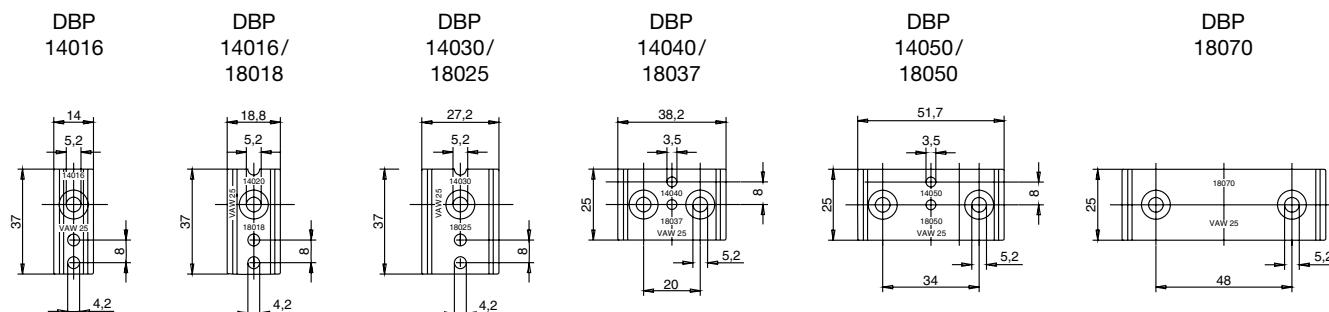


Guide channel	Fastening	Dimensions in mm			
		D	C	A	B
VAW 80	DBP 3001	46	70	80	74
VAW 80	DBP 3002	60	84	80	74
VAW 80	DBP 3002.5	79	103	80	74
VAW 80	DBP 3003.5	84	108	80	74
VAW 80	DBP 3003/35062	99	123	80	74
VAW 80	DBP 3004/35086	106	130	80	74
VAW 80	DBP 3005/35102	121	145	80	74

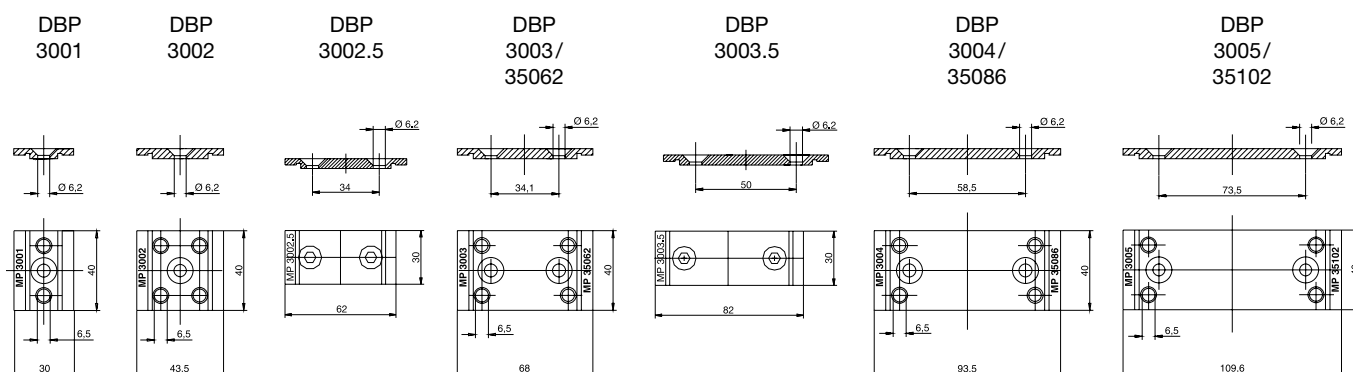


# Variable guide channel dimension tables

## Distance fixing plates (DBP)

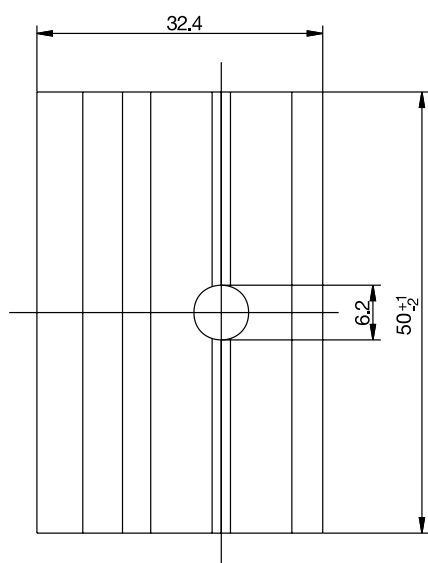


With MP 18 5.2 mm holes serve as through-holes where the fixed chain bracket and distance plate converge.



Holes 6.5 mm serve as through-holes where the fixed chain bracket and distance plate converge.

## Clamping piece KL 50



# Variable guide channel dimension tables

## VAW 80 guide channel

(Internal or external clamping)

- Internal clamping with distance fixing plate

$C = \text{External width of chain} + \text{clearance} + 24 \text{ mm}$

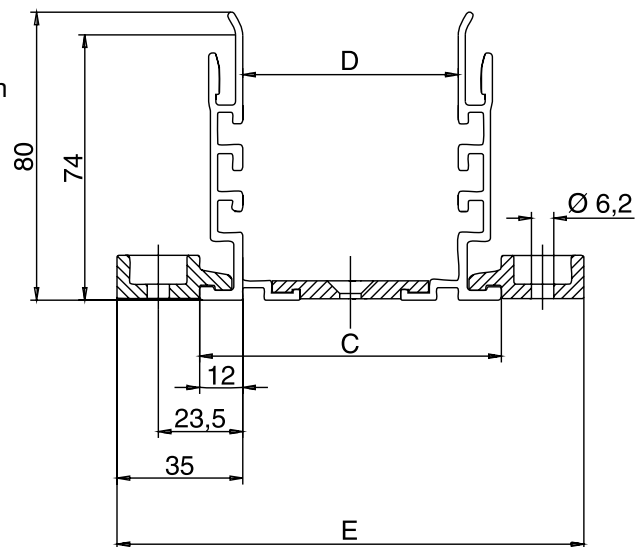
- External clamping with clamping piece KL 50

$E = \text{External width of chain} + \text{clearance} + 70 \text{ mm}$

- Clear width

$D = \text{Outside width of chain} + \text{clearance}$

SP = Clearance (see page 304)



## VAW 122 guide channel

(Internal or external clamping)

- Internal clamping with clamping piece KL 50

$C = \text{External width of chain} + \text{clearance} + 30 \text{ mm}$

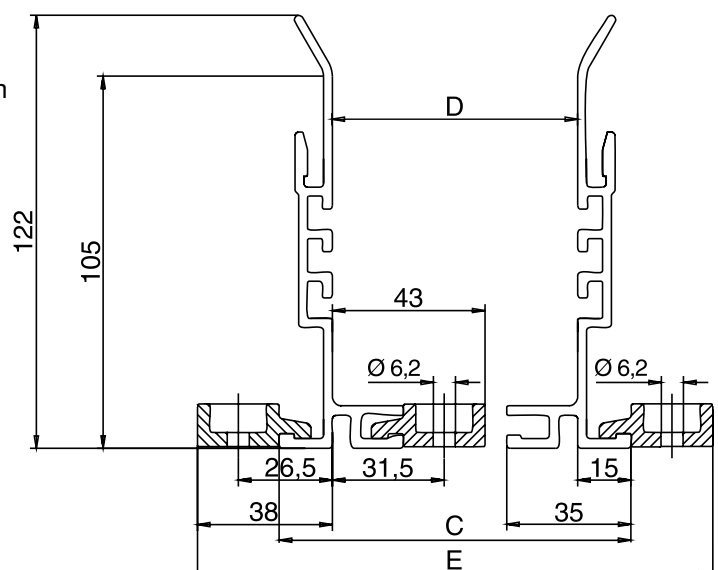
- External clamping with clamping piece KL 50

