

# Energy Guiding Chains Series 3112 Viper

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3112 Viper 20

3112 Viper 26

3112 Viper 38

3112 Viper 44



# Energy Guiding Chains

## Series 3112 Viper

All-purpose **Viper** Energy Guiding Chains make it possible to configure the ideal solution for virtually any standard application.

### Main applications

- Small to medium-sized bridge cranes, for interior and exterior use
- Order picking systems
- Transfer cars
- Sliding door systems
- Irrigation systems
- Carousels
- Telescopic booms
- Material handling



Series 3113/3114  
**Cobra**



Series 3116/3117  
**Boa**



**Ordering guide** (Example)  
**Viper 44** Energy Guiding Chain system with two vertical separators preinstalled in every second

link, inside width  $B_i = 150$  mm, bending radius  $KR = 100$  mm, standard connector, desired length of 5 meters.

### ■ System components for energy guiding chains

Text for order	Quantity	Article number <sup>3</sup>
<b>1. Chain</b> Viper 44 Energy Guiding Chain with inside width $B_i = 150$ mm with bending radius $KR = 100$ mm	5.054 m <sup>1</sup>	311244-150-VBA-100
<b>2. Vertical separators</b> 2 vertical separators TS 0 in every second link, preassembled	10.108 m <sup>2</sup>	311244-TS0-VBA-MT
<b>3. Connectors</b> Standard connector $B_i = 150$ mm	1 set	311244-ASE-150

### ■ System components for guiding elements

See Technical Data Sheets for Series 3110

### ■ System components for cables

See Technical Data Sheets for Series 3000



Series 3110  
**Guiding Elements**



Series 3000  
**Cables**

<sup>1</sup> Rounded up to 66.5 mm pitch.

<sup>2</sup> Two separators x chain length.

<sup>3</sup> It is not necessary to provide article numbers when ordering systems. They are, however, necessary when ordering individual or replacement parts.

# Energy Guiding Chain

## 3112 Viper 20

**Chain type**

Mono-link plastic chain.

Lightweight energy guiding chain with yokes on the outside that can be unlocked and flipped open.

**Materials**

Glass-fiber reinforced PA (halogen-free, silicone-free). Special materials are available for applications involving low or high temperatures or use in explosion-protected areas.

**Inside height**

20 mm

**Corresponding channel**

Aluminum 300



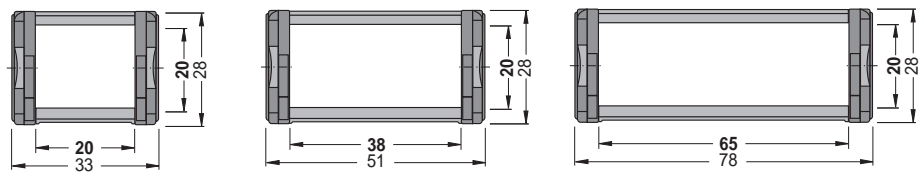
# Energy Guiding Chain

## 3112 Viper 20

### Chain types

Inside width	Outside width	Weight	Article number	KR <sup>1</sup>
$B_i$ (mm)	$B_k$ (mm)	$G_k$ (kg/m)		
20	33	0.45	311220-020-VBA-	
38	51	0.50	311220-038-VBA-	
65	78	0.57	311220-065-VBA-	

<sup>1</sup>  = Space for the bending radius KR of the chain.

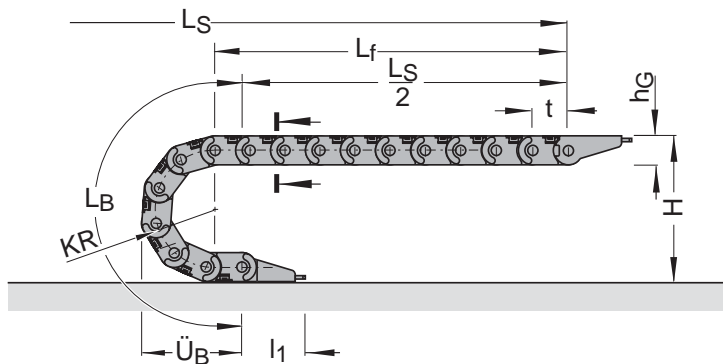


### Design parameters<sup>1</sup>

Bending radius	KR	050	075	100	125
Length of bend	$L_B$	226	305	383	462
Projected length of bend	$\ddot{U}_B$	161	186	211	236
Connector height	H	128	178	228	278
Chain pitch	t				34.5
Inside height	$H_i$				20
Link height	$h_G$				28
Connector length	$l_1$	Standard connector		62	
		Universal connector		36	
Self-supporting length <sup>2</sup>	$L_f$	$L_f = 1.5 \text{ m} + KR/295 - q_z/3.3$			
Additional load	$q_z$	max. 2 kg/m			

<sup>1</sup> = All dimensions in mm except for the self-supporting length.

<sup>2</sup> = Apply KR in mm,  $q_z$  in kg/m.



To determine the length  $L_k$  for a self-supporting chain:

$$L_k = L_S/2 + L_B + 2t$$

**Important:**

If the length  $L_f$  is exceeded, the upper run will start to sag and slide on top of the lower run. The factors that determine the length of the chain vary as a function of actual operating parameters. We recommend consulting our design engineers.

