# Guiding Elements
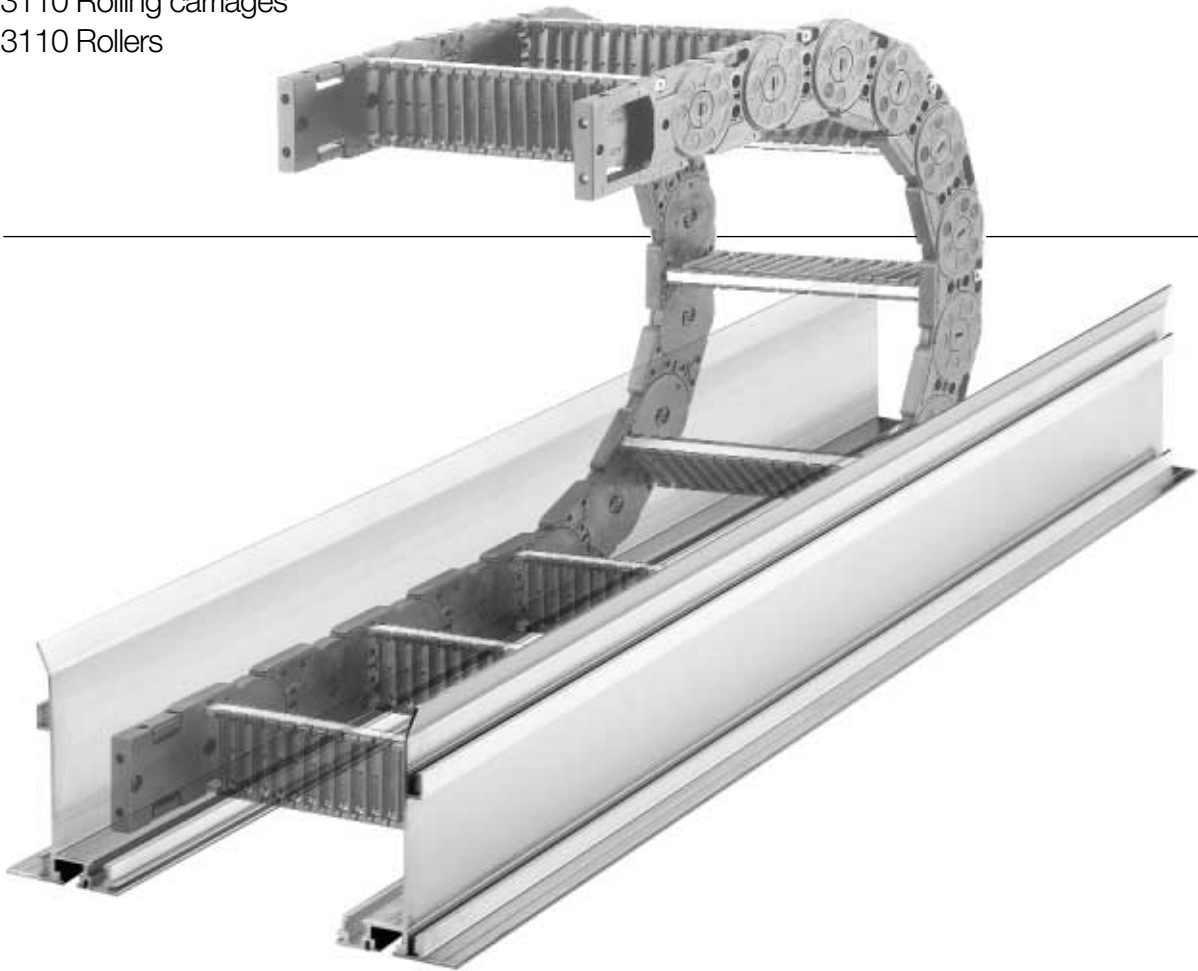# **Series** 3110

3110 Aluminum channels
3110 Steel tracks
3110 Stainless steel tracks
3110 Rolling carriages
3110 Rollers

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# Guiding Elements
## Series 3110

**Ordering guide** (Example)
COBRA 72 M Energy Guiding
Chain with an 18-meter channel,
including brackets for installation.

### ■ System components for energy guiding chain
see technical data sheets for Series 3112, 3113, 3114, 3116, 3117



Series 3112
**Viper**

Series 3113/3114
**Cobra**

Series 3116/3117
**Boa**

| ■ System components for guiding elements | Quantity | Article number[2] |
|---|---|---|
| Text for order | | |
| Aluminum channel 1200 with glides 3 m | 3 units | 311012-FKA-MA-3M |
| Aluminum channel 1200 without glides 3 m | 3 units | 311012-FKA-OA-3M |
| Brackets 1200 | 26 units [1] | 311012-KHR |

