

Photo: HELUKABEL®

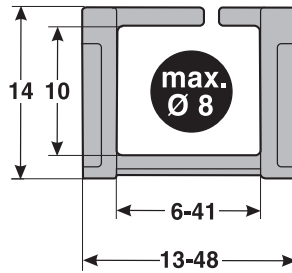
Cable drag chains



Cable accessories

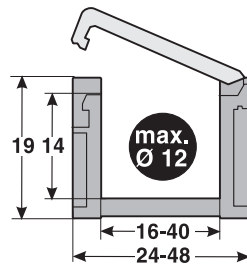
HELUKABEL – Contents

Cable drag chain systems open



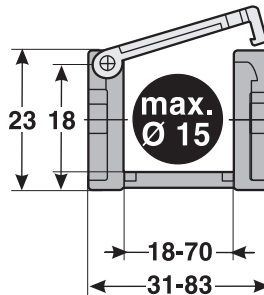
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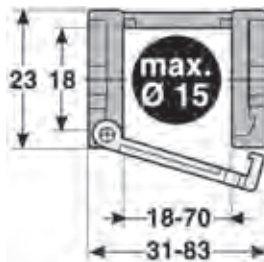
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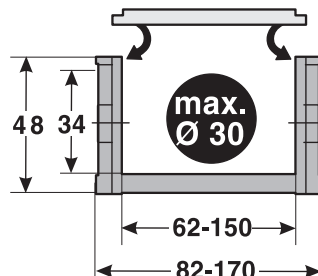
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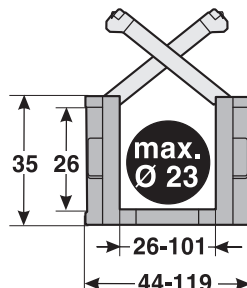
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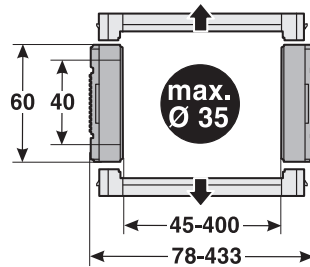
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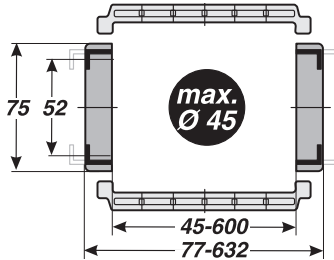
Cable accessories

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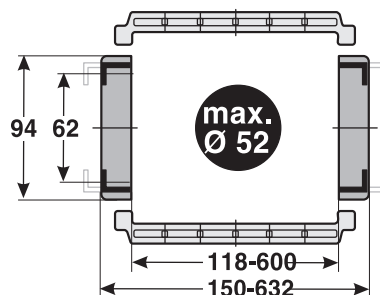
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PowerLine EFK 52.2

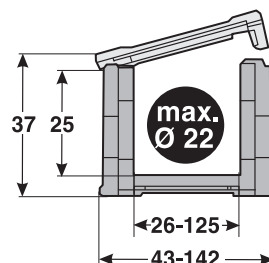
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HeavyLine EFK 62.2

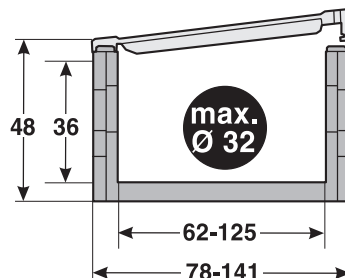
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Cable drag chain systems closed



SafeLine EFK 25G

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SafeLine EFK 36G

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Cable accessories

**Please use our selection table
Cables for cable drag chains
which follows after the cable drag chains.**

- a) Control cables, screened and unscreened
- b) Elektronik data bus cables, screened and unscreened
- c) Servo and motor connection cables, screened and unscreened
- d) Environmentally-compatible cables, screened and unscreened

**All cables are also in our main catalogue
"Cables and Wires"**

Advantages:

• **Subsequent laying of cables or changing the assignment:**

The chain must be opened from the inside and outside curve.
Pre-assembled cables can then be inserted easily.

• **High stability:**

Due to multiple and large stops. Large connecting bolts ensure better force absorbing capacity.

• **Easy handling:**

Only a screwdriver is needed to open the cable carrier.

• **Quick adjustment of the chain lengths:**

A simple length modification is also possible at any time in the installed condition.

• **Fastening secured using metal inserts:**

The cold flow characteristics are prevented in this way.

• **Strain relief in the chain connector:**

The strain relief is integrated in the chain connector. The cables are fixed using cable binders.

• **Fastening variant using rotating chain connector:**

Many variants are made possible using this option.

• **Dividers:**

Guarantee optimum cable routing.

• **Can be recycled:**

The plastic of the chain is completely recyclable.



Cable accessories

Drag Chain Systems

Please send inquiry to:
 MARYLAND METRICS
 P.O. Box 261
 Owings Mills, MD 21117 USA
 ph: (410)358-3130 (800)638-1830
 fx: (410)358-3142 (800)872-9329
 email: sales@mdmetric.com
 web: <http://mdmetric.com>

Sender _____

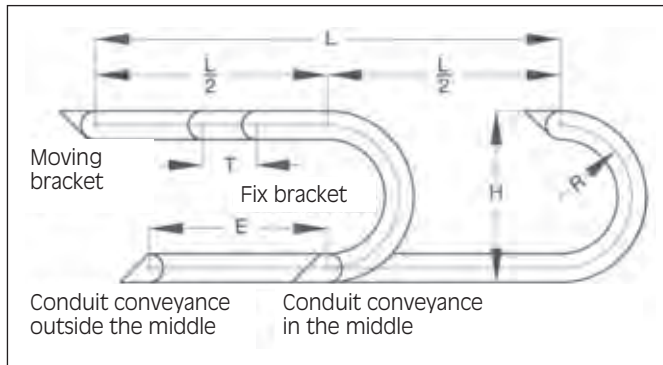
Contact _____

Phone _____ Fax _____

Inquiry No. _____
 Date _____

Requirement _____ pieces

User parameters



L = Total travel, R = Radius, H = Installation height, T = Separation, E = Distance of the conduit conveyance to the middle of the total travel

Internal height: _____ mm
 Internal width: _____ mm

If the inner height or width are not known:

| Filling | Cable type | Quantity | Outer diameter |
|---------|------------|----------|----------------|
| | | | |
| | | | |

Radius: _____ mm
 If not known: Maximum overall height _____ mm

Incoming supply:: in the middle of the traverse path
 or: _____ mm from the middle of the traverse path
 _____ mm