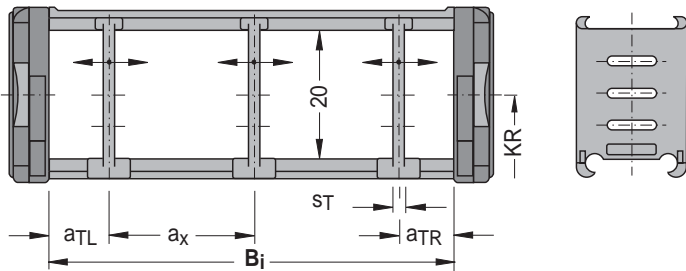
$L_S$  = Travel distance

# Energy Guiding Chain

## 3112 Viper 20

### Vertical separators TS 0

Article	Article number
Vertical separators TS 0 for Viper 20, preassembled	311220-TS0-VBA-MT
Vertical separators TS 0 for Viper 20, separate	311220-TS0-VBA-LS



### Viper 20 with TS 0

Separator thickness	$s_T$	2 mm
Min. distance middle	$a_{x\min}$	8 mm
Min. distance edge	$a_{T\min}$	4 mm

The separators can be moved horizontally and are normally provided on every second link.

### Connectors

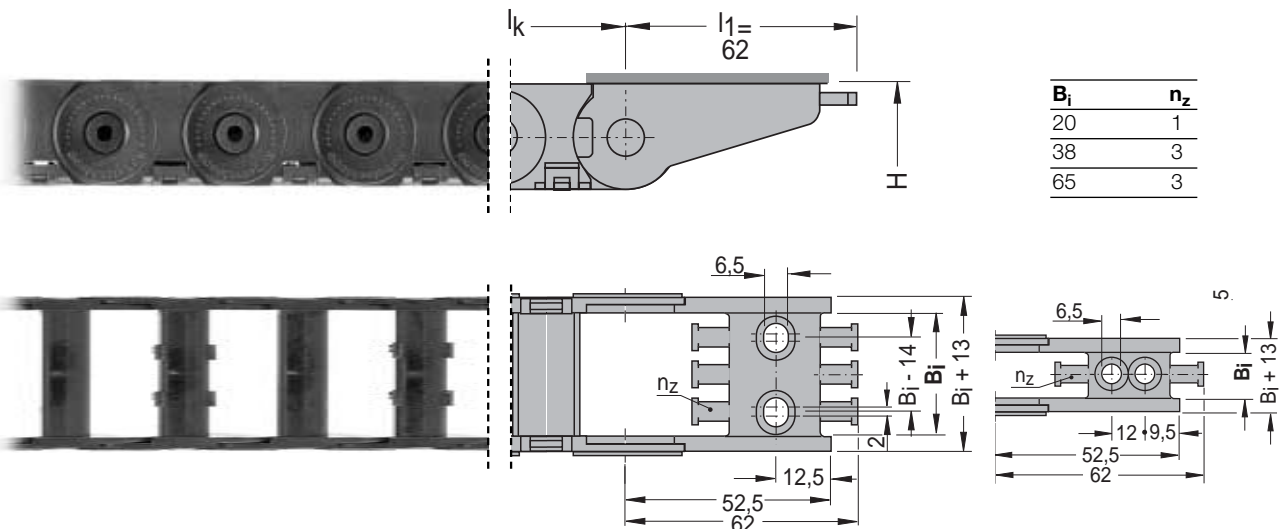
#### Standard

Article	Article number
Connectors for Viper 20 $B_i$ 20, standard	311220-ASE-020
Connectors for Viper 20 $B_i$ 38, standard	311220-ASE-038
Connectors for Viper 20 $B_i$ 65, standard	311220-ASE-065

The standard connector comes with an integrated strain-relief comb. The drawing shows the standard connector with "fixation to the outside".

The connector elements can be turned at any time (90° to the outside, 90° to the inside) or mounted with the "fixation to the inside".

A complete set is supplied that contains both the fixed point and driver element connectors.



