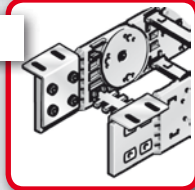


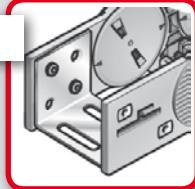
System overview

1 Chain bracket

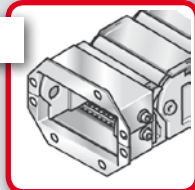
Chain bracket angle



Chain bracket U-part

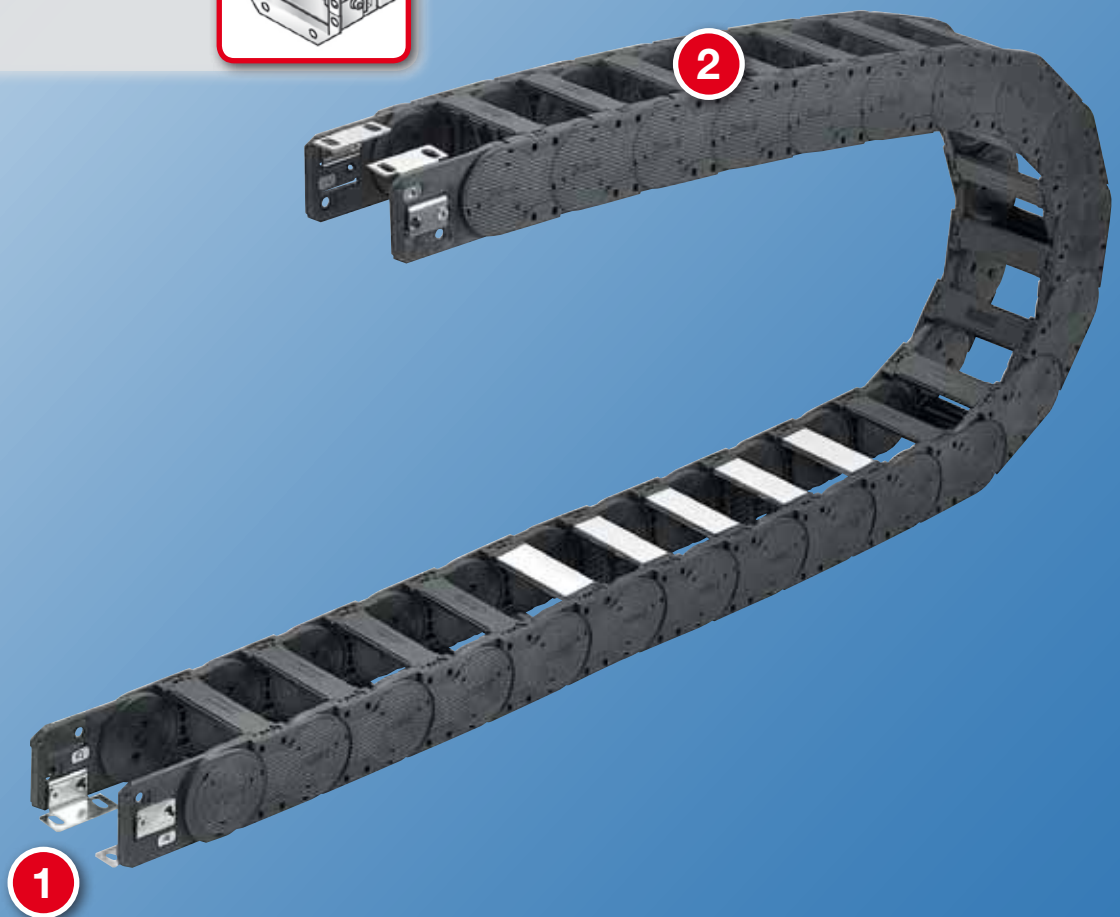


End brackets flange



2 Shelving system

Separator TR



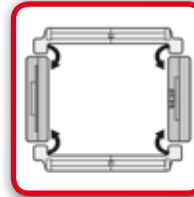
Guide channels

Aluminium VAW

Stainless steel VAW-E

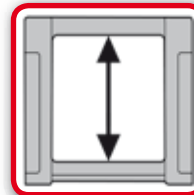


Technical data



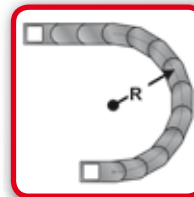
Loading side

inside and outside flexure curve



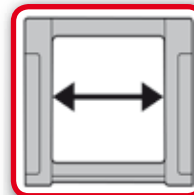
Available interior heights

60.0 mm



Available radii

150.0 – 400.0 mm



Available interior widths

45.0 – 182.0 mm

With aluminium frame
bridge

70.0 – 600.0 mm

Ordering key

| Type | Variation | Dimensions | | | Ridge version | | Chain length mm |
|------|-----------|--------------------|---------------------|-------------------|-----------------|---|--------------------|
| | | Inside width mm | Outside width mm | Radius mm | Material | | |
| 0660 | 30 | 45 ¹⁾ | 79 ¹⁾ | 150 ¹⁾ | 0 | 0 | |
| 0650 | 44 | 62 ¹⁾ | 96 ¹⁾ | 200 | 1 | 9 | |
| | | 84 | 118 | 240 | 2 ¹⁾ | | |
| | | 105 | 139 | 280 | 3 ¹⁾ | | |
| | | 144 | 178 | 350 | 4 ¹⁾ | | |
| | | 182 ¹⁾ | 216 ¹⁾ | 400 | 5 ¹⁾ | | |
| | | | | | 6 ¹⁾ | | |
| | | | | | 7 ¹⁾ | | |
| | | | | | 9 | | |