If not known: Traverse path _____ mm

Installation variants (see right) _____

Total stroke speed _____ m/s

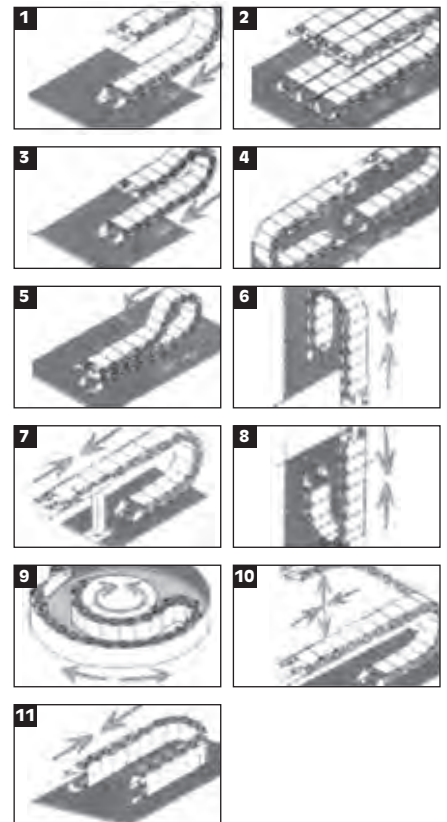
Speed up _____ m/s²

Total stroke frequency _____ x/h

Environmental effects _____

Tub existing yes no Internal width _____ mm

Installation variants



Cable accessories

Installation manual

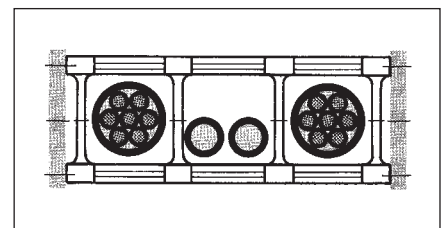
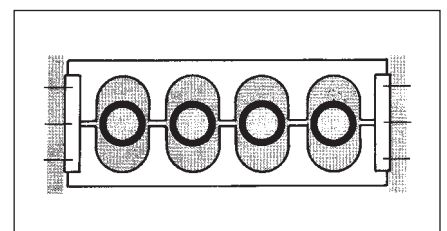
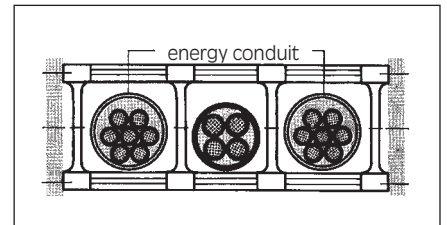
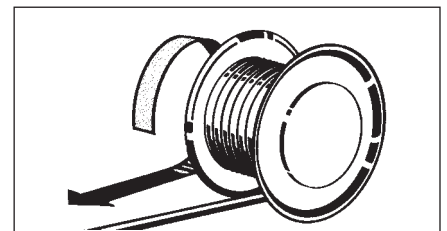
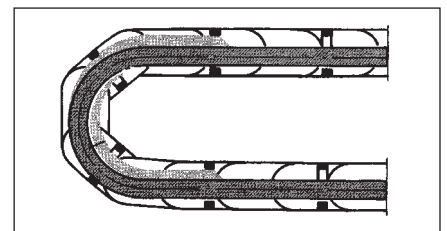
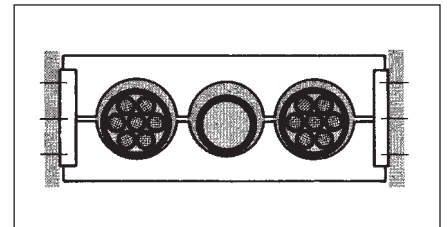
Cable installation in drag chains

The control cables in drag chains undertake an important task for the controlling and power technique, must be good synchronized with each other in the power chain systems. Further the installation of the cables and protection tubes in the power drag chains must be conducted with great care. An efficient usage upon accurate and exact cable installation. The following basic points should be noticed:

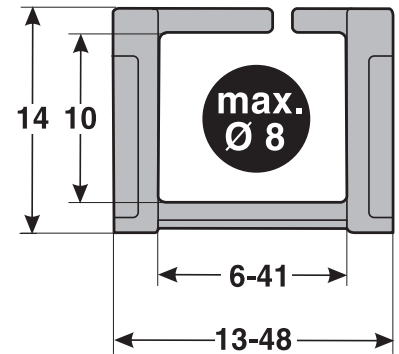
1. Where flat and round cables are mixed in one drag tray, then these should be installed loosely next to one another. The guide stays should be installed between the cables laid side by side. Try and avoid placing different sizes of round cables next to one another. Due to the limited space relationship cables arranged one above the other, frame stays are to be installed.
2. The cables must be installed with guide stays, dividers or in separate hole stays so as to move freely in the drag tray guides. As free space for the cables in the guide stay should be at least 10% of the cable \varnothing .
3. Always ensure that the cable can follow the drag trays motions without appearing to be forced.
4. If the cables are to be installed in the drag tray in layers then it is important to check upon installation that the cables are laid in such a way that they do not block each other when the drag tray alters direction.
5. Cables should always be installed in nonkinking and nontwisting flat position into the drag trays. The cables must be reeled down tangential from the reels or drums; the cables should not be lifted up in twisted or looping form over head. Before the installation, the cables must be laid in straight and non-twisted form on plane surface. The cables must have an additional length of at least 10% of the whole length so that these can be laid freely without twisting in drag chains.
6. In case that is not possible to lay the cables as described under 5, in order to lay several multi core high flexible cables with an outer diameter < 10 mm, we recommend the use of a guiding tube, in which these cables should loosely laid. This tube is then integrated into the drag system.
The cross section of this tube has to be much larger as the sum of the cross sections of the cables. For the free movement of the flexible energy conduits, the guide or divider stays must be installed.
7. In case that pressure- or hydraulic tubes are integrated in a power drag system, those should be able to expand and to shrink under alternating charges without interrupting the functionality of the drag system.
8. In order to maintain a balanced running of the drag chain it is necessary to ensure that the weight of the cables inside is divided up evenly, with the heavier cables installed on the edges and the lighter types in the middle.
All cables must be securely fixed at one end of the drag chain. Thus assuring that the cores are securely fastened to one side with the other, open, side allowing enough slack to take up the drag chain's motion.

Generally it is recommended, if possible, not to use cables with a multi layer construction, e.g. >25 cores, but to split the necessary number of conductors over several cables.

If you have any further questions please call our support team.