### ■ System components for cables
see technical data sheets for Series 3000



Series 3000
**Cables**

[1] Quantity = 2 + (total channel sections x 4)
[2] It is not necessary to provide article numbers when ordering systems. They are, however, necessary when ordering individual or replacement parts.
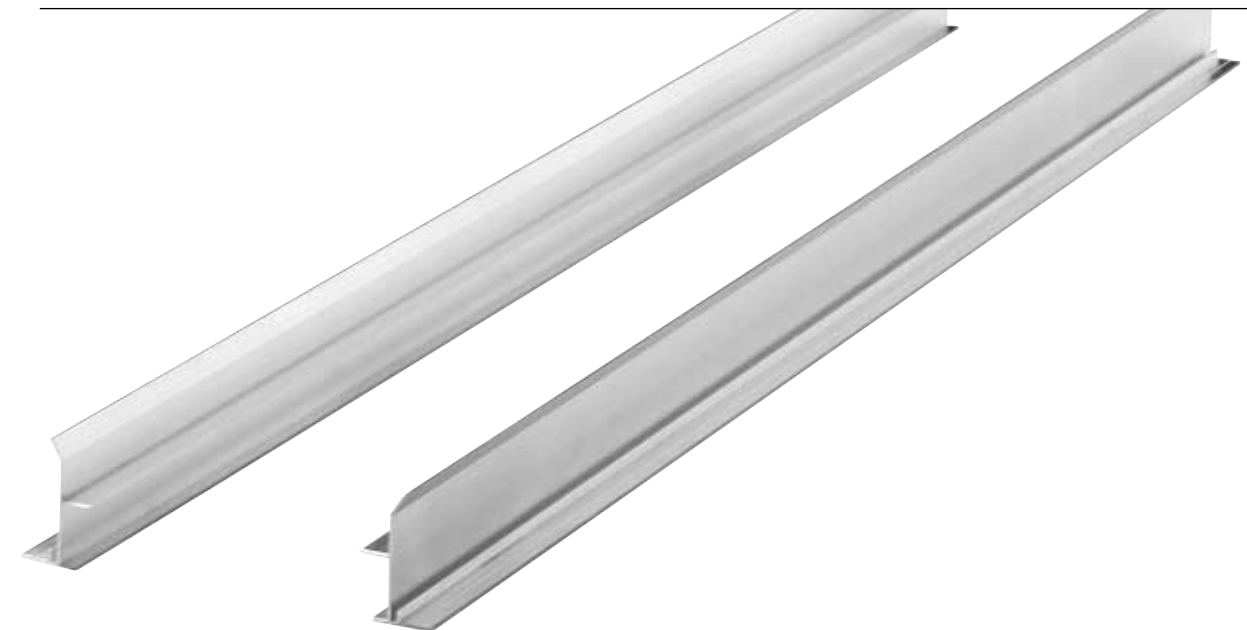
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# Channel
## 3110 **Aluminum 300**

Modular system consisting of aluminum sides with/without glides.
No screws required at butted ends.
Force fit with plastic jam connectors.

**Material**
Aluminum alloy AIMgSi 0.5 F 22
Seawater-resistant

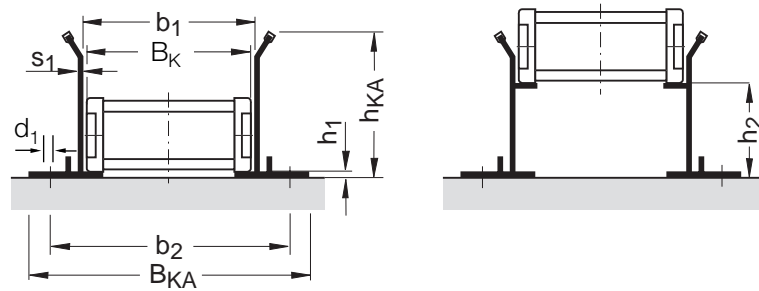**Series**
300

**For Viper 20
Energy Guiding Chain**



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# Channel
## 3110 **Aluminum 300**

### Series 300

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_k$ (kg/m) | |
| Channel without glides | 2000 | 0.75 | 311003-FKA-OA-2M |
| Channel with glides | 2000 | 0.83 | 311003-FKA-MA-2M |

Each channel section consists of two side elements.

| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K + 3$ |
| $b_2$ | $B_K + 29$ |
| $B_{KA}$ | $B_K + 42$ |
| $h_1$ | 1.5 |
| $h_2$ | 29 |
| $h_{KA}$ | 55 |
| $s_1$ | 2 |
| $d_1$ | Ø 7 / M 6 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Viper 20** Energy Guiding Chains.

### Accessories

| Article | Article number |
|---|---|
| G1 jam connectors for butt connection | 311099-KLP-G1 |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.
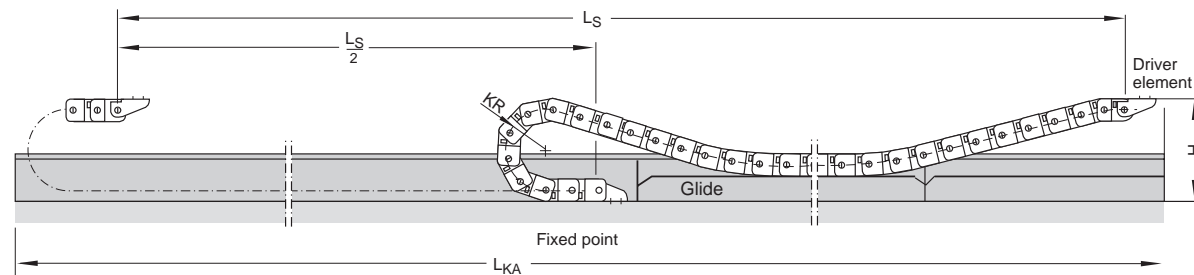
Formula to determine the length of a channel for self-supporting chain without glides:

$$L_A = L_S/2 + Ü_B + I_1$$

Formula to determine the length of a channel for non-self-supporting chain with standard connectors. Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + I_1 + 100 \text{ mm}$$

$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$I_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $I_1$ are provided in the Technical Data Sheets for **Viper 20** Energy Guiding Chains.

# Channel
## 3110 **Aluminum 400**

Modular system consisting of aluminum sides with/without glides.
No screws required at butted ends.
Force fit with plastic jam connectors.

**Material**
Aluminum alloy AlMgSi 0.5 F 22
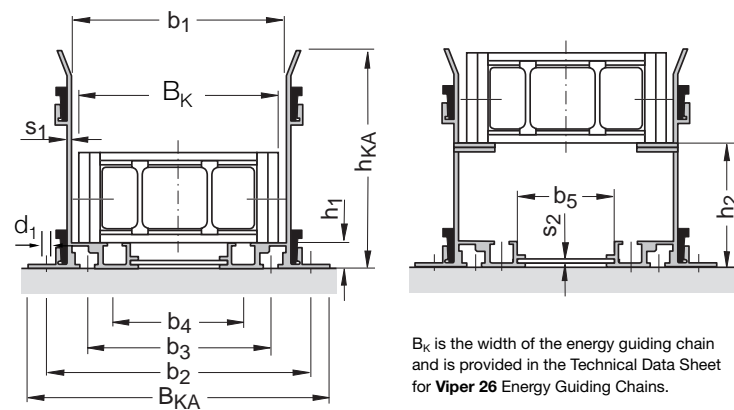Seawater-resistant

**For Viper 26**
**Energy Guiding Chain**

**Series**
400



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# Channel
## 3110 **Aluminum 400**