$E = \text{External width of chain} + \text{clearance} + 76 \text{ mm}$

- Clear width

$D = \text{Outside width of chain} + \text{clearance}$

SP = Clearance (see page 304)





# Variable guide channel dimension tables

## VAW 150 guide channel

(Internal or external clamping)

- Internal clamping with clamping piece KL 50

$C$  = External width of chain + clearance + 30 mm

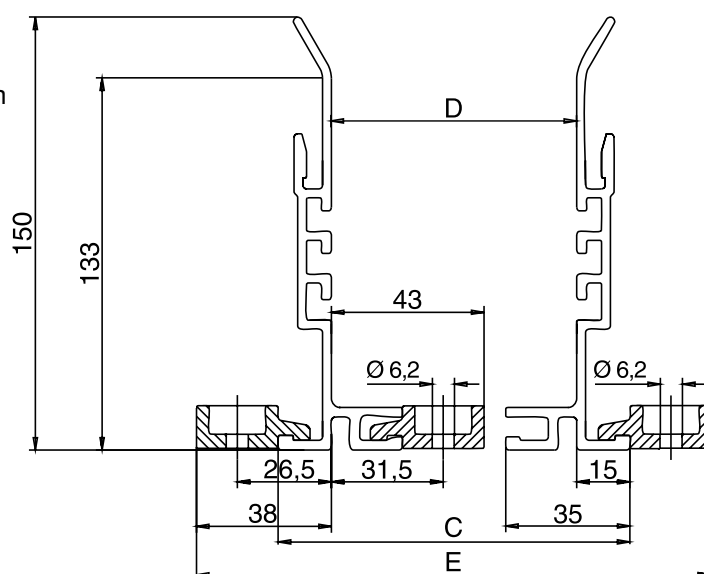
- External clamping with clamping piece KL 50

$E$  = External width of chain + clearance + 76 mm

- Clear width

$D$  = External width of chain + clearance

SP = Clearance (see page 304)



## VAW 177 guide channel

(Internal or external clamping)

- Internal clamping with clamping piece KL 50

$C$  = External width of chain + clearance + 30 mm

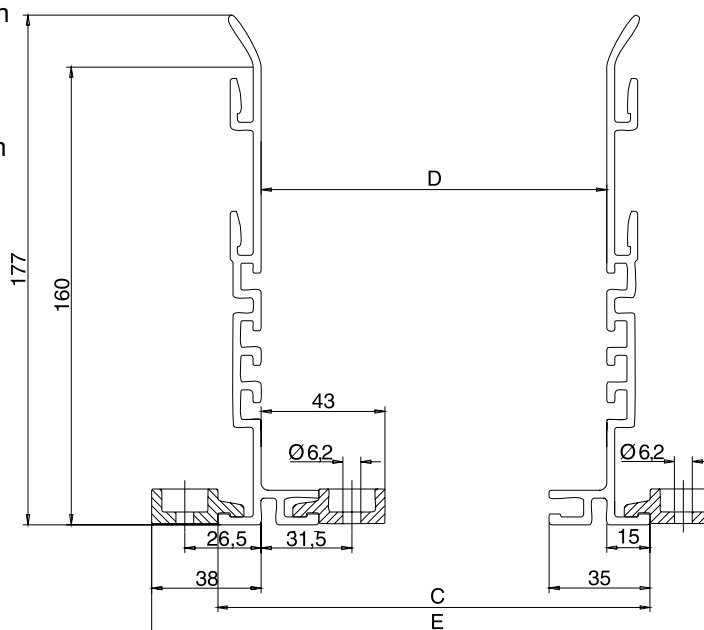
- External clamping with clamping piece KL 50

$E$  = External width of chain + clearance + 76 mm

- Clear width

$D$  = External width of chain + clearance

SP = Clearance (see page 304)



# Variable guide channel dimension tables

## VAW 248 guide channel

(Internal or external clamping)

- Internal clamping with clamping piece KL 50

$C$  = External width of chain + clearance + 30 mm

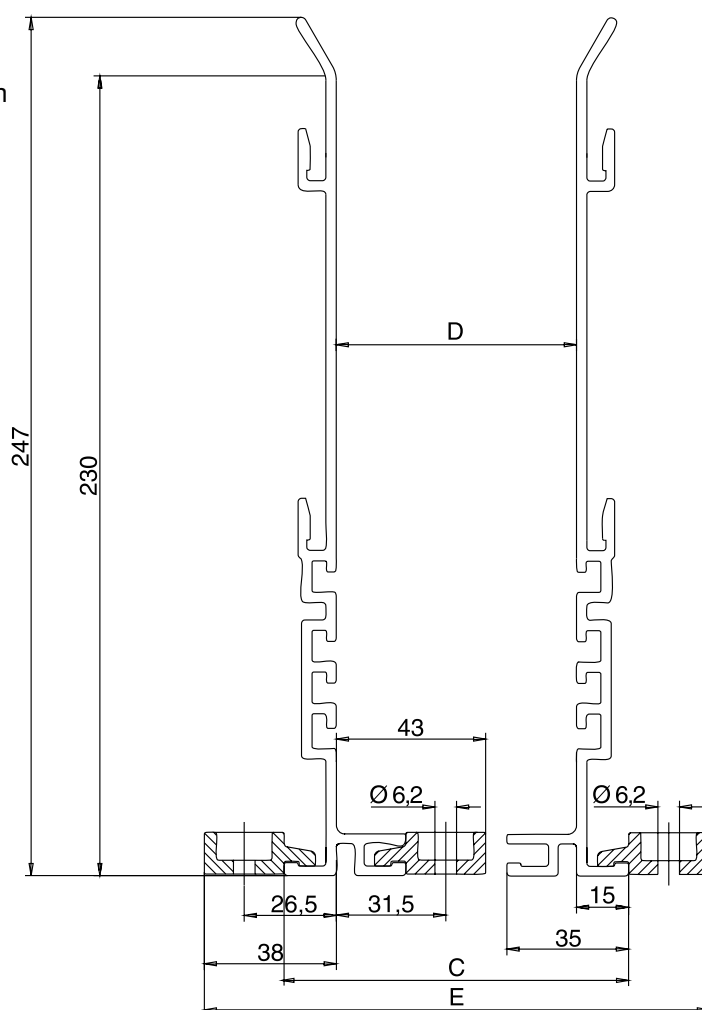
- External clamping with clamping piece KL 50

$E$  = External width of chain + clearance + 76 mm

- Clear width

$D$  = External width of chain + clearance

SP = Clearance (see page 304)