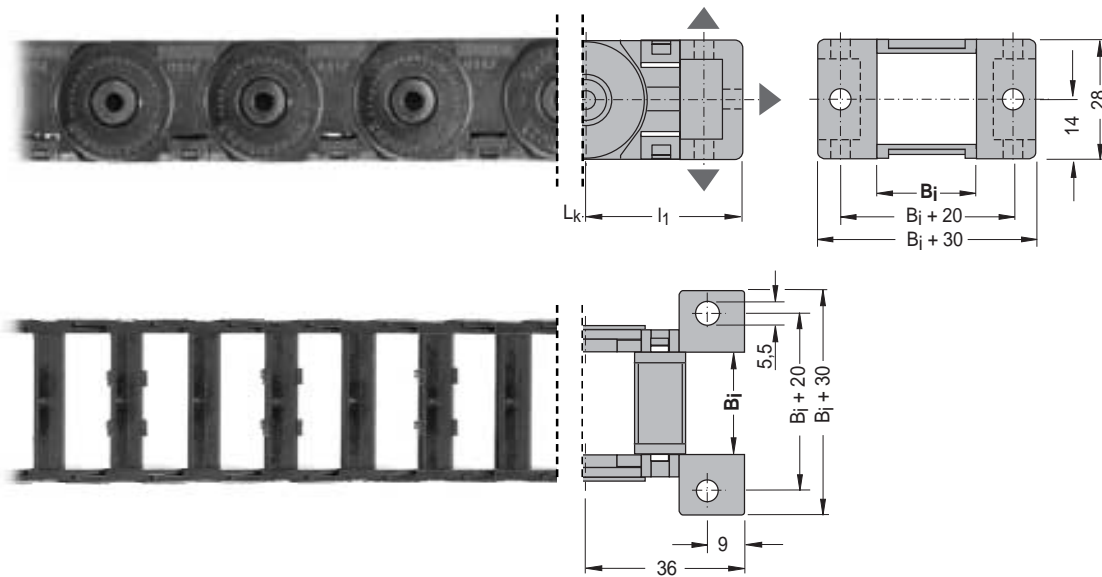
# Energy Guiding Chain

## 3112 Viper 20

Connectors	Universal	
	Article	Article number
	Connectors for Viper 20 $B_i$ 20, aluminum	311220-ASU-020
	Connectors for Viper 20 $B_i$ 38, aluminum	311220-ASU-038
	Connectors for Viper 20 $B_i$ 65, aluminum	311220-ASU-065

ASU universal connectors are made of die-cast aluminum and are primarily used for vertical configurations and heavier loads.

The dimensions of the elements for the fixed point and driver element connectors are identical.



See p.2 for "Ordering guide"

# Energy Guiding Chain

## 3112 Viper 26

**Chain type**

Mono-link plastic chain.

Lightweight energy guiding chain with yokes on the outside that can be unlocked and flipped open.

**Materials**

Glass-fiber reinforced PA (halogen-free, silicone-free). Special materials are available for applications involving low or high temperatures or use in explosion-protected areas.

**Inside height**

26 mm

**Corresponding channel**

Aluminum 400



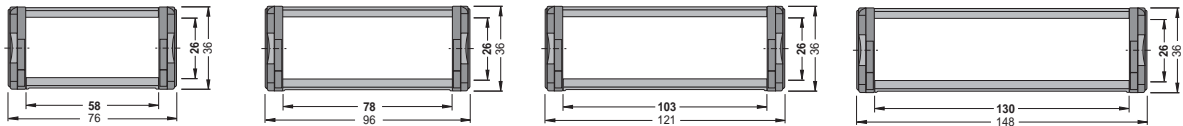
# Energy Guiding Chain

## 3112 Viper 26

### Chain types

	Inside width	Outside width	Weight	Article number	KR <sup>1</sup>
	$B_i$ (mm)	$B_k$ (mm)	$G_k$ (kg/m)		
	58	76	0.95	311226-058-VBA-	
	78	96	1.02	311226-078-VBA-	
	103	121	1.15	311226-103-VBA-	
	130	148	1.27	311226-130-VBA-	

<sup>1</sup>  = Space for the bending radius KR of the chain.

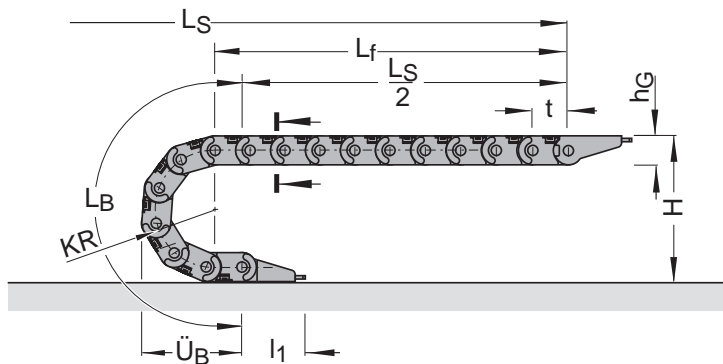


### Design parameters<sup>1</sup>

Bending radius	KR	065	095	150	200
Length of bend	$L_B$	295	390	562	720
Projected length of bend	$\ddot{U}_B$	203	233	288	338
Connector height	H	166	226	336	436
Chain pitch	t				45.5
Inside height	$H_i$				26
Link height	$h_G$				36
Connector length	$l_1$	Standard connector		74	
		Universal connector		47	
Self-supporting length <sup>2</sup>	$L_f$	$L_f = 2 \text{ m} + KR/220 - q_z/3.9$			
Additional load	$q_z$	max. 4 kg/m			

1= All dimensions in mm except for the self-supporting length.

2= Apply KR in mm,  $q_z$  in kg/m.



To determine the length  $L_k$  for a self-supporting chain:

$$L_k = L_s/2 + L_B + 2t$$

**Important:**

If the length  $L_f$  is exceeded, the upper run will start to sag and slide on top of the lower run. The factors that determine the length of the chain vary as a function of actual operating parameters. We recommend consulting our design engineers.

