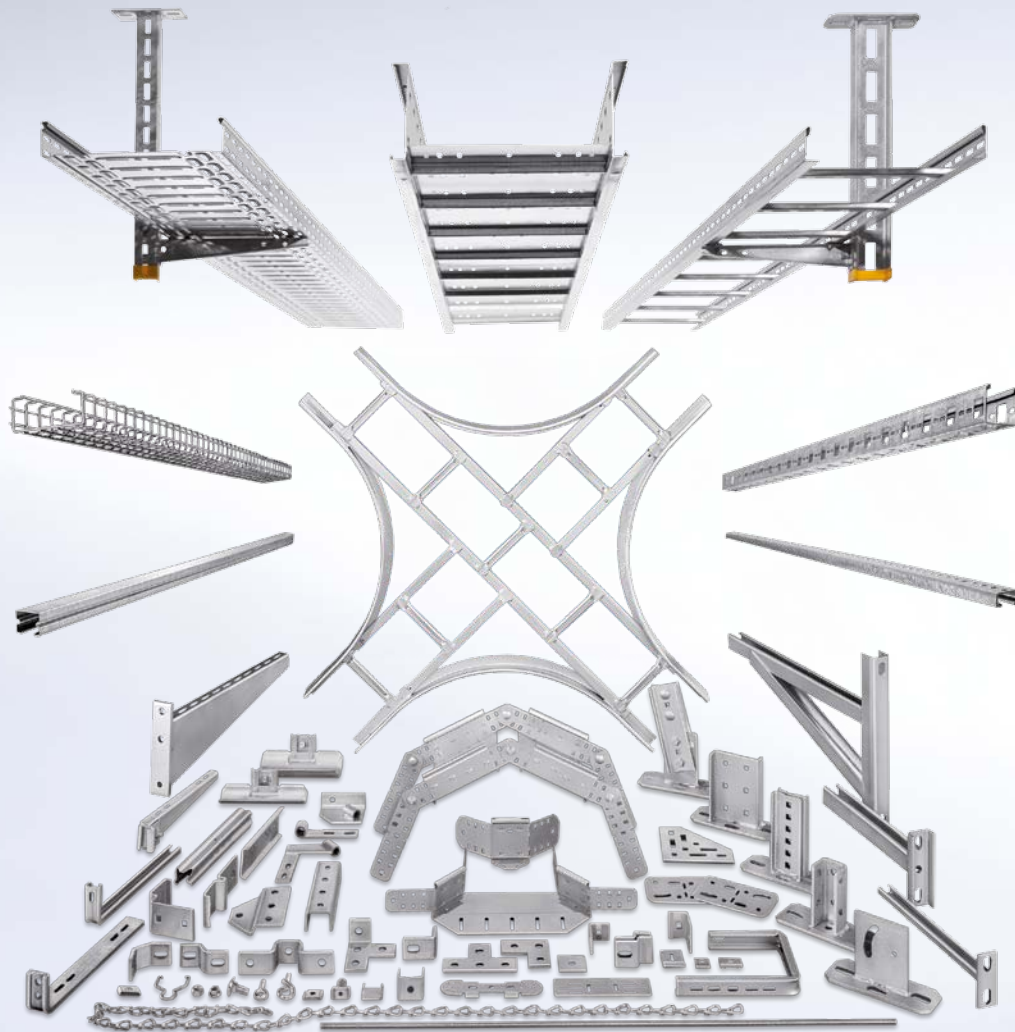




# Cable trays

## Catalogue



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## Information

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Cable trays [B](#)

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Wide-span systems [D](#)

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# Our history

The brand PUK represents an independent private enterprise, run in the best tradition of the German medium-sized businesses.

PUK-WERKE was formally founded in 1969. Our history, however, goes way back to the 30ies of the last century. Today, we may look back on 70 years of successful company history.

The Berlin-based businesses Herman Pohl OHG (general partnership, founded in 1951), and the Anton Klein OHG, (founded in 1935), whose shareholders decided in 1969 to bundle

their business activities in the PUK-WERKE KG (limited partnership), form the roots of our company.

The merge of those two companies set the course for a positive future. Synergies could be utilized, enabling the enterprise to work the German market with greater intensity. At the same time, this step laid the foundations for an efficient internationalization of our business relations.

Both founding companies began their success story with the production of cable clamps – known until this day as “Pohl-clamps” or “KSV-clamps”.

The development and production of cable support systems was soon to follow, developing into our today’s complete and innovative product portfolio, complemented by under floor systems with new, patented solutions, as well as assembly systems for photovoltaic systems.

Our expertise in the installation of PV mounting systems are sourced from the long-time experience of our Spanish subsidiary PUK-Portacables and continue together with PUK Solar the success story.



# Our group of companies

We supply cable support systems, cable clamps, under floor systems and assembly systems for photovoltaic systems directly to you; furthermore we will mount our products for you on your construction sites both, nationwide and abroad.

Consequentially, we see ourselves as a service provider for whom customer orientation, service and flexibility are number one priority. Your contact person is always nearby in our 10 branches all over Germany.

in addition we have our own distribution companies or distribution partners in many European countries; thanks to our subsidiary P&K ENERGO, we can offer you our products even in Moscow in stock.

With our Polish subsidiary EL-PUK and PUK-România we not only have our own production site for the East European market but are also able to offer you assembly on site at regional conditions.

TEKOM-PUK is the leading producer of cable support systems in Turkey. Together with PUK-Middle East new possibilities will be opened not only in Turkey but also in its adjacent states and in the Arabic region.

In Western Europe, PUK Portacables is your partner on the spanish and portuguese market, PUK Schweiz on the swiss market, PUK Benelux in The Netherlands and Belgium, as well as PUK UK in the United Kingdom and Ireland.

In the fiscal year of 2015, the PUK Group generated a turnover of about 140 million Euros with around 770 employees – 415 of them work in Germany.



# Our comprehensive offer

## Consulting

Our field staff and sales force consists of skilled specialists with high-level expert knowledge and many years of experience.

They are always happy to answer your questions regarding cable support systems, cable clamps, underfloor systems and photovoltaic systems.

If you wish, our experts will develop technical solutions for you and optimize your project together with you under consideration of costs.

If you chose to mount our products on your construction site, our local staff will help you all the way - from the right

choice of products to the mounting technology.

## Planning

Our technical department engineers in our Berlin headquarters are at our customers' disposal. During international large-scale projects, they work in close cooperation with the responsible planning and engineering offices Germany-wide and abroad.

Our engineers develop detailed recommendations for special applications, provide engineering drawings, static verifications and compile installation-typicals for complex situations to ensure a smooth mounting of our products.

## Installation

Our competence in installation is being proven on nearly 1.000 construction sites per year.

The PUK branch offices provide flexible and customer-oriented support for small and medium-sized projects. Our experienced construction supervisors are located directly in our branch offices to make sure that your competent contact person is always close by during the completion of your project.

If you are planning a challenging and



complex major project in Germany or abroad, our main installation department in the Berlin headquarters will be by your side.

The construction of a power plant, a tunnel or an airport often times requires the timely delivery and installation of more than 100 kilometres of cable trays. Therefore, our construction supervisors are always on site.

Our SCC-certification meets high requirements regarding security, health and environment protection (according to SGU) on our construction sites.

### **Production and logistics**

In Germany, we manufacture in two modern plants in Berlin and Schoenecken (Eifel) on a shop floor of more than 30.000 square metres.

Our high capacity and flexible production lines process more than 20.000 tons of steel each year into cable support parts, underfloor components and photovoltaic constructions.

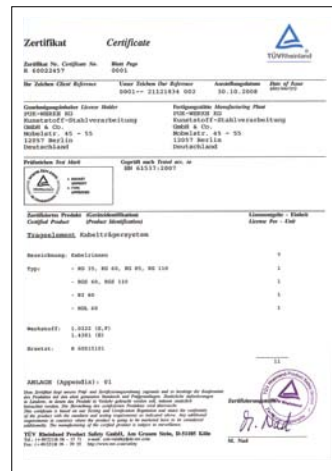
Our own galvanizing plants are an essential factor for being able to guarantee our quality and flexibility.

Our broad experience has taught us how important it is for the completion of every individual project to have a reliable material availability, even on short-notice.

Therefore, our PUK storehouses in all regions are at your disposal offering an extensive assortment of products. With the storehouses at our production facilities plus other nine storehouses throughout Germany, we can guarantee shortest delivery times, no matter where you are, and – if you have commissioned us with the assembly as well – the capability for a proximate assembly start.



# Quality and safety



We ensure the quality of our products and the application security by constant inspection and certification, as well as by supplementing the legal test procedures by additional, specially developed quality assurance. Specific instructions regarding work, procedures and inspection are an inherent part of our quality management.

Our plants and branch offices have been certified according to DIN EN ISO 9001. This certification applies to the construction, manufacture and mounting of PUK cable support systems.

In co-operation with the TÜV Rheinland (Technical Inspection Agency), we test our cable support systems on our own test stand according to the strict DIN EN 61537 guidelines and with a special focus on the bearing capacities and thus application security.

Our underfloor systems comply with DIN EN 50085 and DIN VDE 0634.

PUK Solar's mounting systems were tested and certified according to the TÜV specification TZE/2.572.11.

The corresponding specifications in our catalogues bear the „TÜV Rheinland - construction type tested“ label as well as the VDE label.

Our SCC-certification meets high requirements regarding security, health and environment protection (according to SGU) on our construction sites.



# Our product portfolio



## Cable trays

A time-tested complete solution, consisting of:

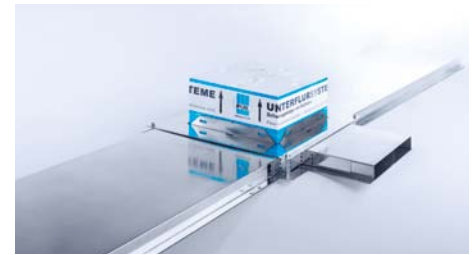
- wire mesh cable trays
- cable trays
- cable ladders
- wide-span systems
- supporting elements

Proven and tested system solutions consisting of serial parts. Cost-efficient due to serial production on state-of-the-art production facilities.



## Cable clamps

The thoroughly tried and tested solution for the rational and safe mounting of one, two or three cables with a diameter of up to 175 mm. For mounting to channels of various dimensions, to sectional steel, or directly to the wall. Made of hot-dip galvanized steel, corrosion-resistant and non-magnetic high-grade steel or of aluminium.



## Underfloor systems

Complete solutions for all types of use, consisting of:

- screed flush duct systems
- system components for double and cavity floors
- screed covered duct systems
- device cup and installation devices made of hot-dip galvanized steel, high-grade steel and synthetic material.



## Industry

A specially developed product range for industrial plants with the highest safety standards, consisting of:

- wide-span cable systems
- ship ladders
- supporting systems
- PUK STRUT



## PUK Solar

The mounting system for photovoltaic system underframes is based on the use of various standard mounting profiles. The simplicity of the coaction of the profiles to the module clamps, the functionality as well as the flexible utilization are the prerequisites for the easily distinguishable user-friendly mountability of our system. Based on set parameters we offer solutions for the assembly of photovoltaic systems that are statically funded, yet at the same time unbeatably priced.

Of course, we offer our cable trays, underfloor systems, as well as mounting structures for photovoltaic systems with optional assembly!



# Wire-mesh Cable trays

Wire-mesh cable trays [A03-A06](#)

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Accessories [A07-A11](#)

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A

# Numeric index

## Wire-mesh Cable trays

### G

**G 100** wire mesh cable tray [A04](#)  
**G 50** wire mesh cable tray [A03](#)  
**GI** wire mesh cable tray [A05](#)  
**GTD 30** wire-mesh cable support W-shape [A06](#)  
**GTDW** wire-mesh cable support G-shape [A05](#)  
**GTR 100** wire-mesh cable tray barrier strip [A10](#)  
**GTR 50** wire-mesh cable tray barrier strip [A09](#)  
**GTR 60** wire-mesh cable tray barrier strip [A10](#)  
**GV 30** wire-mesh cable tray coupler [A07](#)  
**GVD 30** wire-mesh cable tray coupler [A08](#)  
**GVK** Wire-mesh cable tray coupler clamp [A09](#)  
**GV-L 30** wire-mesh cable tray coupler [A08](#)  
**GVU** wire-mesh cable tray coupler [A09](#)

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### K

**KZF** cold zinc paint [A11](#)  
**KZS** cold zinc spray [A11](#)

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### M

**MP-G** assembly plate [A07](#)

# Wire-mesh Cable trays

## G 50 wire mesh cable tray , height=53 mm

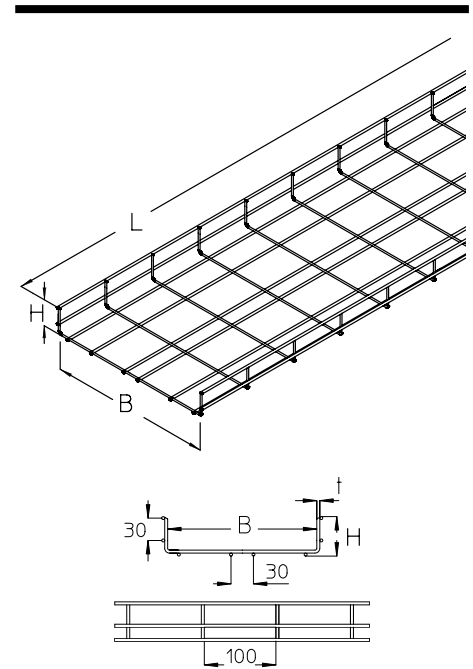
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For a load diagram, see the chapter planning.



article number	H mm	B mm	L mm	a mm	t mm	G kg
<b>S</b>						
G 50-10S	53	100	3000	30	4,0	2,30
G 50-20S	53	200	3000	30	4,0	3,20
G 50-30S	53	300	3000	30	4,0	4,10
G 50-40S	53	400	3000	30	4,5	6,30
G 50-50S	53	500	3000	30	4,5	7,40
G 50-60S	53	600	3000	30	4,5	8,50
<b>F</b>						
G 50-10F	53	100	3000	30	4,0	2,40
G 50-20F	53	200	3000	30	4,0	3,30
G 50-30F	53	300	3000	30	4,0	4,20
G 50-40F	53	400	3000	30	4,5	6,50
G 50-50F	53	500	3000	30	4,5	7,70
G 50-60F	53	600	3000	30	4,5	8,80
<b>E</b>						
G 50-10E	53	100	3000	30	4,0	2,30
G 50-20E	53	200	3000	30	4,0	3,20
G 50-30E	53	300	3000	30	4,0	4,10
G 50-40E	53	400	3000	30	4,5	6,30
G 50-50E	53	500	3000	30	4,5	7,40
G 50-60E	53	600	3000	30	4,5	8,50

accessories optional:

<b>GV 30</b>	wire-mesh cable tray coupler	(page A07)
<b>GVD 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GV-L 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVU</b>	wire-mesh cable tray coupler	(page A09)
<b>GVK</b>	Wire-mesh cable tray coupler clamp	(page A09)
<b>GTR 50</b>	wire-mesh cable tray barrier strip	(page A09)
<b>MP-G</b>	assembly plate	(page A07)
<b>KLU</b>	fixing set	(page G07)



# Wire-mesh Cable trays

## G 100 wire mesh cable tray , height=103 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

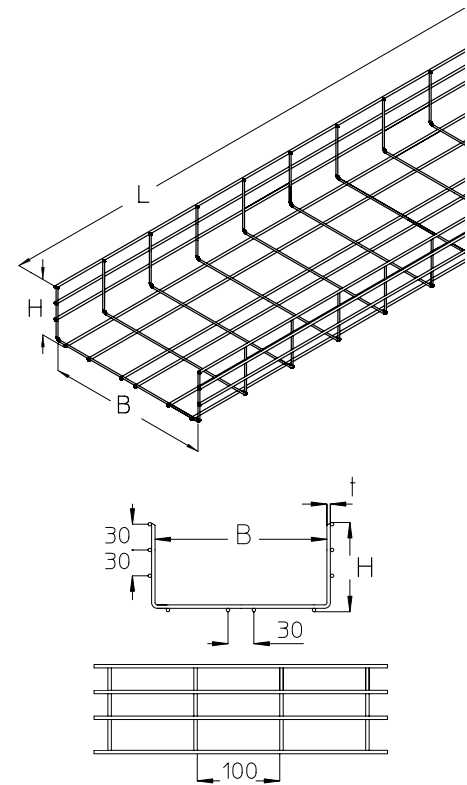
For an application example, see the chapter assembly.



article number	H mm	B mm	L mm	a mm	t mm	G kg
<b>S</b>						
G 100-10S	103	100	3000	30	4,0	3,20
G 100-20S	103	200	3000	30	4,0	4,10
G 100-30S	103	300	3000	30	4,5	6,30
G 100-40S	103	400	3000	30	4,5	7,40
G 100-50S	103	500	3000	30	4,5	8,50
G 100-60S	103	600	3000	30	4,5	9,60
<b>F</b>						
G 100-10F	103	100	3000	30	4,0	3,30
G 100-20F	103	200	3000	30	4,0	4,20
G 100-30F	103	300	3000	30	4,5	6,50
G 100-40F	103	400	3000	30	4,5	7,70
G 100-50F	103	500	3000	30	4,5	8,80
G 100-60F	103	600	3000	30	4,5	9,90
<b>E</b>						
G 100-10E	103	100	3000	30	4,0	3,20
G 100-20E	103	200	3000	30	4,0	4,10
G 100-30E	103	300	3000	30	4,5	6,30
G 100-40E	103	400	3000	30	4,5	7,40
G 100-50E	103	500	3000	30	4,5	8,50
G 100-60E	103	600	3000	30	4,5	9,60
<b>E4</b>						
G 100-10E4	103	100	3000	30	4,0	3,30
G 100-20E4	103	200	3000	30	4,0	4,20
G 100-30E4	103	300	3000	30	4,5	6,50
G 100-40E4	103	400	3000	30	4,5	7,70

accessories optional:

<b>GV 30</b>	wire-mesh cable tray coupler	(page A07)
<b>GVD 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GV-L 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVU</b>	wire-mesh cable tray coupler	(page A09)
<b>GVK</b>	Wire-mesh cable tray coupler clamp	(page A09)
<b>GTR 100</b>	wire-mesh cable tray barrier strip	(page A10)
<b>MP-G</b>	assembly plate	(page A07)
<b>KLU</b>	fixing set	(page G07)



# Wire-mesh Cable trays

## GI wire mesh cable tray , height=60 mm

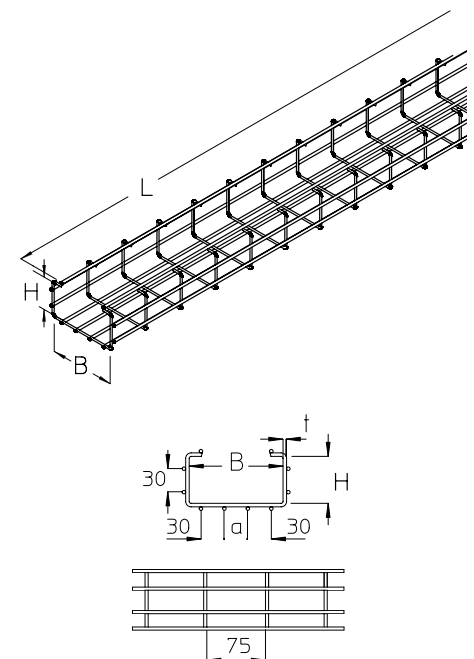
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For a load diagram, see the chapter planning.



article number	H mm	B mm	L mm	a mm	t mm	G kg
<b>S</b>						
<b>GI 06S</b>	60	60	3000	30	4,5	4,10
<b>GI 12S</b>	60	120	3000	30	4,5	5,20
<b>GI 20S</b>	60	200	3000	30	4,5	5,60
<b>GI 30S</b>	60	300	3000	30	4,5	6,80
<b>F</b>						
<b>GI 06F</b>	60	60	3000	30	4,5	4,40
<b>GI 12F</b>	60	120	3000	30	4,5	5,60
<b>GI 20F</b>	60	200	3000	30	4,5	6,00
<b>GI 30F</b>	60	300	3000	30	4,5	7,30
<b>E</b>						
<b>GI 06E</b>	60	60	3000	30	4,5	4,10
<b>GI 12E</b>	60	120	3000	30	4,5	5,20
<b>GI 20E</b>	60	200	3000	30	4,5	5,60
<b>GI 30E</b>	60	300	3000	30	4,5	6,90

accessories optional:

<b>GV 30</b>	wire-mesh cable tray coupler	(page A07)
<b>GVD 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GV-L 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVU</b>	wire-mesh cable tray coupler	(page A09)
<b>GVK</b>	Wire-mesh cable tray coupler clamp	(page A09)
<b>GTR 60</b>	wire-mesh cable tray barrier strip	(page A10)
<b>MP-G</b>	assembly plate	(page A07)
<b>KLU</b>	fixing set	(page G07)



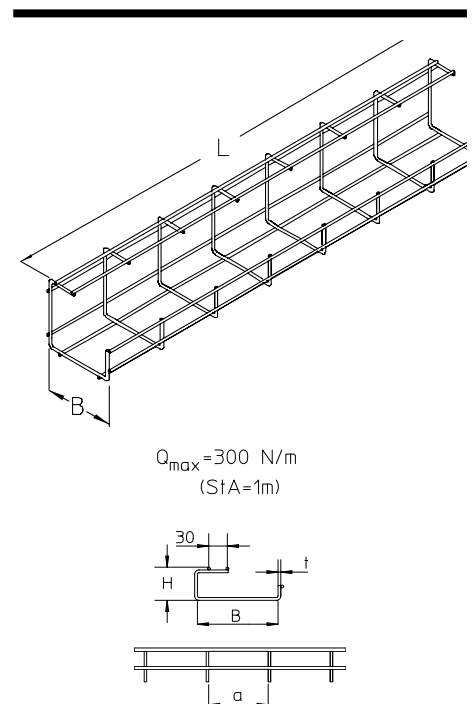
## GTDW wire-mesh cable support G-shape

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	a mm	t mm	G kg
<b>S</b>						
<b>GTDW 8S</b>	48	80	3000	100	4,0	2,30
<b>GTDW 10S</b>	99	100	3000	100	4,0	3,20
<b>GTDW 13S</b>	53	130	3000	200	4,5	1,70
<b>F</b>						
<b>GTDW 8F</b>	48	80	3000	100	4,0	2,40
<b>GTDW 10F</b>	99	100	3000	100	4,0	3,30

accessories optional:

<b>GV 30</b>	wire-mesh cable tray coupler	(page A07)
<b>GVD 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GV-L 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVU</b>	wire-mesh cable tray coupler	(page A09)
<b>GVK</b>	Wire-mesh cable tray coupler clamp	(page A09)
<b>MP-G</b>	assembly plate	(page A07)
<b>KLU</b>	fixing set	(page G07)



# Wire-mesh Cable trays

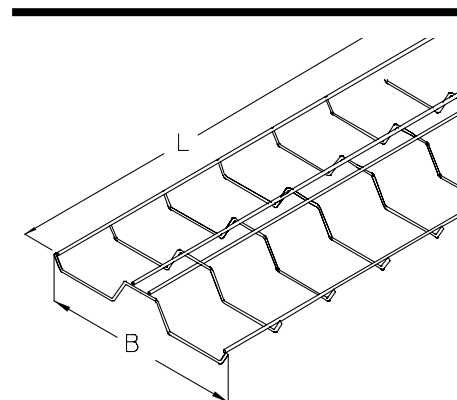
## GTD 30 wire-mesh cable support W-shape

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>GTD 30S</b>	50	300	3000	2,40
<b>F</b>				
<b>GTD 30F</b>	50	300	3000	2,50

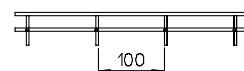
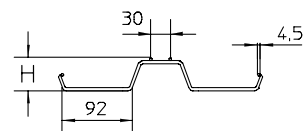
accessories optional:

<b>GV-L 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVD 30</b>	wire-mesh cable tray coupler	(page A08)
<b>GVU</b>	wire-mesh cable tray coupler	(page A09)
<b>GVK</b>	Wire-mesh cable tray coupler clamp	(page A09)



$$Q_{\max} = 300 \text{ N/m}$$

(StA=1m)





# Wire-mesh Cable trays

## Accessories

### MP-G assembly plate

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>MP-G 50S</b>	198	120	0,16

accessories included:

1 x <b>SEMS 8</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRSV 8x16</b>	round-head screw with short square	(page G34)
1 x <b>GV-L 30F</b>	wire-mesh cable tray coupler	(page A08)

article number	H mm	B mm	G kg
<b>F</b>			
<b>MP-G 50F</b>	198	120	0,17

accessories included:

1 x <b>SEMS 8E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
1 x <b>GV-L 30F</b>	wire-mesh cable tray coupler	(page A08)

article number	H mm	B mm	G kg
<b>E4</b>			
<b>MP-G 50E4</b>	198	120	0,16

accessories included:

1 x <b>US 8x17E4</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 8E4</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>SES 8x20E4</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>GV-L 30E4</b>	wire-mesh cable tray coupler	(page A08)

### GV 30 wire-mesh cable tray coupler

For an application example, see the chapter assembly.

article number	G kg
<b>S</b>	
<b>GV 30S</b>	0,04

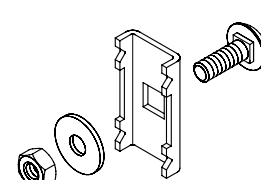
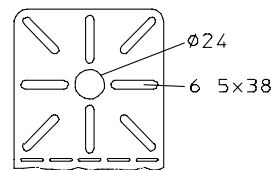
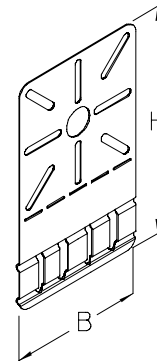
accessories included:

1 x <b>GV-L 30F</b>	wire-mesh cable tray coupler	(page A08)
1 x <b>FRSV 8x16</b>	round-head screw with short square	(page G34)
1 x <b>SEM 8</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>US 8x25</b>	square washer, DIN 9021	(page G40)

article number	G kg
<b>F</b>	
<b>GV 30F</b>	0,04

accessories included:

1 x <b>GV-L 30F</b>	wire-mesh cable tray coupler	(page A08)
1 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>US 8x25E</b>	square washer, DIN 9021	(page G40)



# Wire-mesh Cable trays

## Accessories

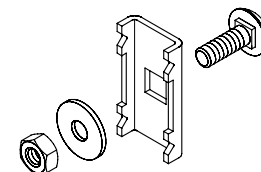
### GV 30 wire-mesh cable tray coupler

For an application example, see the chapter assembly.

article number	G	kg
<b>E</b>		
<b>GV 30E</b>		0,04

accessories included:

1 x <b>GV-L 30E</b>	wire-mesh cable tray coupler	(page A08)
1 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>US 8x25E</b>	square washer, DIN 9021	(page G40)



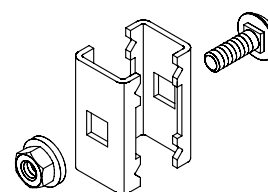
### GVD 30 wire-mesh cable tray coupler

For an application example, see the chapter assembly.

article number	G	kg
<b>S</b>		
<b>GVD 30S</b>		0,05

accessories included:

1 x <b>SEMS 8</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRS 8x25</b>	round-head screw with square, DIN 603	(page G35)
2 x <b>GV-L 30F</b>	wire-mesh cable tray coupler	(page A08)



article number	G	kg
<b>F</b>		
<b>GVD 30F</b>		0,06

<b>E</b>		
<b>GVD 30E</b>		0,05

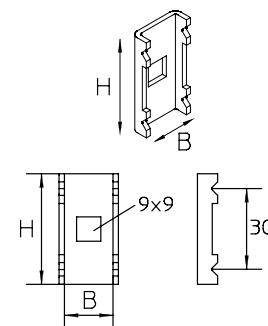
accessories included:

1 x <b>FRS 8x25E</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>SEMS 8E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
2 x <b>GV-L 30E</b>	wire-mesh cable tray coupler	(page A08)

### GV-L 30 wire-mesh cable tray coupler

For an application example, see the chapter assembly.

article number	H	B	G
	mm	mm	kg
<b>F</b>			
<b>GV-L 30F</b>	41	18	0,02
<b>E</b>			
<b>GV-L 30E</b>	41	18	0,02
<b>E4</b>			
<b>GV-L 30E4</b>	41	18	0,02



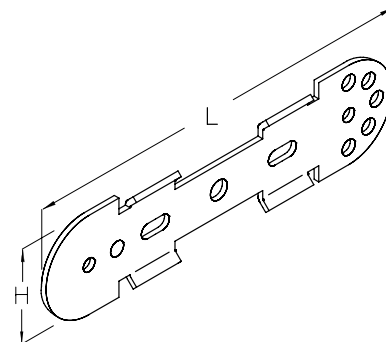
# Wire-mesh Cable trays

## Accessories

### GVU wire-mesh cable tray coupler

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>F</b>			
<b>GVU F</b>	46	185	0,13
<b>E</b>			
<b>GVU E</b>	46	185	0,10



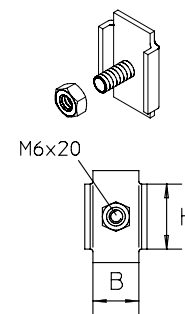
### GVK Wire-mesh cable tray coupler clamp

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
<b>GVK F</b>	24	17	0,02
<b>E</b>			
<b>GVK E</b>	24	17	0,02

accessories included:

1 x **SEMSS 6E** hexagon-nut, self-locking, DIN 985 (page G42)



### GTR 50 wire-mesh cable tray barrier strip

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>GTR 50S</b>	33	3000	1,60

accessories included:

3 x **KLU** fixing set (page G07)

article number	H mm	L mm	G kg
<b>F</b>			
<b>GTR 50F</b>	33	3000	1,70

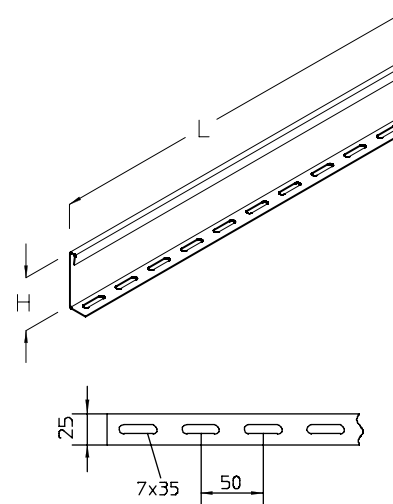
accessories included:

3 x **KLU F** fixing set (page G08)

article number	H mm	L mm	G kg
<b>E</b>			
<b>GTR 50E</b>	33	3000	1,60

accessories included:

3 x **KLU E** fixing set (page G08)



# Wire-mesh Cable trays

## Accessories

### GTR 60 wire-mesh cable tray barrier strip

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>GTR 60S</b>	50	3000	1,90

accessories included:  
3 x **KLU** fixing set (page G07)

article number	H mm	L mm	G kg
<b>F</b>			
<b>GTR 60F</b>	50	3000	2,10

accessories included:  
3 x **KLU F** fixing set (page G08)

article number	H mm	L mm	G kg
<b>E</b>			
<b>GTR 60E</b>	50	3000	1,90

accessories included:  
3 x **KLU E** fixing set (page G08)

### GTR 100 wire-mesh cable tray barrier strip

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>GTR 100S</b>	75	3000	2,50

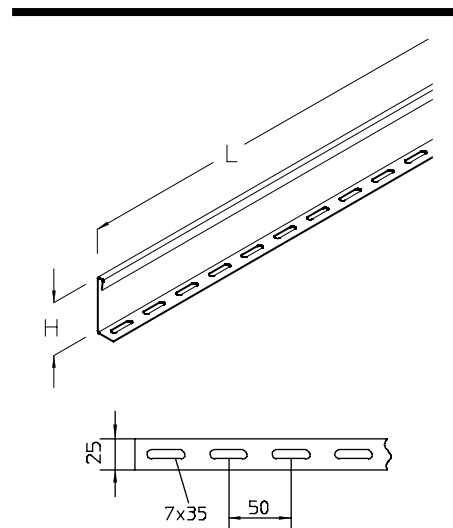
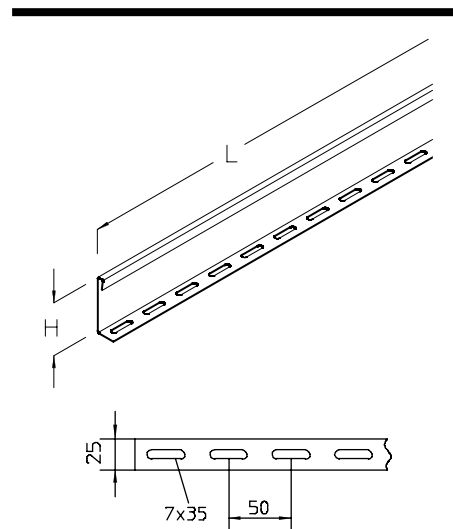
accessories included:  
3 x **KLU** fixing set (page G07)

article number	H mm	L mm	G kg
<b>F</b>			
<b>GTR 100F</b>	75	3000	2,70

accessories included:  
3 x **KLU F** fixing set (page G08)

article number	H mm	L mm	G kg
<b>E</b>			
<b>GTR 100E</b>	75	3000	2,70

accessories included:  
3 x **KLU E** fixing set (page G08)



# Wire-mesh Cable trays

## Accessories

### **KZF** cold zinc paint

For assembly instructions, see the chapter assembly.

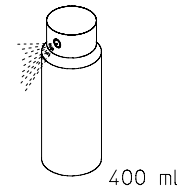
article number	l ml	G kg
<b>KZF</b>	750	1,93



### **KZS** cold zinc spray

For assembly instructions, see the chapter assembly.

article number	l ml	G kg
<b>KZS</b>	400	0,40





# Cable trays

Cable trays	B03-B15
Fittings	B16-B33
Accessories of cable trays	B34-B42
Accessories of cable installation trays	B43-B45
Cover	B46-B54



B

# Numeric index

## Cable trays

### A

**AHB** suspension-bow [B45](#)

---

### K

**KSB** edge protection strip [B41](#)

**KSR** cable protection ring [B45](#)

**KZF** cold zinc paint [B42](#)

**KZS** cold zinc spray [B42](#)

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### M

**MKB** adhesive metal strip [B54](#)

**MP-RG** assembly plate [B41](#)

---

### R

**R 110** cable tray [B11](#)

**R 35** cable tray [B03](#)

**R 60** cable tray [B04](#)

**R 85** cable tray [B09](#)

**RA 110** cable tray branch-piece, height=110 mm [B26](#)

**RA 35** cable tray branch-piece, height=35 mm [B24](#)

**RA 60** cable tray branch-piece, height=60 mm [B25](#)

**RA 85** cable tray branch-piece, height=85 mm [B25](#)

**RAA 110** cable tray attachment branch-piece, height=110 mm [B23](#)

**RAA 35** cable tray attachment branch-piece, height=35 mm [B21](#)

**RAA 60** cable tray attachment branch-piece, height=60 mm [B22](#)

**RAA 85** cable tray attachment branch-piece, height=85 mm [B23](#)

**RAAD** cable tray attachment branch-piece cover [B50](#)

**RAADR** cable tray attachment branch-piece cover with bar lock [B51](#)

**RAB 110** cable tray closing panel, height=110 mm [B35](#)

**RAB 35** cable tray closing panel, height=35 mm [B34](#)

**RAB 60** cable tray closing panel, height=60 mm [B34](#)

**RAB 85** cable tray closing panel, height=85 mm [B35](#)

**RAD** cable tray branch-piece cover [B51](#)

**RADR** cable tray branch-piece cover with bar lock [B52](#)

**RAE 110** cable tray attachment corner, height=110 mm [B21](#)

**RAE 60** cable tray attachment corner, height=60 mm [B20](#)

**RAED** cable tray attachment corner cover [B49](#)

**RB 110** cable tray bend, height=110 mm [B18](#)

**RB 35** cable tray bend, height=35 mm [B16](#)

**RB 60** cable tray bend, height=60 mm [B16](#)

**RB 85** cable tray bend, height=85 mm [B17](#)

**RB45 110** cable tray bend, height=110 mm [B20](#)

**RB45 60** cable tray bend, height=60 mm [B18](#)

**RB45 85** cable tray bend, height=85 mm [B19](#)

**RBD** cable tray bend cover [B47](#)

**RBD45** cable tray bend cover [B49](#)

**RBDR** cable tray bend cover with bar lock [B48](#)

**RBDR45** cable tray bend cover with bar lock [B49](#)

**RD** cable tray cover [B46](#)

**RDKL 110** cable tray cover clamp [B47](#)

**RDKL 60** cable tray cover clamp [B47](#)

**RDR** cable tray cover with bar lock [B46](#)

**RD-SW** cable tray storm protection angle [B47](#)

**REB** cable tray end-plate [B36](#), [B43](#)

**RG 110** cable tray [B13](#)

**RG 35** cable tray [B03](#)

**RG 60** cable tray [B07](#)

**RG 85** cable tray [B09](#)

**RGL 60** cable tray [B06](#)

**RGS 110** cable tray [B14](#)

**RGS 60** cable tray [B08](#)

**RGS 85** cable tray [B10](#)

**RGV 110** cable tray coupler, height=110 mm [B38](#)

**RGV 35** cable tray coupler, height=35 mm [B37](#)

**RGV 60** cable tray coupler, height=60 mm [B37](#)

**RGV 85** cable tray coupler, height=85 mm [B38](#)

**RGVS** cable tray snap coupler [B38](#)

**RI 60** cable installation tray, height=60 mm [B15](#)

**RID** cable installation tray cover [B44](#)

**RIDR** cable installation tray cover with bar lock [B45](#)

**RIV 60** cable tray coupler, height=60 mm [B43](#)

**RK 110** cable tray crossover, height=110 mm [B28](#)

**RK 35** cable tray crossover, height=35 mm [B27](#)

**RK 60** cable tray crossover, height=60 mm [B27](#)

**RK 85** cable tray crossover, height=85 mm [B28](#)

**RKD** cable tray cross-piece cover [B52](#)

**RKDR** cable tray cross-piece cover with bar lock [B53](#)

**RR 110** cable tray reducer, height=110 mm [B33](#)

**RR 35** cable tray reducer, height=35 mm [B31](#)

**RR 60** cable tray reducer, height=60 mm [B32](#)

**RR 85** cable tray reducer, height=85 mm [B32](#)

**RRD** cable tray reducer cover [B53](#)

**RRDR** cable tray reducer cover with bar lock [B54](#)

**RS 110** cable tray [B12](#)

**RS 60** cable tray [B05](#)

**RTR 110** cable tray barrier strip, height=110 mm [B41](#)

**RTR 35** cable tray barrier strip, height=35 mm [B39](#)

**RTR 60** cable tray barrier strip, height=60 mm [B40](#)

**RTR 85** cable tray barrier strip, height=85 mm [B40](#)

**RVB 110** cable tray vertical bend, height=110 mm [B31](#)

**RVB 35** cable tray vertical bend, height=35 mm [B29](#)

**RVB 60** cable tray vertical bend, height=60 mm [B30](#)

**RVB 85** cable tray vertical bend, height=85 mm [B30](#)

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### V

**VB** connection plate [B39](#)



# Cable trays

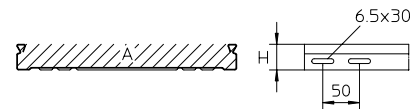
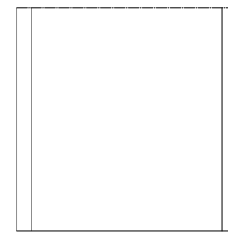
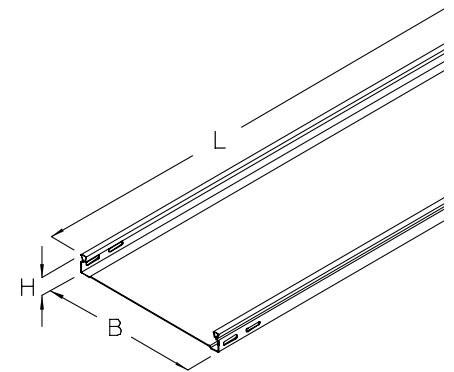
## R 35 cable tray, not perforated, height=35 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg
<b>S</b>						
R 35-10S	35	100	3000	31	0,05	3,70
R 35-20S	35	200	3000	63	0,10	5,50
R 35-30S	35	300	3000	96	0,15	7,30
<b>F</b>						
R 35-10F	35	100	3000	31	0,05	4,20
R 35-20F	35	200	3000	63	0,10	6,20
R 35-30F	35	300	3000	96	0,15	8,10

accessories optional:

<b>RB 35</b>	cable tray bend, height=35 mm	(page B16)
<b>RAA 35</b>	cable tray attachment branch-piece, height=35 mm	(page B21)
<b>RA 35</b>	cable tray branch-piece, height=35 mm	(page B24)
<b>RK 35</b>	cable tray crossover, height=35 mm	(page B27)
<b>RVB 35</b>	cable tray vertical bend, height=35 mm	(page B29)
<b>RR 35</b>	cable tray reducer, height=35 mm	(page B31)
<b>RAB 35</b>	cable tray closing panel, height=35 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 35</b>	cable tray coupler, height=35 mm	(page B37)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 35</b>	cable tray barrier strip, height=35 mm	(page B39)
<b>KLR</b>	fixing set	(page G33)



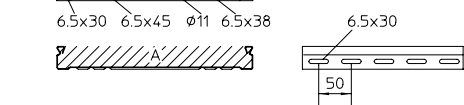
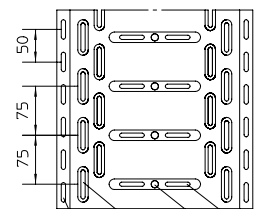
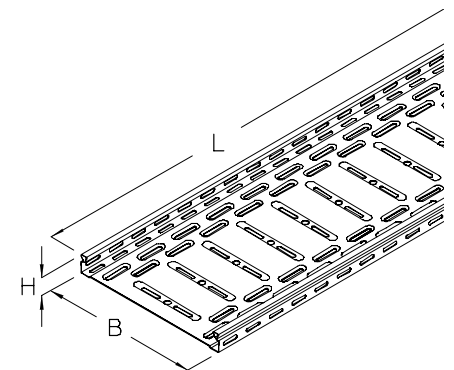
## RG 35 cable tray, perforated, height=35 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg
<b>S</b>						
RG 35-10S	35	100	3000	31	0,05	3,30
RG 35-20S	35	200	3000	63	0,10	5,10
RG 35-30S	35	300	3000	96	0,15	6,70
<b>F</b>						
RG 35-10F	35	100	3000	31	0,05	3,50
RG 35-20F	35	200	3000	63	0,10	5,50
RG 35-30F	35	300	3000	96	0,15	7,20

accessories optional:

<b>RB 35</b>	cable tray bend, height=35 mm	(page B16)
<b>RAA 35</b>	cable tray attachment branch-piece, height=35 mm	(page B21)
<b>RA 35</b>	cable tray branch-piece, height=35 mm	(page B24)
<b>RK 35</b>	cable tray crossover, height=35 mm	(page B27)
<b>RVB 35</b>	cable tray vertical bend, height=35 mm	(page B29)
<b>RR 35</b>	cable tray reducer, height=35 mm	(page B31)
<b>RAB 35</b>	cable tray closing panel, height=35 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 35</b>	cable tray coupler, height=35 mm	(page B37)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 35</b>	cable tray barrier strip, height=35 mm	(page B39)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## R 60 cable tray, not perforated, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

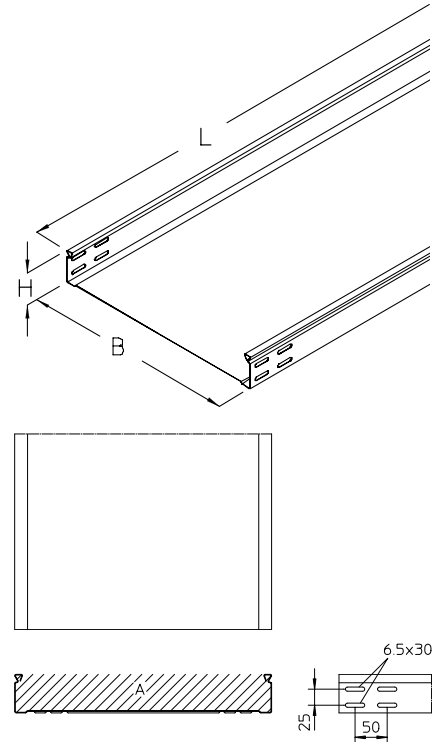
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg
<b>S</b>						
R 60-10S	60	100	3000	56	0,09	4,60
R 60-20S	60	200	3000	113	0,17	6,40
R 60-30S	60	300	3000	171	0,26	8,10
R 60-40S	60	400	3000	228	0,34	11,60
R 60-50S	60	500	3000	286	0,43	15,50
R 60-60S	60	600	3000	343	0,52	17,90
<b>F</b>						
R 60-10F	60	100	3000	56	0,09	5,20
R 60-20F	60	200	3000	113	0,17	7,10
R 60-30F	60	300	3000	171	0,26	9,10
R 60-40F	60	400	3000	228	0,34	12,80
R 60-50F	60	500	3000	286	0,43	16,90
R 60-60F	60	600	3000	343	0,52	19,50
<b>E</b>						
R 60-10E	60	100	3000	56	0,09	4,90
R 60-20E	60	200	3000	113	0,17	6,80
R 60-30E	60	300	3000	171	0,26	8,70
R 60-40E	60	400	3000	228	0,34	10,60
R 60-50E	60	500	3000	286	0,43	15,60
R 60-60E	60	600	3000	343	0,52	18,00

accessories optional:

<b>RB 60</b>	cable tray bend, height=60 mm	(page B16)
<b>RB45 60</b>	cable tray bend, height=60 mm	(page B18)
<b>RAE 60</b>	cable tray attachment corner, height=60 mm	(page B20)
<b>RAA 60</b>	cable tray attachment branch-piece, height=60 mm	(page B22)
<b>RA 60</b>	cable tray branch-piece, height=60 mm	(page B25)
<b>RK 60</b>	cable tray crossover, height=60 mm	(page B27)
<b>RVB 60</b>	cable tray vertical bend, height=60 mm	(page B30)
<b>RR 60</b>	cable tray reducer, height=60 mm	(page B32)
<b>RAB 60</b>	cable tray closing panel, height=60 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 60</b>	cable tray coupler, height=60 mm	(page B37)
<b>RGVS</b>	cable tray snap coupler	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 60</b>	cable tray barrier strip, height=60 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

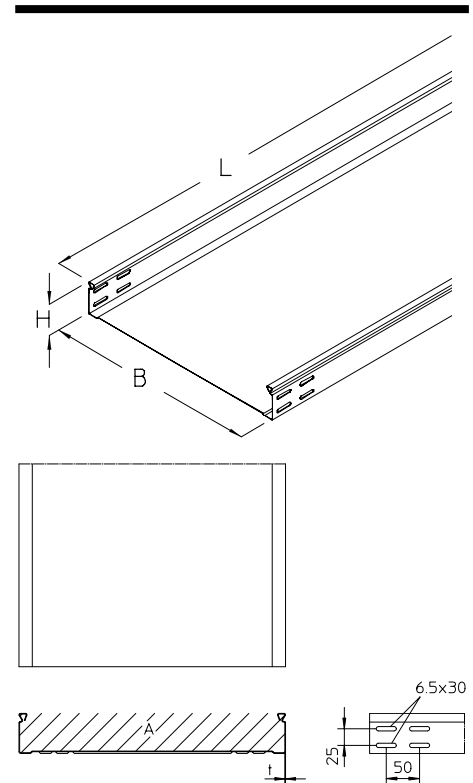
## RS 60 cable tray, heavy, not perforated, height=60 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>							
RS 60-10S	60	100	3000	1,5	56	0,09	9,00
RS 60-20S	60	200	3000	1,5	113	0,17	12,60
RS 60-30S	60	300	3000	1,5	171	0,26	16,10
RS 60-40S	60	400	3000	1,5	228	0,34	19,60
RS 60-50S	60	500	3000	1,5	286	0,43	23,20
RS 60-60S	60	600	3000	1,5	343	0,52	26,70
<b>F</b>							
RS 60-10F	60	100	3000	1,5	56	0,09	9,60
RS 60-20F	60	200	3000	1,5	113	0,17	13,30
RS 60-30F	60	300	3000	1,5	171	0,26	17,10
RS 60-40F	60	400	3000	1,5	228	0,34	20,80
RS 60-50F	60	500	3000	1,5	286	0,43	24,60
RS 60-60F	60	600	3000	1,5	343	0,52	28,30

accessories optional:

<b>RB 60</b>	cable tray bend, height=60 mm	(page B16)
<b>RB45 60</b>	cable tray bend, height=60 mm	(page B18)
<b>RAE 60</b>	cable tray attachment corner, height=60 mm	(page B20)
<b>RAA 60</b>	cable tray attachment branch-piece, height=60 mm	(page B22)
<b>RA 60</b>	cable tray branch-piece, height=60 mm	(page B25)
<b>RK 60</b>	cable tray crossover, height=60 mm	(page B27)
<b>RVB 60</b>	cable tray vertical bend, height=60 mm	(page B30)
<b>RR 60</b>	cable tray reducer, height=60 mm	(page B32)
<b>RAB 60</b>	cable tray closing panel, height=60 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 60</b>	cable tray coupler, height=60 mm	(page B37)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 60</b>	cable tray barrier strip, height=60 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RGL 60 cable tray, perforated, light, height=60mm

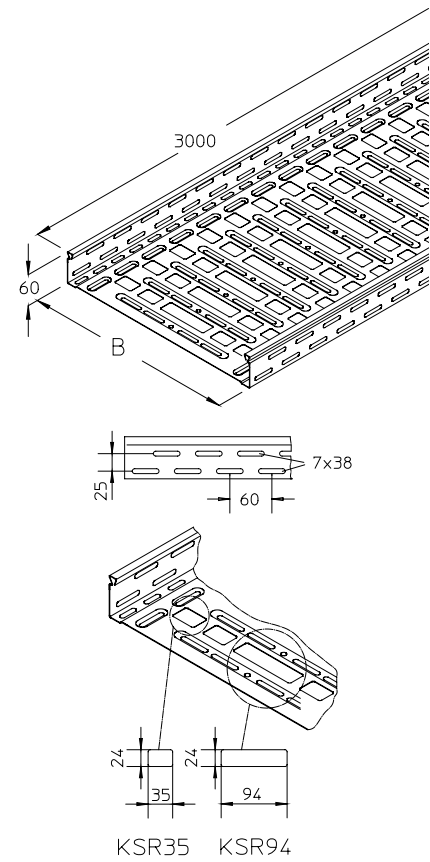
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
RGL 60-20S	60	200	3000	113	0,17	4,60
RGL 60-30S	60	300	3000	171	0,26	5,80
RGL 60-40S	60	400	3000	228	0,34	8,68
RGL 60-50S	60	500	3000	286	0,43	10,40
RGL 60-60S	60	600	3000	343	0,52	11,80
<b>F</b>						
RGL 60-20F	60	200	3000	113	0,17	5,80
RGL 60-30F	60	300	3000	171	0,26	6,80
RGL 60-40F	60	400	3000	228	0,34	9,05
RGL 60-50F	60	500	3000	286	0,43	11,50
RGL 60-60F	60	600	3000	343	0,52	12,80

accessories optional:

<b>RB 60</b>	cable tray bend, height=60 mm	(page B16)
<b>RB45 60</b>	cable tray bend, height=60 mm	(page B18)
<b>RAE 60</b>	cable tray attachment corner, height=60 mm	(page B20)
<b>RAA 60</b>	cable tray attachment branch-piece, height=60 mm	(page B22)
<b>RA 60</b>	cable tray branch-piece, height=60 mm	(page B25)
<b>RK 60</b>	cable tray crossover, height=60 mm	(page B27)
<b>RVB 60</b>	cable tray vertical bend, height=60 mm	(page B30)
<b>RR 60</b>	cable tray reducer, height=60 mm	(page B32)
<b>RAB 60</b>	cable tray closing panel, height=60 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 60</b>	cable tray coupler, height=60 mm	(page B37)
<b>RGVS</b>	cable tray snap coupler	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 60</b>	cable tray barrier strip, height=60 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RG 60 cable tray, perforated, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

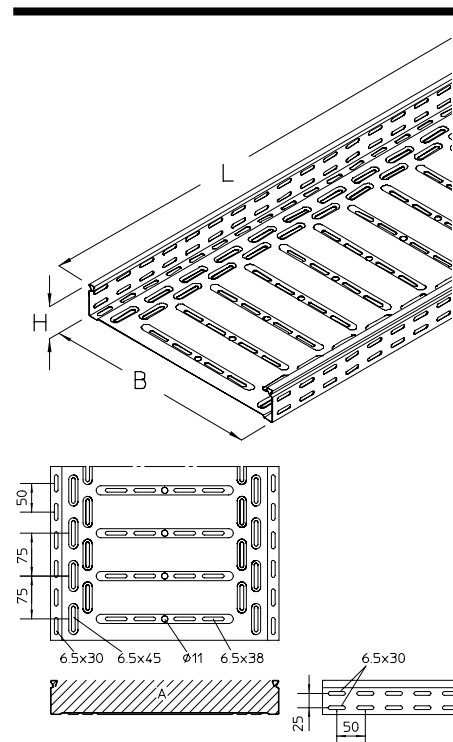
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
RG 60-10S	60	100	3000	56	0,09	4,50
RG 60-20S	60	200	3000	113	0,17	5,80
RG 60-30S	60	300	3000	171	0,26	7,50
RG 60-40S	60	400	3000	228	0,34	10,70
RG 60-50S	60	500	3000	286	0,43	14,30
RG 60-60S	60	600	3000	343	0,52	16,50
<b>F</b>						
RG 60-10F	60	100	3000	56	0,09	4,80
RG 60-20F	60	200	3000	113	0,17	6,20
RG 60-30F	60	300	3000	171	0,26	8,00
RG 60-40F	60	400	3000	228	0,34	11,40
RG 60-50F	60	500	3000	286	0,43	15,30
RG 60-60F	60	600	3000	343	0,52	17,70
<b>E</b>						
RG 60-10E	60	100	3000	56	0,09	4,50
RG 60-20E	60	200	3000	113	0,17	5,80
RG 60-30E	60	300	3000	171	0,26	7,50
RG 60-40E	60	400	3000	228	0,34	9,50
RG 60-50E	60	500	3000	286	0,43	12,10
RG 60-60E	60	600	3000	343	0,52	13,90

accessories optional:

<b>RB 60</b>	cable tray bend, height=60 mm	(page B16)
<b>RB45 60</b>	cable tray bend, height=60 mm	(page B18)
<b>RAE 60</b>	cable tray attachment corner, height=60 mm	(page B20)
<b>RAA 60</b>	cable tray attachment branch-piece, height=60 mm	(page B22)
<b>RA 60</b>	cable tray branch-piece, height=60 mm	(page B25)
<b>RK 60</b>	cable tray crossover, height=60 mm	(page B27)
<b>RVB 60</b>	cable tray vertical bend, height=60 mm	(page B30)
<b>RR 60</b>	cable tray reducer, height=60 mm	(page B32)
<b>RAB 60</b>	cable tray closing panel, height=60 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 60</b>	cable tray coupler, height=60 mm	(page B37)
<b>RGVS</b>	cable tray snap coupler	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 60</b>	cable tray barrier strip, height=60 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RGS 60 cable tray, heavy, perforated, height=60 mm

Only cable trays up to 300 mm wide are permissible for systems of function maintenance in fire protection as standard support structures according to DIN 4102-12. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

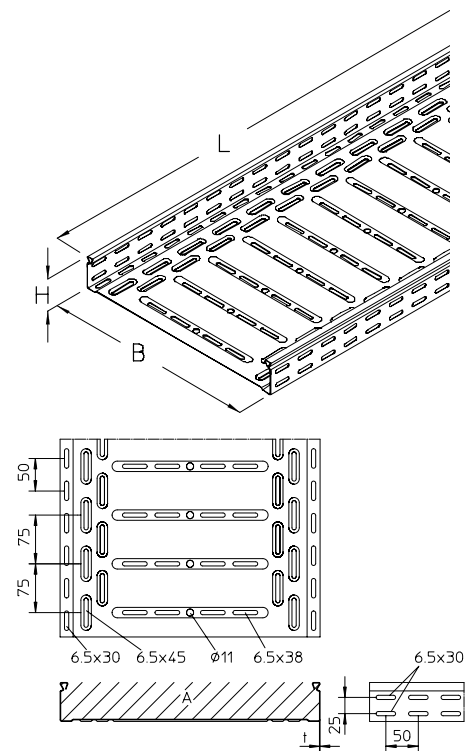
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	t mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>							
RGS 60-10S	60	100	3000	1,5	56	0,09	8,80
RGS 60-20S	60	200	3000	1,5	113	0,17	11,40
RGS 60-30S	60	300	3000	1,5	171	0,26	14,70
RGS 60-40S	60	400	3000	1,5	228	0,34	18,00
RGS 60-50S	60	500	3000	1,5	286	0,43	21,30
RGS 60-60S	60	600	3000	1,5	343	0,52	24,60
<b>F</b>							
RGS 60-10F	60	100	3000	1,5	56	0,09	9,40
RGS 60-20F	60	200	3000	1,5	113	0,17	12,20
RGS 60-30F	60	300	3000	1,5	171	0,26	15,70
RGS 60-40F	60	400	3000	1,5	228	0,34	19,30
RGS 60-50F	60	500	3000	1,5	286	0,43	22,80
RGS 60-60F	60	600	3000	1,5	343	0,52	26,30
<b>E</b>							
RGS 60-10E	60	100	3000	1,5	56	0,09	8,10
RGS 60-20E	60	200	3000	1,5	113	0,17	11,00
RGS 60-30E	60	300	3000	1,5	171	0,26	14,20
RGS 60-40E	60	400	3000	1,5	228	0,34	17,20
RGS 60-50E	60	500	3000	1,5	286	0,43	21,60
RGS 60-60E	60	600	3000	1,5	343	0,52	24,20

accessories optional:

<b>RB 60</b>	cable tray bend, height=60 mm	(page B16)
<b>RB45 60</b>	cable tray bend, height=60 mm	(page B18)
<b>RAE 60</b>	cable tray attachment corner, height=60 mm	(page B20)
<b>RAA 60</b>	cable tray attachment branch-piece, height=60 mm	(page B22)
<b>RA 60</b>	cable tray branch-piece, height=60 mm	(page B25)
<b>RK 60</b>	cable tray crossover, height=60 mm	(page B27)
<b>RVB 60</b>	cable tray vertical bend, height=60 mm	(page B30)
<b>RR 60</b>	cable tray reducer, height=60 mm	(page B32)
<b>RAB 60</b>	cable tray closing panel, height=60 mm	(page B34)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 60</b>	cable tray coupler, height=60 mm	(page B37)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 60</b>	cable tray barrier strip, height=60 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## R 85 cable tray, not perforated, height=85 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
R 85-10S	85	100	3000	81	0,12	5,50
R 85-20S	85	200	3000	163	0,25	7,20
R 85-30S	85	300	3000	246	0,37	10,50
R 85-40S	85	400	3000	328	0,49	12,60
R 85-50S	85	500	3000	411	0,62	16,70
R 85-60S	85	600	3000	493	0,74	19,00
<b>F</b>						
R 85-10F	85	100	3000	81	0,12	6,10
R 85-20F	85	200	3000	163	0,25	8,10
R 85-30F	85	300	3000	246	0,37	11,60
R 85-40F	85	400	3000	328	0,49	13,90
R 85-50F	85	500	3000	411	0,62	18,20
R 85-60F	85	600	3000	493	0,74	20,80

accessories optional:

<b>RB 85</b>	cable tray bend, height=85 mm	(page B17)
<b>RB45 85</b>	cable tray bend, height=85 mm	(page B19)
<b>RAA 85</b>	cable tray attachment branch-piece, height=85 mm	(page B23)
<b>RA 85</b>	cable tray branch-piece, height=85 mm	(page B25)
<b>RK 85</b>	cable tray crossover, height=85 mm	(page B28)
<b>RVB 85</b>	cable tray vertical bend, height=85 mm	(page B30)
<b>RR 85</b>	cable tray reducer, height=85 mm	(page B32)
<b>RAB 85</b>	cable tray closing panel, height=85 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 85</b>	cable tray coupler, height=85 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 85</b>	cable tray barrier strip, height=85 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)

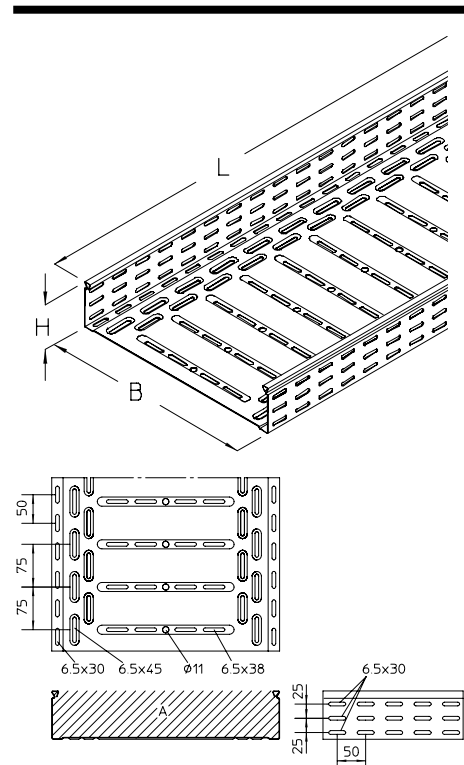
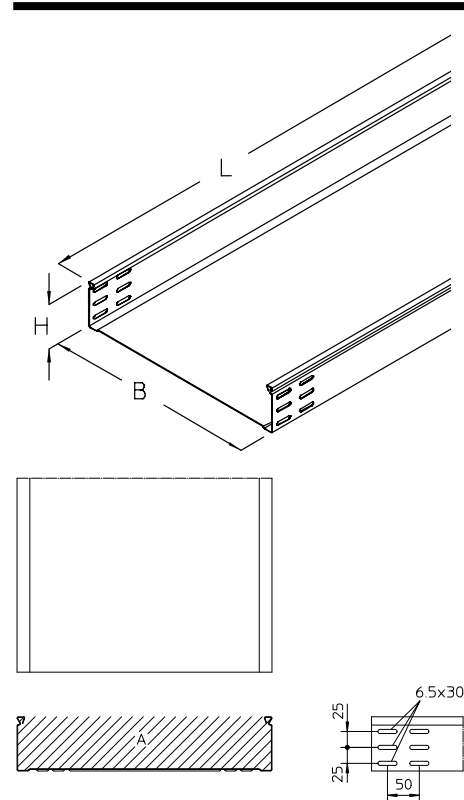
## RG 85 cable tray, perforated, height=85 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
RG 85-10S	85	100	3000	81	0,12	4,80
RG 85-20S	85	200	3000	163	0,25	6,60
RG 85-30S	85	300	3000	246	0,37	9,60
RG 85-40S	85	400	3000	328	0,49	11,60
RG 85-50S	85	500	3000	411	0,62	15,30
RG 85-60S	85	600	3000	493	0,74	17,50

accessories optional:

<b>RB 85</b>	cable tray bend, height=85 mm	(page B17)
<b>RB45 85</b>	cable tray bend, height=85 mm	(page B19)
<b>RAA 85</b>	cable tray attachment branch-piece, height=85 mm	(page B23)
<b>RA 85</b>	cable tray branch-piece, height=85 mm	(page B25)
<b>RK 85</b>	cable tray crossover, height=85 mm	(page B28)
<b>RVB 85</b>	cable tray vertical bend, height=85 mm	(page B30)
<b>RR 85</b>	cable tray reducer, height=85 mm	(page B32)
<b>RAB 85</b>	cable tray closing panel, height=85 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 85</b>	cable tray coupler, height=85 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 85</b>	cable tray barrier strip, height=85 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RG 85 cable tray, perforated, height=85 mm

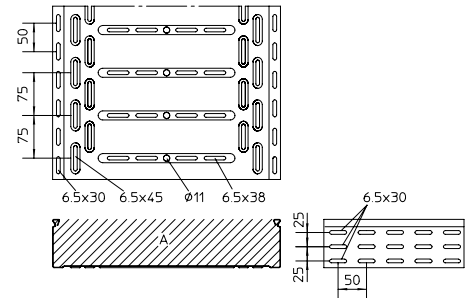
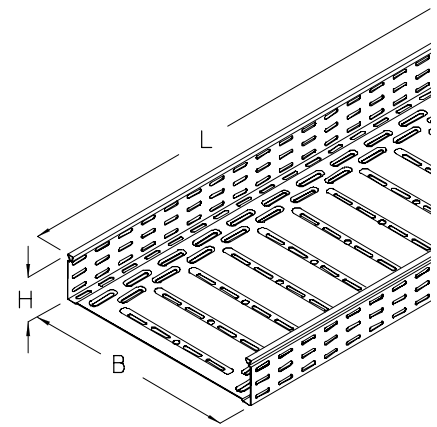
For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>F</b>						
RG 85-10F	85	100	3000	81	0,12	5,10
RG 85-20F	85	200	3000	163	0,25	7,10
RG 85-30F	85	300	3000	246	0,37	10,30
RG 85-40F	85	400	3000	328	0,49	13,90
RG 85-50F	85	500	3000	411	0,62	16,40
RG 85-60F	85	600	3000	493	0,74	18,70

accessories optional:

<b>RB 85</b>	cable tray bend, height=85 mm	(page B17)
<b>RB45 85</b>	cable tray bend, height=85 mm	(page B19)
<b>RAA 85</b>	cable tray attachment branch-piece, height=85 mm	(page B23)
<b>RA 85</b>	cable tray branch-piece, height=85 mm	(page B25)
<b>RK 85</b>	cable tray crossover, height=85 mm	(page B28)
<b>RVB 85</b>	cable tray vertical bend, height=85 mm	(page B30)
<b>RR 85</b>	cable tray reducer, height=85 mm	(page B32)
<b>RAB 85</b>	cable tray closing panel, height=85 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 85</b>	cable tray coupler, height=85 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 85</b>	cable tray barrier strip, height=85 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)



## RGS 85 cable tray, perforated, heavy, height=85mm

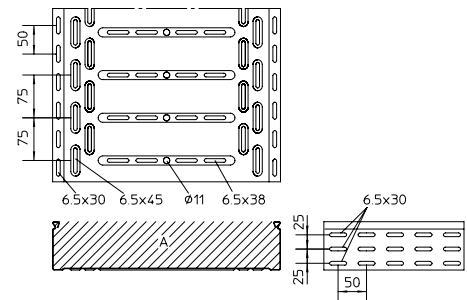
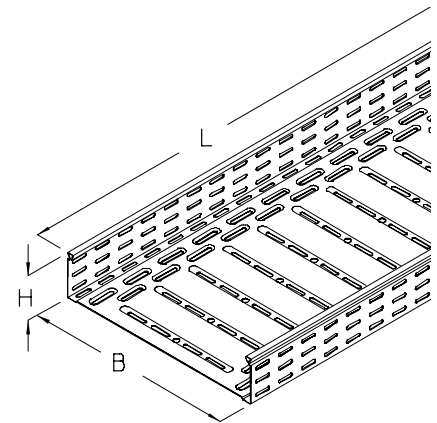
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
RGS 85-10S	85	100	3000	81	0,12	9,84
RGS 85-20S	85	200	3000	163	0,25	12,84
RGS 85-30S	85	300	3000	246	0,37	16,14
RGS 85-40S	85	400	3000	328	0,49	19,45
RGS 85-50S	85	500	3000	411	0,62	22,75
RGS 85-60S	85	600	3000	493	0,74	26,07

accessories optional:

<b>RB 85</b>	cable tray bend, height=85 mm	(page B17)
<b>RB45 85</b>	cable tray bend, height=85 mm	(page B19)
<b>RAA 85</b>	cable tray attachment branch-piece, height=85 mm	(page B23)
<b>RA 85</b>	cable tray branch-piece, height=85 mm	(page B25)
<b>RK 85</b>	cable tray crossover, height=85 mm	(page B28)
<b>RVB 85</b>	cable tray vertical bend, height=85 mm	(page B30)
<b>RR 85</b>	cable tray reducer, height=85 mm	(page B32)
<b>RAB 85</b>	cable tray closing panel, height=85 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 85</b>	cable tray coupler, height=85 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 85</b>	cable tray barrier strip, height=85 mm	(page B40)
<b>KLR</b>	fixing set	(page G33)





# Cable trays

## R 110 cable tray, not perforated, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

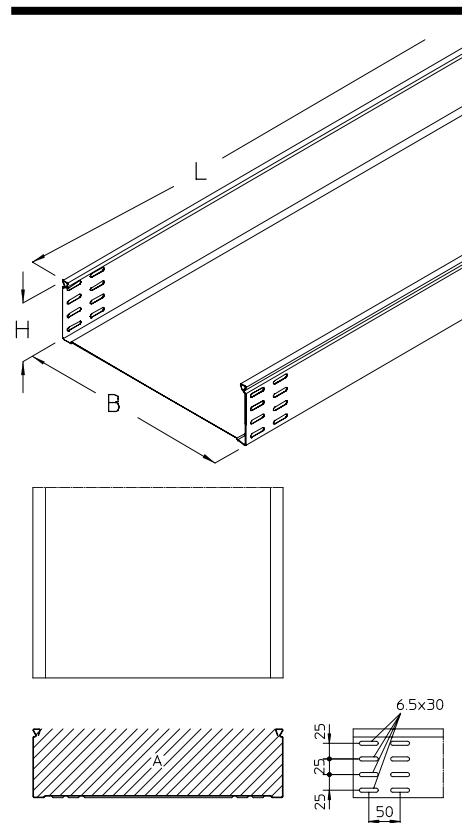
For a load diagram, see the chapter planning.

For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
R 110-10S	110	100	3000	106	0,16	6,30
R 110-20S	110	200	3000	213	0,32	8,10
R 110-30S	110	300	3000	321	0,48	11,60
R 110-40S	110	400	3000	428	0,64	15,50
R 110-50S	110	500	3000	536	0,81	17,80
R 110-60S	110	600	3000	643	0,97	20,20
<b>F</b>						
R 110-10F	110	100	3000	106	0,16	7,10
R 110-20F	110	200	3000	213	0,32	9,10
R 110-30F	110	300	3000	321	0,48	12,80
R 110-40F	110	400	3000	428	0,64	16,90
R 110-50F	110	500	3000	536	0,81	19,40
R 110-60F	110	600	3000	643	0,97	22,00
<b>E</b>						
R 110-10E	110	100	3000	106	0,16	6,80
R 110-20E	110	200	3000	213	0,32	8,70
R 110-30E	110	300	3000	321	0,48	10,60
R 110-40E	110	400	3000	428	0,64	15,60
R 110-50E	110	500	3000	536	0,81	17,90
R 110-60E	110	600	3000	643	0,97	20,30

accessories optional:

<b>RB 110</b>	cable tray bend, height=110 mm	(page B18)
<b>RB45 110</b>	cable tray bend, height=110 mm	(page B20)
<b>RAE 110</b>	cable tray attachment corner, height=110 mm	(page B21)
<b>RAA 110</b>	cable tray attachment branch-piece, height=110 mm	(page B23)
<b>RA 110</b>	cable tray branch-piece, height=110 mm	(page B26)
<b>RK 110</b>	cable tray crossover, height=110 mm	(page B28)
<b>RVB 110</b>	cable tray vertical bend, height=110 mm	(page B31)
<b>RR 110</b>	cable tray reducer, height=110 mm	(page B33)
<b>RAB 110</b>	cable tray closing panel, height=110 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 110</b>	cable tray coupler, height=110 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 110</b>	cable tray barrier strip, height=110 mm	(page B41)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RS 110 cable tray, heavy, not perforated, height=110 mm

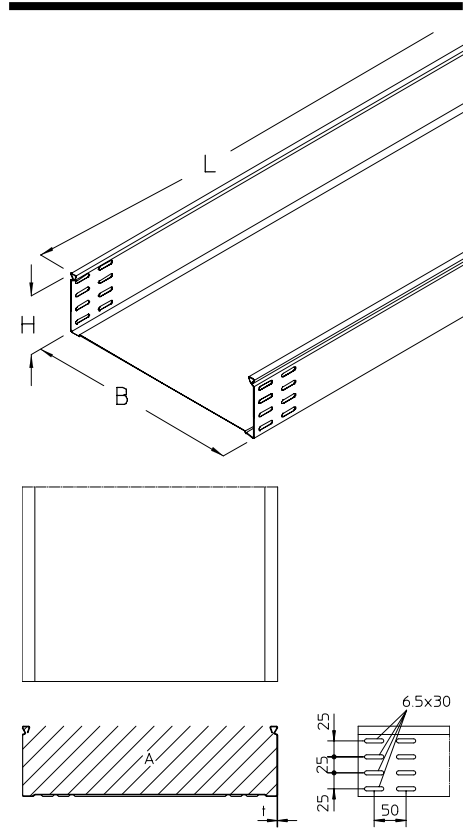
For a load diagram, see the chapter planning.