EasyLine EFK 10.1



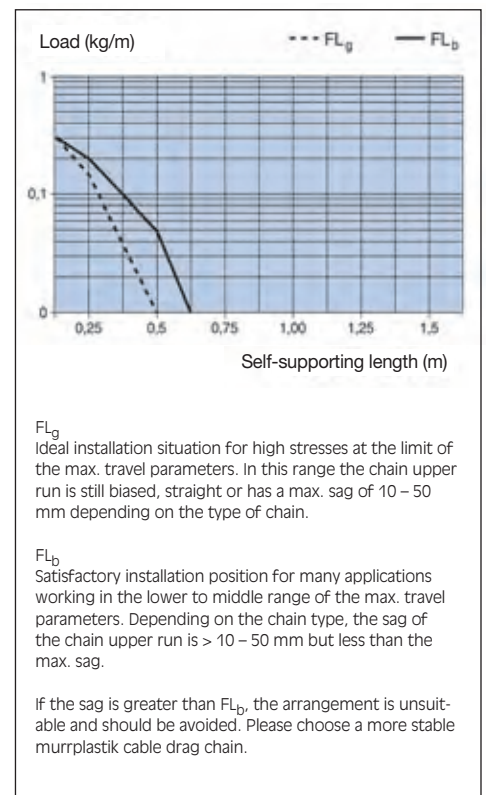
Product range:

- **Internal height 10 mm**
- **Internal width 6-41 mm**
- **Loading side slotted on outside of radius**
- **Links per metre: 67**
- **Chain separation: 15 mm**
- **Maximum cable diameter: 8 mm**
- **Maximum procedure path: 10 m**
- **Material: modified polyamide**

Advantages:

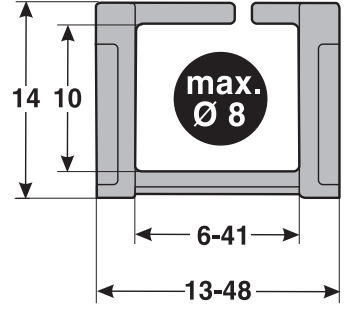
- **Open cross bar:**
The slit cross bars on the outer radius allow easy cable installation. Due to the diagonal slit configuration, cables falling out is avoided.
- **Wire insertion tool:**
The wire insertion tool allows the easy insertion of cable, wires and hoses.
- **High stability:**
Multiple large stops ensure high stability, while large diameter pins provide a high strength connection between links.
- **Quick adaptation of the chain length:**
The chain can be easily modified in terms of length without the use of tools.
- **Subsequent strain relief:**
Strain relief is integrated into the chain end brackets. Cable ties provide secure strain relief.
- **Integrated separators:**
Integrated separators ensure optimal cable guiding.
- **Recyclable:**
The plastic used in the chain is fully recyclable.

Unsupported length



Technical modifications are subject to change without prior notice.

EasyLine EFK 10.1



- Style (order code)
- Configuration (order code)
- Radius (order code) in mm
- Internal width (order code) in mm
- External width in mm

| R | HS | HMA |
|----|-----|-----|
| mm | mm | mm |
| 18 | 60 | 50 |
| 28 | 80 | 70 |
| 38 | 100 | 90 |
| 48 | 120 | 110 |
| 58 | 140 | 130 |

Open built-in height: $HS = 2xR + HG + S$
 Connecting height bottom/top: $HMA = 2xR + HG$
 External height of chain link: $HG = 14 \text{ mm}$
 Safety: $S = 10 \text{ mm}$
 Length of chain link: $T = 15 \text{ mm}$

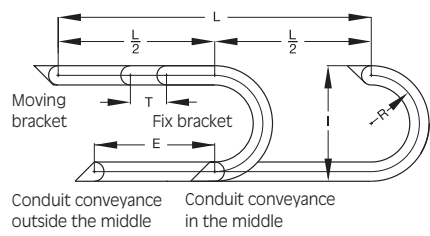
| | | | | | | | |
|----|----|-----|----|-----|--|---|--|
| 13 | 6 | 006 | | | | | |
| 16 | 9 | 009 | 18 | 018 | | | |
| 22 | 15 | 015 | 28 | 028 | | | |
| 28 | 21 | 021 | 38 | 038 | | | |
| 38 | 31 | 031 | 48 | 048 | | 0 | |
| 48 | 41 | 041 | 58 | 058 | | 7 | |
| | | | | | | 9 | |

Configuration: 0 crossbar every link; w/bias
 Style: 0 Standard (PA)
 7 ESD (PA)
 9 Special version

Order Number:

Sample order: Inside width = 6 mm, Radius = 18 mm, Configuration = 0, Style = 0

Order number: 0101 006 018 0000



Determining the chain length

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

≈ 1 m chain = 67 x 15 mm links

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

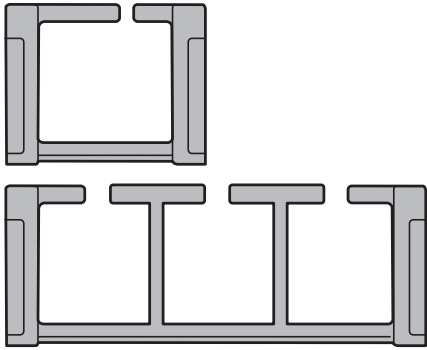
The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.

Technical modifications are subject to change without prior notice.

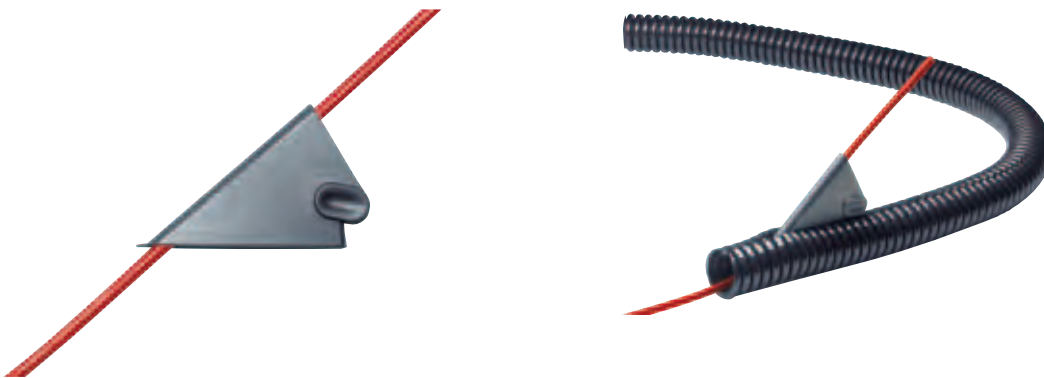


EasyLine EFK 10.1 / Accessories

Insertion aid



| Chamber size Type | Order no. | Description | Pack |
|----------------------|-----------|-----------------------|------|
| KE | 901006 | KE wire insertion aid | 1 |



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

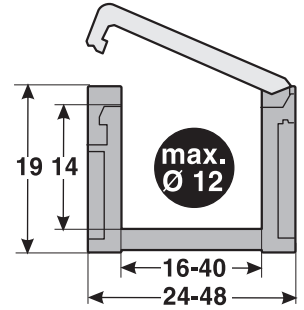
Technical modifications are subject to change without prior notice.