$L_s$  = Travel distance

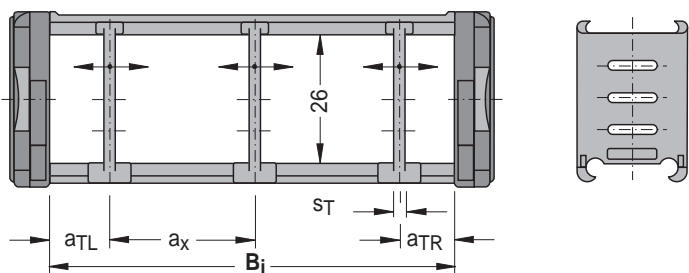


# Energy Guiding Chain

## 3112 Viper 26

### Vertical separators TS 0

Article	Article number
Vertical separators TS 0 for Viper 26, preassembled	311226-TS0-VBA-MT
Vertical separators TS 0 for Viper 26, separate	311226-TS0-VBA-LS



### Viper 26 with TS 0

Separator thickness	$s_T$	2.5 mm
Min. distance middle	$a_{x\min}$	10 mm
Min. distance edge	$a_{T\min}$	5 mm

The separators can be moved horizontally and are normally provided on every second link.

### Connectors

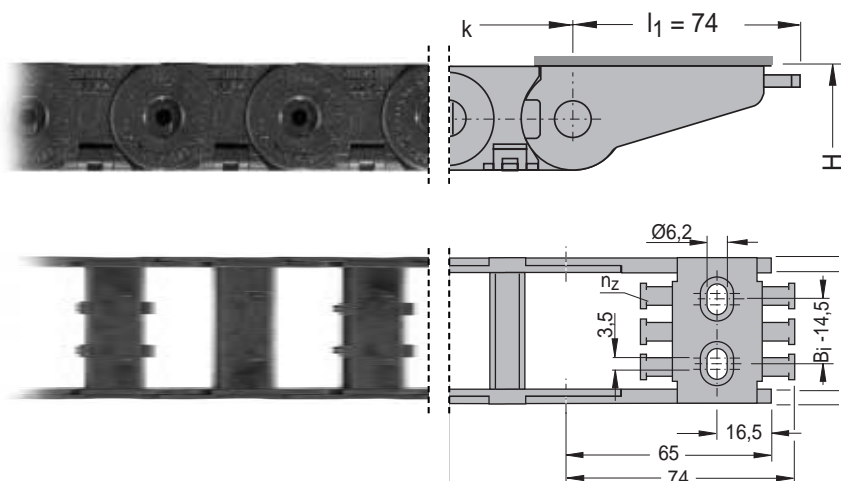
#### Standard

Article	Article number
Connectors for Viper 26 B <sub>i</sub> 58, standard	311226-ASE-058
Connectors for Viper 26 B <sub>i</sub> 78, standard	311226-ASE-078
Connectors for Viper 26 B <sub>i</sub> 103, standard	311226-ASE-103
Connectors for Viper 26 B <sub>i</sub> 130, standard	311226-ASE-130

The standard connector comes with an integrated strain-relief comb. The drawing shows the standard connector with "fixation to the outside".

The connector elements can be turned at any time (90° to the outside, 90° to the inside) or mounted with the "fixation to the inside".

A complete set is supplied that contains both the fixed point and driver element connectors.



B <sub>i</sub>	n <sub>z</sub>
58	4
78	6
103	8
130	10

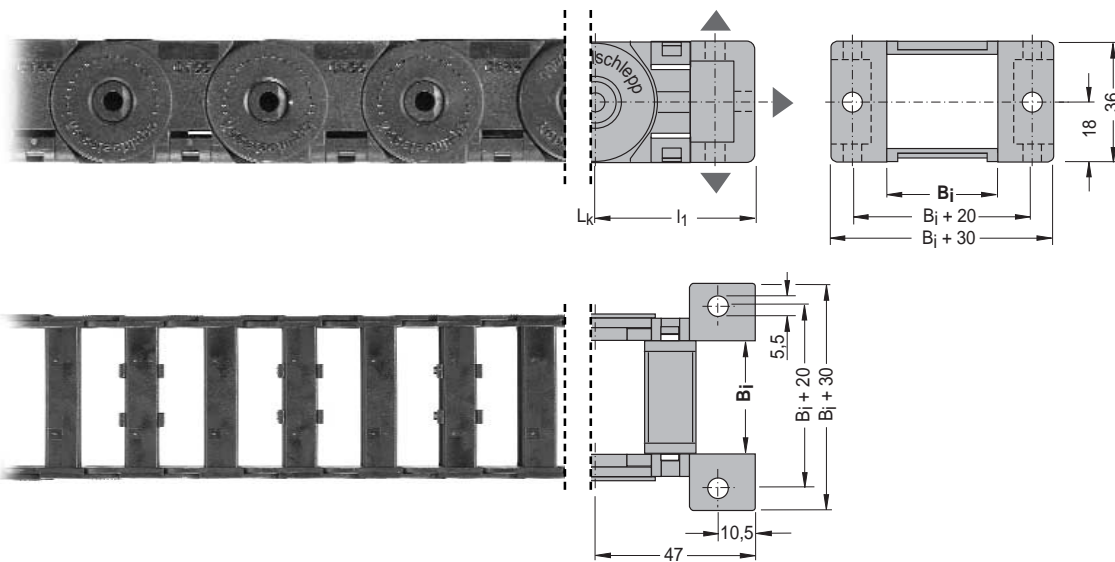
# Energy Guiding Chain

## 3112 Viper 26

Connectors	Universal	
	Article	Article number
	Connectors for Viper 26 B <sub>i</sub> 58, aluminum	311226-ASU-058
	Connectors for Viper 26 B <sub>i</sub> 78, aluminum	311226-ASU-078
	Connectors for Viper 26 B <sub>i</sub> 103, aluminum	311226-ASU-103
	Connectors for Viper 26 B <sub>i</sub> 130, aluminum	311226-ASU-130

ASU universal connectors are made of die-cast aluminum and are primarily used for vertical configurations and heavier loads.