For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>							
RS 110-10S	110	100	3000	1,5	106	0,16	12,60
RS 110-20S	110	200	3000	1,5	213	0,32	16,00
RS 110-30S	110	300	3000	1,5	321	0,48	19,60
RS 110-40S	110	400	3000	1,5	428	0,64	23,10
RS 110-50S	110	500	3000	1,5	536	0,81	26,60
RS 110-60S	110	600	3000	1,5	643	0,97	30,20
<b>F</b>							
RS 110-10F	110	100	3000	1,5	106	0,16	13,30
RS 110-20F	110	200	3000	1,5	213	0,32	17,00
RS 110-30F	110	300	3000	1,5	321	0,48	20,80
RS 110-40F	110	400	3000	1,5	428	0,64	24,50
RS 110-50F	110	500	3000	1,5	536	0,81	28,20
RS 110-60F	110	600	3000	1,5	643	0,97	32,00

accessories optional:

<b>RB 110</b>	cable tray bend, height=110 mm	(page B18)
<b>RB45 110</b>	cable tray bend, height=110 mm	(page B20)
<b>RAE 110</b>	cable tray attachment corner, height=110 mm	(page B21)
<b>RAA 110</b>	cable tray attachment branch-piece, height=110 mm	(page B23)
<b>RA 110</b>	cable tray branch-piece, height=110 mm	(page B26)
<b>RK 110</b>	cable tray crossover, height=110 mm	(page B28)
<b>RVB 110</b>	cable tray vertical bend, height=110 mm	(page B31)
<b>RR 110</b>	cable tray reducer, height=110 mm	(page B33)
<b>RAB 110</b>	cable tray closing panel, height=110 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 110</b>	cable tray coupler, height=110 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 110</b>	cable tray barrier strip, height=110 mm	(page B41)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RG 110 cable tray, perforated, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

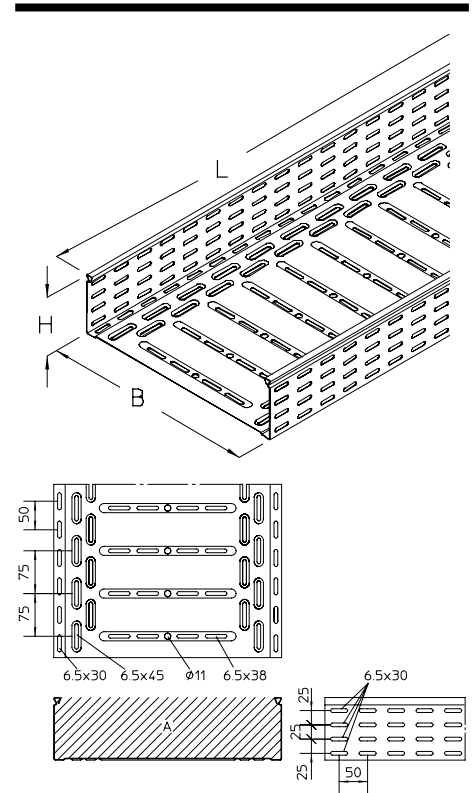
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
RG 110-10S	110	100	3000	106	0,16	5,60
RG 110-20S	110	200	3000	213	0,32	7,30
RG 110-30S	110	300	3000	321	0,48	10,50
RG 110-40S	110	400	3000	428	0,64	14,10
RG 110-50S	110	500	3000	536	0,81	16,30
RG 110-60S	110	600	3000	643	0,97	18,50
<b>F</b>						
RG 110-10F	110	100	3000	106	0,16	6,00
RG 110-20F	110	200	3000	213	0,32	7,80
RG 110-30F	110	300	3000	321	0,48	11,20
RG 110-40F	110	400	3000	428	0,64	15,10
RG 110-50F	110	500	3000	536	0,81	17,40
RG 110-60F	110	600	3000	643	0,97	19,80
<b>E</b>						
RG 110-10E	110	100	3000	106	0,16	5,80
RG 110-20E	110	200	3000	213	0,32	7,50
RG 110-30E	110	300	3000	321	0,48	9,20
RG 110-40E	110	400	3000	428	0,64	12,10
RG 110-50E	110	500	3000	536	0,81	13,90
RG 110-60E	110	600	3000	643	0,97	15,80

accessories optional:

<b>RB 110</b>	cable tray bend, height=110 mm	(page B18)
<b>RB45 110</b>	cable tray bend, height=110 mm	(page B20)
<b>RAE 110</b>	cable tray attachment corner, height=110 mm	(page B21)
<b>RAA 110</b>	cable tray attachment branch-piece, height=110 mm	(page B23)
<b>RA 110</b>	cable tray branch-piece, height=110 mm	(page B26)
<b>RK 110</b>	cable tray crossover, height=110 mm	(page B28)
<b>RVB 110</b>	cable tray vertical bend, height=110 mm	(page B31)
<b>RR 110</b>	cable tray reducer, height=110 mm	(page B33)
<b>RAB 110</b>	cable tray closing panel, height=110 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 110</b>	cable tray coupler, height=110 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 110</b>	cable tray barrier strip, height=110 mm	(page B41)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RGS 110 cable tray, heavy, perforated, height=110 mm

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

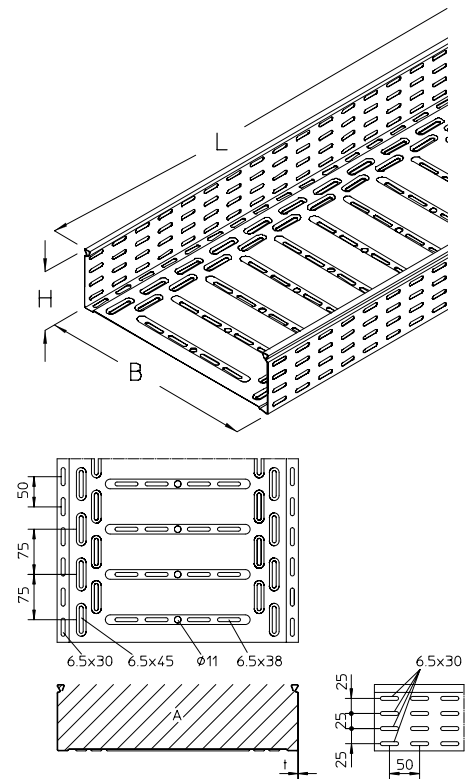
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	t mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>							
<b>RGS 110-10S</b>	110	100	3000	1,5	106	0,16	10,90
<b>RGS 110-20S</b>	110	200	3000	1,5	213	0,32	14,50
<b>RGS 110-30S</b>	110	300	3000	1,5	321	0,48	17,80
<b>RGS 110-40S</b>	110	400	3000	1,5	428	0,64	21,10
<b>RGS 110-50S</b>	110	500	3000	1,5	536	0,81	24,40
<b>RGS 110-60S</b>	110	600	3000	1,5	643	0,97	27,70
<b>F</b>							
<b>RGS 110-10F</b>	110	100	3000	1,5	106	0,16	11,70
<b>RGS 110-20F</b>	110	200	3000	1,5	213	0,32	15,50
<b>RGS 110-30F</b>	110	300	3000	1,5	321	0,48	19,00
<b>RGS 110-40F</b>	110	400	3000	1,5	428	0,64	22,60
<b>RGS 110-50F</b>	110	500	3000	1,5	536	0,81	26,10
<b>RGS 110-60F</b>	110	600	3000	1,5	643	0,97	29,60

accessories optional:

<b>RB 110</b>	cable tray bend, height=110 mm	(page B18)
<b>RB45 110</b>	cable tray bend, height=110 mm	(page B20)
<b>RAE 110</b>	cable tray attachment corner, height=110 mm	(page B21)
<b>RAA 110</b>	cable tray attachment branch-piece, height=110 mm	(page B23)
<b>RA 110</b>	cable tray branch-piece, height=110 mm	(page B26)
<b>RK 110</b>	cable tray crossover, height=110 mm	(page B28)
<b>RVB 110</b>	cable tray vertical bend, height=110 mm	(page B31)
<b>RR 110</b>	cable tray reducer, height=110 mm	(page B33)
<b>RAB 110</b>	cable tray closing panel, height=110 mm	(page B35)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>RGV 110</b>	cable tray coupler, height=110 mm	(page B38)
<b>VB</b>	connection plate	(page B39, D28)
<b>RTR 110</b>	cable tray barrier strip, height=110 mm	(page B41)
<b>KLR</b>	fixing set	(page G33)



# Cable trays

## RI 60 cable installation tray, height=60 mm

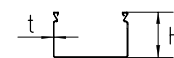
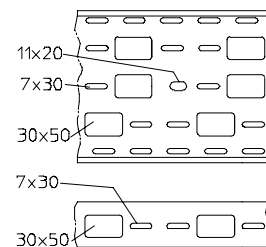
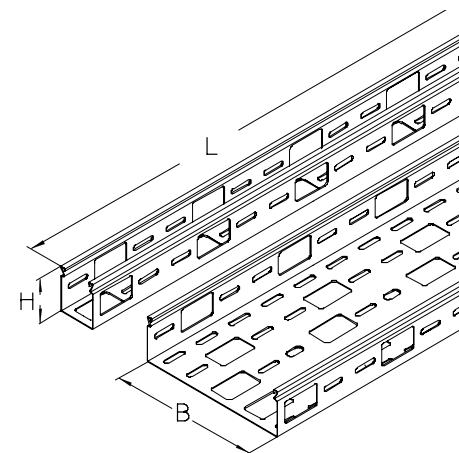
For a load diagram, see the chapter planning.  
For an application example, see the chapter assembly.



article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
RI 60-05S	60	50	3000	1,0	3,50
RI 60-10S	60	100	3000	1,0	4,50
RI 60-15S	60	150	3000	1,0	5,70
RI 60-20S	60	200	3000	1,0	6,30
RI 60-30S	60	300	3000	1,0	8,00
<b>F</b>					
RI 60-05F	60	50	3000	1,0	3,80
RI 60-10F	60	100	3000	1,0	4,80
RI 60-15F	60	150	3000	1,0	6,10
RI 60-20F	60	200	3000	1,0	6,70
RI 60-30F	60	300	3000	1,0	8,60
<b>E</b>					
RI 60-05E	60	50	3000	1,0	3,49
RI 60-10E	60	100	3000	1,0	4,51
RI 60-15E	60	150	3000	1,0	5,78
RI 60-20E	60	200	3000	1,0	6,20
RI 60-30E	60	300	3000	1,0	8,70

accessories optional:

<b>RIV 60</b>	cable tray coupler, height=60 mm	(page B43)
<b>VB</b>	connection plate	(page B39, D28)
<b>REB</b>	cable tray end-plate	(page B36, B43)
<b>KSR</b>	cable protection ring	(page B45)
<b>AHB</b>	suspension-bow	(page B45)
<b>KLR</b>	fixing set	(page G33)
<b>RID</b>	cable installation tray cover	(page B44)
<b>RIDR</b>	cable installation tray cover with bar lock	(page B45)



# Cable trays

## Fittings

### RB 35 cable tray bend, height=35 mm

For an application example, see the chapter assembly.

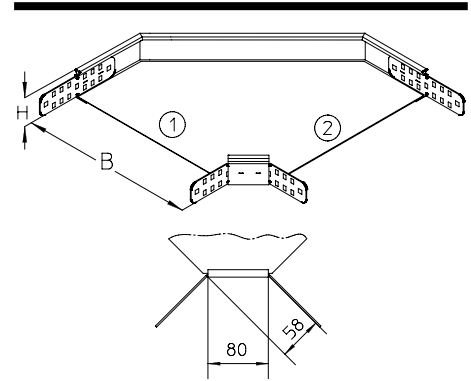
article number	H mm	B mm	G kg
<b>S</b>			
<b>RB 35-10S</b>	35	100	0,40
<b>RB 35-20S</b>	35	200	0,70
<b>RB 35-30S</b>	35	300	1,20

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RB 35-10F</b>	35	100	0,40
<b>RB 35-20F</b>	35	200	0,70
<b>RB 35-30F</b>	35	300	1,30

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RB 60 cable tray bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

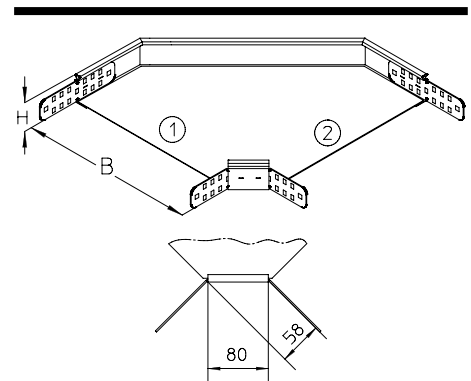
article number	H mm	B mm	G kg
<b>S</b>			
<b>RB 60-10S</b>	60	100	0,80
<b>RB 60-20S</b>	60	200	1,10
<b>RB 60-30S</b>	60	300	1,60
<b>RB 60-40S</b>	60	400	2,20
<b>RB 60-50S</b>	60	500	3,10
<b>RB 60-60S</b>	60	600	4,00

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RB 60-10F</b>	60	100	0,90
<b>RB 60-20F</b>	60	200	1,20
<b>RB 60-30F</b>	60	300	1,70
<b>RB 60-40F</b>	60	400	2,40
<b>RB 60-50F</b>	60	500	3,30
<b>RB 60-60F</b>	60	600	4,30

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

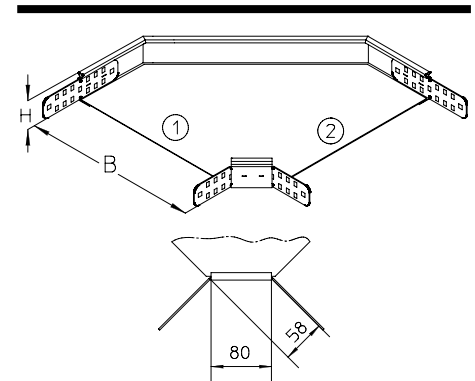
### RB 60 cable tray bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>E</b>			
RB 60-10E	60	100	0,70
RB 60-20E	60	200	1,00
RB 60-30E	60	300	1,50
RB 60-40E	60	400	2,10
RB 60-50E	60	500	2,90
RB 60-60E	60	600	3,90

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

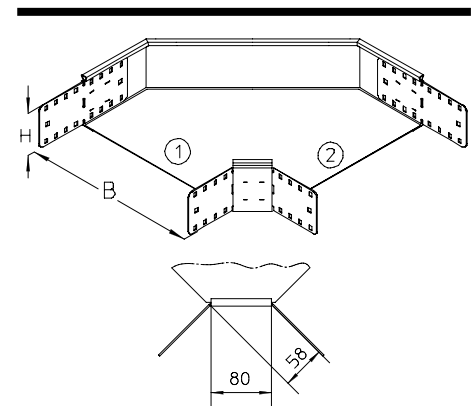


### RB 85 cable tray bend, height=85 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
RB 85-10S	85	100	1,20
RB 85-20S	85	200	1,50
RB 85-30S	85	300	2,00
RB 85-40S	85	400	2,60
RB 85-50S	85	500	3,40
RB 85-60S	85	600	4,40

accessories included:  
4 x **KLR** fixing set (page G33)



article number	H mm	B mm	G kg
<b>F</b>			
RB 85-10F	85	100	1,20
RB 85-20F	85	200	1,60
RB 85-30F	85	300	2,10
RB 85-40F	85	400	2,80
RB 85-50F	85	500	3,60
RB 85-60F	85	600	4,70

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

# Cable trays

## Fittings

### RB 110 cable tray bend, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
RB 110-10S	110	100	1,60
RB 110-20S	110	200	1,90
RB 110-30S	110	300	2,40
RB 110-40S	110	400	3,00
RB 110-50S	110	500	3,80
RB 110-60S	110	600	4,80

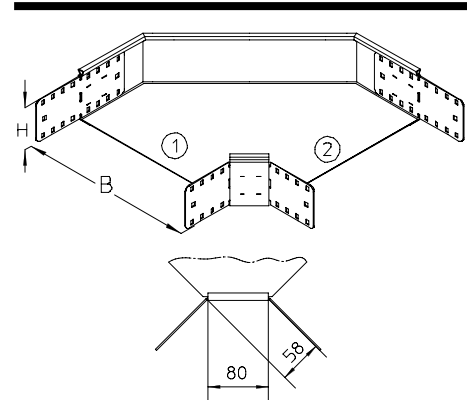
accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
RB 110-10F	110	100	1,70
RB 110-20F	110	200	2,00
RB 110-30F	110	300	2,50
RB 110-40F	110	400	3,20
RB 110-50F	110	500	4,10
RB 110-60F	110	600	5,10

article number	H mm	B mm	G kg
<b>E</b>			
RB 110-10E	110	100	1,20
RB 110-20E	110	200	1,50
RB 110-30E	110	300	2,00
RB 110-40E	110	400	2,70
RB 110-50E	110	500	3,50
RB 110-60E	110	600	4,40

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



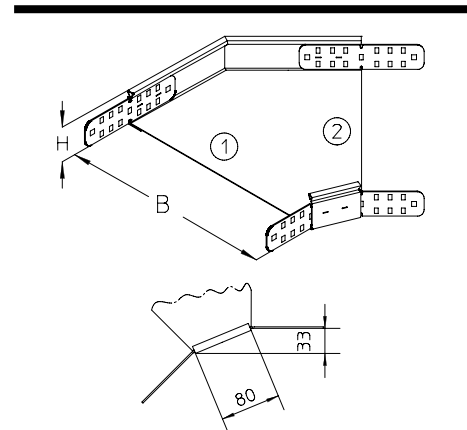
### RB45 60 cable tray bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
RB45 60-10S	60	100	0,50
RB45 60-20S	60	200	0,80
RB45 60-30S	60	300	1,20
RB45 60-40S	60	400	1,60
RB45 60-50S	60	500	2,50
RB45 60-60S	60	600	3,20

accessories included:  
2 x **KLR** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)





# Cable trays

## Fittings

### RB45 60 cable tray bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
RB45 60-10F	60	100	0,60
RB45 60-20F	60	200	0,80
RB45 60-30F	60	300	1,30
RB45 60-40F	60	400	1,80
RB45 60-50F	60	500	2,70
RB45 60-60F	60	600	3,50

<b>E</b>			
RB45 60-10E	60	100	0,40
RB45 60-20E	60	200	0,70
RB45 60-30E	60	300	1,10
RB45 60-40E	60	400	1,50
RB45 60-50E	60	500	2,40
RB45 60-60E	60	600	3,10

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

### RB45 85 cable tray bend, height=85 mm

For an application example, see the chapter assembly.

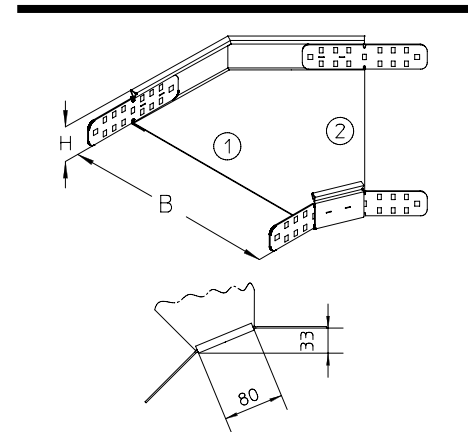
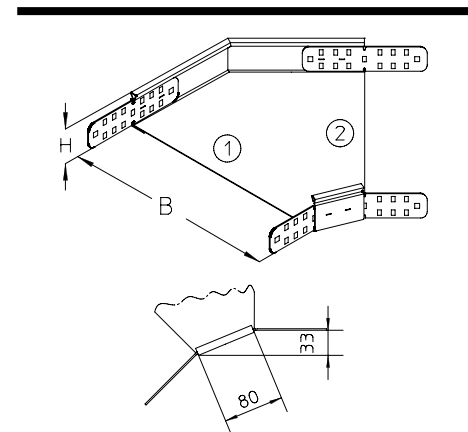
article number	H mm	B mm	G kg
<b>S</b>			
RB45 85-10S	85	100	0,70
RB45 85-20S	85	200	1,00
RB45 85-30S	85	300	1,40
RB45 85-40S	85	400	1,90
RB45 85-50S	85	500	2,70
RB45 85-60S	85	600	3,50

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
RB45 85-10F	85	100	0,80
RB45 85-20F	85	200	1,10
RB45 85-30F	85	300	1,50
RB45 85-40F	85	400	2,10
RB45 85-50F	85	500	3,00
RB45 85-60F	85	600	3,80

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RB45 110 cable tray bend, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

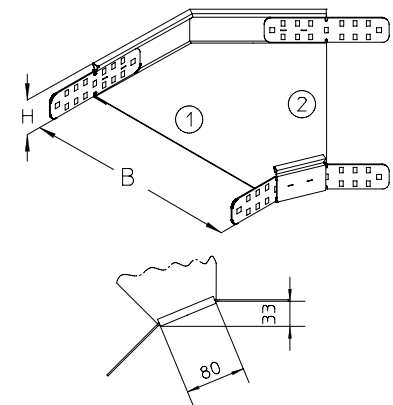
article number	H mm	B mm	G kg
<b>S</b>			
RB45 110-10S	110	100	0,90
RB45 110-20S	110	200	1,10
RB45 110-30S	110	300	1,60
RB45 110-40S	110	400	2,10
RB45 110-50S	110	500	2,90
RB45 110-60S	110	600	3,70

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
RB45 110-10F	110	100	1,00
RB45 110-20F	110	200	1,30
RB45 110-30F	110	300	1,80
RB45 110-40F	110	400	2,30
RB45 110-50F	110	500	3,20
RB45 110-60F	110	600	4,10

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RAE 60 cable tray attachment corner, height=60 mm

For an application example, see the chapter assembly.

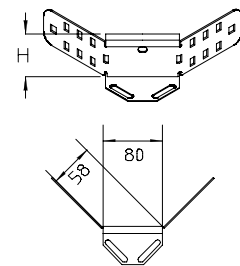
article number	H mm	G kg
<b>S</b>		
RAE 60S	60	0,30

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	G kg
<b>F</b>		
RAE 60F	60	0,30
<b>E</b>		
RAE 60E	60	0,30

accessories included:  
3 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RAE 110 cable tray attachment corner, height=110 mm

For an application example, see the chapter assembly.

article number	H mm	G kg
<b>S</b>		
<b>RAE 110S</b>	110	0,60

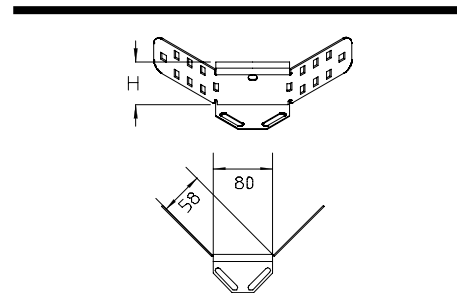
accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	G kg
<b>F</b>		
<b>RAE 110F</b>	110	0,60

<b>E</b>		
<b>RAE 110E</b>	110	0,60

accessories included:  
3 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RAA 35 cable tray attachment branch-piece, height=35 mm

For an application example, see the chapter assembly.

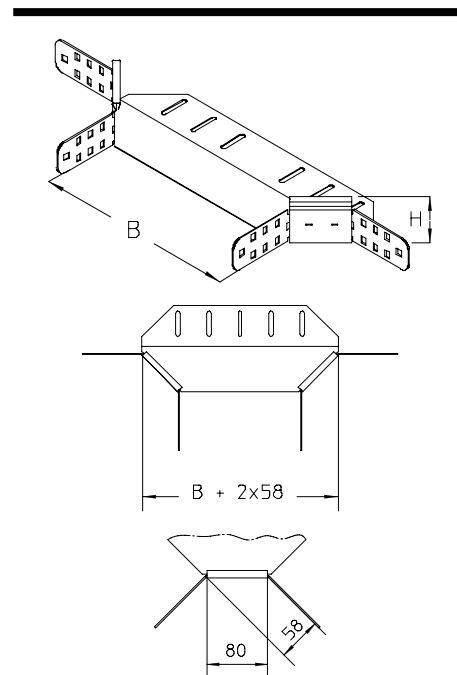
article number	H mm	B mm	G kg
<b>S</b>			
<b>RAA 35-10S</b>	35	100	0,50
<b>RAA 35-20S</b>	35	200	0,60
<b>RAA 35-30S</b>	35	300	0,80

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAA 35-10F</b>	35	100	0,50
<b>RAA 35-20F</b>	35	200	0,70
<b>RAA 35-30F</b>	35	300	0,80

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RAA 60 cable tray attachment branch-piece, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
RAA 60-10S	60	100	0,80
RAA 60-20S	60	200	0,90
RAA 60-30S	60	300	1,00
RAA 60-40S	60	400	1,20
RAA 60-50S	60	500	1,30
RAA 60-60S	60	600	1,40

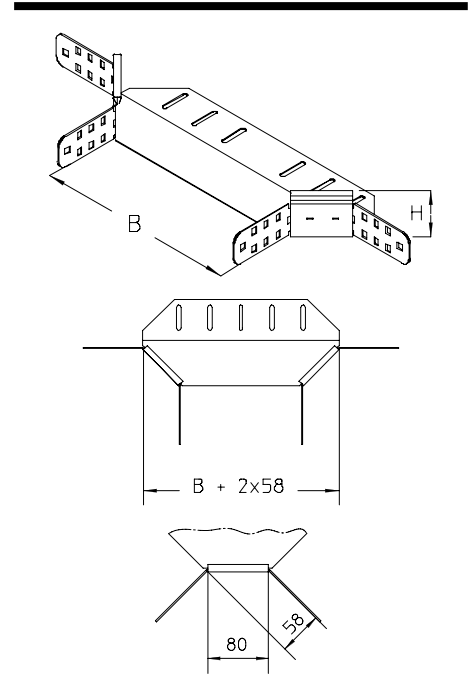
accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
RAA 60-10F	60	100	0,80
RAA 60-20F	60	200	1,00
RAA 60-30F	60	300	1,10
RAA 60-40F	60	400	1,30
RAA 60-50F	60	500	1,40
RAA 60-60F	60	600	1,50

article number	H mm	B mm	G kg
<b>E</b>			
RAA 60-10E	60	100	0,70
RAA 60-20E	60	200	0,80
RAA 60-30E	60	300	1,00
RAA 60-40E	60	400	1,10
RAA 60-50E	60	500	1,20
RAA 60-60E	60	600	1,40

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RAA 85 cable tray attachment branch-piece, height=85 mm

For an application example, see the chapter assembly.

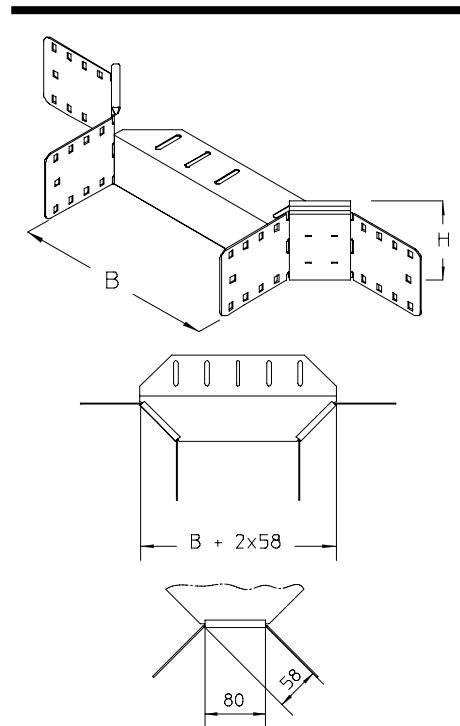
article number	H mm	B mm	G kg
<b>S</b>			
<b>RAA 85-10S</b>	85	100	1,00
<b>RAA 85-20S</b>	85	200	1,20
<b>RAA 85-30S</b>	85	300	1,30
<b>RAA 85-40S</b>	85	400	1,40
<b>RAA 85-50S</b>	85	500	1,60
<b>RAA 85-60S</b>	85	600	1,70

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAA 85-10F</b>	85	100	1,10
<b>RAA 85-20F</b>	85	200	1,20
<b>RAA 85-30F</b>	85	300	1,40
<b>RAA 85-40F</b>	85	400	1,50
<b>RAA 85-50F</b>	85	500	1,70
<b>RAA 85-60F</b>	85	600	1,80

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



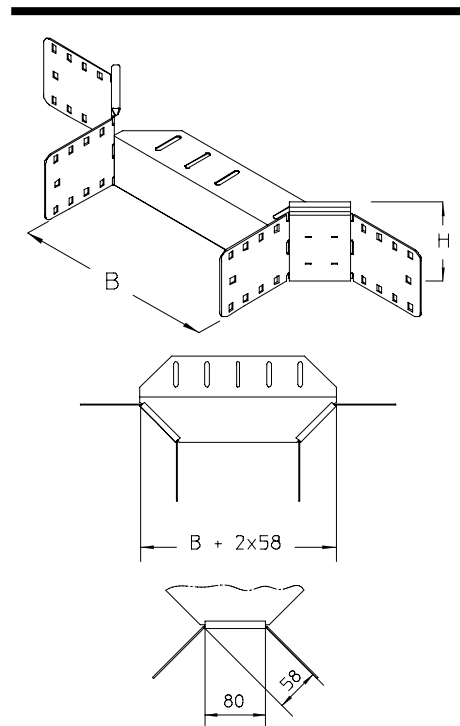
### RAA 110 cable tray attachment branch-piece, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RAA 110-10S</b>	110	100	1,20
<b>RAA 110-20S</b>	110	200	1,40
<b>RAA 110-30S</b>	110	300	1,50
<b>RAA 110-40S</b>	110	400	1,70
<b>RAA 110-50S</b>	110	500	1,80
<b>RAA 110-60S</b>	110	600	1,90

accessories included:  
4 x **KLR** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RAA 110 cable tray attachment branch-piece, height=110 mm

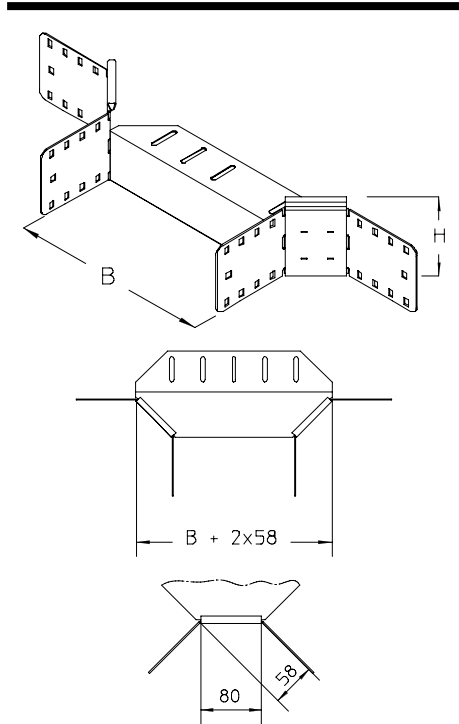
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
RAA 110-10F	110	100	1,30
RAA 110-20F	110	200	1,50
RAA 110-30F	110	300	1,60
RAA 110-40F	110	400	1,80
RAA 110-50F	110	500	1,90
RAA 110-60F	110	600	2,10

<b>E</b>			
RAA 110-10E	110	100	1,10
RAA 110-20E	110	200	1,20
RAA 110-30E	110	300	1,40
RAA 110-40E	110	400	1,50
RAA 110-50E	110	500	1,60
RAA 110-60E	110	600	1,80

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RA 35 cable tray branch-piece, height=35 mm

For an application example, see the chapter assembly.

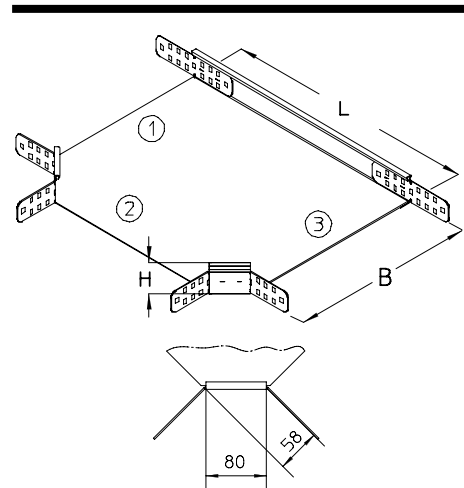
article number	H mm	B mm	L mm	G kg
<b>S</b>				
RA 35-10S	35	100	214	0,80
RA 35-20S	35	200	314	1,30
RA 35-30S	35	300	414	2,00

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	B mm	L mm	G kg
<b>F</b>				
RA 35-10F	35	100	214	0,80
RA 35-20F	35	200	314	1,40
RA 35-30F	35	300	414	2,20

accessories included:  
3 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RA 60 cable tray branch-piece, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RA 60-10S	60	100	214	1,30
RA 60-20S	60	200	314	1,80
RA 60-30S	60	300	414	2,60
RA 60-40S	60	400	514	3,50
RA 60-50S	60	500	614	5,30
RA 60-60S	60	600	714	6,90

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	B mm	L mm	G kg
<b>F</b>				
RA 60-10F	60	100	214	1,40
RA 60-20F	60	200	314	1,90
RA 60-30F	60	300	414	2,80
RA 60-40F	60	400	514	3,70
RA 60-50F	60	500	614	5,70
RA 60-60F	60	600	714	7,40

article number	H mm	B mm	L mm	G kg
<b>E</b>				
RA 60-10E	60	100	214	1,10
RA 60-20E	60	200	314	1,60
RA 60-30E	60	300	414	2,50
RA 60-40E	60	400	514	3,40
RA 60-50E	60	500	614	5,20
RA 60-60E	60	600	714	6,80

accessories included:  
3 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

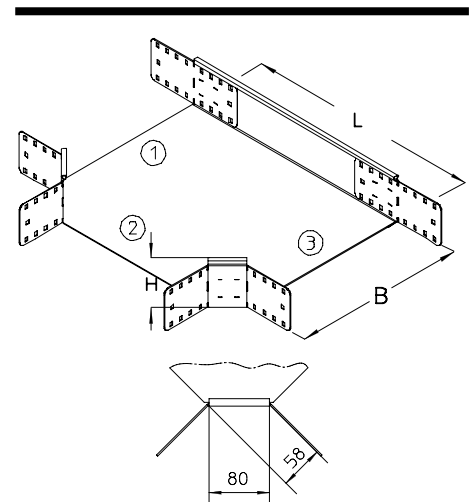
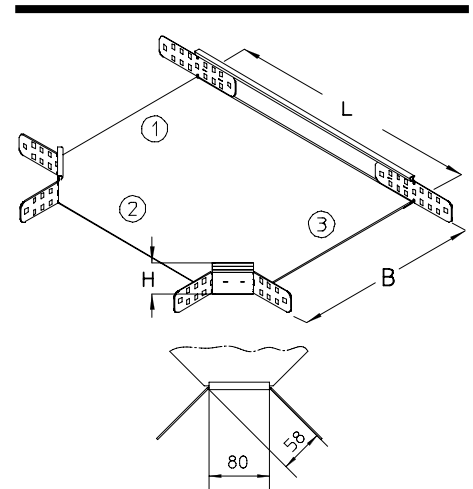
### RA 85 cable tray branch-piece, height=85 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RA 85-10S	85	100	214	1,70
RA 85-20S	85	200	314	2,30
RA 85-30S	85	300	414	3,10
RA 85-40S	85	400	514	4,10
RA 85-50S	85	500	614	5,80
RA 85-60S	85	600	714	7,40

accessories included:  
6 x **KLR** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RA 85 cable tray branch-piece, height=85 mm

For an application example, see the chapter assembly.

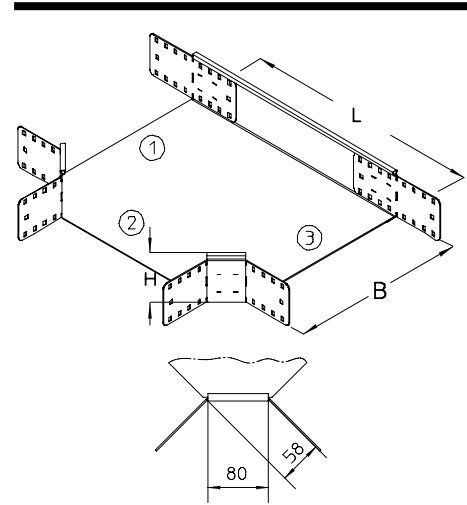
article number	H mm	B mm	L mm	G kg
<b>F</b>				
RA 85-10F	85	100	214	1,90
RA 85-20F	85	200	314	2,50
RA 85-30F	85	300	414	3,30
RA 85-40F	85	400	514	4,40
RA 85-50F	85	500	614	6,20
RA 85-60F	85	600	714	7,90

accessories included:

6 x **KLR E** fixing set (page G33)

accessories optional:

**VB** connection plate (page B39, D28)



### RA 110 cable tray branch-piece, height=110 mm

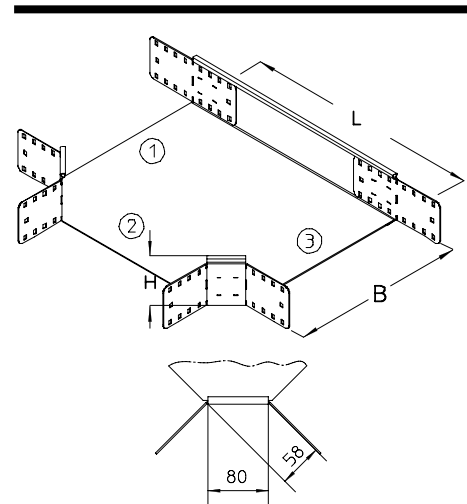
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RA 110-10S	110	100	214	2,20
RA 110-20S	110	200	314	2,90
RA 110-30S	110	300	414	3,60
RA 110-40S	110	400	514	4,60
RA 110-50S	110	500	614	6,30
RA 110-60S	110	600	714	7,90

accessories included:

6 x **KLR** fixing set (page G33)



article number	H mm	B mm	L mm	G kg
<b>F</b>				
RA 110-10F	110	100	214	2,40
RA 110-20F	110	200	314	3,10
RA 110-30F	110	300	414	3,90
RA 110-40F	110	400	514	4,90
RA 110-50F	110	500	614	6,70
RA 110-60F	110	600	714	8,50

#### E

RA 110-10E	110	100	214	2,00
RA 110-20E	110	200	314	2,70
RA 110-30E	110	300	414	3,30
RA 110-40E	110	400	514	4,20
RA 110-50E	110	500	614	6,10
RA 110-60E	110	600	714	7,60

accessories included:

6 x **KLR E** fixing set (page G33)

accessories optional:

**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RK 35 cable tray crossover, height=35 mm

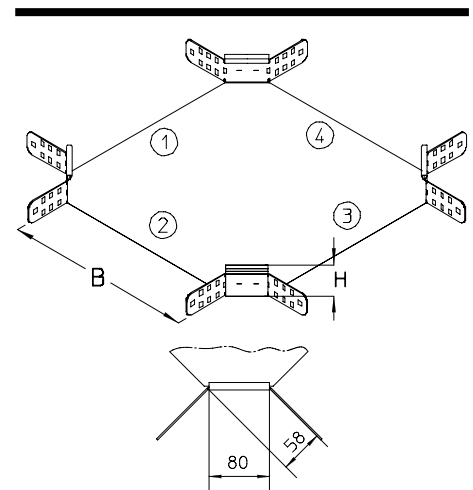
article number	H mm	B mm	G kg
<b>S</b>			
<b>RK 35-10S</b>	35	100	0,60
<b>RK 35-20S</b>	35	200	0,90
<b>RK 35-30S</b>	35	300	1,70

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RK 35-10F</b>	35	100	0,70
<b>RK 35-20F</b>	35	200	1,00
<b>RK 35-30F</b>	35	300	1,80

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RK 60 cable tray crossover, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	G kg
<b>S</b>			
<b>RK 60-10S</b>	60	100	1,00
<b>RK 60-20S</b>	60	200	1,30
<b>RK 60-30S</b>	60	300	2,00
<b>RK 60-40S</b>	60	400	2,80
<b>RK 60-50S</b>	60	500	4,40
<b>RK 60-60S</b>	60	600	5,70

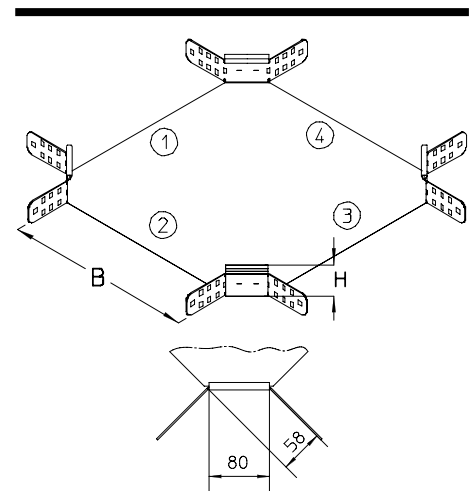
accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RK 60-10F</b>	60	100	1,10
<b>RK 60-20F</b>	60	200	1,40
<b>RK 60-30F</b>	60	300	2,10
<b>RK 60-40F</b>	60	400	3,00
<b>RK 60-50F</b>	60	500	4,70
<b>RK 60-60F</b>	60	600	6,10

<b>E</b>			
<b>RK 60-10E</b>	60	100	0,90
<b>RK 60-20E</b>	60	200	1,20
<b>RK 60-30E</b>	60	300	1,90
<b>RK 60-40E</b>	60	400	2,70
<b>RK 60-50E</b>	60	500	4,30
<b>RK 60-60E</b>	60	600	5,60

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RK 85 cable tray crossover, height=85 mm

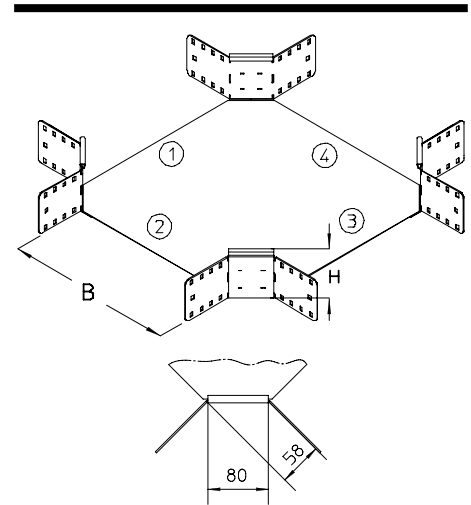
article number	H mm	B mm	G kg
<b>S</b>			
<b>RK 85-10S</b>	85	100	1,50
<b>RK 85-20S</b>	85	200	2,00
<b>RK 85-30S</b>	85	300	2,50
<b>RK 85-40S</b>	85	400	3,80
<b>RK 85-50S</b>	85	500	4,90
<b>RK 85-60S</b>	85	600	6,20

accessories included:  
8 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RK 85-10F</b>	85	100	1,60
<b>RK 85-20F</b>	85	200	2,10
<b>RK 85-30F</b>	85	300	2,70
<b>RK 85-40F</b>	85	400	4,10
<b>RK 85-50F</b>	85	500	5,20
<b>RK 85-60F</b>	85	600	6,60

accessories included:  
8 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RK 110 cable tray crossover, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

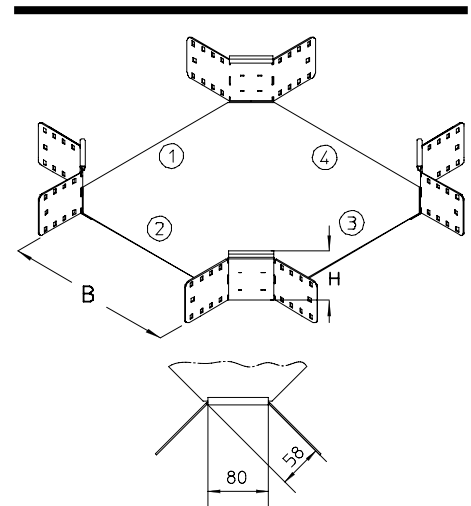
article number	H mm	B mm	G kg
<b>S</b>			
<b>RK 110-10S</b>	110	100	1,70
<b>RK 110-20S</b>	110	200	2,40
<b>RK 110-30S</b>	110	300	3,00
<b>RK 110-40S</b>	110	400	4,20
<b>RK 110-50S</b>	110	500	5,30
<b>RK 110-60S</b>	110	600	6,60

accessories included:  
8 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RK 110-10F</b>	110	100	1,80
<b>RK 110-20F</b>	110	200	2,60
<b>RK 110-30F</b>	110	300	3,20
<b>RK 110-40F</b>	110	400	4,50
<b>RK 110-50F</b>	110	500	5,70
<b>RK 110-60F</b>	110	600	7,10

accessories included:  
8 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

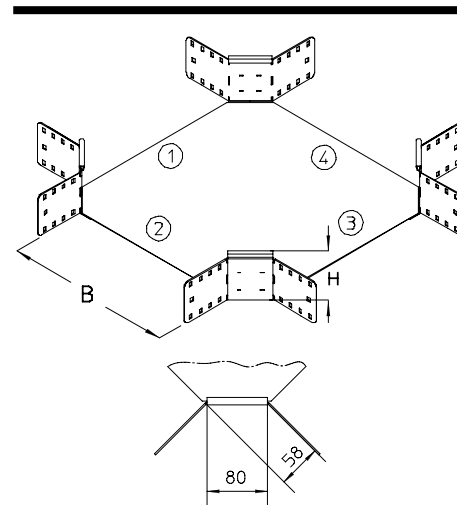
### RK 110 cable tray crossover, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	G kg
<b>E</b>			
<b>RK 110-10E</b>	110	100	1,50
<b>RK 110-20E</b>	110	200	2,20
<b>RK 110-30E</b>	110	300	2,80
<b>RK 110-40E</b>	110	400	4,00
<b>RK 110-50E</b>	110	500	5,10
<b>RK 110-60E</b>	110	600	6,40

accessories included:  
8 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



### RVB 35 cable tray vertical bend, height=35 mm

For an application example, see the chapter assembly.

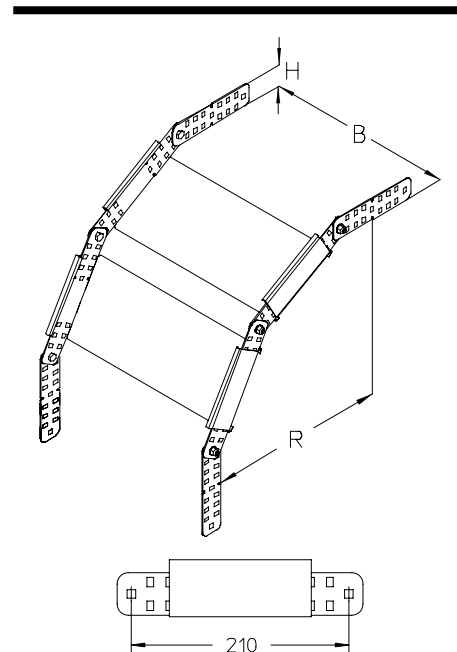
article number	H mm	B mm	R mm	G kg
<b>S</b>				
<b>RVB 35-10S</b>	35	100	280	1,40
<b>RVB 35-20S</b>	35	200	280	1,90
<b>RVB 35-30S</b>	35	300	280	2,40

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>RVB 35-10F</b>	35	100	280	1,50
<b>RVB 35-20F</b>	35	200	280	2,00
<b>RVB 35-30F</b>	35	300	280	2,60

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**REB** cable tray end-plate (page B36, B43)



# Cable trays

## Fittings

### RVB 60 cable tray vertical bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

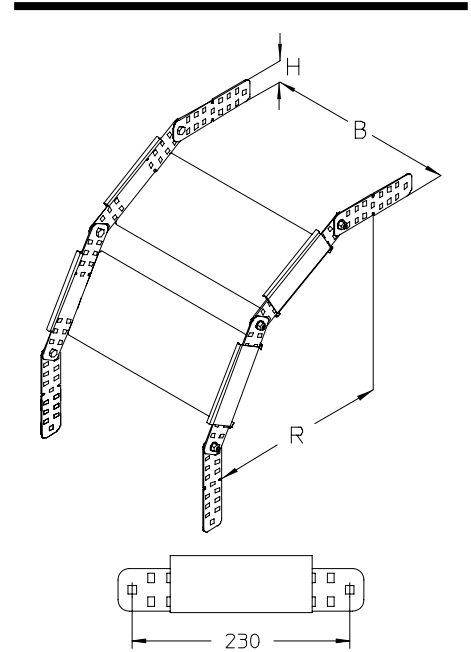
article number	H mm	B mm	R mm	G kg
<b>S</b>				
<b>RVB 60-10S</b>	60	100	300	2,00
<b>RVB 60-20S</b>	60	200	300	2,50
<b>RVB 60-30S</b>	60	300	300	3,00
<b>RVB 60-40S</b>	60	400	300	3,50
<b>RVB 60-50S</b>	60	500	300	4,00
<b>RVB 60-60S</b>	60	600	300	4,50

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>RVB 60-10F</b>	60	100	300	2,10
<b>RVB 60-20F</b>	60	200	300	2,70
<b>RVB 60-30F</b>	60	300	300	3,20
<b>RVB 60-40F</b>	60	400	300	3,80
<b>RVB 60-50F</b>	60	500	300	4,30
<b>RVB 60-60F</b>	60	600	300	4,80

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**REB** cable tray end-plate (page B36, B43)



### RVB 85 cable tray vertical bend, height=85 mm

For an application example, see the chapter assembly.

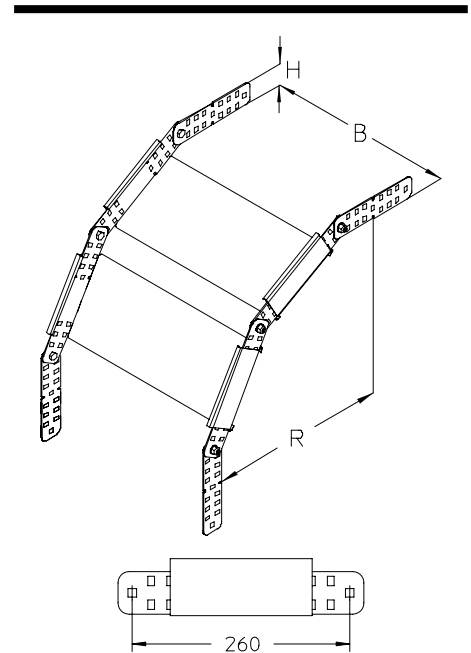
article number	H mm	B mm	R mm	G kg
<b>S</b>				
<b>RVB 85-10S</b>	85	100	330	2,80
<b>RVB 85-20S</b>	85	200	330	3,30
<b>RVB 85-30S</b>	85	300	330	3,80
<b>RVB 85-40S</b>	85	400	330	4,30
<b>RVB 85-50S</b>	85	500	330	4,80
<b>RVB 85-60S</b>	85	600	330	5,30

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>RVB 85-10F</b>	85	100	330	3,00
<b>RVB 85-20F</b>	85	200	330	3,50
<b>RVB 85-30F</b>	85	300	330	4,10
<b>RVB 85-40F</b>	85	400	330	4,60
<b>RVB 85-50F</b>	85	500	330	5,10
<b>RVB 85-60F</b>	85	600	330	5,70

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**REB** cable tray end-plate (page B36, B43)



# Cable trays

## Fittings

### RVB 110 cable tray vertical bend, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>S</b>				
<b>RVB 110-10S</b>	110	100	375	3,70
<b>RVB 110-20S</b>	110	200	375	4,20
<b>RVB 110-30S</b>	110	300	375	4,70
<b>RVB 110-40S</b>	110	400	375	5,20
<b>RVB 110-50S</b>	110	500	375	5,70
<b>RVB 110-60S</b>	110	600	375	6,20

accessories included:  
4 x **KLR** fixing set (page G33)

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>RVB 110-10F</b>	110	100	375	4,00
<b>RVB 110-20F</b>	110	200	375	4,50
<b>RVB 110-30F</b>	110	300	375	5,00
<b>RVB 110-40F</b>	110	400	375	5,60
<b>RVB 110-50F</b>	110	500	375	6,10
<b>RVB 110-60F</b>	110	600	375	6,60

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**REB** cable tray end-plate (page B36, B43)

### RR 35 cable tray reducer, height=35 mm

Please quote the design (left, centred, right) and the side width with your order.  
For an application example, see the chapter assembly.

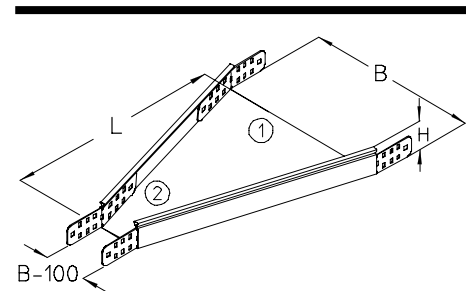
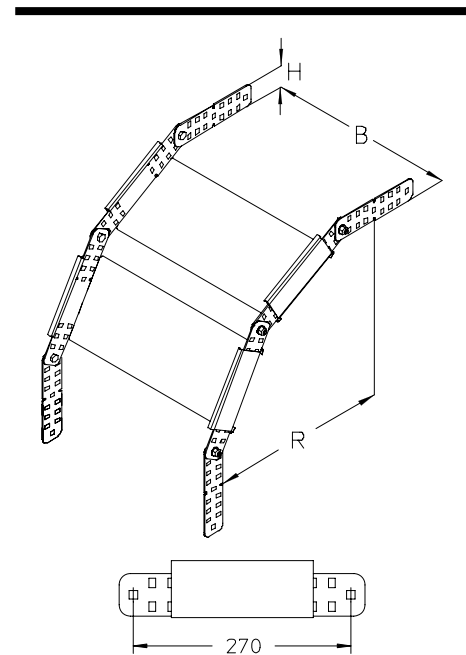
article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>RR 35-20S</b>	35	200	500	1,20
<b>RR 35-30S</b>	35	300	500	1,60

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>RR 35-20F</b>	35	200	500	1,30
<b>RR 35-30F</b>	35	300	500	1,80

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

### RR 60 cable tray reducer, height=60 mm

Please quote the design (left, centred, right) and the side width with your order. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RR 60-20S	60	200	500	1,40
RR 60-30S	60	300	500	1,80
RR 60-40S	60	400	500	2,20
RR 60-50S	60	500	500	2,60
RR 60-60S	60	600	500	2,90

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	L mm	G kg
<b>F</b>				
RR 60-20F	60	200	500	1,60
RR 60-30F	60	300	500	2,00
RR 60-40F	60	400	500	2,40
RR 60-50F	60	500	500	2,90
RR 60-60F	60	600	500	3,30

article number	H mm	B mm	L mm	G kg
<b>E</b>				
RR 60-20E	60	200	500	1,40
RR 60-30E	60	300	500	1,80
RR 60-40E	60	400	500	2,20
RR 60-50E	60	500	500	2,60
RR 60-60E	60	600	500	3,00

accessories included:  
2 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

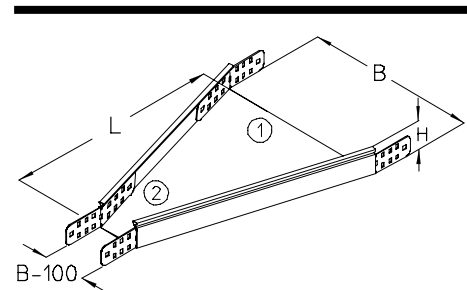
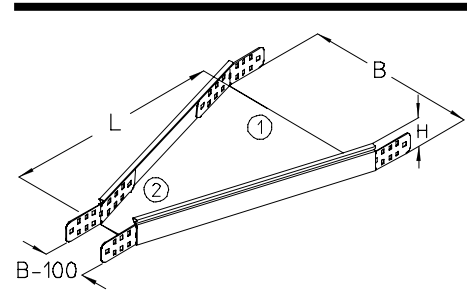
### RR 85 cable tray reducer, height=85 mm

Please quote the design (left, centred, right) and the side width with your order.  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RR 85-20S	85	200	500	1,70
RR 85-30S	85	300	500	2,20
RR 85-40S	85	400	500	2,70
RR 85-50S	85	500	500	3,20
RR 85-60S	85	600	500	3,70

accessories included:  
4 x **KLR** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)



# Cable trays

## Fittings

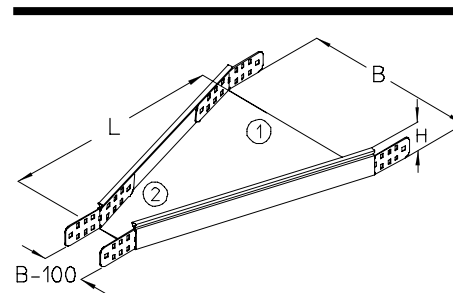
### RR 85 cable tray reducer, height=85 mm

Please quote the design (left, centred, right) and the side width with your order.  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
RR 85-20F	85	200	500	1,90
RR 85-30F	85	300	500	2,50
RR 85-40F	85	400	500	3,00
RR 85-50F	85	500	500	3,60
RR 85-60F	85	600	500	4,10

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

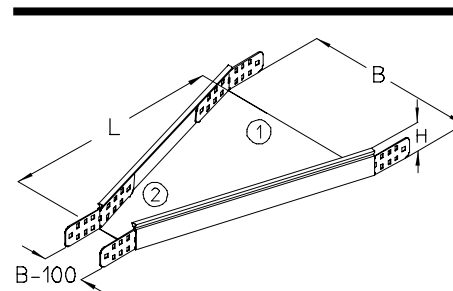


### RR 110 cable tray reducer, height=110 mm

Please quote the design (left, centred, right) and the side width with your order. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
RR 110-20S	110	200	500	1,90
RR 110-30S	110	300	500	2,40
RR 110-40S	110	400	500	2,90
RR 110-50S	110	500	500	3,40
RR 110-60S	110	600	500	3,90

accessories included:  
4 x **KLR** fixing set (page G33)



article number	H mm	B mm	L mm	G kg
<b>F</b>				
RR 110-20F	110	200	500	2,20
RR 110-30F	110	300	500	2,70
RR 110-40F	110	400	500	3,20
RR 110-50F	110	500	500	3,80
RR 110-60F	110	600	500	4,30

<b>E</b>				
RR 110-20E	110	200	500	2,00
RR 110-30E	110	300	500	2,50
RR 110-40E	110	400	500	2,80
RR 110-50E	110	500	500	3,40
RR 110-60E	110	600	500	3,80

accessories included:  
4 x **KLR E** fixing set (page G33)

accessories optional:  
**VB** connection plate (page B39, D28)

# Cable trays

## Accessories of cable trays

### RAB 35 cable tray closing panel, height=35 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RAB 35-10S</b>	35	100	0,06
<b>RAB 35-20S</b>	35	200	0,09
<b>RAB 35-30S</b>	35	300	0,11

accessories included:

1 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAB 35-10F</b>	35	100	0,02
<b>RAB 35-20F</b>	35	200	0,11
<b>RAB 35-30F</b>	35	300	0,14

accessories included:

1 x **KLR E** fixing set (page G33)

### RAB 60 cable tray closing panel, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RAB 60-10S</b>	60	100	0,15
<b>RAB 60-20S</b>	60	200	0,20
<b>RAB 60-30S</b>	60	300	0,25
<b>RAB 60-40S</b>	60	400	0,31
<b>RAB 60-50S</b>	60	500	0,36
<b>RAB 60-60S</b>	60	600	0,41

accessories included:

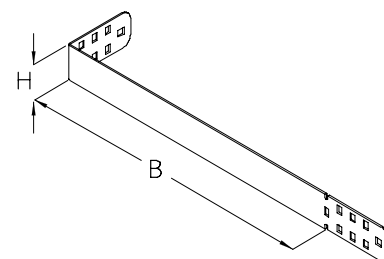
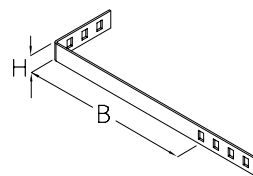
1 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAB 60-10F</b>	60	100	0,21
<b>RAB 60-20F</b>	60	200	0,29
<b>RAB 60-30F</b>	60	300	0,34
<b>RAB 60-40F</b>	60	400	0,45
<b>RAB 60-50F</b>	60	500	0,53
<b>RAB 60-60F</b>	60	600	0,60

<b>E</b>			
<b>RAB 60-10E</b>	60	100	0,15
<b>RAB 60-20E</b>	60	200	0,20
<b>RAB 60-30E</b>	60	300	0,25
<b>RAB 60-40E</b>	60	400	0,31
<b>RAB 60-50E</b>	60	500	0,36
<b>RAB 60-60E</b>	60	600	0,41

accessories included:

1 x **KLR E** fixing set (page G33)





# Cable trays

## Accessories of cable trays

### RAB 85 cable tray closing panel, height=85 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RAB 85-10S</b>	85	100	0,24
<b>RAB 85-20S</b>	85	200	0,32
<b>RAB 85-30S</b>	85	300	0,41
<b>RAB 85-40S</b>	85	400	0,49
<b>RAB 85-50S</b>	85	500	0,57
<b>RAB 85-60S</b>	85	600	0,65

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAB 85-10F</b>	85	100	0,34
<b>RAB 85-20F</b>	85	200	0,46
<b>RAB 85-30F</b>	85	300	0,58
<b>RAB 85-40F</b>	85	400	0,70
<b>RAB 85-50F</b>	85	500	0,82
<b>RAB 85-60F</b>	85	600	0,94

accessories included:  
2 x **KLR E** fixing set (page G33)

### RAB 110 cable tray closing panel, height=110 mm

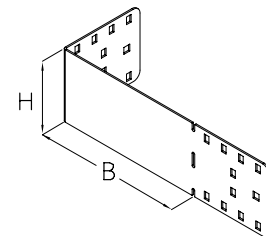
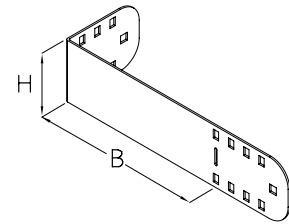
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RAB 110-10S</b>	110	100	0,33
<b>RAB 110-20S</b>	110	200	0,44
<b>RAB 110-30S</b>	110	300	0,56
<b>RAB 110-40S</b>	110	400	0,67
<b>RAB 110-50S</b>	110	500	0,78
<b>RAB 110-60S</b>	110	600	0,89

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RAB 110-10F</b>	110	100	0,48
<b>RAB 110-20F</b>	110	200	0,65
<b>RAB 110-30F</b>	110	300	0,81
<b>RAB 110-40F</b>	110	400	0,98
<b>RAB 110-50F</b>	110	500	1,14
<b>RAB 110-60F</b>	110	600	1,31

accessories included:  
2 x **KLR E** fixing set (page G33)



# Cable trays

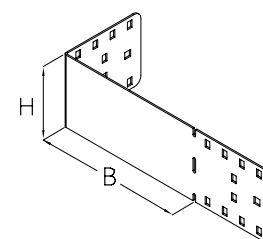
## Accessories of cable trays

### RAB 110 cable tray closing panel, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>E</b>			
<b>RAB 110-10E</b>	110	100	0,33
<b>RAB 110-20E</b>	110	200	0,44
<b>RAB 110-30E</b>	110	300	0,55
<b>RAB 110-40E</b>	110	400	0,66
<b>RAB 110-50E</b>	110	500	0,77
<b>RAB 110-60E</b>	110	600	0,88

accessories included:  
2 x **KLR E** fixing set (page G33)

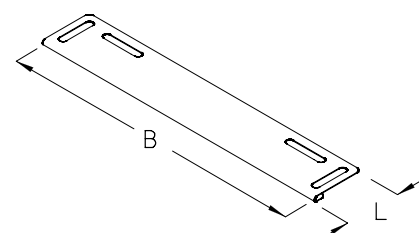


### REB cable tray end-plate

For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
<b>REB 05S</b>	40	50	0,02

accessories included:  
1 x **KLR** fixing set (page G33)



article number	B mm	L mm	G kg
<b>S</b>			
<b>REB 10S</b>	90	50	0,03
<b>REB 20S</b>	190	50	0,06
<b>REB 30S</b>	290	50	0,10
<b>REB 40S</b>	390	50	0,13
<b>REB 50S</b>	490	50	0,17
<b>REB 60S</b>	590	50	0,20

accessories included:  
2 x **KLR** fixing set (page G33)

article number	B mm	L mm	G kg
<b>F</b>			
<b>REB 05F</b>	40	50	0,03

accessories included:  
1 x **KLR E** fixing set (page G33)

article number	B mm	L mm	G kg
<b>F</b>			
<b>REB 10F</b>	90	50	0,03
<b>REB 20F</b>	190	50	0,06
<b>REB 30F</b>	290	50	0,10
<b>REB 40F</b>	390	50	0,13
<b>REB 50F</b>	490	50	0,17
<b>REB 60F</b>	590	50	0,20

accessories included:  
2 x **KLR E** fixing set (page G33)

# Cable trays

## Accessories of cable trays

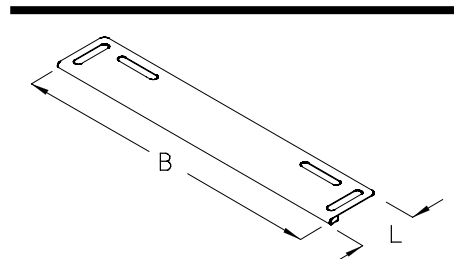
### REB cable tray end-plate

For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>E</b>			
<b>REB 10E</b>	90	50	0,02
<b>REB 20E</b>	190	50	0,05
<b>REB 30E</b>	290	50	0,08
<b>REB 40E</b>	390	50	0,10
<b>REB 50E</b>	490	50	0,13
<b>REB 60E</b>	590	50	0,16

accessories included:

2 x **KLR E** fixing set (page G33)



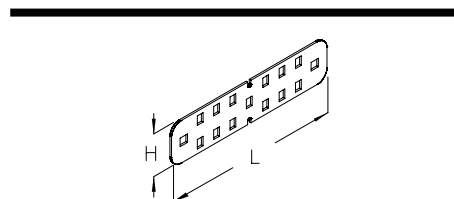
### RGV 35 cable tray coupler, height=35 mm

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>RGV 35S</b>	20	150	0,04

accessories included:

1 x **KLR** fixing set (page G33)



article number	H mm	L mm	G kg
<b>F</b>			
<b>RGV 35F</b>	20	150	0,04

accessories included:

1 x **KLR E** fixing set (page G33)

### RGV 60 cable tray coupler, height=60 mm

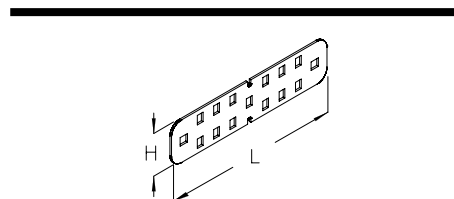
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>RGV 60S</b>	45	190	0,08

accessories included:

1 x **KLR** fixing set (page G33)



article number	H mm	L mm	G kg
<b>F</b>			
<b>RGV 60F</b>	45	190	0,09

article number	H mm	L mm	G kg
<b>E</b>			
<b>RGV 60E</b>	45	190	0,08

accessories included:

1 x **KLR E** fixing set (page G33)

# Cable trays

## Accessories of cable trays

### RGV 85 cable tray coupler, height=85 mm

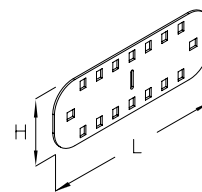
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>RGV 85S</b>	70	190	0,16

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
<b>RGV 85F</b>	70	190	0,17

accessories included:  
2 x **KLR E** fixing set (page G33)



### RGV 110 cable tray coupler, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

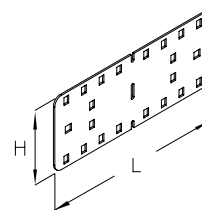
article number	H mm	L mm	G kg
<b>S</b>			
<b>RGV 110S</b>	95	230	0,34

accessories included:  
2 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
<b>RGV 110F</b>	95	230	0,36

article number	H mm	L mm	G kg
<b>E</b>			
<b>RGV 110E</b>	95	230	0,27

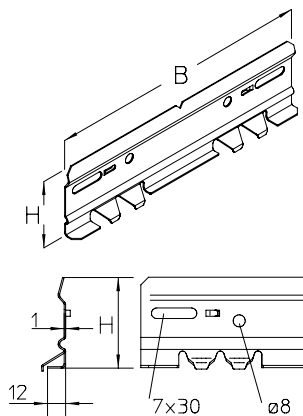
accessories included:  
2 x **KLR E** fixing set (page G33)



### RGVS cable tray snap coupler

The side connector is only suitable for the cable trays type RG 60 and R 60.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RGVS 60S</b>	60	230	0,12



# Cable trays

## Accessories of cable trays

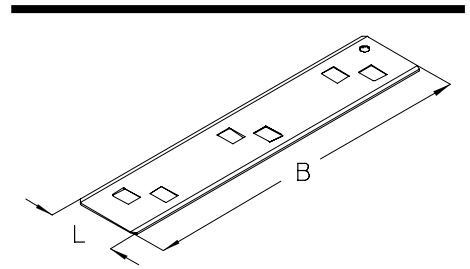
### VB connection plate

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
VB 10S	54	70	0,04
VB 20S	155	70	0,11
VB 30S	255	70	0,18
VB 40S	355	70	0,27
VB 50S	455	70	0,32
VB 60S	555	70	0,38

<b>F</b>			
VB 10F	54	70	0,04
VB 20F	155	70	0,11
VB 30F	255	70	0,19
VB 40F	355	70	0,28
VB 50F	455	70	0,34
VB 60F	555	70	0,40

<b>E</b>			
VB 10E	54	70	0,04
VB 20E	155	70	0,11
VB 30E	255	70	0,18
VB 40E	355	70	0,27
VB 50E	455	70	0,32
VB 60E	555	70	0,38



### RTR 35 cable tray barrier strip, height=35 mm

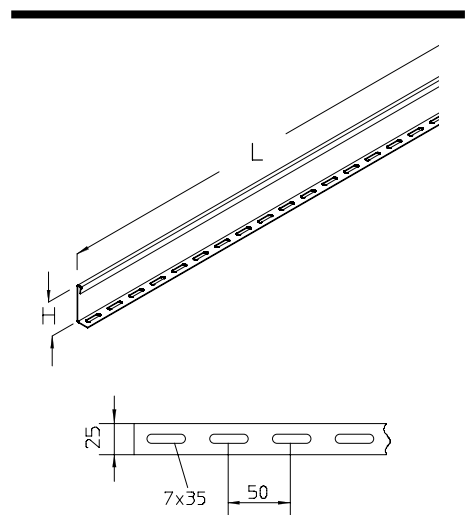
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
RTR 35S	33	3000	1,50

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
RTR 35F	33	3000	1,60

accessories included:  
3 x **KLR E** fixing set (page G33)



# Cable trays

## Accessories of cable trays

### RTR 60 cable tray barrier strip, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>RTR 60S</b>	50	3000	2,10

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
<b>RTR 60F</b>	50	3000	2,20

<b>E</b>			
<b>RTR 60E</b>	50	3000	2,10

<b>E4</b>			
<b>RTR 60E4</b>	50	3000	2,10

accessories included:  
3 x **KLR E** fixing set (page G33)

### RTR 85 cable tray barrier strip, height=85 mm

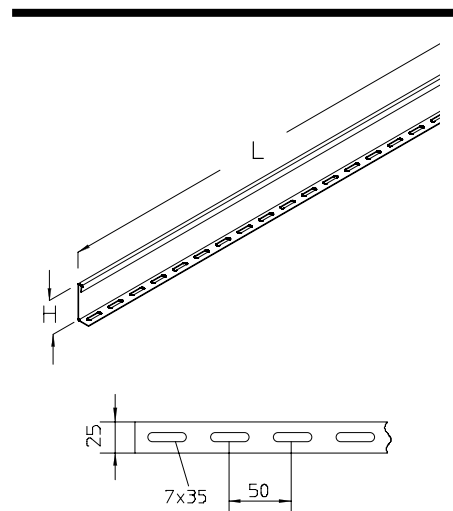
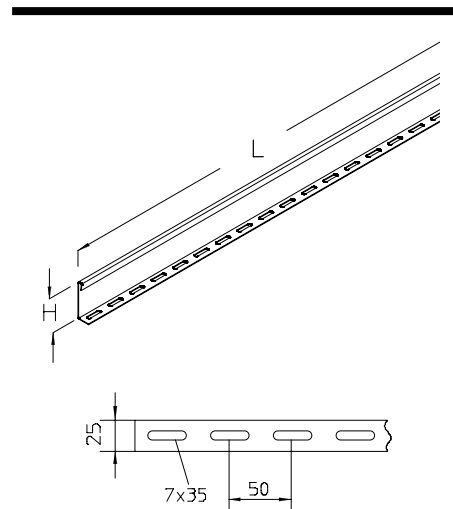
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>RTR 85S</b>	80	3000	2,70

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
<b>RTR 85F</b>	80	3000	2,90

accessories included:  
3 x **KLR E** fixing set (page G33)



# Cable trays

## Accessories of cable trays

### RTR 110 cable tray barrier strip, height=110 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

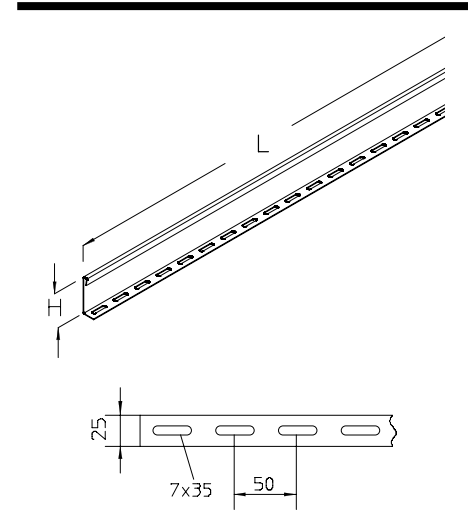
article number	H mm	L mm	G kg
<b>S</b>			
<b>RTR 110S</b>	100	3000	3,30

accessories included:  
3 x **KLR** fixing set (page G33)

article number	H mm	L mm	G kg
<b>F</b>			
<b>RTR 110F</b>	100	3000	3,50

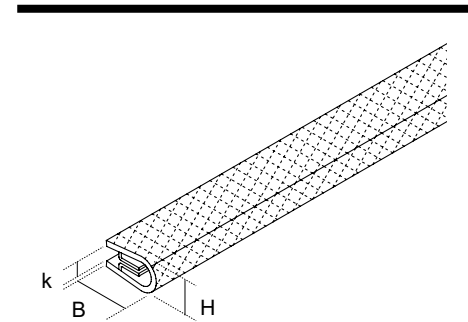
article number	H mm	L mm	G kg
<b>E</b>			
<b>RTR 110E</b>	100	3000	3,30

accessories included:  
3 x **KLR E** fixing set (page G33)



### KSB edge protection strip

article number	H mm	B mm	k mm	colour	G kg/m
<b>PVC</b>					
<b>KSB</b>	6,5	9,5	1 - 2	silver	0,06



### MP-RG assembly plate

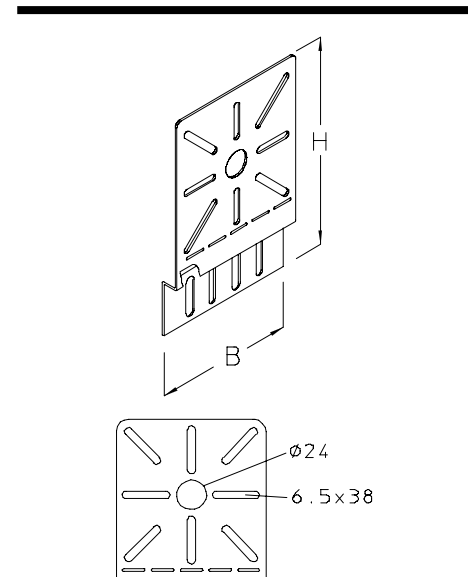
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>MP-RG 60S</b>	185	120	0,16

accessories included:  
1 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>MP-RG 60F</b>	185	120	0,17

accessories included:  
1 x **KLR E** fixing set (page G33)



# Cable trays

## Accessories of cable trays

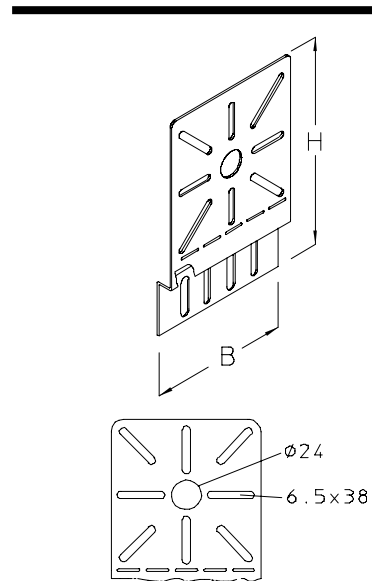
### MP-RG assembly plate

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>E4</b>			
<b>MP-RG 60E4</b>	185	120	0,16

accessories included:

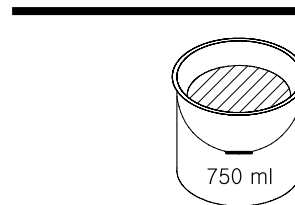
2 x <b>SEM 6E4</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 6x12E4</b>	square washer, DIN 125	(page G40)
2 x <b>FKS 6x16E4</b>	slotted cylinder head screw, DIN 84	(page G36)



### KZF cold zinc paint

For assembly instructions, see the chapter assembly.