### Series 400

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_k$ (kg/m) | |
| Channel without glides | 2000 | 2.34 | 311004-FKA-OA-2M |
| Channel with glides | 2000 | 2.54 | 311004-FKA-MA-2M |

Each channel section consists of two side elements.

| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K + 4$ |
| $b_2$ | $B_K + 31$ |
| $b_3$ | $B_K - 10$ |
| $b_4$ | $B_K - 32$ |
| $b_5$ | $B_K - 43$ |
| $B_{KA}$ | $B_K + 44$ |
| $h_1$ | 14 |
| $h_2$ | 52 |
| $h_{KA}$ | 100 |
| $s_1$ | 2 |
| $s_2$ | 1.5 |
| $d_1$ | Ø 7 / M 6 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Viper 26** Energy Guiding Chains.

### Accessories

| Article | Article number |
|---|---|
| G2 jam connectors for butt connection | 311099-KLP-G2 |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.
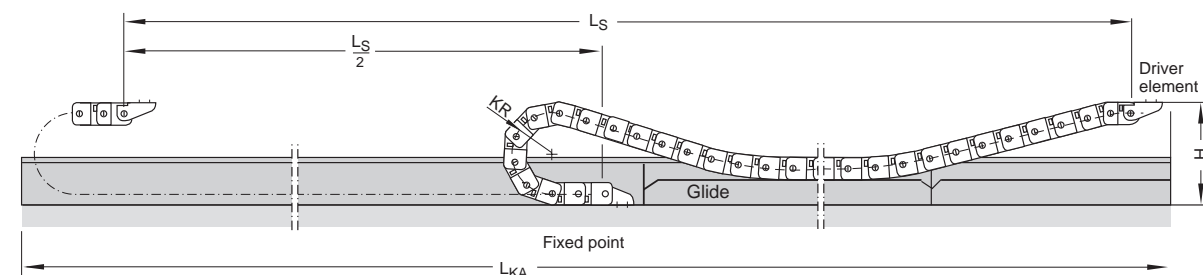
$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$I_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $I_1$ are provided in the Technical Data Sheets for **Viper 26** Energy Guiding Chains.

Formula to determine the length of a channel for non-self-supporting chain with standard connectors.

Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + I_1 + 100 \text{ mm}$$

# Channel
## 3110 **Aluminum 500**

Modular system consisting of aluminum sides with/without glides. No screws required at butted ends. Force fit with plastic jam connectors.

**Material**
Aluminum alloy AlMgSi 0.5 F 22 Seawater-resistant
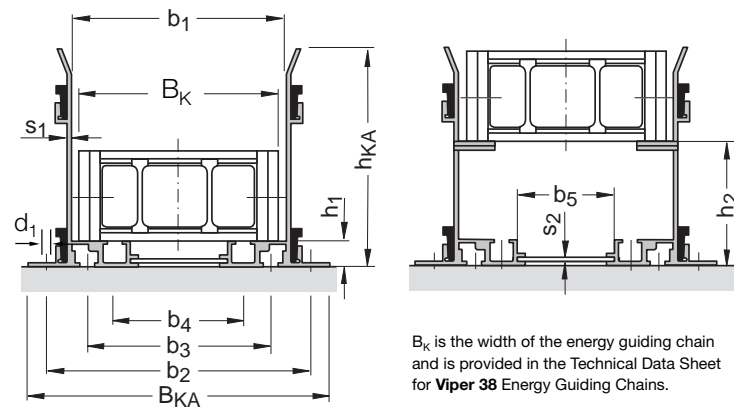
**For Viper 38**
**Energy Guiding Chain**

**Series**
500

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# Channel
## 3110 **Aluminum 500**

### Series 500

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_k$ (kg/m) | |
| Channel without glides | 2000 | 2.80 | 311005-FKA-OA-2M |
| Channel with glides | 2000 | 2.92 | 311005-FKA-MA-2M |

Each channel section consists of two side elements.



| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K$ + 5 |
| $b_2$ | $B_K$ + 42 |
| $b_3$ | $B_K$ - 12 |
| $b_4$ | $B_K$ - 44 |
| $b_5$ | $B_K$ - 62 |
| $B_{KA}$ | $B_K$ + 55 |
| $h_1$ | 14 |
| $h_2$ | 65 |
| $h_{KA}$ | 115 |
| $s_1$ | 2.2 |
| $s_2$ | 2 |
| $d_1$ | Ø 7 / M 6 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Viper 38** Energy Guiding Chains.

### Accessories

| Article | Article number |
|---|---|
| G2 jam connectors for butt connection | 311099-KLP-G2 |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.
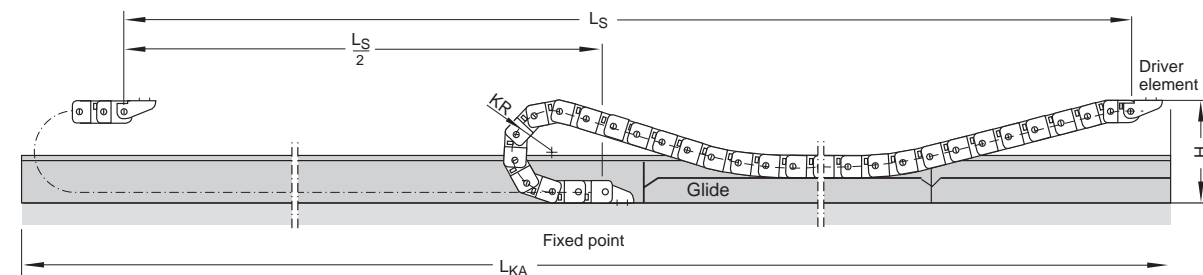


$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$l_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $l_1$ are provided in the Technical Data Sheets for **Viper 38** Energy Guiding Chains.

Formula to determine the length of a channel for non-self-supporting chain with standard connectors.

Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + l_1 + 100 \text{ mm}$$

---

# Channel
## 3110 **Aluminum 600**

Modular system consisting of aluminum sides with/without glides. No screws required at butted ends. Force fit with plastic jam connectors.

**Material**
Aluminum alloy AlMgSi 0.5 F 22 Seawater-resistant
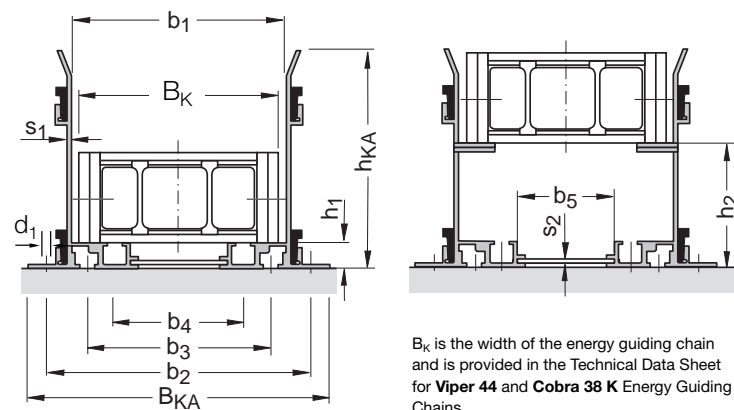
**For Viper 44 and Cobra 38 K Energy Guiding Chains**

**Series**
600

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# Channel
## 3110 **Aluminum 600**

**Series 600**

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_K$ (kg/m) | |
| Channel without glides | 2000 | 3.34 | 311006-FKA-OA-2M |
| Channel with glides | 2000 | 3.45 | 311006-FKA-MA-2M |
| Channel without glides | 3000 | 3.34 | 311006-FKA-OA-3M |
| Channel with glides | 3000 | 3.45 | 311006-FKA-MA-3M |

Each channel section consists of two side elements.



| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K + 5$ |
| $b_2$ | $B_K + 39$ |
| $b_3$ | $B_K - 12$ |
| $b_4$ | $B_K - 44$ |
| $b_5$ | $B_K - 62$ |
| $B_{KA}$ | $B_K + 55$ |
| $h_1$ | 15 |
| $h_2$ | 75 |
| $h_{KA}$ | 130 |
| $s_1$ | 2.2 |
| $s_2$ | 2 |
| $d_1$ | Ø 9 / M 8 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Viper 44** and **Cobra 38 K** Energy Guiding Chains.
Use width $B_{EF}$ instead of $B_K$ for **Cobra 38 K** chains with anti-friction glider disks.

**Accessories**

| Article | Article number |
|---|---|
| G2 jam connectors for butt connection | 311099-KLP-G2 |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.
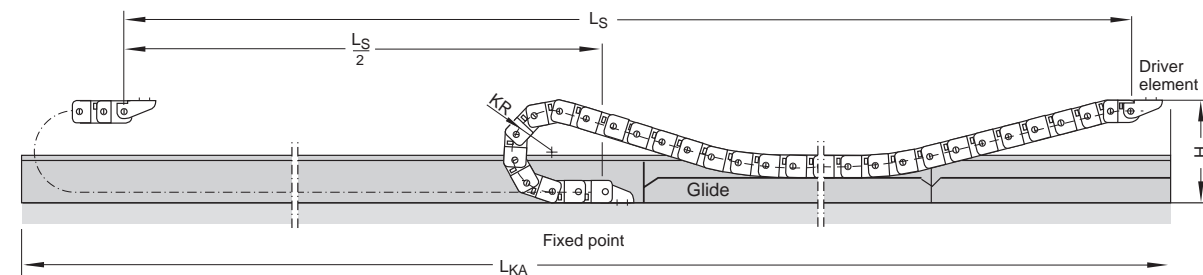


$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$I_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $I_1$ are provided in the Technical Data Sheets for **Viper 44** and **Cobra 38 K** Energy Guiding Chains.

Formula to determine the length of a channel for non-self-supporting chain with standard connectors.

Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + I_1 + 100 \text{ mm}$$

# Channel
## 3110 **Aluminum 900**

Modular system consisting of aluminum sides with/without glides.
No screws required at butted ends.
Force fit with plastic jam connectors.

**Material**
Aluminum alloy AlMgSi 0.5 F 22
Seawater-resistant

**For Cobra 58 M
Energy Guiding Chains**

**Series**
900



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# Channel
## 3110 **Aluminum 900**

**Series 900**

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_K$ (kg/m) | |
| Channel without glides | 2000 | 4.80 | 311009-FKA-OA-2M |
| Channel with glides | 2000 | 4.92 | 311009-FKA-MA-2M |
| Channel without glides | 3000 | 4.80 | 311009-FKA-OA-3M |
| Channel with glides | 3000 | 4.92 | 311009-FKA-MA-3M |

Each channel section consists of two side elements.
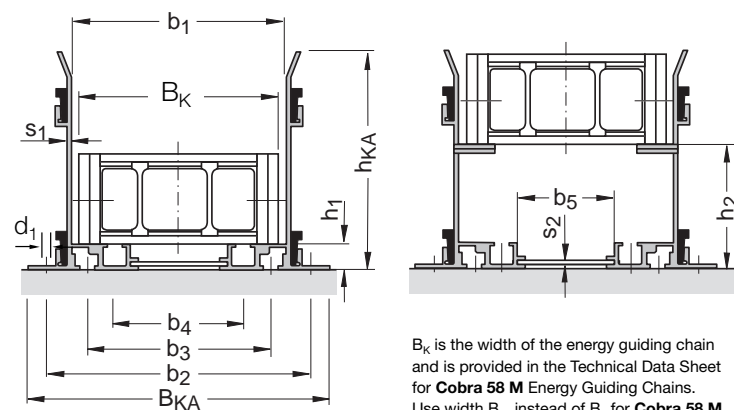


| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K + 5$ |
| $b_2$ | $B_K + 41$ |
| $b_3$ | $B_K - 13$ |
| $b_4$ | n.a. |
| $b_5$ | $B_K - 31$ |
| $B_{KA}$ | $B_K + 57$ |
| $h_1$ | 18 |
| $h_2$ | 100 |
| $h_{KA}$ | 185 |
| $s_1$ | 2.8 |
| $s_2$ | 2.5 |
| $d_1$ | Ø 9 / M 8 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Cobra 58 M** Energy Guiding Chains. Use width $B_{EF}$ instead of $B_K$ for **Cobra 58 M** chains with anti-friction skids.