The dimensions of the elements for the fixed point and driver element connectors are identical.



See p.2 for "Ordering guide"

# Energy Guiding Chain

## 3112 Viper 38

**Chain type**

Mono-link plastic chain.

Lightweight energy guiding chain with yokes on the outside that can be unlocked and flipped open.

**Materials**

Glass-fiber reinforced PA (halogen-free, silicone-free). Special materials are available for applications involving low or high temperatures or use in explosion-protected areas.

**Inside height**

38 mm

**Corresponding channel**

Aluminum 500



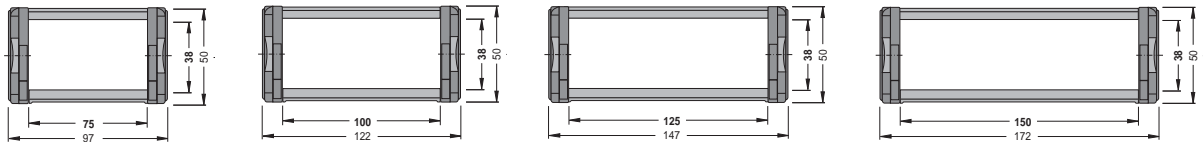
# Energy Guiding Chain

## 3112 Viper 38

### Chain types

Inside width	Outside width	Weight	Article number	KR <sup>1</sup>
$B_i$ (mm)	$B_k$ (mm)	$G_k$ (kg/m)		
75	97	1.60	311238-075-VBA-	
100	122	1.72	311238-100-VBA-	
125	147	1.86	311238-125-VBA-	
150	172	1.98	311238-150-VBA-	

<sup>1</sup>  = Space for the bending radius KR of the chain.

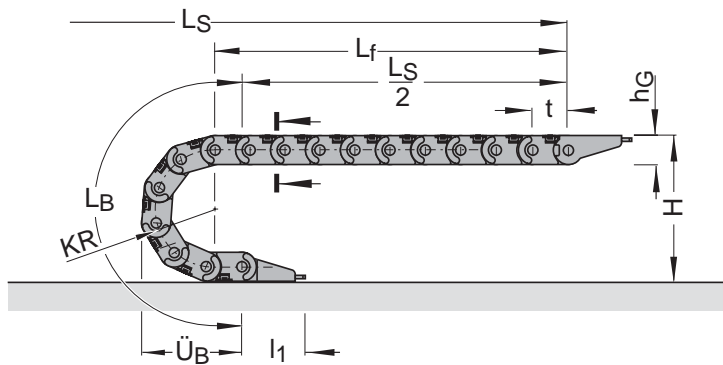


### Design parameters<sup>1</sup>

Bending radius	KR	100	160	200	230
Length of bend	$L_B$	425	614	740	834
Projected length of bend	$\ddot{U}_B$	275	335	375	405
Connector height	H	250	370	450	510
Chain pitch	t				55.5
Inside height	$H_i$				38
Link height	$h_G$				50
Connector length	$l_1$	Standard connector		94	
		Universal connector		57	
Self-supporting length <sup>2</sup>	$L_f$	$L_f = 2.55 \text{ m} + KR/160 - q_z/5.3$			
Additional load	$q_z$	max. 7 kg/m			

1= All dimensions in mm except for the self-supporting length.

2= Apply KR in mm,  $q_z$  in kg/m.



To determine the length  $L_k$  for a self-supporting chain:

$$L_k = L_S/2 + L_B + 2t$$

#### Important:

If the length  $L_f$  is exceeded, the upper run will start to sag and slide on top of the lower run. The factors that determine the length of the chain vary as a function of actual operating parameters. We recommend consulting our design engineers.

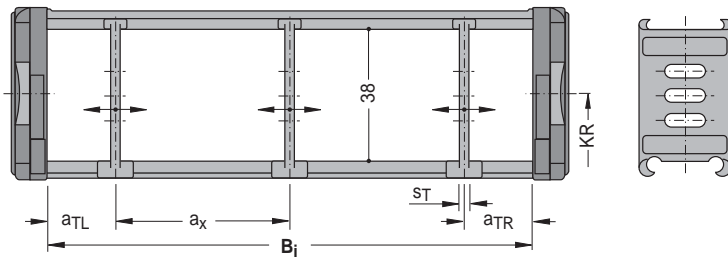
$L_S$  = Travel Distance

# Energy Guiding Chain

## 3112 Viper 38

### Vertical separators TS 0

Article	Article number
Vertical separators TS 0 for Viper 38, preassembled	311238-TS0-VBA-MT
Vertical separators TS 0 for Viper 38, separate	311238-TS0-VBA-LS



### Viper 38 with TS 0

Separator thickness	$s_T$	2.5 mm
Min. distance middle	$a_{x\min}$	10 mm
Min. distance edge	$a_{T\min}$	5 mm

The separators can be moved horizontally and are normally provided on every second link.