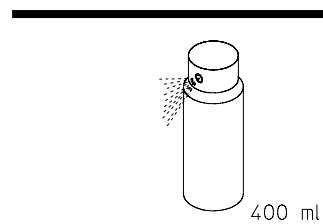
article number	I ml	G kg
<b>KZF</b>	750	1,93



### KZS cold zinc spray

For assembly instructions, see the chapter assembly.

article number	I ml	G kg
<b>KZS</b>	400	0,40





# Cable trays

## Accessories of cable installation trays

### RIV 60 cable tray coupler, height=60 mm

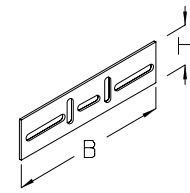
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>RIV 60S</b>	45	176	0,12

accessories included:  
1 x **KLR** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>RIV 60F</b>	45	176	0,12

accessories included:  
1 x **KLR E** fixing set (page G33)



### REB cable tray end-plate

For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
<b>REB 05S</b>	40	50	0,02

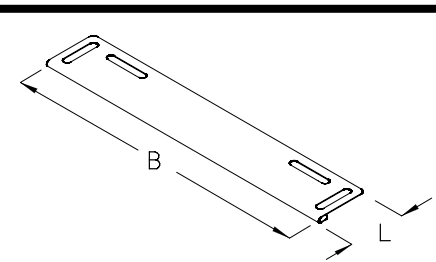
accessories included:  
1 x **KLR** fixing set (page G33)

article number	B mm	L mm	G kg
<b>S</b>			
<b>REB 10S</b>	90	50	0,03
<b>REB 20S</b>	190	50	0,06
<b>REB 30S</b>	290	50	0,10
<b>REB 40S</b>	390	50	0,13
<b>REB 50S</b>	490	50	0,17
<b>REB 60S</b>	590	50	0,20

accessories included:  
2 x **KLR** fixing set (page G33)

article number	B mm	L mm	G kg
<b>F</b>			
<b>REB 05F</b>	40	50	0,03

accessories included:  
1 x **KLR E** fixing set (page G33)



# Cable trays

## Accessories of cable installation trays

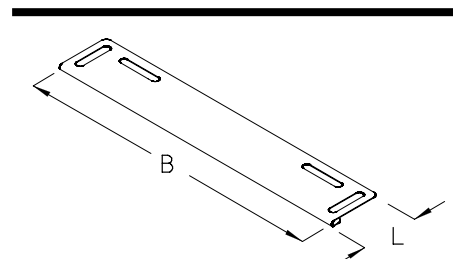
### REB cable tray end-plate

For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>F</b>			
REB 10F	90	50	0,03
REB 20F	190	50	0,06
REB 30F	290	50	0,10
REB 40F	390	50	0,13
REB 50F	490	50	0,17
REB 60F	590	50	0,20

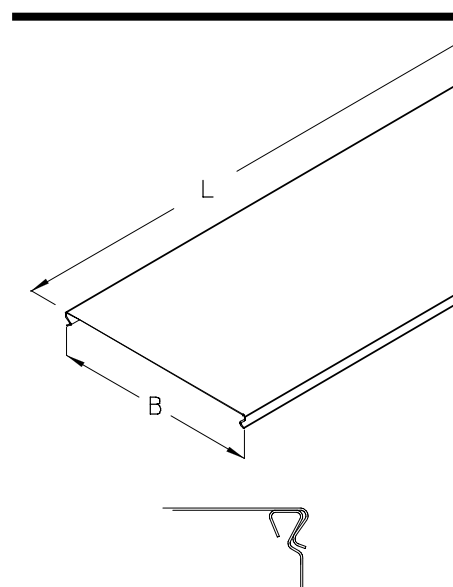
<b>E</b>			
REB 10E	90	50	0,02
REB 20E	190	50	0,05
REB 30E	290	50	0,08
REB 40E	390	50	0,10
REB 50E	490	50	0,13
REB 60E	590	50	0,16

accessories included:  
2 x **KLR E** fixing set (page G33)



### RID cable installation tray cover

article number	B mm	L mm	G kg
<b>S</b>			
RID 05S	50	3000	1,40
RID 10S	100	3000	2,31
RID 15S	150	3000	3,19
RID 20S	200	3000	4,08
RID 30S	300	3000	7,78
<b>F</b>			
RID 05F	50	3000	1,60
RID 10F	100	3000	2,60
RID 15F	150	3000	3,60
RID 20F	200	3000	4,60
RID 30F	300	3000	8,70

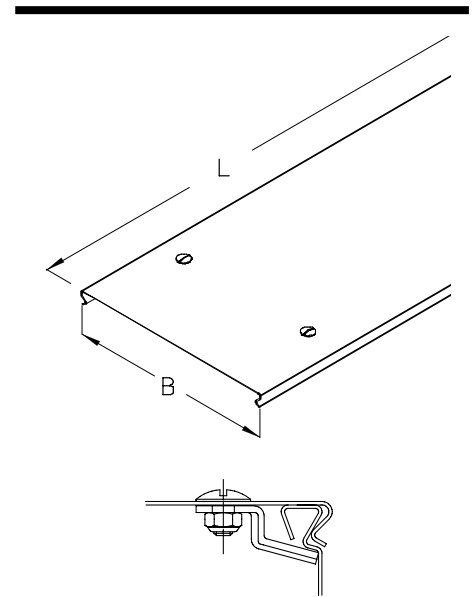


# Cable trays

## Accessories of cable installation trays

### RIDR cable installation tray cover with bar lock

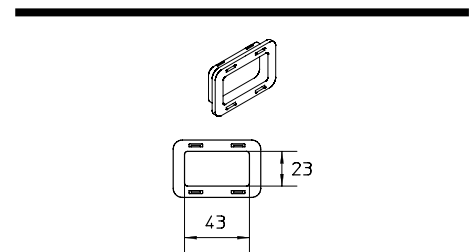
article number	B mm	L mm	G kg
<b>S</b>			
RIDR 05S	50	3000	1,43
RIDR 10S	100	3000	2,40
RIDR 15S	150	3000	3,28
RIDR 20S	200	3000	4,17
RIDR 30S	300	3000	7,89
<b>F</b>			
RIDR 05F	50	3000	1,64
RIDR 10F	100	3000	2,77
RIDR 15F	150	3000	3,70
RIDR 20F	200	3000	4,72
RIDR 30F	300	3000	8,81



### KSR cable protection ring

For an application example, see the chapter assembly.

article number	G kg/100
<b>PE</b>	
KSR 50	0,6

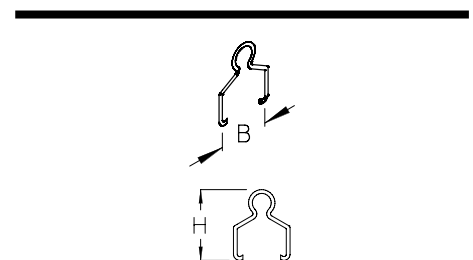


### AHB suspension-bow

Central support for installation grooves.

For an application example, see the chapter assembly.

article number	H mm	B mm	P <sub>max</sub> kN	G kg/100
<b>S</b>				
AHB 05S	75	50	0,7	2,1
AHB 10S	75	100	0,7	2,4



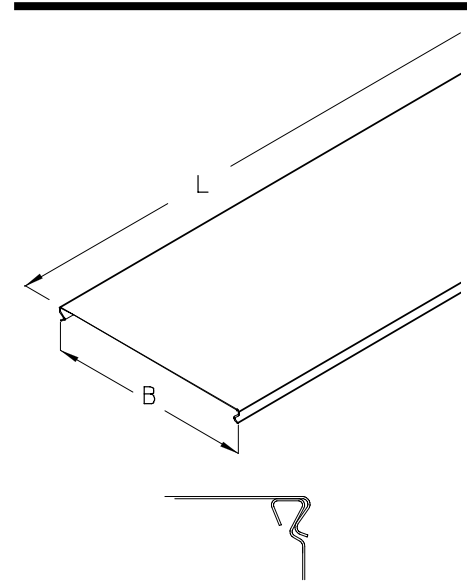
# Cable trays

## Cover

### RD cable tray cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

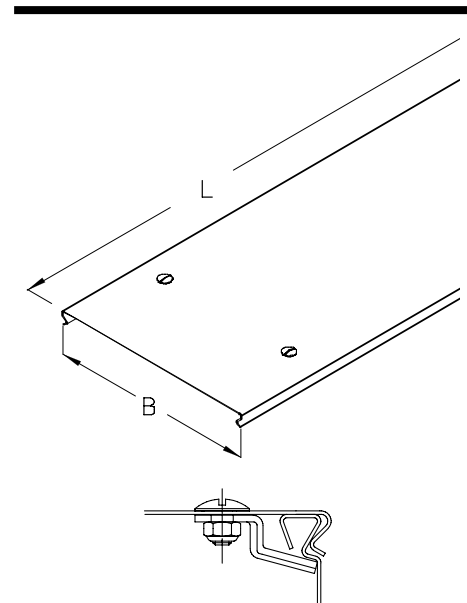
article number	B mm	L mm	G kg
<b>S</b>			
RD 10S	100	3000	2,40
RD 20S	200	3000	4,20
RD 30S	300	3000	7,90
RD 40S	400	3000	10,20
RD 50S	500	3000	15,70
RD 60S	600	3000	18,60
<b>F</b>			
RD 10F	100	3000	2,60
RD 20F	200	3000	4,60
RD 30F	300	3000	8,70
RD 40F	400	3000	11,30
RD 50F	500	3000	17,30
RD 60F	600	3000	20,50
<b>E</b>			
RD 10E	100	3000	2,50
RD 20E	200	3000	4,40
RD 30E	300	3000	7,80
RD 40E	400	3000	10,20
RD 50E	500	3000	15,00
RD 60E	600	3000	17,90



### RDR cable tray cover with bar lock

Installation of covers in outdoor areas requires additional provisions against storm forces. Turning bolts are in no case sufficient as security provision. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	L mm	G kg
<b>S</b>			
RDR 10S	100	3000	2,30
RDR 20S	200	3000	4,10
RDR 30S	300	3000	7,80
RDR 40S	400	3000	10,10
RDR 50S	500	3000	15,60
RDR 60S	600	3000	18,50
<b>F</b>			
RDR 10F	100	3000	2,80
RDR 20F	200	3000	4,70
RDR 30F	300	3000	7,90
RDR 40F	400	3000	11,40
RDR 50F	500	3000	17,40
RDR 60F	600	3000	20,60
<b>E</b>			
RDR 10E	100	3000	2,60
RDR 20E	200	3000	4,50
RDR 30E	300	3000	7,90
RDR 40E	400	3000	10,30
RDR 50E	500	3000	15,20
RDR 60E	600	3000	18,00



# Cable trays

## Cover

### RD-SW cable tray storm protection angle

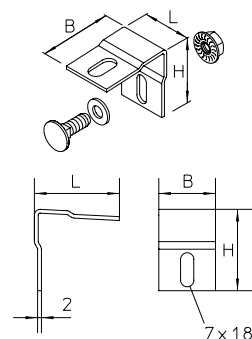
Storm protection angles, suitable for outdoor use. According to assembly instructions you should use at least 6 safety elements for each 3 meters cable path cover. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>RD-SW F</b>	40	30	40	0,06
<b>E</b>				
<b>RD-SW E</b>	40	30	40	0,06

accessories included:

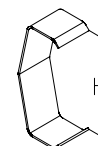
1 x <b>FRSV 6x12E</b>	round-head screw with short square	(page G35)
1 x <b>SEMS 6E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>UVS M6</b>	captive washer	(page G40)



### RDKL 60 cable tray cover clamp

Installation of covers in outdoor areas requires additional provisions against storm forces. Cover clamps are in no case sufficient as security provision. Gutter cover brackets suitable for use in buildings. According to assembly instructions you should use at least 6 safety elements for each 3 meters cable path cover.

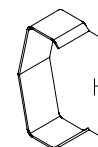
article number	H mm	G kg
<b>E</b>		
<b>RDKL 60E</b>	58	0,10



### RDKL 110 cable tray cover clamp

Installation of covers in outdoor areas requires additional provisions against storm forces. Cover clamps are in no case sufficient as security provision. Gutter cover brackets suitable for use in buildings. According to assembly instructions you should use at least 6 safety elements for each 3 meters cable path cover.

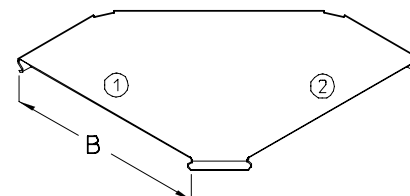
article number	H mm	G kg
<b>E</b>		
<b>RDKL 110E</b>	108	0,10



### RBD cable tray bend cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
<b>RBD 10S</b>	100	0,20
<b>RBD 20S</b>	200	0,40
<b>RBD 30S</b>	300	1,00
<b>RBD 40S</b>	400	1,60
<b>RBD 50S</b>	500	2,90
<b>RBD 60S</b>	600	4,00



# Cable trays

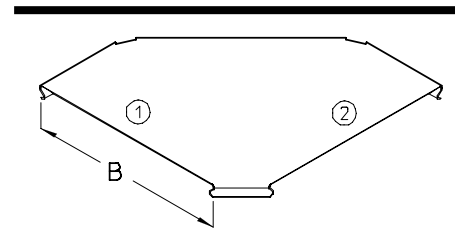
## Cover

### RBD cable tray bend cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>F</b>		
RBD 10F	100	0,20
RBD 20F	200	0,40
RBD 30F	300	1,00
RBD 40F	400	1,70
RBD 50F	500	3,10
RBD 60F	600	4,20

<b>E</b>		
RBD 10E	100	0,20
RBD 20E	200	0,40
RBD 30E	300	1,00
RBD 40E	400	1,60
RBD 50E	500	2,90
RBD 60E	600	4,00



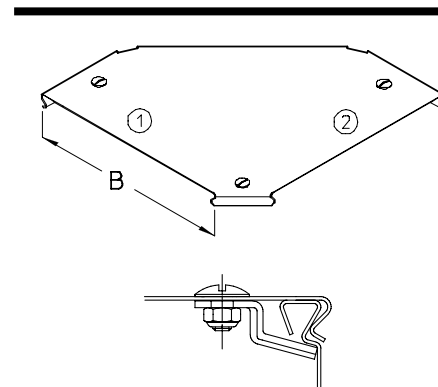
### RBDR cable tray bend cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
RBDR 10S	100	0,20
RBDR 20S	200	0,40
RBDR 30S	300	1,00
RBDR 40S	400	1,60
RBDR 50S	500	2,80
RBDR 60S	600	3,90

<b>F</b>		
RBDR 10F	100	0,20
RBDR 20F	200	0,50
RBDR 30F	300	1,10
RBDR 40F	400	1,70
RBDR 50F	500	3,10
RBDR 60F	600	4,20

<b>E</b>		
RBDR 10E	100	0,20
RBDR 20E	200	0,50
RBDR 30E	300	1,00
RBDR 40E	400	1,60
RBDR 50E	500	2,70
RBDR 60E	600	3,70



# Cable trays

## Cover

### RAED cable tray attachment corner cover

article number	B mm	L mm	G kg
<b>S</b>			
<b>RAED S</b>	80	50	0,10

accessories included:

1 x <b>UVS M6</b>	captive washer	(page G40)
1 x <b>FRSV 6x12</b>	round-head screw with short square	(page G34)
1 x <b>SEMS 6</b>	hexagon nut, self-locking, DIN 6923	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>RAED F</b>	80	50	0,10

article number	B mm	L mm	G kg
<b>E</b>			
<b>RAED E</b>	80	50	0,10

accessories included:

1 x <b>FRSV 6x12E</b>	round-head screw with short square	(page G35)
1 x <b>SEMS 6E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>UVS M6</b>	captive washer	(page G40)

### RBD45 cable tray bend cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

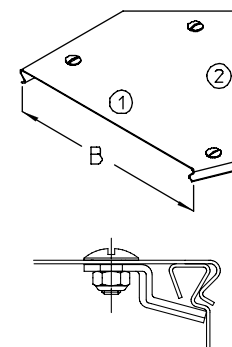
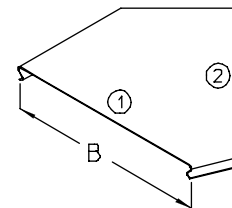
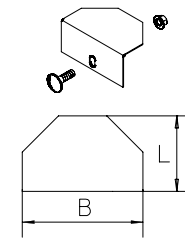
article number	B mm	G kg
<b>S</b>		
<b>RBD45 10S</b>	100	0,10
<b>RBD45 20S</b>	200	0,20
<b>RBD45 30S</b>	300	0,60
<b>RBD45 40S</b>	400	0,90
<b>RBD45 50S</b>	500	1,60
<b>RBD45 60S</b>	600	2,10

article number	B mm	G kg
<b>F</b>		
<b>RBD45 10F</b>	100	0,10
<b>RBD45 20F</b>	200	0,30
<b>RBD45 30F</b>	300	0,60
<b>RBD45 40F</b>	400	1,00
<b>RBD45 50F</b>	500	1,80
<b>RBD45 60F</b>	600	2,40

### RBDR45 cable tray bend cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
<b>RBDR45 10S</b>	100	0,20
<b>RBDR45 20S</b>	200	0,30
<b>RBDR45 30S</b>	300	0,60
<b>RBDR45 40S</b>	400	1,00
<b>RBDR45 50S</b>	500	1,70
<b>RBDR45 60S</b>	600	2,20



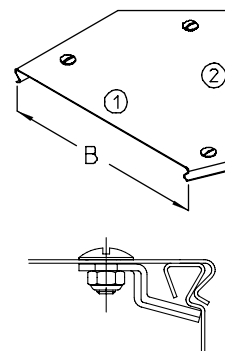
# Cable trays

## Cover

### RBDR45 cable tray bend cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

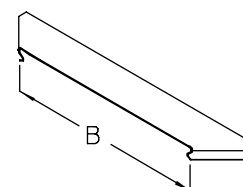
article number	B mm	G kg
<b>F</b>		
RBDR45 10F	100	0,20
RBDR45 20F	200	0,40
RBDR45 30F	300	0,70
RBDR45 40F	400	1,10
RBDR45 50F	500	1,80
RBDR45 60F	600	2,50



### RAAD cable tray attachment branch-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
RAAD 10S	100	0,07
RAAD 20S	200	0,11
RAAD 30S	300	0,19
RAAD 40S	400	0,23
RAAD 50S	500	0,35
RAAD 60S	600	0,41



<b>F</b>		
RAAD 10F	100	0,08
RAAD 20F	200	0,12
RAAD 30F	300	0,20
RAAD 40F	400	0,25
RAAD 50F	500	0,37
RAAD 60F	600	0,43

<b>E</b>		
RAAD 10E	100	0,07
RAAD 20E	200	0,11
RAAD 30E	300	0,19
RAAD 40E	400	0,24
RAAD 50E	500	0,35
RAAD 60E	600	0,41



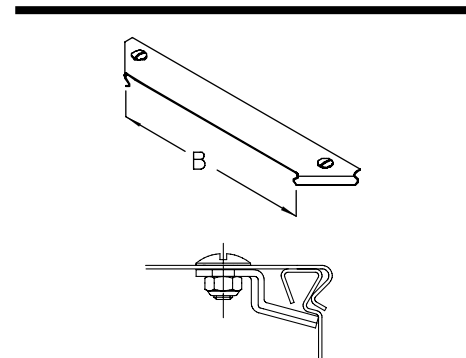
# Cable trays

## Cover

### RAADR cable tray attachment branch-piece cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

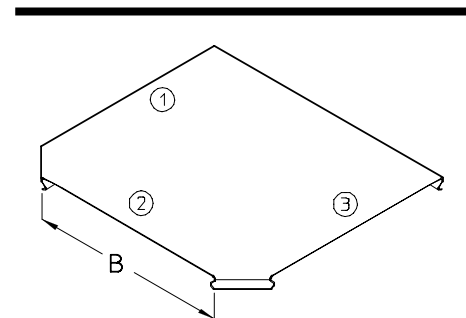
article number	B mm	G kg
<b>S</b>		
RAADR 10S	100	0,11
RAADR 20S	200	0,15
RAADR 30S	300	0,23
RAADR 40S	400	0,27
RAADR 50S	500	0,39
RAADR 60S	600	0,45
<b>F</b>		
RAADR 10F	100	0,12
RAADR 20F	200	0,16
RAADR 30F	300	0,24
RAADR 40F	400	0,29
RAADR 50F	500	0,41
RAADR 60F	600	0,47
<b>E</b>		
RAADR 10E	100	0,11
RAADR 20E	200	0,15
RAADR 30E	300	0,23
RAADR 40E	400	0,28
RAADR 50E	500	0,39
RAADR 60E	600	0,45



### RAD cable tray branch-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
RAD 10S	100	0,20
RAD 20S	200	0,40
RAD 30S	300	1,10
RAD 40S	400	1,80
RAD 50S	500	3,30
RAD 60S	600	4,60
<b>F</b>		
RAD 10F	100	0,20
RAD 20F	200	0,40
RAD 30F	300	1,10
RAD 40F	400	1,90
RAD 50F	500	3,50
RAD 60F	600	4,90
<b>E</b>		
RAD 10E	100	0,20
RAD 20E	200	0,40
RAD 30E	300	1,10
RAD 40E	400	1,80
RAD 50E	500	3,30
RAD 60E	600	4,60



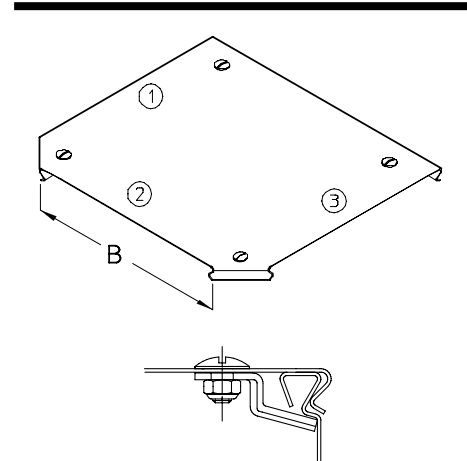
# Cable trays

## Cover

### RADR cable tray branch-piece cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

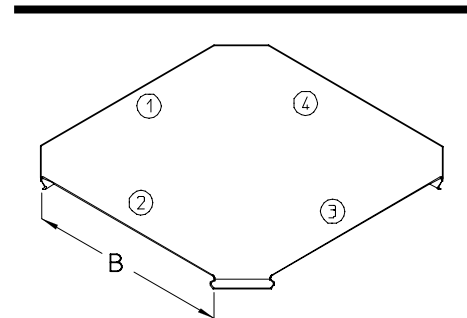
article number	B mm	G kg
<b>S</b>		
RADR 10S	100	0,30
RADR 20S	200	0,60
RADR 30S	300	1,30
RADR 40S	400	2,00
RADR 50S	500	3,60
RADR 60S	600	4,90
<b>F</b>		
RADR 10F	100	0,20
RADR 20F	200	0,60
RADR 30F	300	1,40
RADR 40F	400	2,20
RADR 50F	500	3,90
RADR 60F	600	5,40
<b>E</b>		
RADR 10E	100	0,30
RADR 20E	200	0,60
RADR 30E	300	1,30
RADR 40E	400	2,00
RADR 50E	500	3,50
RADR 60E	600	4,70



### RKD cable tray cross-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
RKD 10S	100	0,20
RKD 20S	200	0,50
RKD 30S	300	1,20
RKD 40S	400	2,00
RKD 50S	500	3,60
RKD 60S	600	4,90
<b>F</b>		
RKD 10F	100	0,20
RKD 20F	200	0,50
RKD 30F	300	1,20
RKD 40F	400	2,10
RKD 50F	500	3,80
RKD 60F	600	5,20
<b>E</b>		
RKD 10E	100	0,20
RKD 20E	200	0,50
RKD 30E	300	1,20
RKD 40E	400	2,00
RKD 50E	500	3,60
RKD 60E	600	4,90



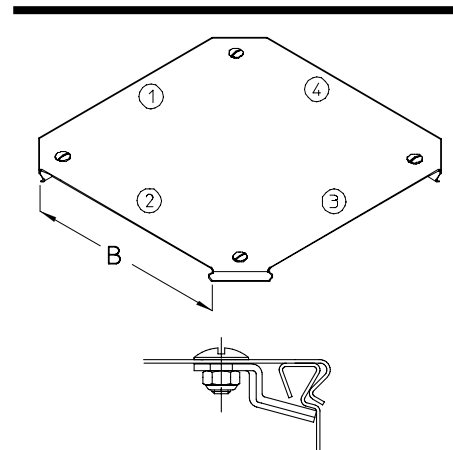
# Cable trays

## Cover

### RKDR cable tray cross-piece cover with bar lock

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

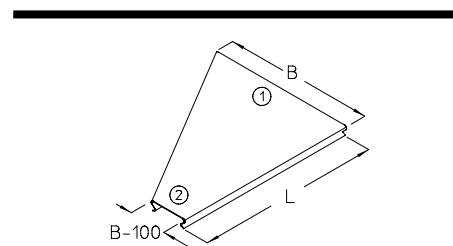
article number	B mm	G kg
<b>S</b>		
RKDR 10S	100	0,30
RKDR 20S	200	0,70
RKDR 30S	300	1,40
RKDR 40S	400	2,20
RKDR 50S	500	3,80
RKDR 60S	600	5,10
<b>F</b>		
RKDR 10F	100	0,40
RKDR 20F	200	0,70
RKDR 30F	300	1,60
RKDR 40F	400	2,40
RKDR 50F	500	4,20
RKDR 60F	600	5,50
<b>E</b>		
RKDR 10E	100	0,40
RKDR 20E	200	0,70
RKDR 30E	300	1,40
RKDR 40E	400	2,20
RKDR 50E	500	3,70
RKDR 60E	600	5,00



### RRD cable tray reducer cover

Please quote the design (left, centred, right) and the side width with your order. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	L mm	G kg
<b>S</b>			
RRD 20S	200	500	0,50
RRD 30S	300	500	1,20
RRD 40S	400	500	1,50
RRD 50S	500	500	2,40
RRD 60S	600	500	2,90
<b>F</b>			
RRD 20F	200	500	0,50
RRD 30F	300	500	1,20
RRD 40F	400	500	1,60
RRD 50F	500	500	2,50
RRD 60F	600	500	3,10
<b>E</b>			
RRD 20E	200	500	0,50
RRD 30E	300	500	1,20
RRD 40E	400	500	1,50
RRD 50E	500	500	2,40
RRD 60E	600	500	2,90



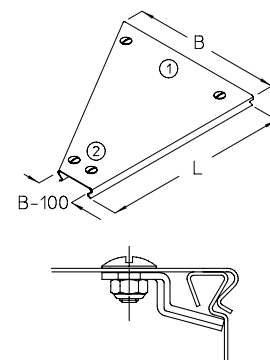
# Cable trays

## Cover

### RRDR cable tray reducer cover with bar lock

Please quote the design (left, centred, right) and the side width with your order. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

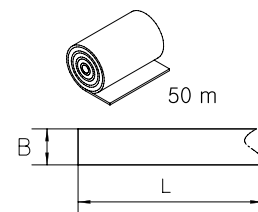
article number	B mm	L mm	G kg
<b>S</b>			
RRDR 20S	200	500	0,60
RRDR 30S	300	500	1,20
RRDR 40S	400	500	1,60
RRDR 50S	500	500	2,50
RRDR 60S	600	500	2,90
<b>F</b>			
RRDR 20F	200	500	0,70
RRDR 30F	300	500	1,30
RRDR 40F	400	500	1,70
RRDR 50F	500	500	2,70
RRDR 60F	600	500	3,20
<b>E</b>			
RRDR 20E	200	500	0,60
RRDR 30E	300	500	1,20
RRDR 40E	400	500	1,60
RRDR 50E	500	500	2,50
RRDR 60E	600	500	3,20

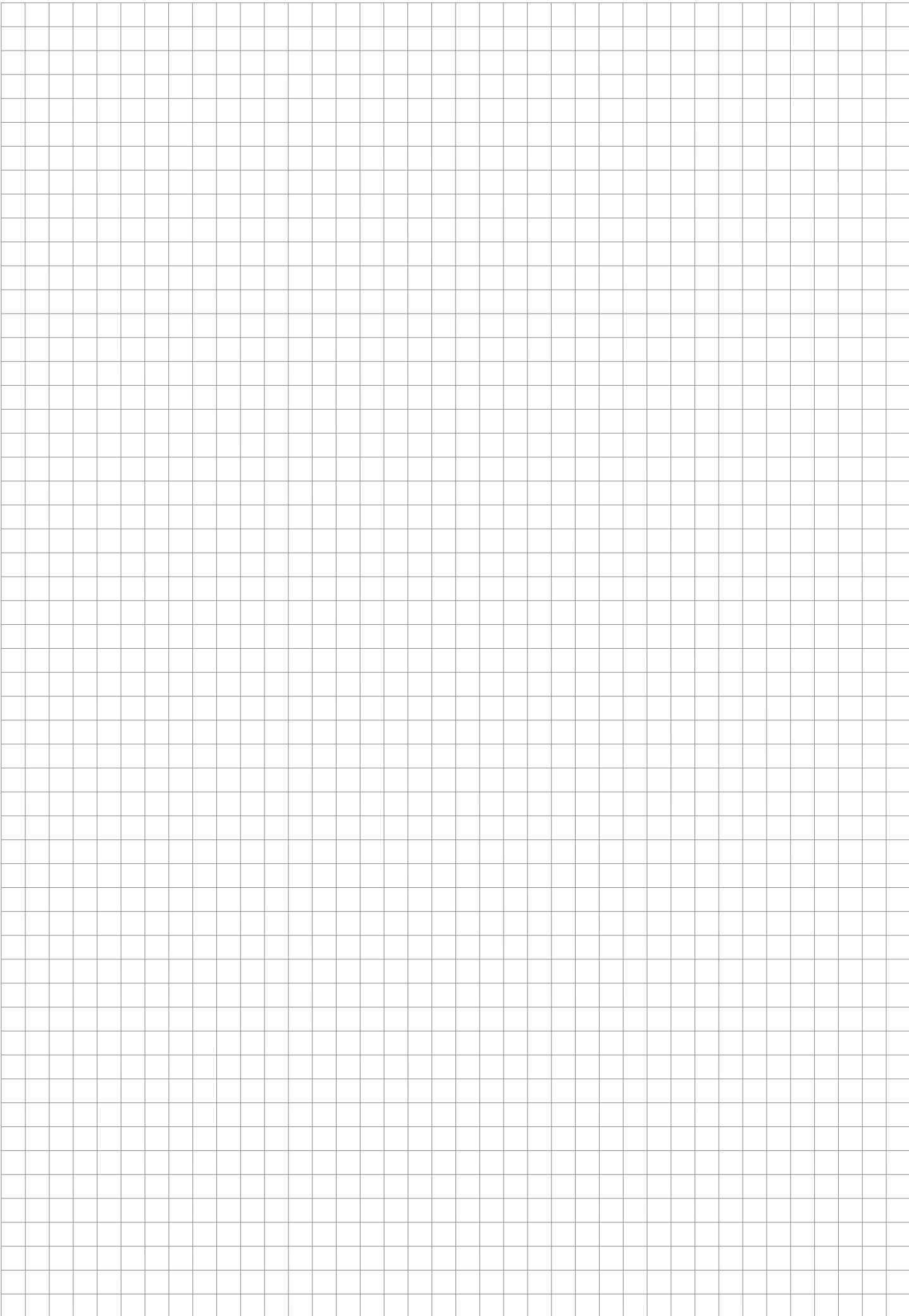


### MKB adhesive metal strip

For an application example, see the chapter assembly.

article number	B mm	L mm	G kg/m
<b>MKB</b>	50	50000	0,12







# Cable ladders

Cable ladders	C03-C06
Fittings	C07-C12
Cover	C13-C14
Accessories	C15-C21



# Numeric index

## Cable ladders

### E

**EL** Fiber cement plate [C20](#)

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### K

**KZF** cold zinc paint [C21](#)

**KZS** cold zinc spray [C21](#)

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### L

**LAD** cable ladder branch-piece cover [C14](#)

**LD** cable ladder cover [C13](#)

**LDR** cable ladder cover with turning bolt [C13](#)

**LD-SW** storm protection angle [C14](#)

**LGA 100** cable ladder branch-piece, height=100 mm

[C10](#)

**LGA 60** cable ladder branch-piece, height=60 mm [C10](#)

**LGAB 100** cable ladder outside bend, height=100 mm

[C08](#)

**LGAB 60** cable ladder outside bend, height=60 mm

[C08](#)

**LGG 100** cable ladder [C05](#)

**LGG 60** cable ladder [C03](#)

**LGGS 100** cable ladder [C06](#)

**LGGS 60** cable ladder [C04](#)

**LGHS-P** flange mounting clamp [C18](#)

**LGIB 100** cable ladder inside bend, height=100 mm

[C07](#)

**LGIB 60** cable ladder inside bend, height=60 mm [C07](#)

**LGK 100** cable ladder cross-piece, height=100 mm

[C12](#)

**LGK 60** cable ladder cross-piece, height=60 mm [C11](#)

**LGKAB** end plate, cable ladder [C19](#)

**LGTR 100** cable ladder barrier strip, height=80 mm [C18](#)

**LGTR 60** cable ladder barrier strip, height=33 mm [C17](#)

**LGV 100** cable ladder coupler, height=100 mm [C15](#)

**LGV 60** cable ladder coupler, height=60 mm [C15](#)

**LGVB 100** cable ladder vertical bend, height=100 mm

[C09](#)

**LGVB 60** cable ladder vertical bend, height=60 mm [C09](#)

**LGVB 100** cable ladder coupler, height=100 mm [C16](#)

**LGVB 60** cable ladder coupler, height=60 mm [C15](#)

**LGVV 100** cable ladder coupler, height=100 mm [C17](#)

**LGVV 60** cable ladder coupler, height=60 mm [C16](#)

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### M

**MP-L** assembly plate [C20](#)

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### S

**SL 100** protection end cap [C20](#)

**SL 60** protection end cap [C20](#)



# Cable ladders

## LGG 60 cable ladder, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.



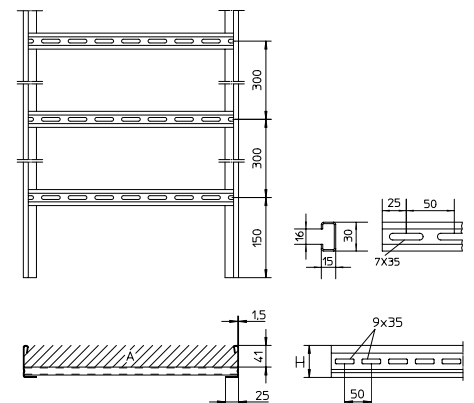
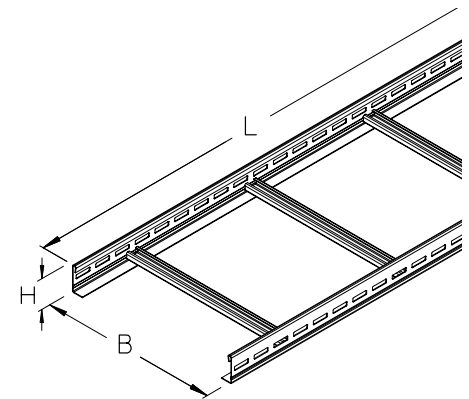
article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>Lk</sub> kN/m	P <sub>max</sub> kN	G kg
<b>S</b>							
LGG 60-20-3S	60	200	3000	81	0,23	1,5	7,92
LGG 60-30-3S	60	300	3000	122	0,34	1,5	8,61
LGG 60-40-3S	60	400	3000	162	0,45	1,5	9,30
LGG 60-50-3S	60	500	3000	203	0,57	1,5	9,98
LGG 60-60-3S	60	600	3000	243	0,68	1,5	10,67
LGG 60-20S	60	200	6000	81	0,23	1,5	15,84
LGG 60-30S	60	300	6000	122	0,34	1,5	17,22
LGG 60-40S	60	400	6000	162	0,45	1,5	18,59
LGG 60-50S	60	500	6000	203	0,57	1,5	19,96
LGG 60-60S	60	600	6000	243	0,68	1,5	21,34

<b>F</b>							
LGG 60-20-3F	60	200	3000	81	0,23	1,5	8,48
LGG 60-30-3F	60	300	3000	122	0,34	1,5	9,21
LGG 60-40-3F	60	400	3000	162	0,45	1,5	9,95
LGG 60-50-3F	60	500	3000	203	0,57	1,5	10,68
LGG 60-60-3F	60	600	3000	243	0,68	1,5	11,42
LGG 60-20F	60	200	6000	81	0,23	1,5	16,95
LGG 60-30F	60	300	6000	122	0,34	1,5	18,42
LGG 60-40F	60	400	6000	162	0,45	1,5	19,89
LGG 60-50F	60	500	6000	203	0,57	1,5	21,36
LGG 60-60F	60	600	6000	243	0,68	1,5	22,83

<b>E</b>							
LGG 60-20-3E	60	200	3000	81	0,23	1,5	7,97
LGG 60-30-3E	60	300	3000	122	0,34	1,5	8,66
LGG 60-40-3E	60	400	3000	162	0,45	1,5	9,35
LGG 60-50-3E	60	500	3000	203	0,57	1,5	10,05
LGG 60-60-3E	60	600	3000	243	0,68	1,5	10,74
LGG 60-20E	60	200	6000	81	0,23	1,5	15,95
LGG 60-30E	60	300	6000	122	0,34	1,5	17,33
LGG 60-40E	60	400	6000	162	0,45	1,5	18,71
LGG 60-50E	60	500	6000	203	0,57	1,5	20,09
LGG 60-60E	60	600	6000	243	0,68	1,5	21,47

accessories optional:

<b>LG V 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LG HS-P</b>	flange mounting clamp	(page C18)
<b>LG V H 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LG V V 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>LG TR 60</b>	cable ladder barrier strip, height=33 mm	(page C17)
<b>SL 60</b>	protection end cap	(page C20)
<b>KLU</b>	fixing set	(page G07)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)
<b>LG IB 60</b>	cable ladder inside bend, height=60 mm	(page C07)
<b>LG AB 60</b>	cable ladder outside bend, height=60 mm	(page C08)
<b>LG VB 60</b>	cable ladder vertical bend, height=60 mm	(page C09)
<b>LG A 60</b>	cable ladder branch-piece, height=60 mm	(page C10)
<b>LG KAB</b>	end plate, cable ladder	(page C19)
<b>LG K 60</b>	cable ladder cross-piece, height=60 mm	(page C11)



# Cable ladders

## LGGS 60 cable ladder, heavy, height=60 mm

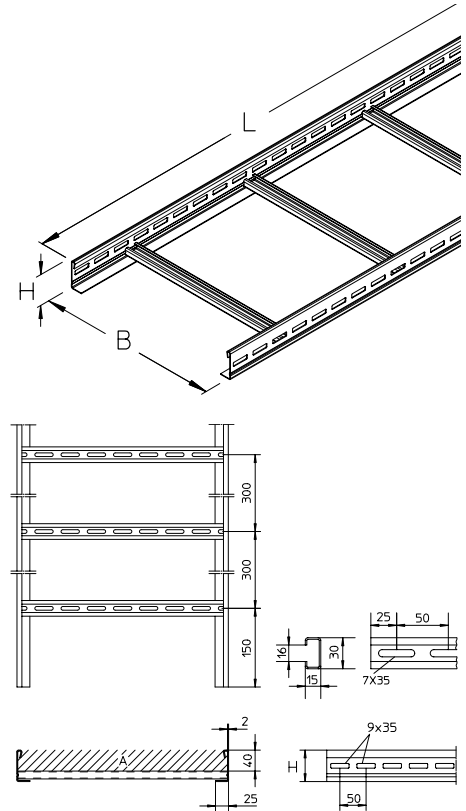
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For a load diagram, see the chapter planning.  
For an application example, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg
<b>S</b>						
LGGS 60-20-3S	60	200	3000	81	0,23	10,41
LGGS 60-30-3S	60	300	3000	122	0,34	11,29
LGGS 60-40-3S	60	400	3000	162	0,45	12,17
LGGS 60-50-3S	60	500	3000	203	0,57	13,06
LGGS 60-60-3S	60	600	3000	243	0,68	13,94
LGGS 60-20S	60	200	6000	81	0,23	20,81
LGGS 60-30S	60	300	6000	122	0,34	22,58
LGGS 60-40S	60	400	6000	162	0,45	24,35
LGGS 60-50S	60	500	6000	203	0,57	26,12
LGGS 60-60S	60	600	6000	243	0,68	27,89
<b>F</b>						
LGGS 60-20-3F	60	200	3000	81	0,23	11,13
LGGS 60-30-3F	60	300	3000	122	0,34	12,08
LGGS 60-40-3F	60	400	3000	162	0,45	13,03
LGGS 60-50-3F	60	500	3000	203	0,57	13,97
LGGS 60-60-3F	60	600	3000	243	0,68	14,92
LGGS 60-20F	60	200	6000	81	0,23	22,27
LGGS 60-30F	60	300	6000	122	0,34	24,16
LGGS 60-40F	60	400	6000	162	0,45	26,05
LGGS 60-50F	60	500	6000	203	0,57	27,95
LGGS 60-60F	60	600	6000	243	0,68	29,84

accessories optional:

<b>LGIB 60</b>	cable ladder inside bend, height=60 mm	(page C07)
<b>LGAB 60</b>	cable ladder outside bend, height=60 mm	(page C08)
<b>LGVB 60</b>	cable ladder vertical bend, height=60 mm	(page C09)
<b>LGA 60</b>	cable ladder branch-piece, height=60 mm	(page C10)
<b>LGK 60</b>	cable ladder cross-piece, height=60 mm	(page C11)
<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVH 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>LGTR 60</b>	cable ladder barrier strip, height=33 mm	(page C17)
<b>SL 60</b>	protection end cap	(page C20)
<b>LGKAB</b>	end plate, cable ladder	(page C19)
<b>KLU</b>	fixing set	(page G07)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



# Cable ladders

## LGG 100 cable ladder, height=100 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For a load diagram, see the chapter planning.  
For an application example, see the chapter assembly.



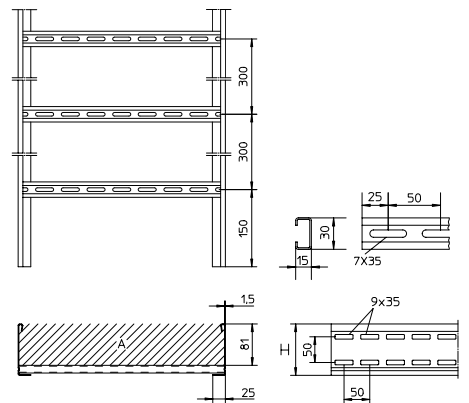
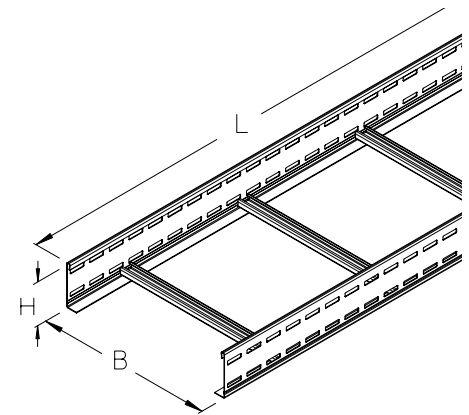
article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg
<b>S</b>						
LGG 100-20-3S	100	200	3000	161	0,45	10,37
LGG 100-30-3S	100	300	3000	242	0,68	11,06
LGG 100-40-3S	100	400	3000	322	0,90	11,75
LGG 100-50-3S	100	500	3000	403	1,13	12,43
LGG 100-60-3S	100	600	3000	483	1,35	13,12
LGG 100-20S	100	200	6000	161	0,45	20,75
LGG 100-30S	100	300	6000	242	0,68	22,12
LGG 100-40S	100	400	6000	322	0,90	23,49
LGG 100-50S	100	500	6000	403	1,13	24,87
LGG 100-60S	100	600	6000	483	1,35	26,24

<b>F</b>						
LGG 100-20-3F	100	200	3000	161	0,45	11,10
LGG 100-30-3F	100	300	3000	242	0,68	11,83
LGG 100-40-3F	100	400	3000	322	0,90	12,57
LGG 100-50-3F	100	500	3000	403	1,13	13,30
LGG 100-60-3F	100	600	3000	483	1,35	14,04
LGG 100-20F	100	200	6000	161	0,45	22,20
LGG 100-30F	100	300	6000	242	0,68	23,67
LGG 100-40F	100	400	6000	322	0,90	25,14
LGG 100-50F	100	500	6000	403	1,13	26,61
LGG 100-60F	100	600	6000	483	1,35	28,08

<b>E</b>						
LGG 100-20-3E	100	200	3000	161	0,45	10,44
LGG 100-30-3E	100	300	3000	242	0,68	11,13
LGG 100-40-3E	100	400	3000	322	0,90	11,82
LGG 100-50-3E	100	500	3000	403	1,13	12,51
LGG 100-60-3E	100	600	3000	483	1,35	13,20
LGG 100-20E	100	200	6000	161	0,45	20,88
LGG 100-30E	100	300	6000	242	0,68	22,26
LGG 100-40E	100	400	6000	322	0,90	23,64
LGG 100-50E	100	500	6000	403	1,13	25,03
LGG 100-60E	100	600	6000	483	1,35	26,41

accessories optional:

<b>LGHS-P</b>	flange mounting clamp	(page C18)
<b>LGIB 100</b>	cable ladder inside bend, height=100 mm	(page C07)
<b>LGAB 100</b>	cable ladder outside bend, height=100 mm	(page C08)
<b>LGVB 100</b>	cable ladder vertical bend, height=100 mm	(page C09)
<b>LGA 100</b>	cable ladder branch-piece, height=100 mm	(page C10)
<b>LGK 100</b>	cable ladder cross-piece, height=100 mm	(page C12)
<b>LGCV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVBH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVBV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>LGTR 100</b>	cable ladder barrier strip, height=80 mm	(page C18)
<b>SL 100</b>	protection end cap	(page C20)
<b>LGKAB</b>	end plate, cable ladder	(page C19)
<b>KLU</b>	fixing set	(page G07)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



# Cable ladders

## LGGS 100 cable ladder, heavy, height=100 mm

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

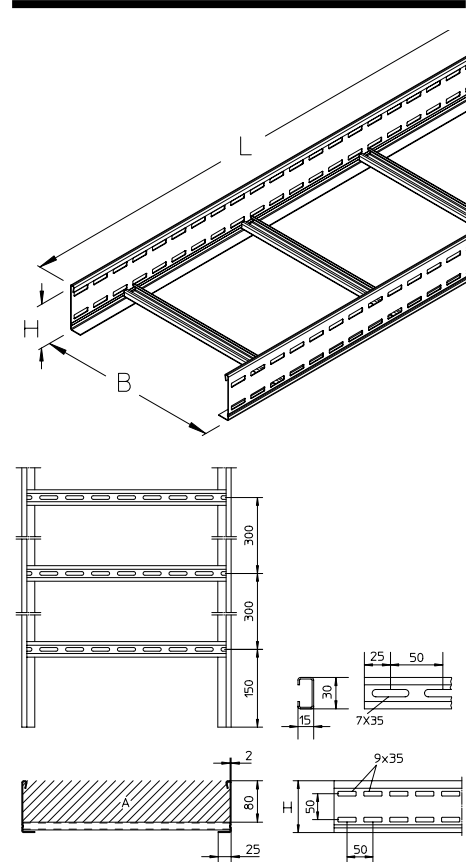


article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg
<b>S</b>						
LGGS 100-20-3S	100	200	3000	161	0,45	13,58
LGGS 100-30-3S	100	300	3000	242	0,68	14,46
LGGS 100-40-3S	100	400	3000	322	0,90	15,35
LGGS 100-50-3S	100	500	3000	403	1,13	16,23
LGGS 100-60-3S	100	600	3000	483	1,35	17,12
LGGS 100-20S	100	200	6000	161	0,45	27,16
LGGS 100-30S	100	300	6000	242	0,68	28,93
LGGS 100-40S	100	400	6000	322	0,90	30,70
LGGS 100-50S	100	500	6000	403	1,13	32,47
LGGS 100-60S	100	600	6000	483	1,35	34,23

<b>F</b>						
LGGS 100-20-3F	100	200	3000	161	0,45	14,53
LGGS 100-30-3F	100	300	3000	242	0,68	15,48
LGGS 100-40-3F	100	400	3000	322	0,90	16,42
LGGS 100-50-3F	100	500	3000	403	1,13	17,37
LGGS 100-60-3F	100	600	3000	483	1,35	18,32
LGGS 100-20F	100	200	6000	161	0,45	29,06
LGGS 100-30F	100	300	6000	242	0,68	30,95
LGGS 100-40F	100	400	6000	322	0,90	32,85
LGGS 100-50F	100	500	6000	403	1,13	34,74
LGGS 100-60F	100	600	6000	483	1,35	36,63

accessories optional:

<b>LGIB 100</b>	cable ladder inside bend, height=100 mm	(page C07)
<b>LGAB 100</b>	cable ladder outside bend, height=100 mm	(page C08)
<b>LGVB 100</b>	cable ladder vertical bend, height=100 mm	(page C09)
<b>LGA 100</b>	cable ladder branch-piece, height=100 mm	(page C10)
<b>LGK 100</b>	cable ladder cross-piece, height=100 mm	(page C12)
<b>LGV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>LGTR 100</b>	cable ladder barrier strip, height=80 mm	(page C18)
<b>SL 100</b>	protection end cap	(page C20)
<b>LGKAB</b>	end plate, cable ladder	(page C19)
<b>KLU</b>	fixing set	(page G07)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



# Cable ladders

## Fittings

### LGIB 60 cable ladder inside bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGIB 60-20F	60	200	400	3,00
LGIB 60-30F	60	300	400	3,47
LGIB 60-40F	60	400	400	3,95
LGIB 60-50F	60	500	400	5,16
LGIB 60-60F	60	600	400	5,78
<b>E</b>				
LGIB 60-20E	60	200	400	2,82
LGIB 60-30E	60	300	400	3,27
LGIB 60-40E	60	400	400	3,72
LGIB 60-50E	60	500	400	4,85
LGIB 60-60E	60	600	400	5,44

accessories optional:

<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVH 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>KLU</b>	fixing set	(page G07)

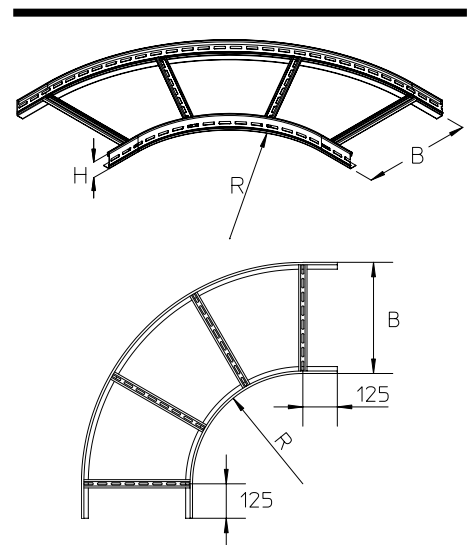
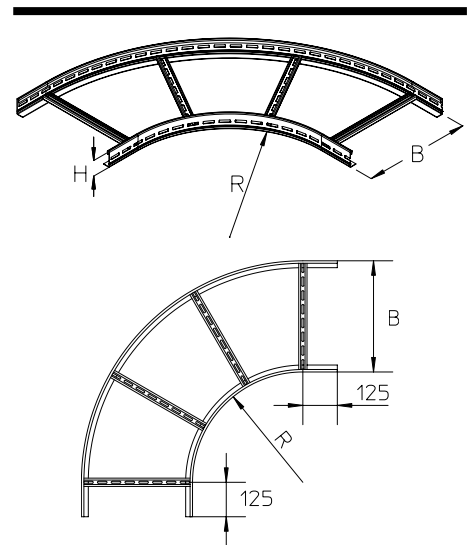
### LGIB 100 cable ladder inside bend, height=100 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGIB 100-20F	100	200	400	3,90
LGIB 100-30F	100	300	400	4,45
LGIB 100-40F	100	400	400	4,99
LGIB 100-50F	100	500	400	6,27
LGIB 100-60F	100	600	400	6,96
<b>E</b>				
LGIB 100-20E	100	200	400	3,67
LGIB 100-30E	100	300	400	4,18
LGIB 100-40E	100	400	400	4,70
LGIB 100-50E	100	500	400	5,90
LGIB 100-60E	100	600	400	6,55

accessories optional:

<b>LGV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>KLU</b>	fixing set	(page G07)



# Cable ladders

## Fittings

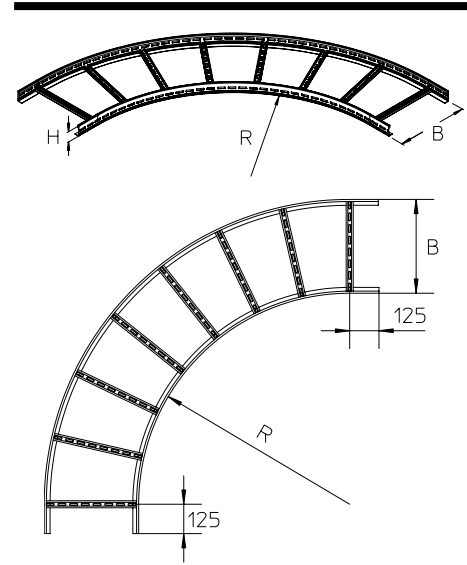
### LGAB 60 cable ladder outside bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGAB 60-20F	60	200	700	4,39
LGAB 60-30F	60	300	800	5,38
LGAB 60-40F	60	400	900	6,95
LGAB 60-50F	60	500	1000	8,09
LGAB 60-60F	60	600	1100	9,23
<b>E</b>				
LGAB 60-20E	60	200	700	4,13
LGAB 60-30E	60	300	800	5,06
LGAB 60-40E	60	400	900	6,54
LGAB 60-50E	60	500	1000	7,61
LGAB 60-60E	60	600	1100	8,68

accessories optional:

<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVH 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>KLU</b>	fixing set	(page G07)



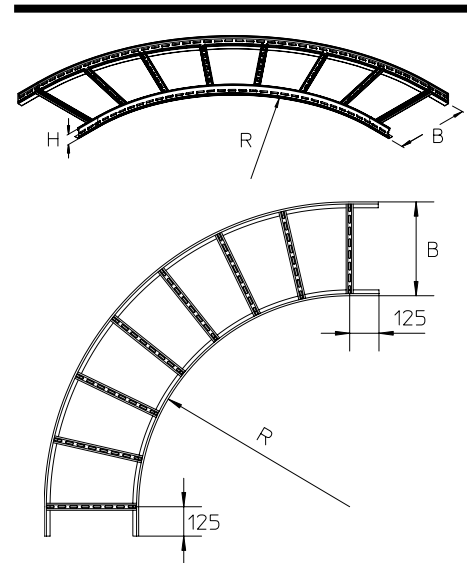
### LGAB 100 cable ladder outside bend, height=100 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGAB 100-20F	100	200	700	5,71
LGAB 100-30F	100	300	800	6,90
LGAB 100-40F	100	400	900	8,68
LGAB 100-50F	100	500	1000	10,03
LGAB 100-60F	100	600	1100	11,37
<b>E</b>				
LGAB 100-20E	100	200	700	5,37
LGAB 100-30E	100	300	800	6,49
LGAB 100-40E	100	400	900	8,17
LGAB 100-50E	100	500	1000	9,43
LGAB 100-60E	100	600	1100	10,69

accessories optional:

<b>LGV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>KLU</b>	fixing set	(page G07)



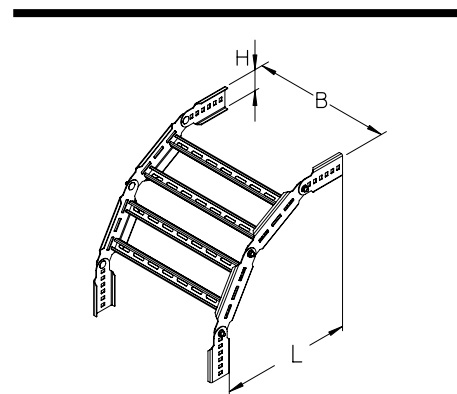
# Cable ladders

## Fittings

### LGVB 60 cable ladder vertical bend, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

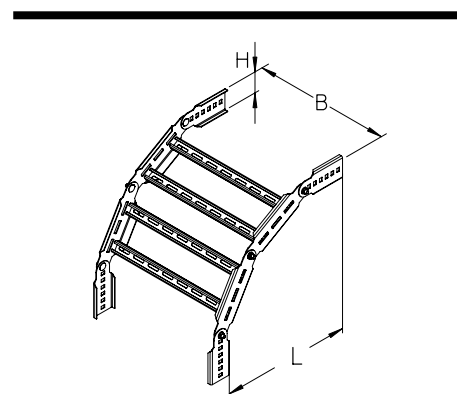
article number	H mm	B mm	L mm	G kg
<b>F</b>				
LGVB 60-20F	60	200	350	2,26
LGVB 60-30F	60	300	350	2,55
LGVB 60-40F	60	400	350	2,85
LGVB 60-50F	60	500	350	3,14
LGVB 60-60F	60	600	350	3,44
<b>E</b>				
LGVB 60-20E	60	200	350	2,13
LGVB 60-30E	60	300	350	2,40
LGVB 60-40E	60	400	350	2,68
LGVB 60-50E	60	500	350	2,95
LGVB 60-60E	60	600	350	3,23



### LGVB 100 cable ladder vertical bend, height=100 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
LGVB 100-20F	100	200	350	2,96
LGVB 100-30F	100	300	350	3,26
LGVB 100-40F	100	400	350	3,55
LGVB 100-50F	100	500	350	3,85
LGVB 100-60F	100	600	350	4,14
<b>E</b>				
LGVB 100-20E	100	200	350	2,79
LGVB 100-30E	100	300	350	3,06
LGVB 100-40E	100	400	350	3,34
LGVB 100-50E	100	500	350	3,62
LGVB 100-60E	100	600	350	3,89



# Cable ladders

## Fittings

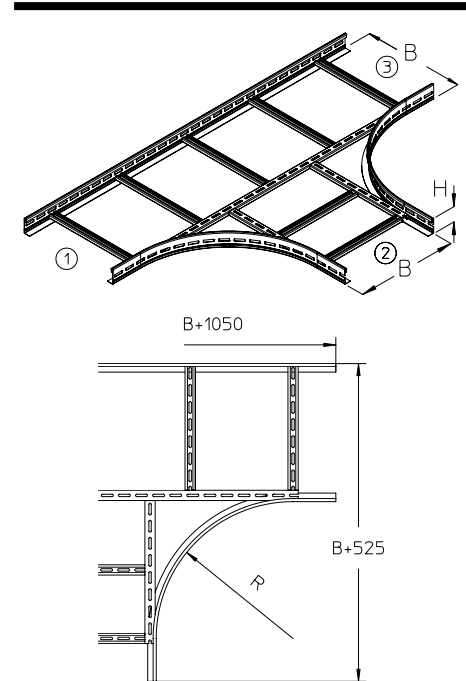
### LGA 60 cable ladder branch-piece, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGA 60-20F	60	200	400	4,69
LGA 60-30F	60	300	400	5,39
LGA 60-40F	60	400	400	6,10
LGA 60-50F	60	500	400	6,80
LGA 60-60F	60	600	400	7,51
<b>E</b>				
LGA 60-20E	60	200	400	4,41
LGA 60-30E	60	300	400	5,07
LGA 60-40E	60	400	400	5,74
LGA 60-50E	60	500	400	6,40
LGA 60-60E	60	600	400	7,06

accessories optional:

<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVH 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>KLU</b>	fixing set	(page G07)



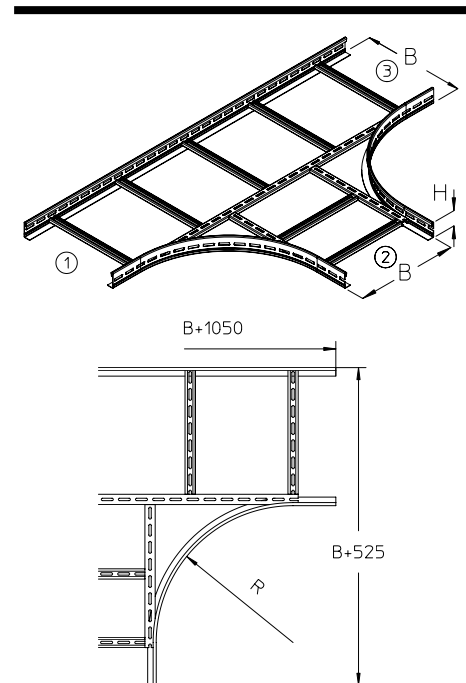
### LGA 100 cable ladder branch-piece, height=100 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGA 100-20F	100	200	400	5,62
LGA 100-30F	100	300	400	6,37
LGA 100-40F	100	400	400	7,12
LGA 100-50F	100	500	400	7,86
LGA 100-60F	100	600	400	8,61
<b>E</b>				
LGA 100-20E	100	200	400	5,28
LGA 100-30E	100	300	400	5,99
LGA 100-40E	100	400	400	6,69
LGA 100-50E	100	500	400	7,40
LGA 100-60E	100	600	400	8,10

accessories optional:

<b>LGV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>KLU</b>	fixing set	(page G07)





# Cable ladders

## Fittings

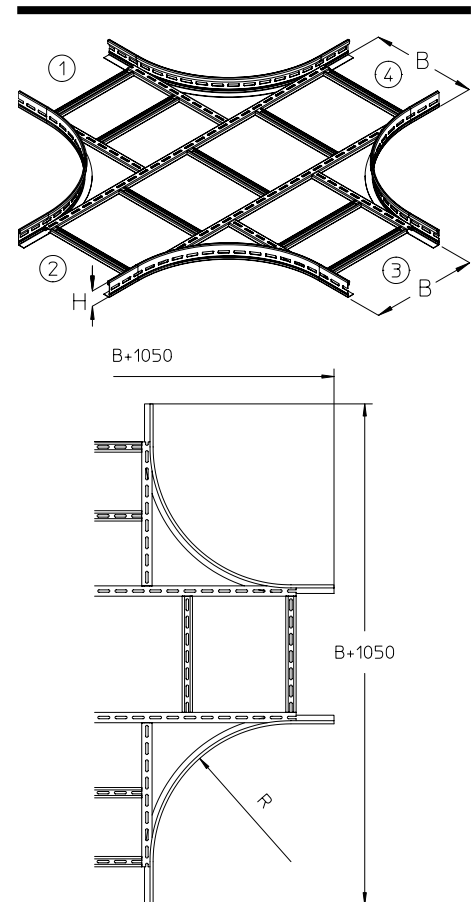
### LGK 60 cable ladder cross-piece, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGK 60-20F	60	200	400	7,78
LGK 60-30F	60	300	400	8,59
LGK 60-40F	60	400	400	9,40
LGK 60-50F	60	500	400	10,21
LGK 60-60F	60	600	400	11,02
<b>E</b>				
LGK 60-20E	60	200	400	7,32
LGK 60-30E	60	300	400	8,08
LGK 60-40E	60	400	400	8,84
LGK 60-50E	60	500	400	9,60
LGK 60-60E	60	600	400	10,36

accessories optional:

<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVH 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGKV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>KLU</b>	fixing set	(page G07)



# Cable ladders

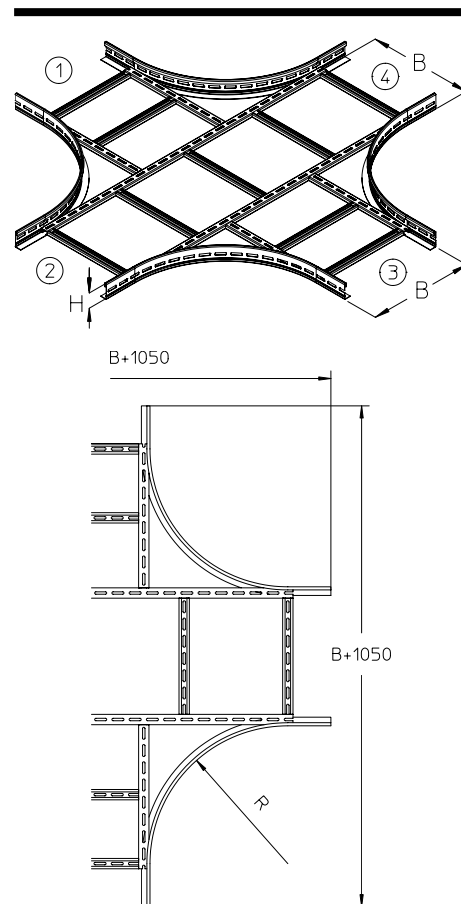
## Fittings

### LGK 100 cable ladder cross-piece, height=100 mm

article number	H mm	B mm	R mm	G kg
<b>F</b>				
LGK 100-20F	100	200	400	9,32
LGK 100-30F	100	300	400	10,13
LGK 100-40F	100	400	400	10,94
LGK 100-50F	100	500	400	11,74
LGK 100-60F	100	600	400	12,55
<b>E</b>				
LGK 100-20E	100	200	400	8,77
LGK 100-30E	100	300	400	9,53
LGK 100-40E	100	400	400	10,29
LGK 100-50E	100	500	400	11,05
LGK 100-60E	100	600	400	11,81

accessories optional:

<b>LGV 100</b>	cable ladder coupler, height=100 mm	(page C15)
<b>LGVH 100</b>	cable ladder coupler, height=100 mm	(page C16)
<b>LGVV 100</b>	cable ladder coupler, height=100 mm	(page C17)
<b>KLU</b>	fixing set	(page G07)



# Cable ladders

## Cover

### LD cable ladder cover

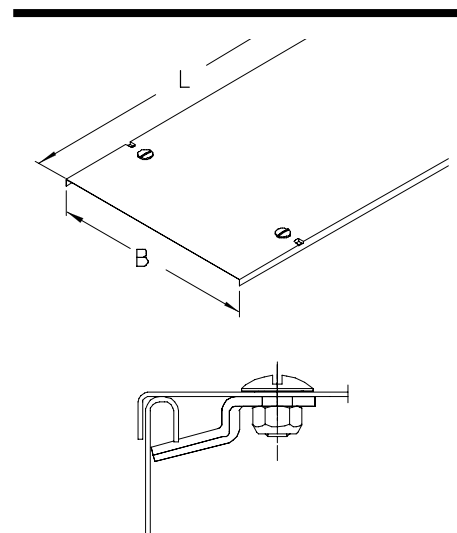
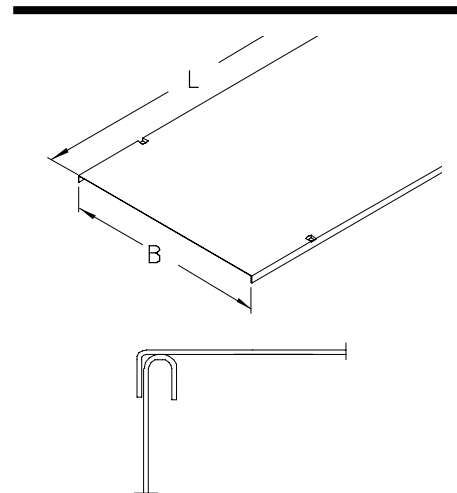
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	L mm	G kg
<b>S</b>			
LD 20S	206	3000	4,10
LD 30S	306	3000	7,80
LD 40S	406	3000	10,10
LD 50S	506	3000	15,60
LD 60S	606	3000	18,50
<b>F</b>			
LD 20F	206	3000	4,70
LD 30F	306	3000	8,60
LD 40F	406	3000	11,20
LD 50F	506	3000	17,00
LD 60F	606	3000	20,30
<b>E</b>			
LD 20E	206	3000	4,40
LD 30E	306	3000	7,80
LD 40E	406	3000	10,20
LD 50E	506	3000	15,10
LD 60E	606	3000	17,60

### LDR cable ladder cover with turning bolt

Installation of covers in outdoor areas requires additional provisions against storm forces. Turning bolts are in no case sufficient as security provision. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	L mm	G kg
<b>S</b>			
LDR 20S	206	3000	4,10
LDR 30S	306	3000	7,80
LDR 40S	406	3000	10,10
LDR 50S	506	3000	15,60
LDR 60S	606	3000	18,50
<b>F</b>			
LDR 20F	206	3000	4,70
LDR 30F	306	3000	8,60
LDR 40F	406	3000	11,20
LDR 50F	506	3000	17,00
LDR 60F	606	3000	20,30
<b>E</b>			
LDR 20E	206	3000	4,40
LDR 30E	306	3000	7,80
LDR 40E	406	3000	10,20
LDR 50E	506	3000	15,10
LDR 60E	606	3000	17,60



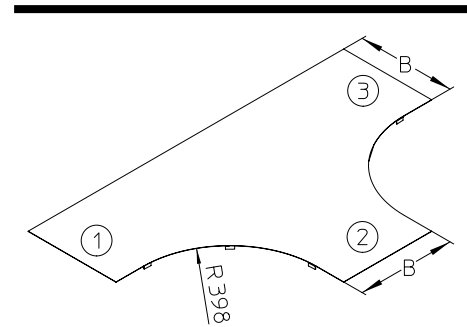
# Cable ladders

## Cover

### LAD cable ladder branch-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B mm	R mm	t mm	G kg
<b>S</b>				
LAD 20S	204	398	0,75	2,67
LAD 30S	304	398	1,00	5,14
LAD 40S	404	398	1,00	6,93
LAD 50S	504	398	1,25	11,06
LAD 60S	604	398	1,25	13,68
<b>F</b>				
LAD 20F	204	398	0,75	2,86
LAD 30F	304	398	1,00	5,50
LAD 40F	404	398	1,00	7,42
LAD 50F	504	398	1,25	11,83
LAD 60F	604	398	1,25	14,64



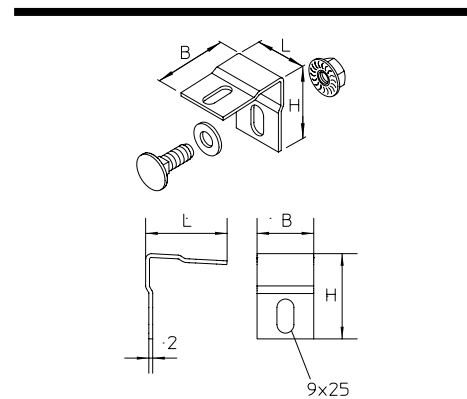
### LD-SW storm protection angle

Storm protection angles, suitable for outdoor use. According to assembly instructions you should use at least 6 safety elements for each 3 meters cable path cover.  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
LD-SW F	46	30	30	2	0,15
<b>E</b>					
LD-SW E	46	30	30	2	0,15

accessories included:

- 1 x **KLS 8x16E** fixing set (page G34)
- 1 x **UVS M8** captive washer (page G40)



# Cable ladders

## Accessories

### LGV 60 cable ladder coupler, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGV 60S</b>	60	150	0,22

accessories included:  
2 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGV 60F</b>	60	150	0,23

article number	H mm	B mm	G kg
<b>E</b>			
<b>LGV 60E</b>	60	150	0,22

accessories included:  
2 x **KLS 8x16E** fixing set (page G34)

### LGV 100 cable ladder coupler, height=100 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGV 100S</b>	100	220	0,41

accessories included:  
4 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGV 100F</b>	100	220	0,42

article number	H mm	B mm	G kg
<b>E</b>			
<b>LGV 100E</b>	100	220	0,41

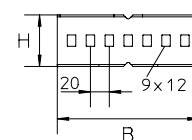
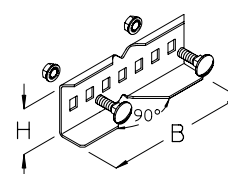
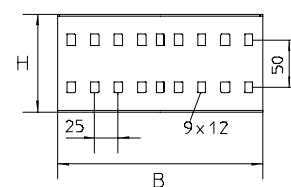
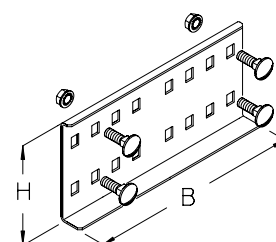
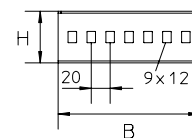
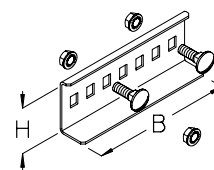
accessories included:  
4 x **KLS 8x16E** fixing set (page G34)

### LGVH 60 cable ladder coupler, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVH 60S</b>	60	150	0,20

accessories included:  
2 x **KLS 8x16** fixing set (page G33)



# Cable ladders

## Accessories

### LGVH 60 cable ladder coupler, height=60 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVH 60F</b>	60	150	0,22
<b>E</b>			
<b>LGVH 60E</b>	60	150	0,20

accessories included:  
2 x **KLS 8x16E** fixing set (page G34)

### LGVH 100 cable ladder coupler, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVH 100S</b>	100	220	0,41

accessories included:  
4 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVH 100F</b>	100	220	0,42
<b>E</b>			
<b>LGVH 100E</b>	100	220	0,41

accessories included:  
4 x **KLS 8x16E** fixing set (page G34)

### LGVV 60 cable ladder coupler, height=60 mm

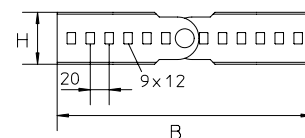
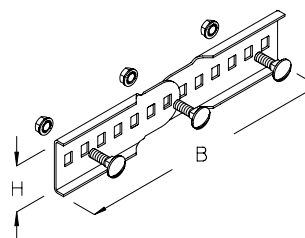
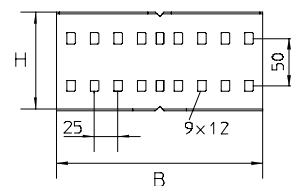
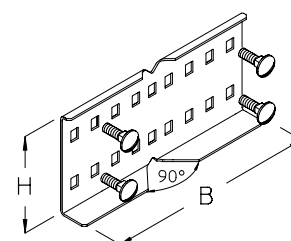
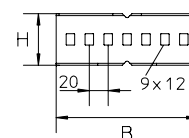
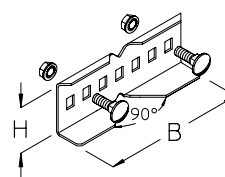
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVV 60S</b>	60	270	0,39

accessories included:  
3 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVV 60F</b>	60	270	0,42
<b>E</b>			
<b>LGVV 60E</b>	60	270	0,39

accessories included:  
3 x **KLS 8x16E** fixing set (page G34)



# Cable ladders

## Accessories

### LGVV 100 cable ladder coupler, height=100 mm

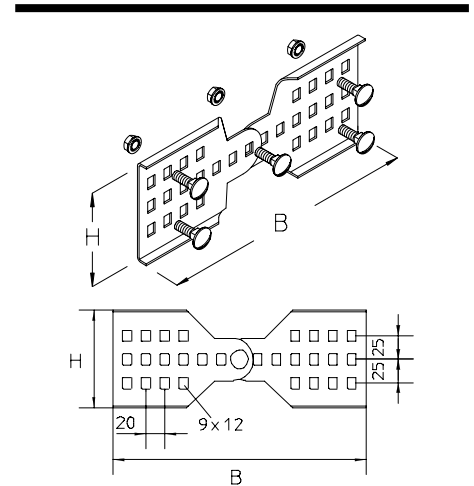
article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVV 100S</b>	100	270	0,61

accessories included:  
5 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVV 100F</b>	100	270	0,64

article number	H mm	B mm	G kg
<b>E</b>			
<b>LGVV 100E</b>	100	270	0,61

accessories included:  
5 x **KLS 8x16E** fixing set (page G34)



### LGTR 60 cable ladder barrier strip, height=33 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>LGTR 60S</b>	33	3000	1,50

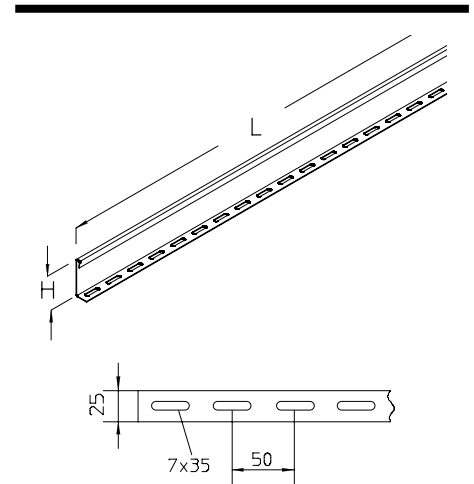
accessories included:  
3 x **FKS 6x10** slotted cylinder head screw, DIN 84 (page G35)  
3 x **AM16 M6F** channel nut, B7 (page G45)

article number	H mm	L mm	G kg
<b>F</b>			
<b>LGTR 60F</b>	33	3000	1,60

accessories included:  
3 x **FKS 6x10E** slotted cylinder head screw, DIN 84 (page G35)  
3 x **AM16 M6F** channel nut, B7 (page G45)

article number	H mm	L mm	G kg
<b>E</b>			
<b>LGTR 60E</b>	33	3000	1,50

accessories included:  
3 x **FKS 6x10E** slotted cylinder head screw, DIN 84 (page G35)  
3 x **AM16 M6E4** channel nut, B7 (page G45)



# Cable ladders

## Accessories

### LGTR 100 cable ladder barrier strip, height=80 mm

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>LGTR 100S</b>	80	3000	2,70

accessories included:

- 3 x **FKS 6x10** slotted cylinder head screw, DIN 84 (page G35)
- 3 x **AM16 M6F** channel nut, B7 (page G45)

article number	H mm	L mm	G kg
<b>F</b>			
<b>LGTR 100F</b>	80	3000	2,90

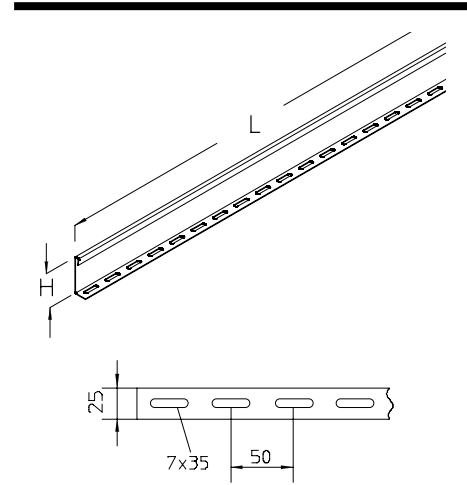
accessories included:

- 3 x **FKS 6x10E** slotted cylinder head screw, DIN 84 (page G35)
- 3 x **AM16 M6F** channel nut, B7 (page G45)

article number	H mm	L mm	G kg
<b>E</b>			
<b>LGTR 100E</b>	80	3000	2,70

accessories included:

- 3 x **FKS 6x10E** slotted cylinder head screw, DIN 84 (page G35)
- 3 x **AM16 M6E4** channel nut, B7 (page G45)



### LGHS-P flange mounting clamp

article number	G kg
<b>F</b>	
<b>LGHS-P S</b>	0,68

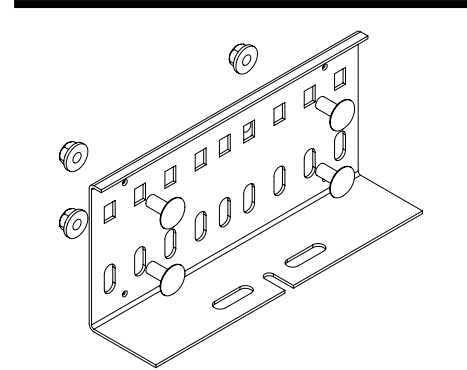
accessories included:

- 4 x **FRSV 8x16** round-head screw with short square (page G34)
- 4 x **SEMS 8** hexagon nut, self-locking, DIN 6923 (page G41)
- 1 x **FRS 8x50** round-head screw with square, DIN 603 (page G35)
- 1 x **US 8x17** square washer, DIN 125 (page G39)
- 1 x **SKLL F** clamping claw (page D23)
- 1 x **SEM 8** hexagon-nut, DIN 934 (page G41)

article number	G kg
<b>F</b>	
<b>LGHS-P F</b>	0,71

accessories included:

- 4 x **FRSV 8x16E** round-head screw with short square (page G35)
- 4 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)
- 1 x **FRS 8x50E** round-head screw with square, DIN 603 (page G35)
- 1 x **US 8x17E** square washer, DIN 125 (page G40)
- 1 x **SKLL F** clamping claw (page D23)
- 1 x **SEM 8E** hexagon-nut, DIN 934 (page G41)





# Cable ladders

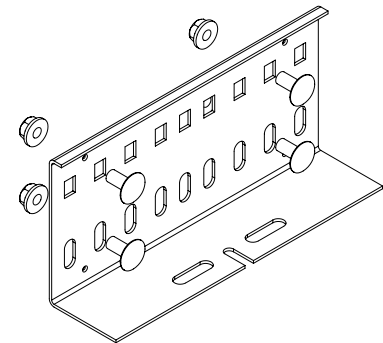
## Accessories

### LGHS-P flange mounting clamp

article number	G	kg
<b>F</b>		
<b>LGHS-P E</b>	0,68	

accessories included:

4 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
4 x <b>SEMS 8E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRS 8x50E</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
1 x <b>SKLL E</b>	clamping claw	(page D23)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)



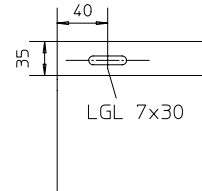
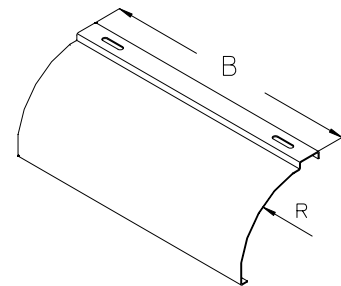
### LGKAB end plate, cable ladder

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B	R	G
	mm	mm	kg
<b>S</b>			
<b>LGKAB 20S</b>	140	100	0,41
<b>LGKAB 30S</b>	240	100	0,68
<b>LGKAB 40S</b>	340	100	0,95
<b>LGKAB 50S</b>	440	100	1,22
<b>LGKAB 60S</b>	540	100	1,49

accessories included:

2 x <b>AM16 M6F</b>	channel nut, B7	(page G45)
2 x <b>FKS 6x10</b>	slotted cylinder head screw, DIN 84	(page G35)



article number	B	R	G
	mm	mm	kg
<b>F</b>			
<b>LGKAB 20F</b>	140	100	0,44
<b>LGKAB 30F</b>	240	100	0,73
<b>LGKAB 40F</b>	340	100	1,02
<b>LGKAB 50F</b>	440	100	1,31
<b>LGKAB 60F</b>	540	100	1,60

accessories included:

2 x <b>FKS 6x10E</b>	slotted cylinder head screw, DIN 84	(page G35)
2 x <b>AM16 M6F</b>	channel nut, B7	(page G45)

article number	B	R	G
	mm	mm	kg
<b>E</b>			
<b>LGKAB 20E</b>	140	100	0,41
<b>LGKAB 30E</b>	240	100	0,68
<b>LGKAB 40E</b>	340	100	0,95
<b>LGKAB 50E</b>	440	100	1,22
<b>LGKAB 60E</b>	540	100	1,49

accessories included:

2 x <b>FKS 6x10E</b>	slotted cylinder head screw, DIN 84	(page G35)
2 x <b>AM16 M6E4</b>	channel nut, B7	(page G45)

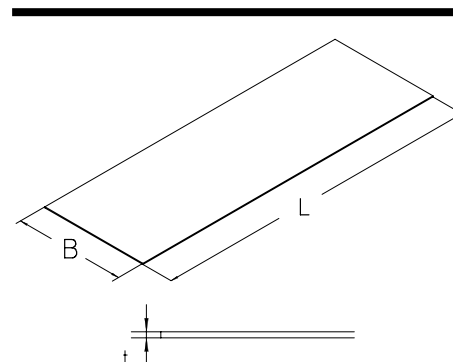
# Cable ladders

## Accessories

### EL Fiber cement plate

For an application example, see the chapter assembly.