MultiLine EFK 14



Product range:

- Internal height 14 mm
- Internal width 16-40 mm
- Loading side slotted on outside of radius
- Links per metre: 38
- Chain separation: 26 mm
- Maximum cable diameter: 12 mm
- Maximum procedure path: max. 20 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HS | HMA |
|----|-----|-----|
| mm | mm | mm |
| 25 | 89 | 69 |
| 38 | 115 | 69 |
| 48 | 135 | 115 |
| 78 | 189 | 169 |

Open built-in height: $HS = 2xR + HG + S$
 Connecting height bottom/top: $HMA = 2xR + HG$
 External height of chain link: $HG = 19 \text{ mm}$
 Safety: $SK = 20 \text{ mm}$
 Length of chain link: $T = 26 \text{ mm}$

| | | | | | | |
|----|----|-----|----|-----|---|---|
| 24 | 16 | 016 | 25 | 025 | | |
| 28 | 20 | 020 | 38 | 038 | | |
| 38 | 30 | 030 | 48 | 048 | | |
| 48 | 40 | 040 | 75 | 075 | | |
| | | | | | 0 | 0 |
| | | | | | 7 | 9 |

Configuration: 0 crossbar every link; w/bias
 Style: 0 Standard (PA)
 7 ESD (PA)
 9 Special version

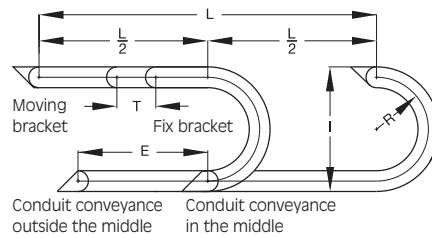
Order number: 0140 [] [] 0 [] [] 0

Sample order: Inside width = 16 mm, Radius = 25 mm, Configuration = 0, Style = 0

Order number: 0140 016 025 0000

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 1 m chain = 38 x 26 mm links

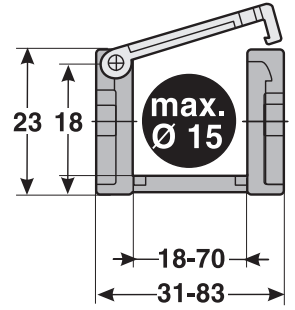
The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.

MultiLine MP 18.1



Product range:

- Internal height 18 mm
- Internal width 18-70 mm
- Loading side slotted on outside of radius
- Links per metre: 30
- Chain separation: 33 mm
- Maximum cable diameter: 15 mm
- Maximum procedure path: max. 30 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HS | HMA |
|----|-----|-----|
| mm | mm | mm |
| 28 | 109 | 79 |
| 38 | 129 | 99 |
| 48 | 149 | 119 |
| 78 | 209 | 179 |

Open built-in height: $HS = 2xR + HG + S$
 Connecting height bottom/top: $HMA = 2xR + HG$
 External height of chain link: $HG = 23$ mm
 Safety: $S = 30$ mm
 Length of chain link: $T = 33$ mm

| | | | | |
|----|----|-----|----|-----|
| 31 | 18 | 018 | | |
| 38 | 25 | 025 | 25 | 028 |
| 50 | 37 | 037 | 38 | 038 |
| 63 | 50 | 050 | 48 | 048 |
| 83 | 70 | 070 | 78 | 078 |

| | |
|---|---|
| | |
| | 0 |
| | 7 |
| 0 | 9 |

Configuration: 0 crossbar every link; w/bias
 Style: 0 Standard (PA)
 7 ESD (PA)
 9 Special version

Order number:

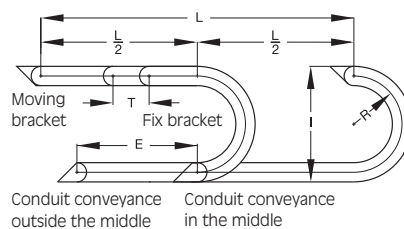
Sample order: Inside width = 18 mm, Radius = 28 mm, Configuration = 0, Style = 0

Order number: 0181 018 028 0000

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

Prices on request

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 1 m chain = 30 x 33 mm links

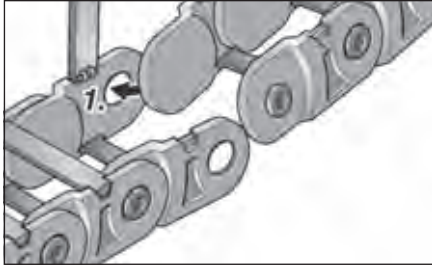
The fixed point of the cable drag chain should be connected in the middle of the travel distance. This arrangement gives the shortest connection between the fixed point and the moving consumer and thus the most efficient chain length.



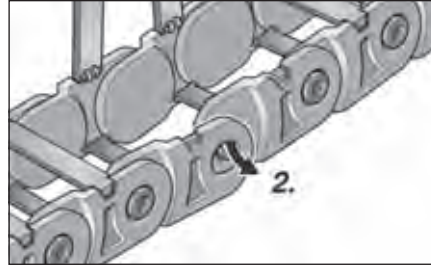
Cable accessories

MultiLine MP 18.1

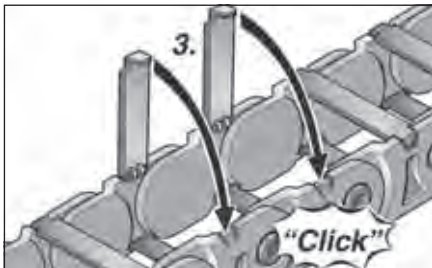
Assembly



Step 1

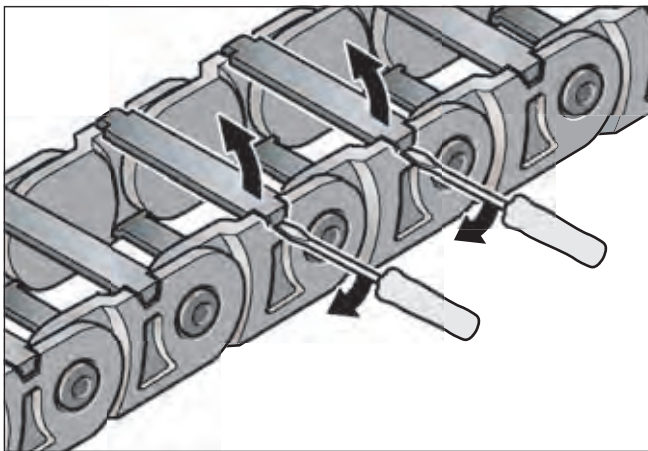


Step 2

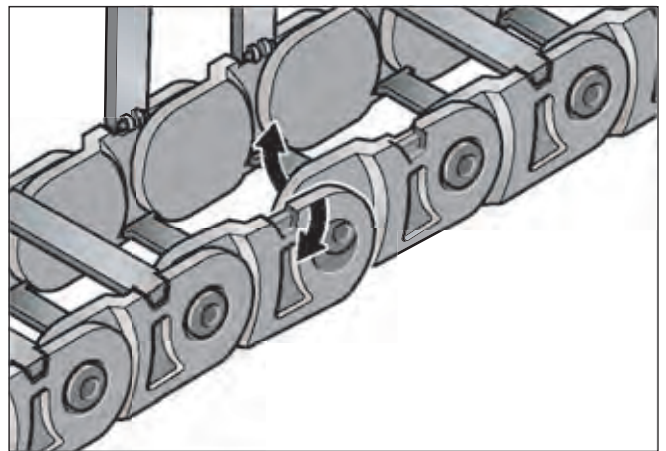


Step 3

Disassembly



Step 1



Step 2

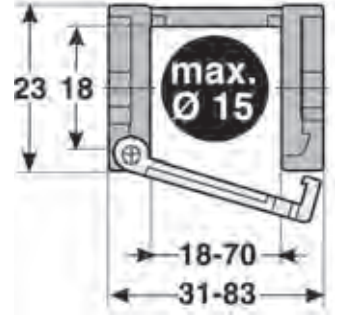
Technical modifications are subject to change without prior notice.