Note on configuration

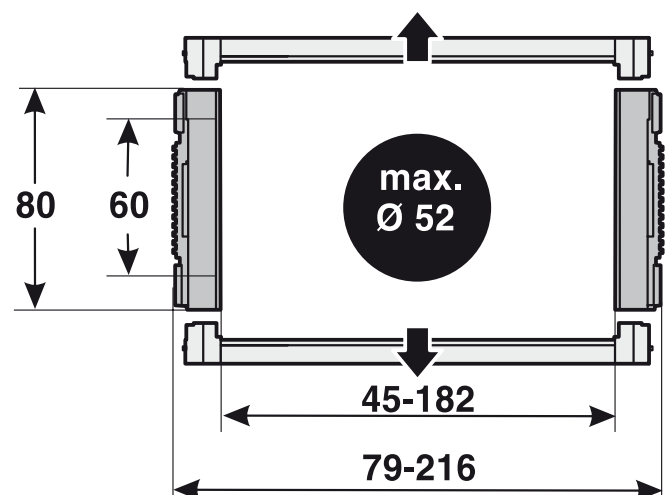
Frame bridges and cover from aluminium:
Aluminium frame bridges and covers can be supplied in 1 mm width sizes for inner widths from 70.0 mm – 600.0 mm.
If frame bridge strain relief plates (RS-ZL) are to be deployed, take standard widths into account.

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

For detailed information, please consult the corresponding product documentation.

Chain link

Loading side: inside and outside flexure curve



Dimensions in mm

- 0 Standard (PA/black)
- 9 Special version

- 0 PA full-ridged with bias
- 1 PA full-ridged without bias
- 2 PA half-ridged with bias
- 3 PA half-ridged without bias
- 4 Aluminium full-ridged with bias
- 5 Aluminium full-ridged without bias
- 6 Aluminium half-ridged with bias
- 7 Aluminium half-ridged without bias
- 9 Special version

- 30 Frame bridge on outside of radius
Frame bridge on inside of radius
Opens on inside and outside of radius
- 44 Cover on outside of radius
Cover on inside of radius
Opens on inside and outside of radius

Order sample: 0660 30 045 150 0 0 1556

Frame bridge in outside bend, frame bridge in inside bend, can be opened from inside and outside bend
 Inside width 45 mm; radius 150 mm
 Plastic bridge, full-ridged with bias, material black-coloured polyamide
 Chain length 1556 mm (17 links)