**Accessories**

| Article | Article number |
|---|---|
| G2 jam connectors for butt connection | 311099-KLP-G2 |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.
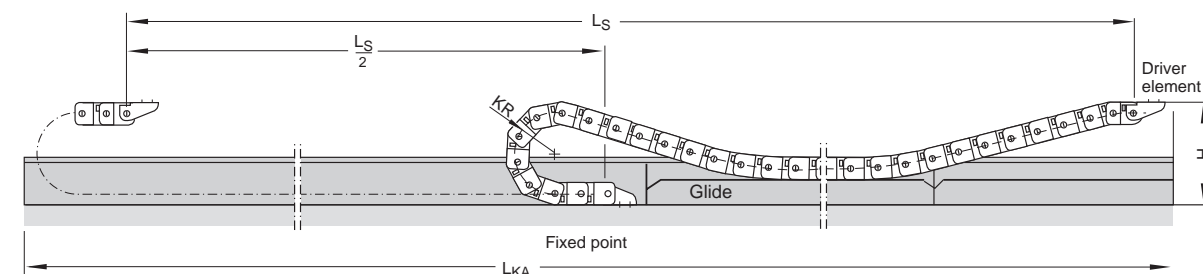


$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$I_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $I_1$ are provided in the Technical Data Sheets for **Cobra 58 M** Energy Guiding Chains.

Formula to determine the length of a channel for non-self-supporting chain with standard connectors.

Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + I_1 + 100 \text{ mm}$$

---

# Channel
## 3110 **Aluminum 1200**

Modular system consisting of aluminum sides with/without glides. No screws required at butted ends. Force fit with plastic jam connectors.

**Material**
Aluminum alloy AlMgSi 0.5 F 22
Seawater-resistant

**For Cobra 72 M
Energy Guiding Chains**

**Series**
1200



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# Channel
## 3110 **Aluminum 1200**

**Series 1200**

| Article | Length | Weight | Article number |
|---|---|---|---|
| | (mm) | $G_K$ (kg/m) | |
| Channel without glides | 2000 | 6.20 | 311012-FKA-OA-2M |
| Channel with glides | 2000 | 6.55 | 311012-FKA-MA-2M |
| Channel without glides | 3000 | 6.20 | 311012-FKA-OA-3M |
| Channel with glides | 3000 | 6.55 | 311012-FKA-MA-3M |

Each channel section consists of two side elements.
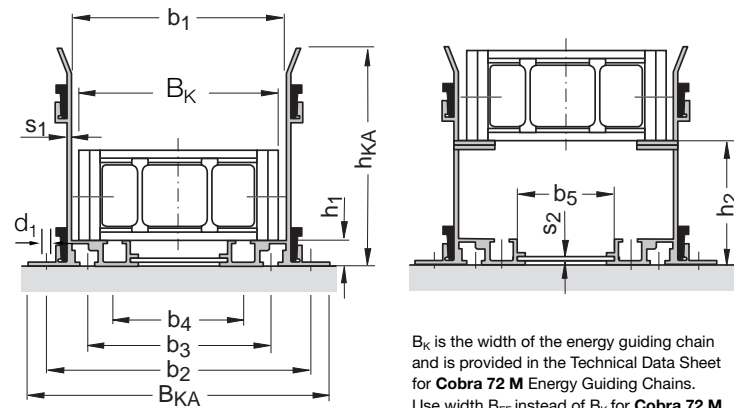


| Parameters | Dimensions |
|---|---|
| $b_1$ | $B_K + 6$ |
| $b_2$ | $B_K + 43$ |
| $b_3$ | $B_K - 25$ |
| $b_4$ | n.a. |
| $b_5$ | $B_K - 41$ |
| $B_{KA}$ | $B_K + 68$ |
| $h_1$ | 19.5 |
| $h_2$ | 119 |
| $h_{KA}$ | 248 |
| $s_1$ | 2.8 |
| $s_2$ | 2.5 |
| $d_1$ | Ø 9 / M 8 |

$B_K$ is the width of the energy guiding chain and is provided in the Technical Data Sheet for **Cobra 72 M** Energy Guiding Chains. Use width $B_{EF}$ instead of $B_K$ for **Cobra 72 M** chains with anti-friction skids.
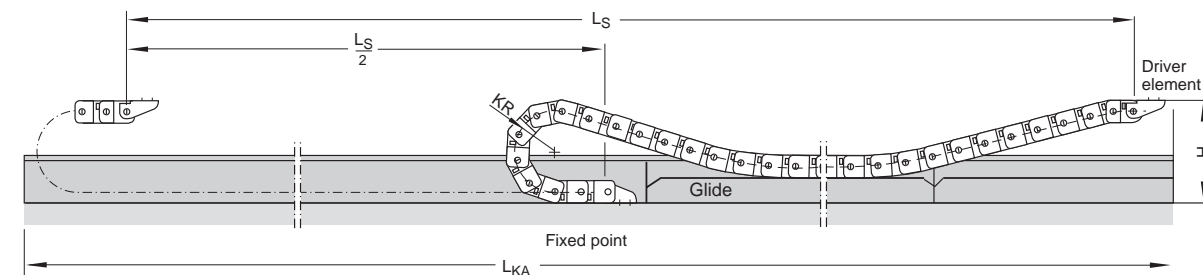
**Accessories**
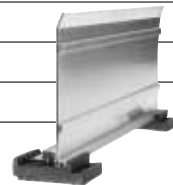
| Article | Article number |
|---|---|
| G2 jam connectors for butt connection | 311099-KLP-G2 |
| Channel bracket 1200 | 311012-KHR |

Each channel section comes with 4 jam connectors. Steel tracks are recommended for optimum operation with self-supporting chains.