MultiLine EFK 18.2



Product range:

- Internal height 18 mm
- Internal width 18-70 mm
- Loading side slotted on outside of radius
- Links per metre: 30
- Chain separation: 33 mm
- Maximum cable diameter: 15 mm
- Maximum procedure path: max. 30 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HS | HMA |
|----|-----|-----|
| mm | mm | mm |
| 28 | 109 | 79 |
| 38 | 129 | 99 |
| 48 | 149 | 119 |
| 78 | 209 | 179 |

Open built-in height: $HS = 2xR + HG + S$
 Connecting height bottom/top: $HMA = 2xR + HG$
 External height of chain link: $HG = 23 \text{ mm}$
 Safety: $S = 30 \text{ mm}$
 Length of chain link: $T = 33 \text{ mm}$

| | | | | |
|----|----|-----|----|-----|
| 31 | 18 | 018 | 28 | 028 |
| 38 | 25 | 025 | 38 | 038 |
| 50 | 37 | 037 | 48 | 048 |
| 63 | 50 | 050 | 78 | 078 |
| 83 | 70 | 070 | | |

| | |
|---|---|
| | 0 |
| | 7 |
| 0 | 9 |

Configuration: Style:
 0 crossbar every 2 chain connectors. 0 Standard (PA)
 link; w/bias 7 ESD (PA)
 9 Special version

Order number:

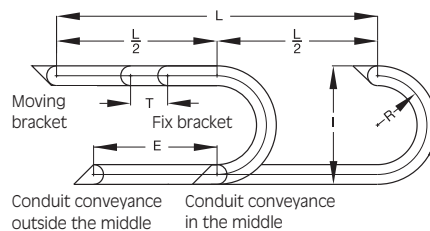
0182

Sample order: Inside width = 18 mm, Radius = 28 mm, Configuration = 0, Style = 0

Order number: 0182 018 028 0000

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 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.



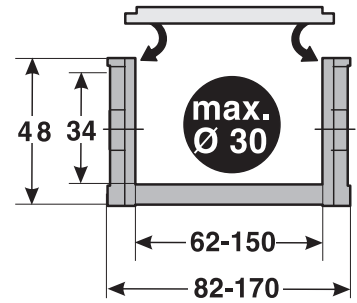
Cable accessories

MultiLine EFK 35



Product range:

- Internal height 34 mm
- Internal width 62-150 mm
- Loading side slotted on outside of radius
- Links per metre: 17
- Chain separation: 58 mm
- Maximum cable diameter: 30 mm
- Maximum procedure path: max. 80 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HSK | HSV | HMA |
|-----|-----|-----|-----|
| mm | mm | mm | mm |
| 70 | 203 | 228 | 188 |
| 100 | 263 | 288 | 248 |
| 150 | 363 | 388 | 348 |
| 200 | 463 | 488 | 448 |
| 300 | 663 | 688 | 648 |

Open built-in height without pre-tension: HSK = 2xR+HG+SK
 Open built-in height with pre-tension: HSV = 2xR+HG+SV
 Connecting height bottom/top: HMA = 2xR+ HG

External height of chain link: HG = 48 mm
 Safety without pre-tension: SK = 15 mm
 Safety with pre-tension: SV = 40 mm
 Length of chain link: T = 58 mm

| | | | | | | |
|-----|-----|-----|-----|-----|---|---|
| 82 | 62 | 062 | 70 | 070 | | |
| 106 | 68 | 086 | 100 | 100 | | |
| 122 | 102 | 102 | 150 | 150 | | 0 |
| 145 | 125 | 125 | 200 | 200 | 1 | 7 |
| 170 | 150 | 150 | 300 | 300 | 0 | 9 |

Configuration: 0 crossbar every link; w/bias
 Style: 0 Standard (PA)
 7 ESD (PA)
 1 crossbar every link; w/o bias
 9 Special version

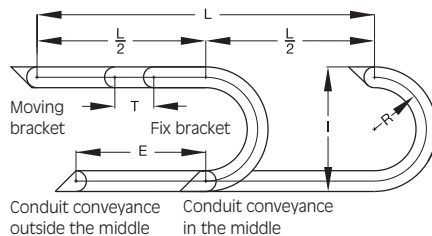
Order number:

Sample order: Inside width = 62 mm, Radius = 70 mm, Configuration = 0, Style = 0

Order number: 0350 062 070 0000

**Please order (per chain)
 2 chain connectors.
 You will automatically receive
 1 with a drill-hole
 and 1 with a bolt.**

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 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.



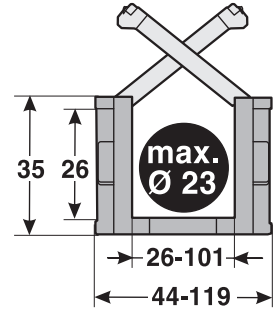
Cable accessories

MultiLine EFK 3000



Product range:

- Internal height 26 mm
- Internal width 26-101 mm
- Loading side slotted on outside of radius
- Links per metre: 22
- Chain separation: 45 mm
- Maximum cable diameter: 23 mm
- Maximum procedure path: max. 60 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HSK | HSV | HMA |
|-----|-----|-----|-----|
| mm | mm | mm | mm |
| 50 | 145 | 180 | 135 |
| 70 | 185 | 220 | 175 |
| 95 | 235 | 270 | 225 |
| 120 | 285 | 320 | 275 |
| 150 | 345 | 380 | 335 |
| 200 | 445 | 480 | 435 |
| 300 | 645 | 680 | 635 |

Open built-in height without pre-tension: HSK = 2xR+HG+SK
 Open built-in height with pre-tension: HSV = 2xR+HG+SV
 Connecting height bottom/top: HMA = 2xR+ HG

External height of chain link: HG = 35 mm
 Safety without pre-tension: SK = 10 mm
 Safety with pre-tension: SV = 45 mm
 Length of chain link: T = 45 mm

| | | | | | | |
|-----|-----|-----|-----|-----|---|---|
| 44 | 26 | 026 | 50 | 050 | | |
| 55 | 37 | 037 | 70 | 070 | | |
| 74 | 56 | 056 | 95 | 095 | | |
| 80 | 62 | 062 | 120 | 120 | | |
| 94 | 76 | 076 | 150 | 150 | | |
| 105 | 87 | 087 | 200 | 200 | 1 | 7 |
| 119 | 101 | 101 | 300 | 300 | 0 | 9 |

Configuration: 0 crossbar every link; w/bias
 1 crossbar every link; w/o bias

Style: 0 Standard (PA)
 7 ESD (PA)
 9 Special version

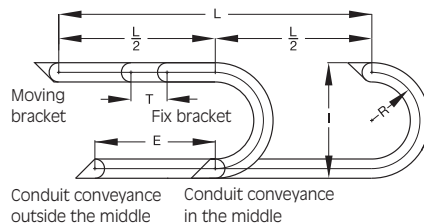
Order number:

Sample order: Inside width = 26 mm, Radius = 50 mm, Configuration = 0, Style = 0

Order number: 0300 026 050 0000

**Please order (per chain)
 2 chain connectors.
 You will automatically receive
 1 with a drill-hole
 and 1 with a bolt.**

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 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.