### Connectors

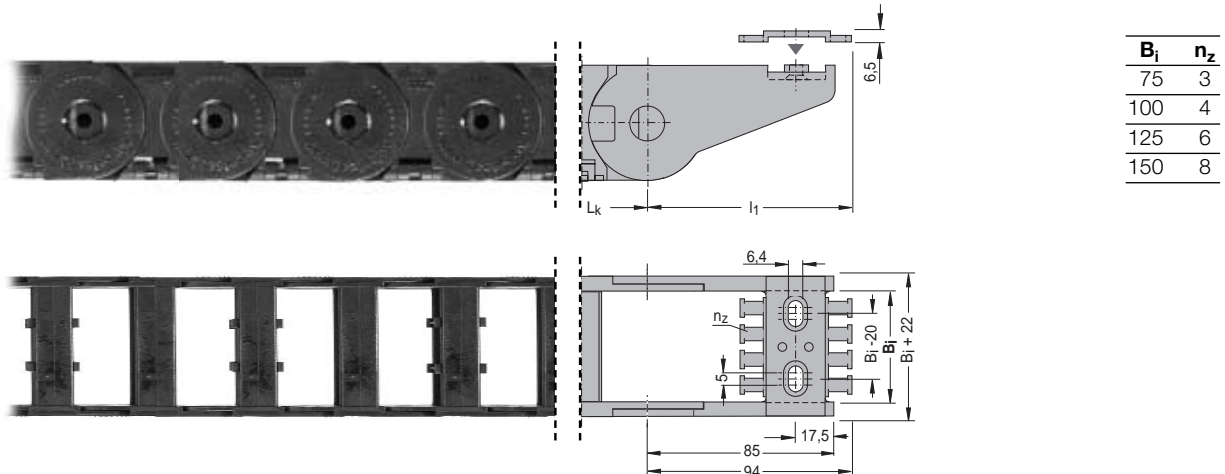
#### Standard

Article	Article number
Connectors for Viper 38 $B_i$ 75, standard	311238-ASE-075
Connectors for Viper 38 $B_i$ 100, standard	311238-ASE-100
Connectors for Viper 38 $B_i$ 125, standard	311238-ASE-125
Connectors for Viper 38 $B_i$ 150, standard	311238-ASE-150

The standard connector comes with an integrated strain-relief comb. The drawing shows the standard connector with "fixation to the outside".

The connector elements can be turned at any time (90° to the outside, 90° to the inside) or mounted with the "fixation to the inside".

A complete set is supplied that contains both the fixed point and driver element connectors.



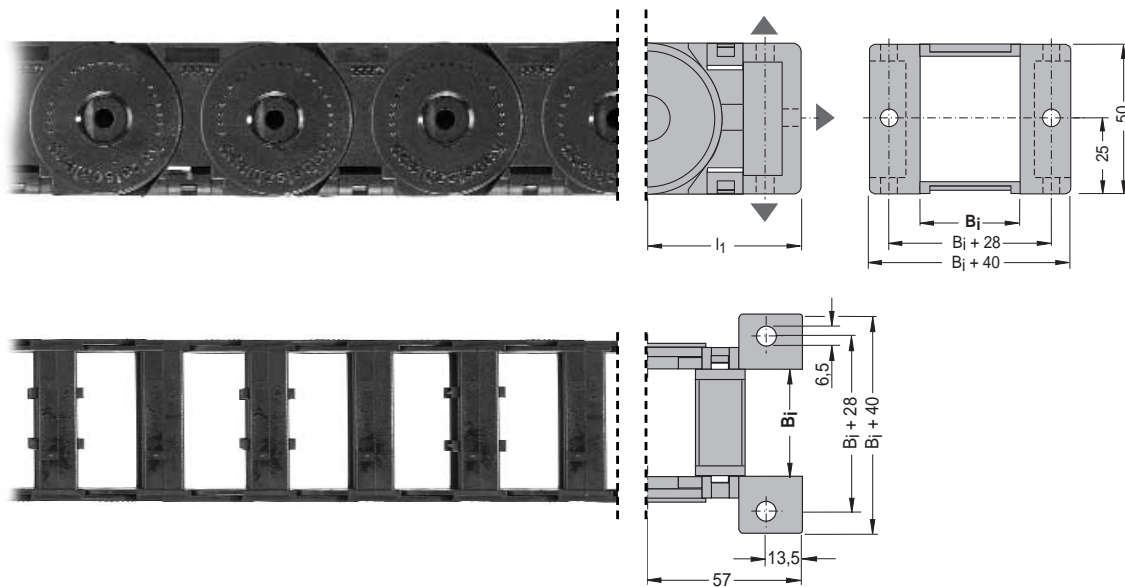
# Energy Guiding Chain

## 3112 Viper 38

Connectors	Universal	
	Article	Article number
	Connectors for Viper 38 B <sub>i</sub> 75, aluminum	311238-ASU-075
	Connectors for Viper 38 B <sub>i</sub> 100, aluminum	311238-ASU-100
	Connectors for Viper 38 B <sub>i</sub> 125, aluminum	311238-ASU-125
	Connectors for Viper 38 B <sub>i</sub> 150, aluminum	311238-ASU-150

ASU universal connectors are made of die-cast aluminum and are primarily used for vertical configurations and heavier loads.

The dimensions of the elements for the fixed point and driver element connectors are identical.