$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$l_1$ = Connection length of chain
The dimensions $B_K$, $Ü_B$ and $l_1$ are provided in the Technical Data Sheets for **Cobra 72 M** Energy Guiding Chains.

Formula to determine the length of a channel for non-self-supporting chain with standard connectors.

Half of the length consists of a channel with glides and half of a channel without glides:

$$L_{KA} = L_S + Ü_B + l_1 + 100 \text{ mm}$$

---

# Track
## 3110 **Galvanized Steel**

One-piece track

**Material**
Galvanized steel

**Description**
Dimensioned as a function of chain width
Standard length: 2000 mm

**For Viper, Cobra and Boa Energy Guiding Chains**



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# Track
## 3110 **Galvanized Steel**

**Galvanized one-piece steel track**

| | For chain type[1] | with $B_K$ [2] | Length | Article number [2] |
|---|---|---|---|---|
| | | (mm) | (m) | |
| | | | 2 | 311010-ALR-ST- |

1     Please enter the chain type, e.g., Viper 26.

2     Space for the width $B_K$ of the chain.

**Chain Type**

| | $b_1$ | $B_A$ | $h_A$ | s |
|---|---|---|---|---|
| **Viper 26** | $B_K$ + 6 | $B_K$ + 21 | 20 | 1.5 |
| **Viper 38** | $B_K$ + 6 | $B_K$ + 21 | 20 | 1.5 |
| **Viper 44** | $B_K$ + 10 | $B_K$ + 25 | 20 | 1.5 |
| **Cobra 38 K** | $B_K$ + 10 | $B_K$ + 25 | 20 | 1.5 |
| **Cobra 58 M** | $B_K$ + 15 | $B_K$ + 35 | 30 | 2.0 |
| **Cobra 72 M** | $B_K$ + 15 | $B_K$ + 45 | 40 | 3.0 |
| **Boa 31** | $B_K$ + 15 | $B_K$ + 40 | 30 | 2.0 |
| **Boa 46** | $B_K$ + 15 | $B_K$ + 40 | 30 | 2.0 |
| **Boa 72** | $B_K$ + 20 | $B_K$ + 60 | 50 | 3.0 |
| **Boa 109** | $B_K$ + 20 | $B_K$ + 60 | 50 | 3.0 |
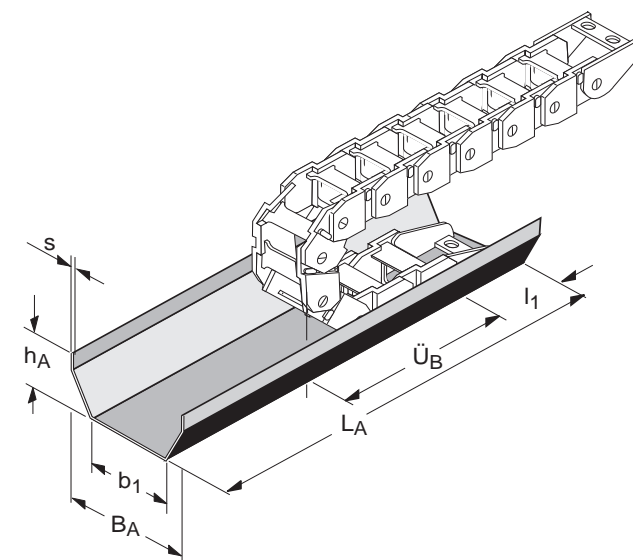


The length for tracks for self-supporting chains with a center feed connection:

$$L_A = L_S / 2 + Ü_B + l_1$$

**Important**

An aluminum channel without glides should be used as a track for self-supporting **Viper 20** Energy Guiding Chains.

$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$l_1$ = Connection length of chain
$L_A$ = Track length
The dimensions $B_K$, $Ü_B$ and $l_1$ are provided in the Technical Data Sheet for **Viper**, **Cobra** and **Boa** Energy Guiding Chains.

---

# Track
## 3110 **Stainless Steel**

One-piece track

**Material**
Stainless steel

**Description**
Dimensioned as a function of chain width
Standard length: 2000 mm

**For Viper, Cobra and Boa Energy Guiding Chains**



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# Track
## 3110 **Stainless Steel**

**Stainless Steel one-piece steel track**

| For chain type[1] | with $B_K$[2] | Length | Article number[2] |
|---|---|---|---|
| | (mm) | (m) | |
| | | 2 | 311040-ALR-ER- |

1    Please enter the chain type, e.g., Viper 26.

2    Space for the width $B_K$ of the chain.

**Chain Type**

| | $b_1$ | $B_A$ | $h_A$ | s |
|---|---|---|---|---|
| **Viper 26** | $B_K + 6$ | $B_K + 21$ | 20 | 1.5 |
| **Viper 38** | $B_K + 6$ | $B_K + 21$ | 20 | 1.5 |
| **Viper 44** | $B_K + 10$ | $B_K + 25$ | 20 | 1.5 |
| **Cobra 38 K** | $B_K + 10$ | $B_K + 25$ | 20 | 1.5 |
| **Cobra 58 M** | $B_K + 15$ | $B_K + 35$ | 30 | 2.0 |
| **Cobra 72 M** | $B_K + 15$ | $B_K + 45$ | 40 | 3.0 |
| **Boa 31** | $B_K + 15$ | $B_K + 40$ | 30 | 2.0 |
| **Boa 72** | $B_K + 20$ | $B_K + 60$ | 50 | 3.0 |
| **Boa 109** | $B_K + 20$ | $B_K + 60$ | 50 | 3.0 |



The length for tracks for self-supporting chains with a center feed connection:

$$L_A = L_S / 2 + Ü_B + l_1$$

**Important**

An aluminum channel without glides should be used as a track for self-supporting **Viper 20** Energy Guiding Chains.