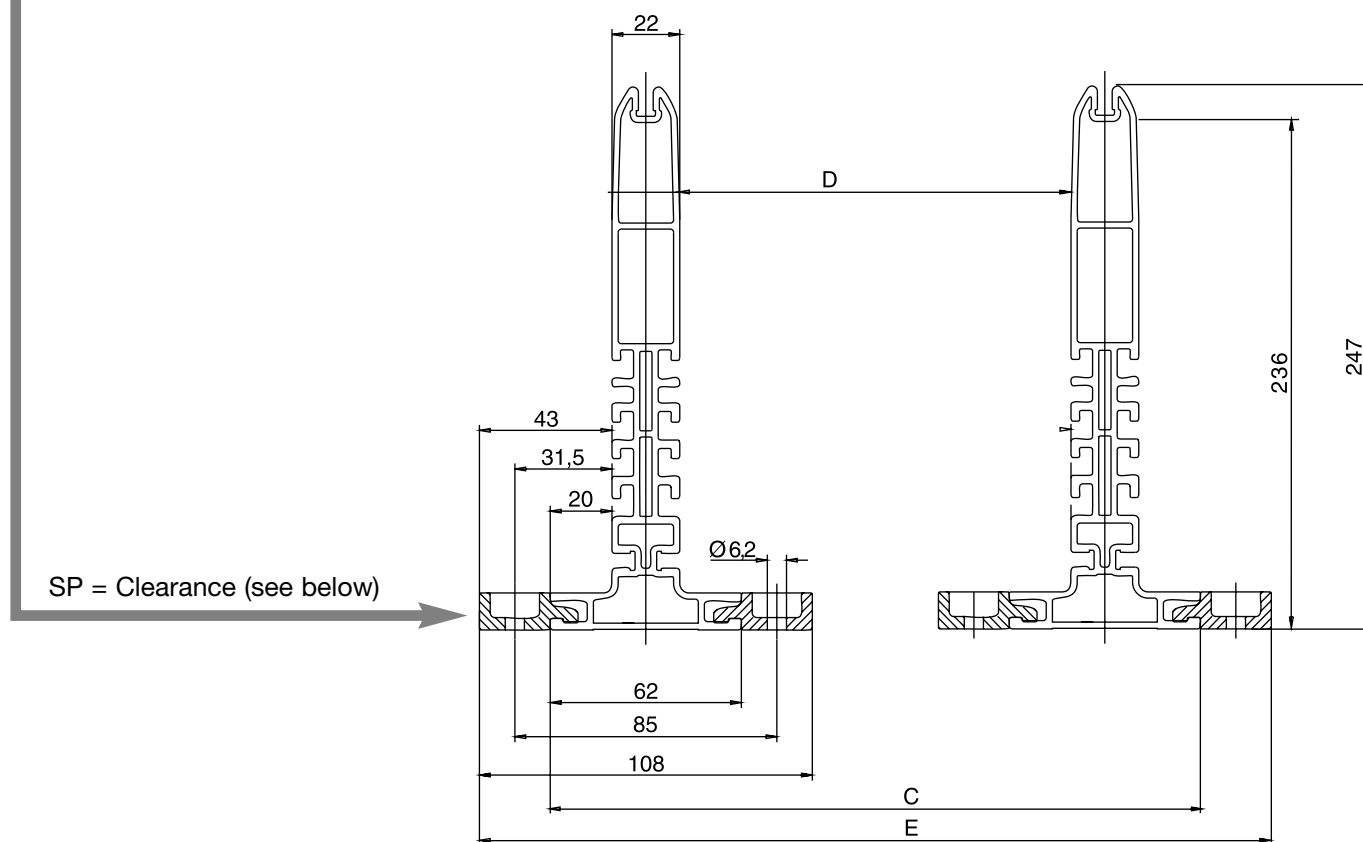




# Variable guide channel dimension tables

## VAW-MT 248 guide channel

- Clamping with KL 50 clamping piece  
 $C$  = External width of chain + clearance + 84 mm  
 $E$  = External width of chain + clearance + 130 mm
- Clear width  
 $D$  = External width of chain + clearance

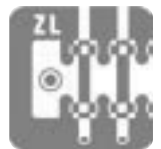


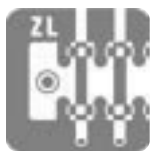
## Clearance (SP) with variable clamping

Chain type										Total clearance (SP)
MP 18										up to 6 mm
MP 25 G	MP 26	MP 3000	MP 35	MP 36 G						up to 8 mm
MP 32	MP 41	MP 42	MP 43 G	MP 44	MP 52	MP 62	MP 65 G	MP 66	MP 72	up to 12 mm
MP 82	MP 102									up to 16 mm

As a general rule, there must be sufficient clearance between the guide channel and the chain to prevent the chain from ever jamming in the guide channel. The clearance must be at least 2 mm less than the width of the sideband of the chain link, otherwise the chain will not glide properly and this will lead to problems over time.

## STRAIN RELIEF SYSTEMS





# Strain relief systems

**We take the strain**



The ZL strain relief plates are used when laying various different cables on machines and installations.

When used in cable drag chains, the cables are secured on both sides of the strain relief plates with power cable ties, type KB 28. The lip down on the strain relief plates prevents the power cable

tie from slipping off even if the cable diameter is the same or larger than the width of the tongue. Every cable is clamped twice-one at each end of the plate.

Wide and highly flexible power cable ties distribute the surface pressure and ensure longer service life.

When using a shelf system, two plates are installed on top of each other. The DH type distance sleeves are used for this. Washers are supplied with the strain relief plates.

However, we do recommend our ELB insert bushing. This inhibits the cold flow properties of the plastic.

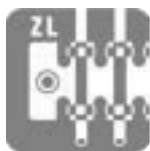


Durable fastening with metal bushing

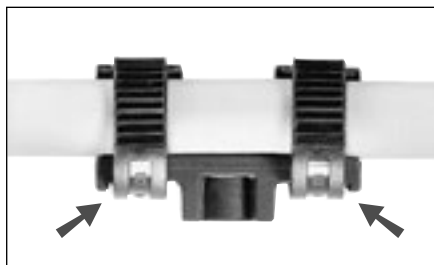


Strain relief plate installed in cable drag chain system.

The strain relief should occur at least 20 to 30 x maximum cable diameter from the end point of the last bend movement.



# Strain relief system advantages



1.

## Secure hold

The pronounced lip prevents the power cable tie from slipping off, even in the case of very large cable diameters.



2.

## Longer life

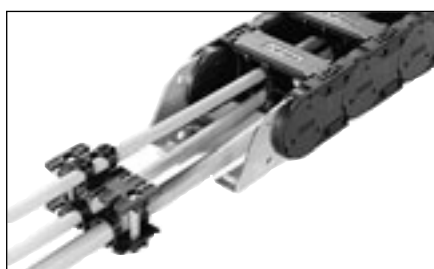
Each cable is secured twice at each end with power cable ties. Wide and highly-flexible power cable ties heighten the surface pressure and ensure longer service life distribute the cables.



3.

## Wide supporting surface on the individual plate tongues

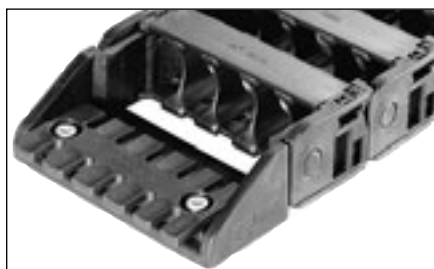
The cables are optimally secured by the wide supporting surfaces of the individual strain relief tongues. The wide power cable ties help to facilitate strain relief which is quick and simple but gentle on the cables.



4.

## Two-tier installation

The DH distance bushes enable double-deck installation.



5.

## Standard fixing measurements

The dimensions of the holes on the plates system match those on the chain brackets.