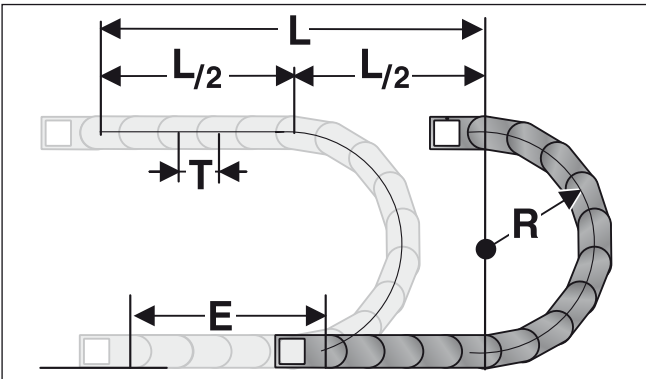
Technical specifications

| | |
|--|-----------------------|
| Travel distance gliding L_g max.: | 60.0 m |
| Travel distance self-supporting L_f max.: | see diagram |
| Travel distance vertical, hanging L_{vh} max.: | 50.0 m |
| Travel distance vertical, upright L_{vs} max.: | 5.0 m |
| Rotated 90°, unsupported L_{90f} max.: | 2.0 m |
| Speed, gliding V_g max.: | 5.0 m/s |
| Speed, self-supporting V_f max.: | 15.0 m/s |
| Acceleration, gliding a_g max.: | 15.0 m/s ² |
| Acceleration, self-supporting a_f max.: | 20.0 m/s ² |

Material properties

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

Determining the chain length



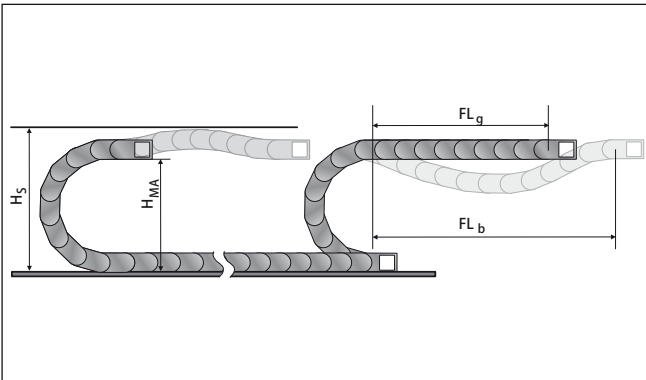
The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.

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

$$\approx 1 \text{ m chain} = 11 \text{ qty.} \times 91.5 \text{ mm links.}$$

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

Self-supporting length



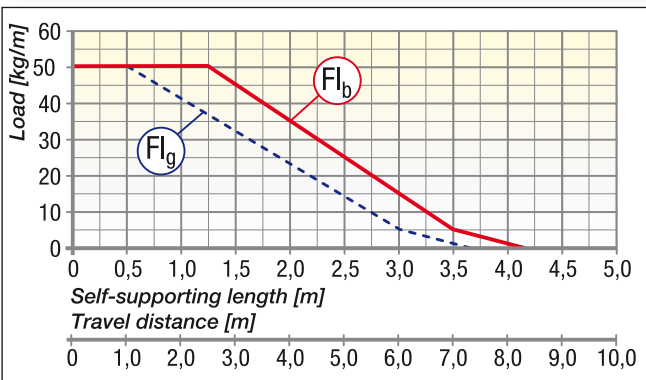
The self-supporting length is the distance between the chain bracket on the moving end and the start of the chain arch.

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

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

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

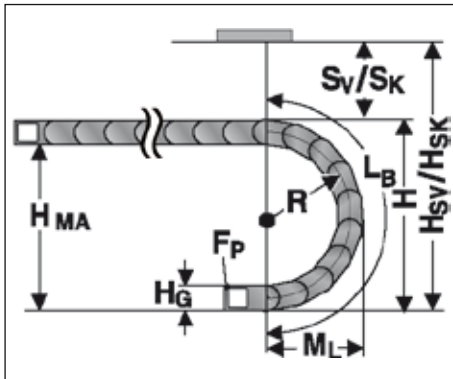
Load diagram for self-supporting applications



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

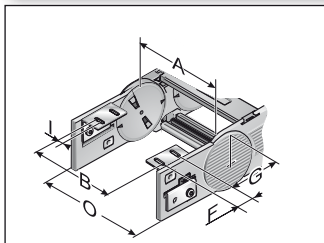
FL_b Self-supporting Length, upper run bent
In the FL_b range, the chain upper run has a sag of more than , but this is still less than the maximum sag. Where the sag is greater than that permitted in the FL_b range, the application is critical and should be avoided. The self-supporting length can be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