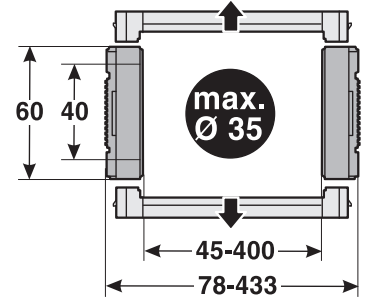
Cable accessories

MultiLine EFK 44



Product range:

- Internal height 40 mm
- Internal width 45-400 mm
- Loading side slotted on outside of radius
- Links per metre: 13
- Chain separation: 75,5 mm
- Maximum cable diameter: 35 mm
- Maximum procedure path: max. 50 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HSK | HSV | HMA |
|-----|-----|-----|-----|
| mm | mm | mm | mm |
| 90 | 253 | 278 | 240 |
| 125 | 323 | 348 | 310 |
| 150 | 373 | 398 | 360 |
| 200 | 473 | 498 | 460 |
| 250 | 573 | 598 | 560 |

Open built-in height without pre-tension: HSK = 2xR+HG+SK
 Open built-in height with pre-tension: HSV = 2xR+HG+SV
 Connecting height bottom/top: HMA = 2xR+HG

External height of chain link: HG = 60 mm
 Safety without pre-tension: SK = 13 mm
 Safety with pre-tension: SV = 38 mm
 Length of chain link: T = 75,5 mm

| | | | | | | | |
|-------|------|-----|-----|-----|--|---|---|
| 78 | 45 | 045 | | | | 0 | |
| 95 | 62 | 062 | | | | 1 | |
| 117 | 84 | 084 | | | | 2 | |
| 138 | 105 | 105 | 90 | 090 | | 3 | |
| 177 | 144 | 144 | 125 | 125 | | 4 | |
| 215 | 182 | 182 | 150 | 150 | | 5 | |
| Innen | 118- | | 200 | 200 | | 6 | 0 |
| +33 | 600 | ALU | 250 | 250 | | 7 | 7 |
| | | | | | | 9 | 9 |

Configuration: Style:
 0 crossbar every link; w/bias 0 Standard (PA)
 1 crossbar every link; w/o bias 7 ESD (PA)
 2 crossbar EOL; w/bias 9 Special version
 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

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

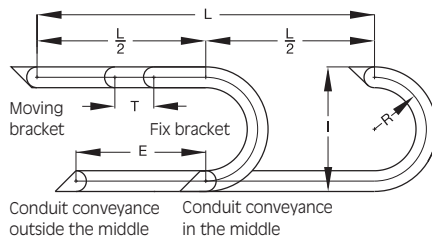
Technical modifications are subject to change without prior notice.

Order number:

| | | | | | | |
|------|--|--|---|--|--|---|
| 0440 | | | 0 | | | 0 |
|------|--|--|---|--|--|---|

Sample order: Inside width = 45 mm, Radius = 90 mm, Configuration = 0, Style = 0

Order number: 0440 045 090 0000



Determining the chain length

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

≈ 1 m chain = 13 x 75.5 mm links

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

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.

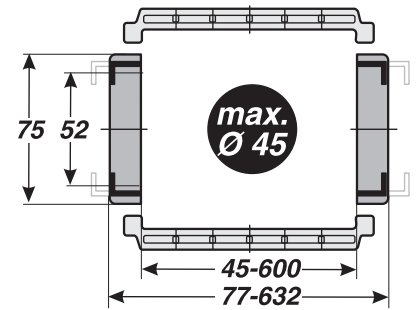


PowerLine EFK 52.2



Product range:

- Internal height 52 mm
- Internal width 45-546 mm
- Loading side slotted on outside of radius
- Links per metre: 11
- Chain separation: 91 mm
- Maximum cable diameter: 45 mm
- Maximum procedure path: max. 150 m
- Material: modified polyamide



Style (order code)

Configuration (order code)

Radius (order code) in mm

Internal width (order code) in mm

External width in mm

| R | HSK | HSV | HMA |
|-----|-----|-----|-----|
| mm | mm | mm | mm |
| 100 | 290 | 320 | 274 |
| 150 | 390 | 420 | 374 |
| 200 | 490 | 520 | 474 |
| 250 | 590 | 620 | 574 |
| 300 | 690 | 720 | 674 |
| 350 | 790 | 820 | 774 |

Open built-in height without pre-tension: HSK = 2xR+HG+SK
 Open built-in height with pre-tension: HSV = 2xR+HG+SV
 Connecting height bottom/top: HMA = 2xR+HG

External height of chain link: HG = 74 mm
 Safety without pre-tension: SK = 16 mm
 Safety with pre-tension: SV = 46 mm
 Length of chain link: T = 91 mm

| | | | | | | |
|-------|-----|-----|-----|-----|--|---|
| 77 | 45 | 045 | | | | |
| 94 | 62 | 062 | | | | |
| 103 | 71 | 071 | | | | |
| 116 | 84 | 084 | | | | |
| 128 | 96 | 096 | | | | |
| 139 | 107 | 107 | | | | |
| 153 | 121 | 121 | | | | |
| 176 | 144 | 144 | | | | |
| 178 | 146 | 146 | | | | |
| 203 | 171 | 171 | | | | |
| 214 | 182 | 182 | | | | |
| 228 | 196 | 196 | | | | |
| 252 | 220 | 220 | | | | |
| 278 | 246 | 246 | | | | 0 |
| 328 | 296 | 296 | | | | 1 |
| 378 | 346 | 346 | | | | 2 |
| 428 | 396 | 396 | 100 | 100 | | 3 |
| 478 | 446 | 446 | 150 | 150 | | 4 |
| 528 | 496 | 496 | 200 | 200 | | 5 |
| 578 | 546 | 546 | 250 | 250 | | 6 |
| Innen | 80- | | 300 | 300 | | 7 |
| +32 | 600 | ALU | 350 | 350 | | 9 |

- 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

Please order (per chain)
2 chain connectors.
You will automatically receive
1 with a drill-hole
and 1 with a bolt.

Technical modifications are subject to change without prior notice.

Order number:

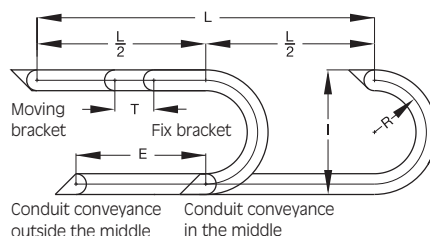
0522

0

0

Sample order: Inside width = 45 mm, Radius = 100 mm, Configuration = 0, Style = 0

Order number: 0522 045 100 0000



Determining the chain length

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

≈ 1 m chain = 11 x 91 mm links

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

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.