$L_S$ = Travel distance
$B_K$ = Chain width
$Ü_B$ = Projecting length of bend
$l_1$ = Connection length of chain
$L_A$ = Track length
The dimensions $B_K$, $Ü_B$ and $l_1$ are provided in the Technical Data Sheet for **Viper**, **Cobra** and **Boa** Energy Guiding Chains.

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# Energy Guiding System
## 3110 **Rolling Carriage**

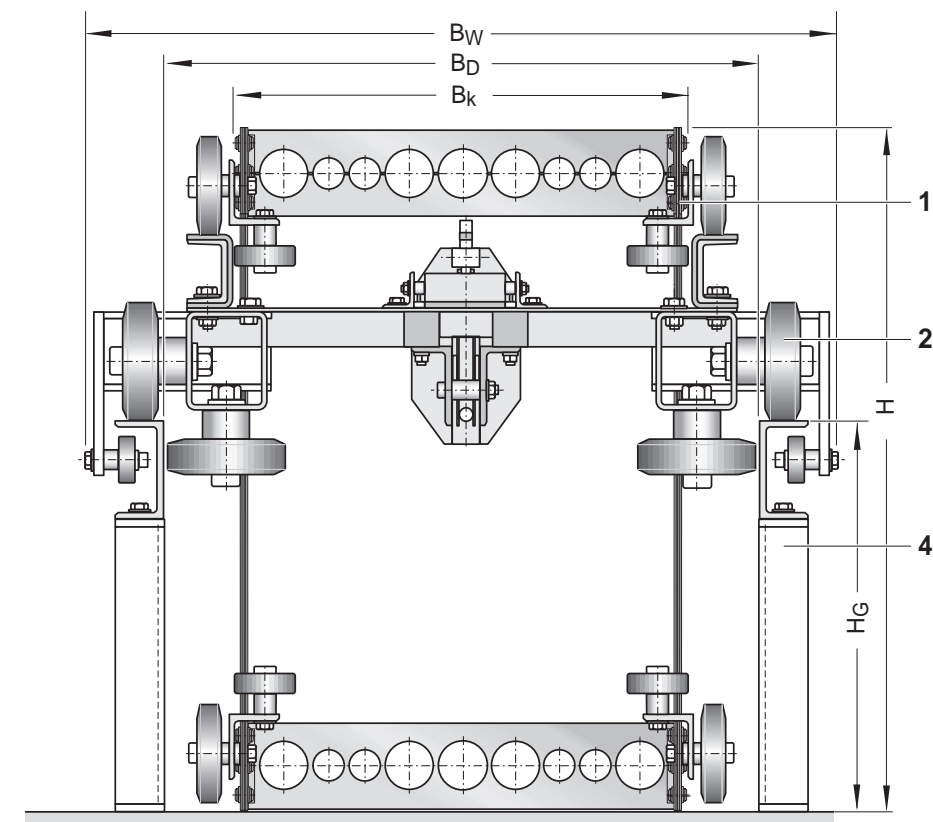Energy guiding system consisting of a track, rolling carriage, drive trolley and tensioner (optional)

**Material**
Steel

**Description**
Rolling carriage to support steel chains with long travel distances and heavy loads

**For Boa S/SX Energy Guiding Chains**



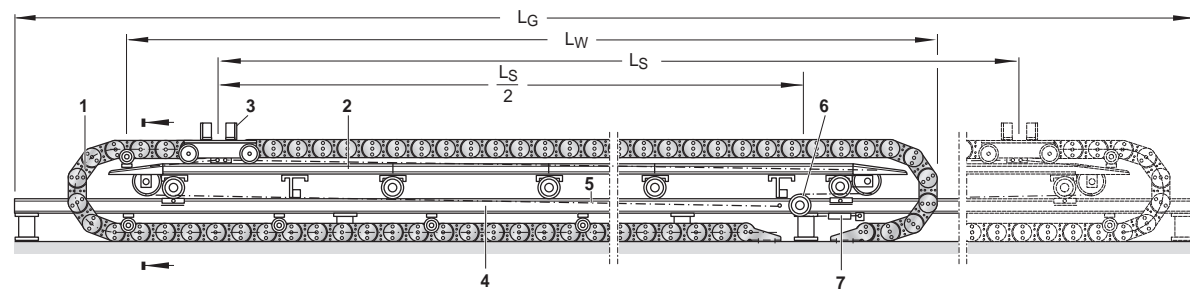**wampfler**

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# Energy Guiding System
## 3110 **Rolling Carriage**

### Single-sided horizontal configuration
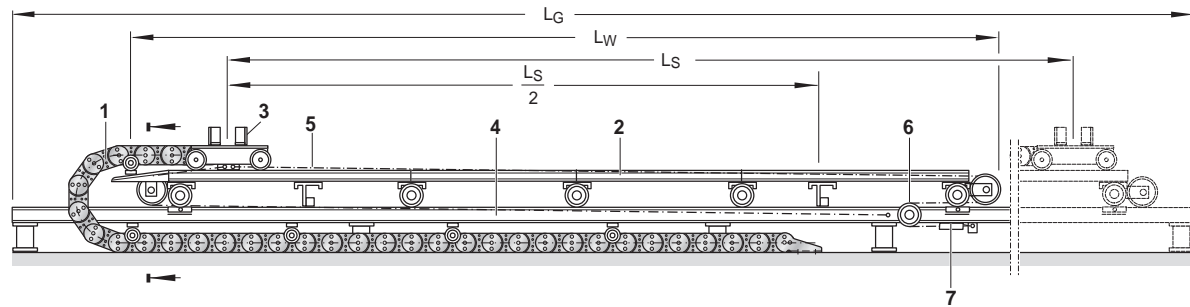


### Opposing horizontal configuration



The use of an energy guiding system with a rolling carriage makes it possible to extend the travel distance $L_S$ significantly beyond the distance that would be possible with a self-supporting chain. The carriage prevents the chain from sagging and carries it over the entire travel distance on rollers.