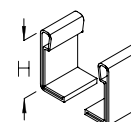
article number	B mm	L mm	t mm	G kg
<b>EL 20</b>	190	1250	4	1,30
<b>EL 30</b>	290	1250	4	2,00
<b>EL 40</b>	390	1250	4	2,60
<b>EL 50</b>	490	1250	4	3,30
<b>EL 60</b>	590	1250	4	4,00



### SL 60 protection end cap

For an application example, see the chapter assembly.

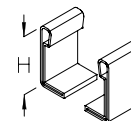
article number	H mm	G kg/set
<b>PE</b>		
<b>SL 60</b>	60	0,03



### SL 100 protection end cap

For an application example, see the chapter assembly.

article number	H mm	G kg/set
<b>PE</b>		
<b>SL 100</b>	100	0,04



### MP-L assembly plate

article number	H mm	B mm	G kg
<b>S</b>			
<b>MP-L 60S</b>	185	120	0,16

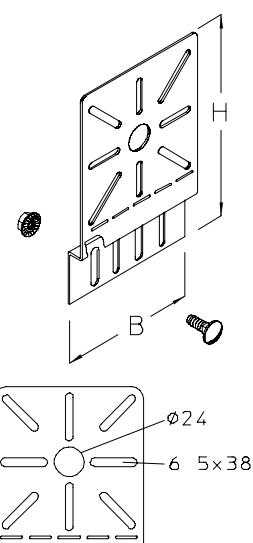
accessories included:  
1 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>MP-L 60F</b>	185	120	0,17

accessories included:  
1 x **KLS 8x16E** fixing set (page G34)

article number	H mm	B mm	G kg
<b>E4</b>			
<b>MP-L 60E4</b>	185	120	0,16

accessories included:  
1 x **SES 8x20E4** hexagon head bolt, DIN 933 (page G38)  
1 x **SEM 8E4** hexagon-nut, DIN 934 (page G41)  
1 x **US 8x17E4** square washer, DIN 125 (page G40)



# Cable ladders

## Accessories

### **KZF** cold zinc paint

For assembly instructions, see the chapter assembly.

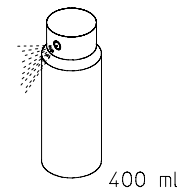
article number	l ml	G kg
<b>KZF</b>	750	1,93



### **KZS** cold zinc spray

For assembly instructions, see the chapter assembly.

article number	l ml	G kg
<b>KZS</b>	400	0,40





# Wide-span systems

Wide-span systems	<a href="#">D03-D06</a>
Fittings	<a href="#">D07-D14</a>
Cover	<a href="#">D15-D19</a>
Accessories	<a href="#">D20-D29</a>



# Numeric index

## Wide-span systems

### E

**EBW** Corner fixing [D20](#)

---

### K

**KZF** cold zinc paint [D29](#)

**KZS** cold zinc spray [D29](#)

---

### S

**SKLL** clamping claw [D23](#)

**SWP** protection end cap [D28](#)

---

### V

**VB** connection plate [D28](#)

---

### W

**WPAD** wide-span branch-piece cover [D18](#)

**WP-AH** spacer sleeve [D16](#)

**WPBD** wide-span bend cover [D17](#)

**WPD** wide-span cover [D15](#)

**WPD-A** cover elevator [D15](#)

**WPD-K** cover clamp [D15](#)

**WPDFD** wide-span outside riser cover [D18](#)

**WPFDK** fitting cover hook clip [D16](#)

**WPFDKA** fitting cover hook clip, elevated [D16](#)

**WPHS-A** flange mounting clamp (C-profiles) [D22](#)

**WPHS-IS** isolation strip [D23](#)

**WPHS-K** flange mounting clamp (brackets) [D21](#)

**WPHS-P** flange mounting clamp (profiles) [D22](#)

**WPKAB** end plate [D27](#)

**WPKD** wide-span cross-piece cover [D19](#)

**WPL 120** wide-span cable ladder, height=120 mm [D03](#)

**WPL 150** wide-span cable ladder, height=150 mm [D04](#)

**WPLA 120** wide-span branch-piece, height=120 mm

[D09](#)

**WPLA 150** wide-span branch-piece, height=150 mm

[D10](#)

**WPLAA 120** wide-span attachment branch-piece,

height=120 mm [D10](#)

**WPLAA 150** wide-span attachment branch-piece,

height=150 mm [D10](#)

**WPLB 120** wide-span bend, height=120 mm [D07](#)

**WPLB 150** wide-span bend, height=150 mm [D07](#)

**WPLF 120** wide-span outside riser, height=120 mm

[D09](#)

**WPLF 150** wide-span outside riser, height=150 mm

[D09](#)

**WPLK 120** wide-span cross-piece, height=120 mm

[D11](#)

**WPLK 150** wide-span cross-piece, height=150 mm

[D11](#)

**WPLS 120** wide-span inside riser, height=120 mm [D08](#)

**WPLS 150** wide-span inside riser, height=150 mm [D08](#)

**WPR 120** wide-span cable tray, height=120 mm [D05](#)

**WPR 150** wide-span cable tray, height=150 mm [D05](#)

**WPRA 120** wide-span cable tray branch-piece,

height=120 mm [D12](#)

**WPRA 150** wide-span cable tray branch-piece,

height=150 mm [D13](#)

**WPRAA 120** wide-span cable tray attachment branch-

piece, height=120 mm [D13](#)

**WPRAA 150** wide-span cable tray attachment branch-

piece, height=150 mm [D13](#)

**WPRB 120** wide-span cable tray bend, height=120 mm

[D12](#)

**WPRB 150** wide-span cable tray bend, height=150 mm

[D12](#)

**WPREB** end plate [D28](#)

**WPRK 120** wide-span cross-piece, height=120 mm

[D14](#)

**WPRK 150** wide-span cross-piece, height=150 mm

[D14](#)

**WPSD** wide-span inside riser cover [D17](#)

**WPTR 120** wide-span barrier strip, height=80 mm [D26](#)

**WPTR 150** wide-span barrier strip, height=100 mm [D27](#)

**WPV 120** wide-span coupler, height=120 mm [D23](#)

**WPV 150** wide-span coupler, height=150 mm [D24](#)

**WPVH 120** wide-span coupler, height=120 mm [D24](#)

**WPVH 150** wide-span coupler, height=150 mm [D25](#)

**WPVV 120** wide-span coupler, height=120 mm [D25](#)

**WPVV 150** wide-span coupler, height=150 mm [D26](#)

# Wide-span systems

## WPL 120 wide-span cable ladder, height=120 mm

This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

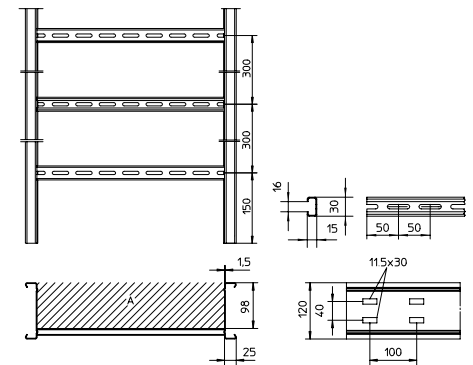
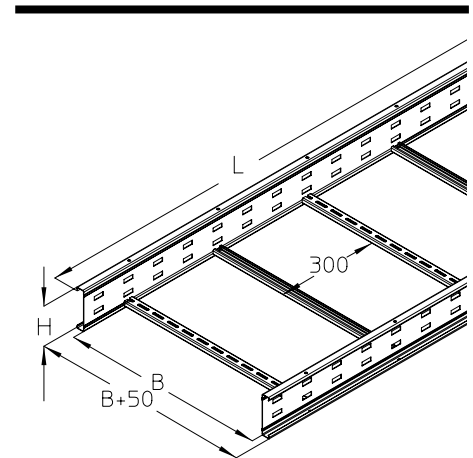
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	Q <sub>LK</sub> kN/m	G kg
<b>S</b>							
<b>WPL 120-20S</b>	120	200	6000	196	0,29	0,55	27,35
<b>WPL 120-30S</b>	120	300	6000	294	0,44	0,82	28,72
<b>WPL 120-40S</b>	120	400	6000	392	0,59	1,10	30,10
<b>WPL 120-50S</b>	120	500	6000	490	0,74	1,37	31,47
<b>WPL 120-60S</b>	120	600	6000	588	0,88	1,65	32,84
<b>F</b>							
<b>WPL 120-20F</b>	120	200	6000	196	0,29	0,55	29,22
<b>WPL 120-30F</b>	120	300	6000	294	0,44	0,82	30,69
<b>WPL 120-40F</b>	120	400	6000	392	0,59	1,10	32,16
<b>WPL 120-50F</b>	120	500	6000	490	0,74	1,37	33,63
<b>WPL 120-60F</b>	120	600	6000	588	0,88	1,65	35,10

accessories optional:

<b>WPLB 120</b>	wide-span bend, height=120 mm	(page D07)
<b>WPLS 120</b>	wide-span inside riser, height=120 mm	(page D08)
<b>WPLF 120</b>	wide-span outside riser, height=120 mm	(page D09)
<b>WPLA 120</b>	wide-span branch-piece, height=120 mm	(page D09)
<b>WPLAA 120</b>	wide-span attachment branch-piece, height=120 mm	(page D10)
<b>WPLK 120</b>	wide-span cross-piece, height=120 mm	(page D11)
<b>WPV 120</b>	wide-span coupler, height=120 mm	(page D23)
<b>WPVH 120</b>	wide-span coupler, height=120 mm	(page D24)
<b>WPVV 120</b>	wide-span coupler, height=120 mm	(page D25)
<b>WPTR 120</b>	wide-span barrier strip, height=80 mm	(page D26)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>WPHS-P</b>	flange mounting clamp (profiles)	(page D22)
<b>WPHS-IS</b>	isolation strip	(page D23)
<b>WPKAB</b>	end plate	(page D27)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



# Wide-span systems

## WPL 150 wide-span cable ladder, height=150 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

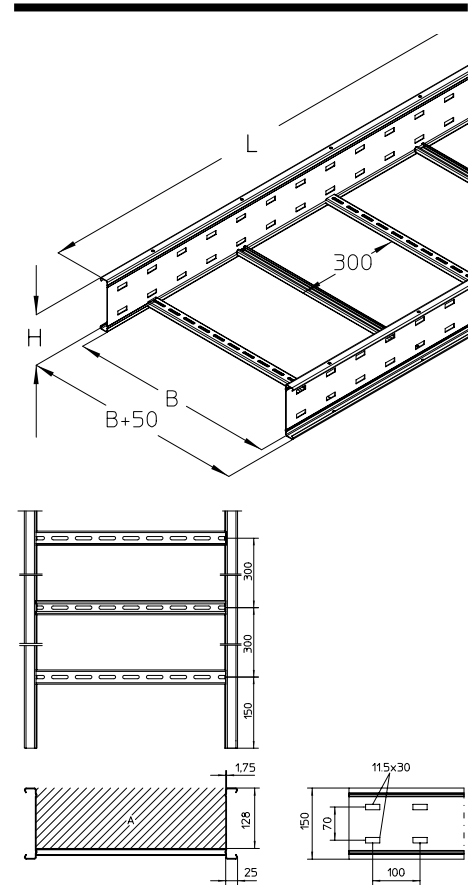
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg
<b>S</b>						
WPL 150-20S	150	200	6000	256	0,72	36,06
WPL 150-30S	150	300	6000	384	1,08	37,43
WPL 150-40S	150	400	6000	512	1,43	38,80
WPL 150-50S	150	500	6000	640	1,79	40,18
WPL 150-60S	150	600	6000	768	2,15	41,55
<b>F</b>						
WPL 150-20F	150	200	6000	256	0,72	38,58
WPL 150-30F	150	300	6000	384	1,08	40,05
WPL 150-40F	150	400	6000	512	1,43	41,52
WPL 150-50F	150	500	6000	640	1,79	42,99
WPL 150-60F	150	600	6000	768	2,15	44,46
<b>E</b>						
WPL 150-20E	150	200	6000	256	0,72	37,25
WPL 150-30E	150	300	6000	384	1,08	38,63
WPL 150-40E	150	400	6000	512	1,43	40,02
WPL 150-50E	150	500	6000	640	1,79	41,40
WPL 150-60E	150	600	6000	768	2,15	42,78

accessories optional:

<b>WPLB 150</b>	wide-span bend, height=150 mm	(page D07)
<b>WPLS 150</b>	wide-span inside riser, height=150 mm	(page D08)
<b>WPLF 150</b>	wide-span outside riser, height=150 mm	(page D09)
<b>WPLA 150</b>	wide-span branch-piece, height=150 mm	(page D10)
<b>WPLAA 150</b>	wide-span attachment branch-piece, height=150 mm	(page D10)
<b>WPLK 150</b>	wide-span cross-piece, height=150 mm	(page D11)
<b>WPV 150</b>	wide-span coupler, height=150 mm	(page D24)
<b>WPVH 150</b>	wide-span coupler, height=150 mm	(page D25)
<b>WPVV 150</b>	wide-span coupler, height=150 mm	(page D26)
<b>WPTR 150</b>	wide-span barrier strip, height=100 mm	(page D27)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>WPHS-P</b>	flange mounting clamp (profiles)	(page D22)
<b>WPHS-IS</b>	isolation strip	(page D23)
<b>WPKAB</b>	end plate	(page D27)
<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)





# Wide-span systems

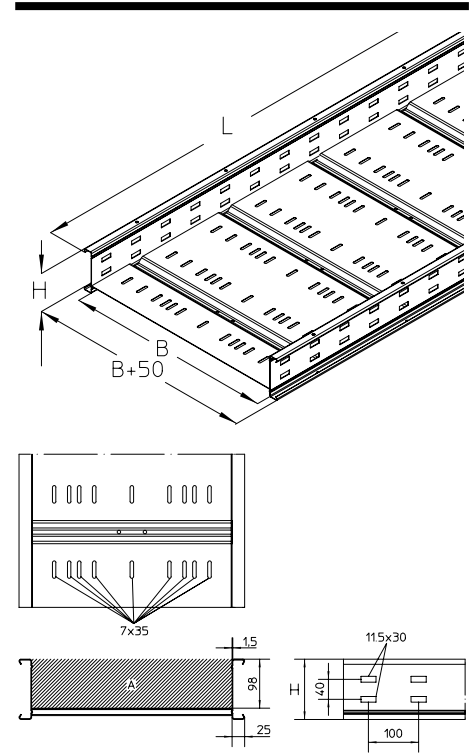
## WPR 120 wide-span cable tray, height=120 mm

For a load diagram, see the chapter planning.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	Q <sub>LK</sub> kN/m	G kg
<b>S</b>							
WPR 120-20S	120	200	6000	196	0,29	0,55	36,42
WPR 120-30S	120	300	6000	294	0,44	0,82	42,10
WPR 120-40S	120	400	6000	392	0,59	1,10	47,96
WPR 120-50S	120	500	6000	490	0,74	1,37	53,84
WPR 120-60S	120	600	6000	588	0,88	1,65	59,70
<b>F</b>							
WPR 120-20F	120	200	6000	196	0,29	0,55	38,97
WPR 120-30F	120	300	6000	294	0,44	0,82	45,05
WPR 120-40F	120	400	6000	392	0,59	1,10	51,32
WPR 120-50F	120	500	6000	490	0,74	1,37	57,61
WPR 120-60F	120	600	6000	588	0,88	1,65	63,88

accessories optional:

<b>WPRK 120</b>	wide-span cross-piece, height=120 mm	(page D14)
<b>WPV 120</b>	wide-span coupler, height=120 mm	(page D23)
<b>WPVH 120</b>	wide-span coupler, height=120 mm	(page D24)
<b>WPVV 120</b>	wide-span coupler, height=120 mm	(page D25)
<b>WPTR 120</b>	wide-span barrier strip, height=80 mm	(page D26)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>WPHS-P</b>	flange mounting clamp (profiles)	(page D22)
<b>WPHS-IS</b>	isolation strip	(page D23)
<b>WPREB</b>	end plate	(page D28)
<b>WPRB 120</b>	wide-span cable tray bend, height=120 mm	(page D12)
<b>WPRA 120</b>	wide-span cable tray branch-piece, height=120 mm	(page D12)
<b>WPRAA 120</b>	wide-span cable tray attachment branch-piece, height=120 mm	(page D13)
<b>VB</b>	connection plate	(page B39, D28)



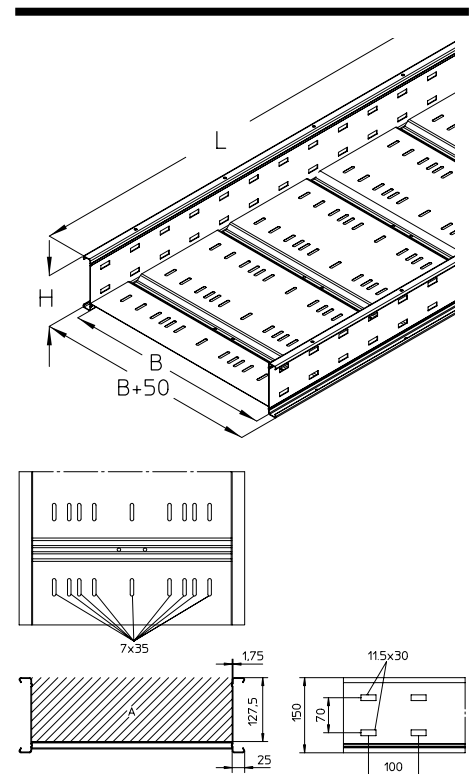
## WPR 150 wide-span cable tray, height=150 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For a load diagram, see the chapter planning.  
For an application example, see the chapter assembly.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>S</b>						
WPR 150-20S	150	200	6000	256	0,38	42,81
WPR 150-30S	150	300	6000	384	0,58	47,39
WPR 150-40S	150	400	6000	512	0,77	52,11
WPR 150-50S	150	500	6000	640	0,96	56,85
WPR 150-60S	150	600	6000	768	1,15	61,57

accessories optional:

<b>WPRK 150</b>	wide-span cross-piece, height=150 mm	(page D14)
<b>WPV 150</b>	wide-span coupler, height=150 mm	(page D24)
<b>WPVH 150</b>	wide-span coupler, height=150 mm	(page D25)
<b>WPVV 150</b>	wide-span coupler, height=150 mm	(page D26)
<b>WPTR 150</b>	wide-span barrier strip, height=100 mm	(page D27)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>WPHS-P</b>	flange mounting clamp (profiles)	(page D22)
<b>WPHS-IS</b>	isolation strip	(page D23)
<b>WPREB</b>	end plate	(page D28)
<b>WPRB 150</b>	wide-span cable tray bend, height=150 mm	(page D12)
<b>WPRA 150</b>	wide-span cable tray branch-piece, height=150 mm	(page D13)
<b>WPRAA 150</b>	wide-span cable tray attachment branch-piece, height=150 mm	(page D13)
<b>VB</b>	connection plate	(page B39, D28)



# Wide-span systems

## WPR 150 wide-span cable tray, height=150 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For a load diagram, see the chapter planning.

For an application example, see the chapter assembly.

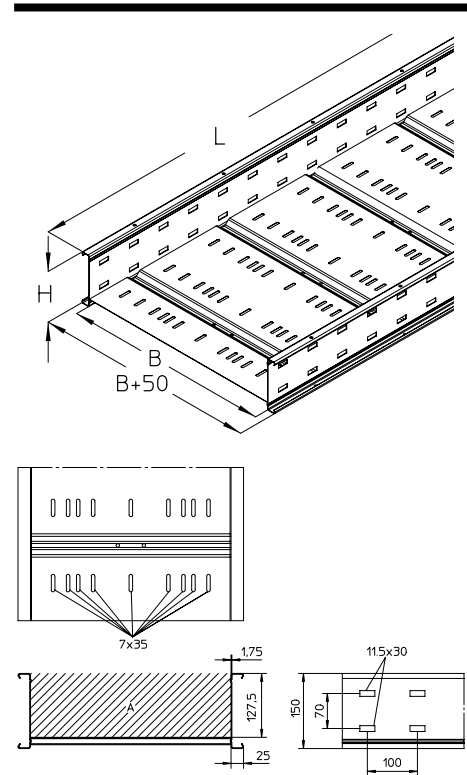
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg
<b>F</b>						
<b>WPR 150-20F</b>	150	200	6000	256	0,38	45,81
<b>WPR 150-30F</b>	150	300	6000	384	0,58	50,71
<b>WPR 150-40F</b>	150	400	6000	512	0,77	55,76
<b>WPR 150-50F</b>	150	500	6000	640	0,96	60,83
<b>WPR 150-60F</b>	150	600	6000	768	1,15	65,88

accessories optional:

<b>WPRK 150</b>	wide-span cross-piece, height=150 mm	(page D14)
<b>WPV 150</b>	wide-span coupler, height=150 mm	(page D24)
<b>WPVH 150</b>	wide-span coupler, height=150 mm	(page D25)
<b>WPVV 150</b>	wide-span coupler, height=150 mm	(page D26)
<b>WPTR 150</b>	wide-span barrier strip, height=100 mm	(page D27)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>WPHS-P</b>	flange mounting clamp (profiles)	(page D22)
<b>WPHS-IS</b>	isolation strip	(page D23)
<b>WPREB</b>	end plate	(page D28)
<b>WPRB 150</b>	wide-span cable tray bend, height=150 mm	(page D12)
<b>WPRA 150</b>	wide-span cable tray branch-piece, height=150 mm	(page D13)
<b>WPRAA 150</b>	wide-span cable tray attachment branch-piece, height=150 mm	(page D13)
<b>VB</b>	connection plate	(page B39, D28)



# Wide-span systems

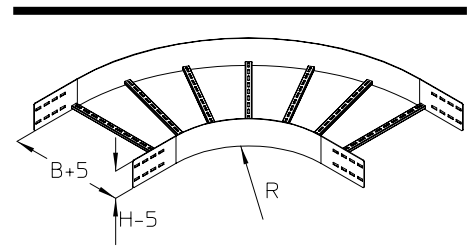
## Fittings

### WPLB 120 wide-span bend, height=120 mm

Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLB 120-20F	120	200	450	8,85
WPLB 120-30F	120	300	450	9,68
WPLB 120-40F	120	400	450	10,80
WPLB 120-50F	120	500	450	12,07
WPLB 120-60F	120	600	450	13,04

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

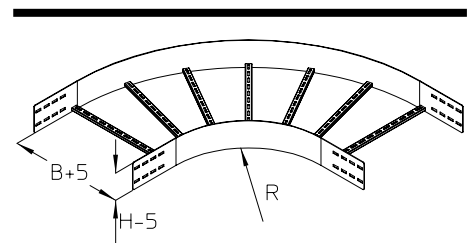


### WPLB 150 wide-span bend, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLB 150-20F	150	200	450	10,97
WPLB 150-30F	150	300	450	11,19
WPLB 150-40F	150	400	450	13,14
WPLB 150-50F	150	500	450	14,53
WPLB 150-60F	150	600	450	15,62

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)



article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLB 150-20E	150	200	450	10,31
WPLB 150-30E	150	300	450	11,20
WPLB 150-40E	150	400	450	12,36
WPLB 150-50E	150	500	450	13,67
WPLB 150-60E	150	600	450	14,67

accessories included:  
8 x **KLS 10x20E** fixing set (page G34)

# Wide-span systems

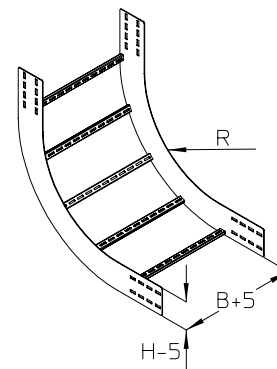
## Fittings

### WPLS 120 wide-span inside riser, height=120 mm

Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLS 120-20F	120	200	450	7,79
WPLS 120-30F	120	300	450	8,09
WPLS 120-40F	120	400	450	8,38
WPLS 120-50F	120	500	450	8,67
WPLS 120-60F	120	600	450	8,97

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

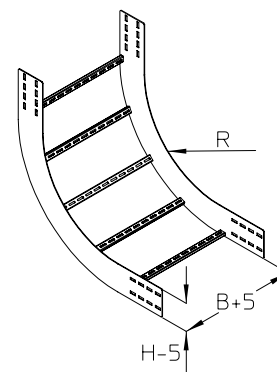


### WPLS 150 wide-span inside riser, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLS 150-20F	150	200	450	10,34
WPLS 150-30F	150	300	450	10,71
WPLS 150-40F	150	400	450	11,08
WPLS 150-50F	150	500	450	11,45
WPLS 150-60F	150	600	450	11,81

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)



article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLS 150-20E	150	200	450	9,73
WPLS 150-30E	150	300	450	10,07
WPLS 150-40E	150	400	450	10,42
WPLS 150-50E	150	500	450	10,76
WPLS 150-60E	150	600	450	11,11

accessories included:  
8 x **KLS 10x20E** fixing set (page G34)

# Wide-span systems

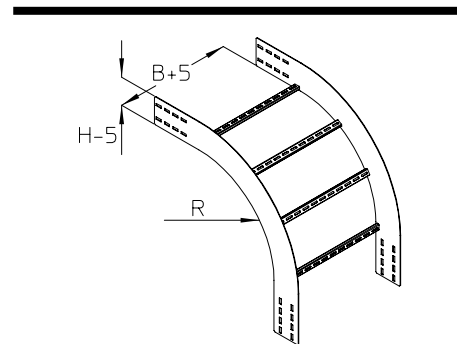
## Fittings

### WPLF 120 wide-span outside riser, height=120 mm

Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLF 120-20F	120	200	450	8,47
WPLF 120-30F	120	300	450	8,77
WPLF 120-40F	120	400	450	9,06
WPLF 120-50F	120	500	450	9,35
WPLF 120-60F	120	600	450	9,65

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

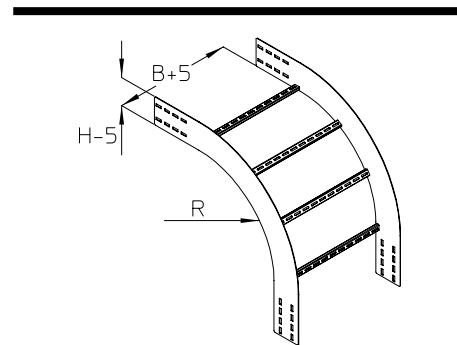


### WPLF 150 wide-span outside riser, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLF 150-20F	150	200	450	12,07
WPLF 150-30F	150	300	450	12,43
WPLF 150-40F	150	400	450	12,80
WPLF 150-50F	150	500	450	13,17
WPLF 150-60F	150	600	450	13,53

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)



article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLF 150-20E	150	200	450	11,65
WPLF 150-30E	150	300	450	12,00
WPLF 150-40E	150	400	450	12,35
WPLF 150-50E	150	500	450	12,69
WPLF 150-60E	150	600	450	13,04

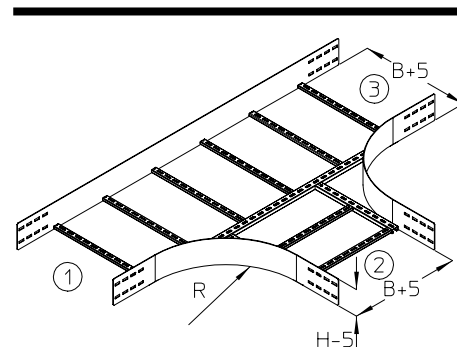
accessories included:  
8 x **KLS 10x20E** fixing set (page G34)

### WPLA 120 wide-span branch-piece, height=120 mm

Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLA 120-20F	120	200	450	15,91
WPLA 120-30F	120	300	450	16,99
WPLA 120-40F	120	400	450	17,95
WPLA 120-50F	120	500	450	18,91
WPLA 120-60F	120	600	450	20,29

accessories included:  
12 x **KLS 10x20F** fixing set (page G34)



# Wide-span systems

## Fittings

### WPLA 150 wide-span branch-piece, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLA 150-20F	150	200	450	18,99
WPLA 150-30F	150	300	450	20,14
WPLA 150-40F	150	400	450	21,18
WPLA 150-50F	150	500	450	22,21
WPLA 150-60F	150	600	450	23,66

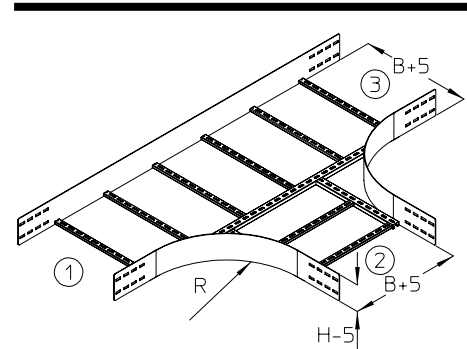
accessories included:

12 x **KLS 10x20F** fixing set (page G34)

article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLA 150-20E	150	200	450	17,90
WPLA 150-30E	150	300	450	1,99
WPLA 150-40E	150	400	450	19,97
WPLA 150-50E	150	500	450	20,94
WPLA 150-60E	150	600	450	22,31

accessories included:

12 x **KLS 10x20E** fixing set (page G34)



### WPLAA 120 wide-span attachment branch-piece, height=120 mm

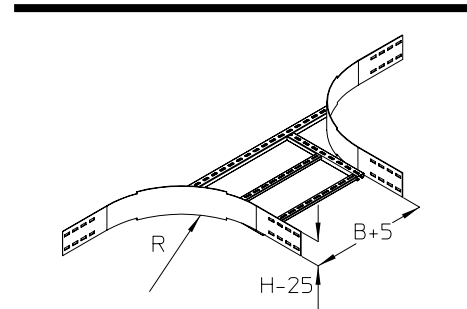
Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLAA 120-20F	120	200	450	8,16
WPLAA 120-30F	120	300	450	8,43
WPLAA 120-40F	120	400	450	8,71
WPLAA 120-50F	120	500	450	8,99
WPLAA 120-60F	120	600	450	9,26

accessories included:

8 x **KLS 10x20F** fixing set (page G34)



### WPLAA 150 wide-span attachment branch-piece, height=150 mm

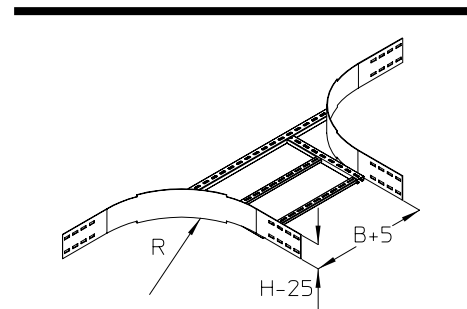
Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLAA 150-20F	150	200	450	9,94
WPLAA 150-30F	150	300	450	10,24
WPLAA 150-40F	150	400	450	10,54
WPLAA 150-50F	150	500	450	10,84
WPLAA 150-60F	150	600	450	11,14

accessories included:

8 x **KLS 10x20F** fixing set (page G34)



# Wide-span systems

## Fittings

### WPLAA 150 wide-span attachment branch-piece, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLAA 150-20E	150	200	450	9,37
WPLAA 150-30E	150	300	450	9,66
WPLAA 150-40E	150	400	450	9,94
WPLAA 150-50E	150	500	450	10,23
WPLAA 150-60E	150	600	450	10,51

accessories included:

8 x **KLS 10x20E** fixing set (page G34)

### WPLK 120 wide-span cross-piece, height=120 mm

Formed components must be supported at all sides. This article is only available in stainless steel finish with a side rail height of 100mm, material No. 1.4301 (V2A), as well as 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLK 120-20F	120	200	450	21,70
WPLK 120-30F	120	300	450	22,76
WPLK 120-40F	120	400	450	23,73
WPLK 120-50F	120	500	450	24,70
WPLK 120-60F	120	600	450	26,05

accessories included:

16 x **KLS 10x20F** fixing set (page G34)

### WPLK 150 wide-span cross-piece, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPLK 150-20F	150	200	450	25,42
WPLK 150-30F	150	300	450	26,48
WPLK 150-40F	150	400	450	27,45
WPLK 150-50F	150	500	450	28,42
WPLK 150-60F	150	600	450	29,78

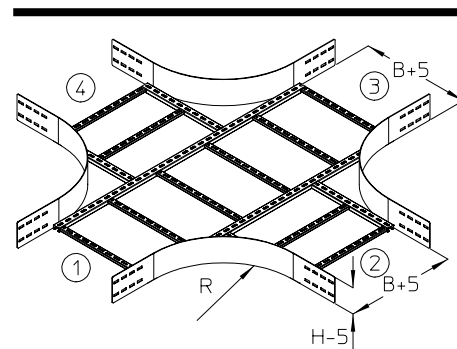
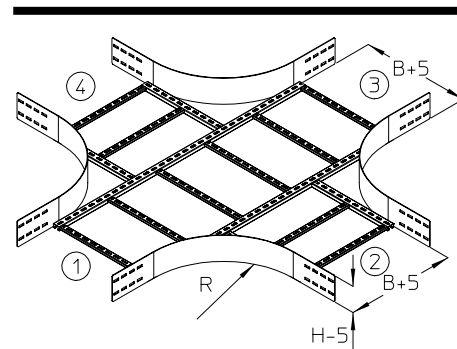
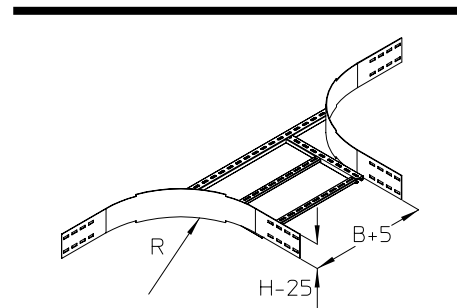
accessories included:

16 x **KLS 10x20F** fixing set (page G34)

article number	H mm	B mm	R mm	G kg
<b>E</b>				
WPLK 150-20E	150	200	450	24,00
WPLK 150-30E	150	300	450	25,00
WPLK 150-40E	150	400	450	25,92
WPLK 150-50E	150	500	450	26,84
WPLK 150-60E	150	600	450	28,12

accessories included:

16 x **KLS 10x20E** fixing set (page G34)



# Wide-span systems

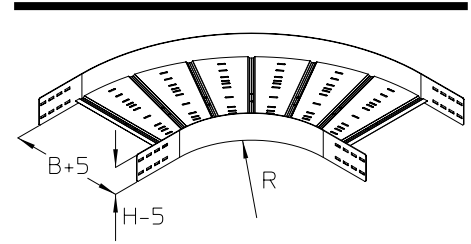
## Fittings

### WPRB 120 wide-span cable tray bend, height=120 mm

Formed components must be supported at all sides.  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>WPRB 120-20F</b>	120	200	450	9,47
<b>WPRB 120-30F</b>	120	300	450	10,91
<b>WPRB 120-40F</b>	120	400	450	12,51
<b>WPRB 120-50F</b>	120	500	450	14,24
<b>WPRB 120-60F</b>	120	600	450	16,09

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

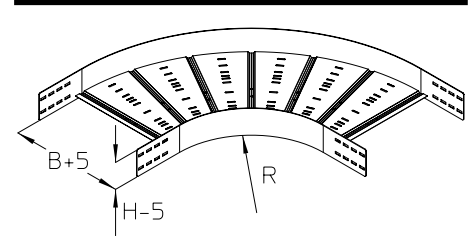


### WPRB 150 wide-span cable tray bend, height=150 mm

Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>WPRB 150-20F</b>	150	200	450	11,51
<b>WPRB 150-30F</b>	150	300	450	13,15
<b>WPRB 150-40F</b>	150	400	450	14,86
<b>WPRB 150-50F</b>	150	500	450	16,71
<b>WPRB 150-60F</b>	150	600	450	18,68

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

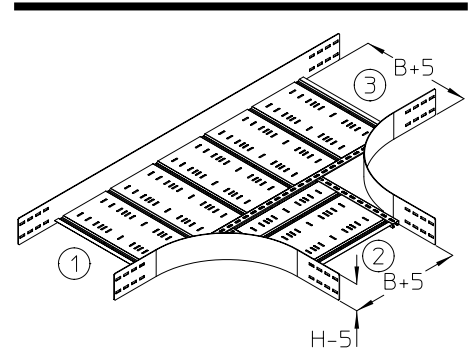


### WPRA 120 wide-span cable tray branch-piece, height=120 mm

Formed components must be supported at all sides.  
For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
<b>WPRA 120-20F</b>	120	200	17,00
<b>WPRA 120-30F</b>	120	300	19,01
<b>WPRA 120-40F</b>	120	400	21,18
<b>WPRA 120-50F</b>	120	500	23,53
<b>WPRA 120-60F</b>	120	600	33,29

accessories included:  
12 x **KLS 10x20F** fixing set (page G34)





# Wide-span systems

## Fittings

### WPRA 150 wide-span cable tray branch-piece, height=150 mm

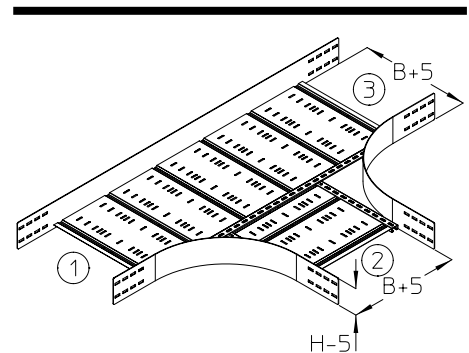
Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>F</b>			
WPRA 150-20F	150	200	20,11
WPRA 150-30F	150	300	22,20
WPRA 150-40F	150	400	24,43
WPRA 150-50F	150	500	26,86
WPRA 150-60F	150	600	29,45

accessories included:

12 x **KLS 10x20F** fixing set (page G34)



### WPRAA 120 wide-span cable tray attachment branch-piece, height=120 mm

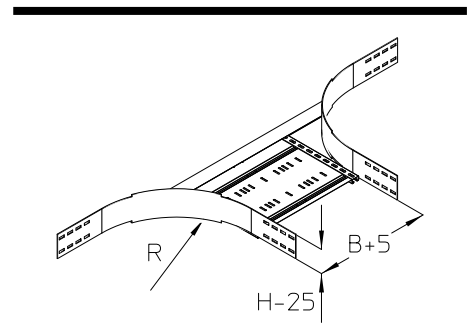
Formed components must be supported at all sides.

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPRAA 120-20F	120	200	450	9,28
WPRAA 120-30F	120	300	450	9,76
WPRAA 120-40F	120	400	450	10,23
WPRAA 120-50F	120	500	450	10,71
WPRAA 120-60F	120	600	450	11,45

accessories included:

8 x **KLS 10x20F** fixing set (page G34)



### WPRAA 150 wide-span cable tray attachment branch-piece, height=150 mm

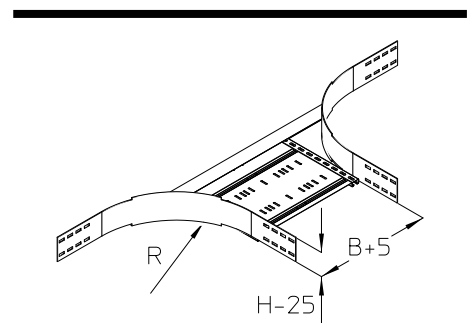
Formed components must be supported at all sides. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
WPRAA 150-20F	150	200	450	11,15
WPRAA 150-30F	150	300	450	11,63
WPRAA 150-40F	150	400	450	12,10
WPRAA 150-50F	150	500	450	12,58
WPRAA 150-60F	150	600	450	13,31

accessories included:

8 x **KLS 10x20F** fixing set (page G34)



# Wide-span systems

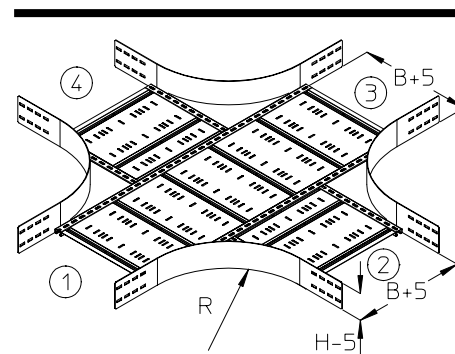
## Fittings

### WPRK 120 wide-span cross-piece, height=120 mm

Formed components must be supported at all sides.  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>WPRK 120-20F</b>	120	200	450	22,81
<b>WPRK 120-30F</b>	120	300	450	25,05
<b>WPRK 120-40F</b>	120	400	450	27,41
<b>WPRK 120-50F</b>	120	500	450	29,98
<b>WPRK 120-60F</b>	120	600	450	33,29

accessories included:  
16 x **KLS 10x20F** fixing set (page G34)

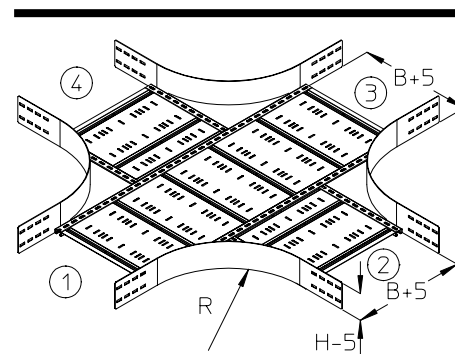


### WPRK 150 wide-span cross-piece, height=150 mm

Formed components must be supported at all sides.  
For an application example, see the chapter assembly.

article number	H mm	B mm	R mm	G kg
<b>F</b>				
<b>WPRK 150-20F</b>	150	200	450	26,54
<b>WPRK 150-30F</b>	150	300	450	28,78
<b>WPRK 150-40F</b>	150	400	450	31,14
<b>WPRK 150-50F</b>	150	500	450	33,71
<b>WPRK 150-60F</b>	150	600	450	37,02

accessories included:  
16 x **KLS 10x20F** fixing set (page G34)



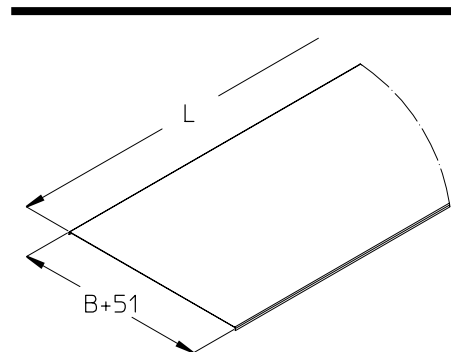
# Wide-span systems

## Cover

### WPD wide-span cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
<b>WPD 20S</b>	200	3000	4,75
<b>WPD 30S</b>	300	3000	8,69
<b>WPD 40S</b>	400	3000	11,04
<b>WPD 50S</b>	500	3000	16,75
<b>WPD 60S</b>	600	3000	19,69
<b>F</b>			
<b>WPD 20F</b>	200	3000	5,08
<b>WPD 30F</b>	300	3000	9,30
<b>WPD 40F</b>	400	3000	11,82
<b>WPD 50F</b>	500	3000	17,92
<b>WPD 60F</b>	600	3000	21,07
<b>E</b>			
<b>WPD 20E</b>	200	3000	5,10
<b>WPD 30E</b>	300	3000	8,75
<b>WPD 40E</b>	400	3000	11,12
<b>WPD 50E</b>	500	3000	16,86
<b>WPD 60E</b>	600	3000	19,82



### WPD-K cover clamp

Can also be used as storm protection angle. According to assembly instructions you should use at least 6 safety elements for each 3 meters cable path cover.  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>WPD-K S</b>	29	30	66,5	2,5	0,05

accessories included:  
1 x **SES 6x20** hexagon head bolt, DIN 933 (page G37)

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>WPD-K F</b>	29	30	66,5	2,5	0,05
<b>E</b>					
<b>WPD-K E</b>	29	30	66,5	2,5	0,05

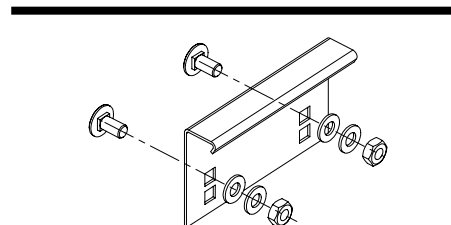
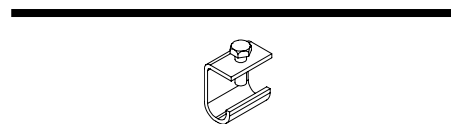
accessories included:  
1 x **SES 6x20E** hexagon head bolt, DIN 933 (page G38)

### WPD-A cover elevator

For an application example, see the chapter assembly.

article number	G kg
<b>S</b>	
<b>WPD-A S</b>	0,35

accessories included:  
2 x **KLS 10x20** fixing set (page G34)  
2 x **UVS M10** captive washer (page G40)



# Wide-span systems

## Cover

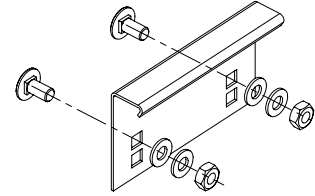
### WPD-A cover elevator

For an application example, see the chapter assembly.

article number	G	kg
<b>F</b>		
<b>WPD-A F</b>	0,35	

accessories included:

2 x <b>KLS 10x20F</b>	fixing set	(page G34)
2 x <b>UVS M10</b>	captive washer	(page G40)



article number	G	kg
<b>E</b>		
<b>WPD-A E</b>	0,35	

accessories included:

2 x <b>KLS 10x20E</b>	fixing set	(page G34)
2 x <b>UVS M10</b>	captive washer	(page G40)

### WPFDK fitting cover hook clip

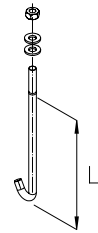
Can also be used as storm protection angle. The number of cover brackets depends on the number of holes drilled in moulded cover.

For an application example, see the chapter assembly.

article number	L	G
	mm	kg
<b>E</b>		
<b>WPFDK 120E</b>	120	0,08
<b>WPFDK 150E</b>	150	0,06

accessories included:

2 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)



### WPFDKA fitting cover hook clip, elevated

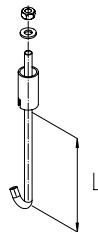
Can also be used as storm protection angle. The number of cover brackets depends on the number of holes drilled in moulded cover.

For an application example, see the chapter assembly.

article number	L	G
	mm	kg
<b>E</b>		
<b>WPFDKA 120E</b>	120	0,12
<b>WPFDKA 150E</b>	150	0,13

accessories included:

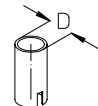
1 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>WP-AH E</b>	spacer sleeve	(page D16)



### WP-AH spacer sleeve

For an application example, see the chapter assembly.

article number	D	G
	mm	kg
<b>E</b>		
<b>WP-AH E</b>	21,3	0,03



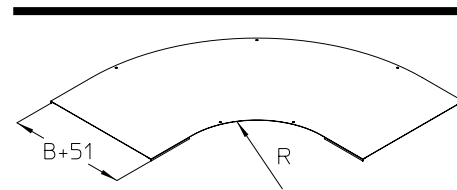
# Wide-span systems

## Cover

### WPBD wide-span bend cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

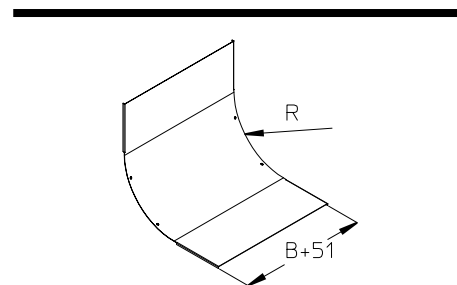
article number	B mm	R mm	G kg
<b>S</b>			
WPBD 20S	200	450	2,09
WPBD 30S	300	450	4,07
WPBD 40S	400	450	5,50
WPBD 50S	500	450	8,79
WPBD 60S	600	450	10,86
<b>F</b>			
WPBD 20F	200	450	2,24
WPBD 30F	300	450	4,36
WPBD 40F	400	450	5,88
WPBD 50F	500	450	9,40
WPBD 60F	600	450	11,62
<b>E</b>			
WPBD 20E	200	450	2,09
WPBD 30E	300	450	4,07
WPBD 40E	400	450	5,50
WPBD 50E	500	450	8,79
WPBD 60E	600	450	10,86



### WPSD wide-span inside riser cover

If the cover is to be mounted elevated, this must be mentioned separately in your order, e.g. WPFDA ("A" - German "aufgeständert" means elevated) This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	R mm	G kg
<b>S</b>			
WPSD 20S	200	450	1,91
WPSD 30S	300	450	3,50
WPSD 40S	400	450	4,48
WPSD 50S	500	450	6,81
WPSD 60S	600	450	8,03
<b>F</b>			
WPSD 20F	200	450	2,04
WPSD 30F	300	450	3,75
WPSD 40F	400	450	4,79
WPSD 50F	500	450	7,29
WPSD 60F	600	450	8,59
<b>E</b>			
WPSD 20E	200	450	1,91
WPSD 30E	300	450	3,50
WPSD 40E	400	450	4,48
WPSD 50E	500	450	6,81
WPSD 60E	600	450	8,03



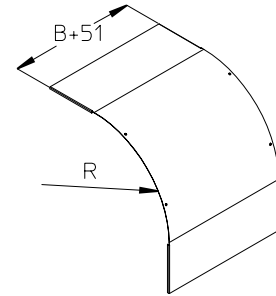
# Wide-span systems

## Cover

### WPFD wide-span outside riser cover

If the cover is to be mounted elevated, this must be mentioned separately in your order, e.g. WPFDA ("A" - German "aufgeständert" means elevated) This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

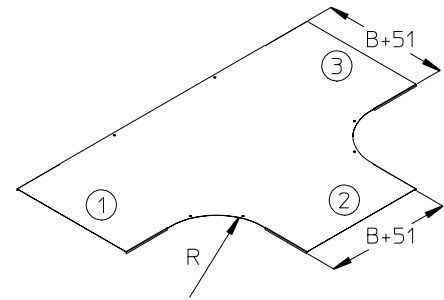
article number	B mm	R mm	G kg
<b>S</b>			
WPFD 20S	200	450	2,24
WPFD 30S	300	450	4,14
WPFD 40S	400	450	5,29
WPFD 50S	500	450	8,06
WPFD 60S	600	450	9,50
<b>F</b>			
WPFD 20F	200	450	2,40
WPFD 30F	300	450	4,43
WPFD 40F	400	450	5,66
WPFD 50F	500	450	8,62
WPFD 60F	600	450	10,16
<b>E</b>			
WPFD 20E	200	450	2,24
WPFD 30E	300	450	4,14
WPFD 40E	400	450	5,29
WPFD 50E	500	450	8,06
WPFD 60E	600	450	9,50



### WPAD wide-span branch-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A). For an application example, see the chapter assembly.

article number	B mm	R mm	G kg
<b>S</b>			
WPAD 20S	200	450	3,94
WPAD 30S	300	450	7,36
WPAD 40S	400	450	9,63
WPAD 50S	500	450	15,06
WPAD 60S	600	450	18,27
<b>F</b>			
WPAD 20F	200	450	4,22
WPAD 30F	300	450	7,88
WPAD 40F	400	450	10,30
WPAD 50F	500	450	16,11
WPAD 60F	600	450	19,55
<b>E</b>			
WPAD 20E	200	450	3,94
WPAD 30E	300	450	7,36
WPAD 40E	400	450	9,63
WPAD 50E	500	450	15,06
WPAD 60E	600	450	18,27



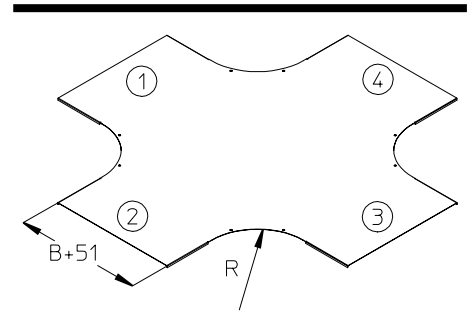
# Wide-span systems

## Cover

### WPKD wide-span cross-piece cover

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	R mm	G kg
<b>S</b>			
WPKD 20S	200	450	5,44
WPKD 30S	300	450	9,90
WPKD 40S	400	450	12,70
WPKD 50S	500	450	19,57
WPKD 60S	600	450	23,47
<b>F</b>			
WPKD 20F	200	450	5,82
WPKD 30F	300	450	10,59
WPKD 40F	400	450	13,59
WPKD 50F	500	450	20,94
WPKD 60F	600	450	25,11
<b>E</b>			
WPKD 20E	200	450	5,44
WPKD 30E	300	450	9,90
WPKD 40E	400	450	12,70
WPKD 50E	500	450	19,57
WPKD 60E	600	450	23,47



D

# Wide-span systems

## Accessories

### EBW Corner fixing

For an application example, see the chapter assembly.

article number	G
	kg

<b>F</b>	
<b>EBW 020F</b>	52,64

accessories included:

20 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
10 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
10 x <b>SES 12x30F</b>	hexagon head bolt, DIN 933	(page G38)
3 x <b>KHU 80-10F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-08F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-14F</b>	bracket support, profile U80	(page F27)

article number	G
	kg

<b>F</b>	
<b>EBW 030F</b>	55,31

accessories included:

20 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
10 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
10 x <b>SES 12x30F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>KHU 80-08F</b>	bracket support, profile U80	(page F27)
3 x <b>KHU 80-11F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-15F</b>	bracket support, profile U80	(page F27)

article number	G
	kg

<b>F</b>	
<b>EBW 040F</b>	60,63

accessories included:

20 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
10 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
10 x <b>SES 12x30F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>KHU 80-08F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-12F</b>	bracket support, profile U80	(page F27)
2 x <b>KHU 80-13F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-18F</b>	bracket support, profile U80	(page F27)

article number	G
	kg

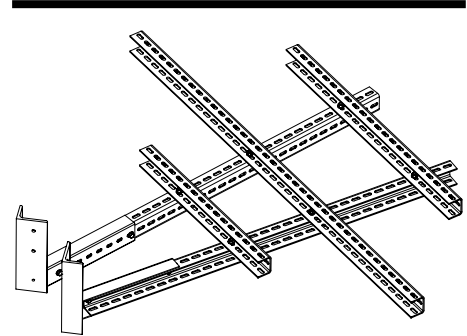
<b>F</b>	
<b>EBW 050F</b>	60,64

accessories included:

20 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
10 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
10 x <b>SES 12x30F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>KHU 80-08F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-10F</b>	bracket support, profile U80	(page F27)
2 x <b>KHU 80-14F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-18F</b>	bracket support, profile U80	(page F27)

accessories optional:

<b>WPRB 120</b>	wide-span cable tray bend, height=120 mm	(page D12)
<b>WPRB 150</b>	wide-span cable tray bend, height=150 mm	(page D12)
<b>WPLB 120</b>	wide-span bend, height=120 mm	(page D07)
<b>WPLB 150</b>	wide-span bend, height=150 mm	(page D07)
<b>SD</b>	expansion anchor	(page G12)





# Wide-span systems

## Accessories

### EBW Corner fixing

For an application example, see the chapter assembly.