**Please note the dimension of the holes on the strain relief plate when using strain relief in the chain bracket (see page 158).**

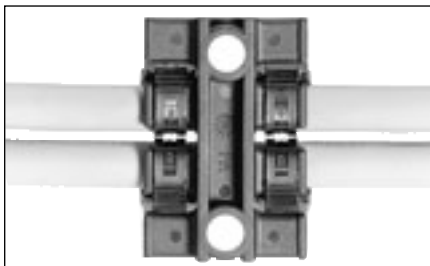
# Strain relief system advantages



6.

## Durable fastening with metal bush

The metal bushes inhibit cold flow properties. Metal is screwed onto metal. The screws are prevented from working loose. (Please order separately.)



7.

## Easy installation

Even if two cables are immediately next to each other, it is possible to secure them with two power cable ties.



8.

## Different cable diameters

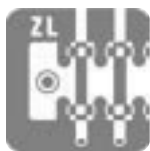
The flexible use of power cable ties provides strain relief which is quick and simple but very gentle on the cables, even for cables of very different diameters with extremely high packing density.



9.

## Cost-effective solution

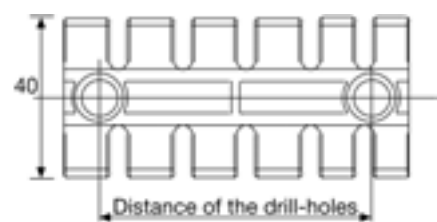
Suitable for laying cables on machines and installations.



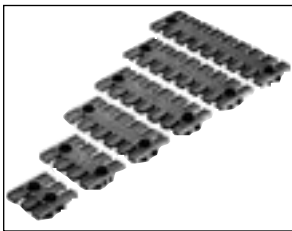
# Strain relief systems

Type	Order no.	Suitable for cable drag chain type	Pack (Quantity)	Distance Drill holes (mm)
ZL 39	87 70 10 14	MP 25037G / MP 44045 / MP 66045	10	19.5
ZL 60	87 70 10 16	MP 25062G / MP 35032 / MP 36062 / MP 43062 / MP44062 / MP 66062	10	43.5
ZL 80	87 70 10 15	MP 43082 / MP 44082 / MP 66082	10	68.0
ZL 87	87 70 10 18	MP 25087G / MP 35086 / MP 36086	10	68.0
ZL 103	87 70 10 20	MP 35102 / MP 36102 / MP 43107 / MP 44107 / MP 66107	10	84.0
ZL 121	87 70 10 22	MP 25125G / MP 35125 / MP 36125	10	102.5
ZL 140	87 70 10 24	MP 35150 / MP 43142 / MP 44142 / MP 66142	10	121.0
ZL 180/6	87 70 10 26	MP 43182 / MP 44182	10	154 - 160
ZL 180/8	87 70 10 27	MP 66182	10	154 - 180

If the strain relief plate is to be fitted directly on the chain bracket, the hole dimensions of the strain relief plate are used for the bracket as well.



Supplied with washers.



Strain relief plates in various widths.

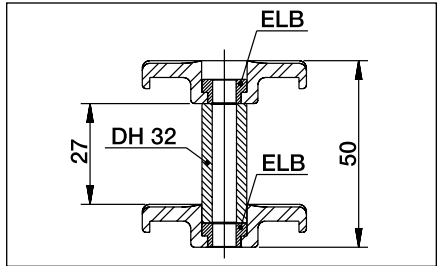


Strain relief plate mounted in chain bracket.



Double-deck strain relief plates.

Type		Order No.	Pack (Quantity)
Distance sleeve DH 32*	(Brass distance sleeve)	87 70 10 52	Loose
Power cable tie KB 28	Bundle range approx. 40 mm	87 66 12 58	100
Insert bushing ELB*		87 70 10 50	Loose



\* not for ZL 180/8

# Strain relief systems

## murrplastik recommendations

The strain relief plate should be fitted with two power cable ties per cable and secured approx. 20 to 30 x cable diameter from the last moving chain link.

When installed in the chain bracket, the relevant number of chain links (20 to 30 x max. cable diameter) must not be moved. The strain relief is suitable for cables up to approx. 40 mm diameter.

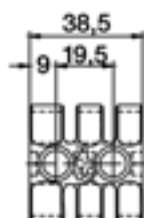
All electric cables must be relieved of strain at both the moving and fixed end. Where longer travel distances are involved (gliding application), one-sided strain relief on the moving end may be advisable. In this case, it is important to note that the pressure may only be applied to a wide surface of the outer jacket. The clamping must be undertaken carefully so as not to squash the individual wires in the

cable while still holding the cable tightly and preventing any further movement of the cable. Hydraulic and pneumatic conduits are relieved of strain on one side only.

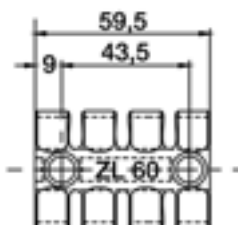


# Strain relief dimensions ZL

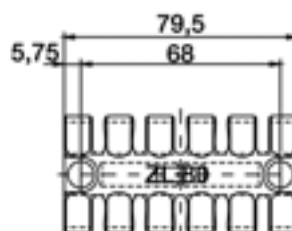
ZL 39



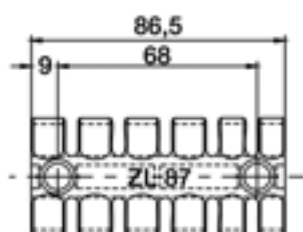
ZL 60



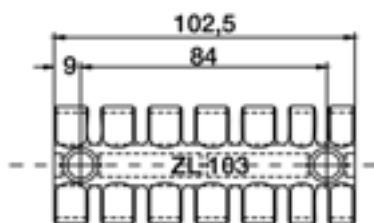
ZL 80



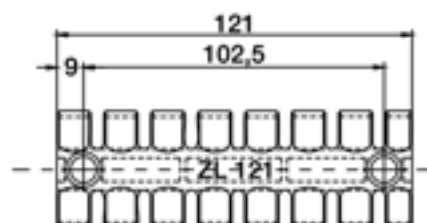
ZL 87



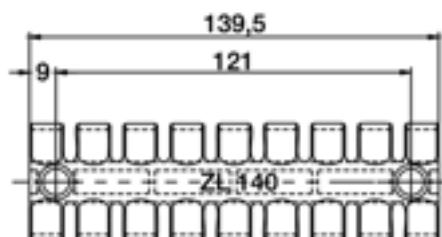
ZL 103



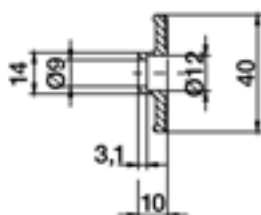
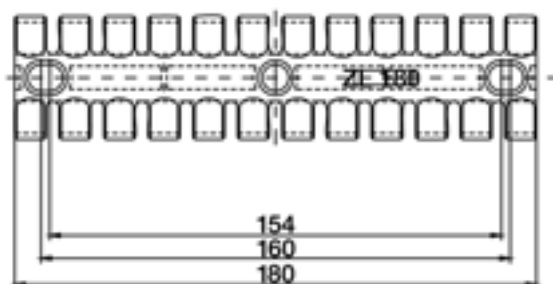
ZL 121



ZL 140



ZL 180/6 (for the M6-thread)  
ZL 180/8 (for the M8-thread)