Installation dimensions

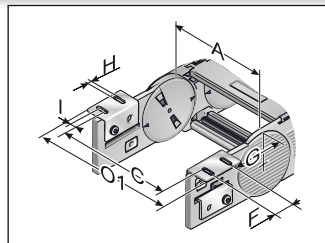


| Radius R | 150 | 200 | 240 | 280 | 350 | 400 |
|---|-----|-----|-----|------|------|------|
| Outside height of chain link (H_c) | 80 | 80 | 80 | 80 | 80 | 80 |
| Height of bend (H) | 380 | 480 | 560 | 640 | 780 | 880 |
| Height of moving end connection (H_{MA}) | 300 | 400 | 480 | 560 | 700 | 800 |
| Safety margin with bias (S_v) | 50 | 50 | 50 | 50 | 50 | 50 |
| Installation height with bias (H_{SV}) | 430 | 530 | 610 | 690 | 830 | 930 |
| Safety margin without bias (S_{SK}) | 15 | 15 | 15 | 15 | 15 | 15 |
| Installation height without bias (H_{SK}) | 395 | 495 | 575 | 655 | 795 | 895 |
| Arc projection (M_L) | 282 | 332 | 372 | 412 | 482 | 532 |
| Bend length (L_b) | 688 | 845 | 971 | 1096 | 1316 | 1473 |

Chain bracket angle



KA 66 (inside up / down)

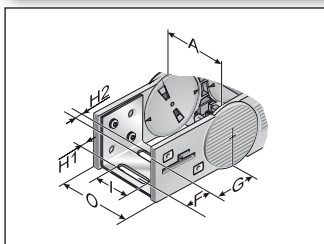


KA 66 (outside up / down)

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

| Type | Order no. | Material | Inside width | | | | | | | Outside width KA O | Outside width KA O1 |
|-------|------------|------------------------|--------------|---------|---------|---------|---------|----------|---------|-----------------------|------------------------|
| | | | A mm | B mm | C mm | F mm | G mm | HØ mm | I mm | | |
| KA 66 | 0660000050 | Sheet steel | 62.0 – 182.0 | A-17.0 | A+51.0 | 45.0 | 50.5 | 9.0 | 10.0 | A+34.0 | A+64.0 |
| KA 66 | 0660000060 | Stainless steel 1.4301 | 62.0 – 182.0 | A-17.0 | A+51.0 | 45.0 | 50.5 | 9.0 | 10.0 | A+34.0 | A+64.0 |

Chain bracket U-part



KA 66 U

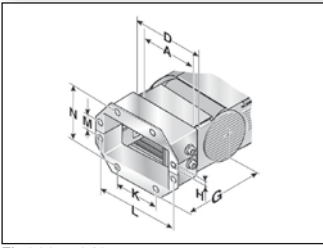
As standard, this chain bracket is supplied in a width of 45 mm. Bracket can be mounted up or down.

| Type | Order no. | Material | Inside width | | | | | | Outside width KA O |
|---------|------------|-------------|--------------|---------|---------|----------|----------|---------|-----------------------|
| | | | A mm | F mm | G mm | H1 mm | H2 mm | I mm | |
| KA 66 U | 0660000054 | Sheet steel | 45.0 | 28.0 | 58.5 | 6.5 | 8.5 | 33.0 | A+34.0 |



MultiLine MP 66 MP 65G

End brackets flange

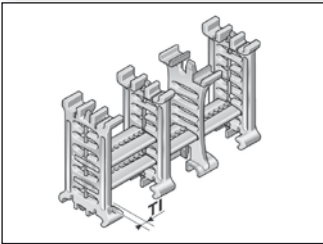


A cable drag chain requires two chain brackets. The divisible flange connection has been specifically designed for commissioning and re-installation. This keeps the chain in the installed position.