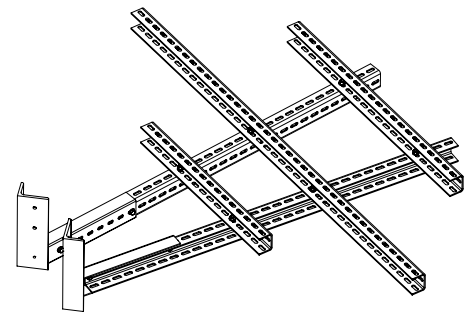
article number	G
	kg
<b>F</b>	
<b>EBW 060F</b>	64,63

accessories included:

20 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
10 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
10 x <b>SES 12x30F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>KHU 80-08F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-11F</b>	bracket support, profile U80	(page F27)
2 x <b>KHU 80-16F</b>	bracket support, profile U80	(page F27)
1 x <b>KHU 80-19F</b>	bracket support, profile U80	(page F27)

accessories optional:

<b>WPRB 120</b>	wide-span cable tray bend, height=120 mm	(page D12)
<b>WPRB 150</b>	wide-span cable tray bend, height=150 mm	(page D12)
<b>WPLB 120</b>	wide-span bend, height=120 mm	(page D07)
<b>WPLB 150</b>	wide-span bend, height=150 mm	(page D07)
<b>SD</b>	expansion anchor	(page G12)



### WPHS-K flange mounting clamp (brackets)

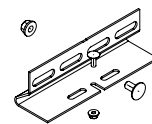
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	G
	kg
<b>S</b>	
<b>WPHS-K S</b>	0,51

accessories included:

1 x <b>KLS 10x20</b>	fixing set	(page G34)
1 x <b>FRSV 6x16</b>	round-head screw with short square	(page G34)
1 x <b>SEMS 6</b>	hexagon nut, self-locking, DIN 6923	(page G41)



article number	G
	kg
<b>F</b>	
<b>WPHS-K F</b>	0,55

accessories included:

1 x <b>KLS 10x20F</b>	fixing set	(page G34)
1 x <b>SEMS 6E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRSV 6x16E</b>	round-head screw with short square	(page G35)

article number	G
	kg
<b>E</b>	
<b>WPHS-K E</b>	0,51

accessories included:

1 x <b>KLS 10x20E</b>	fixing set	(page G34)
1 x <b>SEMS 6E</b>	hexagon nut, self-locking, DIN 6923	(page G41)
1 x <b>FRSV 6x16E</b>	round-head screw with short square	(page G35)

# Wide-span systems

## Accessories

### WPHS-A flange mounting clamp (C-profiles)

For an application example, see the chapter assembly.

article number	G	kg
<b>S</b>		
<b>WPHS-A S</b>		0,53

accessories included:

1 x <b>SES 6x20</b>	hexagon head bolt, DIN 933	(page G37)
1 x <b>US 6x12</b>	square washer, DIN 125	(page G39)
1 x <b>AM22 M6</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
1 x <b>KLS 10x20</b>	fixing set	(page G34)

article number	G	kg
<b>F</b>		
<b>WPHS-A F</b>		0,57

accessories included:

1 x <b>SES 6x20E</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>US 6x12E</b>	square washer, DIN 125	(page G40)
1 x <b>AM22 M6F</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
1 x <b>KLS 10x20F</b>	fixing set	(page G34)

article number	G	kg
<b>E</b>		
<b>WPHS-A E</b>		0,53

accessories included:

1 x <b>SES 6x20E</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>US 6x12E</b>	square washer, DIN 125	(page G40)
1 x <b>AM22 M6E4</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
1 x <b>KLS 10x20E</b>	fixing set	(page G34)

### WPHS-P flange mounting clamp (profiles)

For an application example, see the chapter assembly.

article number	G	kg
<b>S</b>		
<b>WPHS-P S</b>		0,54

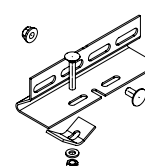
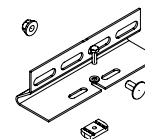
accessories included:

1 x <b>KLS 10x20</b>	fixing set	(page G34)
1 x <b>FRS 8x50</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>US 8x17</b>	square washer, DIN 125	(page G39)
1 x <b>SKLL F</b>	clamping claw	(page D23)
1 x <b>SEM 8</b>	hexagon-nut, DIN 934	(page G41)

article number	G	kg
<b>F</b>		
<b>WPHS-P F</b>		0,58

accessories included:

1 x <b>KLS 10x20F</b>	fixing set	(page G34)
1 x <b>FRS 8x50E</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>SKLL F</b>	clamping claw	(page D23)



# Wide-span systems

## Accessories

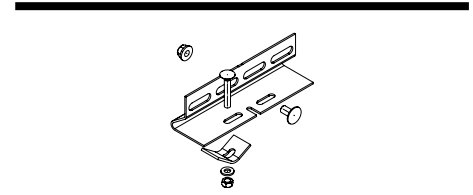
### WPHS-P flange mounting clamp (profiles)

For an application example, see the chapter assembly.

article number	G
	kg
<b>E</b>	
<b>WPHS-P E</b>	0,54

accessories included:

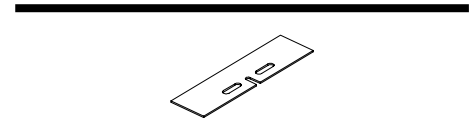
1 x <b>KLS 10x20E</b>	fixing set	(page G34)
1 x <b>FRS 8x50</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>SKLL F</b>	clamping claw	(page D23)



### WPHS-IS isolation strip

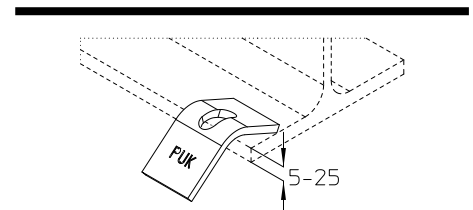
For an application example, see the chapter assembly.

article number	G
	kg
<b>EPDM</b>	
<b>WPHS-IS</b>	0,02



### SKLL clamping claw

article number	G
	kg
<b>F</b>	
<b>SKLL F</b>	0,07
<b>E</b>	
<b>SKLL E</b>	0,16



### WPV 120 wide-span coupler, height=120 mm

In order to compensate for the heat expansion one side of the connector is mounted as a loose bearing. The given torques must be observed. The other side of the connector is to be mounted as a fixed bearing. A minimum distance of 4mm must be kept between the cable ladders. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H	L	G
	mm	mm	kg
<b>S</b>			
<b>WPV 120S</b>	120	400	1,08

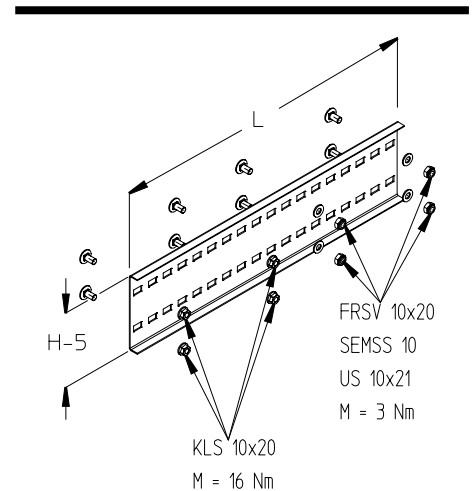
accessories included:

4 x <b>KLS 10x20</b>	fixing set	(page G34)
4 x <b>FRSV 10x20</b>	round-head screw with short square	(page G34)
4 x <b>US 10x21</b>	square washer, DIN 125	(page G39)
4 x <b>SEMSS 10</b>	hexagon-nut, self-locking, DIN 985	(page G42)

article number	H	L	G
	mm	mm	kg
<b>F</b>			
<b>WPV 120F</b>	120	400	1,10

accessories included:

4 x <b>KLS 10x20F</b>	fixing set	(page G34)
4 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)
4 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
4 x <b>SEMSS 10E</b>	hexagon-nut, self-locking, DIN 985	(page G42)



**WPV 150** wide-span coupler, height=150 mm

In order to compensate for the heat expansion one side of the connector is mounted as a loose bearing. The given torques must be observed. The other side of the connector is to be mounted as a fixed bearing. A minimum distance of 4mm must be kept between the cable ladders. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPV 150S</b>	150	600	1,79

accessories included:

- 4 x **KLS 10x20** fixing set (page G34)
- 4 x **FRSV 10x20** round-head screw with short square (page G34)
- 4 x **US 10x21** square washer, DIN 125 (page G39)
- 4 x **SEMSS 10** hexagon-nut, self-locking, DIN 985 (page G42)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPV 150F</b>	150	600	1,92

accessories included:

- 4 x **KLS 10x20F** fixing set (page G34)
- 4 x **FRSV 10x20F** round-head screw with short square (page G34)
- 4 x **US 10x21F** square washer, DIN 125 (page G39)
- 4 x **SEMSS 10E** hexagon-nut, self-locking, DIN 985 (page G42)

article number	H mm	L mm	G kg
<b>E</b>			
<b>WPV 150E</b>	150	600	1,79

accessories included:

- 4 x **KLS 10x20E** fixing set (page G34)
- 4 x **FRSV 10x20E** round-head screw with short square (page G35)
- 4 x **US 10x21E** square washer, DIN 125 (page G40)
- 4 x **SEMSS 10E** hexagon-nut, self-locking, DIN 985 (page G42)

**WPVH 120** wide-span coupler, height=120 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPVH 120S</b>	120	400	0,92

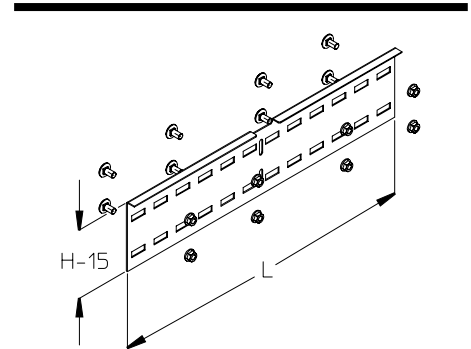
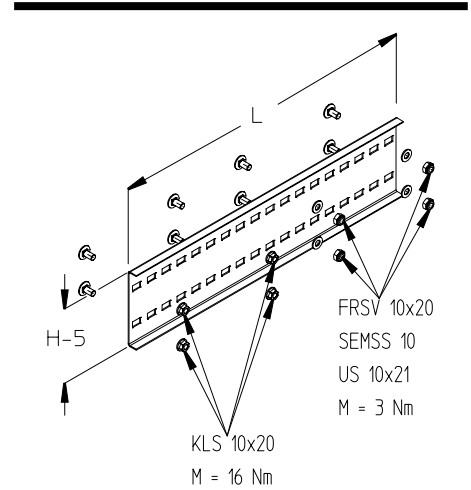
accessories included:

- 8 x **KLS 10x20** fixing set (page G34)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPVH 120F</b>	120	400	0,98

accessories included:

- 8 x **KLS 10x20F** fixing set (page G34)



# Wide-span systems

## Accessories

### WPVH 150 wide-span coupler, height=150 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPVH 150S</b>	150	600	1,53

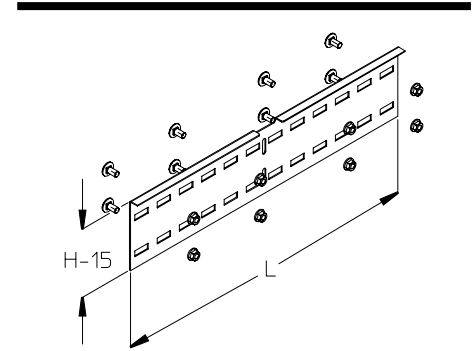
accessories included:  
8 x **KLS 10x20** fixing set (page G34)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPVH 150F</b>	150	600	1,64

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)

article number	H mm	L mm	G kg
<b>E</b>			
<b>WPVH 150E</b>	150	600	1,57

accessories included:  
8 x **KLS 10x20E** fixing set (page G34)



### WPVV 120 wide-span coupler, height=120 mm

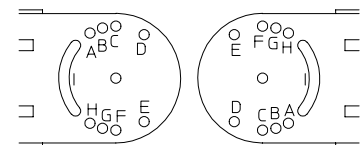
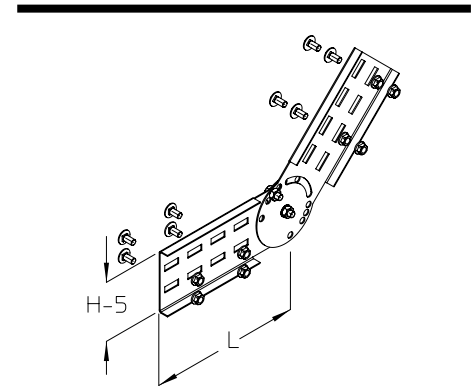
All other angles up to 90° maximum are to be set above the elongated holes I. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPVV 120S</b>	120	253	1,41

accessories included:  
8 x **KLS 10x20** fixing set (page G34)  
2 x **SES 10x20** hexagon head bolt, DIN 933 (page G37)  
2 x **SEM 10** hexagon-nut, DIN 934 (page G41)  
1 x **FS 10** serrated lock washer (page G39)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPVV 120F</b>	120	253	1,18

accessories included:  
8 x **KLS 10x20F** fixing set (page G34)  
2 x **SES 10x20F** hexagon head bolt, DIN 933 (page G38)  
2 x **SEM 10F** hexagon-nut, DIN 934 (page G41)  
1 x **FS 10E** serrated lock washer (page G39)



15° C + G  
18° E + B  
30° A + F  
45° B + H  
60° A + H

# Wide-span systems

## Accessories

### WPVV 150 wide-span coupler, height=150 mm

All other angles up to 90° maximum are to be set above the elongated holes I. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPVV 150S</b>	150	377	2,43

accessories included:

8 x <b>KLS 10x20</b>	fixing set	(page G34)
2 x <b>SES 10x20</b>	hexagon head bolt, DIN 933	(page G37)
2 x <b>SEM 10</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>FS 10</b>	serrated lock washer	(page G39)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPVV 150F</b>	150	377	2,60

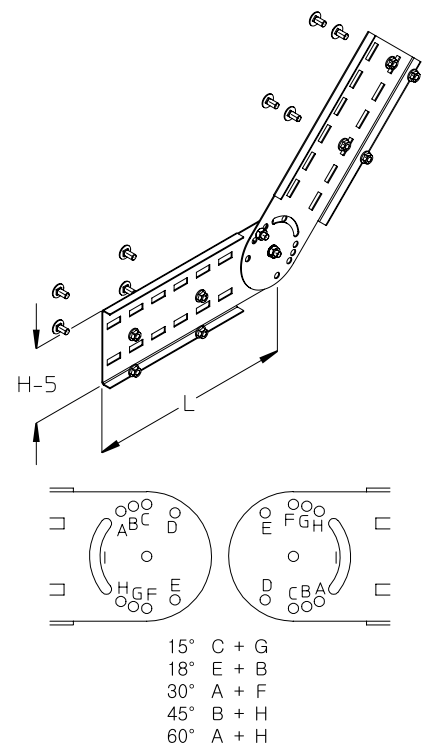
accessories included:

8 x <b>KLS 10x20F</b>	fixing set	(page G34)
2 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>FS 10E</b>	serrated lock washer	(page G39)

article number	H mm	L mm	G kg
<b>E</b>			
<b>WPVV 150E</b>	150	377	2,43

accessories included:

8 x <b>KLS 10x20E</b>	fixing set	(page G34)
2 x <b>SES 10x20E</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>FS 10E</b>	serrated lock washer	(page G39)



### WPTR 120 wide-span barrier strip, height=80 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPTR 120S</b>	80	3000	2,63

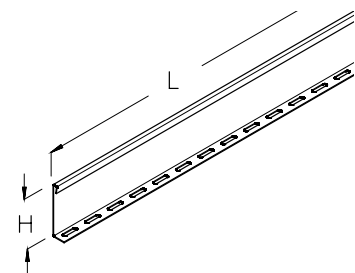
accessories included:

3 x <b>FRSV 6x12</b>	round-head screw with short square	(page G34)
3 x <b>SEMS 6</b>	hexagon nut, self-locking, DIN 6923	(page G41)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPTR 120F</b>	80	3000	2,82

accessories included:

3 x <b>FRSV 6x12E</b>	round-head screw with short square	(page G35)
3 x <b>SEMS 6E</b>	hexagon nut, self-locking, DIN 6923	(page G41)



# Wide-span systems

## Accessories

### WPTR 150 wide-span barrier strip, height=100 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	L mm	G kg
<b>S</b>			
<b>WPTR 150S</b>	100	3000	3,27

accessories included:

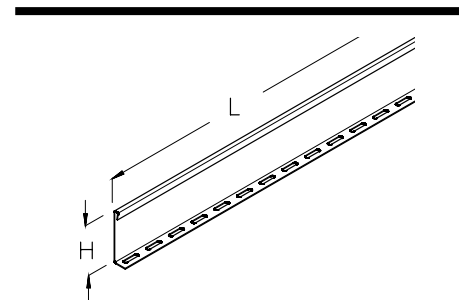
3 x **FRSV 6x12** round-head screw with short square (page G34)  
3 x **SEMSS 6** hexagon-nut, self-locking, DIN 985 (page G42)

article number	H mm	L mm	G kg
<b>F</b>			
<b>WPTR 150F</b>	100	3000	3,50

<b>E</b>			
<b>WPTR 150E</b>	100	3000	3,27

accessories included:

3 x **FRSV 6x12E** round-head screw with short square (page G35)  
3 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)



### WPKAB end plate

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	G kg
<b>S</b>		
<b>WPKAB 20S</b>	195	0,50
<b>WPKAB 30S</b>	295	0,77
<b>WPKAB 40S</b>	395	1,02
<b>WPKAB 50S</b>	495	1,28
<b>WPKAB 60S</b>	595	1,54

accessories included:

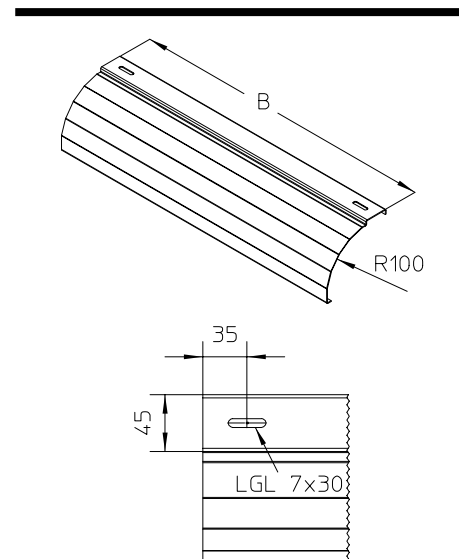
2 x **FKS 6x10** slotted cylinder head screw, DIN 84 (page G35)  
2 x **AM16 M6F** channel nut, B7 (page G45)

article number	B mm	G kg
<b>F</b>		
<b>WPKAB 20F</b>	195	0,54
<b>WPKAB 30F</b>	295	0,82
<b>WPKAB 40F</b>	395	1,09
<b>WPKAB 50F</b>	495	1,37
<b>WPKAB 60F</b>	595	1,65

<b>E</b>		
<b>WPKAB 20E</b>	195	0,50
<b>WPKAB 30E</b>	295	0,77
<b>WPKAB 40E</b>	395	1,02
<b>WPKAB 50E</b>	495	1,28
<b>WPKAB 60E</b>	595	1,54

accessories included:

2 x **FKS 6x10E** slotted cylinder head screw, DIN 84 (page G35)  
2 x **AM16 M6E4** channel nut, B7 (page G45)



# Wide-span systems

## Accessories

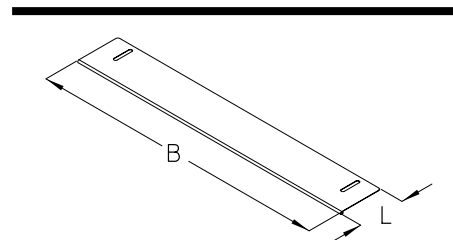
### WPREB end plate

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
<b>WPREB 20S</b>	195	90	0,11
<b>WPREB 30S</b>	295	90	0,17
<b>WPREB 40S</b>	395	90	0,23
<b>WPREB 50S</b>	495	90	0,29
<b>WPREB 60S</b>	595	90	0,35

accessories included:

2 x **FRSV 6x12** round-head screw with short square (page G34)  
2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)



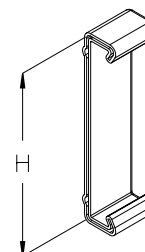
article number	B mm	L mm	G kg
<b>F</b>			
<b>WPREB 20F</b>	195	90	0,12
<b>WPREB 30F</b>	295	90	0,18
<b>WPREB 40F</b>	395	90	0,25
<b>WPREB 50F</b>	495	90	0,31
<b>WPREB 60F</b>	595	90	0,37

accessories included:

2 x **FRSV 6x12E** round-head screw with short square (page G35)  
2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)

### SWP protection end cap

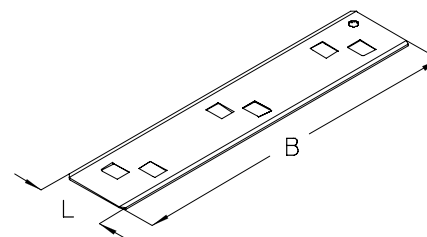
article number	H mm	G kg
<b>PE</b>		
<b>SWP 120</b>	100	0,02
<b>SWP 150</b>	150	0,03



### VB connection plate

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	B mm	L mm	G kg
<b>S</b>			
<b>VB 10S</b>	54	70	0,04
<b>VB 20S</b>	155	70	0,11
<b>VB 30S</b>	255	70	0,18
<b>VB 40S</b>	355	70	0,27
<b>VB 50S</b>	455	70	0,32
<b>VB 60S</b>	555	70	0,38





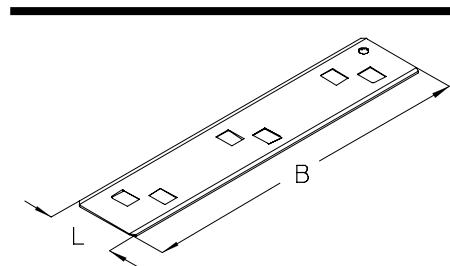
# Wide-span systems

## Accessories

### VB connection plate

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

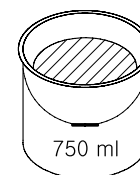
article number	B mm	L mm	G kg
<b>F</b>			
VB 10F	54	70	0,04
VB 20F	155	70	0,11
VB 30F	255	70	0,19
VB 40F	355	70	0,28
VB 50F	455	70	0,34
VB 60F	555	70	0,40
<b>E</b>			
VB 10E	54	70	0,04
VB 20E	155	70	0,11
VB 30E	255	70	0,18
VB 40E	355	70	0,27
VB 50E	455	70	0,32
VB 60E	555	70	0,38



### KZF cold zinc paint

For assembly instructions, see the chapter assembly.

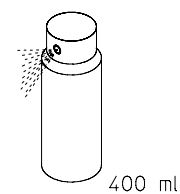
article number	I ml	G kg
<b>KZF</b>		
	750	1,93



### KZS cold zinc spray

For assembly instructions, see the chapter assembly.

article number	I ml	G kg
<b>KZS</b>		
	400	0,40





# Vertical ladders

Vertical ladders	E03-E16
Accessories of STU 50	E17-E20
Accessories of ST 81/82	E21-E24



# Numeric index

## Vertical ladders

### B

**BGI** head plate, profile I80 [E22](#)

**BGIQ** head plate, profile I80 [E23](#)

**BL 4** corner angle, profile U50/ U60/ U100 [E20](#)

**BL 7** corner angle [E23](#)

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### H

**HKI** support connector [E22](#)

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### K

**KZF** cold zinc paint [E23](#)

**KZS** cold zinc spray [E24](#)

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### L

**LGG 60** vertical ladder [E03](#)

**LGV 50** cable ladder coupler, height=50 mm [E17](#)

**LGVH 50** cable ladder coupler, height=50 mm [E17](#)

**LGVV 50** cable ladder coupler, height=50 mm [E18](#)

**LH** ladder support [E18](#)

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### S

**ST 81** vertical ladder [E13](#)

**ST 82** vertical ladder [E15](#)

**STIS** rung [E21](#)

**STISD** rung [E21](#)

**STLS** rung [E19](#)

**STR 50** barrier strip [E17](#)

**STU 50** vertical ladder [E04](#)

**STU 50-3E** vertical ladder [E05](#)

**STU 60** vertical ladder [E07](#)

**STU 62** vertical ladder [E10](#)

**STUS** rung [E19](#)

**SU 50/36** protection end cap, profile U50 [E17](#)

# Vertical ladders

## LGG 60 vertical ladder, light duty

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.



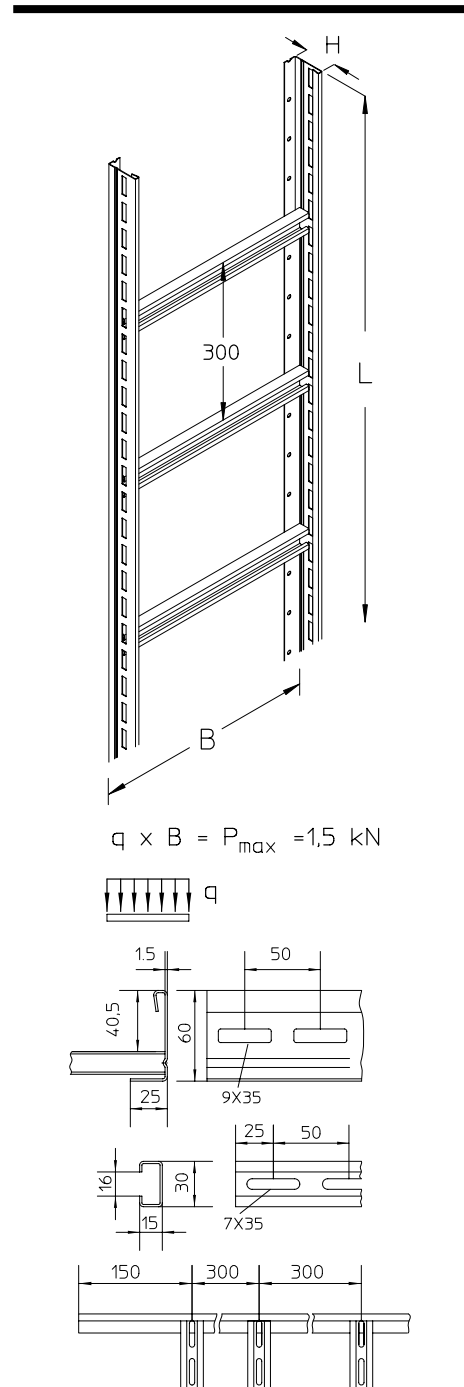
article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	P <sub>max</sub> kN	G kg
<b>S</b>							
LGG 60-20-3S	60	200	3000	81	0,23	1,5	7,92
LGG 60-30-3S	60	300	3000	122	0,34	1,5	8,61
LGG 60-40-3S	60	400	3000	162	0,45	1,5	9,30
LGG 60-50-3S	60	500	3000	203	0,57	1,5	9,98
LGG 60-60-3S	60	600	3000	243	0,68	1,5	10,67
LGG 60-20S	60	200	6000	81	0,23	1,5	15,84
LGG 60-30S	60	300	6000	122	0,34	1,5	17,22
LGG 60-40S	60	400	6000	162	0,45	1,5	18,59
LGG 60-50S	60	500	6000	203	0,57	1,5	19,96
LGG 60-60S	60	600	6000	243	0,68	1,5	21,34

<b>F</b>							
LGG 60-20-3F	60	200	3000	81	0,23	1,5	8,48
LGG 60-30-3F	60	300	3000	122	0,34	1,5	9,21
LGG 60-40-3F	60	400	3000	162	0,45	1,5	9,95
LGG 60-50-3F	60	500	3000	203	0,57	1,5	10,68
LGG 60-60-3F	60	600	3000	243	0,68	1,5	11,42
LGG 60-20F	60	200	6000	81	0,23	1,5	16,95
LGG 60-30F	60	300	6000	122	0,34	1,5	18,42
LGG 60-40F	60	400	6000	162	0,45	1,5	19,89
LGG 60-50F	60	500	6000	203	0,57	1,5	21,36
LGG 60-60F	60	600	6000	243	0,68	1,5	22,83

<b>E</b>							
LGG 60-20-3E	60	200	3000	81	0,23	1,5	7,97
LGG 60-30-3E	60	300	3000	122	0,34	1,5	8,66
LGG 60-40-3E	60	400	3000	162	0,45	1,5	9,35
LGG 60-50-3E	60	500	3000	203	0,57	1,5	10,05
LGG 60-60-3E	60	600	3000	243	0,68	1,5	10,74
LGG 60-20E	60	200	6000	81	0,23	1,5	15,95
LGG 60-30E	60	300	6000	122	0,34	1,5	17,33
LGG 60-40E	60	400	6000	162	0,45	1,5	18,71
LGG 60-50E	60	500	6000	203	0,57	1,5	20,09
LGG 60-60E	60	600	6000	243	0,68	1,5	21,47

accessories optional:

<b>H</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)
<b>LGV 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>LGVV 60</b>	cable ladder coupler, height=60 mm	(page C16)
<b>LGVB 60</b>	cable ladder coupler, height=60 mm	(page C15)
<b>SL 60</b>	protection end cap	(page C20)
<b>LH</b>	ladder support	(page E18)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)



# Vertical ladders

## STU 50 vertical ladder, medium building class / medium-duty

For an application example, see the chapter assembly.

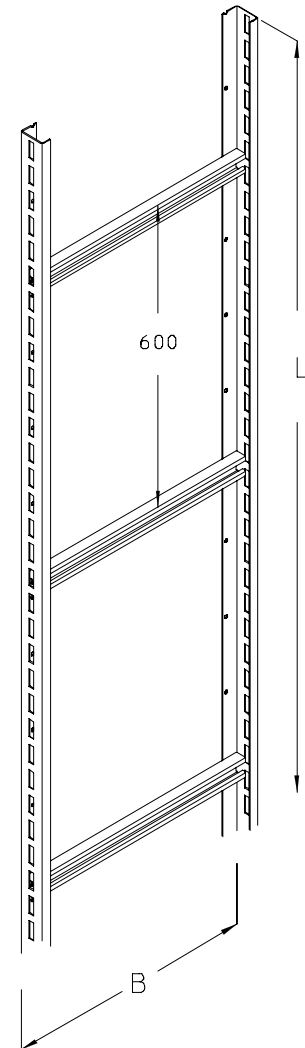


article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>S</b>				
STU 50-02-3S	210	3000	2,0	9,75
STU 50-03-3S	300	3000	2,0	10,35
STU 50-04-3S	400	3000	2,0	10,90
STU 50-05-3S	500	3000	2,0	11,50
STU 50-06-3S	600	3000	2,0	12,05
STU 50-07-3S	700	3000	2,0	12,65
STU 50-08-3S	800	3000	2,0	13,25
STU 50-02S	210	6000	2,0	19,50
STU 50-03S	300	6000	2,0	20,70
STU 50-04S	400	6000	2,0	21,80
STU 50-05S	500	6000	2,0	23,00
STU 50-06S	600	6000	2,0	24,10
STU 50-07S	700	6000	2,0	25,30
STU 50-08S	800	6000	2,0	26,50

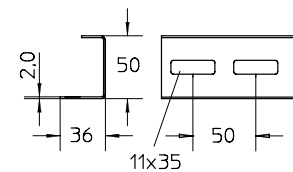
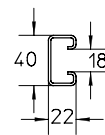
<b>F</b>				
STU 50-02-3F	210	3000	2,0	10,50
STU 50-03-3F	300	3000	2,0	11,05
STU 50-04-3F	400	3000	2,0	11,65
STU 50-05-3F	500	3000	2,0	12,30
STU 50-06-3F	600	3000	2,0	12,90
STU 50-07-3F	700	3000	2,0	13,55
STU 50-08-3F	800	3000	2,0	14,15
STU 50-02F	210	6000	2,0	21,00
STU 50-03F	300	6000	2,0	22,10
STU 50-04F	400	6000	2,0	23,30
STU 50-05F	500	6000	2,0	24,60
STU 50-06F	600	6000	2,0	25,80
STU 50-07F	700	6000	2,0	27,10
STU 50-08F	800	6000	2,0	28,30

accessories optional:

<b>STR 50</b>	barrier strip	(page E17)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)
<b>STLS</b>	rung	(page E19)
<b>LGV 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVH 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVV 50</b>	cable ladder coupler, height=50 mm	(page E18)
<b>SU 50/36</b>	protection end cap, profile U50	(page E17)
<b>LH</b>	ladder support	(page E18)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 50-3E vertical ladder, medium building class / medium-duty

Beams and rungs are delivered not mounted including screws and nuts. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-02-3E</b>	210	3000	10,40

accessories included:

5 x <b>STUS 02E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-03-3E</b>	300	3000	10,90

accessories included:

5 x <b>STUS 03E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-04-3E</b>	400	3000	11,40

accessories included:

5 x <b>STUS 04E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-05-3E</b>	500	3000	11,90

accessories included:

5 x <b>STUS 05E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

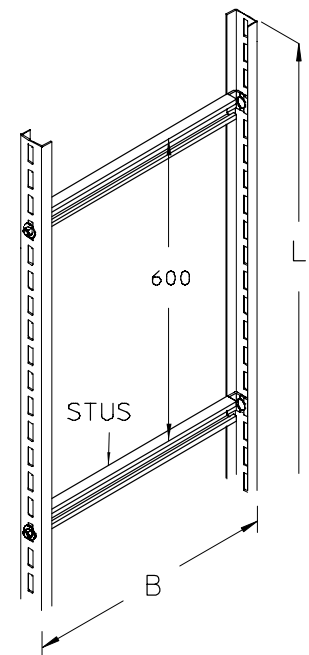
article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-06-3E</b>	600	3000	12,40

accessories included:

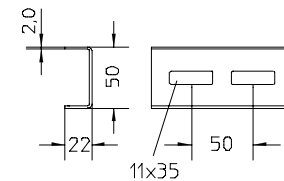
5 x <b>STUS 06E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)
<b>STUS</b>	rung	(page E19)
<b>LGV 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVB 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVB 50</b>	cable ladder coupler, height=50 mm	(page E18)
<b>LH</b>	ladder support	(page E18)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)



$$q \times B = P_{max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 50-3E vertical ladder, medium building class / medium-duty

Beams and rungs are delivered not mounted including screws and nuts. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).



article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-07-3E</b>	700	3000	12,90

accessories included:

5 x <b>STUS 07E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

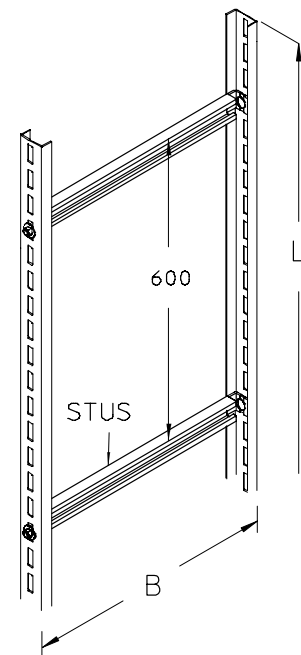
article number	B mm	L mm	G kg
<b>E</b>			
<b>STU 50-08-3E</b>	800	3000	13,50

accessories included:

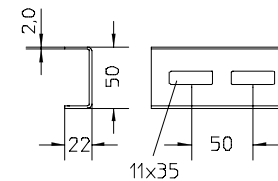
5 x <b>STUS 08E</b>	rung	(page E19)
10 x <b>FRSV 8x16E</b>	round-head screw with short square	(page G35)
10 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
10 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
20 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)
<b>STUS</b>	rung	(page E19)
<b>LGV 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVH 50</b>	cable ladder coupler, height=50 mm	(page E17)
<b>LGVV 50</b>	cable ladder coupler, height=50 mm	(page E18)
<b>LH</b>	ladder support	(page E18)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$





# Vertical ladders

## STU 60 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-02-3F</b>	200	3000	2,0	21,25
<b>STU 60-02F</b>	200	6000	2,0	49,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-02F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-03-3F</b>	300	3000	2,0	22,07
<b>STU 60-03F</b>	300	6000	2,0	52,20

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-03F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-04-3F</b>	400	3000	2,0	22,77
<b>STU 60-04F</b>	400	6000	2,0	55,20

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-04F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

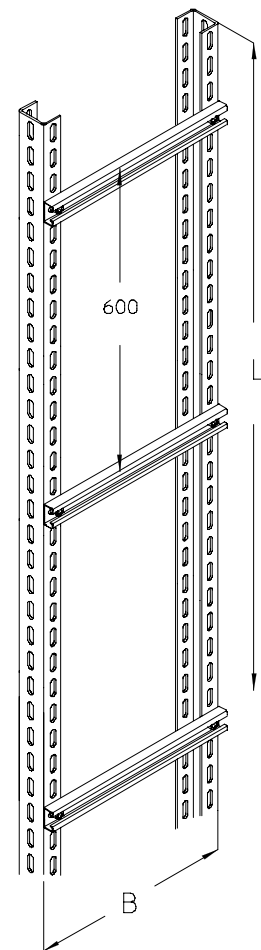
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-05-3F</b>	500	3000	2,0	23,57
<b>STU 60-05F</b>	500	6000	2,0	57,60

accessories included:

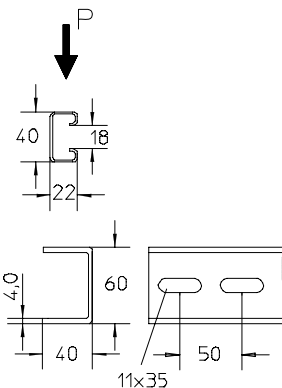
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-05F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>SU 60</b>	protection end cap, profile U60	(page F37)
<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 60 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.



article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-06-3F</b>	600	3000	2,0	24,27
<b>STU 60-06F</b>	600	6000	2,0	60,80

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-06F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-07-3F</b>	700	3000	2,0	25,07
<b>STU 60-07F</b>	700	6000	2,0	63,80

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-07F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-08-3F</b>	800	3000	2,0	25,77
<b>STU 60-08F</b>	800	6000	2,0	66,80

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-08F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

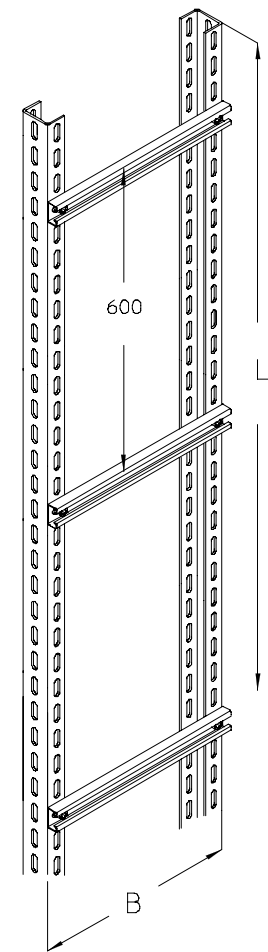
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-09-3F</b>	900	3000	2,0	26,32
<b>STU 60-09F</b>	900	6000	2,0	70,00

accessories included:

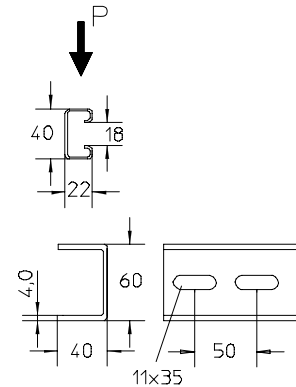
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-09F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>SU 60</b>	protection end cap, profile U60	(page F37)
<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 60 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-10-3F</b>	1000	3000	2,0	27,42
<b>STU 60-10F</b>	1000	6000	2,0	73,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-10F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-11-3F</b>	1100	3000	2,0	28,22
<b>STU 60-11F</b>	1100	6000	2,0	76,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-11F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

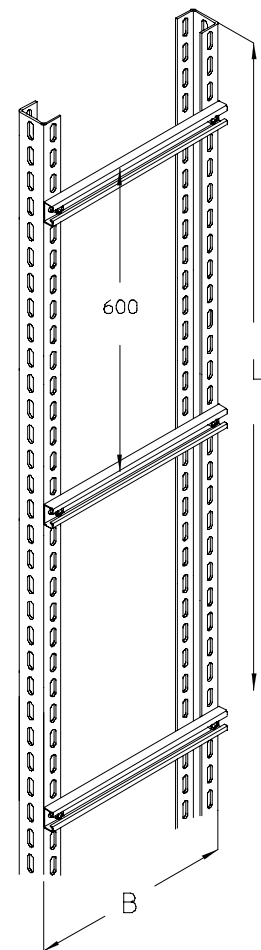
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>STU 60-12-3F</b>	1200	3000	2,0	29,20
<b>STU 60-12F</b>	1200	6000	2,0	79,20

accessories included:

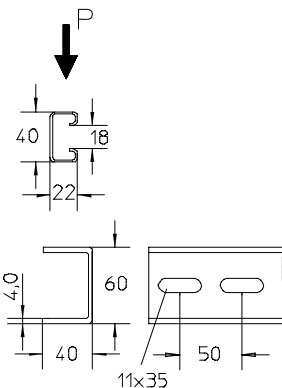
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
10 x <b>KHA 8-12F</b>	C-rail, perforated, 40x22 mm	(page F60)
20 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
40 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
20 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>SU 60</b>	protection end cap, profile U60	(page F37)
<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 62 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.



article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-02F</b>	200	6000	49,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-02F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-03F</b>	300	6000	52,20

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-03F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-04F</b>	400	6000	55,20

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-04F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-05F</b>	500	6000	57,60

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-05F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

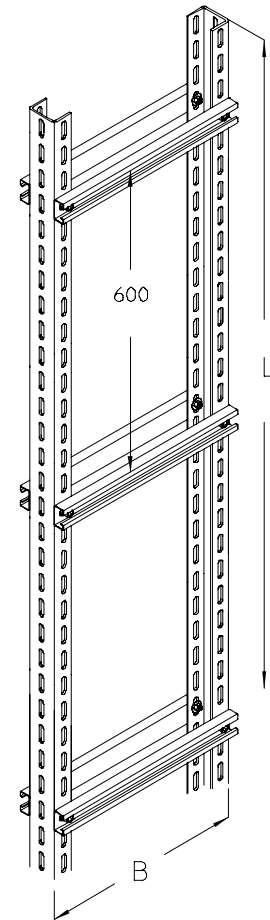
article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-06F</b>	600	6000	60,80

accessories included:

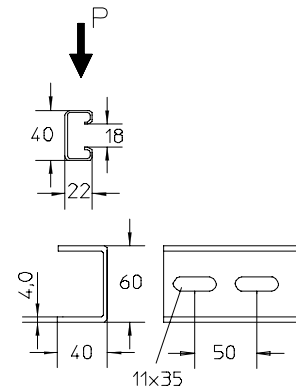
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-06F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 62 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.



article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-07F</b>	700	6000	63,80

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-07F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-08F</b>	800	6000	66,80

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-08F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-09F</b>	900	6000	70,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-09F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-10F</b>	1000	6000	73,00

accessories included:

2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-10F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

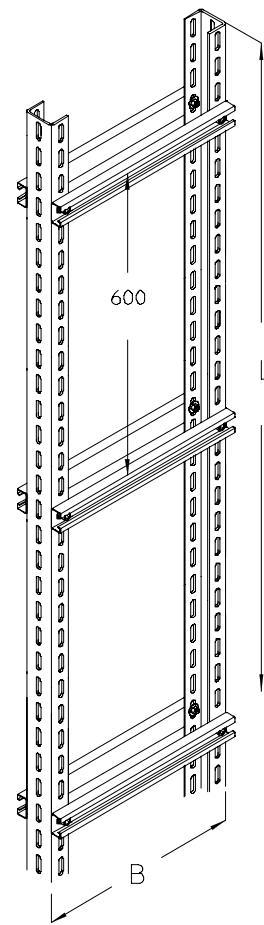
article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-11F</b>	1100	6000	76,00

accessories included:

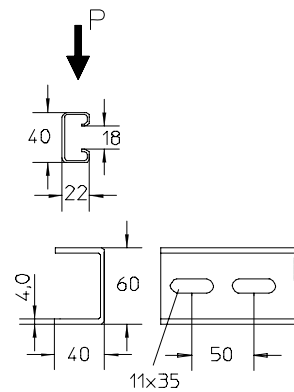
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-11F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## STU 62 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts.  
For an application example, see the chapter assembly.



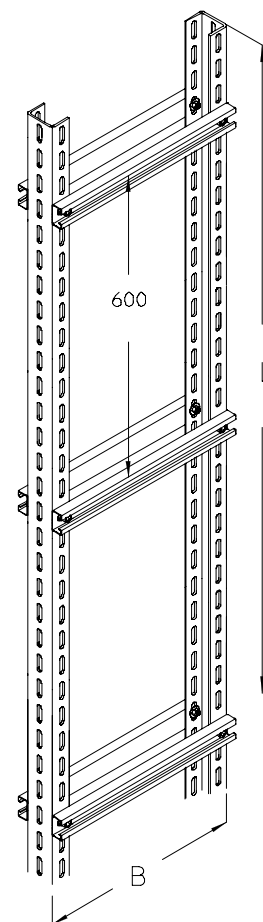
article number	B mm	L mm	G kg
<b>F</b>			
<b>STU 62-12F</b>	1200	6000	79,20

accessories included:

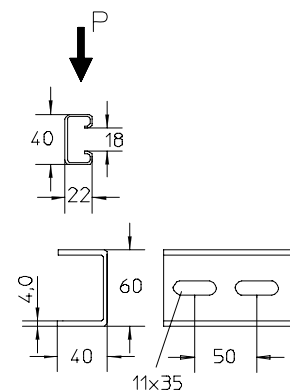
2 x <b>KHU 60-60F</b>	bracket support, profile U60	(page F26)
20 x <b>KHA 8-12F</b>	C-rail, perforated, 40x22 mm	(page F60)
40 x <b>IK 10x20E</b>	hexagon socket head screw, DIN 912	(page G37)
80 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
40 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

<b>KHUV 60</b>	coupler, profile U60	(page F33)
<b>BL 4</b>	corner angle, profile U50/ U60/ U100	(page E20, F35)
<b>KHA 8</b>	C-rail, perforated, 40x22 mm	(page F60)
<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>AC</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



$$q \times B = P_{\max} = 2,0 \text{ kN}$$



# Vertical ladders

## ST 81 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts. External dimension = B + 42 mm  
For an application example, see the chapter assembly.



article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-02F</b>	200	6000	2,5	82,50

accessories included:  
10 x **STIS 02F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-03F</b>	300	6000	2,5	84,00

accessories included:  
10 x **STIS 03F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-04F</b>	400	6000	2,5	85,50

accessories included:  
10 x **STIS 04F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-05F</b>	500	6000	2,5	87,00

accessories included:  
10 x **STIS 05F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

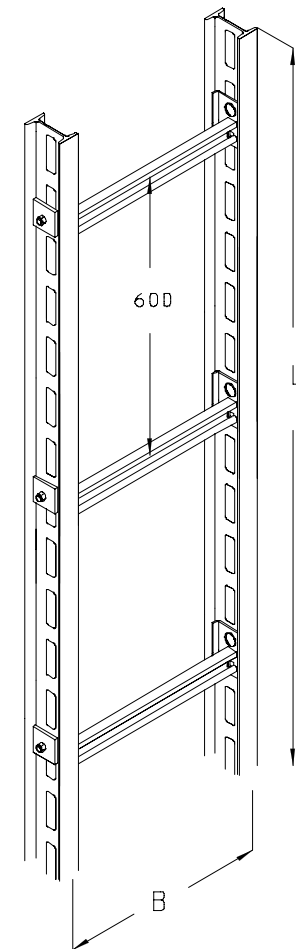
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-06F</b>	600	6000	2,5	88,50

accessories included:  
10 x **STIS 06F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

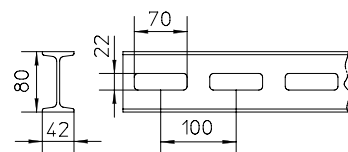
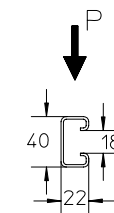
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 81-07F</b>	700	6000	2,5	90,00

accessories included:  
10 x **STIS 07F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

accessories optional:  
**STIS** rung (page E21)  
**SI** protection end cap, yellow (page F46)  
**HKI** support connector (page E22, F43)  
**BGI** head plate, profile I80 (page E22, F41)  
**BGIQ** head plate, profile I80 (page E23, F42)  
**BL 7** corner angle (page E23, F45)  
**AC** cable clamp for fastening to C-profiles (catalogue cable clamps)



$$q \times B = P_{\max} = 2,5 \text{ kN}$$



# Vertical ladders

## ST 81 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts. External dimension =  $B + 42$  mm  
For an application example, see the chapter assembly.



article number	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>				
<b>ST 81-08F</b>	800	6000	2,5	91,50

accessories included:  
10 x **STIS 08F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>				
<b>ST 81-09F</b>	900	6000	2,5	93,00

accessories included:  
10 x **STIS 09F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>				
<b>ST 81-10F</b>	1000	6000	2,5	94,50

accessories included:  
10 x **STIS 10F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

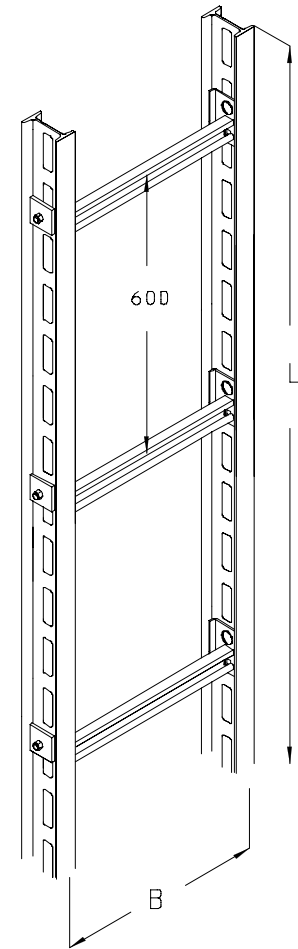
article number	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>				
<b>ST 81-11F</b>	1100	6000	2,5	96,00

accessories included:  
10 x **STIS 11F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

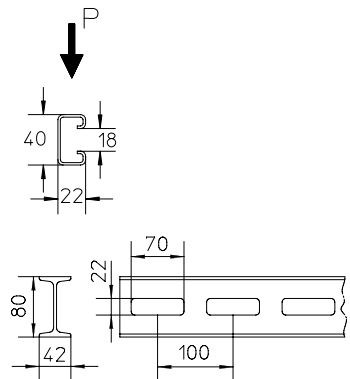
article number	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>				
<b>ST 81-12F</b>	1200	6000	2,5	97,50

accessories included:  
10 x **STIS 12F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

accessories optional:  
**STIS** rung (page E21)  
**SI** protection end cap, yellow (page F46)  
**HKI** support connector (page E22, F43)  
**BGI** head plate, profile I80 (page E22, F41)  
**BGIQ** head plate, profile I80 (page E23, F42)  
**BL 7** corner angle (page E23, F45)  
**AC** cable clamp for fastening to C-profiles (catalogue cable clamps)



$$q \times B = P_{max} = 2,5 \text{ kN}$$





# Vertical ladders

## ST 82 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts. External dimension = B + 42 mm



article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-02F</b>	200	6000	5,0	85,50

accessories included:  
 10 x **STISD 02F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-03F</b>	300	6000	5,0	88,00

accessories included:  
 10 x **STISD 03F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-04F</b>	400	6000	5,0	91,50

accessories included:  
 10 x **STISD 04F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-05F</b>	500	6000	5,0	94,50

accessories included:  
 10 x **STISD 05F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

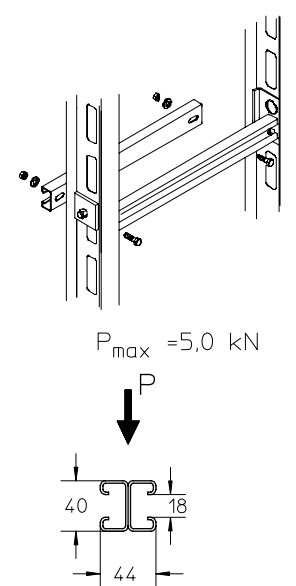
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-06F</b>	600	6000	5,0	97,50

accessories included:  
 10 x **STISD 06F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-07F</b>	700	6000	5,0	100,50

accessories included:  
 10 x **STISD 07F** rung (page E21)  
 2 x **KHI 60F** bracket support, type KT (page F39)

accessories optional:  
**STIS** rung (page E21)  
**STISD** rung (page E21)  
**SI** protection end cap, yellow (page F46)  
**HKI** support connector (page E22, F43)  
**BGI** head plate, profile I80 (page E22, F41)  
**BGIQ** head plate, profile I80 (page E23, F42)  
**BL 7** corner angle (page E23, F45)  
**AC** cable clamp for fastening to C-profiles (catalogue cable clamps)



# Vertical ladders

## ST 82 vertical ladder, heavy building class / heavy-duty

Beams and rungs are delivered not mounted including screws and nuts. External dimension = B + 42 mm



article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-08F</b>	800	6000	5,0	103,50

accessories included:

10 x **STISD 08F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-09F</b>	900	6000	5,0	106,50

accessories included:

10 x **STISD 09F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-10F</b>	1000	6000	5,0	109,50

accessories included:

10 x **STISD 10F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-11F</b>	1100	6000	5,0	112,50

accessories included:

10 x **STISD 11F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

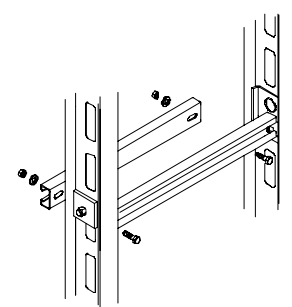
article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>ST 82-12F</b>	1200	6000	5,0	115,50

accessories included:

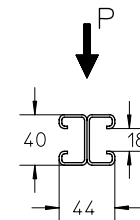
10 x **STISD 12F** rung (page E21)  
2 x **KHI 60F** bracket support, type KT (page F39)

accessories optional:

**STIS** rung (page E21)  
**STISD** rung (page E21)  
**SI** protection end cap, yellow (page F46)  
**HKI** support connector (page E22, F43)  
**BGI** head plate, profile I80 (page E22, F41)  
**BGIQ** head plate, profile I80 (page E23, F42)  
**BL 7** corner angle (page E23, F45)  
**AC** cable clamp for fastening to C-profiles (catalogue cable clamps)



$P_{max} = 5,0 \text{ kN}$

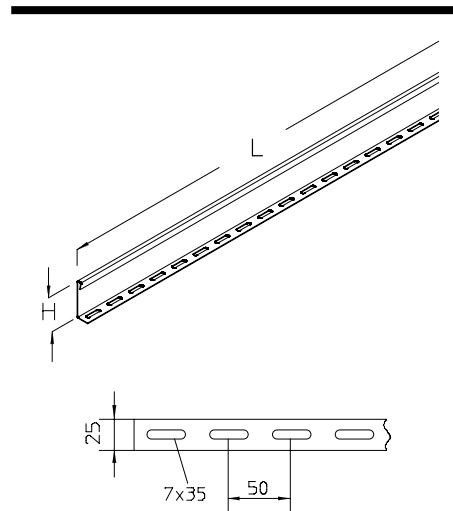


# Vertical ladders

## Accessories of STU 50

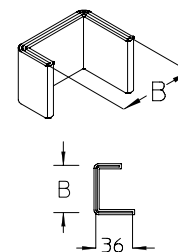
### STR 50 barrier strip

article number	H mm	L mm	G kg
<b>S</b>			
<b>STR 50S</b>	33	3000	1,62
<b>F</b>			
<b>STR 50F</b>	33	3000	1,78
<b>E</b>			
<b>STR 50E</b>	33	3000	1,65



### SU 50/36 protection end cap, profile U50

article number	B mm	G kg
<b>PE</b>		
<b>SU 50/36</b>	50	0,01



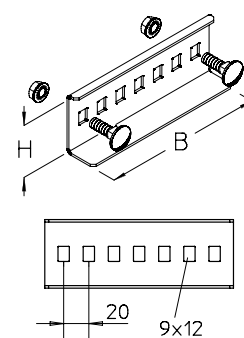
### LGV 50 cable ladder coupler, height=50 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGV 50S</b>	50,5	150	0,18

accessories included:  
2 x **KLS 8x16** fixing set (page G33)

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGV 50F</b>	50,5	150	0,19
<b>E</b>			
<b>LGV 50E</b>	50,5	150	0,18

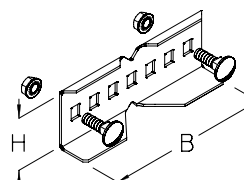
accessories included:  
2 x **KLS 8x16E** fixing set (page G34)



### LGVH 50 cable ladder coupler, height=50 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVH 50S</b>	50,5	150	0,18

accessories included:  
2 x **KLS 8x16** fixing set (page G33)



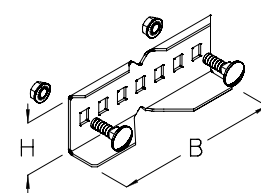
# Vertical ladders

## Accessories of STU 50

### LGVH 50 cable ladder coupler, height=50 mm

article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVH 50F</b>	50,5	150	0,19
<b>E</b>			
<b>LGVH 50E</b>	50,5	150	0,18

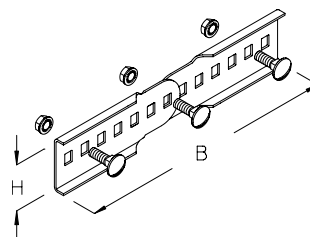
accessories included:  
2 x **KLS 8x16E** fixing set (page G34)



### LGVV 50 cable ladder coupler, height=50 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>LGVV 50S</b>	50,5	270	0,36

accessories included:  
3 x **KLS 8x16** fixing set (page G33)



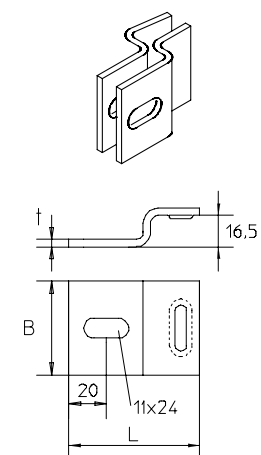
article number	H mm	B mm	G kg
<b>F</b>			
<b>LGVV 50F</b>	50,5	270	0,38
<b>E</b>			
<b>LGVV 50E</b>	50,5	270	0,36

accessories included:  
3 x **KLS 8x16E** fixing set (page G34)

### LH ladder support

For an application example, see the chapter assembly.

article number	B mm	L mm	t mm	G kg
<b>F</b>				
<b>LH F</b>	50	70	4	0,25



# Vertical ladders

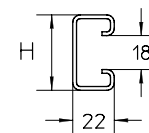
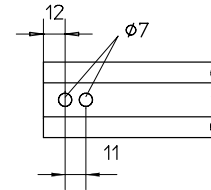
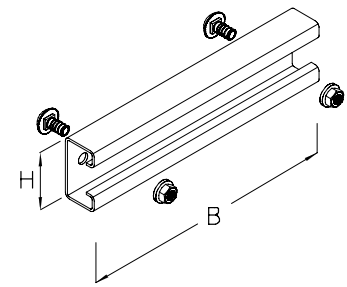
## Accessories of STU 50

### STLS rung

article number	H mm	B mm	G kg
<b>S</b>			
<b>STLS 02S</b>	40	203	0,24
<b>STLS 03S</b>	40	293	0,36
<b>STLS 04S</b>	40	393	0,47
<b>STLS 05S</b>	40	493	0,59
<b>STLS 06S</b>	40	593	0,70
<b>STLS 07S</b>	40	693	0,82
<b>STLS 08S</b>	40	793	0,94

accessories included:

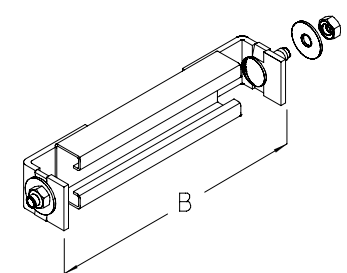
2 x **SES 6x16** hexagon head bolt, DIN 933 (page G37)  
 2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)



article number	H mm	B mm	G kg
<b>F</b>			
<b>STLS 02F</b>	40	203	0,27
<b>STLS 03F</b>	40	293	0,38
<b>STLS 04F</b>	40	393	0,50
<b>STLS 05F</b>	40	493	0,63
<b>STLS 06F</b>	40	593	0,75
<b>STLS 07F</b>	40	693	0,88
<b>STLS 08F</b>	40	793	1,00

accessories included:

2 x **SES 6x16E** hexagon head bolt, DIN 933 (page G38)  
 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)



### STUS rung

article number	B mm	G kg
<b>E</b>		
<b>STUS 02E</b>	200	0,39
<b>STUS 03E</b>	300	0,51
<b>STUS 04E</b>	400	0,63
<b>STUS 05E</b>	500	0,75
<b>STUS 06E</b>	600	0,87
<b>STUS 07E</b>	700	0,99
<b>STUS 08E</b>	800	1,11
<b>STUS 09E</b>	900	1,23
<b>STUS 10E</b>	1000	1,80
<b>STUS 11E</b>	1100	2,00
<b>STUS 12E</b>	1200	2,20

accessories included:

2 x **FRSV 8x16E** round-head screw with short square (page G35)  
 2 x **US 8x25E** square washer, DIN 9021 (page G40)  
 2 x **SES 8x16E** hexagon head bolt, DIN 933 (page G38)  
 2 x **US 8x17E** square washer, DIN 125 (page G40)  
 4 x **SEM 8E** hexagon-nut, DIN 934 (page G41)

# Vertical ladders

## Accessories of STU 50

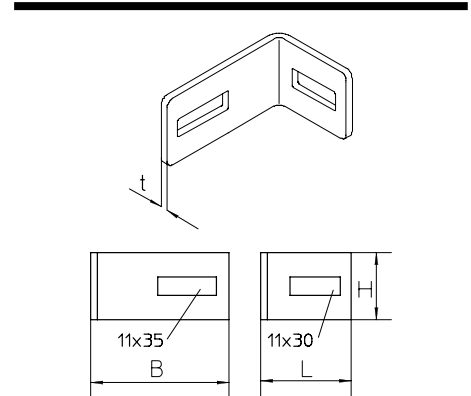
### BL 4 corner angle, profile U50/ U60/ U100

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>BL 4F</b>	40	82,5	54	4	0,15
<b>E</b>					
<b>BL 4E</b>	40	82,5	54	4	0,15

accessories optional:

**SD** expansion anchor (page G12)  
**KLS** fixing set (page G33)



# Vertical ladders

## Accessories of ST 81/82

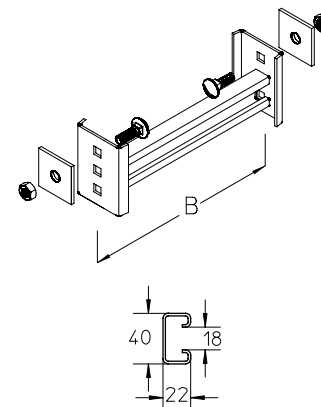
### STIS rung

For an application example, see the chapter assembly.

article number	B mm	P <sub>max</sub> kN	G kg
<b>F</b>			
<b>STIS 02F</b>	200	2,5	0,90
<b>STIS 03F</b>	300	2,5	1,10
<b>STIS 04F</b>	400	2,5	1,20
<b>STIS 05F</b>	500	2,5	1,40
<b>STIS 06F</b>	600	2,5	1,60
<b>STIS 07F</b>	700	2,5	1,70
<b>STIS 08F</b>	800	2,5	1,90
<b>STIS 09F</b>	900	2,5	2,10
<b>STIS 10F</b>	1000	2,5	2,20
<b>STIS 11F</b>	1100	2,5	2,40
<b>STIS 12F</b>	1200	2,5	2,50

accessories included:

2 x <b>FRS 10x30F</b>	round-head screw with square, DIN 603	(page G35)
2 x <b>RUS 50-L13F</b>	square washer	(page G42)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

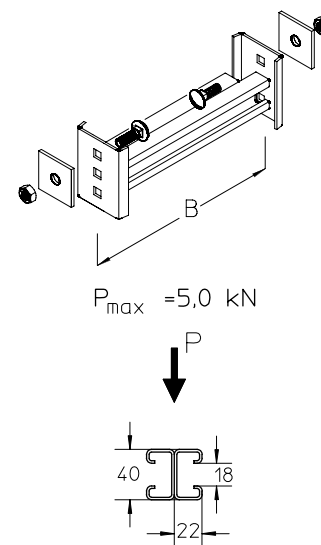


### STISD rung

article number	B mm	P <sub>max</sub> kN	G kg
<b>F</b>			
<b>STISD 02F</b>	200	5,0	1,20
<b>STISD 03F</b>	300	5,0	1,50
<b>STISD 04F</b>	400	5,0	1,90
<b>STISD 05F</b>	500	5,0	2,20
<b>STISD 06F</b>	600	5,0	2,50
<b>STISD 07F</b>	700	5,0	2,90
<b>STISD 08F</b>	800	5,0	3,20
<b>STISD 09F</b>	900	5,0	3,50
<b>STISD 10F</b>	1000	5,0	3,90
<b>STISD 11F</b>	1100	5,0	4,20
<b>STISD 12F</b>	1200	5,0	4,50

accessories included:

2 x <b>FRS 10x30F</b>	round-head screw with square, DIN 603	(page G35)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>RUS 50-L13F</b>	square washer	(page G42)
2 x <b>SES 8x16E</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEMS 8E</b>	hexagon nut, self-locking, DIN 6923	(page G41)



# Vertical ladders

## Accessories of ST 81/82

### HKI support connector

For an application example, see the chapter assembly.

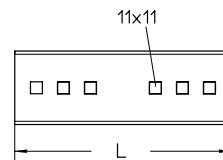
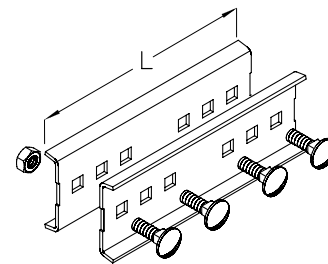
article number	L mm	G kg
<b>F</b>		
<b>HKI F</b>	200	1,00

accessories included:

4 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)  
 4 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

**SD** expansion anchor (page G12)



### BGI head plate, profile 180

article also available with other inclinations

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

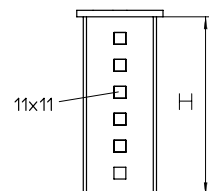
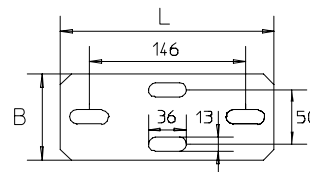
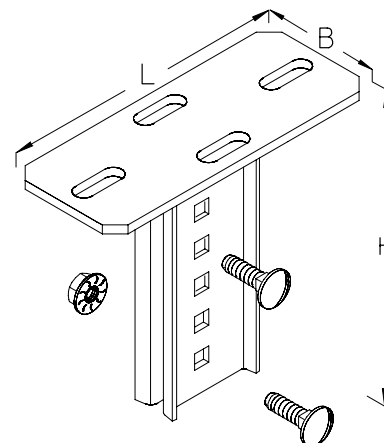
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGI F</b>	165	80	200	1,40

accessories included:

2 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)  
 2 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

**SD** expansion anchor (page G12)





# Vertical ladders

## Accessories of ST 81/82

### BGIQ head plate, profile I80

For an application example, see the chapter assembly.

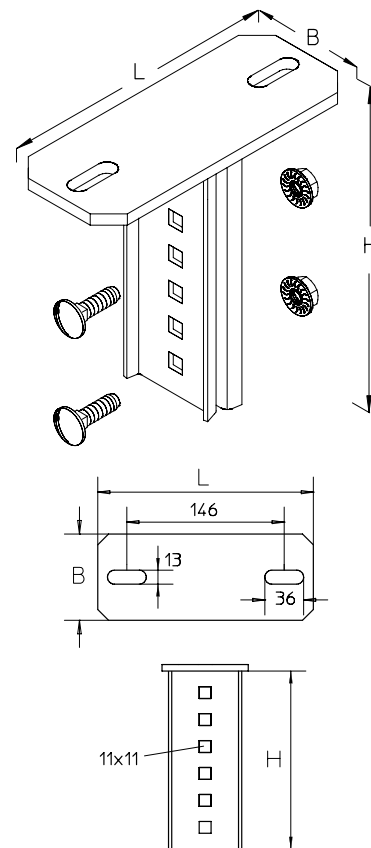
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGIQ F</b>	165	80	200	1,40

accessories included:

2 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)  
 2 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

**SD** expansion anchor (page G12)



### BL 7 corner angle

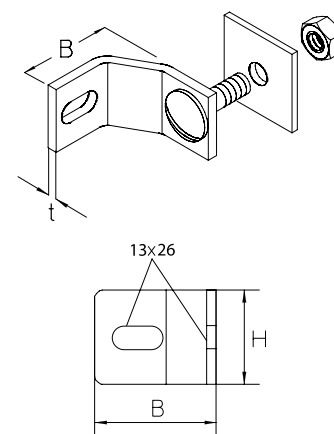
article number	H mm	B mm	t mm	G kg
<b>F</b>				
<b>BL 7F</b>	50	65	5	0,30

accessories included:

1 x **FRS 12x30F** round-head screw with square, DIN 603 (page G35)  
 1 x **SEM 12F** hexagon-nut, DIN 934 (page G41)  
 1 x **RUS 50-L13F** square washer (page G42)

accessories optional:

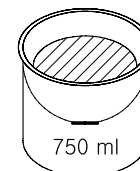
**SD** expansion anchor (page G12)



### KZF cold zinc paint

For assembly instructions, see the chapter assembly.

article number	I ml	G kg
<b>KZF</b>	750	1,93



# Vertical ladders

## Accessories of ST 81/82

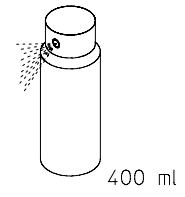
### **KZS** cold zinc spray

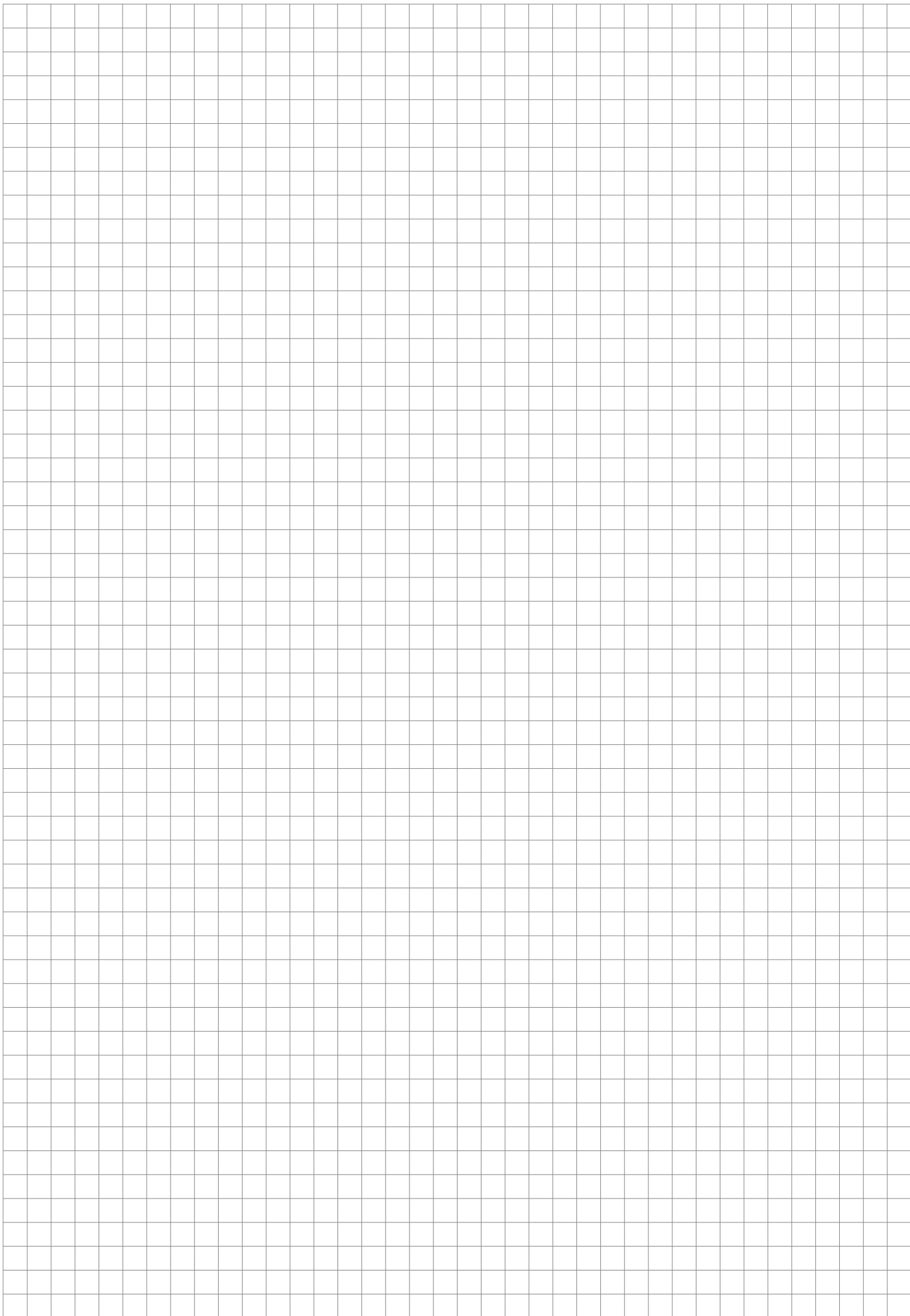
For assembly instructions, see the chapter assembly.

---

article number	l ml	G kg
<b>KZS</b>	400	0,40

---





E



# Support systems

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KHU-system	F17-F37
KHI-system	F38-F46
KHA-system	F47-F55
Profile rails	F56-F68



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**A 4** C-rail, not perforated, 48x26 mm [F57](#)  
**A 41** C-rail, not perforated, 41x41 mm [F62](#)  
**A 7** C-rail, not perforated, 40x22 mm [F58](#)  
**A 8** C-rail, not perforated, 40x22 mm [F60](#)  
**A 9** C-rail, not perforated, 40x25 mm [F61](#)  
**AKL** rail clamp [F51](#)  
**ASK 4** coupler for KHA-profile [F56](#)  
**ASK 8** coupler for KHA-profile [F56](#)  
**AV** coupler for KHA-profile [F51](#)  
**AVA** corner connector T-piece [F53](#)  
**AVAW** corner connector left / center / right [F54](#)  
**AVB** rail coupler U support [F53](#)  
**AVE** corner connector 90° [F52](#)  
**AVL** fastening strip [F52](#)  
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### B

**B 3** profile rail, not perforated, 28x12 mm [F65](#)  
**B 6** profile rail, not perforated, 28x15 mm [F66](#)  
**B 7** profile rail, not perforated, 30x15 mm [F66](#)  
**BGA 41** Mounting/ floor/ ceiling plate [F50](#)  
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**BGUD** head plate, profile U40/ U57/ U60 [F31](#)  
**BGUDW** head plate, profile U40/ U57/ U60 [F31](#)  
**BGUQ** head plate, profile U50 [F30](#)  
**BL 3** corner angle [F44](#)  
**BL 4** corner angle, profile U50/ U60/ U100 [F35](#)  
**BL 5** corner angle [F51](#)  
**BL 7** corner angle [F45](#)  
**BL 8** corner angle [F45](#)  
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### D

**DB** ceiling fixed bracket [F11](#)  
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### G

**GBAG** central hanger [F12](#)  
**GBAR** central hanger [F11](#)

### H

**HKI** support connector [F43](#)  
**HKIQ** support connector [F44](#)  
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### K

**KA 30** bracket, light duty, profile 41 [F49](#)  
**KA 41** bracket, standard, profile 41 [F49](#)  
**KB** junction plate [F36](#)  
**KDAG 41** ceiling fixed bracket, profile 41 [F47](#)  
**KDI** bracket support, heavy, profile I80 [F38](#)  
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**KHA 41** C-rail, perforated, 41x41 mm [F48](#), [F63](#)  
**KHA 42** C-rail, perforated, 41x42 mm [F65](#)

**KHA 7** C-rail, perforated, 40x22 mm [F59](#)  
**KHA 8** C-rail, perforated, 40x22 mm [F60](#)  
**KHA 82** C-rail, perforated, 41x82 mm [F64](#)  
**KHA 9** C-rail, perforated, 40x25 mm [F61](#)  
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**KIS** bracket, heavy [F09](#)  
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**KW** bracket, standard [F05](#)  
**KWF** bracket, light duty [F05](#)  
**KWLL** bracket, light duty [F03](#)  
**KWMS** wall bracket, medium duty [F06](#)  
**KWS** bracket, heavy [F07](#)  
**KWSS** bracket, very heavy [F08](#)  
**KWW** wall bracket [F04](#)  
**KZF** cold zinc paint [F37](#), [F46](#)  
**KZS** cold zinc spray [F37](#), [F46](#)

### L

**LGL** elongated hole [F68](#)

### M

**MA 60** central hanger [F12](#)

### P

**PRS** cut [F67](#)

### R

**RL** round hole [F67](#)

### S

**SA 1** protection end cap [F54](#)  
**SA 2** protection end cap [F55](#)  
**SAI 21** protection end cap [F55](#)  
**SAI 41** protection end cap [F55](#)  
**SI** protection end cap, yellow [F46](#)  
**SU 40** protection end cap [F37](#)  
**SU 57** protection end cap [F37](#)  
**SU 60** protection end cap, profile U60 [F37](#)

# Support systems

## Brackets

### KWLL bracket, light duty

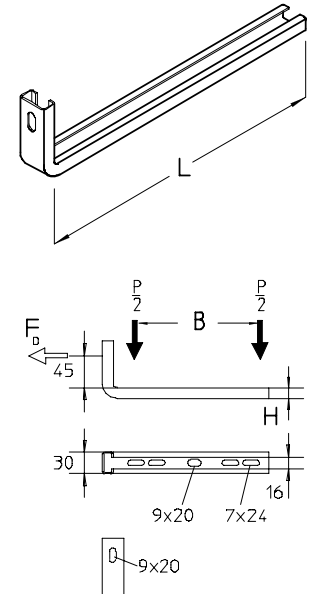
$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>						
<b>KWLL 010S</b>	15	100	110	0,3	2,0	0,13
<b>KWLL 020S</b>	15	200	210	0,3	3,0	0,20
<b>KWLL 030S</b>	15	300	310	0,3	4,0	0,28
<b>E</b>						
<b>KWLL 010E</b>	15	100	110	0,3	2,0	0,13
<b>KWLL 020E</b>	15	200	210	0,3	3,0	0,20
<b>KWLL 030E</b>	15	300	310	0,3	4,0	0,28

accessories optional:

**SD** expansion anchor (page G12)  
**KLR** fixing set (page G33)



### KSLW bracket, light and ceiling stem

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.  
For an application example, see the chapter assembly.  
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>KSLW 010S</b>	20	100	120	0,36
<b>KSLW 020S</b>	20	200	220	0,53
<b>KSLW 030S</b>	20	300	320	0,69
<b>KSLW 040S</b>	20	400	420	0,86
<b>KSLW 050S</b>	20	500	520	1,03
<b>KSLW 060S</b>	20	600	620	1,18

accessories included:

1 x **KSL-SP S** spacer (page F16)

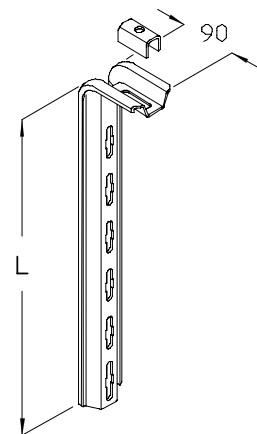
article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>KSLW 015S</b>	20	150	170	0,45
<b>KSLW 025S</b>	20	250	270	0,61

accessories included:

1 x **KSL-SP F** spacer (page F16)

accessories optional:

**SD** expansion anchor (page G12)



# Support systems

## Brackets

### KSLW bracket, light and ceiling stem

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

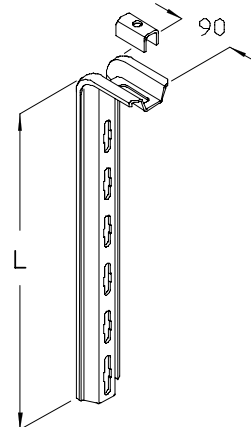
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KSLW 010F</b>	20	100	120	0,38
<b>KSLW 015F</b>	20	150	170	0,47
<b>KSLW 020F</b>	20	200	220	0,56
<b>KSLW 025F</b>	20	250	270	0,65
<b>KSLW 030F</b>	20	300	320	0,73
<b>KSLW 040F</b>	20	400	420	0,92
<b>KSLW 050F</b>	20	500	520	1,10
<b>KSLW 060F</b>	20	600	620	1,26

accessories included:

1 x **KSL-SP F** spacer (page F16)

accessories optional:

**SD** expansion anchor (page G12)



### KWW wall bracket

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

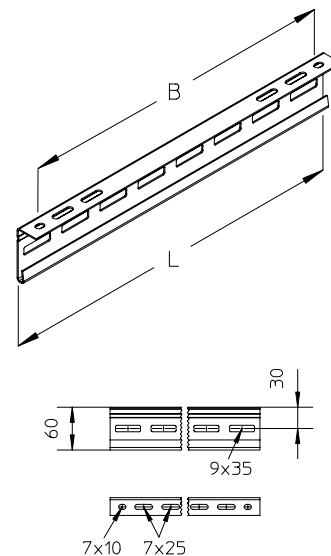
article number	B mm	L mm	G kg
<b>F</b>			
<b>KWW 020F</b>	100	200	0,27
<b>KWW 030F</b>	200	300	0,40
<b>KWW 040F</b>	300	400	0,52
<b>KWW 050F</b>	400	500	0,65
<b>KWW 060F</b>	500	600	0,78
<b>KWW 070F</b>	600	700	0,91

accessories optional:

**SD** expansion anchor (page G12)

**KLU** fixing set (page G07)

**KLR** fixing set (page G33)





# Support systems

## Brackets

### KWF bracket, light duty

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For assembly instructions, see the chapter assembly.