Mounting options  
ZL + bush



## MATERIAL DATA, PLASTIC AND LIGHT METALS





# Material data for plastic parts

## Material table for standard material

Mechanical properties	Test piece Condition	Test value	Unit
Tensile strength (DIN 53 455)	Dry	190	N/mm <sup>2</sup>
	Humid	120	N/mm <sup>2</sup>
Elongation at tear (DIN 53 455)	Dry	4	%
	Humid	6	%
Modulus of elasticity Tensile test	Dry	7,000	N/mm <sup>2</sup>
	Humid	10,000	N/mm <sup>2</sup>
Impact toughness (DIN 53 453)	23 °C Dry	60	kJ/m <sup>2</sup>
	23 °C Humid	75	kJ/m <sup>2</sup>
	-40 °C Dry	50	kJ/m <sup>2</sup>
Creep modulus E	23...50 °C Humid	5,400	N/mm <sup>2</sup>
	120 °C Dry	2,100	N/mm <sup>2</sup>
Thermal conductivity	–	0.3	W/k • m
Dielectric constant (DIN 53483)	Dry	3.8	MHz
	Humid	6.8	MHz
Specific forward resistance	Dry	10 <sup>15</sup>	Ω x cm
	Humid	10 <sup>12</sup>	Ω x cm
Disruptive strength, thickness 0.6...0.8 mm	–	80	kV/mm
Surface resistance ROA	Dry	10 <sup>12</sup>	Ω
	Humid	10 <sup>10</sup>	Ω
Absorption of humidity	23...25 °C	–	1.8 ± 0.2 %
Thermal properties			
Thermal limit of application			
Permissible temperature range	–	-40 to 100	°C
5,000 hours	–	up to 135	°C
A few hours	–	up to 170	°C

### Other properties

Density	Dry	1.4	g/cm <sup>3</sup>
Coefficient of sliding friction	Unlubricated	0.3 - 0.45	–
Fire behaviour	DIN VDE 0304 Part 3		
Flame class	HB/UL 94		

murrplastik plastic cable drag chain systems have been developed for extreme demands. The standard material is black glass fibre reinforced plastic:

- 1) Load such as strain, pressure, gliding quality and torsion
- 2) Weathering resistance
- 3) Environmental conditions, e.g. in clean rooms and environments with high demands in terms of hygiene

Developed in-house, our own PA (polyamide) material perfectly meets these requirements. Modified materials are used in special cases and, given our experience with problem cases, we can provide the right solution for virtually any application.

## General points

The plastic used is free of halogens, silicone and hard metals such as lead and cadmium. No formaldehyde is used in manufacturing.

The use of murrplastik plastic cable drag chains meets the requirements of the food industry.

# Chemical resistance

Medium	Mass fraction in %	Temperature in °C	Resistance
Acetic acid, aqueous	10		■
Acetic acid, aqueous, conc.	95		▲
Acetone	TR		●
Ammonia		+ 20	●
Ammonia, (liquid)	TR	+ 70	■
Benzene	H	85	●
Benzol	H		●
Bitumen	H		●
Boracic acid, aqueous	H		●
Butyric acid, aqueous	20		●
Calcium chloride	GL	23	●
Caustic potash solution	10		●
Chlorine, carbon hydride			●
Chlorine, chlorine water	H		▲
Chromic acid, aqueous	10		▲
Diesel oil	H		●
Ethanol	40		●
Ethyl acetate	TR		●
Fluorohydrocarbons			●
Formaldehyde and polymac.	TR		●
Formaldehyde, aqueous	30		●
Formic acid	10		■
Greases and waxes	H		●
Hydraulic oils	H		●
Hydrochloric acid	2		▲
Hydrochloric acid, aqueous	≥ 20		◆
Lactic acid	90		▲
Lactic acid, aqueous	10		●
Liquefied gas (DIN 51 622)			●
Lubricants, edible fats	H		●
Mercury	TR		●
Methyl acetate	TR		●
Milk	H		●
Mineral oil	H		●
Oil/edible oil, lubricating oil	H		●
Oleic acid	H		●
Paints and lacquers			●
Paraffin, paraffin oils	H		●
Polyester resins	H		●
Potassium chloride, aqueous	10		●
Potassium nitrate, aqueous	10		●
Propane, propene, propene	TR		●
Sodium carbonate, aqueous	10		●
Tartaric acid	50		■
Tartaric acid, aqueous	10		●
Vaseline	H		●
Xylol	TR		●

## Chemical resistance

murrplastik cable drag chains are resistant to fuel, lubricants, oil, grease, alcohol, ester, ketone, aliphatic and aromatic hydrocarbons. Oxidising agents and acids are harmful.

The table contains an excerpt showing the exact details of chemical resistance.

Please contact us should you have a query regarding a particular chemical that is not included in the table.

## Explanation of symbols and definition of terms

- Resistant
- Conditional resistance
- ▲ Non-resistant
- ◆ Soluble

G Saturated aqueous solution  
H Commercially available  
TR Technically pure

All information relating to the chemical and physical properties of our products, and all advice on applications provided in verbal or written form or by way of tests, are given to the best of our knowledge.

It does not exempt the purchaser from the duty to carry out inspections and tests to determine the precise suitability of the products for the intended use.

The purchaser is solely liable for the application, use, and installation of the products. He must also comply with the legal and official provisions, and observe any industrial property rights of third parties. Furthermore, our General Terms and Conditions apply.



# Material properties



1.

## Burning behaviour

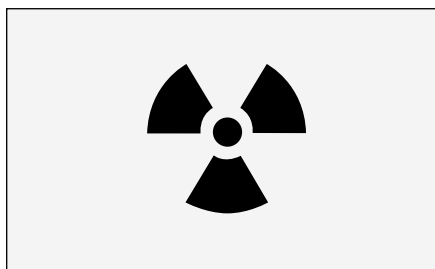
The fire precaution properties of murrplastik cable drag chains can be listed under various classifications:

Test procedure VDE 0304 Part 3/5.70,  
Classification: IIc;

Test conforming to "UL 94 – Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances",  
Classification: 94 HB with 3.2 and 1.6 mm body thicknesses;

Test conforming to DIN 4102 "Fire behaviour of building materials and components", classification: Materials class B2;

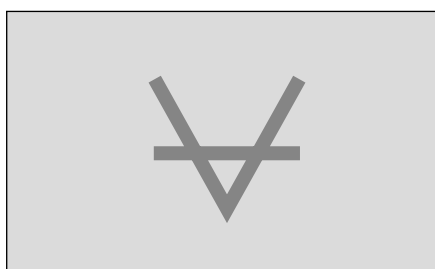
In case of more stringent demands, please consult us about special solutions.



2.

## Radiation resistance

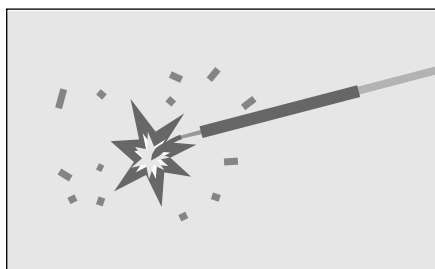
murrplastik cable drag chains are very resistant to high-energy radiation. In the range of  $8 \times 10^4$  rd gamma radiation there are only minor changes to the mechanical properties.



3.

## Vacuum

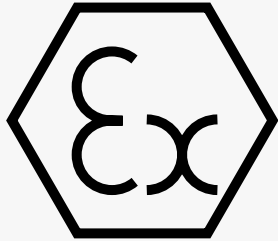
murrplastik plastic cable drag chains can also be used in a vacuum. Gas will only be given off in very low amounts.



4.