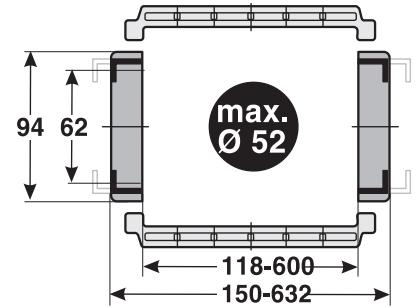
Cable accessories

HeavyLine MP 62.2



Product range:

- Internal height 62 mm
- Internal width 118-518 mm
- Loading side slotted on outside of radius
- Links per metre: 10
- Chain separation: 100 mm
- Maximum cable diameter: 52 mm
- Maximum procedure path: max. 180 m
- Material: modified polyamide



Style (order code)

Configuration (order code)
 *= standard

Radius (order code) in mm

Internal width (order code) in mm

External width in mm

| R | HSK | HSV | HMA |
|-----|------|------|------|
| mm | mm | mm | mm |
| 150 | 414 | 444 | 394 |
| 200 | 514 | 544 | 494 |
| 250 | 614 | 644 | 594 |
| 300 | 714 | 744 | 694 |
| 400 | 914 | 944 | 894 |
| 500 | 1114 | 1144 | 1094 |

Open built-in height without pre-tension: HSK = 2xR+HG+SK
 Open built-in height with pre-tension: HSV = 2xR+HG+SV
 Connecting height bottom/top: HMA = 2xR+HG
 External height of chain link: HG = 94 mm
 Safety without pre-tension: SK = 20 mm
 Safety with pre-tension: SV = 50 mm
 Length of chain link: T = 100 mm

| | | | | | | | | | |
|--------|------|-----|-----|-----|--|--|---|---|--|
| 150 | 118 | 118 | | | | | | | |
| 175 | 143 | 143 | | | | | | | |
| 200 | 168 | 168 | | | | | | | |
| 225 | 193 | 193 | | | | | | | |
| 250 | 218 | 218 | | | | | | | |
| 275 | 243 | 243 | | | | | | | |
| 300 | 268 | 268 | | | | | | | |
| 325 | 293 | 293 | | | | | | | |
| 350 | 318 | 318 | | | | | | | |
| 375 | 343 | 343 | | | | | | | |
| 400 | 368 | 368 | 150 | 150 | | | | | |
| 450 | 418 | 418 | 200 | 200 | | | | | |
| 500 | 468 | 468 | 250 | 250 | | | | | |
| 550 | 518 | 518 | 300 | 300 | | | | | |
| inside | 118- | | 400 | 400 | | | | | |
| +32 | 600 | ALU | 500 | 500 | | | | | |
| | | | | | | | 0 | | |
| | | | | | | | 1 | | |
| | | | | | | | 2 | | |
| | | | | | | | 3 | | |
| | | | | | | | 4 | | |
| | | | | | | | 5 | | |
| | | | | | | | 6 | | |
| | | | | | | | 7 | 0 | |
| | | | | | | | 8 | 7 | |
| | | | | | | | 9 | 9 | |

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

Order number:

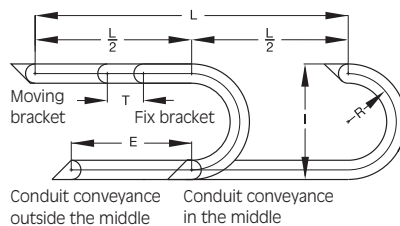
0622

0

0

Inside width = 118 mm, Radius = 150 mm, Configuration = 0, Style = 0

Sample order 0622 118 150 0000



Conduit conveyance outside the middle Conduit conveyance in the middle

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

Determining the chain length

$$\text{Length} = \frac{1}{2} + \pi \times R + 2 \times T + E$$

~ 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.

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

Technical modifications are subject to change without prior notice.



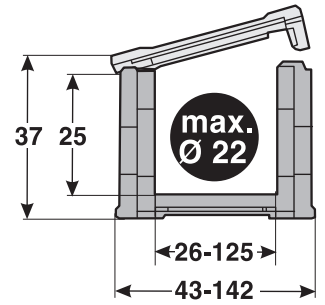
Cable accessories

SafeLine EFK 25G



Product range:

- Internal height 25 mm
- Internal width 26-125 mm
- Loading inside
- Links per metre: 33
- Chain separation: 30 mm
- Maximum cable diameter: 22 mm
- Maximum procedure path: max. 40 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HS | HMA |
|-----|-----|-----|
| mm | mm | mm |
| 60 | 190 | 157 |
| 75 | 220 | 187 |
| 100 | 270 | 237 |
| 125 | 320 | 287 |
| 150 | 370 | 337 |
| 200 | 470 | 437 |
| 250 | 570 | 537 |

Open built-in height: HS = 2xR+HG+S
 Connecting height bottom/top: HMA = 2xR + HG
 External height of chain link: HG = 37 mm
 Safety: S = 33 mm
 Length of chain link: T = 30 mm

| | | | | | | |
|-----|-----|-----|-----|-----|--|---|
| 44 | 26 | 026 | 60 | 060 | | |
| 55 | 37 | 037 | 75 | 075 | | |
| 80 | 62 | 062 | 125 | 125 | | |
| 105 | 87 | 087 | 150 | 150 | | 0 |
| 119 | 101 | 101 | 200 | 200 | | 7 |
| 143 | 125 | 125 | 250 | 250 | | 9 |
| | | | | | | 0 |

Configuration: Style:
 0 crossbar every 0 Standard (PA)
 link; w/bias 7 ESD (PA)
 9 Special version

Order number:

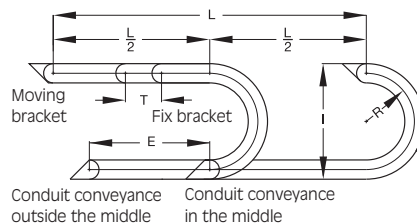
Sample order: Inside width = 26 mm, Radius = 60 mm, Configuration = 0, Style = 0

Order number: 0250 026 060 0000

**Please order (per chain)
 2 chain connectors.
 You will automatically receive
 1 with a drill-hole
 and 1 with a bolt.**

Prices on request

Technical modifications are subject to change without prior notice.



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

Determining the chain length

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

≈ 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.