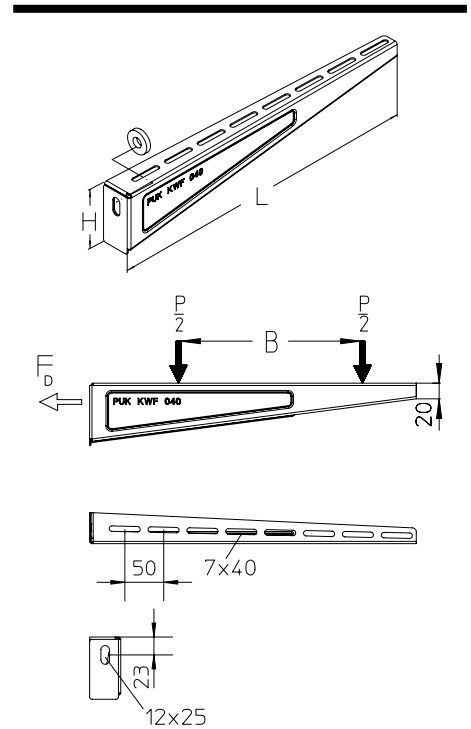
article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>						
<b>KWF 010S</b>	80	100	120	1,2	1,58	0,23
<b>KWF 020S</b>	80	200	220	1,2	2,33	0,30
<b>KWF 030S</b>	80	300	320	1,2	3,15	0,45
<b>KWF 040S</b>	80	400	420	1,2	3,99	0,51

accessories included:

1 x **US 10x30** square washer, DIN 9021 (page G40)

accessories optional:

**KDU 57** bracket support, 57x30mm (page F19)  
**KHU 57** bracket support, 57x30mm (page F24)  
**KDU 40** bracket support, 40x30mm (page F17)  
**KHU 40** bracket support, 40x30mm (page F22)



### KW bracket, standard

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

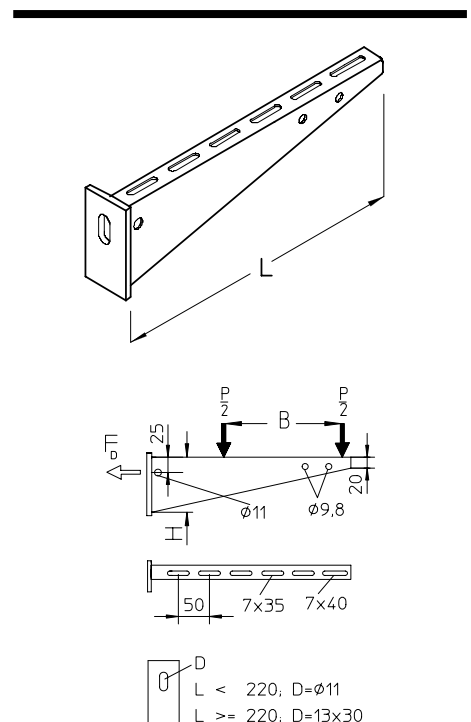
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>						
<b>KW 010F</b>	34	100	120	1,4	3,10	0,13
<b>KW 015F</b>	34	150	170	1,4	4,10	0,16
<b>KW 020F</b>	56	200	220	2,0	3,00	0,35
<b>KW 030F</b>	56	300	320	2,0	4,00	0,50
<b>KW 040F</b>	75	400	420	2,4	3,60	0,80
<b>KW 050F</b>	96	500	520	2,1	3,40	1,40
<b>KW 060F</b>	96	600	620	2,1	4,00	1,60
<b>KW 070F</b>	96	700	720	3,0	5,68	2,27

<b>E</b>						
article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>KW 010E</b>	34	100	120	1,5	3,10	0,13
<b>KW 015E</b>	34	150	170	1,5	4,10	0,16
<b>KW 020E</b>	56	200	220	1,5	3,00	0,39
<b>KW 030E</b>	56	300	320	1,5	4,00	0,47
<b>KW 040E</b>	75	400	420	2,2	3,60	0,76
<b>KW 050E</b>	95	500	520	2,2	3,40	1,20
<b>KW 060E</b>	95	600	620	2,2	4,00	1,40

accessories optional:

**SD** expansion anchor (page G12)  
**KDU 57** bracket support, 57x30mm (page F19)  
**KLU** fixing set (page G07)  
**KLR** fixing set (page G33)



# Support systems

## Brackets

### KWMS wall bracket, medium duty

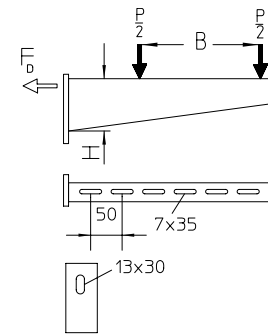
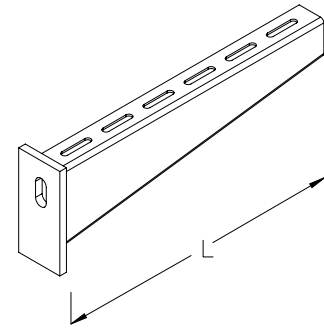
$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>						
<b>KWMS 010F</b>	85	100	120	3,8	1,36	0,53
<b>KWMS 020F</b>	85	200	220	3,8	1,81	0,76
<b>KWMS 030F</b>	85	300	320	3,8	2,32	0,99
<b>KWMS 040F</b>	85	400	420	3,8	2,86	1,21
<b>KWMS 050F</b>	85	400	420	3,8	3,42	1,43
<b>KWMS 060F</b>	85	600	620	3,8	3,99	1,65
<b>KWMS 070F</b>	85	700	720	2,9	5,68	1,88
<b>E</b>						
<b>KWMS 010E</b>	85	100	120	3,8	1,36	0,60
<b>KWMS 020E</b>	85	200	220	3,8	1,81	0,82
<b>KWMS 030E</b>	85	300	320	3,8	2,32	1,03
<b>KWMS 040E</b>	85	400	420	3,8	2,86	1,25
<b>KWMS 050E</b>	85	400	420	3,8	3,42	1,46
<b>KWMS 060E</b>	85	600	620	3,8	3,99	1,68
<b>E4</b>						
<b>KWMS 010E4</b>	85	100	120	3,8	1,36	0,60
<b>KWMS 020E4</b>	85	200	220	3,8	1,81	0,82
<b>KWMS 030E4</b>	85	300	320	3,8	2,32	1,03
<b>KWMS 040E4</b>	85	400	420	3,8	2,86	1,25
<b>KWMS 050E4</b>	85	400	420	3,8	3,42	1,46
<b>KWMS 060E4</b>	85	600	620	3,8	3,99	1,68

accessories optional:

<b>KDU 57</b>	bracket support, 57x30mm	(page F19)
<b>KDU 60</b>	bracket support, heavy, 60x40 mm	(page F21)
<b>KHU 57</b>	bracket support, 57x30mm	(page F24)
<b>KHU 60</b>	bracket support, profile U60	(page F26)
<b>SD</b>	expansion anchor	(page G12)
<b>KLR</b>	fixing set	(page G33)



# Support systems

## Brackets

### KWS bracket, heavy

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

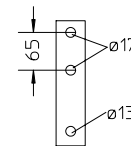
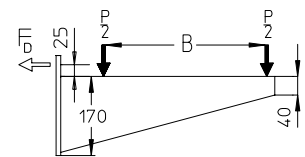
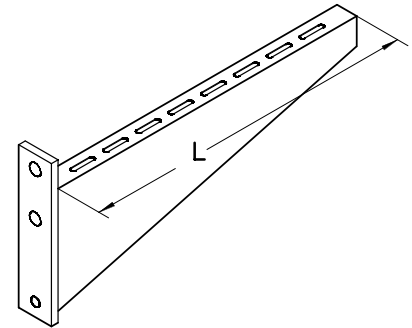
For assembly instructions, see the chapter assembly.



article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>					
<b>KWS 020F</b>	200	280	7,0	1,31	2,04
<b>KWS 030F</b>	300	380	6,7	1,49	2,40
<b>KWS 040F</b>	400	480	6,5	1,69	2,78
<b>KWS 050F</b>	500	580	6,3	1,91	3,32
<b>KWS 060F</b>	600	680	6,1	2,13	3,68
<b>KWS 070F</b>	600	780	5,2	2,60	4,04
<b>KWS 080F</b>	600	880	4,4	3,07	4,41
<b>KWS 090F</b>	600	980	3,6	3,56	4,77
<b>KWS 100F</b>	600	1080	2,8	4,06	5,14

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>KDU 57</b>	bracket support, 57x30mm	(page F19)
<b>KLU</b>	fixing set	(page G07)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)



F

# Support systems

## Brackets

### KWSS bracket, very heavy

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

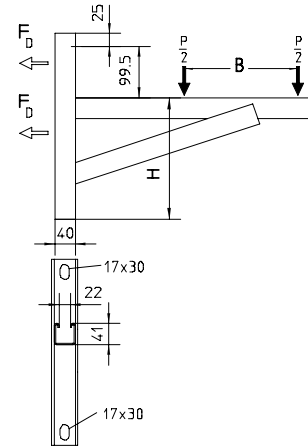
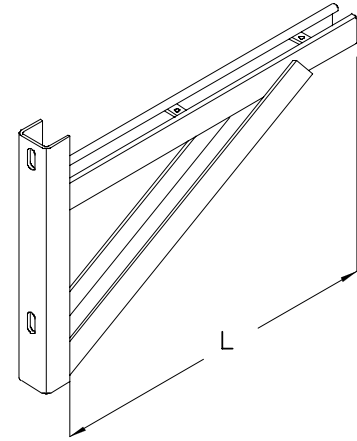
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>						
<b>KWSS 020F</b>	166	200	280	10	0,76	2,59
<b>KWSS 030F</b>	196	300	380	10	0,86	3,37
<b>KWSS 040F</b>	236	400	480	10	0,91	4,18
<b>KWSS 050F</b>	266	500	580	10	0,97	4,96
<b>KWSS 060F</b>	236	600	680	10	1,26	5,51
<b>KWSS 070F</b>	266	600	780	10	1,44	6,28
<b>KWSS 080F</b>	301	600	880	10	1,56	7,08
<b>KWSS 090F</b>	331	600	980	10	1,66	7,85
<b>KWSS 100F</b>	366	600	1080	10	1,72	8,65

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>WPHS-A</b>	flange mounting clamp (C-profiles)	(page D22)
<b>VAB-HB</b>	shear connector rod, concrete	(page G14)
<b>VAS-AS</b>	shear connector rod, stone	(page G15)



# Support systems

## Brackets

### KIS bracket, heavy

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

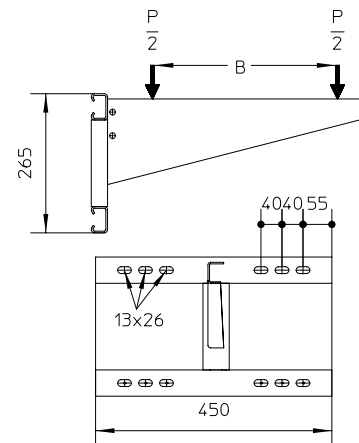
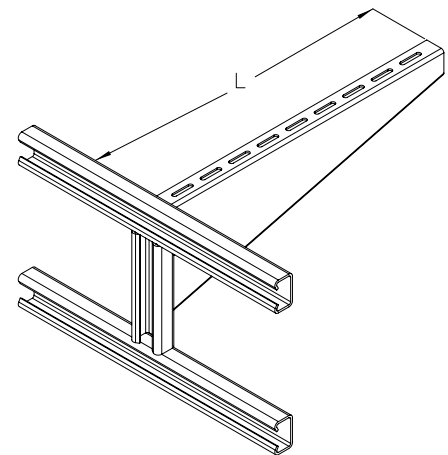
For assembly instructions, see the chapter assembly.



article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>					
<b>KIS 020F</b>	200	280	7,0	0,66	4,32
<b>KIS 030F</b>	300	380	6,7	0,76	4,65
<b>KIS 040F</b>	400	480	6,5	0,86	5,00
<b>KIS 050F</b>	500	580	6,3	0,97	5,34
<b>KIS 060F</b>	600	680	6,1	1,09	5,68
<b>KIS 070F</b>	600	780	5,2	1,33	6,02
<b>KIS 080F</b>	600	880	4,4	1,57	6,36
<b>KIS 090F</b>	600	980	3,6	1,83	6,70
<b>KIS 100F</b>	600	1080	2,8	2,08	7,04

accessories optional:

**SKS H** beam clamp set (page G03)



F

# Support systems

## Brackets

### KISS bracket, very heavy

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

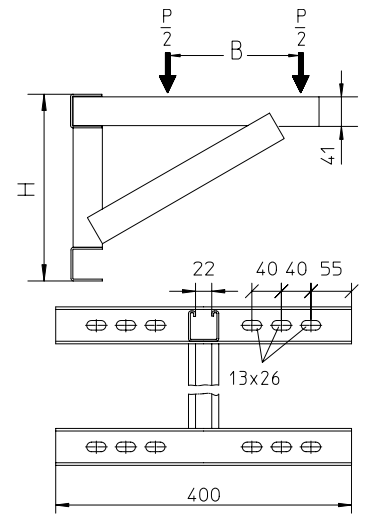
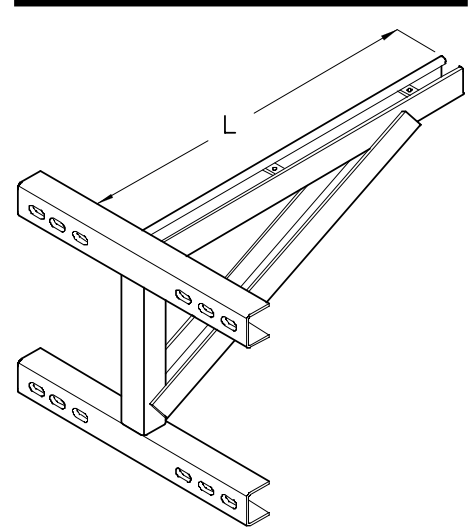
For assembly instructions, see the chapter assembly.



article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>						
<b>KISS 020F</b>	150	200	280	10	0,93	4,66
<b>KISS 030F</b>	185	300	380	10	0,91	5,42
<b>KISS 040F</b>	215	400	480	10	0,92	6,17
<b>KISS 050F</b>	250	500	580	10	0,92	6,93
<b>KISS 060F</b>	280	600	680	10	0,92	7,70
<b>KISS 070F</b>	315	600	780	10	0,99	8,44
<b>KISS 080F</b>	345	600	880	10	1,06	9,21
<b>KISS 090F</b>	380	600	980	10	1,10	9,96
<b>KISS 100F</b>	410	600	1080	10	1,15	10,71

accessories optional:

**WPHS-A** flange mounting clamp (C-profiles) (page D22)  
**SKS M** beam clamp set (page G05)



# Support systems

## Ceiling fixed suspensions

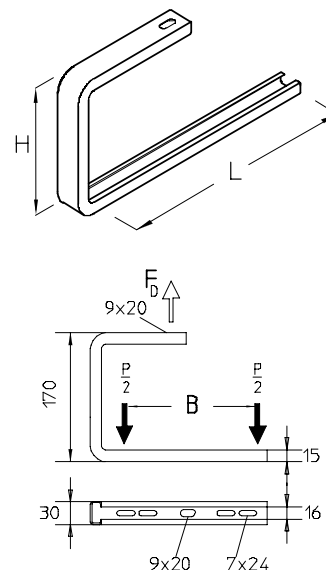
### DB ceiling fixed bracket

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>						
<b>DB 10S</b>	170	100	110	0,60	1,2	0,25
<b>DB 20S</b>	170	200	210	0,40	1,1	0,36
<b>DB 30S</b>	170	300	310	0,28	1,1	0,47
<b>E</b>						
<b>DB 10E</b>	170	100	110	0,50	1,2	0,30
<b>DB 20E</b>	170	200	210	0,35	1,1	0,44
<b>DB 30E</b>	170	300	310	0,25	1,1	0,58

accessories optional:

**KLR** fixing set (page G33)  
**SAZ** anchor (page G12)



### GBAR central hanger

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.  
For an application example, see the chapter assembly.

article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>					
<b>GBAR 10S</b>	100	60	0,7	1	0,62
<b>GBAR 20S</b>	200	160	0,7	1	0,75
<b>GBAR 30S</b>	300	260	0,7	1	0,88

accessories included:

1 x **GB M10-10** threaded rod, DIN 976-1 (page G16)  
3 x **SEM 10** hexagon-nut, DIN 934 (page G41)  
1 x **US 10x30** square washer, DIN 9021 (page G40)  
1 x **KLR** fixing set (page G33)

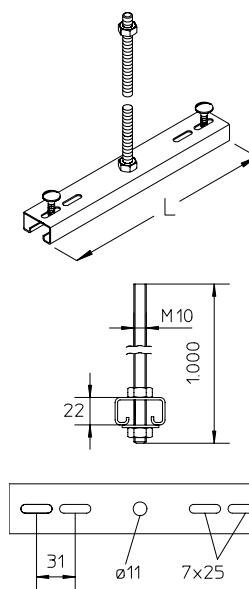
article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>E</b>					
<b>GBAR 10E</b>	100	60	0,7	1	0,62
<b>GBAR 20E</b>	200	160	0,7	1	0,75
<b>GBAR 30E</b>	300	260	0,7	1	0,88

accessories included:

1 x **GB M10-10E** threaded rod, DIN 976-1 (page G16)  
3 x **SEM 10E** hexagon-nut, DIN 934 (page G41)  
1 x **US 10x30E** square washer, DIN 9021 (page G40)  
1 x **KLR E** fixing set (page G33)

accessories optional:

**SAZ** anchor (page G12)



# Support systems

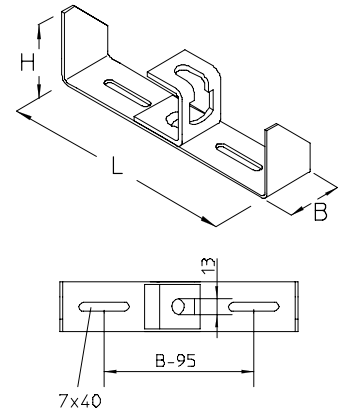
## Ceiling fixed suspensions

### MA 60 central hanger

article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>MA 60-10S</b>	56	40	90	0,26
<b>MA 60-20S</b>	56	40	190	0,36
<b>MA 60-30S</b>	56	40	290	0,45

accessories optional:

**KLR** fixing set (page G33)



### GBAG central hanger

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.  
For an application example, see the chapter assembly.

article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>					
<b>GBAG 10S</b>	100	41	0,5	1	0,42

accessories included:

- 1 x **GB M8-10** threaded rod, DIN 976-1 (page G16)
- 2 x **GV-L 30F** wire-mesh cable tray coupler (page A08)
- 1 x **US 8x17** square washer, DIN 125 (page G39)
- 3 x **SEM 8** hexagon-nut, DIN 934 (page G41)

article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>					
<b>GBAG 20S</b>	200	180	0,5	1	0,50

accessories included:

- 1 x **GB M8-10** threaded rod, DIN 976-1 (page G16)
- 1 x **GV-L 30F** wire-mesh cable tray coupler (page A08)
- 3 x **SEM 8** hexagon-nut, DIN 934 (page G41)
- 1 x **US 8x25** square washer, DIN 9021 (page G40)

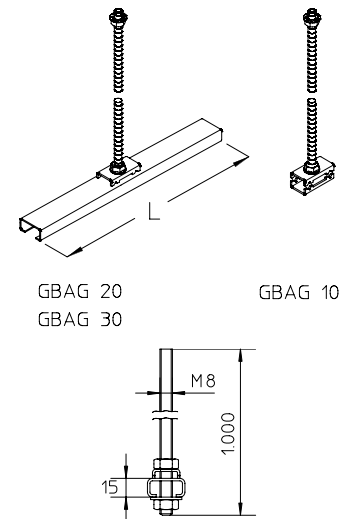
article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>					
<b>GBAG 30S</b>	300	280	0,5	1	0,57

accessories included:

- 1 x **GB M8-10** threaded rod, DIN 976-1 (page G16)
- 1 x **GV-L 30F** wire-mesh cable tray coupler (page A08)
- 1 x **US 8x25** square washer, DIN 9021 (page G40)
- 3 x **SEM 8** hexagon-nut, DIN 934 (page G41)

accessories optional:

**SAZ** anchor (page G12)





# Support systems

## Ceiling fixed suspensions

### GBAG central hanger

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>E</b>					
<b>GBAG 10E</b>	100	41	0,5	1	0,42

accessories included:

1 x <b>GB M8-10E</b>	threaded rod, DIN 976-1	(page G16)
3 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>US 8x17E</b>	square washer, DIN 125	(page G40)
2 x <b>GV-L 30E</b>	wire-mesh cable tray coupler	(page A08)

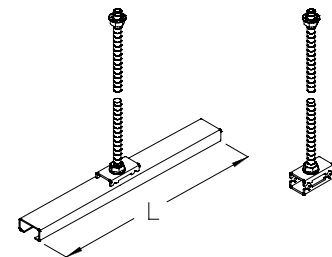
article number	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>E</b>					
<b>GBAG 20E</b>	200	180	0,5	1	0,50
<b>GBAG 30E</b>	300	280	0,5	1	0,57

accessories included:

1 x <b>GB M8-10E</b>	threaded rod, DIN 976-1	(page G16)
3 x <b>SEM 8E</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>US 8x25E</b>	square washer, DIN 9021	(page G40)
1 x <b>GV-L 30E</b>	wire-mesh cable tray coupler	(page A08)

accessories optional:

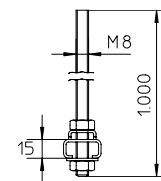
<b>SAZ</b>	anchor	(page G12)
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GBAG 20

GBAG 10

GBAG 30



F

# Support systems

## KSL-system

### KSL bracket, light duty

For an application example, see the chapter assembly.

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>S</b>				
<b>KSL 010S</b>	100	120	3,0	0,36
<b>KSL 015S</b>	150	170	2,4	0,45
<b>KSL 020S</b>	200	220	1,9	0,53
<b>KSL 025S</b>	250	270	1,5	0,61
<b>KSL 030S</b>	300	320	1,1	0,69
<b>KSL 040S</b>	400	420	0,8	0,86

accessories included:

1 x **FRS 8x20** round-head screw with square, DIN 603 (page G35)  
 1 x **SEMS 8** hexagon nut, self-locking, DIN 6923 (page G41)

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>KSL 010F</b>	100	120	3,0	0,38
<b>KSL 015F</b>	150	170	2,4	0,47
<b>KSL 020F</b>	200	220	1,9	0,56
<b>KSL 025F</b>	250	270	1,5	0,65
<b>KSL 030F</b>	300	320	1,1	0,73
<b>KSL 040F</b>	400	420	0,8	0,92

accessories included:

1 x **FRS 8x20E** round-head screw with square, DIN 603 (page G35)  
 1 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)

accessories optional:

**KLRL** clamping assembly (page G36)

### KSLW bracket, light and ceiling stem

$F_d/P$ : coefficient for calculation of the dowel load  $F_d$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>KSLW 010S</b>	20	100	120	0,36
<b>KSLW 020S</b>	20	200	220	0,53
<b>KSLW 030S</b>	20	300	320	0,69
<b>KSLW 040S</b>	20	400	420	0,86
<b>KSLW 050S</b>	20	500	520	1,03
<b>KSLW 060S</b>	20	600	620	1,18

accessories included:

1 x **KSL-SP S** spacer (page F16)

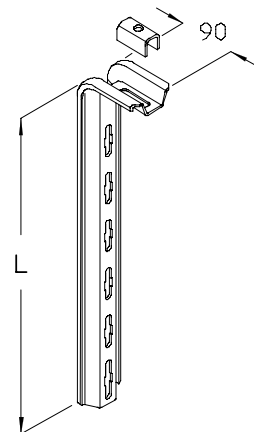
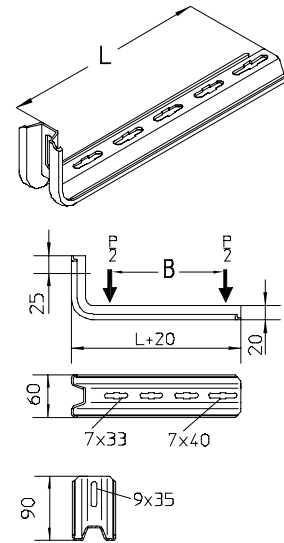
article number	H mm	B mm	L mm	G kg
<b>S</b>				
<b>KSLW 015S</b>	20	150	170	0,45
<b>KSLW 025S</b>	20	250	270	0,61

accessories included:

1 x **KSL-SP F** spacer (page F16)

accessories optional:

**SD** expansion anchor (page G12)



# Support systems

## KSL-system

### KSLW bracket, light and ceiling stem

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KSLW 010F</b>	20	100	120	0,38
<b>KSLW 015F</b>	20	150	170	0,47
<b>KSLW 020F</b>	20	200	220	0,56
<b>KSLW 025F</b>	20	250	270	0,65
<b>KSLW 030F</b>	20	300	320	0,73
<b>KSLW 040F</b>	20	400	420	0,92
<b>KSLW 050F</b>	20	500	520	1,10
<b>KSLW 060F</b>	20	600	620	1,26

accessories included:

1 x **KSL-SP F** spacer (page F16)

accessories optional:

**SD** expansion anchor (page G12)

### DKSL ceiling fixed bracket, light duty

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>						
<b>DKSL 010S</b>	170	100	120	0,9	3,1	0,59
<b>DKSL 020S</b>	170	200	220	0,5	2,1	0,76
<b>DKSL 030S</b>	170	300	320	0,4	2,7	0,91
<b>DKSL 040S</b>	170	400	420	0,3	3,3	1,08

<b>F</b>						
<b>DKSL 010F</b>	170	100	120	0,9	3,1	0,63
<b>DKSL 020F</b>	170	200	220	0,5	2,1	0,81
<b>DKSL 030F</b>	170	300	320	0,4	2,7	0,97
<b>DKSL 040F</b>	170	400	420	0,3	3,3	1,15

accessories included:

1 x **KSL-SP F** spacer (page F16)

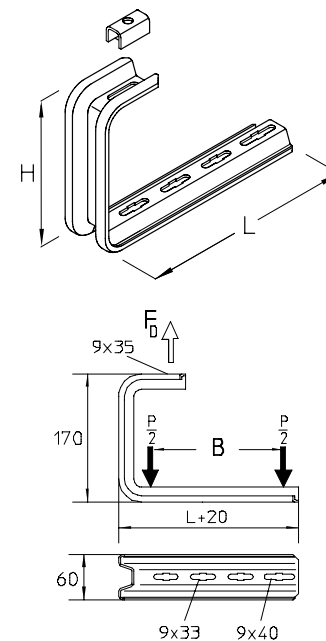
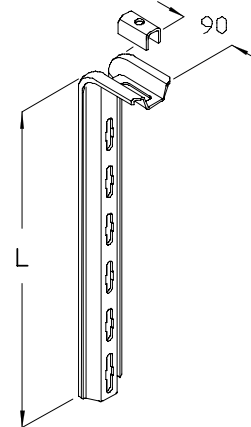
accessories optional:

**SD** expansion anchor (page G12)

**SAZ** anchor (page G12)

**KLRL** clamping assembly (page G36)

**KLU** fixing set (page G07)



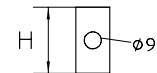
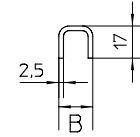
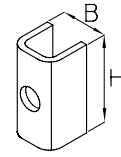
# Support systems

## KSL-system

### KSL-SP spacer

For an application example, see the chapter assembly.

article number	H mm	B mm	G kg
<b>S</b>			
<b>KSL-SP S</b>	35	18	0,28
<b>F</b>			
<b>KSL-SP F</b>	35	18	0,03



# Support systems

## KHU-system

### KDU 40 bracket support, 40x30mm

Ceiling bracket support, U-profile 40 x 30mm, continuously three-way perforated, with welded head plate, certified according to DIN EN 61537.

Load figures  $P_{max}$  when using a support piece with the hot-dip galvanized Bracket support according to DIN EN 61537 (test No. 10.8.2.3). It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

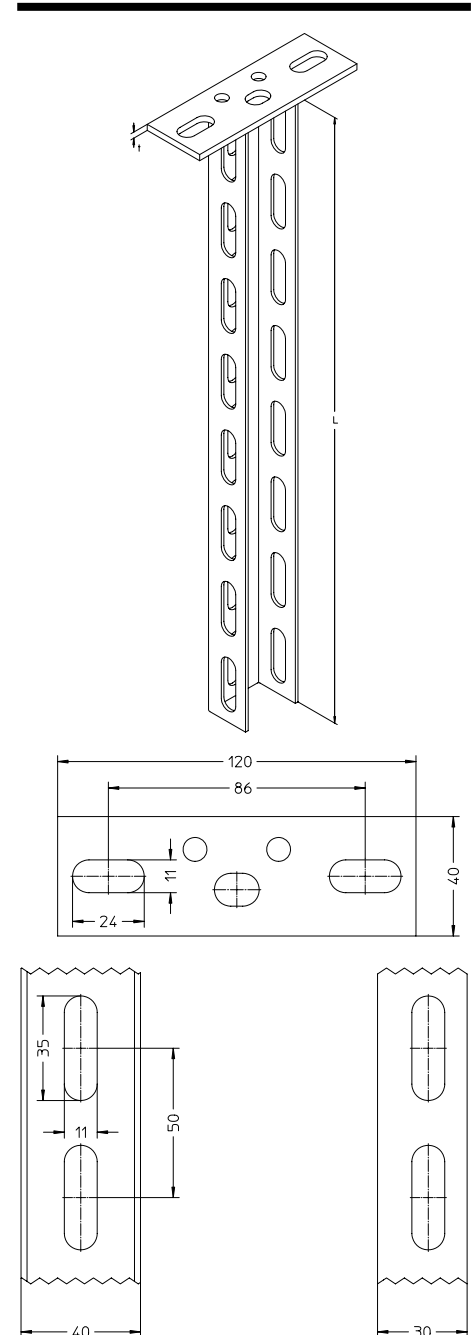
For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>F</b>		
KDU 40-02F	200	0,38
KDU 40-03F	300	0,50
KDU 40-04F	400	0,62
KDU 40-05F	500	0,73
KDU 40-06F	600	0,86
KDU 40-07F	700	0,98
KDU 40-08F	800	1,10
KDU 40-09F	900	1,22
KDU 40-10F	1000	1,34
KDU 40-11F	1100	1,46
KDU 40-12F	1200	1,58
KDU 40-13F	1300	1,70
KDU 40-14F	1400	1,82
KDU 40-15F	1500	1,94

<b>E</b>		
KDU 40-02E	200	0,36
KDU 40-03E	300	0,47
KDU 40-04E	400	0,60
KDU 40-05E	500	0,70
KDU 40-06E	600	0,81
KDU 40-07E	700	0,92
KDU 40-08E	800	1,03
KDU 40-09E	900	1,15
KDU 40-10E	1000	1,26
KDU 40-11E	1100	1,40
KDU 40-12E	1200	1,50
KDU 40-13E	1300	1,60
KDU 40-14E	1400	1,73
KDU 40-15E	1500	1,83

accessories optional:

<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KHU 40</b>	bracket support, 40x30mm	(page F22)
<b>KHUV 40</b>	coupler	(page F32)
<b>KHUSS 40</b>	support piece	(page F33)
<b>SU 40</b>	protection end cap	(page F37)



# Support systems

## KHU-system

### KDU 40 bracket support, 40x30mm

Ceiling bracket support, U-profile 40 x 30mm, continuously three-way perforated, with welded head plate, certified according to DIN EN 61537.

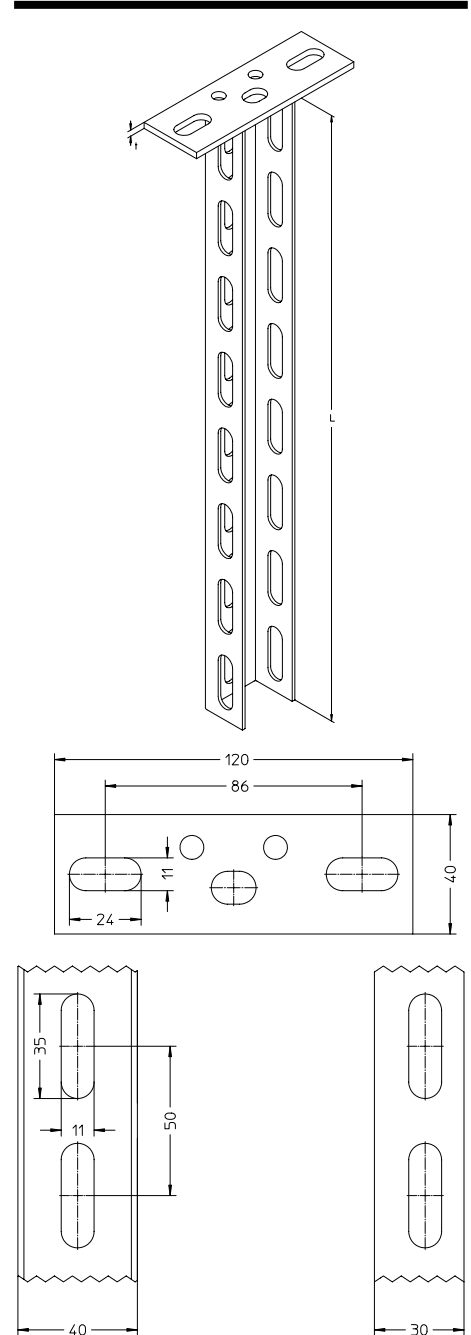
Load figures  $P_{max}$  when using a support piece with the hot-dip galvanized Bracket support according to DIN EN 61537 (test No. 10.8.2.3). It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>E4</b>		
<b>KDU 40-02E4</b>	200	0,36
<b>KDU 40-03E4</b>	300	0,47
<b>KDU 40-04E4</b>	400	0,60
<b>KDU 40-05E4</b>	500	0,70
<b>KDU 40-06E4</b>	600	0,81
<b>KDU 40-07E4</b>	700	0,92
<b>KDU 40-08E4</b>	800	1,03
<b>KDU 40-09E4</b>	900	1,16
<b>KDU 40-10E4</b>	1000	1,26
<b>KDU 40-11E4</b>	1100	1,40
<b>KDU 40-12E4</b>	1200	1,50
<b>KDU 40-13E4</b>	1300	1,61
<b>KDU 40-14E4</b>	1400	1,73
<b>KDU 40-15E4</b>	1500	1,84

accessories optional:

<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KHU 40</b>	bracket support, 40x30mm	(page F22)
<b>KHUV 40</b>	coupler	(page F32)
<b>KHUSS 40</b>	support piece	(page F33)
<b>SU 40</b>	protection end cap	(page F37)



# Support systems

## KHU-system

### KDU 57 bracket support, 57x30mm

Ceiling bracket support, U-profile 57 x 30mm, continuously three-way perforated, with welded head plate, certified according to DIN EN 61537.

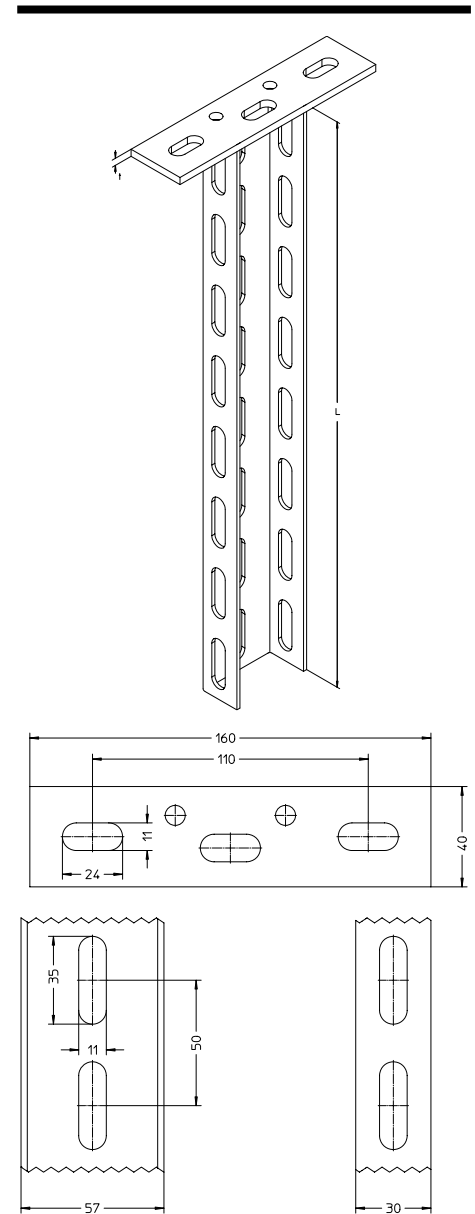
Load figures  $P_{max}$  when using a support piece with the hot-dip galvanized Bracket support according to DIN EN 61537 (test No. 10.8.2.3). It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket. For the system-tested circuit integrity maintenance the support piece KHUSS 60 must be used.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>F</b>		
KDU 57-02F	200	0,59
KDU 57-03F	300	0,77
KDU 57-04F	400	0,95
KDU 57-05F	500	1,13
KDU 57-06F	600	1,31
KDU 57-07F	700	1,49
KDU 57-08F	800	1,68
KDU 57-09F	900	1,86
KDU 57-10F	1000	2,04
KDU 57-11F	1100	2,22
KDU 57-12F	1200	2,40
KDU 57-13F	1300	2,58
KDU 57-14F	1400	2,77
KDU 57-15F	1500	2,95
<b>E</b>		
KDU 57-02E	200	0,57
KDU 57-03E	300	0,74
KDU 57-04E	400	0,91
KDU 57-05E	500	1,08
KDU 57-06E	600	1,25
KDU 57-07E	700	1,42
KDU 57-08E	800	1,59
KDU 57-09E	900	1,76
KDU 57-10E	1000	1,93
KDU 57-11E	1100	2,10
KDU 57-12E	1200	2,27
KDU 57-13E	1300	2,44
KDU 57-14E	1400	2,61
KDU 57-15E	1500	2,78

accessories optional:

<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KWMS</b>	wall bracket, medium duty	(page F06)
<b>KHU 57</b>	bracket support, 57x30mm	(page F24)
<b>KHUV 57</b>	coupler	(page F32)
<b>KHUSS 57</b>	support piece	(page F34)
<b>KHUSS 60</b>	support piece	(page F35)
<b>SU 57</b>	protection end cap	(page F37)



# Support systems

## KHU-system

### KDU 57 bracket support, 57x30mm

Ceiling bracket support, U-profile 57 x 30mm, continuously three-way perforated, with welded head plate, certified according to DIN EN 61537.

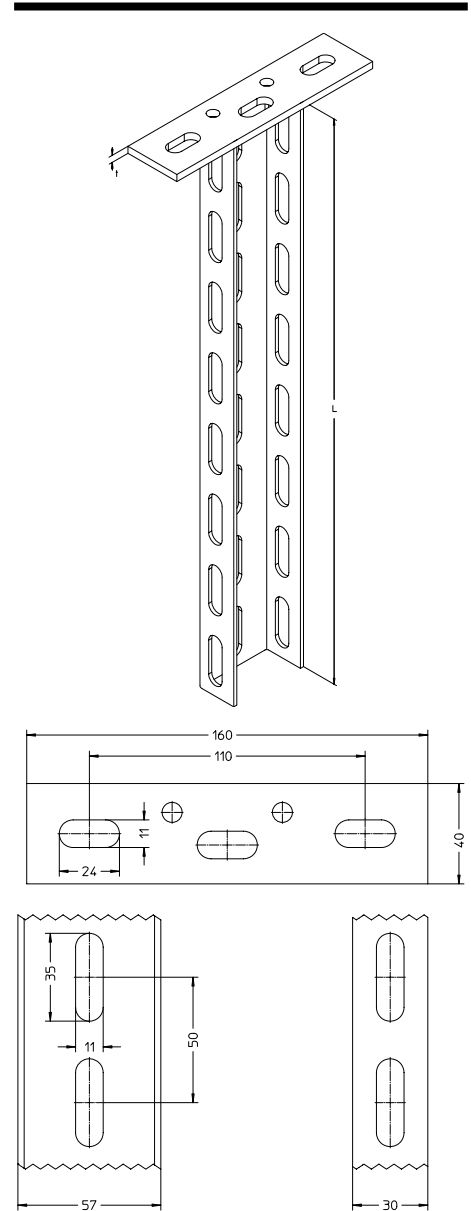
Load figures  $P_{max}$  when using a support piece with the hot-dip galvanized Bracket support according to DIN EN 61537 (test No. 10.8.2.3). It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket. For the system-tested circuit integrity maintenance the support piece KHUSS 60 must be used.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>E4</b>		
<b>KDU 57-02E4</b>	200	0,57
<b>KDU 57-03E4</b>	300	0,74
<b>KDU 57-04E4</b>	400	0,91
<b>KDU 57-05E4</b>	500	1,08
<b>KDU 57-06E4</b>	600	1,25
<b>KDU 57-07E4</b>	700	1,42
<b>KDU 57-08E4</b>	800	1,59
<b>KDU 57-09E4</b>	900	1,76
<b>KDU 57-10E4</b>	1000	1,93
<b>KDU 57-11E4</b>	1100	2,10
<b>KDU 57-12E4</b>	1200	2,27
<b>KDU 57-13E4</b>	1300	2,44
<b>KDU 57-14E4</b>	1400	2,61
<b>KDU 57-15E4</b>	1500	2,78

accessories optional:

<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KWMS</b>	wall bracket, medium duty	(page F06)
<b>KHU 57</b>	bracket support, 57x30mm	(page F24)
<b>KHUV 57</b>	coupler	(page F32)
<b>KHUSS 57</b>	support piece	(page F34)
<b>KHUSS 60</b>	support piece	(page F35)
<b>SU 57</b>	protection end cap	(page F37)





# Support systems

## KHU-system

### KDU 60 bracket support, heavy, 60x40 mm

$F_d/P$ : coefficient for calculation of the dowel load  $F_d$  with effective bracket load  $P$  respectively the sum of effective bracket loads. This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

For an application example, see the chapter assembly.

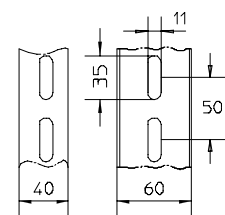
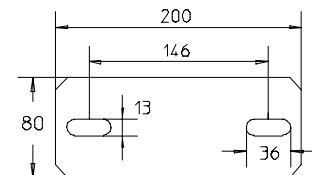
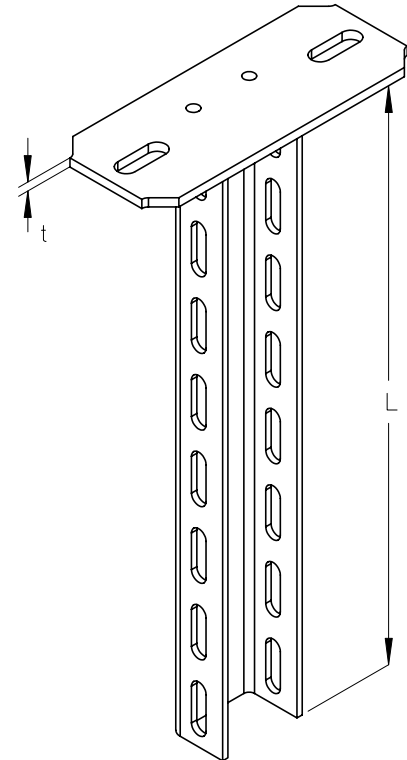
For assembly instructions, see the chapter assembly.



article number	L mm	t mm	G kg
<b>F</b>			
KDU 60-02F	200	6	1,40
KDU 60-03F	300	6	1,80
KDU 60-04F	400	6	2,10
KDU 60-05F	500	6	2,50
KDU 60-06F	600	6	2,80
KDU 60-07F	700	6	3,20
KDU 60-08F	800	6	3,50
KDU 60-09F	900	6	3,90
KDU 60-10F	1000	6	4,20
KDU 60-11F	1100	8	4,80
KDU 60-12F	1200	8	5,20
KDU 60-13F	1300	8	5,50
KDU 60-14F	1400	8	5,90
KDU 60-15F	1500	8	6,30
KDU 60-16F	1600	8	6,60
KDU 60-17F	1700	8	7,00
KDU 60-18F	1800	8	7,30
KDU 60-19F	1900	8	7,70
KDU 60-20F	2000	8	8,00
<b>E</b>			
KDU 60-02E	200	6	1,40
KDU 60-03E	300	6	1,80
KDU 60-04E	400	6	2,10
KDU 60-05E	500	6	2,50
KDU 60-06E	600	6	2,80
KDU 60-07E	700	6	3,20
KDU 60-08E	800	6	3,50
KDU 60-09E	900	6	3,90
KDU 60-10E	1000	6	4,20
KDU 60-11E	1100	6	4,80
KDU 60-12E	1200	6	5,20
KDU 60-13E	1300	6	5,50
KDU 60-14E	1400	6	5,90
KDU 60-15E	1500	6	6,30
KDU 60-16E	1600	6	6,60
KDU 60-17E	1700	6	7,00
KDU 60-18E	1800	6	7,30
KDU 60-19E	1900	6	7,70
KDU 60-20E	2000	6	8,00

accessories optional:

<b>KW</b>	bracket, standard	(page F05)
<b>KWMS</b>	wall bracket, medium duty	(page F06)
<b>KWS</b>	bracket, heavy	(page F07)
<b>SD</b>	expansion anchor	(page G12)
<b>SU 60</b>	protection end cap, profile U60	(page F37)



# Support systems

## KHU-system

### KHU 40 bracket support, 40x30mm

Ceiling bracket support, U-profile 40 x 30mm, continuously three-way perforated.

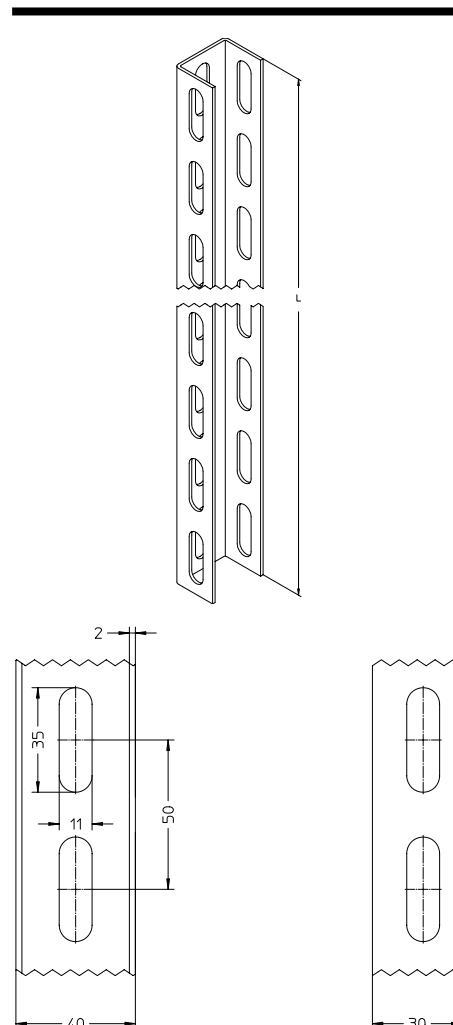
It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>S</b>		
KHU 40-02S	200	0,22
KHU 40-03S	300	0,34
KHU 40-04S	400	0,45
KHU 40-05S	500	0,56
KHU 40-06S	600	0,67
KHU 40-07S	700	0,79
KHU 40-08S	800	0,90
KHU 40-09S	900	1,01
KHU 40-10S	1000	1,12
KHU 40-11S	1100	1,23
KHU 40-12S	1200	1,35
KHU 40-13S	1300	1,55
KHU 40-14S	1400	1,60
KHU 40-15S	1500	1,70
KHU 40-30S	3000	3,40
KHU 40-60S	6000	6,73
<b>F</b>		
KHU 40-02F	200	0,24
KHU 40-03F	300	0,36
KHU 40-04F	400	0,48
KHU 40-05F	500	0,60
KHU 40-06F	600	0,72
KHU 40-07F	700	0,84
KHU 40-08F	800	0,96
KHU 40-09F	900	1,10
KHU 40-10F	1000	1,20
KHU 40-11F	1100	1,32
KHU 40-12F	1200	1,44
KHU 40-13F	1300	1,60
KHU 40-14F	1400	1,70
KHU 40-15F	1500	1,80
KHU 40-30F	3000	3,60
KHU 40-60F	6000	7,20

accessories optional:

<b>KDU 40</b>	bracket support, 40x30mm	(page F17)
<b>BGU 40</b>	head plate, profile U40	(page F28)
<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KHUV 40</b>	coupler	(page F32)
<b>KHUSS 40</b>	support piece	(page F33)
<b>SU 40</b>	protection end cap	(page F37)
<b>BGUD</b>	head plate, profile U40/ U57/ U60	(page F31)
<b>BGUDW</b>	head plate, profile U40/ U57/ U60	(page F31)



# Support systems

## KHU-system

### KHU 40 bracket support, 40x30mm

Ceiling bracket support, U-profile 40 x 30mm, continuously three-way perforated.

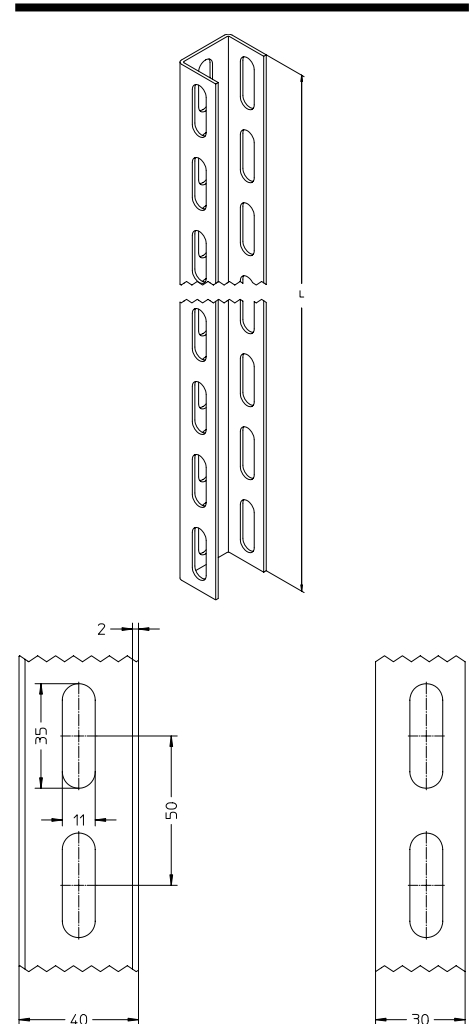
It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>E</b>		
KHU 40-02E	200	0,23
KHU 40-03E	300	0,34
KHU 40-04E	400	0,45
KHU 40-05E	500	0,57
KHU 40-06E	600	0,68
KHU 40-07E	700	0,79
KHU 40-08E	800	0,90
KHU 40-09E	900	1,02
KHU 40-10E	1000	1,13
KHU 40-11E	1100	1,24
KHU 40-12E	1200	1,36
KHU 40-13E	1300	1,47
KHU 40-14E	1400	1,60
KHU 40-15E	1500	1,70
KHU 40-30E	3000	3,40
KHU 40-60E	6000	6,80
<b>E4</b>		
KHU 40-02E4	200	0,23
KHU 40-03E4	300	0,34
KHU 40-04E4	400	0,46
KHU 40-05E4	500	0,57
KHU 40-06E4	600	0,69
KHU 40-07E4	700	0,80
KHU 40-08E4	800	0,92
KHU 40-09E4	900	1,03
KHU 40-10E4	1000	1,14
KHU 40-11E4	1100	1,26
KHU 40-12E4	1200	1,40
KHU 40-13E4	1300	1,50
KHU 40-14E4	1400	1,60
KHU 40-15E4	1500	1,72
KHU 40-30E4	3000	3,43
KHU 40-60E4	6000	6,90

accessories optional:

<b>KDU 40</b>	bracket support, 40x30mm	(page F17)
<b>BGU 40</b>	head plate, profile U40	(page F28)
<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KHUV 40</b>	coupler	(page F32)
<b>KHUSS 40</b>	support piece	(page F33)
<b>SU 40</b>	protection end cap	(page F37)
<b>BGUD</b>	head plate, profile U40/ U57/ U60	(page F31)
<b>BGUDW</b>	head plate, profile U40/ U57/ U60	(page F31)



# Support systems

## KHU-system

### KHU 57 bracket support, 57x30mm

Ceiling bracket support, U-profile 57 x 30mm, continuously three-way perforated.

It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

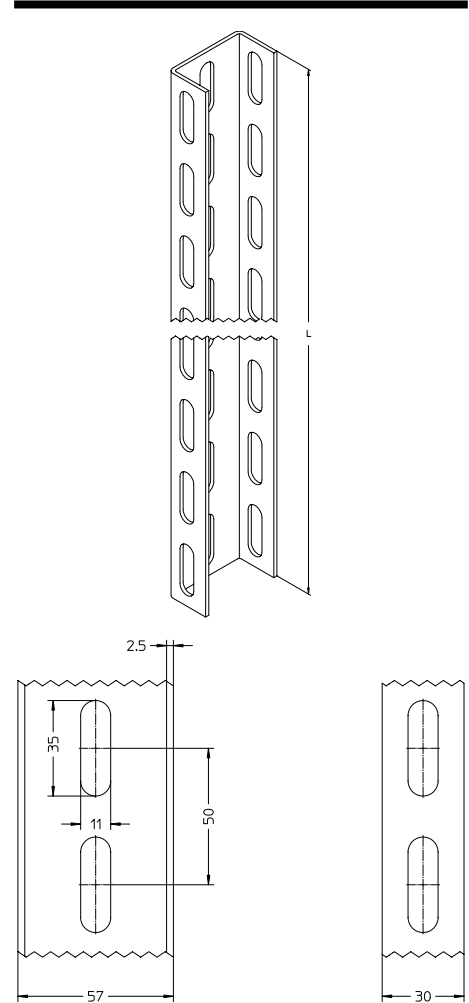
For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>S</b>		
KHU 57-02S	200	0,34
KHU 57-03S	300	0,51
KHU 57-04S	400	0,68
KHU 57-05S	500	0,85
KHU 57-06S	600	1,02
KHU 57-07S	700	1,19
KHU 57-08S	800	1,36
KHU 57-09S	900	1,53
KHU 57-10S	1000	1,70
KHU 57-11S	1100	1,87
KHU 57-12S	1200	2,04
KHU 57-13S	1300	2,21
KHU 57-14S	1400	2,38
KHU 57-15S	1500	2,55
KHU 57-30S	3000	5,09
KHU 57-60S	6000	10,18

<b>F</b>		
KHU 57-02F	200	0,36
KHU 57-03F	300	0,55
KHU 57-04F	400	0,73
KHU 57-05F	500	0,91
KHU 57-06F	600	1,09
KHU 57-07F	700	1,27
KHU 57-08F	800	1,45
KHU 57-09F	900	1,63
KHU 57-10F	1000	1,82
KHU 57-11F	1100	2,00
KHU 57-12F	1200	2,18
KHU 57-13F	1300	2,36
KHU 57-14F	1400	2,54
KHU 57-15F	1500	2,72
KHU 57-30F	3000	5,45
KHU 57-60F	6000	10,89

accessories optional:

<b>BGU 57</b>	head plate, profile U57	(page F28)
<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KWMS</b>	wall bracket, medium duty	(page F06)
<b>KDU 57</b>	bracket support, 57x30mm	(page F19)
<b>KHUV 57</b>	coupler	(page F32)
<b>KHUSS 57</b>	support piece	(page F34)
<b>SU 57</b>	protection end cap	(page F37)
<b>BGUD</b>	head plate, profile U40/ U57/ U60	(page F31)
<b>BGUDW</b>	head plate, profile U40/ U57/ U60	(page F31)



# Support systems

## KHU-system

### KHU 57 bracket support, 57x30mm

Ceiling bracket support, U-profile 57 x 30mm, continuously three-way perforated.

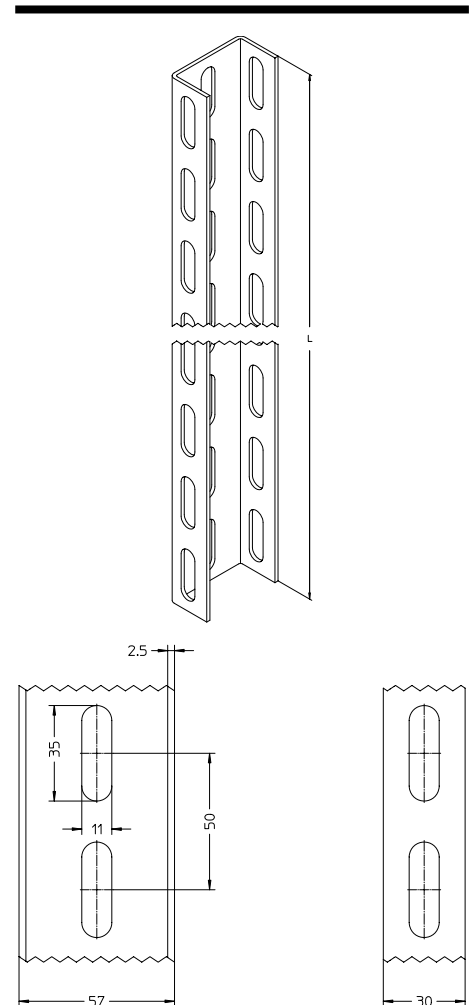
It is recommended to apply the support piece from a bracket width of 400mm or if the bracket is installed at the end of the ceiling fixed bracket.

For assembly instructions, see the chapter assembly.

article number	L mm	G kg
<b>E</b>		
KHU 57-02E	200	0,34
KHU 57-03E	300	0,51
KHU 57-04E	400	0,68
KHU 57-05E	500	0,85
KHU 57-06E	600	1,03
KHU 57-07E	700	1,20
KHU 57-08E	800	1,37
KHU 57-09E	900	1,54
KHU 57-10E	1000	1,71
KHU 57-11E	1100	1,88
KHU 57-12E	1200	2,05
KHU 57-13E	1300	2,22
KHU 57-14E	1400	2,39
KHU 57-15E	1500	2,56
KHU 57-30E	3000	5,12
KHU 57-60E	6000	10,25
<b>E4</b>		
KHU 57-02E4	200	0,35
KHU 57-03E4	300	0,52
KHU 57-04E4	400	0,69
KHU 57-05E4	500	0,87
KHU 57-06E4	600	1,04
KHU 57-07E4	700	1,21
KHU 57-08E4	800	1,38
KHU 57-09E4	900	1,56
KHU 57-10E4	1000	1,73
KHU 57-11E4	1100	1,90
KHU 57-12E4	1200	2,08
KHU 57-13E4	1300	2,25
KHU 57-14E4	1400	2,42
KHU 57-15E4	1500	2,59
KHU 57-30E4	3000	5,19
KHU 57-60E4	6000	10,38

accessories optional:

<b>BGU 57</b>	head plate, profile U57	(page F28)
<b>KWF</b>	bracket, light duty	(page F05)
<b>KW</b>	bracket, standard	(page F05)
<b>KWMS</b>	wall bracket, medium duty	(page F06)
<b>KDU 57</b>	bracket support, 57x30mm	(page F19)
<b>KHUV 57</b>	coupler	(page F32)
<b>KHUSS 57</b>	support piece	(page F34)
<b>SU 57</b>	protection end cap	(page F37)
<b>BGUD</b>	head plate, profile U40/ U57/ U60	(page F31)
<b>BGUDW</b>	head plate, profile U40/ U57/ U60	(page F31)



# Support systems

## KHU-system

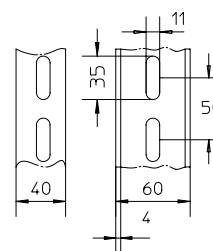
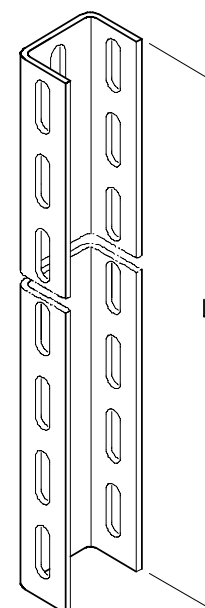
### KHU 60 bracket support, profile U60

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KHU 60-02F</b>	40	60	200	0,70
<b>KHU 60-03F</b>	40	60	300	1,10
<b>KHU 60-04F</b>	40	60	400	1,40
<b>KHU 60-05F</b>	40	60	500	1,80
<b>KHU 60-06F</b>	40	60	600	2,10
<b>KHU 60-07F</b>	40	60	700	2,50
<b>KHU 60-08F</b>	40	60	800	2,80
<b>KHU 60-09F</b>	40	60	900	3,20
<b>KHU 60-10F</b>	40	60	1000	3,50
<b>KHU 60-11F</b>	40	60	1100	3,90
<b>KHU 60-12F</b>	40	60	1200	4,20
<b>KHU 60-13F</b>	40	60	1300	4,60
<b>KHU 60-14F</b>	40	60	1400	4,90
<b>KHU 60-15F</b>	40	60	1500	5,30
<b>KHU 60-20F</b>	40	60	2000	7,00
<b>KHU 60-30F</b>	40	60	3000	10,50
<b>KHU 60-60F</b>	40	60	6000	21,10
<b>E</b>				
<b>KHU 60-30E</b>	40	60	3000	10,50

accessories optional:

<b>BGU 60</b>	head plate, profile U60	(page F29)
<b>SU 60</b>	protection end cap, profile U60	(page F37)
<b>KW</b>	bracket, standard	(page F05)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>KLS</b>	fixing set	(page G33)



# Support systems

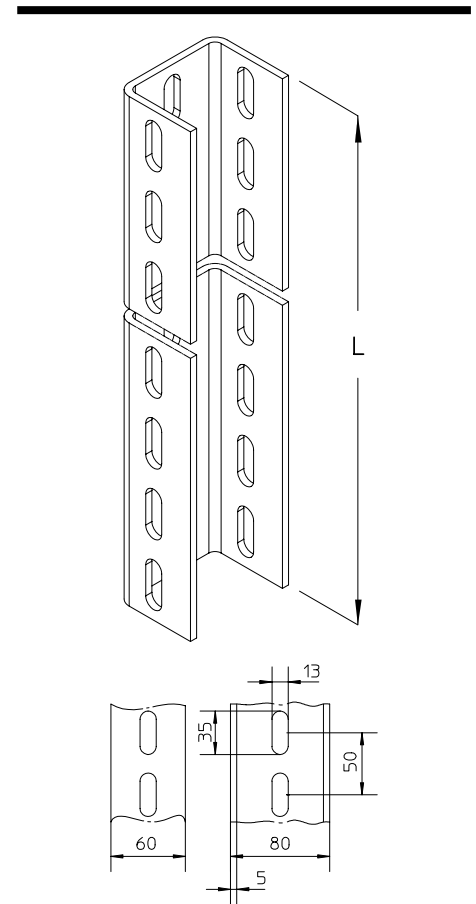
## KHU-system

### KHU 80 bracket support, profile U80

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KHU 80-02F</b>	80	60	200	1,33
<b>KHU 80-03F</b>	80	60	300	2,00
<b>KHU 80-04F</b>	80	60	400	2,66
<b>KHU 80-05F</b>	80	60	500	3,33
<b>KHU 80-06F</b>	80	60	600	3,99
<b>KHU 80-07F</b>	80	60	700	4,66
<b>KHU 80-08F</b>	80	60	800	5,32
<b>KHU 80-09F</b>	80	60	900	5,99
<b>KHU 80-10F</b>	80	60	1000	6,65
<b>KHU 80-11F</b>	80	60	1100	7,32
<b>KHU 80-12F</b>	80	60	1200	7,98
<b>KHU 80-13F</b>	80	60	1300	8,65
<b>KHU 80-14F</b>	80	60	1400	9,32
<b>KHU 80-15F</b>	80	60	1500	9,98
<b>KHU 80-16F</b>	80	60	1600	10,65
<b>KHU 80-17F</b>	80	60	1700	11,31
<b>KHU 80-18F</b>	80	60	1800	11,98
<b>KHU 80-19F</b>	80	60	1900	12,64
<b>KHU 80-20F</b>	80	60	2000	13,31
<b>KHU 80-30F</b>	80	60	3000	19,96
<b>KHU 80-60F</b>	80	60	6000	39,92

accessories optional:

<b>KW</b>	bracket, standard	(page F05)
<b>WPHS-K</b>	flange mounting clamp (brackets)	(page D21)
<b>KLS</b>	fixing set	(page G33)



F

# Support systems

## KHU-system

### BGU 40 head plate, profile U40

Head plate for ceiling mounting of KHU 40 bracket support KHU 40  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>BGU 40F</b>	100	40	120	4	0,37

accessories included:

2 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

article number	H mm	B mm	L mm	t mm	G kg
<b>E</b>					
<b>BGU 40E</b>	100	40	120	4	0,35

accessories included:

2 x <b>FRSV 10x20E</b>	round-head screw with short square	(page G35)
2 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
2 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	H mm	B mm	L mm	t mm	G kg
<b>E4</b>					
<b>BGU 40E4</b>	100	40	120	4	0,35

accessories included:

2 x <b>FRSV 10x20E4</b>	round-head screw with short square	(page G35)
2 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
2 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)

### BGU 57 head plate, profile U57

Head plate for ceiling mounting of bracket support KHU 57  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>BGU 57F</b>	100	40	160	5	0,54

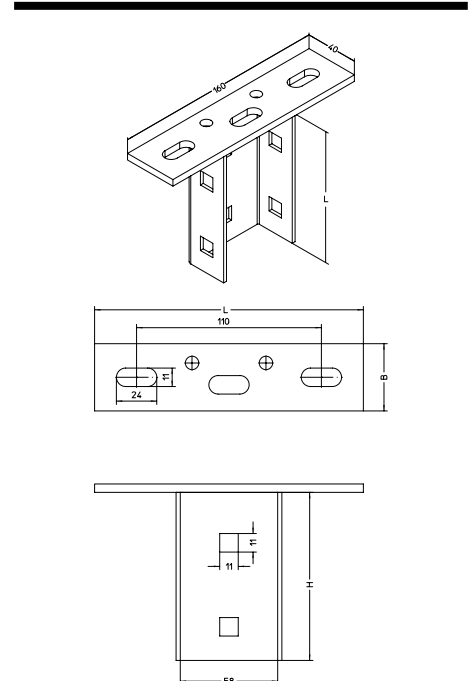
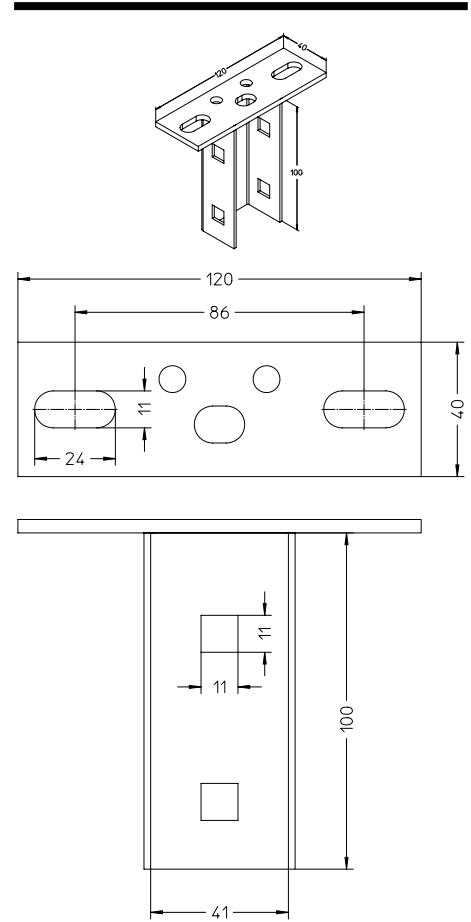
accessories included:

2 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

article number	H mm	B mm	L mm	t mm	G kg
<b>E</b>					
<b>BGU 57E</b>	100	40	160	5	0,52

accessories included:

2 x <b>FRSV 10x20E</b>	round-head screw with short square	(page G35)
2 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
2 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)





# Support systems

## KHU-system

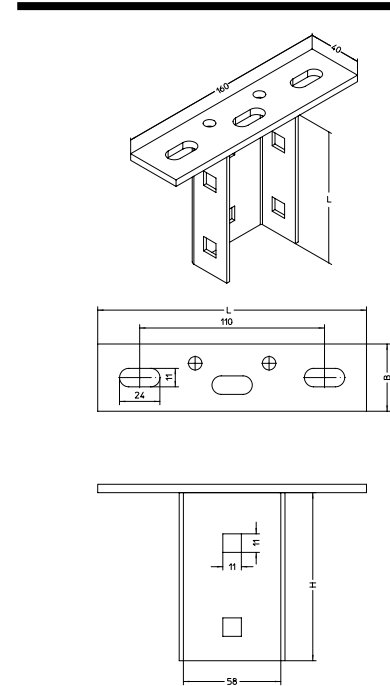
### BGU 57 head plate, profile U57

Head plate for ceiling mounting of bracket support KHU 57  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>E4</b>					
<b>BGU 57E4</b>	100	40	160	5	0,52

accessories included:

2 x <b>FRSV 10x20E4</b>	round-head screw with short square	(page G35)
2 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
2 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)



### BGU 60 head plate, profile U60

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGU 60F</b>	120	80	200	1,28

accessories included:

4 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
4 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
4 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

article number	H mm	B mm	L mm	G kg
<b>E</b>				
<b>BGU 60E</b>	120	80	200	1,30

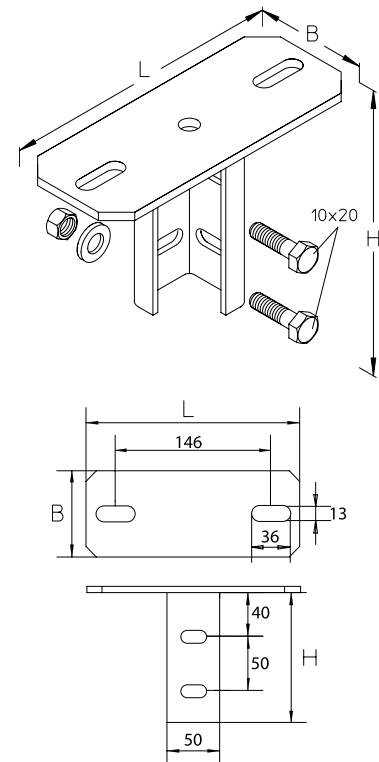
accessories included:

4 x <b>SES 10x20E</b>	hexagon head bolt, DIN 933	(page G38)
4 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
4 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)

article number	H mm	B mm	L mm	G kg
<b>E4</b>				
<b>BGU 60E4</b>	120	80	200	1,30

accessories included:

4 x <b>SES 10x20E4</b>	hexagon head bolt, DIN 933	(page G38)
4 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
4 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)



# Support systems

## KHU-system

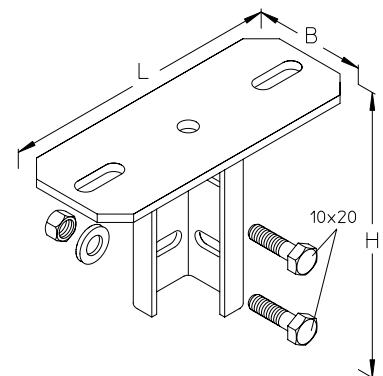
### BGU 80 head plate, profile U80

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGU 80F</b>	120	80	200	2,05

accessories included:

4 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 13x24F</b>	square washer, DIN 125	(page G39)
4 x <b>SES 12x20F</b>	hexagon head bolt, DIN 933	(page G38)

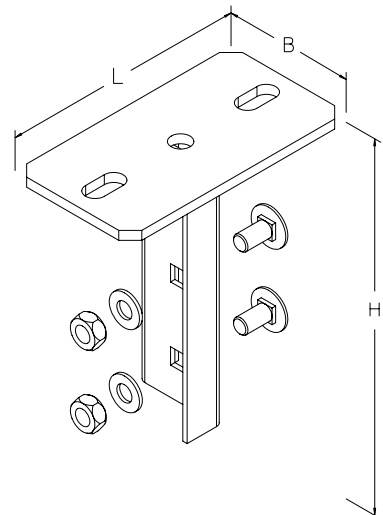


### BGUQ head plate, profile U50

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGUQ 50F</b>	156	80	150	0,86

accessories included:

2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
2 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)



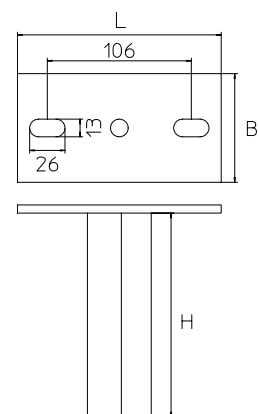
article number	H mm	B mm	L mm	G kg
<b>E</b>				
<b>BGUQ 50E</b>	156	80	150	0,86

accessories included:

2 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
2 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
2 x <b>FRSV 10x20E</b>	round-head screw with short square	(page G35)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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# Support systems

## KHU-system

### BGUD head plate, profile U40/ U57/ U60

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGUD F</b>	125	80	200	1,30

accessories included:

2 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x30F</b>	square washer, DIN 9021	(page G40)

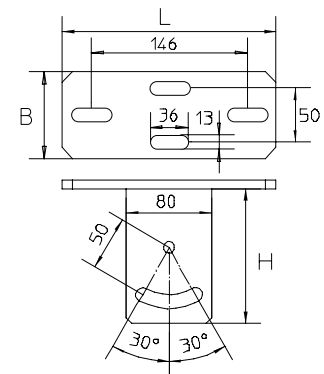
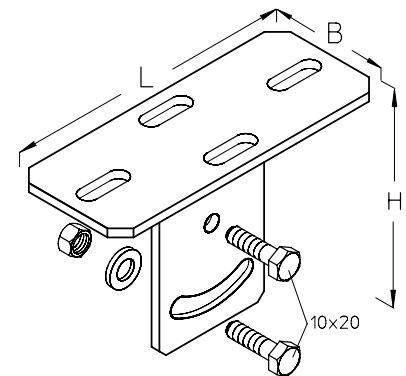
article number	H mm	B mm	L mm	G kg
<b>E</b>				
<b>BGUD E</b>	125	80	200	1,40

accessories included:

2 x <b>SES 10x20E</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x30E</b>	square washer, DIN 9021	(page G40)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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### BGUDW head plate, profile U40/ U57/ U60

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

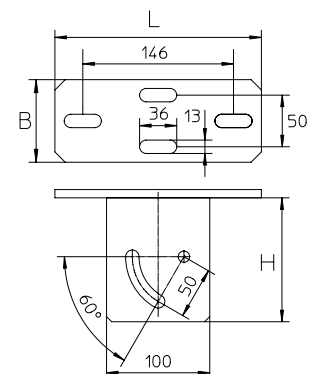
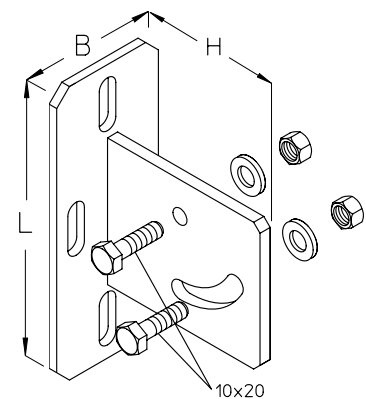
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGUDW F</b>	120	80	200	1,40

accessories included:

2 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x30F</b>	square washer, DIN 9021	(page G40)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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# Support systems

## KHU-system

### KHUV 40 coupler

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KHUV 40S</b>	45	32	210	2,5	0,45

accessories included:

4 x <b>SEM 10</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21</b>	square washer, DIN 125	(page G39)
4 x <b>FRSV 10x20</b>	round-head screw with short square	(page G34)

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHUV 40F</b>	45	32	210	2,5	0,47

accessories included:

4 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
4 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)

article number	H mm	B mm	L mm	t mm	G kg
<b>E</b>					
<b>KHUV 40E</b>	45	32	210	2,5	0,45

accessories included:

4 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
4 x <b>FRSV 10x20E</b>	round-head screw with short square	(page G35)

article number	H mm	B mm	L mm	t mm	G kg
<b>E4</b>					
<b>KHUV 40E4</b>	45	32	210	2,5	0,46

accessories included:

4 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
4 x <b>FRSV 10x20E4</b>	round-head screw with short square	(page G35)

### KHUV 57 coupler

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KHUV 57S</b>	63	32,5	210	2,5	0,60

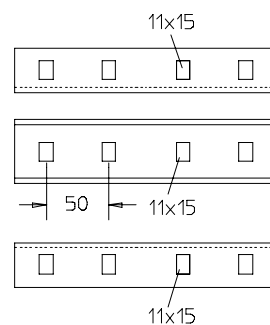
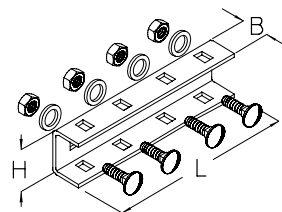
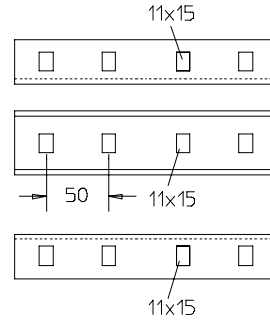
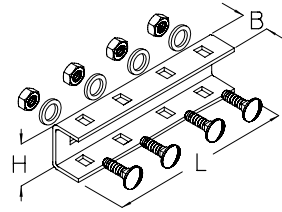
accessories included:

4 x <b>SEM 10</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21</b>	square washer, DIN 125	(page G39)
4 x <b>FRSV 10x20</b>	round-head screw with short square	(page G34)

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHUV 57F</b>	63	32,5	210	2,5	0,63

accessories included:

4 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
4 x <b>FRSV 10x20F</b>	round-head screw with short square	(page G34)



# Support systems

## KHU-system

### KHUV 57 coupler

article number	H mm	B mm	L mm	t mm	G kg
<b>E</b>					
<b>KHUV 57E</b>	63	32,5	210	2,5	0,60

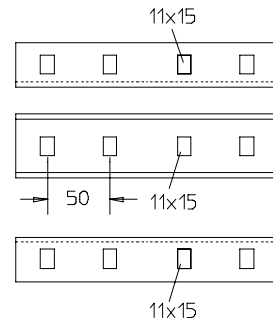
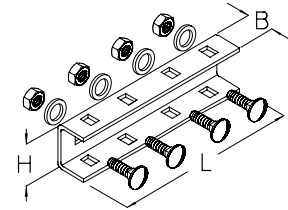
accessories included:

4 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
4 x <b>FRSV 10x20E</b>	round-head screw with short square	(page G35)

article number	H mm	B mm	L mm	t mm	G kg
<b>E4</b>					
<b>KHUV 57E4</b>	63	32,5	210	2,5	0,61

accessories included:

4 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)
4 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
4 x <b>FRSV 10x20E4</b>	round-head screw with short square	(page G35)



### KHUV 60 coupler, profile U60

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KHUV 60F</b>	51	35	210	0,80

accessories included:

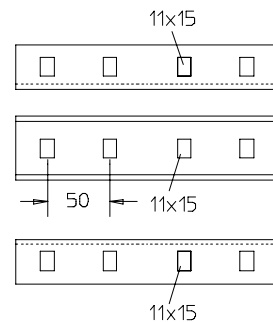
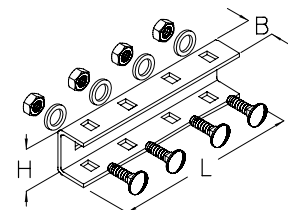
4 x <b>KLS 10x20F</b>	fixing set	(page G34)
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article number	H mm	B mm	L mm	G kg
<b>E</b>				
<b>KHUV 60E</b>	51	35	210	0,89

article number	H mm	B mm	L mm	G kg
<b>E4</b>				
<b>KHUV 60E4</b>	51	35	210	0,89

accessories included:

4 x <b>KLS 10x20E</b>	fixing set	(page G34)
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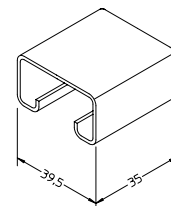
### KHUSS 40 support piece

For an application example, see the chapter assembly.

article number	G kg
<b>S</b>	
<b>KHUSS 40S</b>	0,11

accessories included:

1 x <b>SEM 10</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21</b>	square washer, DIN 125	(page G39)
1 x <b>SES 10x75</b>	hexagon head bolt, DIN 933	(page G37)



# Support systems

## KHU-system

### KHUSS 40 support piece

For an application example, see the chapter assembly.

article number	G	kg
<b>F</b>		
<b>KHUSS 40F</b>		0,11

accessories included:

1 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
1 x <b>SES 10x75F</b>	hexagon head bolt, DIN 933	(page G38)

article number	G	kg
<b>E</b>		
<b>KHUSS 40E</b>		0,11

accessories included:

1 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
1 x <b>SES 10x75E</b>	hexagon head bolt, DIN 933	(page G38)

article number	G	kg
<b>E4</b>		
<b>KHUSS 40E4</b>		0,11

accessories included:

1 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21E4</b>	square washer, DIN 125	(page G40)
1 x <b>SES 10x75E4</b>	hexagon head bolt, DIN 933	(page G38)

### KHUSS 57 support piece

For an application example, see the chapter assembly.

article number	G	kg
<b>S</b>		
<b>KHUSS 57S</b>		0,14

accessories included:

1 x <b>SEM 10</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21</b>	square washer, DIN 125	(page G39)
1 x <b>SES 10x100</b>	hexagon head bolt, DIN 933	(page G37)

article number	G	kg
<b>F</b>		
<b>KHUSS 57F</b>		0,14

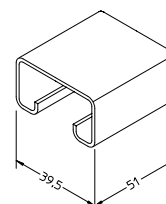
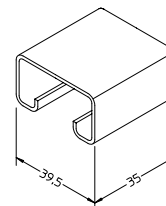
accessories included:

1 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
1 x <b>SES 10x100F</b>	hexagon head bolt, DIN 933	(page G38)

article number	G	kg
<b>E</b>		
<b>KHUSS 57E</b>		0,14

accessories included:

1 x <b>SEM 10E</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>US 10x21E</b>	square washer, DIN 125	(page G40)
1 x <b>SES 10x100E</b>	hexagon head bolt, DIN 933	(page G38)



# Support systems

## KHU-system

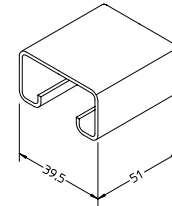
### KHUSS 57 support piece

For an application example, see the chapter assembly.

article number	G kg
<b>E4</b>	
<b>KHUSS 57E4</b>	0,14

accessories included:

- 1 x **SEM 10E4** hexagon-nut, DIN 934 (page G41)
- 2 x **US 10x21E4** square washer, DIN 125 (page G40)
- 1 x **SES 10x100E4** hexagon head bolt, DIN 933 (page G38)



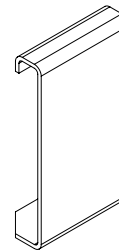
### KHUSS 60 support piece

For an application example, see the chapter assembly.

article number	G kg
<b>S</b>	
<b>KHUSS 60S</b>	0,18

accessories included:

- 1 x **SES 10x100** hexagon head bolt, DIN 933 (page G37)
- 2 x **US 10x21** square washer, DIN 125 (page G39)
- 1 x **SEM 10** hexagon-nut, DIN 934 (page G41)



article number	G kg
<b>F</b>	
<b>KHUSS 60F</b>	0,19

accessories included:

- 2 x **US 10x21F** square washer, DIN 125 (page G39)
- 1 x **SEM 10F** hexagon-nut, DIN 934 (page G41)
- 1 x **SES 10x100F** hexagon head bolt, DIN 933 (page G38)

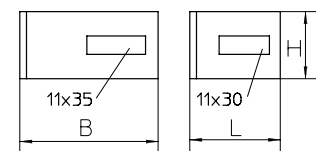
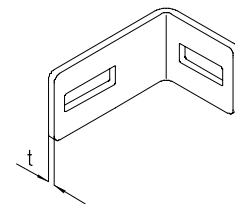
### BL 4 corner angle, profile U50/ U60/ U100

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>BL 4F</b>	40	82,5	54	4	0,15
<b>E</b>					
<b>BL 4E</b>	40	82,5	54	4	0,15

accessories optional:

- SD** expansion anchor (page G12)
- KLS** fixing set (page G33)



# Support systems

## KHU-system

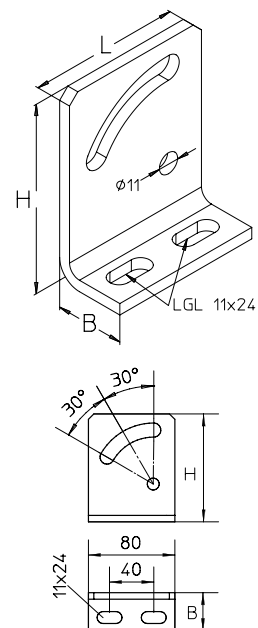
### BLD adaptor diagonal

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BLD F</b>	100	37	80	0,50

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>HS18</b>	tee-head bolt, A7/ A8/ A9	(page G45)
<b>AMF18</b>	channel spring nut, A7/ A8	(page G45)



### KB junction plate

For an application example, see the chapter assembly.

article number	H mm	L mm	t mm	G kg
<b>F</b>				
<b>KB F</b>	150	150	3	0,40

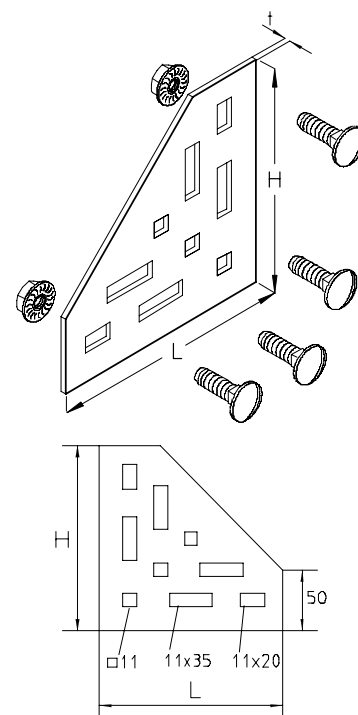
accessories included:

4 x **KLS 10x20F** fixing set (page G34)

article number	H mm	L mm	t mm	G kg
<b>E</b>				
<b>KB E</b>	150	150	2	0,40

accessories included:

4 x **KLS 10x20E** fixing set (page G34)





# Support systems

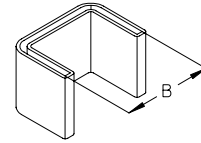
## KHU-system

### SU 40 protection end cap

article number	B mm	G kg
<b>PE</b>		
<b>SU 40</b>	44	0,01

accessories optional:

- KDU 40** bracket support, 40x30mm (page F17)  
**KHU 40** bracket support, 40x30mm (page F22)

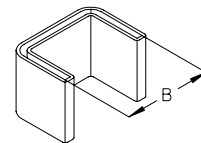


### SU 57 protection end cap

article number	B mm	G kg
<b>PE</b>		
<b>SU 57</b>	61	0,02

accessories optional:

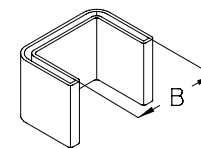
- KDU 57** bracket support, 57x30mm (page F19)  
**KHU 57** bracket support, 57x30mm (page F24)



### SU 60 protection end cap, profile U60

For an application example, see the chapter assembly.