## Weld spatters and hot chips

murrplastik cable drag chains are ideally suited for safe line protection for welding robots. This is confirmed by laboratory tests and numerous references. Welding beads can leave traces but these are simply cosmetic and do not impair the material or its function in any way. murrplastik cable drag chains have passed tests with 500 °C medium-sized hot metal filings.



**5.**

### **Use in areas at risk of explosion**

murrplastik cable drag chains for potentially explosive areas (special version made with special material) may be used in areas subject to explosion hazards if the relevant regulations are observed. All murrplastik cable drag chains have certified conformity to ATEX European Directive 94/9 EC and are therefore guaranteed safe for use in the respective areas.



**6.**

### **Meteorological conditions**

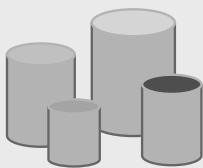
murrplastik cable drag chains are suitable for outdoor applications. Experience has shown that the mechanical properties are not impaired.



**7.**

### **Use in clean rooms**

murrplastik uses a special material. This effects a considerable further reduction in the already minimal wear of the standard chain. In many applications, in which difficult special conditions apply, a cable drag chain can still be used. We have completed an intensive test programme for both gliding applications and self-supporting applications.



**8.**

### **Special colours**

Plastic cable drag chain systems can be supplied in different colours on request. Several colours may also be combined to achieve psychological effects with colour. Minimum order quantities and special prices apply.



**9.**

### **Cable drag applications resistant to cold storage**

A special material is used for plastic cable drag chains resistant to cold storage.



# Material data

## Technical data for light metal parts

Density	2.7 g/cm <sup>3</sup>
Modulus of elasticity	70 kN/mm <sup>2</sup>
Electrical conductivity	30 - 34 m/Wmm <sup>2</sup>
Thermal conductivity	2.0 – 2.2 W/k • cm
Coefficient of thermal expansion	23.4 cm/cm k 106
Tensile strength	215 N/mm <sup>2</sup>
Elongation at failure	12 %

The advantages of light metal are combined in the mechanical, physical and chemical properties of this material.

The material used by murrplastik is a special aluminium alloy. The outstanding features of this material are as follows:

1. lightweight, robust, hard, smooth and resistant
2. attractive appearance
3. excellent frictional behaviour and wear of light metal in respect of the cable materials
4. no tendency to become brittle at low temperatures
5. seawater-resistant

We use light metal for the following applications:

Frame ridge sections, sections for VAW variable guide channel system.

# Technical support and service



## Layout/Project planning

We will provide you with a complete layout for a cable drag chain system with accessories.



## Customised preparation of drawings

If you have your own drawing format and/or administration, we will prepare the drawings in your required size.



## Fabrication of the complete system

With plugs and cables



## Guaranteed quality

From planning the system right through to assembly



## On-site assembly

Reduced commissioning time due to expert installation.



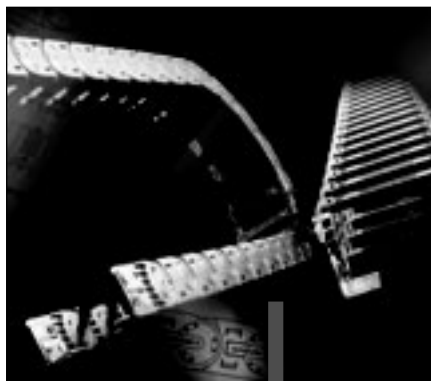
# Ideas - systems - success

## Innovative new products from murrplastik Systemtechnik



### MURRFLEX CABLE PROTECTION CON- DUIT AND CONNECTION SYSTEMS MADE FROM PLASTIC AND METAL

The murrflex system consists of high-grade flexible cable protection conduits, fittings and accessories. All the components are matched to each other, allowing rapid and safe assembly. A variety of conduit types are available for a wide range of areas of application. This gives the user a high degree of optimisation and flexibility.



### PLASTIC CABLE DRAG CHAIN SYSTEMS

All murrplastik cable drag chain systems are fitted with an opening mechanism. A normal screwdriver is all that is required to open any system. Countless applications, without failures and in difficult conditions, demonstrate the consistently high quality of the systems. Given the pressure on time and costs these days, the systems are designed for speed and cost-effectiveness. murrplastik's advisers will be happy to help with designing your application.



### M-FLEX CABLE SYSTEMS

murrplastik supplies a wide range of control, data, and bus cables for flexible use in cable drag chains. The different cable constructions and coating grades mean that the cables can be ideally tailored to the application and ambient conditions on site.

#### **The advantages are obvious:**

1. Fast assembly of screw fittings suitable for all conduits
2. Various conduit types
3. Simple to install
4. UL-approved

#### **The advantages are obvious:**

1. All systems with opening mechanism
2. Easy handling
3. Stable plastic chains
4. Design support from murrplastik
5. CAD library
6. Guide channel systems

#### **The advantages are obvious:**

1. Cables tailored to individual applications
2. Functional reliability thanks to optimal cable adaptation
3. High level of economy efficiency
4. Configuration service for cabledrag chain and cable
5. Fabrication and assembly service

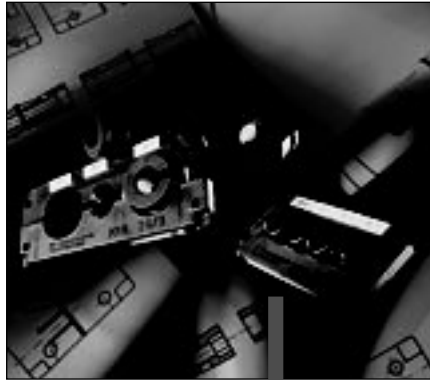
# Ideas - systems - success

## Innovative new products from murrplastik Systemtechnik



### ACCESSORIES FOR CONTROL SYSTEM CONSTRUCTION

This product group includes accessories for control system construction. As well as a wide variety of tools, the product range includes cable ties, fixing rivets, screwed and adhesive holders.



### CABLE ENTRY AND CABLE HOLDING SYSTEMS

The cable entry system is a combination of cable fixing plate and clamping profile. However, the outstanding technical advantage is that the system can be 'split' in half. This enables pre-assembled cables or services to be retrofitted, without removing the connector.



### LABELLING SYSTEMS FOR

- **single wires**
- **switchgear**
- **terminals**
- **cables**
- **conduits**
- **control and signal units**

The "ACS" Ademark computer system is the logical next step up from the existing "Ademark" system. It meets all the requirements of a modern, compatible labelling system. In addition to very easy manual inputting, it also enables existing data from a wide variety of CAD systems to be imported.