| | |
|---|---|
| 1 | = Energy guiding chains with transport and guiding rollers on the sides |
| 2 | = Rolling carriage with transport and guiding rollers over the entire length |
| 3 | = Drive trolley with transport and guiding rollers |
| 4 | = Track |
| 5 | = Steel cable |
| 6 | = Tension roller |
| 7 | = Tensioner |
| $B_D$ | = Distance between track rails |
| $B_G$ | = Track width |
| $B_K$ | = Chain width |
| $B_W$ | = Max. carriage width |
| H | = Installed height of chain |
| $H_G$ | = Track height |
| $L_G$ | = Track length |
| $L_S$ | = Travel distance |
| $L_W$ | = Carriage length |

# Rollers and Uprights
## 3110 **SRO/STB**

Rollers and uprights for horizontal supported configurations

**Material**
Steel

**Description**
For configurations with 1 or 2 rollers

**For Boa S/SX Energy Guiding Chains**



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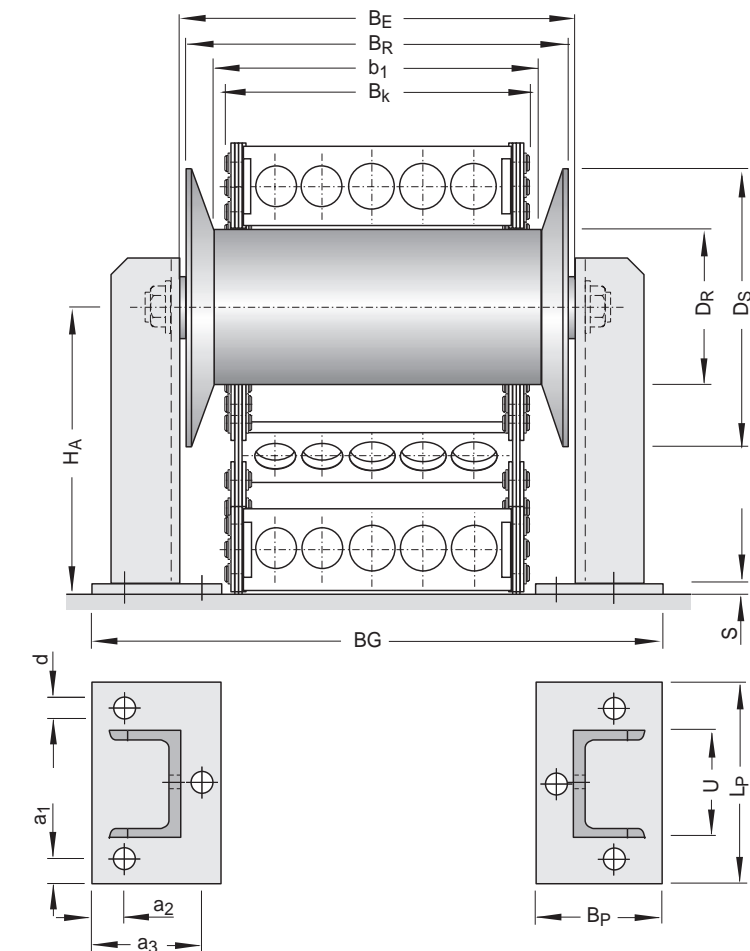
# Rollers and Uprights
## 3110 **SRO/STB**

**SRO Rollers**

| $D_R$ | $b_1$ | $B_R$ | $B_E$ | $B_G$ | $D_S$ |
|---|---|---|---|---|---|
| 90 | $B_K$ + 15 | $B_K$ + 15 | $B_K$ + 15 | $B_K$ + 15 | Ø 170 |
| 120 | $B_K$ + 15 | $B_K$ + 15 | $B_K$ + 15 | $B_K$ + 15 | Ø 200 |

**STB Uprights**

| for Roller | $H_A$ | $B_P$ | $L_P$ | U | $a_1$ | $a_2$ | $a_3$ | d | s |
|---|---|---|---|---|---|---|---|---|---|
| 90 | 2 KR - 45 | 80 | 180 | 80 | 20 | 40 | - | Ø 14 | 8 |
| 120 | 2 KR - 60 | 100 | 180 | 80 | 20 | 20 | 80 | Ø 18 | 8 |

All dimensions in mm.

$D_R$ **90** for Boa 31 S/SX and $D_R$ **120** for Boa 46 S, Boa 72 S/SX, Boa 109 S/SX.
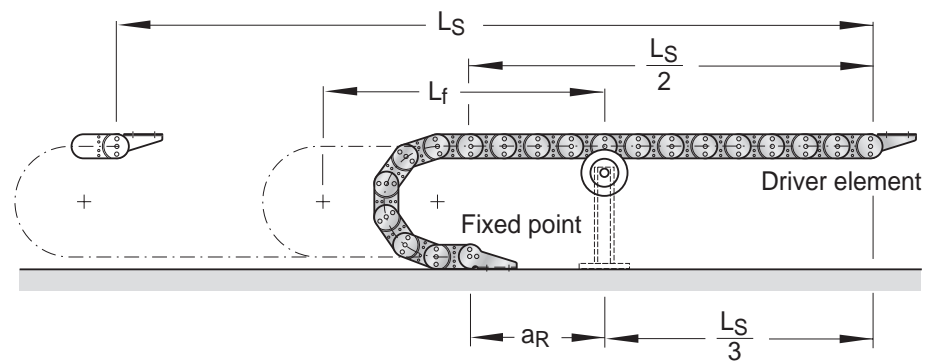
If two rollers are used, the first is installed directly above the fixed point and the second at a distance $L_S$/4 from the first.

$D_R$ = Roller diameter
$D_S$ = Flange diameter
$B_K$ = Chain width
$b_1$ = Roller surface
$B_G$ = Overall width of support
$B_R$ = Roller width
$B_E$ = Installed width of roller
$B_P$ = Width of base plate
$H_A$ = Height of roller axis
$L_P$ = Length of base plate
U = Width of U section
$a_1$- $a_3$ = Locations of holes
d = Diameter of holes
s = Thickness of base plate
$L_S$ = Travel distance
$L_f$ = Self-supported length

3110 Aluminum channels
3110 Steel tracks
3110 Stainless steel tracks
3110 Rolling carriages
3110 Rollers

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