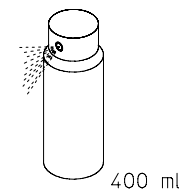
article number	B mm	G kg
<b>PE</b>		
<b>SU 60</b>	60	0,02



### KZS cold zinc spray

For assembly instructions, see the chapter assembly.

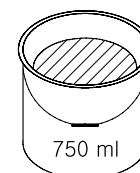
article number	I ml	G kg
<b>KZS</b>	400	0,40



### KZF cold zinc paint

For assembly instructions, see the chapter assembly.

article number	I ml	G kg
<b>KZF</b>	750	1,93



# Support systems

## KHI-system

### KDI bracket support, heavy, profile I80

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

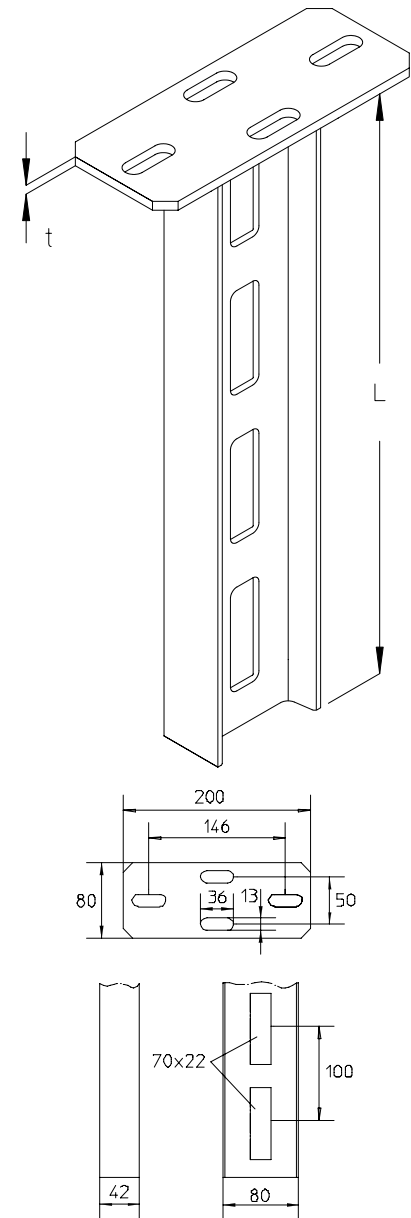
For assembly instructions, see the chapter assembly.



article number	L mm	t mm	G kg
<b>F</b>			
<b>KDI 02F</b>	200	6	1,90
<b>KDI 03F</b>	300	6	2,50
<b>KDI 04F</b>	400	6	3,00
<b>KDI 05F</b>	500	6	3,60
<b>KDI 06F</b>	600	6	4,20
<b>KDI 07F</b>	700	6	4,80
<b>KDI 08F</b>	800	6	5,40
<b>KDI 09F</b>	900	6	6,00
<b>KDI 10F</b>	1000	6	6,60
<b>KDI 11F</b>	1100	8	7,40
<b>KDI 12F</b>	1200	8	8,00
<b>KDI 13F</b>	1300	8	8,60
<b>KDI 14F</b>	1400	8	9,10
<b>KDI 15F</b>	1500	8	9,70
<b>KDI 16F</b>	1600	8	10,30
<b>KDI 17F</b>	1700	8	10,90
<b>KDI 18F</b>	1800	8	11,50
<b>KDI 19F</b>	1900	8	12,10
<b>KDI 20F</b>	2000	8	12,70
<b>KDI 21F</b>	2100	8	13,20
<b>KDI 22F</b>	2200	8	13,80
<b>KDI 23F</b>	2300	8	14,40
<b>KDI 24F</b>	2400	8	15,00
<b>KDI 25F</b>	2500	8	15,60
<b>KDI 26F</b>	2600	8	16,20
<b>KDI 27F</b>	2700	8	16,80
<b>KDI 28F</b>	2800	8	17,30
<b>KDI 29F</b>	2900	8	17,90
<b>KDI 30F</b>	3000	8	18,50

accessories optional:

<b>KT</b>	bracket, standard, profile I80	(page F40)
<b>KTS</b>	bracket, heavy, profile I80	(page F40)
<b>KTSS</b>	bracket, very heavy, profile I80	(page F41)
<b>SD</b>	expansion anchor	(page G12)
<b>SI</b>	protection end cap, yellow	(page F46)



# Support systems

## KHI-system

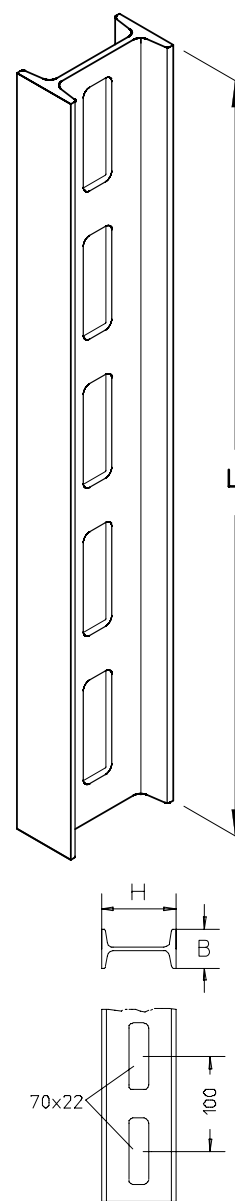
### KHI bracket support, type KT

For an application example, see the chapter assembly.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>KHI 02F</b>	80	42	200	1,10
<b>KHI 03F</b>	80	42	300	1,70
<b>KHI 04F</b>	80	42	400	2,30
<b>KHI 05F</b>	80	42	500	2,90
<b>KHI 06F</b>	80	42	600	3,50
<b>KHI 07F</b>	80	42	700	4,10
<b>KHI 08F</b>	80	42	800	4,70
<b>KHI 09F</b>	80	42	900	5,30
<b>KHI 10F</b>	80	42	1000	5,90
<b>KHI 11F</b>	80	42	1100	6,40
<b>KHI 12F</b>	80	42	1200	7,10
<b>KHI 13F</b>	80	42	1300	7,60
<b>KHI 14F</b>	80	42	1400	8,20
<b>KHI 15F</b>	80	42	1500	8,80
<b>KHI 16F</b>	80	42	1600	9,40
<b>KHI 17F</b>	80	42	1700	10,00
<b>KHI 18F</b>	80	42	1800	10,60
<b>KHI 19F</b>	80	42	1900	11,10
<b>KHI 20F</b>	80	42	2000	11,70
<b>KHI 21F</b>	80	42	2100	12,30
<b>KHI 22F</b>	80	42	2200	12,90
<b>KHI 23F</b>	80	42	2300	13,50
<b>KHI 24F</b>	80	42	2400	14,10
<b>KHI 25F</b>	80	42	2500	14,60
<b>KHI 26F</b>	80	42	2600	15,20
<b>KHI 27F</b>	80	42	2700	15,80
<b>KHI 28F</b>	80	42	2800	16,30
<b>KHI 29F</b>	80	42	2900	16,90
<b>KHI 30F</b>	80	42	3000	17,50
<b>KHI 60F</b>	80	42	6000	35,10

accessories optional:

<b>KT</b>	bracket, standard, profile I80	(page F40)
<b>KTSS</b>	bracket, very heavy, profile I80	(page F41)
<b>BL 7</b>	corner angle	(page E23, F45)
<b>BL 3</b>	corner angle	(page F44)
<b>BLI</b>	corner angle	(page F45)
<b>BGI</b>	head plate, profile I80	(page E22, F41)
<b>BGIQ</b>	head plate, profile I80	(page E23, F42)
<b>BGID</b>	head plate, profile I80	(page F43)
<b>HKI</b>	support connector	(page E22, F43)
<b>HKIW</b>	support connector	(page F44)
<b>HKIQ</b>	support connector	(page F44)



# Support systems

## KHI-system

### KT bracket, standard, profile I80

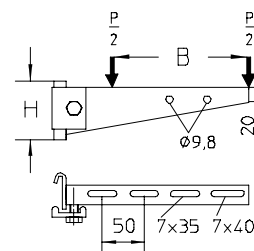
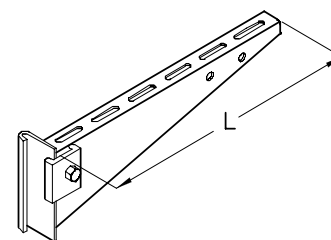
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>					
<b>KT 010F</b>	50	100	120	2,0	0,24
<b>KT 020F</b>	70	200	220	2,0	0,56
<b>KT 030F</b>	70	300	320	2,0	0,77
<b>KT 040F</b>	90	400	420	2,0	0,87
<b>KT 050F</b>	110	500	520	2,0	1,40
<b>KT 060F</b>	110	600	620	2,1	1,55

accessories optional:

**KLU** fixing set (page G07)

**KLR** fixing set (page G33)



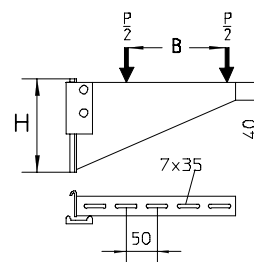
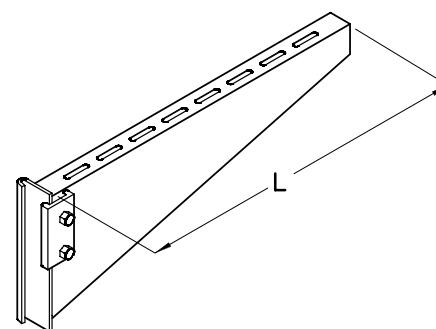
### KTS bracket, heavy, profile I80

article number	H mm	B mm	L mm	$P_{max}$ kN	G kg
<b>F</b>					
<b>KTS 020F</b>	180	200	280	7,0	1,64
<b>KTS 030F</b>	180	300	380	6,3	2,00
<b>KTS 040F</b>	180	400	480	5,5	2,38
<b>KTS 050F</b>	180	500	580	4,9	2,74
<b>KTS 060F</b>	180	600	680	4,3	3,10
<b>KTS 070F</b>	180	600	780	3,6	3,47
<b>KTS 080F</b>	180	600	880	3,0	3,83
<b>KTS 090F</b>	180	600	980	2,3	4,19
<b>KTS 100F</b>	180	600	1080	1,7	4,56

accessories optional:

**WPHS-K** flange mounting clamp (brackets) (page D21)

**KLU** fixing set (page G07)



# Support systems

## KHI-system

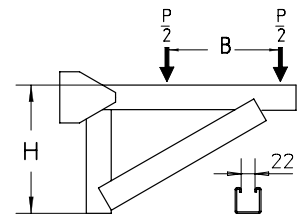
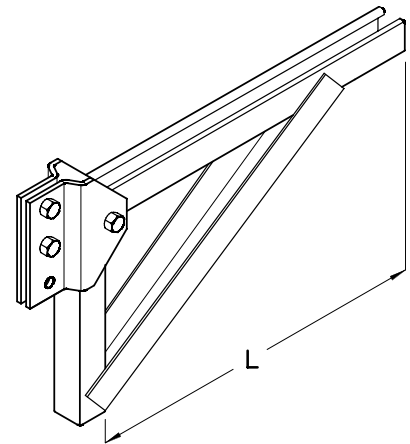
### KTSS bracket, very heavy, profile I80

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>					
<b>KTSS 020F</b>	100	200	280	12	2,94
<b>KTSS 030F</b>	135	300	380	12	3,53
<b>KTSS 040F</b>	165	400	480	12	4,12
<b>KTSS 050F</b>	200	500	580	12	4,71
<b>KTSS 060F</b>	230	600	680	12	6,34

accessories optional:

- WPHS-A** flange mounting clamp (C-profiles) (page D22)  
**WPHS-K** flange mounting clamp (brackets) (page D21)



### BGI head plate, profile I80

article also available with other inclinations

For an application example, see the chapter assembly.

For assembly instructions, see the chapter assembly.

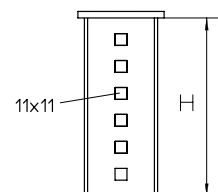
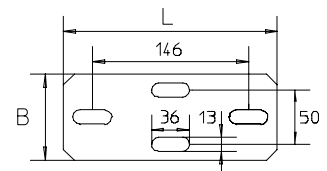
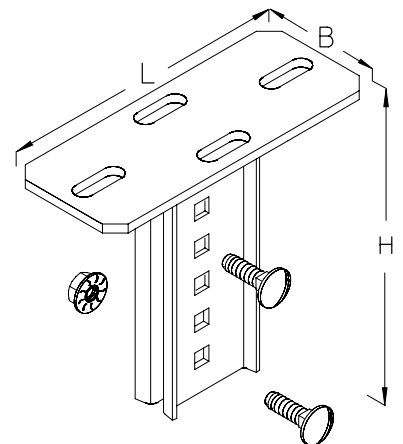
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGI F</b>	165	80	200	1,40

accessories included:

- 2 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)  
 2 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

- SD** expansion anchor (page G12)



# Support systems

## KHI-system

### BGIQ head plate, profile I80

For an application example, see the chapter assembly.



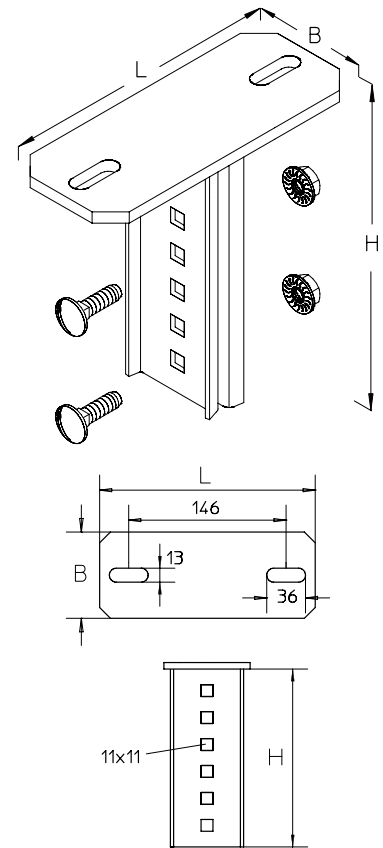
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGIQ F</b>	165	80	200	1,40

accessories included:

- 2 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)
- 2 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

- SD** expansion anchor (page G12)



# Support systems

## KHI-system

### BGID head plate, profile I80

For an application example, see the chapter assembly.



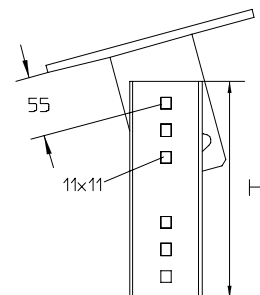
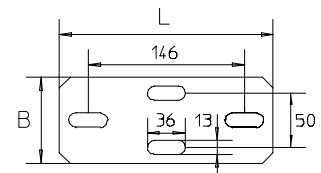
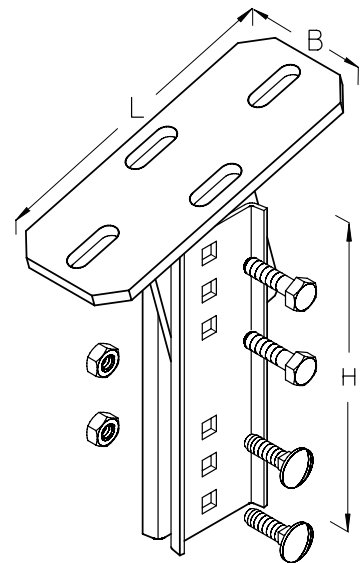
article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGID F</b>	200	80	200	2,30

accessories included:

- 2 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)
- 2 x **SES 10x30F** hexagon head bolt, DIN 933 (page G38)
- 4 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

- SD** expansion anchor (page G12)



### HKI support connector

For an application example, see the chapter assembly.

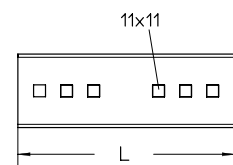
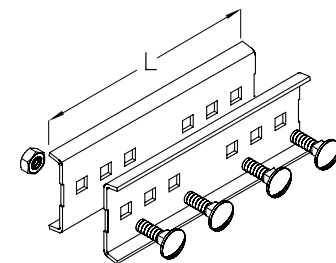
article number	L mm	G kg
<b>F</b>		
<b>HKI F</b>	200	1,00

accessories included:

- 4 x **FRS 10x30F** round-head screw with square, DIN 603 (page G35)
- 4 x **SEM 10F** hexagon-nut, DIN 934 (page G41)

accessories optional:

- SD** expansion anchor (page G12)



# Support systems

## KHI-system

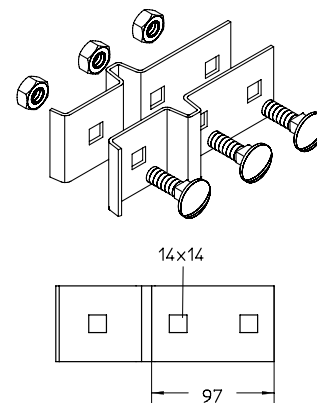
### HKIW support connector

For an application example, see the chapter assembly.

article number	G	kg
<b>F</b>		
<b>HKIW F</b>		1,00

accessories included:

- 3 x **FRS 12x30F** round-head screw with square, DIN 603 (page G35)
- 3 x **SEM 12F** hexagon-nut, DIN 934 (page G41)



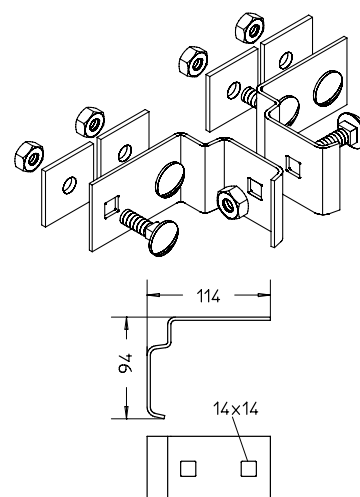
### HKIQ support connector

For an application example, see the chapter assembly.

article number	G	kg
<b>F</b>		
<b>HKIQ F</b>		1,20

accessories included:

- 5 x **FRS 12x30F** round-head screw with square, DIN 603 (page G35)
- 5 x **SEM 12F** hexagon-nut, DIN 934 (page G41)
- 4 x **RUS 50-L13F** square washer (page G42)



### BL 3 corner angle

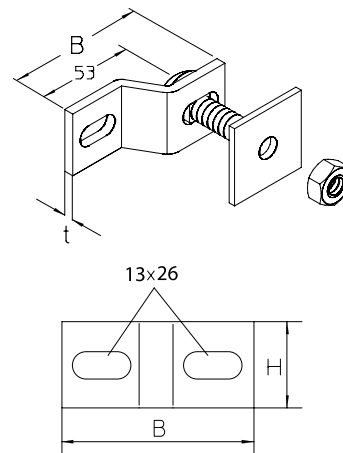
article number	H	B	t	G
	mm	mm	mm	kg
<b>F</b>				
<b>BL 3F</b>	40	90	6	0,20

accessories included:

- 1 x **FRS 12x30F** round-head screw with square, DIN 603 (page G35)
- 1 x **SEM 12F** hexagon-nut, DIN 934 (page G41)
- 1 x **RUS 50-L13F** square washer (page G42)

accessories optional:

- SD** expansion anchor (page G12)





# Support systems

## KHI-system

### BL 7 corner angle

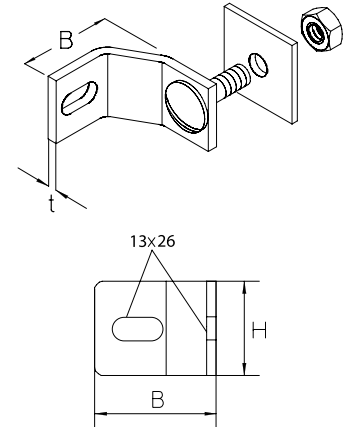
article number	H mm	B mm	t mm	G kg
<b>F</b>				
<b>BL 7F</b>	50	65	5	0,30

accessories included:

1 x <b>FRS 12x30F</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>RUS 50-L13F</b>	square washer	(page G42)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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### BL 8 corner angle

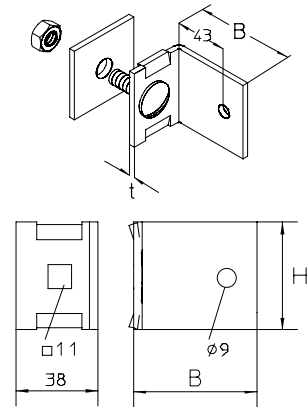
article number	H mm	B mm	t mm	G kg
<b>F</b>				
<b>BL 8F</b>	50	58	4	0,20

accessories included:

1 x <b>FRS 10x30F</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>RUS 50-L13F</b>	square washer	(page G42)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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### BLI corner angle

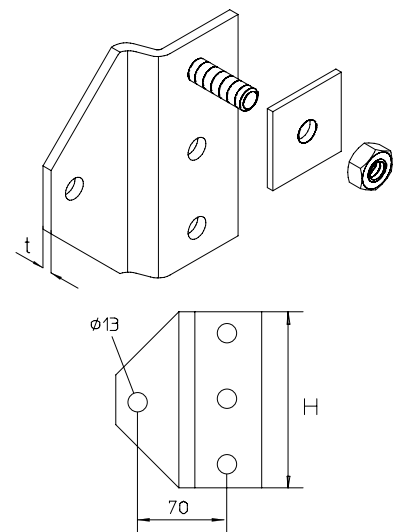
article number	H mm	t mm	G kg
<b>F</b>			
<b>BLI F</b>	140	6	0,80

accessories included:

1 x <b>FRS 12x30F</b>	round-head screw with square, DIN 603	(page G35)
1 x <b>SEM 12F</b>	hexagon-nut, DIN 934	(page G41)
1 x <b>RUS 50-L13F</b>	square washer	(page G42)

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
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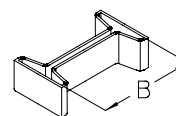


# Support systems

## KHI-system

### SI protection end cap, yellow

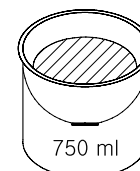
article number	B mm	G kg
<b>PE</b>		
<b>SI</b>	80	0,02



### KZF cold zinc paint

For assembly instructions, see the chapter assembly.

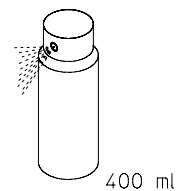
article number	l ml	G kg
<b>KZF</b>	750	1,93



### KZS cold zinc spray

For assembly instructions, see the chapter assembly.

article number	l ml	G kg
<b>KZS</b>	400	0,40



### KDAG 41 ceiling fixed bracket, profile 41

$F_D/P$ : coefficient for calculation of the dowel load  $F_D$  with effective bracket load  $P$  respectively the sum of effective bracket loads.

For an application example, see the chapter assembly.

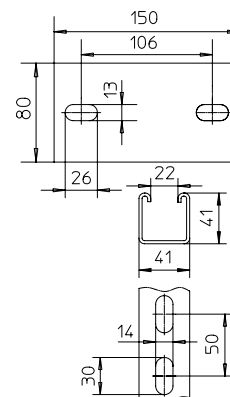
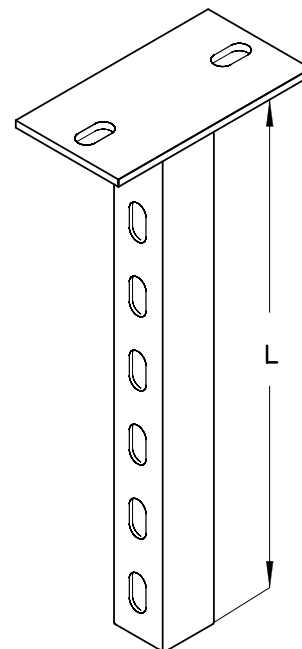
For assembly instructions, see the chapter assembly.



article number	L mm	G kg
<b>F</b>		
<b>KDAG 41-02F</b>	200	1,10
<b>KDAG 41-03F</b>	300	1,40
<b>KDAG 41-04F</b>	400	1,70
<b>KDAG 41-05F</b>	500	1,90
<b>KDAG 41-06F</b>	600	2,20
<b>KDAG 41-07F</b>	700	2,50
<b>KDAG 41-08F</b>	800	2,70
<b>KDAG 41-09F</b>	900	3,00
<b>KDAG 41-10F</b>	1000	3,20

accessories optional:

<b>KA 30</b>	bracket, light duty, profile 41	(page F49)
<b>KA 41</b>	bracket, standard, profile 41	(page F49)
<b>SD</b>	expansion anchor	(page G12)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>SA 2</b>	protection end cap	(page F55)



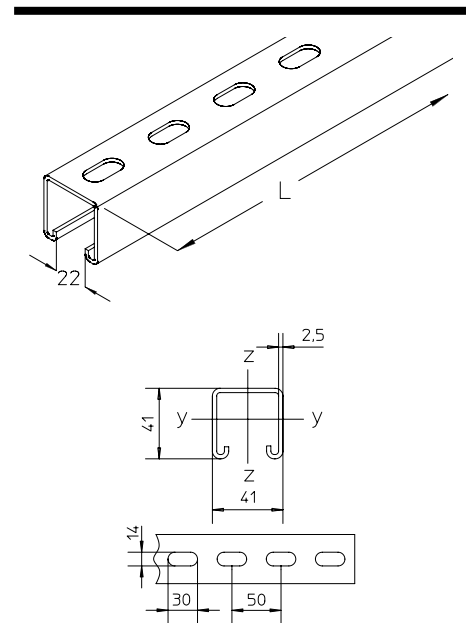
### KHA 41 C-rail, perforated, 41x41 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
KHA 41-01F	41	41	100	2,5	0,30
KHA 41-02F	41	41	200	2,5	0,50
KHA 41-03F	41	41	300	2,5	0,80
KHA 41-04F	41	41	400	2,5	1,10
KHA 41-05F	41	41	500	2,5	1,30
KHA 41-06F	41	41	600	2,5	1,60
KHA 41-07F	41	41	700	2,5	1,90
KHA 41-08F	41	41	800	2,5	2,10
KHA 41-09F	41	41	900	2,5	2,40
KHA 41-10F	41	41	1000	2,5	2,60
KHA 41-11F	41	41	1100	2,5	2,90
KHA 41-12F	41	41	1200	2,5	3,20
KHA 41-13F	41	41	1300	2,5	3,40
KHA 41-14F	41	41	1400	2,5	3,70
KHA 41-15F	41	41	1500	2,5	4,00
KHA 41-20F	41	41	2000	2,5	5,30
KHA 41-30F	41	41	3000	2,5	7,90
KHA 41-60F	41	41	6000	2,5	15,90

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>RUS 41</b>	stabilization plate, KHA profiles	(page G41)
<b>SKS A</b>	beam clamp set	(page G04)
<b>SA 2</b>	protection end cap	(page F55)
<b>SAI 41</b>	protection end cap	(page F55)



# Support systems

## KHA-system

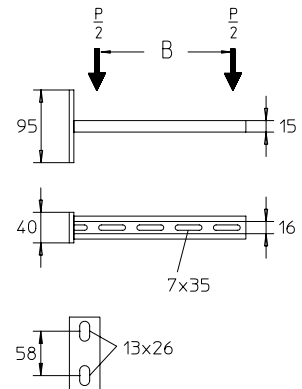
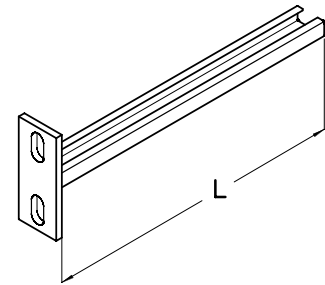
### KA 30 bracket, light duty, profile 41

For an application example, see the chapter assembly.

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
KA 30-010F	100	125	0,5	0,20
KA 30-015F	150	175	0,5	0,30
KA 30-020F	200	225	0,5	0,30
KA 30-025F	250	275	0,5	0,40
KA 30-030F	300	325	0,5	0,40
KA 30-040F	400	425	0,5	0,50

accessories optional:

<b>HS16</b>	Tee-head bolt	(page G46)
<b>AM16</b>	channel nut, B7	(page G45)
<b>KLR</b>	fixing set	(page G33)



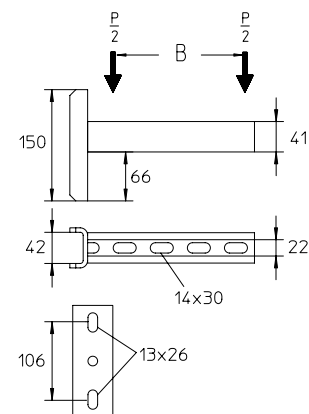
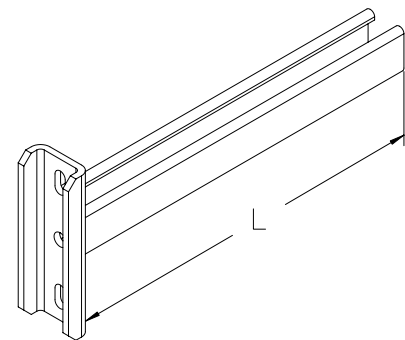
### KA 41 bracket, standard, profile 41

For an application example, see the chapter assembly.

article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
KA 41-010F	100	125	3,7	1,00
KA 41-015F	150	175	3,7	1,10
KA 41-020F	200	225	3,7	1,20
KA 41-025F	250	275	3,7	1,40
KA 41-030F	300	325	3,7	1,50
KA 41-040F	400	425	3,7	1,60
KA 41-050F	500	525	3,7	1,80
KA 41-060F	600	625	3,7	1,90

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>SES</b>	hexagon head bolt, DIN 933	(page G37)



# Support systems

## KHA-system

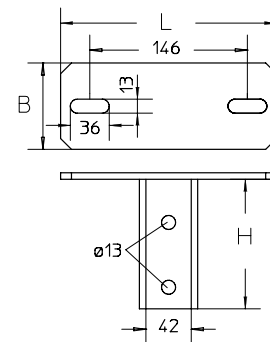
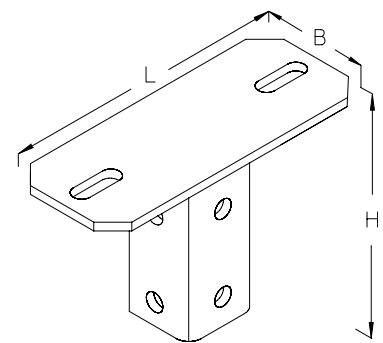
### BGA 41 Mounting/ floor/ ceiling plate

For an application example, see the chapter assembly.  
For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGA 41F</b>	120	80	200	1,20

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>SKL M</b>	beam clamp set	(page G06)
<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)



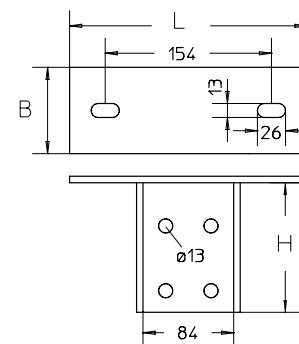
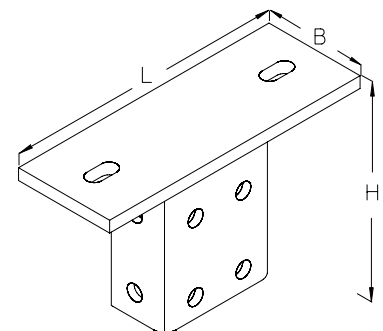
### BGA 41/2 head plate, profile 41

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	G kg
<b>F</b>				
<b>BGA 41/2F</b>	120	80	220	1,80

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>SKL M</b>	beam clamp set	(page G06)
<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)



# Support systems

## KHA-system

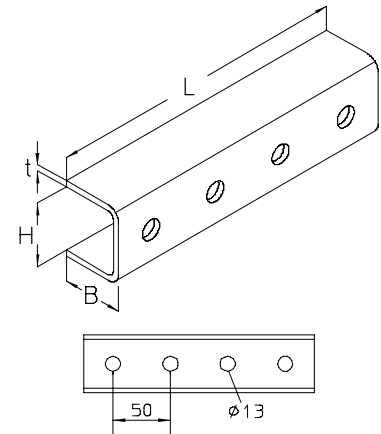
### AV coupler for KHA-profile

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>AV 41F</b>	42	40	200	4	0,70

accessories optional:

<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>US 125</b>	square washer, DIN 125	(page G39)
<b>IK</b>	hexagon socket head screw, DIN 912	(page G36)
<b>SEM</b>	hexagon-nut, DIN 934	(page G41)

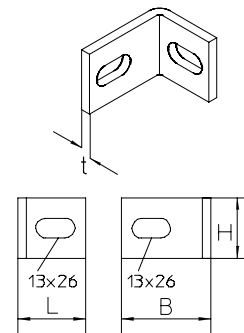


### BL 5 corner angle

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>BL 5F</b>	40	45	60	6	0,20

accessories optional:

<b>SD</b>	expansion anchor	(page G12)
<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>HS18</b>	tee-head bolt, A7/ A8/ A9	(page G45)
<b>AMF18</b>	channel spring nut, A7/ A8	(page G45)
<b>AM18</b>	channel nut, A7/ A8	(page G44)



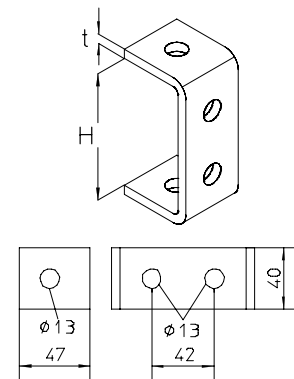
### AKL rail clamp

For an application example, see the chapter assembly.

article number	H mm	t mm	G kg
<b>F</b>			
<b>AKL 41F</b>	84	6	0,30

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



# Support systems

## KHA-system

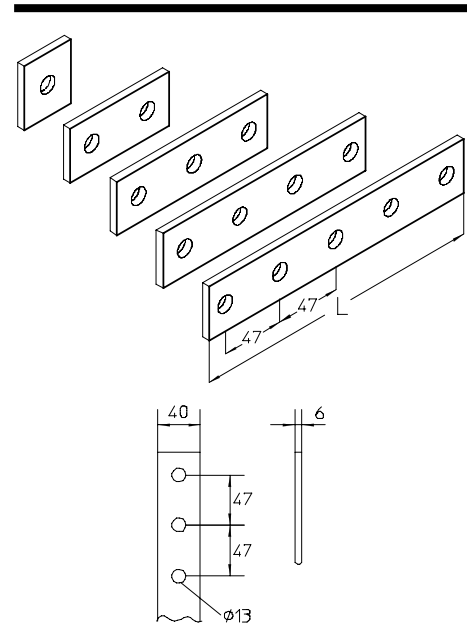
### AVL fastening strip

For an application example, see the chapter assembly.

article number	B mm	L mm	t mm	G kg
<b>F</b>				
<b>AVL-1F</b>	40	42	6	0,07
<b>AVL-2F</b>	40	89	6	0,16
<b>AVL-3F</b>	40	136	6	0,24
<b>AVL-4F</b>	40	183	6	0,32
<b>AVL-5F</b>	40	230	6	0,40

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



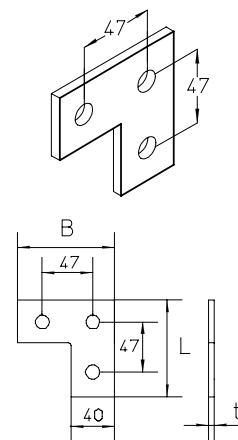
### AVE corner connector 90°

For an application example, see the chapter assembly.

article number	B mm	L mm	t mm	G kg
<b>F</b>				
<b>AVE F</b>	90	90	6	0,27

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)





# Support systems

## KHA-system

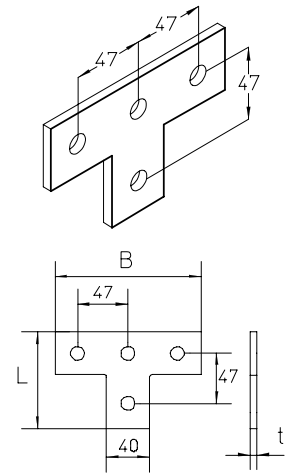
### AVA corner connector T-piece

For an application example, see the chapter assembly.

article number	B mm	L mm	t mm	G kg
<b>F</b>				
<b>AVA F</b>	136	90	6	0,36

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



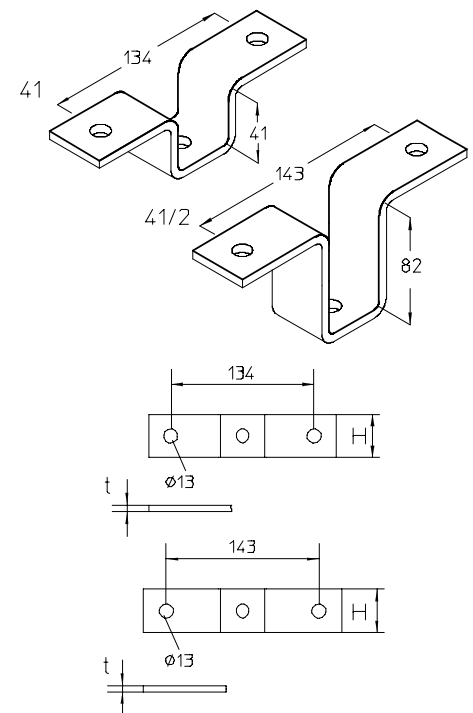
### AVB rail coupler U support

For an application example, see the chapter assembly.

article number	H mm	t mm	G kg
<b>F</b>			
<b>AVB 41F</b>	40	6	0,44
<b>AVB 41/2F</b>	40	6	0,48

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



# Support systems

## KHA-system

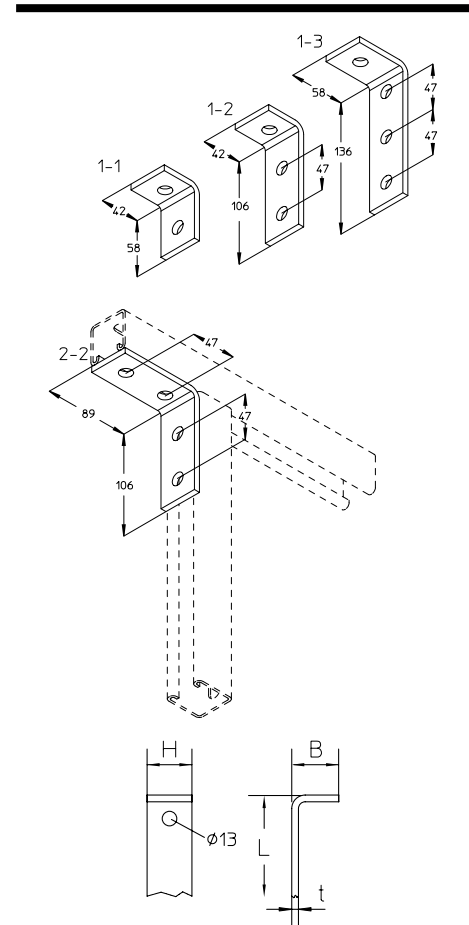
### AVLW corner connector 90°

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>AVLW 1-1F</b>	40	42	58	6	0,17
<b>AVLW 1-2F</b>	40	42	106	6	0,26
<b>AVLW 1-3F</b>	40	58	136	6	0,36
<b>AVLW 2-2F</b>	40	89	106	6	0,44

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



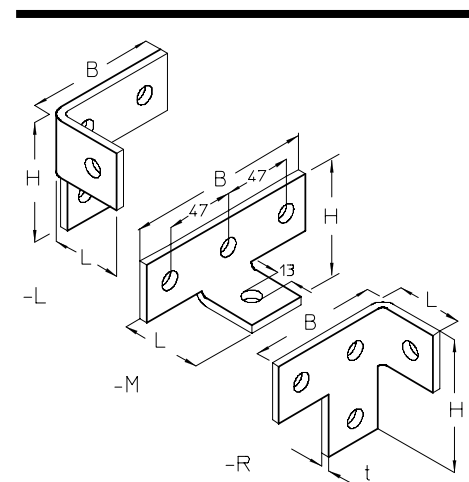
### AVAW corner connector left / center / right

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>AVAW-L F</b>	90	98	48	6	0,36
<b>AVAW-M F</b>	51	136	52	6	0,36
<b>AVAW-R F</b>	90	98	48	6	0,36

accessories optional:

<b>SES</b>	hexagon head bolt, DIN 933	(page G37)
<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



### SA 1 protection end cap

article number	G kg
<b>PE</b>	
<b>SA 1</b>	0,01

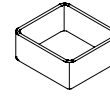


# Support systems

## KHA-system

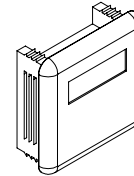
### SA 2 protection end cap

article number	G	kg
<b>PE</b>		
<b>SA 2</b>		0,01



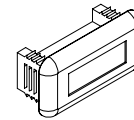
### SAI 41 protection end cap

article number	colour	G	kg
<b>PE</b>			
<b>SAI 41-S</b>	black	0,01	
<b>SAI 41-W</b>	white	0,01	



### SAI 21 protection end cap

article number	colour	G	kg
<b>PE</b>			
<b>SAI 21-S</b>	black	0,01	
<b>SAI 21-W</b>	white	0,01	



F

# Support systems

## Profile rails

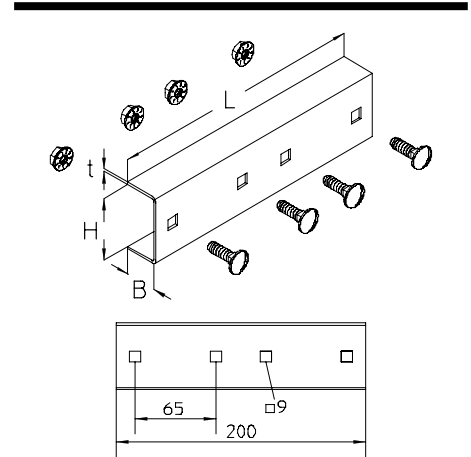
### ASK 4 coupler for KHA-profile

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>ASK 4</b>	49	24	200	2	0,31

accessories included:

4 x **FRS 8x20E** round-head screw with square, DIN 603 (page G35)  
 4 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)



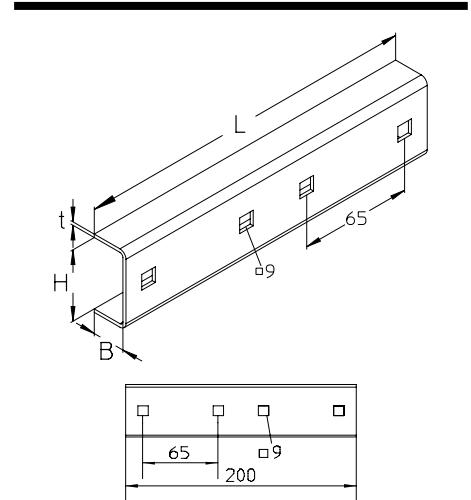
### ASK 8 coupler for KHA-profile

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>ASK 8</b>	41	19	200	2	0,25

accessories included:

4 x **FRS 8x20E** round-head screw with square, DIN 603 (page G35)  
 4 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)

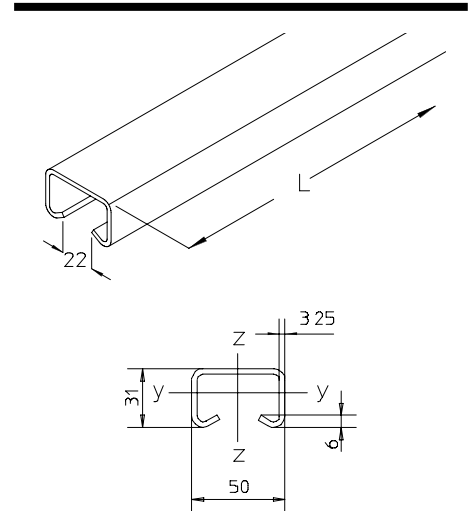


### A 2 C-rail, not perforated, 50x31 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>A 2-30B</b>	31	50	3000	3,25	8,80
<b>A 2-60B</b>	31	50	6000	3,25	17,60
<b>F</b>					
<b>A 2-30F</b>	31	50	3000	3,25	9,40
<b>A 2-60F</b>	31	50	6000	3,25	18,80

accessories optional:

**HS22** tee-head bolt, A2/ A4 (page G43)  
**SKS H** beam clamp set (page G03)



# Support systems

## Profile rails

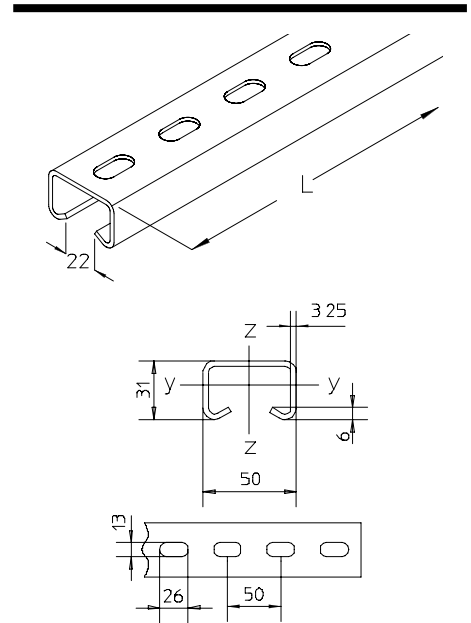
### KHA 2 C-rail, perforated, 50x31 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 2-05F</b>	31	50	500	3,25	1,50
<b>KHA 2-10F</b>	31	50	1000	3,25	3,00
<b>KHA 2-15F</b>	31	50	1500	3,25	4,50
<b>KHA 2-20F</b>	31	50	2000	3,25	6,00
<b>KHA 2-30F</b>	31	50	3000	3,25	9,00
<b>KHA 2-60F</b>	31	50	6000	3,25	17,90

accessories optional:

**HS22** tee-head bolt, A2/ A4 (page G43)  
**SKS H** beam clamp set (page G03)

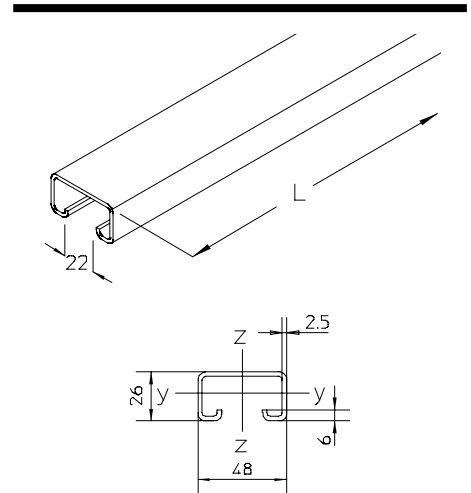


### A 4 C-rail, not perforated, 48x26 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>A 4-30B</b>	26	48	3000	2,5	6,70
<b>A 4-60B</b>	26	48	6000	2,5	13,40
<b>F</b>					
<b>A 4-30F</b>	26	48	3000	2,5	7,20
<b>A 4-60F</b>	26	48	6000	2,5	14,40

accessories optional:

**HS22** tee-head bolt, A2/ A4 (page G43)



F

# Support systems

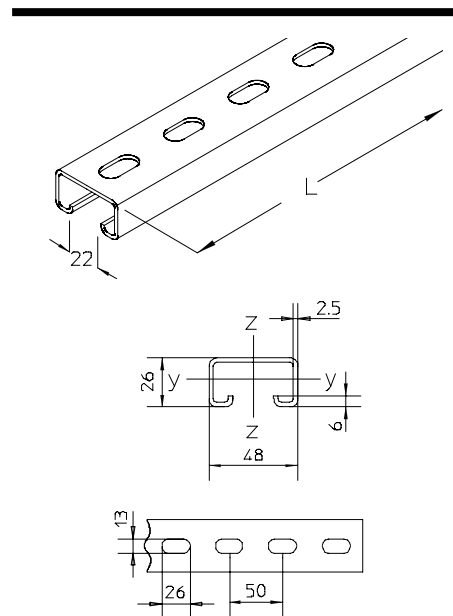
## Profile rails

### KHA 4 C-rail, perforated, 48x26 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 4-30F</b>	26	48	3000	2,5	6,80
<b>KHA 4-60F</b>	26	48	6000	2,5	13,60

accessories optional:

**HS22** tee-head bolt, A2/ A4 (page G43)



### A 7 C-rail, not perforated, 40x22 mm

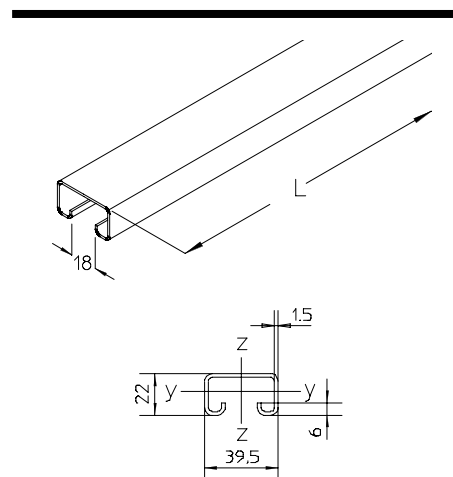
article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>A 7-30S</b>	22	39,5	3000	1,5	3,90
<b>A 7-60S</b>	22	39,5	6000	1,5	7,80
<b>E</b>					
<b>A 7-30E</b>	22	39,5	3000	1,5	3,60
<b>A 7-60E</b>	22	39,5	6000	1,5	7,20

accessories optional:

**HS18** tee-head bolt, A7/ A8/ A9 (page G45)

**AM18** channel nut, A7/ A8 (page G44)

**AMF18** channel spring nut, A7/ A8 (page G45)



# Support systems

## Profile rails

### KHA 7 C-rail, perforated, 40x22 mm

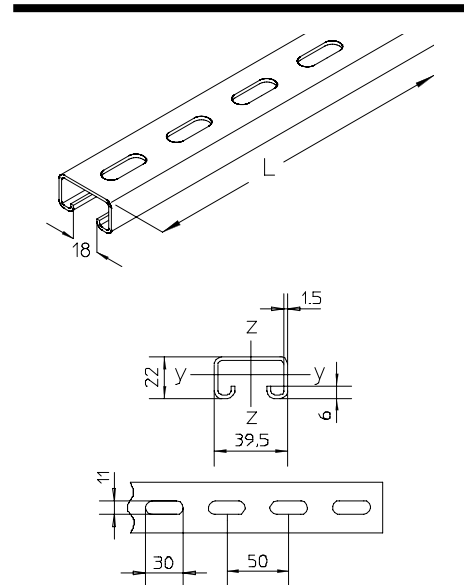
This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
KHA 7-02S	22	39,5	200	1,5	0,20
KHA 7-03S	22	39,5	300	1,5	0,30
KHA 7-04S	22	39,5	400	1,5	0,40
KHA 7-05S	22	39,5	500	1,5	0,50
KHA 7-06S	22	39,5	600	1,5	0,60
KHA 7-07S	22	39,5	700	1,5	0,70
KHA 7-08S	22	39,5	800	1,5	0,80
KHA 7-09S	22	39,5	900	1,5	1,00
KHA 7-10S	22	39,5	1000	1,5	1,10
KHA 7-11S	22	39,5	1100	1,5	1,20
KHA 7-12S	22	39,5	1200	1,5	1,30
KHA 7-13S	22	39,5	1300	1,5	1,40
KHA 7-14S	22	39,5	1400	1,5	1,50
KHA 7-15S	22	39,5	1500	1,5	1,60
KHA 7-20S	22	39,5	2000	1,5	2,20
KHA 7-30S	22	39,5	3000	1,5	3,20
KHA 7-60S	22	39,5	6000	1,5	6,30

<b>E</b>					
KHA 7-01E	22	39,5	100	1,5	0,10
KHA 7-02E	22	39,5	200	1,5	0,20
KHA 7-03E	22	39,5	300	1,5	0,30
KHA 7-04E	22	39,5	400	1,5	0,40
KHA 7-05E	22	39,5	500	1,5	0,60
KHA 7-06E	22	39,5	600	1,5	0,70
KHA 7-07E	22	39,5	700	1,5	0,80
KHA 7-08E	22	39,5	800	1,5	0,90
KHA 7-09E	22	39,5	900	1,5	1,00
KHA 7-10E	22	39,5	1000	1,5	1,10
KHA 7-11E	22	39,5	1100	1,5	1,20
KHA 7-12E	22	39,5	1200	1,5	1,30
KHA 7-13E	22	39,5	1300	1,5	1,50
KHA 7-14E	22	39,5	1400	1,5	1,60
KHA 7-15E	22	39,5	1500	1,5	1,70
KHA 7-20E	22	39,5	2000	1,5	2,20
KHA 7-30E	22	39,5	3000	1,5	3,40
KHA 7-60E	22	39,5	6000	1,5	6,70

accessories optional:

<b>HS18</b>	tee-head bolt, A7/ A8/ A9	(page G45)
<b>AM18</b>	channel nut, A7/ A8	(page G44)
<b>AMF18</b>	channel spring nut, A7/ A8	(page G45)
<b>ASK 8</b>	coupler for KHA-profile	(page F56)
<b>SA 1</b>	protection end cap	(page F54)



F

# Support systems

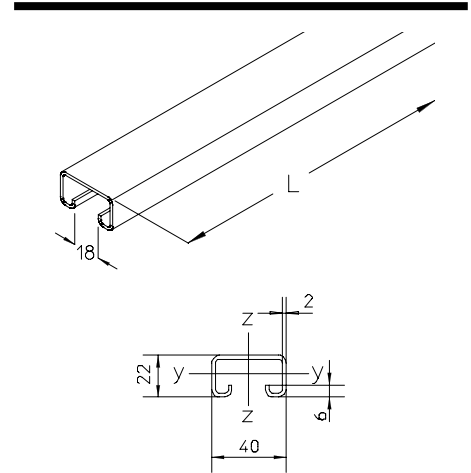
## Profile rails

### A 8 C-rail, not perforated, 40x22 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>A 8-30B</b>	22	40	3000	2	4,60
<b>A 8-60B</b>	22	40	6000	2	9,20
<b>F</b>					
<b>A 8-30F</b>	22	40	3000	2	5,00
<b>A 8-60F</b>	22	40	6000	2	9,90

accessories optional:

- HS18** tee-head bolt, A7/ A8/ A9 (page G45)
- AM18** channel nut, A7/ A8 (page G44)
- AMF18** channel spring nut, A7/ A8 (page G45)



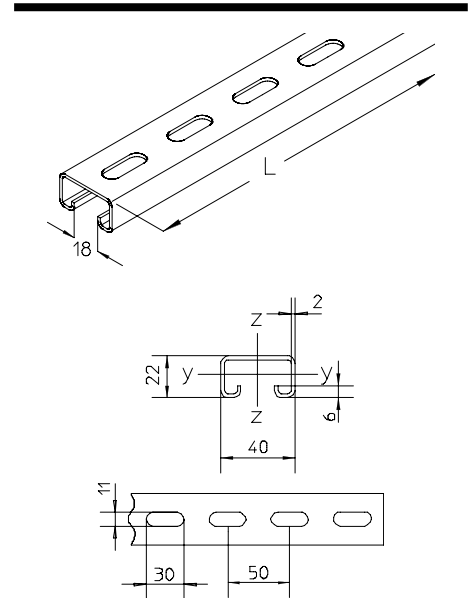
### KHA 8 C-rail, perforated, 40x22 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 8-01F</b>	22	40	100	2	0,20
<b>KHA 8-02F</b>	22	40	200	2	0,30
<b>KHA 8-03F</b>	22	40	300	2	0,50
<b>KHA 8-04F</b>	22	40	400	2	0,60
<b>KHA 8-05F</b>	22	40	500	2	0,80
<b>KHA 8-06F</b>	22	40	600	2	0,90
<b>KHA 8-07F</b>	22	40	700	2	1,10
<b>KHA 8-08F</b>	22	40	800	2	1,30
<b>KHA 8-09F</b>	22	40	900	2	1,40
<b>KHA 8-10F</b>	22	40	1000	2	1,60
<b>KHA 8-11F</b>	22	40	1100	2	1,70
<b>KHA 8-12F</b>	22	40	1200	2	1,90
<b>KHA 8-13F</b>	22	40	1300	2	2,00
<b>KHA 8-14F</b>	22	40	1400	2	2,20
<b>KHA 8-15F</b>	22	40	1500	2	2,40
<b>KHA 8-20F</b>	22	40	2000	2	3,10
<b>KHA 8-30F</b>	22	40	3000	2	4,70
<b>KHA 8-60F</b>	22	40	6000	2	9,40

accessories optional:

- HS18** tee-head bolt, A7/ A8/ A9 (page G45)
- AM18** channel nut, A7/ A8 (page G44)
- AMF18** channel spring nut, A7/ A8 (page G45)
- ASK 8** coupler for KHA-profile (page F56)





# Support systems

## Profile rails

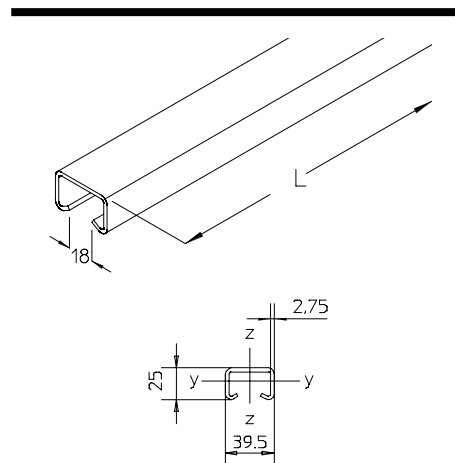
### A 9 C-rail, not perforated, 40x25 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
A 9-30B	25	39,5	3000	2,75	5,50
A 9-60B	25	39,5	6000	2,75	11,00
<b>F</b>					
A 9-30F	25	39,5	3000	2,75	5,90
A 9-60F	25	39,5	6000	2,75	11,80

accessories optional:

**HS18** tee-head bolt, A7/ A8/ A9 (page G45)

**AMA18** channel nut, A7/ A8 (page G44)



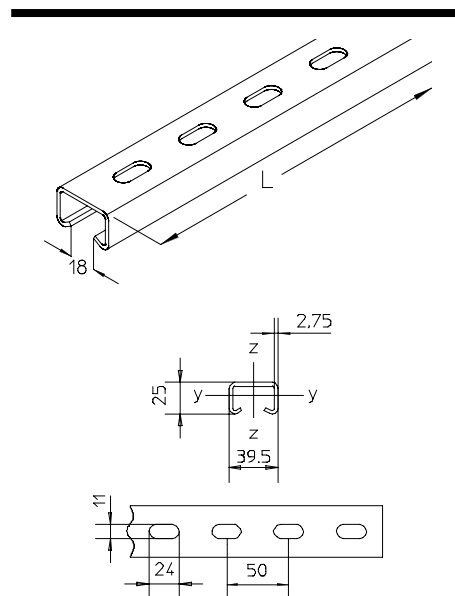
### KHA 9 C-rail, perforated, 40x25 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
KHA 9-02F	25	39,5	200	2,75	0,40
KHA 9-03F	25	39,5	300	2,75	0,60
KHA 9-04F	25	39,5	400	2,75	0,80
KHA 9-05F	25	39,5	500	2,75	0,90
KHA 9-06F	25	39,5	600	2,75	1,20
KHA 9-07F	25	39,5	700	2,75	1,40
KHA 9-08F	25	39,5	800	2,75	1,60
KHA 9-09F	25	39,5	900	2,75	1,80
KHA 9-10F	25	39,5	1000	2,75	1,90
KHA 9-11F	25	39,5	1100	2,75	2,10
KHA 9-12F	25	39,5	1200	2,75	2,30
KHA 9-13F	25	39,5	1300	2,75	2,40
KHA 9-14F	25	39,5	1400	2,75	2,60
KHA 9-15F	25	39,5	1500	2,75	2,80
KHA 9-20F	25	39,5	2000	2,75	3,70
KHA 9-30F	25	39,5	3000	2,75	5,60
KHA 9-60F	25	39,5	6000	2,75	11,20

accessories optional:

**AMA18** channel nut, A7/ A8 (page G44)

**HS18** tee-head bolt, A7/ A8/ A9 (page G45)



# Support systems

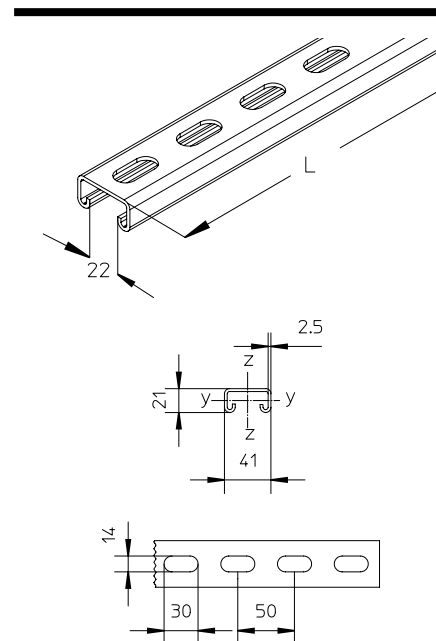
## Profile rails

### KHA 21 C-rail, perforated, 41x21 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 21-30F</b>	21	41	3000	2,5	5,30
<b>KHA 21-60F</b>	21	41	6000	2,5	10,60
<b>E4</b>					
<b>KHA 21-30E4</b>	21	41	3000	2,5	5,10
<b>KHA 21-60E4</b>	21	41	6000	2,5	10,10

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>RUS 41</b>	stabilization plate, KHA profiles	(page G41)
<b>SA 1</b>	protection end cap	(page F54)
<b>SAI 21</b>	protection end cap	(page F55)

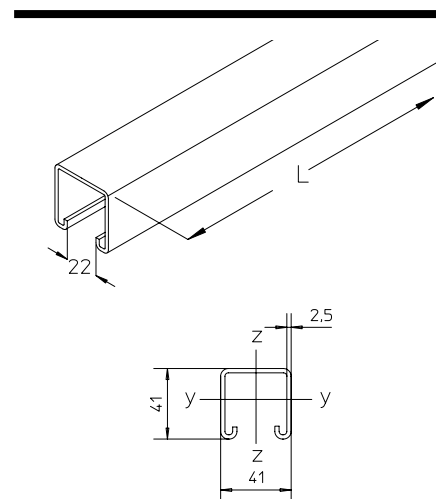


### A 41 C-rail, not perforated, 41x41 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>A 41-30B</b>	41	41	3000	2,5	7,80
<b>A 41-60B</b>	41	41	6000	2,5	15,60
<b>F</b>					
<b>A 41-30F</b>	41	41	3000	2,5	8,30
<b>A 41-60F</b>	41	41	6000	2,5	16,60

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)



# Support systems

## Profile rails

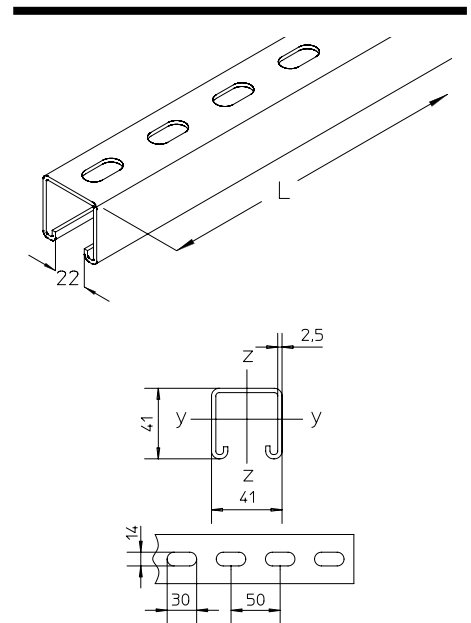
### KHA 41 C-rail, perforated, 41x41 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
KHA 41-01F	41	41	100	2,5	0,30
KHA 41-02F	41	41	200	2,5	0,50
KHA 41-03F	41	41	300	2,5	0,80
KHA 41-04F	41	41	400	2,5	1,10
KHA 41-05F	41	41	500	2,5	1,30
KHA 41-06F	41	41	600	2,5	1,60
KHA 41-07F	41	41	700	2,5	1,90
KHA 41-08F	41	41	800	2,5	2,10
KHA 41-09F	41	41	900	2,5	2,40
KHA 41-10F	41	41	1000	2,5	2,60
KHA 41-11F	41	41	1100	2,5	2,90
KHA 41-12F	41	41	1200	2,5	3,20
KHA 41-13F	41	41	1300	2,5	3,40
KHA 41-14F	41	41	1400	2,5	3,70
KHA 41-15F	41	41	1500	2,5	4,00
KHA 41-20F	41	41	2000	2,5	5,30
KHA 41-30F	41	41	3000	2,5	7,90
KHA 41-60F	41	41	6000	2,5	15,90