#### 3 The advantages are obvious:

1. Reduction in ordering time and costs
2. Quality accessories
3. Specialist tools

#### 4 The advantages are obvious:

1. Costs slashed through the use of pre-assembled cables
2. Easy assembly thanks to lock-in positioning
3. Cable identification possible by means of labels
4. No special punching tools required

#### 6 The advantages are obvious:

1. Universal system
2. Years of experience
3. Multiple configuration of labels
4. Project-specific operation
5. Reduction in stock range
6. Independent manufacturer of the labelling material



# Sales agencies

## Germany



**Postcodes:**  
00000 - 19999  
39000 - 39999  
98000 - 99999

**murrplastik  
Systemtechnik GmbH  
Sales Office East**  
Telephone: +49 33762 819 74  
Fax: +49 33762 819 75  
vb-ost@murrplastik.de

**Postcodes:**  
20000 - 33999  
34000 - 35199  
35250 - 35299  
36170 - 36299  
36400 - 38999  
40000 - 53999  
56000 - 59999

**murrplastik  
Systemtechnik GmbH  
Sales Office West**  
Telephone: +49 209 408 45 68  
Fax: +49 209 408 45 70  
vb-nord-west@murrplastik.de

**Postcodes:**  
35200 - 35249  
35300 - 36169  
36300 - 36399  
36500 - 36999  
54000 - 55999  
60000 - 76899  
77600 - 79899  
88000 - 88099  
88180 - 89299  
89500 - 89699  
97900 - 97999

**murrplastik  
Systemtechnik GmbH  
Sales Office South**  
Telephone: +49 7191 482 24 7  
Fax: +49 7191 482 21 2  
vb-sued@murrplastik.de

**Postcodes:**  
80331 - 86709  
86807 - 87989  
88131 - 88179  
89312 - 89499  
94032 - 94579

**Ing. Adolf Müller GmbH  
Industrievertretungen**  
Elly-Staegmeyer-Straße 15  
80999 München  
Postfach 50 04 67  
80974 München  
Telephone: +49 89 812 60 44  
Fax: +49 89 812 69 25  
info@ingam.de  
www.ingam.de

**Postcodes:**  
86720 - 86759  
90402 - 93499  
95028 - 97896

**murrplastik  
Systemtechnik GmbH  
Sales Office Bavaria North**  
Telephone: +49 7191 482 21 3  
Fax: +49 7191 482 21 2  
vb-nord-bayern@murrplastik.de

## Worldwide

### Argentina



**Nakase**  
Calle 49 No. 5764/66  
Provincia Buenos Aires  
(B-1653AOX)  
Villa Ballester  
Phone: +54 11 476 83 64 3  
Fax: +54 11 476 84 24 21 11  
nakase@nakase.com/  
nakase@usa.net  
www.nakase.com

### Australia



**N.L. Tucker & Associates  
Pty. Ltd.**  
12 b Pitt Way  
Booragoon, Perth,  
Western Australia 6154  
Phone: +61 89 330 79 11  
Fax: +61 89 317 15 44  
sales@nltucker.com.au

**N.L. Tucker & Associates  
Pty. Ltd.**  
Unit 2/18 Superior Drive  
Dandenong Victoria 3175  
Phone: +61 39 706 66 91  
Fax: +61 39 706 66 92  
vicsales@nltucker.com.au

### Austria



**Balluff Vertriebs-GmbH**  
Industriestr. B16  
2345 Brunn/Gebirge  
Phone: +43 2236 325 21 0  
Fax: +43 2236 325 21 46  
sensor@balluff.de

### Belgium



**ATEM NV/SA**  
Bedrijven Park De Veert 4  
2830 Willebroek  
Phone: +32 38 661 80 0  
Fax: +32 38 661 82 8  
info@atem.be

### Brazil



**Murrelektronik do Brasil Ltda.**  
Av. Interlagos 3493  
04661-200 São Paulo  
Phone: +55 11 563 11 01 7  
Fax: +55 11 563 10 90 0  
belmonte@murr.com.br

### China



**murrplastik Asia Co., Ltd.**  
Building B, 155 Fu Te Xi Yi Road  
Wai Gao Qiao Free Trade Zone  
Shanghai, 200131  
Phone: +86 21 586 61 55 5  
Fax: +86 21 586 67 94 0  
info@murrplastik.com.cn  
www.murrplastik.com.cn

### Czech Republic



**Schmachtl CZ spol. s.r.o.**  
Elektrotechnika  
Vestec 185, 252 42 Jesenice  
Phone: +42 2 440 01 50 0  
Fax: +42 2 449 10 70 0  
office@schmachtl.cz  
www.schmachtl.cz

### Denmark



**Brødrene Eegholm A/S**  
Grundtvigs Allé 165-169  
6400 Sønderborg  
Phone: +45 73 121 21 2  
Fax: +45 73 121 21 3  
eegholm@eegholm.dk

### Finland



**Murrelektronik Oy**  
Koukkukatu 1  
15700 Lahti  
Phone: +358 388 240 00  
Fax: +358 388 240 40  
finland@murrelektronik.com

### France



**Murrtechnic S.à.r.l**  
Zone Industrielle Sud  
6 rue Manurhin  
B.P. 62, 68120 Richwiller  
Phone: +33 389 570 01 0  
Fax: +33 389 530 96 6  
murrtechnic@murrtechnic.fr  
www.murrtechnic.fr

### Great Britain



**Murrelektronik Ltd.**  
Albion Street  
Pendlebury Industrial Estate, Swinton  
Manchester M27 4FG  
Phone: +44 161 728 31 33  
Fax: +44 161 728 31 30  
murrelektronik@xxist.com

### Greece



**2 Kappa Ltd.**  
Sofokli Venizelou 13  
54628 Menemeni Thessaloniki  
Phone: +30 2310 77 55 10  
Fax: +30 2310 77 55 14  
2kappa@pel.forthnet.gr

### Hong Kong



**Worldtex & Co. (HK) Ltd.**  
Unit 11, 11/F., Tins Enterprises Centre  
777 Lai Chi Kok Rd., Cheung Sha Wan,  
Kowloon, Hong Kong  
Phone: +852 2781 18 60  
Fax: +852 2781 47 33  
worldtex@hkabc.net

# Sales agencies

## Worldwide

### Hungary



#### Technika G.K.M. Kft.

Csiki u. 1.  
2040 Budaörs  
Phone: +36 23 42 58 88  
Fax: +36 60 34 59 53  
wieland@technikagkm.hu  
www.technikagkm.hu

### Israel



#### EL-KAM Agencies and Trading Ltd.

26, Ha'ta'as St.  
P.O.Box 2475, 44425 Kfar-Saba  
Phone: +972 9 76 58 808  
Fax: +972 9 76 58 545  
el-kam@el-kam.com

### Italy



#### For ESD and conduit systems: R.E.C. Srl

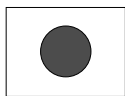
Via Magenta, 77, 20017 Rho (Mi)  
Phone: +39 2 93 50 83 27  
Fax: +39 2 93 50 83 26  
sales@recitalia.it

#### For labeling systems:

##### Modernotecnica S.p.A.

Via Pitagora 18, 20128 Milano  
Phone: +39 2 260 00 02 2  
Fax: +39 2 257 53 51  
sales@modernotecnica.com

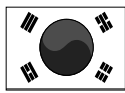
### Japan



#### Kitagawa Industries Co. Ltd.

Sales Dept. attention:  
Mr. S. Nishikawa, Sengoku Bldg. 6F  
2-4-15 Nihonbashi-Muromachi  
Chuo-Ku, TOKYO 103-0022  
Phone: +81 3 32 41 13 03  
Fax: +81 3 52 55 64 35  
nisikawa@kitagawa-ind.co.jp  
www.kitagawa-ind.com

### Korea



#### KPI Co. Ltd.

Room No. 401, 406 Sangnam  
Officetel, Sangnam  
Commercial Area, Sangnam-Dong  
Changwon Kyungsang Nam-Do,  
Korea 640-010  
Phone: +82 551 284 88 25  
Fax: +82 551 287 79 54  
kpi@kpikorea.com

#### Wool Engineering Corp.

Leejo B7D 2f. #713-15  
Mok-Dong, Yangchen-Ku, Seoul  
Phone: +82 2 265 25 62 2  
Fax: +82 2 265 25 62 4  
wool@murr.co.kr  
www.murr.co.kr