See p.2 for "Ordering guide"

# Energy Guiding Chain

## 3112 Viper 44

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**Chain type**

Mono-link plastic chain.

Lightweight energy guiding chain with yokes on the outside that can be unlocked and flipped open.

**Materials**

Glass-fiber reinforced PA (halogen-free, silicone-free). Special materials are available for applications involving low or high temperatures or use in explosion-protected areas.

**Inside height**

44 mm

**Corresponding channel**

Aluminum 600

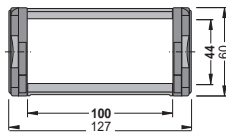
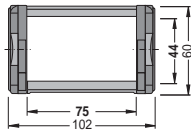
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# Energy Guiding Chain

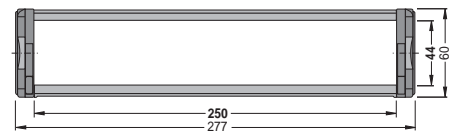
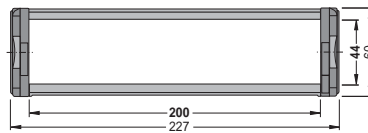
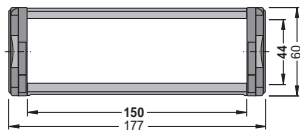
## 3112 Viper 44

### Chain types



Inside width $B_i$ (mm)	Outside width $B_k$ (mm)	Weight $G_k$ (kg/m)	Article number	KR <sup>1</sup>
75	102	2.22	311244-075-VBA-	
100	127	2.37	311244-100-VBA-	
150	177	2.68	311244-150-VBA-	
200	227	3.00	311244-200-VBA-	
250	277	3.31	311244-250-VBA-	

<sup>1</sup> = Space for the bending radius KR of the chain.

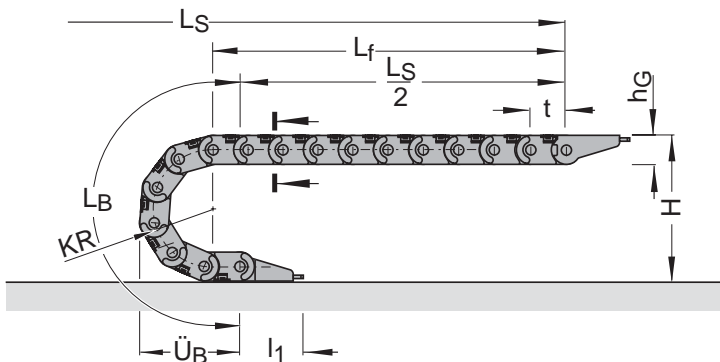


### Design parameters<sup>1</sup>

Bending radius KR		100	140	200	250	300
Length of bend	$L_B$	448	573	762	919	1076
Projected length of bend	$\ddot{U}_B$	289	329	389	439	489
Connector height	H	260	390	460	560	660
Chain pitch	t					66.5
Inside height	$H_i$					44
Link height	$h_G$					60
Connector length	$l_1$	Standard connector				92.5
		Universal connector				68
Self-supporting length <sup>2</sup>	$L_f$	$L_f = 3 \text{ m} + KR/150 - q_z/6$				
Additional load	$q_z$	max. 10 kg/m				

<sup>1</sup> = All dimensions in mm except for the self-supporting length.

<sup>2</sup> = Apply KR in mm,  $q_z$  in kg/m.



To determine the length  $L_k$  for a self-supporting chain:

$$L_k = L_S/2 + L_B + 2t$$

**Important:**

If the length  $L_f$  is exceeded, the upper run will start to sag and slide on top of the lower run. The factors that determine the length of the chain vary as a function of actual operating parameters. We recommend consulting our design engineers.

$L_S$  = Travel distance

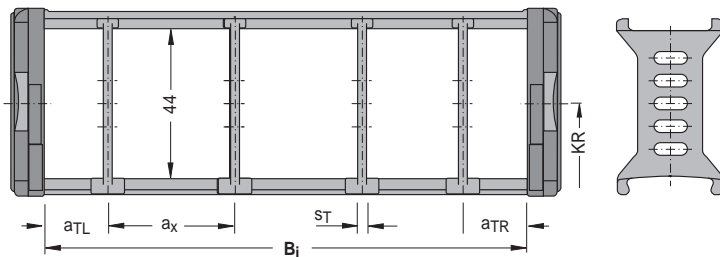


# Energy Guiding Chain

## 3112 Viper 44

### Vertical separators TS 0

Article	Article number
Vertical separators TS 0 for Viper 44, preassembled	311244-TS0-VBA-MT
Vertical separators TS 0 for Viper 44, separate	311244-TS0-VBA-LS



### Viper 44 mit TS 0

Separator thickness	$s_T$	3 mm
Min. distance middle	$a_{x\min}$	13 mm
Min. distance edge	$a_{T\min}$	6.5 mm

The separators can be moved horizontally and are normally provided on every second link.