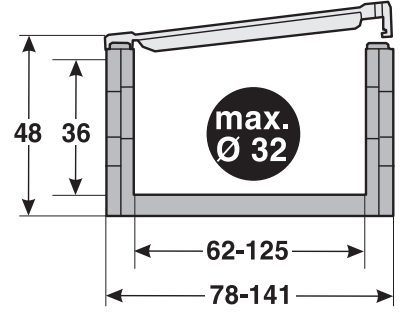
Cable accessories

SafeLine EFK 36G



Product range:

- Internal height 36 mm
- Internal width 62-125 mm
- Loading inside
- Links per metre: 25
- Chain separation: 40 mm
- Maximum cable diameter: 32 mm
- Maximum procedure path: max. 80 m
- Material: modified polyamide



| |
|-----------------------------------|
| Style (order code) |
| Configuration (order code) |
| Radius (order code) in mm |
| Internal width (order code) in mm |
| External width in mm |

| R | HS | HMA |
|-----|-----|-----|
| mm | mm | mm |
| 80 | 240 | 208 |
| 100 | 280 | 248 |
| 125 | 330 | 298 |
| 200 | 380 | 348 |
| 200 | 480 | 448 |

Open built-in height: $HS = 2xR + HG + S$
 Connecting height bottom/top: $HMA = 2xR + HG$
 External height of chain link: $HG = 48$ mm
 Safety: $S = 32$ mm
 Length of chain link: $T = 40$ mm

| | | | | | | |
|-----|-----|-----|-----|-----|---|---|
| 82 | 62 | 062 | 80 | 080 | | |
| 106 | 86 | 086 | 100 | 100 | | |
| 122 | 102 | 102 | 150 | 150 | 0 | 7 |
| 145 | 125 | 125 | 200 | 200 | 0 | 9 |

Configuration:
 0 crossbar every link; w/bias
 Style:
 0 Standard (PA)
 7 ESD (PA)
 9 Special version

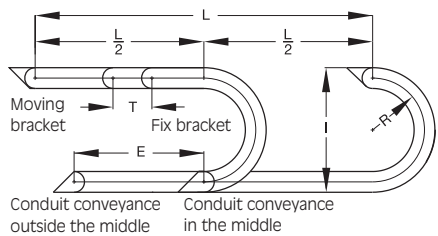
Order number:

Sample order: Inside width = 62 mm, Radius = 80 mm, Configuration = 0, Style = 0

Order number: 0360 062 080 0000

Please order (per chain) 2 chain connectors. You will automatically receive 1 with a drill-hole and 1 with a bolt.

Prices on request
 Technical modifications are subject to change without prior notice.



Determining the chain length

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

≈ 1 m chain = 25 x 40 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
 I = Installation height, T = Pitch
 E = Distance between entry point and middle of travel distance



Selection table cable in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Electronic-Data-BUS-Cables, screened and unscreened

| Type | Application | | | | Cable structure | | | | Technical Data | | | | Resistance | | | | Standards | | | | | | |
|-------------------------------------|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------|--------------|-----------------|-------------------------|--------------|---------------------------|---------------|------------------------|----------|-----|-----------|---------------------------------|---------|------------------|-----------------|---------|--|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core insulation | Inner sheath | Outer Sheath | Nominal Voltage | Temperature Range in C° | halogen-free | extensively oil resistant | oil resistant | Jacket flame retardant | microbes | lye | coolant | radiation resistant 80/100 Mrad | uv-rays | VDE-Register-No. | UL/CSA-approved | DESINA® | |
| SUPERTRONIC-PVC | X | | | | | | | | | | | | | | | | | | | | | | |
| SUPERTRONIC-C-PVC | X | | | | | | | | | | | | | | | | | | | | | | |
| SUPERTRONIC-PUR0 | X | | | | | | | | | | | | | | | | | | | | | | |
| SUPERTRONIC-C-PUR0 | X | | | | | | | | | | | | | | | | | | | | | | |
| TOPGEBER 500 | X | | | | | | | | | | | | | | | | | | | | | | |
| TOPGEBER 502 | X | | | | | | | | | | | | | | | | | | | | | | |
| TOPGEBER 503 | X | | | | | | | | | | | | | | | | | | | | | | |
| TOPGEBER 510 | X | | | | | | | | | | | | | | | | | | | | | | |
| Tachofeedback-Cable-C-PUR | X | | | | | | | | | | | | | | | | | | | | | | |
| SUPER-PAAR-TRONIC-C-PUR | X | | | | | | | | | | | | | | | | | | | | | | |
| S-FTP Drag chain 4 x 2 x AWG 24 PUR | X | | | | | | | | | | | | | | | | | | | | | | |
| PROFIBUS L2 x 20,64 | X | | | | | | | | | | | | | | | | | | | | | | |
| I-BUS Drag chain | X | | | | | | | | | | | | | | | | | | | | | | |
| PROFIBUS Can, high flexible | X | | | | | | | | | | | | | | | | | | | | | | |
| PDF with PUR-Jacket, simplex duplex | X | | | | | | | | | | | | | | | | | | | | | | |

The table indicates the main application.
 In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support.
 Phone +49 (0) 71 50/9 20 93 67 or techsupport@helukabel.de.
 A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop.
 The cycle count is only valid when appropriate and professionally installed (under permitted environment conditions).



Cable accessories

Selection table cable in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Servocables and Motor Cables, screened and unscreened

| Type | Application | | | | Cable structure | | | Technical Data | | | | Resistance | | Standards | | |
|--|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------|-----------------|-------------------------|---|---|------------|---------|-----------|---------------------------------|---------------------------------|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | | | | UV-rays | | radiation resistant 80/100 Mrad | |
| TOPSERV® 101 | 5m | 5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 300/300 V | -40 | * | * | * | * | * | * | UL/CSA-approved |
| TOPSERV® 106 | 15m | 7,5 x D | 3 m/s | 50 m/s² | 5 Mio | PVC special | PUR special | 600 V/UL-CSA | -20 | * | * | * | * | * | * | adapted to VDE 0245/0281/0282 |
| TOPSERV® 109 | 30m | 10 x D | 4 m/s | 50 m/s² | 1 Mio | PVC special | PUR special | 1000 V | -10 | * | * | * | * | * | * | VDE-Register-No. |
| TOPSERV® 110+120m:Control pair, screened | 100m | 12,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/300 V | -5 | * | * | * | * | * | * | UV-rays |
| TOPSERV® 111+124m:Control pair, screened | 100m | 12,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/300 V | 90 | * | * | * | * | * | * | radiation resistant 80/100 Mrad |
| TOPSERV® 112+123m:Control pair, screened | 100m | 12,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/300 V | 80 | * | * | * | * | * | * | coolant |
| TOPSERV® 113+121m:Control pair, screened | 100m | 12,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/300 V | 70 | * | * | * | * | * | * | UV-rays |
| TOPSERV® 116 | 15m | 7,5 x D | 3 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 300/300 V | -30 | * | * | * | * | * | * | oil resistant |
| TOPFLEX® 200m:Control pair, screened | 30m | 5 x D | 3 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 300/300 V | -20 | * | * | * | * | * | * | extensively oil resistant |
| TOPFLEX® 611 | 30m | 5 x D | 3 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 300/300 V | -10 | * | * | * | * | * | * | halogen-free |
| TOPFLEX® 611-C-PUR | 30m | 5 x D | 3 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 300/300 V | 0 | * | * | * | * | * | * | halogen-free |

The table indicates the main application. In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support. Phone +49 (0) 71 50/9 20 93 67 or techsupport@helukabel.de. A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop. The cycle count is only valid when appropriate and professionally installed (under permitted environment conditions).



Cable accessories