### Netherlands



#### Murrelektronik Benelux BV

Burgemeester Krollaan 7  
5126 PT Gilze  
Postbus 4, 5126 ZG Gilze  
Phone: +31 161 45 58 55  
Fax: +31 161 45 56 17  
benelux@murrelektronik.com

### Norway



#### Murrelektronik A/S

Kartverksveien 12  
3504 Honefoss, Serviceboks 20  
Phone: +47 32 179 08 0  
Fax: +47 32 179 09 0

### Poland



#### Ropla Industrial Sp. z o.o.

ul. Wyscigowa 3, 53-011 Wrocław  
Phone: +48 71 36 28 094  
Fax: +48 71 36 08 367  
arkadiuszbak@roplaindustrial.pl  
www.roplaindustrial.pl

### Portugal



#### FFonseca, S.A.

Estrada de Taboeira 87/89  
Apart. 3003 Esgueira  
3801-997 Aveiro  
Phone: +351 234 303 900  
Fax: +351 234 303 910  
ffonseca@ffonseca.com

### Singapore



#### Balluff Asia Pte. Ltd.

Blk 1004  
Toa Payoh Industrial Park  
Lorong 8, # 03 - 14 89  
Singapore 31 90 76  
Phone: +65 6 252 43 84  
Fax: +65 6 252 90 60  
balluff@balluff.com.sg

### Slovakia



#### SCHMACHTL CZ s.r.o.

Dumbierska 10/a  
83101 Bratislava 37  
Phone: +421 2 547 89 295  
Fax: +421 2 547 72 147  
office@schmachtl.sk

### Slovenia



#### Senzorji SB

proizvodnja, trgovina in storitve d.o.o.  
Ulica Pohorskega bataljona 14  
2000 Maribor  
Phone: +386 62 109 63 70  
Fax: +386 62 109 63 71  
sb.elektronika@siol.net

### South Africa



#### Innomatic

42 Monte Carlo Crescent  
Kyalami Business Park  
Kyalami, Midrand  
Phone: +27 11 466 01 74  
Fax: +27 11 466 02 23  
sales@innomatic.co.za

### Spain



#### Murrplastik S.L.

Paseo Ubarburu, 76  
Pabellón 34, polígono 27  
20014 San Sebastián  
Phone: +34 943 444 83 7  
Fax: +34 943 472 89 5  
info@murrplastik.es  
www.murrplastik.es

### Sweden



#### J.Y. Automation System AB

Vikhemsvägen 9  
SE - 241 38 Eslöv  
Box 125  
SE - 241 22 Eslöv  
Phone: +46 413 692 20  
Fax: +46 413 692 21  
info@automationssystem.se  
www.automationssystem.se

### Switzerland



#### Murrplastik AG

Ratihard 40  
8253 Willisdorf  
Phone: +41 52 646 06 46  
Fax: +41 52 646 06 40  
info@murrplastik.ch  
www.murrplastik.ch

### Taiwan



#### Lintronix Co., Ltd.

4F, No. 651-6, Chung Cheng Road,  
242, Hsin Chuang  
Taipei, Taiwan R.O.C.  
Phone: +886 2 290 81 66 6  
Fax: +886 2 290 81 67 8  
lintro@ms13.hinet.net  
www.lintronix.com.tw

#### Autonix Co., Ltd.

3.FL., 124 Chung-Cheng Road,  
Shihlin, Taipei, Taiwan R.O.C.  
Phone: +886 2 886 61 23 1  
Fax: +886 2 886 61 23 9  
day111@ms23.hinet.net

### Thailand



#### Compomax Company Ltd.

16 Soi Ekamai 4, Sukhumvit 63 Rd.  
Prakanongnua, Vadhana  
Bangkok, 10110  
Phone: +66 2 726 95 95 34 3  
Fax: +66 2 726 98 60  
compomax@samart.co.th

### Turkey



#### Pinar Mühendislik Ltd Sti

Perpa Ticaret Merkezi A Blok  
Kat 11 No:1477  
80270 Okyadani-Istanbul  
Phone: +90 212 220 02 77  
Fax: +90 212 220 13 16  
pinarmuh@superonline.com

### Ukraine



#### Ropla Ukraine

Zielona 105  
79035 Lviv  
Phone: +38 322 41 83 45  
Fax: +38 322 41 83 01

### USA



#### Murrplastik Systems, Inc.

4050-F Skyron Drive  
Doylestown, PA 18901  
Phone: +1 215 340 94 86  
Fax: +1 215 340 95 86  
cablemgmt@murrplastik.com  
www.murrplastik.com

### Eastern Europe

#### FORTICAR IM-EXPORT GMBH

Mr. H. Breuer  
Brückenstraße 33  
D-71554 Weissach im Tal  
Phone: +49 7191 300 49 6  
Fax: +49 7191 300 49 8



## Notes

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.

## Notes

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.



## Notes

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.

All information relating to the chemical and physical properties of our products, and all advice on applications provided in verbal or written form or by way of tests, are given to the best of our knowledge.

It does not exempt the purchaser from the responsibility to carry out examinations and tests in order to determine the precise suitability of the products for the intended use.

The purchaser is solely liable for the application, use, and installation of the product. He must also comply with the legal and official provisions, and observe any possible property rights of third parties.

Furthermore, our General Terms and Conditions apply.

## Head Office

### Germany

#### **murrplastik Systemtechnik GmbH**

Postfach 1143  
71567 Oppenweiler  
Tel.: +49(0)7191/482-0  
Fax: +49(0)7191/482-280  
[www.murrplastik.de](http://www.murrplastik.de)  
[info@murrplastik.de](mailto:info@murrplastik.de)

### Switzerland

#### **Murrplastik AG**

Ratihard 40  
8253 Willisdorf  
Tel.: +41 526 46 06 46  
Fax: +41 526 46 06 40  
[www.murrplastik.ch](http://www.murrplastik.ch)  
[info@murrplastik.ch](mailto:info@murrplastik.ch)

### France

#### **Murrtechnic S.à.r.l**

Zone industrielle Sud, 6 rue Manurhin  
B.P. 62, 68120 Richwiller  
Tel.: +33 389 570 01 0  
Fax: +33 389 530 96 6  
[www.murrtechnic.fr](http://www.murrtechnic.fr)  
[murrtechnic@murrtechnic.fr](mailto:murrtechnic@murrtechnic.fr)

### Spain

#### **Murrplastik S.L.**

Paseo Ubarburu, 76  
Pabellón 34, polígono 27  
20014 San Sebastián  
Tel.: +34 943 472 22 5  
Fax: +34 943 472 89 5  
[www.murrplastik.es](http://www.murrplastik.es)  
[info@murrplastik.es](mailto:info@murrplastik.es)

### USA

#### **Murrplastik Systems, Inc.**

4050-F Skyron Drive  
Doylestown, PA 18901  
Tel.: +1 215 340 94 86  
Fax: +1 215 340 95 86  
[www.murrplastik.com](http://www.murrplastik.com)  
[cablemgmt@murrplastik.com](mailto:cablemgmt@murrplastik.com)

### China

#### **murrplastik Asia Co., Ltd.**

Building B, 155 Fu Te Xi Yi Road  
Wai Gao Qiao Free Trade Zone  
Shanghai, 200131  
Tel.: +86 21 586 61 55 5  
Fax: +86 21 586 67 94 0  
[www.murrplastic.com.cn](http://www.murrplastic.com.cn)  
[info@murrplastik.com.cn](mailto:info@murrplastik.com.cn)