FL 082 – 142

| Type | Order no. | Material | Inside width | | | | | | |
|--------|------------|------------------------|--------------|------|-------|-------|-------|------|-------|
| | | | A mm | G mm | HØ mm | K mm | L mm | M mm | N mm |
| FL 082 | 0650000070 | Sheet steel | 86.0 | 60.4 | 7.0 | 78.0 | 141.5 | 40.0 | 105.0 |
| FL 107 | 0650000072 | Sheet steel | 102.0 | 60.4 | 7.0 | 100.0 | 163.5 | 40.0 | 105.0 |
| FL 142 | 0650000074 | Sheet steel | 125.0 | 60.4 | 7.0 | 138.0 | 201.5 | 40.0 | 105.0 |
| FL 082 | 0650000080 | Stainless steel 1.4301 | 86.0 | 60.4 | 7.0 | 78.0 | 141.5 | 40.0 | 105.0 |
| FL 107 | 0650000082 | Stainless steel 1.4301 | 102.0 | 60.4 | 7.0 | 100.0 | 163.5 | 40.0 | 105.0 |
| FL 142 | 0650000084 | Stainless steel 1.4301 | 125.0 | 60.4 | 7.0 | 138.0 | 201.5 | 40.0 | 105.0 |

Shelving system

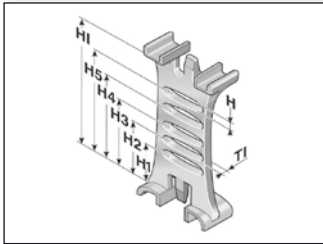


In connection with at least two shelf supports (RT) the shelf becomes a shelving system. The additional levels prevent cables from criss-crossing and therefore destroying each other, while also avoiding excessive friction. The shelving system may be pre-assembled on request.

Shelving system

| Type | Order no. | Designation | Width mm | Pitch mm | TI mm |
|--------|--------------|---------------|----------|----------|-------|
| RB 031 | 100000003100 | Shelf | 31.0 | 1.6 | |
| RB 048 | 100000004800 | Shelf | 48.0 | 1.6 | |
| RB 070 | 100000007000 | Shelf | 70.0 | 1.6 | |
| RB 092 | 100000009200 | Shelf | 92.0 | 1.6 | |
| RB 100 | 100000010000 | Shelf | 100.0 | 1.6 | |
| RB 128 | 100000012800 | Shelf | 128.0 | 1.6 | |
| RB 167 | 100000016700 | Shelf | 167.0 | 1.6 | |
| RT 66 | 1000900100 | Shelf support | | 1.6 | 6.5 |

Separator

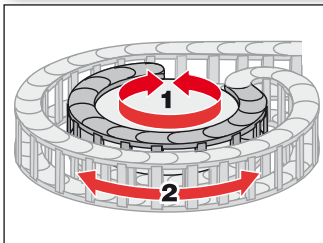


Separator

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

| Type | Order no. | Designation | Pitch mm | TI mm | H mm | H1 mm | H2 mm | H3 mm | H4 mm | H5 mm | H1 mm |
|-------|--------------|-------------|----------|-------|------|-------|-------|-------|-------|-------|-------|
| TV 66 | 066000009000 | Separator | 1.6 | 3.5 | 4.4 | 18.0 | 25.1 | 32.2 | 39.3 | 46.4 | 60.0 |

Back radii

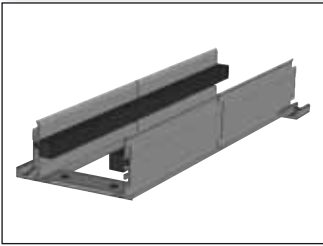


Rotating movement

Side links with radius forward (R) and radius backward (Rü) allow for movement in two directions. This is intended for rotating movements and lowered chain brackets.

| Type | Order no. | Back radius mm | Version |
|---------------|--------------|----------------|---|
| SR 66 (RÜ240) | 066000000060 | 240.0 | Available for radii 150, 200, 240, 280 and 350 mm |

Guide channels (VAW)



VAW

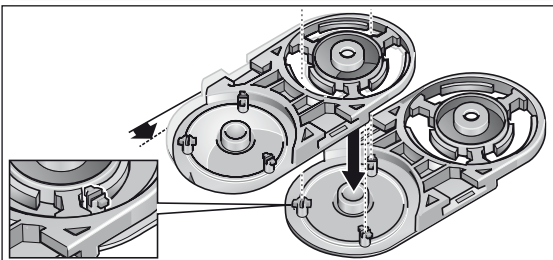
For this cable drag chain, a variable guide channel system is available, constructed from aluminium sections.

The variable guide channel ensures that the cable drag chain is supported and guided securely.