### Connectors

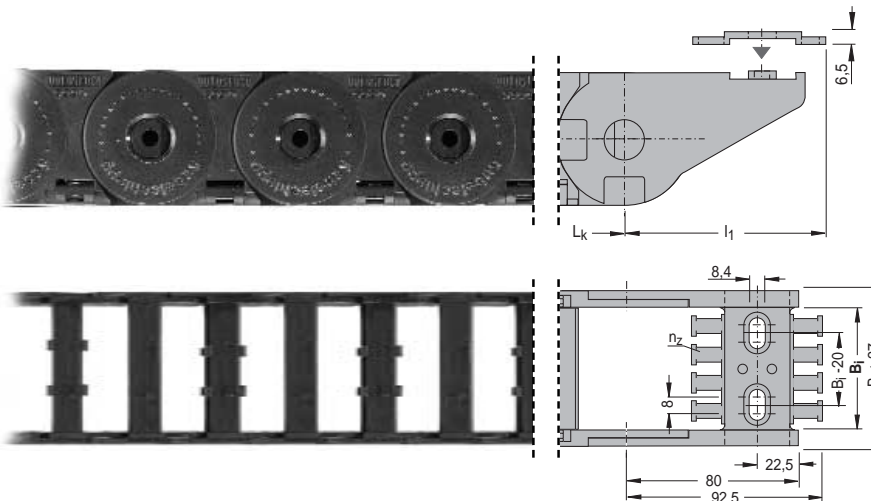
#### Standard

Article	Article number
Connectors for Viper 44 $B_1$ 75, standard	311244-ASE-075
Connectors for Viper 44 $B_1$ 100, standard	311244-ASE-100
Connectors for Viper 44 $B_1$ 150, standard	311244-ASE-150
Connectors for Viper 44 $B_1$ 200, standard	311244-ASE-200
Connectors for Viper 44 $B_1$ 250 standard	311244-ASE-250

The standard connector comes with an integrated strain-relief comb. The drawing shows the standard connector with "fixation to the outside".

The connector elements can be turned at any time (90° to the outside, 90° to the inside) or mounted with the "fixation to the inside".

A complete set is supplied that contains both the fixed point and driver element connectors.



$B_1$	$n_z$
75	6
100	8
150	12
200	16
250	20

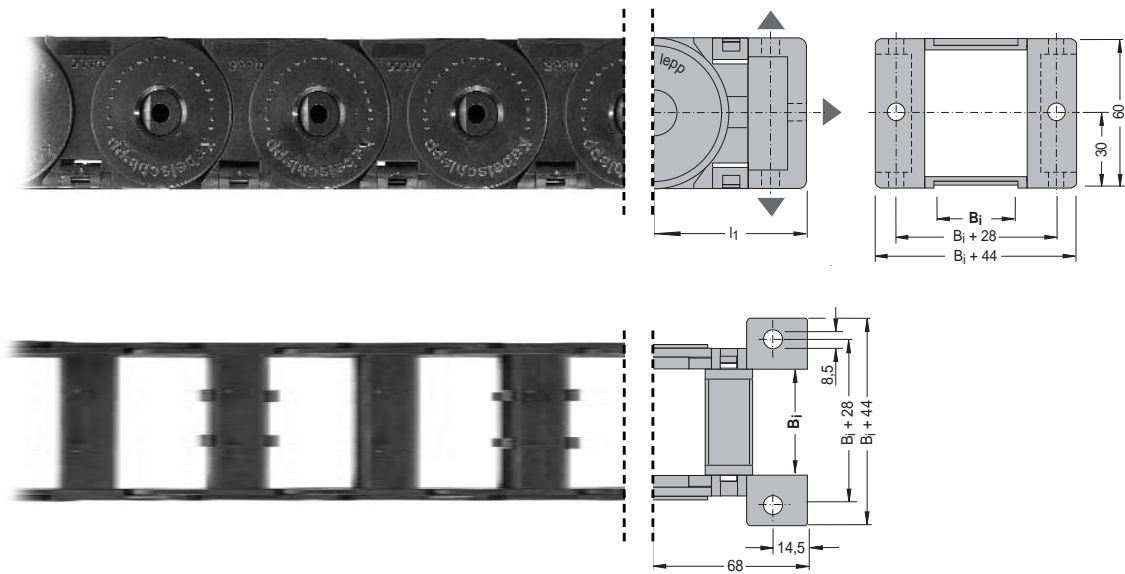
# Energy Guiding Chain

## 3112 Viper 44

Connectors	Universal	
	Article	Article number
	Connectors for Viper 44 $B_i$ 75, aluminum	311244-ASU-075
	Connectors for Viper 44 $B_i$ 100, aluminum	311244-ASU-100
	Connectors for Viper 44 $B_i$ 150, aluminum	311244-ASU-150
	Connectors for Viper 44 $B_i$ 200, aluminum	311244-ASU-200
	Connectors for Viper 44 $B_i$ 250, aluminum	311244-ASU-250

ASU universal connectors are made of die-cast aluminum and are primarily used for vertical configurations and heavier loads.

The dimensions of the elements for the fixed point and driver element connectors are identical.



See p.2 for "Ordering guide"



3112 Viper 20  
3112 Viper 26  
3112 Viper 38  
3112 Viper 44

**www = wampfler world wide**



**Wampfler AG**

Rheinstrasse 27 + 33  
79576 Weil am Rhein-Maerkt  
Germany

Customer Support  
Phone +49 (0) 76 21/66 22 22

Phone +49 (0) 76 21/6 62-0  
Fax +49 (0) 76 21/6 62-144  
info@wampfler.com  
www.wampfler.com

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