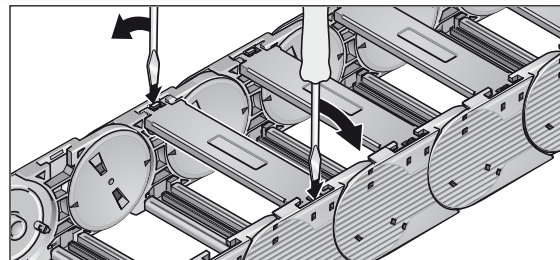
For help on choosing, please consult the chapter „Variable Guide Channel System“.

Assembly

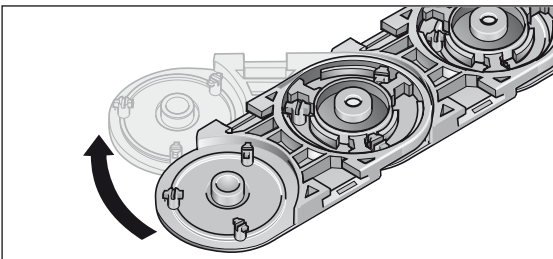
Disassembly



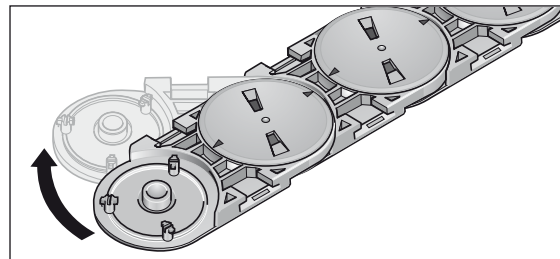
Step 1



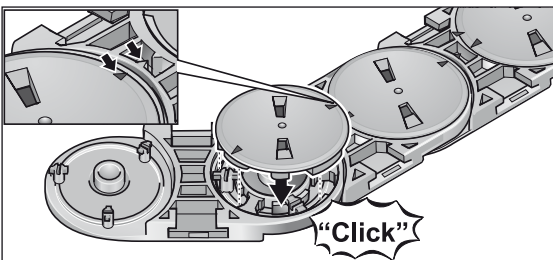
Step 1



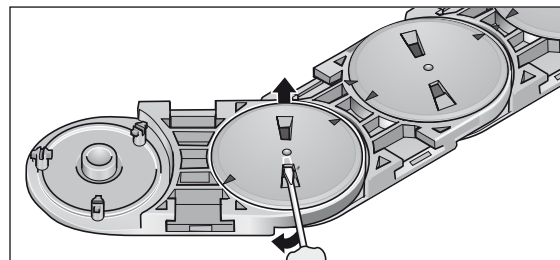
Step 2



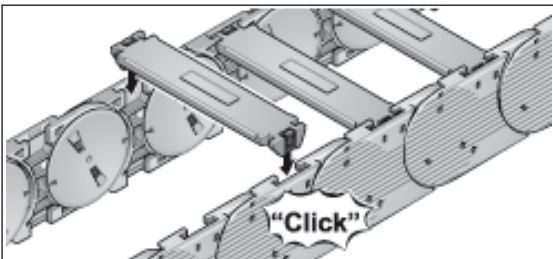
Step 2



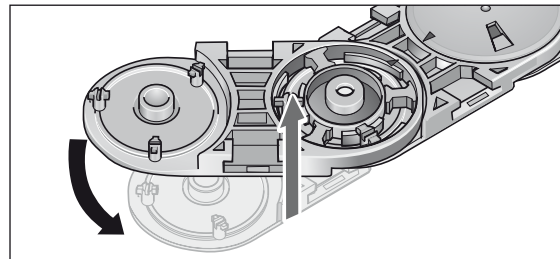
Step 3



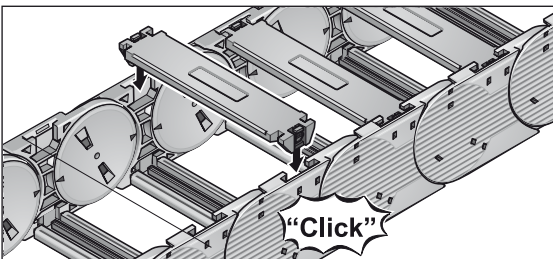
Step 3



Step 4



Step 4



Step 5