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>RUS 41</b>	stabilization plate, KHA profiles	(page G41)
<b>SKS A</b>	beam clamp set	(page G04)
<b>SA 2</b>	protection end cap	(page F55)
<b>SAI 41</b>	protection end cap	(page F55)



F

# Support systems

## Profile rails

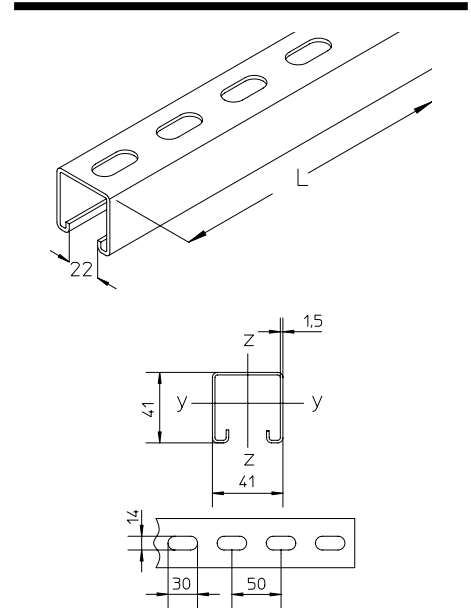
### KHAL 41 C-rail, perforated, 41x41 mm

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KHAL 41-30S</b>	41	41	3000	1,5	4,70
<b>KHAL 41-60S</b>	41	41	6000	1,5	9,40
<b>F</b>					
<b>KHAL 41-05F</b>	41	41	500	1,5	0,80
<b>KHAL 41-10F</b>	41	41	1000	1,5	1,70
<b>KHAL 41-15F</b>	41	41	1500	1,5	2,50
<b>KHAL 41-20F</b>	41	41	2000	1,5	3,30
<b>KHAL 41-30F</b>	41	41	3000	1,5	5,00
<b>KHAL 41-36F</b>	41	41	3600	1,5	6,01
<b>KHAL 41-60F</b>	41	41	6000	1,5	10,00

accessories optional:

**AM22** channel nut, A41/ KHA 41/ KHAL 41 (page G43)  
**AMF22** channel spring nut, A41 (page G43)



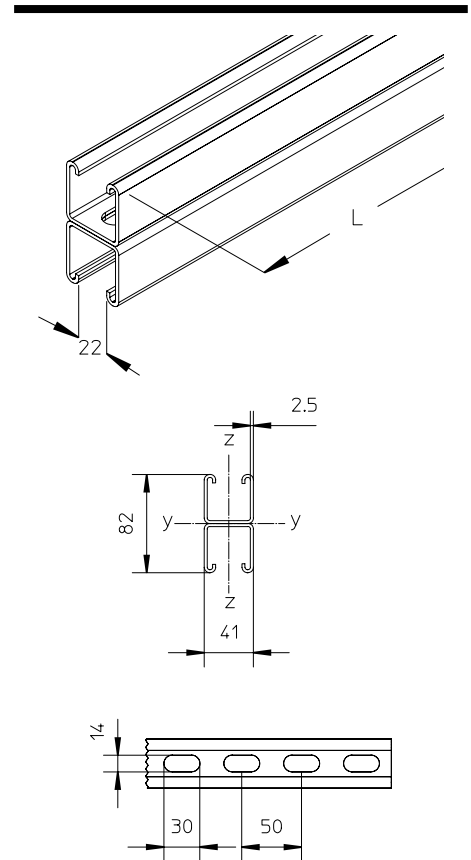
### KHA 82 C-rail, perforated, 41x82 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 82-60F</b>	82	41	6000	2,5	31,80

accessories optional:

**AM22** channel nut, A41/ KHA 41/ KHAL 41 (page G43)  
**AMF22** channel spring nut, A41 (page G43)  
**RUS 41** stabilization plate, KHA profiles (page G41)



# Support systems

## Profile rails

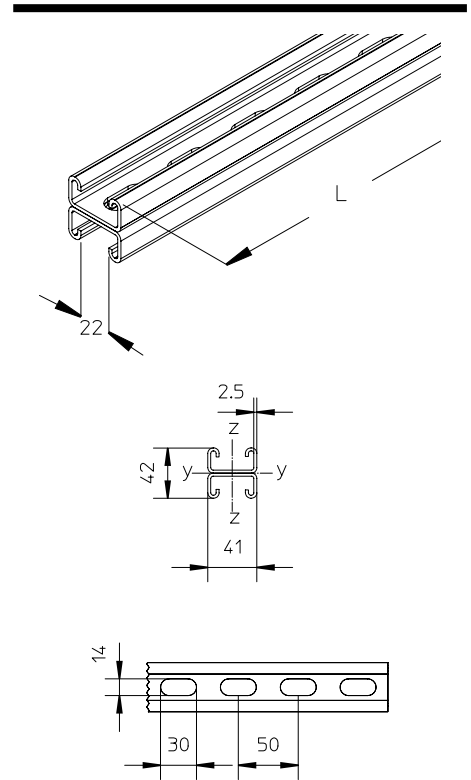
### KHA 42 C-rail, perforated, 41x42 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>KHA 42-60F</b>	42	41	6000	2,5	20,70

accessories optional:

**AM22** channel nut, A41/ KHA 41/ KHAL 41 (page G43)  
**RUS 41** stabilization plate, KHA profiles (page G41)

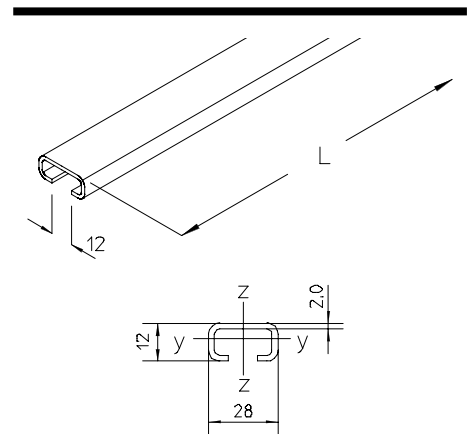


### B 3 profile rail, not perforated, 28x12 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>B 3-30B</b>	12	28	3000	2	2,50
<b>B 3-60B</b>	12	28	6000	2	5,00
<b>F</b>					
<b>B 3-30F</b>	12	28	3000	2	2,70
<b>B 3-60F</b>	12	28	6000	2	5,30
<b>E4</b>					
<b>B 3-30E4</b>	12	28	3000	2	2,50
<b>B 3-60E4</b>	12	28	6000	2	5,00

accessories optional:

**HS12** Tee-head bolt (page G46)  
**AM12** channel nut, B3/ B6 (page G46)



# Support systems

## Profile rails

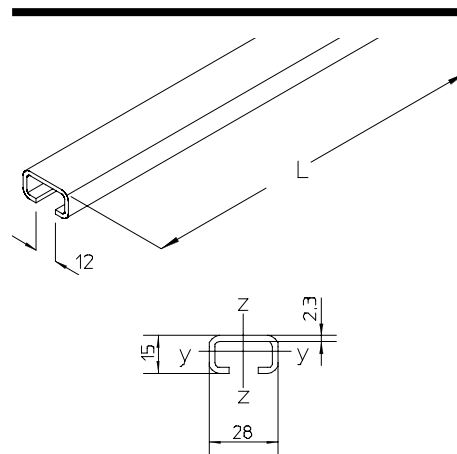
### B 6 profile rail, not perforated, 28x15 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>B 6-30B</b>	15	28	3000	2,3	3,10
<b>B 6-60B</b>	15	28	6000	2,3	6,30
<b>F</b>					
<b>B 6-30F</b>	15	28	3000	2,3	3,40
<b>B 6-60F</b>	15	28	6000	2,3	6,70
<b>E</b>					
<b>B 6-30E</b>	15	28	3000	2,3	3,10
<b>B 6-60E</b>	15	28	6000	2,3	6,30
<b>E4</b>					
<b>B 6-30E4</b>	15	28	3000	2,3	3,40
<b>B 6-60E4</b>	15	28	6000	2,3	6,30

accessories optional:

**HS12** Tee-head bolt (page G46)

**AM12** channel nut, B3/ B6 (page G46)



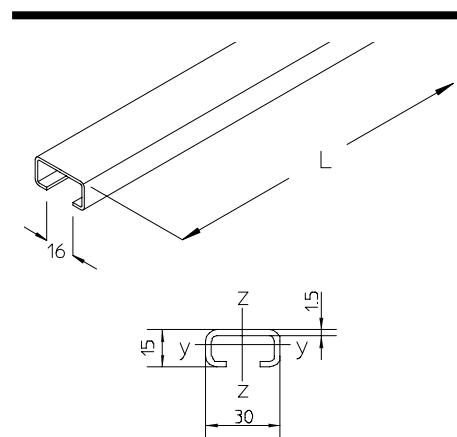
### B 7 profile rail, not perforated, 30x15 mm

article number	H mm	B mm	L mm	t mm	G kg
<b>B</b>					
<b>B 7-30B</b>	15	30	3000	1,5	2,20
<b>B 7-60B</b>	15	30	6000	1,5	4,40
<b>S</b>					
<b>B 7-30S</b>	15	30	3000	1,5	2,30
<b>B 7-60S</b>	15	30	6000	1,5	4,50
<b>F</b>					
<b>B 7-30F</b>	15	30	3000	1,5	2,40
<b>B 7-60F</b>	15	30	6000	1,5	4,80
<b>E</b>					
<b>B 7-30E</b>	15	30	3000	1,5	2,20
<b>B 7-60E</b>	15	30	6000	1,5	4,40

accessories optional:

**HS16** Tee-head bolt (page G46)

**AM16** channel nut, B7 (page G45)



# Support systems

## Profile rails

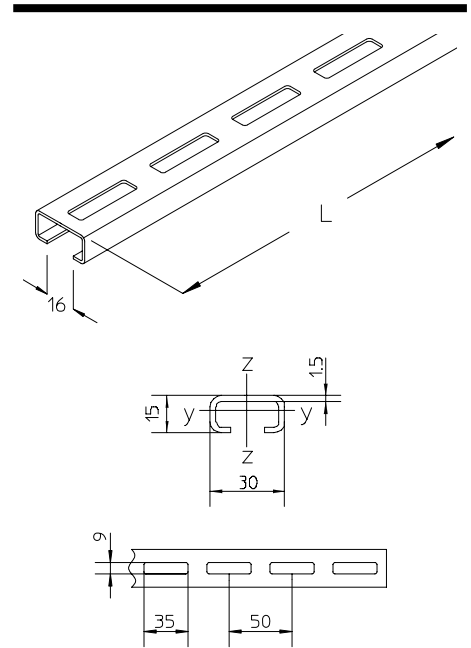
### KHB 7 profile rail, perforated, 30x15 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KHB 7-30S</b>	15	30	3000	1,5	2,10
<b>KHB 7-60S</b>	15	30	6000	1,5	4,20
<b>F</b>					
<b>KHB 7-30F</b>	15	30	3000	1,5	2,30
<b>KHB 7-60F</b>	15	30	6000	1,5	4,60
<b>E</b>					
<b>KHB 7-20E</b>	15	30	2000	1,5	1,34
<b>KHB 7-30E</b>	15	30	3000	1,5	2,20
<b>KHB 7-60E</b>	15	30	6000	1,5	4,40

accessories optional:

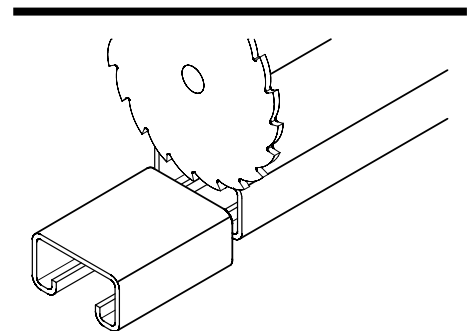
**HS16** Tee-head bolt (page G46)  
**AM16** channel nut, B7 (page G45)



### PRS cut

For detailed explanations, see the chapter planning.

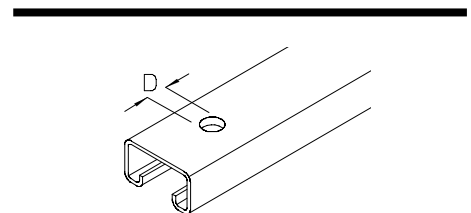
article number
<b>PRS A</b>
<b>PRS B</b>



### RL round hole

For detailed explanations, see the chapter planning.

article number	D mm
<b>RL 7</b>	7
<b>RL 9</b>	9
<b>RL 11</b>	11
<b>RL 13</b>	13



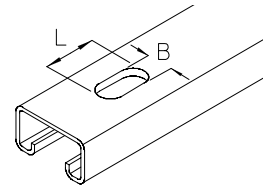
# Support systems

## Profile rails

### LGL elongated hole

For detailed explanations, see the chapter planning.

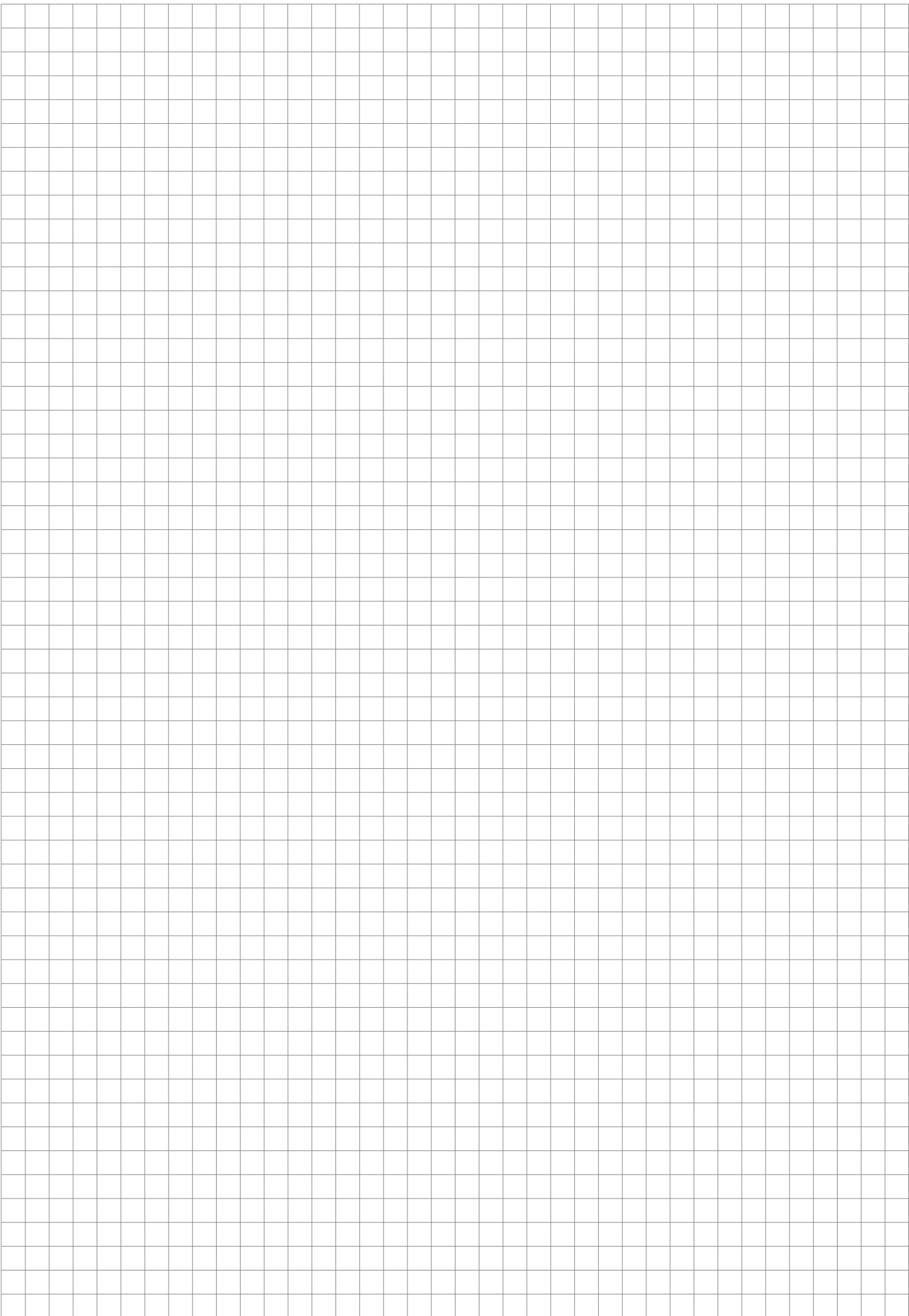
article number	B mm	L mm
<b>LGL 7x10</b>	7	10
<b>LGL 9x20</b>	9	20
<b>LGL 11x24</b>	11	24
<b>LGL 13x26</b>	13	26







F





# Fastenings

Clamping assembly	G03-G11
Plugs	G12-G15
Suspension components	G16-G32
Bolting fasteners/ bolts and nuts	G33-G42
Channel nuts and bolts	G43-G47
Electrical fastenings	G48-G51

# Numeric index

## Fastenings

### A

**AKB** channel bolt, A7/ A8/ A9 [G47](#)  
**AM12** channel nut, B3/ B6 [G46](#)  
**AM16** channel nut, B7 [G45](#)  
**AM18** channel nut, A7/ A8 [G44](#)  
**AM22** channel nut, A41/ KHA 41/ KHAL 41 [G43](#)  
**AMA18** channel nut, A7/ A8 [G44](#)  
**AMF18** channel spring nut, A7/ A8 [G45](#)  
**AMF22** channel spring nut, A41 [G43](#)  
**AN** support [G11](#)

### B

**BFS K** quick-mounting clip for all-rounder cable holder, plastic [G50](#)  
**BFS ND K** quick-mounting clip for all-rounder cable holder, plastic with nail plug [G50](#)

### D

**DAS** wire eyebolt [G17](#)

### F

**FKS** slotted cylinder head screw, DIN 84 [G35](#)  
**FR** spring ring [G39](#)  
**FRS** round-head screw with square, DIN 603 [G35](#)  
**FRSV** round-head screw with short square [G34](#)  
**FS** serrated lock washer [G39](#)

### G

**GB** threaded rod, DIN 976-1 [G16](#)  
**GCB** beam clip [G31](#)  
**GRIPADAP** thread adaptor with hole [G30](#)  
**GRIPCLE 1** adjustment key [G32](#)  
**GRIPCLE 2** adjustment key [G32](#)  
**GRIPM** pigtail anchor bolt [G31](#)  
**GRIPPINC** wire cutter [G32](#)  
**GRIPTRAP** trapezium lock [G30](#)  
**GRIPTRAPP** trapezium lock plus [G31](#)  
**GRIPTWIS** wire end cap [G32](#)

### H

**HFEC 3** wire suspension with hook and universal closure [G18](#)  
**HFECEXP 1** wire suspension with hook and express closure [G18](#)  
**HFECEXP 2** wire suspension with hook and express closure [G18](#)  
**HFEF10 3** wire suspension with threaded end M10 and universal closure [G21](#)  
**HFEF10 4** wire suspension with threaded end M10 and universal closure [G21](#)  
**HFEF10EXP 2** wire suspension with threaded end M10 and express closure [G20](#)  
**HFEF6 2** wire suspension with threaded end M6 and universal closure [G19](#)  
**HFEF6 3** wire suspension with threaded end M6 and universal closure [G19](#)  
**HFEF6EXP 1** wire suspension with threaded end M6 and express closure [G19](#)  
**HFEF6EXP 2** wire suspension with threaded end M6 and express closure [G19](#)  
**HFEF8 2** wire suspension with threaded end M8 and universal closure [G20](#)  
**HFEF8 3** wire suspension with threaded end M8 and universal closure [G20](#)  
**HFEF8EXP 2** wire suspension with threaded end M8 and express closure [G20](#)  
**HFEM 2** wire suspension with carbine and universal closure [G21](#)  
**HFEM 3** wire suspension with carbine and universal closure [G21](#)  
**HFEO 3** wire suspension with eyelet straight and universal closure [G22](#)

**HFEOEXP 2** wire suspension with eyelet straight and express closure [G22](#)  
**HFET6EXP 1** wire suspension with threaded transition M6 and express closure [G22](#)  
**HFET6EXP 2** wire suspension with threaded transition M6 and express closure [G22](#)  
**HFET8EXP 2** wire suspension with threaded transition M8 and express closure [G23](#)  
**HFFR 2** wire suspension with loop and universal closure [G23](#)  
**HFFR 3** wire suspension with loop and universal closure [G24](#)  
**HFFR 4** wire suspension with loop and universal closure [G24](#)  
**HFFR 5** wire suspension with loop and universal closure [G24](#)  
**HFFREXP 1** wire suspension with loop and express closure [G23](#)  
**HFFREXP 2** wire suspension with loop and express closure [G23](#)  
**HFSP 2** wire suspension with cross anchor and universal closure [G25](#)  
**HFSP 3** wire suspension with cross anchor and universal closure [G25](#)  
**HFSPEXP 1** wire suspension with cross anchor and express closure [G24](#)  
**HFSPEXP 2** wire suspension with cross anchor and express closure [G25](#)  
**HFTHEXP 1** wire suspension with trapezium sheet metal hook and express closure [G25](#)  
**HFTHEXP 2** wire suspension with trapezium sheet metal hook and express closure [G26](#)  
**HS12** Tee-head bolt [G46](#)  
**HS16** Tee-head bolt [G46](#)  
**HS18** tee-head bolt, A7/ A8/ A9 [G45](#)  
**HS22** tee-head bolt, A2/ A4 [G43](#)

### I

**IK** hexagon socket head screw, DIN 912 [G36](#)

### K

**KD** plastic dowel [G13](#)  
**KLR** fixing set [G33](#)  
**KLRL** clamping assembly [G36](#)  
**KLS** fixing set [G33](#)  
**KLU** fixing set [G07](#)  
**KLUS** clamping assembly [G08](#)  
**KLUT** clamping assembly [G09](#)  
**KNK** chain [G17](#)  
**KNK-NG** chain, emergency link [G17](#)  
**KOT K** coupling piece, plastic [G50](#)  
**KSD** plastic plug-in dowel [G51](#)

### L

**LK K** cable holder, plastic [G49](#)  
**LK ND K** cable holder, plastic with moulded-in nail plug [G50](#)

### M

**MKD** beam clamp [G09](#)

### R

**RGW** reducing bolt [G11](#)  
**RUS 41** stabilization plate, KHA profiles [G41](#)  
**RUS 50** mounting plate, KHA profiles [G42](#)

### S

**SA** anchor [G13](#)  
**SA-D** anchor [G13](#)  
**SAZ** anchor [G12](#)  
**SAZ-B** Ferro-concrete drill [G12](#)  
**SAZ-D** anchor [G13](#)  
**SD** expansion anchor [G12](#)  
**SD-BS** straddling dowel, fire protection [G51](#)  
**SEH** hexagon wood screw [G38](#)

**SEM** hexagon-nut, DIN 934 [G41](#)  
**SEMS** hexagon nut, self-locking, DIN 6923 [G41](#)  
**SEMSS** hexagon-nut, self-locking, DIN 985 [G42](#)  
**SES** hexagon head bolt, DIN 933 [G37](#)  
**SH K** multiple cable holder, plastic [G48](#)  
**SH ND K** multiple cable holder, plastic with nail plug [G48](#)  
**SH QS** multiple cable holder, metal [G48](#)  
**SHH** eyebolt [G18](#)  
**SHK K** cable holder, plastic [G49](#)  
**SHK ND K** cable holder, plastic with nail plug [G49](#)  
**SHS** eyebolt [G17](#)  
**SK** clamping claw [G10](#)  
**SKL A** beam clamp set [G07](#)  
**SKL M** beam clamp set [G06](#)  
**SKS A** beam clamp set [G04](#)  
**SKS H** beam clamp set [G03](#)  
**SKS M** beam clamp set [G05](#)  
**SN** screw nail anchor [G51](#)  
**SN G** beam clamp [G10](#)  
**SPRINGCLIP** spring clip [G31](#)  
**SSK** protection end cap [G42](#)

### T

**TBS** trapezium bow [G16](#)  
**TIGERCLIP** Tiger clip [G31](#)  
**TPZPEC 2** wire suspension with hook and trapezium closure plus [G26](#)  
**TPZPEC 3** wire suspension with hook and trapezium closure plus [G26](#)  
**TPZPEF10 2** wire suspension with threaded end M10 and trapezium closure plus [G27](#)  
**TPZPEF10 3** wire suspension with threaded end M10 and trapezium closure plus [G27](#)  
**TPZPEF10 4** wire suspension with threaded end M10 and trapezium closure plus [G27](#)  
**TPZPEF8 2** wire suspension with threaded end M8 and trapezium closure plus [G26](#)  
**TPZPEF8 3** wire suspension with threaded end M8 and trapezium closure plus [G27](#)  
**TPZPFR 2** wire suspension with loop and trapezium closure plus [G28](#)  
**TPZPFR 3** wire suspension with loop and trapezium closure plus [G28](#)  
**TPZPFR 4** wire suspension with loop and trapezium closure plus [G28](#)  
**TPZPSP 2** wire suspension with cross anchor and trapezium closure plus [G28](#)  
**TPZPSP 3** wire suspension with cross anchor and trapezium closure plus [G29](#)  
**TPZPTH 2** wire suspension with trapezium sheet metal hook and trapezium closure plus [G29](#)

### U

**US 125** square washer, DIN 125 [G39](#)  
**US 9021** square washer, DIN 9021 [G40](#)  
**UVS** captive washer [G40](#)

### V

**VA-AP** shear connector rod, pistol [G14](#)  
**VAB-HB** shear connector rod, concrete [G14](#)  
**VAB-HB B** shear connector rod, brush [G14](#)  
**VAB-HB M** shear connector mortar [G14](#)  
**VAS-AS** shear connector rod, stone [G15](#)  
**VAS-BS** shear connector rod, fire protection [G15](#)  
**VAS-M** shear connector mortar [G15](#)  
**VAS-SH** perforated bush for shear connector, stone [G15](#)  
**VM** rod coupling [G16](#)

### Y

**YAJCT 2** Y-Fit accessory with hook for cable trays [G30](#)  
**YAJEC 1** Y-Fit accessory with hook [G29](#)  
**YAJEC 2** Y-Fit accessory with hook [G29](#)  
**YAJEC 3** Y-Fit accessory with hook [G30](#)

# Fastenings

## Clamping assembly

### SKS H beam clamp set

For an application example, see the chapter assembly.

article number	k mm	$P_{max}$ kN	M Nm	G kg/set
<b>F</b>				
<b>SKS HF</b>	10 - 30	20	50	0,61

accessories included:

- 2 x **HS22 10x80F** tee-head bolt, A2/ A4 (page G44)
- 2 x **US 10x30F** square washer, DIN 9021 (page G40)

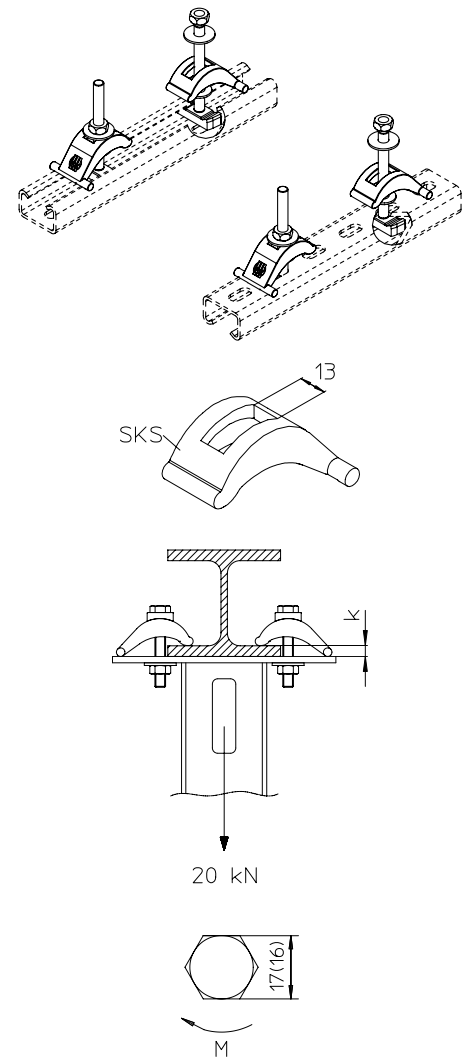
article number	k mm	$P_{max}$ kN	M Nm	G kg/set
<b>E4</b>				
<b>SKS HE4</b>	10 - 30	20	50	0,63

accessories included:

- 2 x **HS22 10x80E4** tee-head bolt, A2/ A4 (page G44)
- 2 x **US 10x30E4** square washer, DIN 9021 (page G40)

accessories optional:

- KHA 2** C-rail, perforated, 50x31 mm (page F57)



# Fastenings

## Clamping assembly

### SKS A beam clamp set

For an application example, see the chapter assembly.

article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>F</b>				
<b>SKS AF</b>	10 - 30	20	50	0,56

accessories included:

2 x <b>SES 10x75F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>US 10x30F</b>	square washer, DIN 9021	(page G40)
2 x <b>AM22 M10F</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
2 x <b>UVS M10x24</b>	captive washer	(page G40)

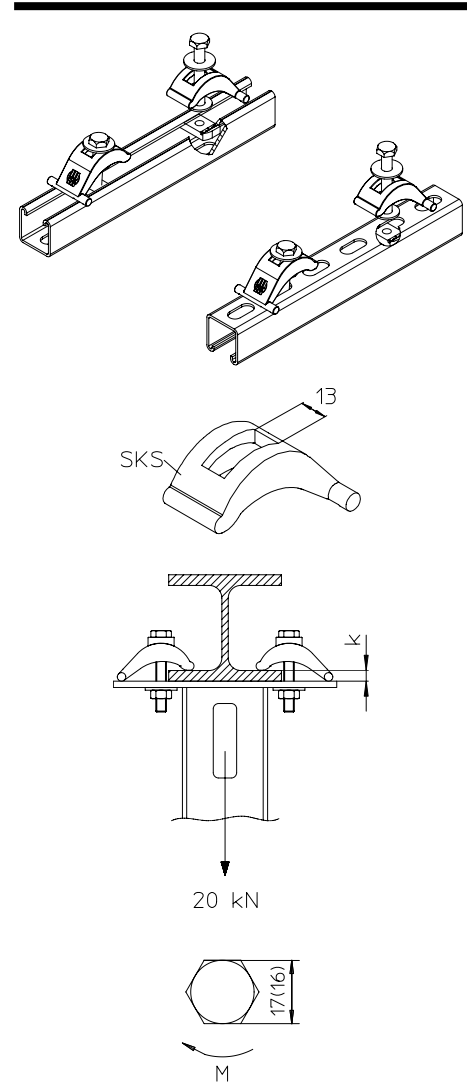
article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>E4</b>				
<b>SKS AE4</b>	10 - 30	20	50	0,59

accessories included:

2 x <b>SES 10x75E4</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>US 10x30E4</b>	square washer, DIN 9021	(page G40)
2 x <b>UVS M10x24</b>	captive washer	(page G40)
2 x <b>AM22 M10E4</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)

accessories optional:

<b>A 41</b>	C-rail, not perforated, 41x41 mm	(page F62)
<b>KHA 41</b>	C-rail, perforated, 41x41 mm	(page F48, F63, L08)



# Fastenings

## Clamping assembly

### SKS M beam clamp set

article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>F</b>				
<b>SKS MF</b>	10 - 30	20	50	0,52

accessories included:

2 x <b>SES 10x75F</b>	hexagon head bolt, DIN 933	(page G38)
4 x <b>US 10x30F</b>	square washer, DIN 9021	(page G40)
2 x <b>UVS M10x24</b>	captive washer	(page G40)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

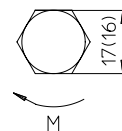
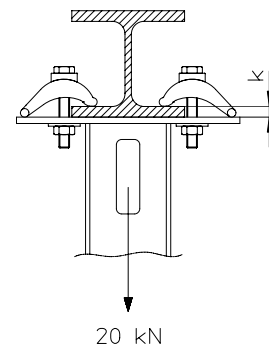
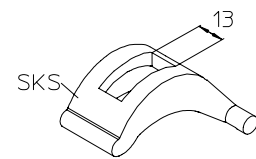
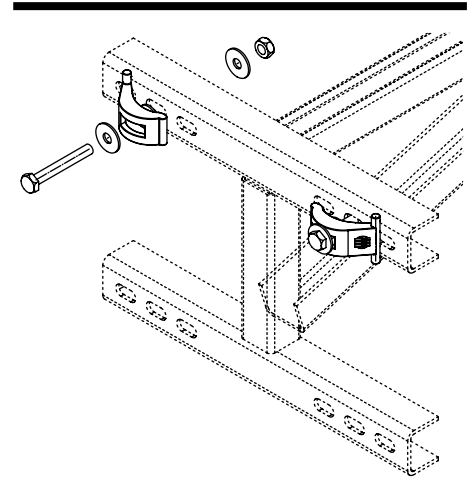
article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>E4</b>				
<b>SKS ME4</b>	10 - 30	20	50	0,3

accessories included:

2 x <b>SES 10x75E4</b>	hexagon head bolt, DIN 933	(page G38)
4 x <b>US 10x30E4</b>	square washer, DIN 9021	(page G40)
2 x <b>UVS M10x24</b>	captive washer	(page G40)
2 x <b>SEM 10E4</b>	hexagon-nut, DIN 934	(page G41)

accessories optional:

**KISS** bracket, very heavy (page F10)



# Fastenings

## Clamping assembly

### SKL M beam clamp set

For an application example, see the chapter assembly.

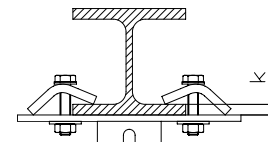
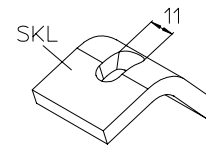
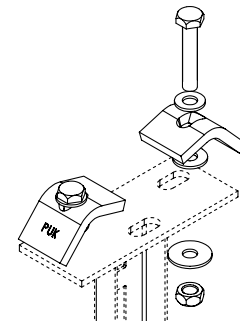
article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>F</b>				
<b>SKL MF</b>	5 - 25	10	35	0,45

accessories included:

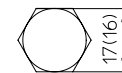
2 x <b>SES 10x55F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
2 x <b>US 10x30F</b>	square washer, DIN 9021	(page G40)
2 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)
2 x <b>UVS M10x24</b>	captive washer	(page G40)

accessories optional:

<b>KDU 60</b>	bracket support, heavy, 60x40 mm	(page F21)
<b>KHA 2</b>	C-rail, perforated, 50x31 mm	(page F57)
<b>HS22</b>	tee-head bolt, A2/ A4	(page G43)



10 kN



M



# Fastenings

## Clamping assembly

### SKL A beam clamp set

For an application example, see the chapter assembly.

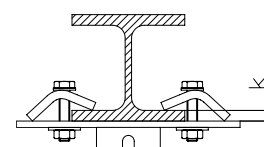
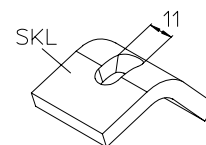
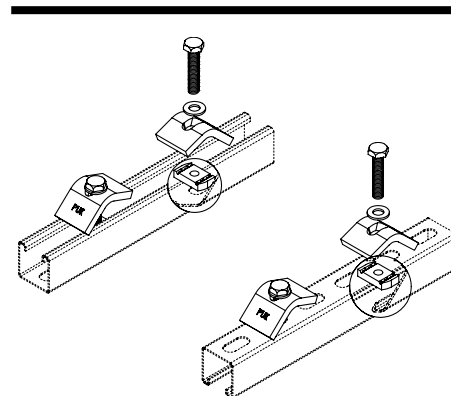
article number	k mm	P <sub>max</sub> kN	M Nm	G kg/set
<b>F</b>				
<b>SKL AF</b>	5 - 25	10	35	0,49

accessories included:

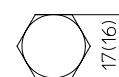
2 x <b>SES 10x55F</b>	hexagon head bolt, DIN 933	(page G38)
2 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
2 x <b>AM22 M10F</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
2 x <b>UVS M10x24</b>	captive washer	(page G40)

accessories optional:

<b>A 41</b>	C-rail, not perforated, 41x41 mm	(page F62)
<b>KHA 41</b>	C-rail, perforated, 41x41 mm	(page F48, F63, L08)
<b>KHAL 41</b>	C-rail, perforated, 41x41 mm	(page F64)



10 kN



M

### KLU fixing set

For an application example, see the chapter assembly.

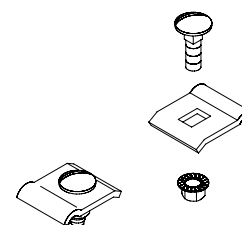
article number	G kg/100
<b>S</b>	
<b>KLU</b>	2,5

accessories included:

2 x <b>FRSV 6x16</b>	round-head screw with short square	(page G34)
2 x <b>SEMS 6</b>	hexagon nut, self-locking, DIN 6923	(page G41)

accessories optional:

<b>FRSV</b>	round-head screw with short square	(page G34)
<b>FRS</b>	round-head screw with square, DIN 603	(page G35)
<b>SEMS</b>	hexagon nut, self-locking, DIN 6923	(page G41)



# Fastenings

## Clamping assembly

### KLU fixing set

For an application example, see the chapter assembly.

article number	G
	kg/100
<b>F</b>	
<b>KLU F</b>	2,5
<b>E</b>	
<b>KLU E</b>	2,5

accessories included:

- 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)
- 2 x **FRSV 6x16E** round-head screw with short square (page G35)

article number	G
	kg/100
<b>E4</b>	
<b>KLU E4</b>	2,5

accessories included:

- 2 x **FKS 6x16E4** slotted cylinder head screw, DIN 84 (page G36)
- 2 x **US 6x12E4** square washer, DIN 125 (page G40)
- 2 x **SEM 6E4** hexagon-nut, DIN 934 (page G41)

accessories optional:

- FRSV** round-head screw with short square (page G34)
- FRS** round-head screw with square, DIN 603 (page G35)
- SEMS** hexagon nut, self-locking, DIN 6923 (page G41)

### KLUS clamping assembly

For an application example, see the chapter assembly.

article number	G
	kg/100
<b>S</b>	
<b>KLUS</b>	9,3

accessories included:

- 2 x **FRSV 6x16** round-head screw with short square (page G34)
- 2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)

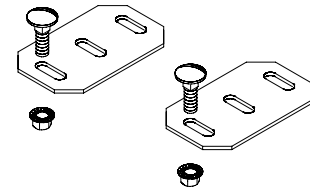
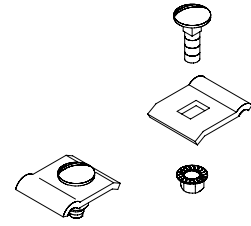
article number	G
	kg/100
<b>E</b>	
<b>KLUS E</b>	8,1

accessories included:

- 2 x **FRSV 6x16E** round-head screw with short square (page G35)
- 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)

accessories optional:

- FRSV** round-head screw with short square (page G34)
- FRS** round-head screw with square, DIN 603 (page G35)
- SEMS** hexagon nut, self-locking, DIN 6923 (page G41)



# Fastenings

## Clamping assembly

### KLUT clamping assembly

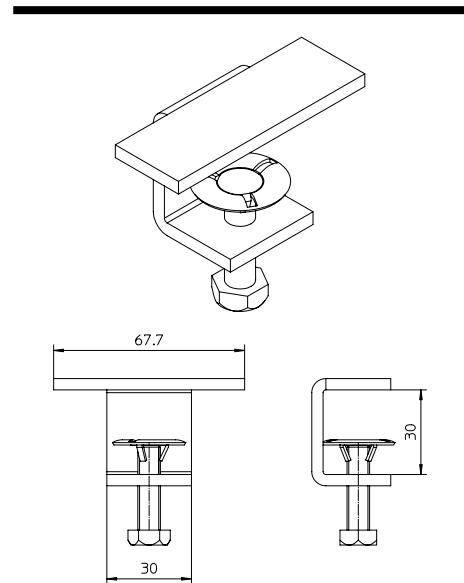
article number	G kg/100
<b>F</b>	
<b>KLUT F</b>	12,4

article number	G kg/100
<b>E</b>	
<b>KLUT E</b>	11,2

accessories included:  
1 x **SES 8x30E** hexagon head bolt, DIN 933 (page G38)

article number	G kg/100
<b>E4</b>	
<b>KLUT E4</b>	11,2

accessories included:  
1 x **SES 8x30E4** hexagon head bolt, DIN 933 (page G38)

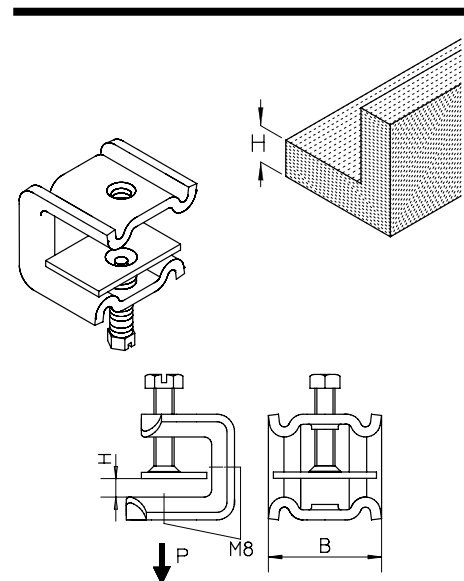


### MKD beam clamp

For an application example, see the chapter assembly.

article number	B mm	k mm	P kN	M Nm	G kg
<b>F</b>					
<b>MKD 21</b>	44	6-21	1,5	9	0,19
<b>MKD 40</b>	44	20-40	1,3	9	0,22
<b>E</b>					
<b>MKD 21E</b>	44	6-21	1,5	9	0,19
<b>MKD 40E</b>	44	20-40	1,3	9	0,22
<b>E4</b>					
<b>MKD 21E4</b>	44	6-21	1,5	9	0,19
<b>MKD 40E4</b>	44	20-40	1,3	9	0,22

accessories optional:  
**HFEF8EXP 2** wire suspension with threaded end M8 and express closure (page G20)  
**HFEF8 3** wire suspension with threaded end M8 and universal closure (page G20)



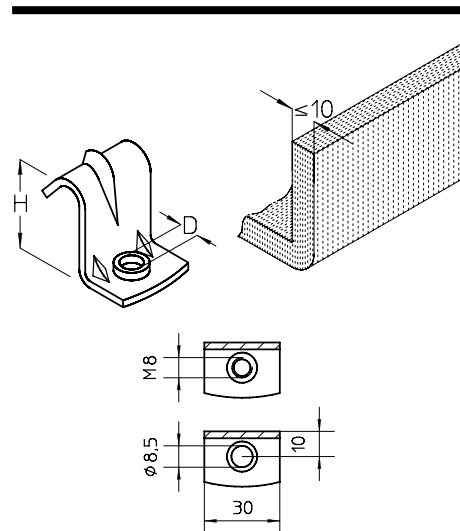
# Fastenings

## Clamping assembly

### SN G beam clamp

For an application example, see the chapter assembly.

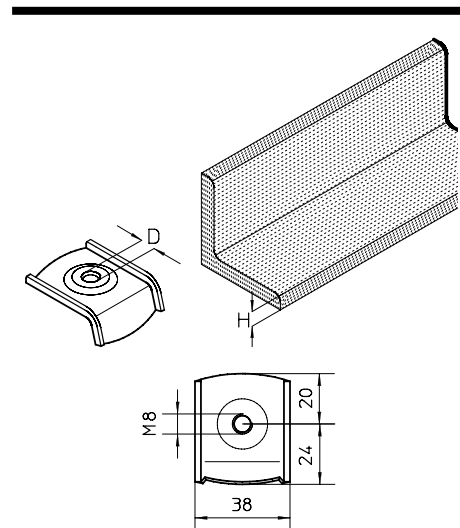
article number	H mm	D mm	G kg
<b>F</b>			
<b>SN 25 M/G</b>	25	M 8	0,04
<b>SN 35 M/G</b>	35	M 8	0,05
<b>SN 25 O/G</b>	25	8,5	0,04
<b>SN 35 O/G</b>	35	8,5	0,05



### SK clamping claw

For an application example, see the chapter assembly.

article number	H mm	D mm	G kg
<b>F</b>			
<b>SK 4 M8</b>	4	M 8	0,04
<b>SK 6 M8</b>	6	M 8	0,04
<b>SK 8 M8</b>	8	M 8	0,04
<b>SK 10 M8</b>	10	M 8	0,04
<b>SK 12 M8</b>	12	M 8	0,04



# Fastenings

## Clamping assembly

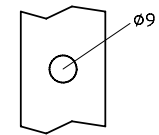
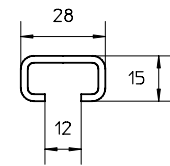
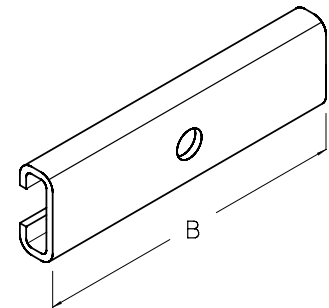
### AN support

For an application example, see the chapter assembly.

article number	B mm	G kg
<b>F</b>		
<b>AN 100</b>	100	8,00

accessories optional:

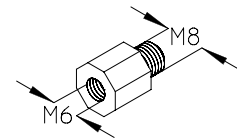
<b>B</b>	cable clamp for fastening to profile rails	(catalogue cable clamps)
<b>HB</b>	cable clamp for fastening to profile rails	(catalogue cable clamps)
<b>ACF-E</b>	cable clamp for fastening to C-profiles	(catalogue cable clamps)



### RGW reducing bolt

For an application example, see the chapter assembly.

article number	G kg
<b>Z</b>	
<b>RGW 8/6</b>	0,01
<b>E</b>	
<b>RGW 8/6E</b>	0,01

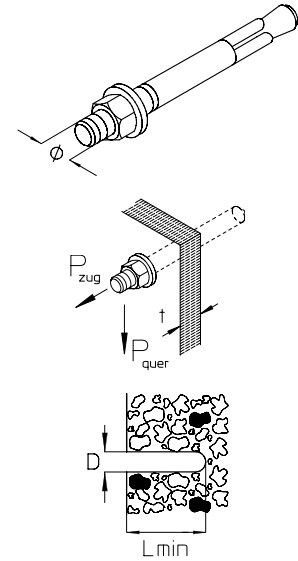


# Fastenings Plugs

## SD expansion anchor

Manufacturer's information has to be observed strictly (ETA-05/0069). \*Permissible load for a single anchor in cracked normal concrete (concrete tension zone) with a consistency of  $\geq C20/25$   
For an application example, see the chapter assembly.

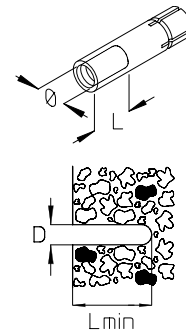
article number	$\varnothing$ mm	D mm	t mm	$P_{zul}$ kN	$L_{min}$ mm	G kg/100
<b>GV</b>						
<b>SDK 10/10</b>	10	10	0-10	4,3	55	5,88
<b>SD 8/10</b>	8	8	0 - 10	3,6	55	3,50
<b>SD 8/30</b>	8	8	0 - 30	3,6	55	4,40
<b>SD 10/10</b>	10	10	0 - 10	5,7	75	6,20
<b>SD 10/30</b>	10	10	0 - 30	5,7	75	7,80
<b>SD 12/10</b>	12	12	0 - 10	9,5	90	11,00
<b>SD 16/25</b>	16	16	0 - 25	13,4	110	26,30
<b>E4</b>						
<b>SD 8/10E4</b>	8	8	0 - 10	3,6	55	3,60
<b>SD 10/10E4</b>	10	10	0 - 10	5,7	75	6,20
<b>SD 12/10E4</b>	12	12	0 - 10	9,5	90	10,90



## SAZ anchor

Manufacturer's information has to be observed strictly (ETA-06/0271). \*Permissible load for a single anchor in cracked normal concrete (concrete tension zone) with a consistency of  $\geq C20/25$

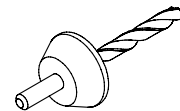
article number	$\varnothing$ mm	D mm	L mm	$P_{zul}$ kN	$L_{min}$ mm	G kg/100
<b>GV</b>						
<b>SAZ 6</b>	6	12	8 - 13	2,4	43	3,2
<b>SAZ 8</b>	8	10	11 - 17	1,6	43	1,4
<b>SAZ 10</b>	10	12	13 - 19	3,0	43	1,9
<b>SAZ 12</b>	12	14	15 - 21	3,6	43	2,6
<b>E4</b>						
<b>SAZ 8E4</b>	8	10	11 - 17	1,6	43	1,4
<b>SAZ 10E4</b>	10	12	13 - 19	3,0	43	1,9
<b>SAZ 12E4</b>	12	14	15 - 21	3,6	43	2,6



## SAZ-B Ferro-concrete drill

manufacturer's information has to be observed strictly.

article number	G kg/100
<b>GV</b>	
<b>SAZ-B 8</b>	8,2
<b>SAZ-B 10</b>	14,0
<b>SAZ-B 12</b>	20,0

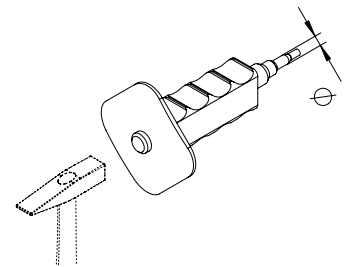


# Fastenings Plugs

## SAZ-D anchor

manufacturer's information has to be observed strictly.

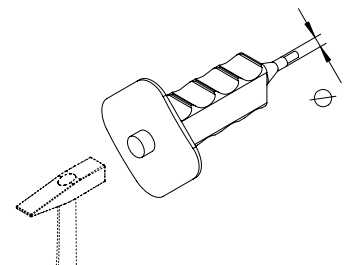
article number	Ø mm	G kg/100
<b>GV</b>		
<b>SAZ-D 8</b>	8	44,4
<b>SAZ-D 10</b>	10	45,0
<b>SAZ-D 12</b>	12	45,2



## SA-D anchor

manufacturer's information has to be observed strictly.

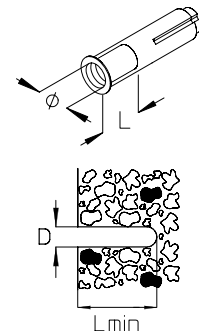
article number	Ø mm	G kg/100
<b>GV</b>		
<b>SA-D 8</b>	8	49,5
<b>SA-D 10</b>	10	50,5
<b>SA-D 12</b>	12	51,0



## SA anchor

Manufacturer's information has to be observed strictly (ETA-07/0135). \*Permissible load for a single anchor in non-cracked normal concrete (compressive concrete zone) with a consistency of  $\geq C20/25$

article number	Ø mm	D mm	L mm	P <sub>zul</sub> kN	L <sub>min</sub> mm	G kg/100
<b>GV</b>						
<b>SA 6</b>	6	8	6 - 12	3,95	27	0,4
<b>SA 8</b>	8	10	11 - 17	3,95	33	0,5
<b>SA 10</b>	10	12	13 - 19	6,10	44	0,8
<b>SA 12</b>	12	15	15 - 21	8,50	54	1,6
<b>E4</b>						
<b>SA 6E4</b>	6	8	6 - 12	3,95	27	0,4
<b>SA 8E4</b>	8	10	11 - 17	3,95	33	0,5
<b>SA 10E4</b>	10	12	13 - 19	6,10	44	0,8
<b>SA 12E4</b>	12	15	15 - 21	8,50	54	1,6



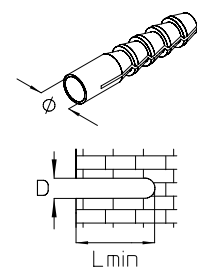
## KD plastic dowel

manufacturer's information has to be observed strictly.

article number	Ø mm	D mm	L <sub>min</sub> mm	G kg/100
<b>PA</b>				
<b>KD 6</b>	6	8	55	0,2
<b>KD 8</b>	8	10	70	0,3
<b>KD 10</b>	10	12	80	0,5
<b>KD 12</b>	12	14	95	0,7

accessories optional:

**SEH** hexagon wood screw (page G38)



# Fastenings Plugs

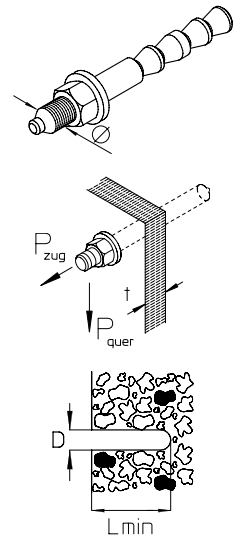
## VAB-HB shear connector rod, concrete

Manufacturer's information has to be observed strictly (ETA-05/0164). \*Permissible load for a single anchor in cracked normal concrete (concrete tension zone) with a consistency of  $\geq$  C20/25

article number	$\varnothing$ mm	D mm	t mm	$P_{zul}$ kN	$L_{min}$ mm	G kg/100
<b>GV</b>						
VAB-HB 10/20	10	10	0 - 20	8	75	6,7
VAB-HB 12/25	12	12	0 - 25	11,1	90	11,9
VAB-HB 16/30	16	16	0 - 30	15,9	110	30,0
<b>E4</b>						
VAB-HB 10/20E4	10	10	0 - 20	8	75	6,9
VAB-HB 12/25E4	12	12	0 - 25	11,1	90	12,0
VAB-HB 16/30E4	16	16	0 - 30	15,9	110	30,2

accessories optional:

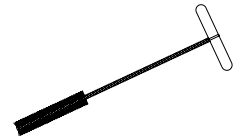
VAB-HB M shear connector mortar (page G14)



## VAB-HB B shear connector rod, brush

manufacturer's information has to be observed strictly. 40-50 dowels per cartridge

article number	G kg
<b>VAB-HB B10</b>	
VAB-HB B10	0,03
VAB-HB B12	0,04
VAB-HB B16	0,08



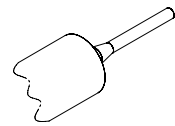
## VAB-HB M shear connector mortar

manufacturer's information has to be observed strictly. Dowels per cartridge in concrete: VAS-HB 10/20 approx. 40x; VAS-HB 12/25 approx. 34x; VAS-HB 16/30 approx. 21x

article number	G kg/100
<b>VAB-HB M</b>	
VAB-HB M	23

accessories optional:

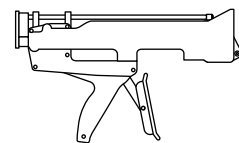
VA-AP shear connector rod, pistol (page G14)



## VA-AP shear connector rod, pistol

manufacturer's information has to be observed strictly.

article number	G kg
<b>VA-AP</b>	
VA-AP	1,15





# Fastenings

## Plugs

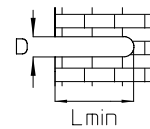
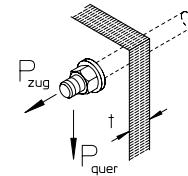
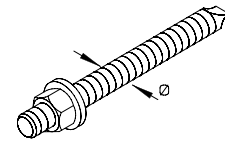
### VAS-AS shear connector rod, stone

Manufacturer's information has to be observed strictly (Z-21.3-1824). load specifications are dependent on the ground. 30-40 dowels per cartridge

article number	Ø mm	D mm	t mm	L <sub>min</sub> mm	G kg/100
<b>GV</b>					
VAS-AS 8/15	8	10	0 - 15	80	4,2
VAS-AS 10/25	10	12	0 - 25	80	7,0
VAS-AS 12/40	12	14	0 - 40	80	11,8
<b>E4</b>					
VAS-AS 8/15E4	8	10	0 - 15	80	4,2
VAS-AS 10/25E4	10	12	0 - 25	80	7,2
VAS-AS 12/40E4	12	14	0 - 40	80	12,1

accessories optional:

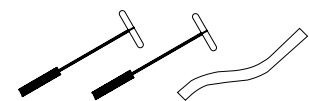
<b>VAS-BS</b>	shear connector rod, fire protection	(page G15)
<b>VAS-M</b>	shear connector mortar	(page G15)
<b>VAS-SH</b>	perforated bush for shear connector, stone	(page G15)



### VAS-BS shear connector rod, fire protection

manufacturer's information has to be observed strictly.

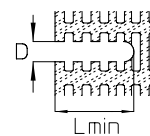
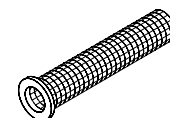
article number	G kg
<b>GV</b>	
VAS-BS 14/20	10,30



### VAS-SH perforated bush for shear connector, stone

manufacturer's information has to be observed strictly.

article number	G kg/100
<b>GV</b>	
VAS-SH	0,2



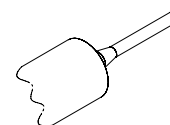
### VAS-M shear connector mortar

manufacturer's information has to be observed strictly. Dowels per cartridge in solid brick: VAS-AS 8/15 approx. 50x; VAS-AS 10/25 approx. 40x; VAS-AS 12/40 approx. 30x Dowels per cartridge in perforated brick: VAS-AS + VAS-SH approx. 14x

article number	G kg/100
<b>GV</b>	
VAS-M	67,2

accessories optional:

<b>VA-AP</b>	shear connector rod, pistol	(page G14)
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# Fastenings

## Suspension components

### TBS trapezium bow

manufacturer's information has to be observed strictly. For hanging direct in trapeze profile.  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.

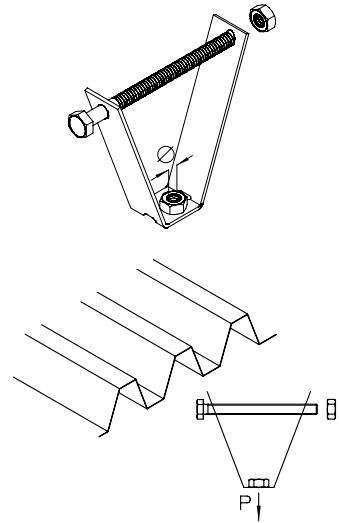
article number	Ø mm	P <sub>zul</sub> kN	G kg/100
<b>TBS 8</b>	8	1,3	0,14
<b>TBS 10</b>	10	1,3	0,14

accessories included:

1 x **SES 8x110** hexagon head bolt, DIN 933 (page G37)  
 1 x **SEM 8** hexagon-nut, DIN 934 (page G41)

accessories optional:

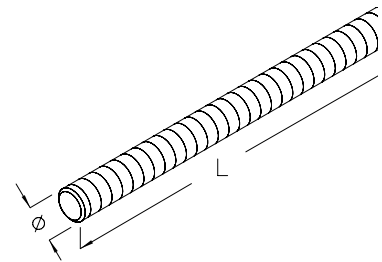
**HFEF8EXP 2** wire suspension with threaded end M8 and express closure (page G20)  
**HFEF8 3** wire suspension with threaded end M8 and universal closure (page G20)  
**HFEF10EXP 2** wire suspension with threaded end M10 and express closure (page G20)  
**HFEF10 3** wire suspension with threaded end M10 and universal closure (page G21)  
**HFEF10 4** wire suspension with threaded end M10 and universal closure (page G21)



### GB threaded rod, DIN 976-1

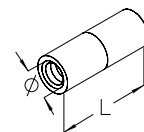
Stress-areas according to DIN 267 T4: GB M8 = 36.6 mm<sup>2</sup>, GB M10 = 58.0 mm<sup>2</sup>, GB M12 = 84.3 mm<sup>2</sup>  
 For an application example, see the chapter assembly.

article number	Ø mm	L mm	G kg
<b>GV</b>			
<b>GB M8-03</b>	8	300	0,09
<b>GB M8-05</b>	8	500	0,15
<b>GB M8-10</b>	8	1000	0,30
<b>GB M10-03</b>	10	300	0,15
<b>GB M10-05</b>	10	500	0,25
<b>GB M10-10</b>	10	1000	0,50
<b>GB M12-03</b>	12	300	0,21
<b>GB M12-05</b>	12	500	0,35
<b>GB M12-10</b>	12	1000	0,70
<b>E</b>			
<b>GB M8-10E</b>	8	1000	0,30
<b>GB M10-10E</b>	10	1000	0,50
<b>GB M12-10E</b>	12	1000	0,70



### VM rod coupling

article number	Ø mm	L mm	G kg
<b>GV</b>			
<b>VM M8</b>	8	30	0,01
<b>VM M10</b>	10	30	0,03
<b>VM M12</b>	12	30	0,05
<b>E</b>			
<b>VM M8E</b>	8	30	0,01
<b>VM M10E</b>	10	30	0,03
<b>VM M12E</b>	12	30	0,05



# Fastenings

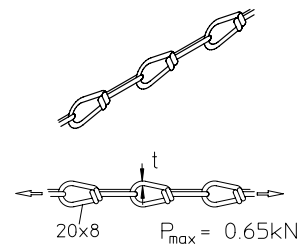
## Suspension components

### KNK chain

Chain elongation app. 0,1 x length.  
For an application example, see the chapter assembly.

article number	t mm	G kg/m
<b>GV</b>		
<b>KNK</b>	3	0,2

accessories optional:  
**KNK-NG** chain, emergency link (page G17, J05)



### KNK-NG chain, emergency link

For an application example, see the chapter assembly.

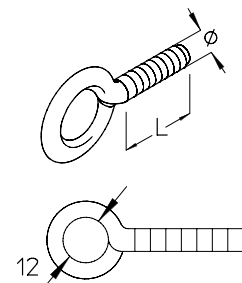
article number	t mm	G kg/100
<b>GV</b>		
<b>KNK-NG</b>	3	0,36



### DAS wire eyebolt

For an application example, see the chapter assembly.

article number	Ø mm	L mm	t mm	P <sub>max</sub> kN	G kg
<b>DAS 8x30</b>	8	30	7	0,5	0,02

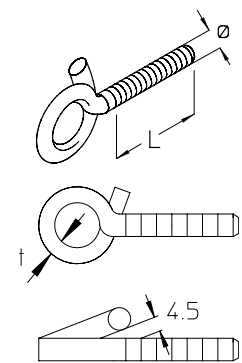


### SHS eyebolt

For an application example, see the chapter assembly.

article number	Ø mm	L mm	t mm	G kg
<b>GV</b>				
<b>SHS 6x40</b>	6	40	5,2	0,02
<b>SHS 8x45</b>	8	45	7,0	0,03

accessories optional:  
**KNK** chain (page G17, J05)



P<sub>max</sub> = 0,4 kN

# Fastenings

## Suspension components

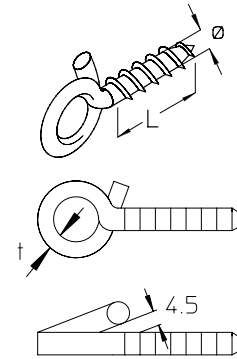
### SHH eyebolt

For an application example, see the chapter assembly.

article number	Ø mm	L mm	t mm	G kg
<b>GV</b>				
<b>SHH 6x40</b>	6	40	5,2	0,02

accessories optional:

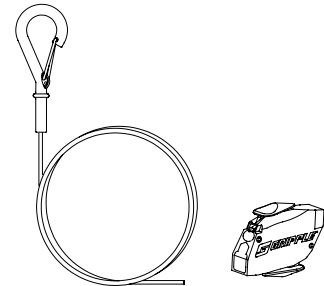
**KNK** chain (page G17, J05)



$P_{max} = 0,4 \text{ kN}$

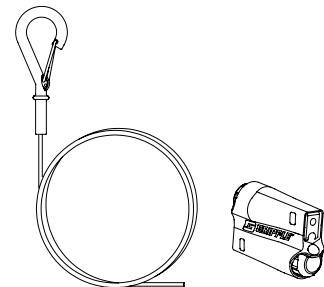
### HFCEXP 1 wire suspension with hook and express closure

article number	L mm	$P_{max}$ kg	Gripple load class	G kg
<b>GV</b>				
<b>HFCEXP 11GV</b>	1000	15	1	0,06
<b>HFCEXP 12GV</b>	2000	15	1	0,06
<b>HFCEXP 13GV</b>	3000	15	1	0,06
<b>HFCEXP 14GV</b>	4000	15	1	0,08
<b>HFCEXP 15GV</b>	5000	15	1	0,09
<b>HFCEXP 110GV</b>	10000	15	1	0,09



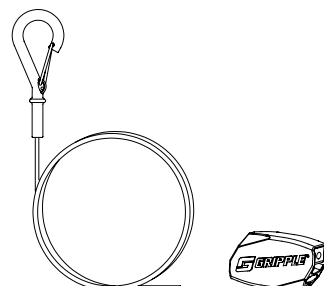
### HFCEXP 2 wire suspension with hook and express closure

article number	L mm	$P_{max}$ kg	Gripple load class	G kg
<b>GV</b>				
<b>HFCEXP 21GV</b>	1000	45	2	0,06
<b>HFCEXP 22GV</b>	2000	45	2	0,08
<b>HFCEXP 23GV</b>	3000	45	2	0,09
<b>HFCEXP 24GV</b>	4000	45	2	0,13
<b>HFCEXP 25GV</b>	5000	45	2	0,14
<b>HFCEXP 210GV</b>	10000	45	2	0,21



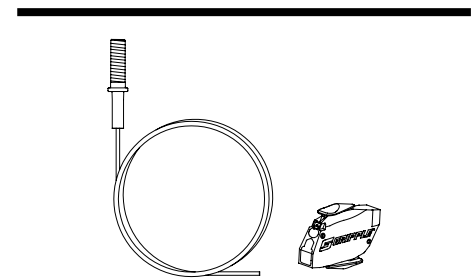
### HFEC 3 wire suspension with hook and universal closure

article number	L mm	$P_{max}$ kg	Gripple load class	G kg
<b>GV</b>				
<b>HFEC 31GV</b>	1000	90	3	0,08
<b>HFEC 32GV</b>	2000	90	3	0,13
<b>HFEC 33GV</b>	3000	90	3	0,16
<b>HFEC 34GV</b>	4000	90	3	0,20
<b>HFEC 35GV</b>	5000	90	3	0,24
<b>HFEC 310GV</b>	1000	90	3	0,43



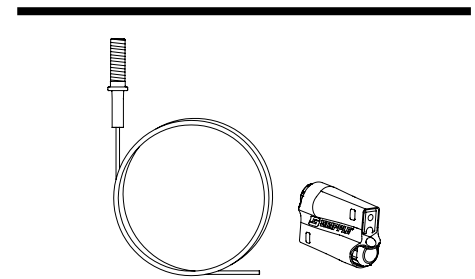
### HFEF6EXP 1 wire suspension with threaded end M6 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF6EXP 11GV	1000	15	1	0,04
HFEF6EXP 12GV	2000	15	1	0,06
HFEF6EXP 13GV	3000	15	1	0,06
HFEF6EXP 14GV	4000	15	1	0,06
HFEF6EXP 15GV	5000	15	1	0,07
HFEF6EXP 110GV	10000	15	1	0,12



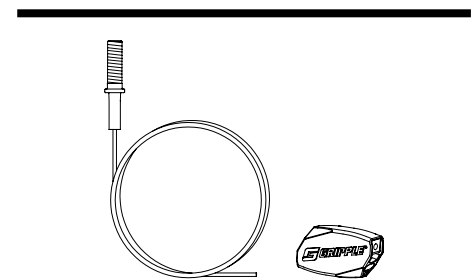
### HFEF6EXP 2 wire suspension with threaded end M6 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF6EXP 21GV	1000	45	2	0,06
HFEF6EXP 22GV	2000	45	2	0,08
HFEF6EXP 23GV	3000	45	2	0,10
HFEF6EXP 24GV	4000	45	2	0,11
HFEF6EXP 25GV	5000	45	2	0,13
HFEF6EXP 210GV	10000	45	2	0,22



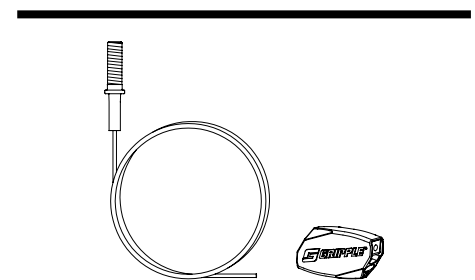
### HFEF6 2 wire suspension with threaded end M6 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E2</b>				
HFEF6 21E2	1000	45	2	0,05
HFEF6 22E2	2000	45	2	0,07
HFEF6 23E2	3000	45	2	0,08
HFEF6 24E2	4000	45	2	0,09
HFEF6 25E2	5000	45	2	0,10
HFEF6 210E2	10000	45	2	0,18



### HFEF6 3 wire suspension with threaded end M6 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF6 31GV	1000	90	3	0,06
HFEF6 32GV	2000	90	3	0,10
HFEF6 33GV	3000	90	3	0,14
HFEF6 34GV	4000	90	3	0,18
HFEF6 35GV	5000	90	3	0,22
HFEF6 310GV	10000	90	3	0,42

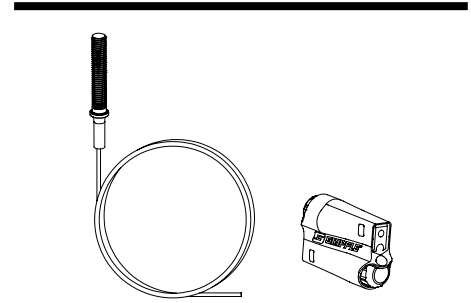


# Fastenings

## Suspension components

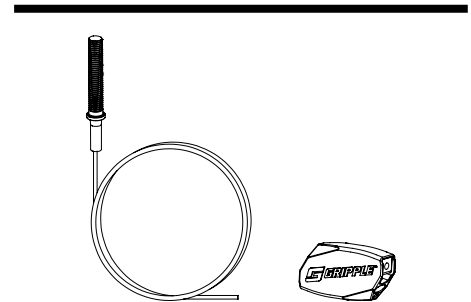
### HFEF8EXP 2 wire suspension with threaded end M8 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF8EXP 21GV	1000	45	2	0,08
HFEF8EXP 22GV	2000	45	2	0,09
HFEF8EXP 23GV	3000	45	2	0,11
HFEF8EXP 24GV	4000	45	2	0,13
HFEF8EXP 25GV	5000	45	2	0,14
HFEF8EXP 210GV	10000	45	2	0,23



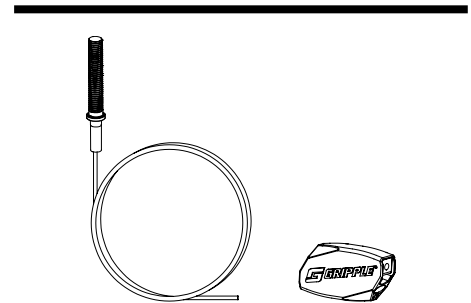
### HFEF8 2 wire suspension with threaded end M8 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E2</b>				
HFEF8 21E2	1000	45	2	0,05
HFEF8 22E2	2000	45	2	0,07
HFEF8 23E2	3000	45	2	0,08
HFEF8 24E2	4000	45	2	0,09
HFEF8 25E2	5000	45	2	0,10
HFEF8 210E2	10000	45	2	0,18



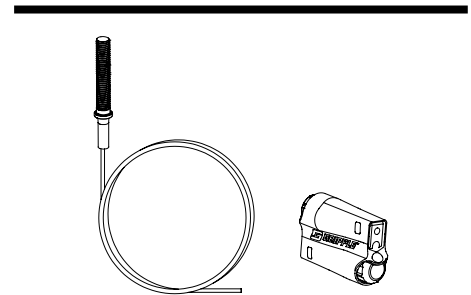
### HFEF8 3 wire suspension with threaded end M8 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF8 31GV	1000	90	3	0,10
HFEF8 32GV	2000	90	3	0,14
HFEF8 33GV	3000	90	3	0,18
HFEF8 34GV	4000	90	3	0,22
HFEF8 35GV	5000	90	3	0,26
HFEF8 310GV	10000	90	3	0,42
<b>E2</b>				
HFEF8 31E2	1000	90	3	0,08
HFEF8 32E2	2000	90	3	0,11
HFEF8 33E2	3000	90	3	0,14
HFEF8 34E2	4000	90	3	0,18
HFEF8 35E2	5000	90	3	0,20
HFEF8 310E2	10000	90	3	0,37



### HFEF10EXP 2 wire suspension with threaded end M10 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF10EXP 21GV	1000	45	2	0,08
HFEF10EXP 22GV	2000	45	2	0,09
HFEF10EXP 23GV	3000	45	2	0,11
HFEF10EXP 24GV	4000	45	2	0,13
HFEF10EXP 25GV	5000	45	2	0,14
HFEF10EXP 210GV	10000	45	2	0,23

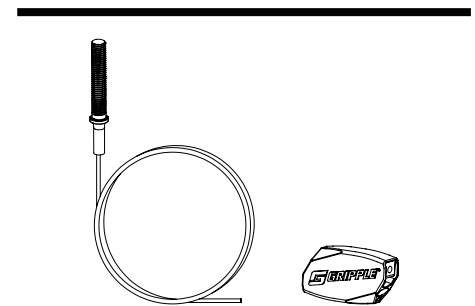


# Fastenings

## Suspension components

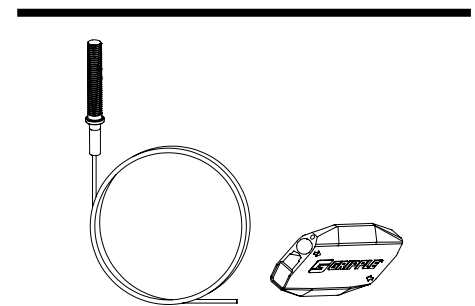
### HFEF10 3 wire suspension with threaded end M10 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF10 31GV	1000	90	3	0,10
HFEF10 32GV	2000	90	3	0,14
HFEF10 33GV	3000	90	3	0,17
HFEF10 34GV	4000	90	3	0,21
HFEF10 35GV	5000	90	3	0,25
HFEF10 310GV	10000	90	3	0,42



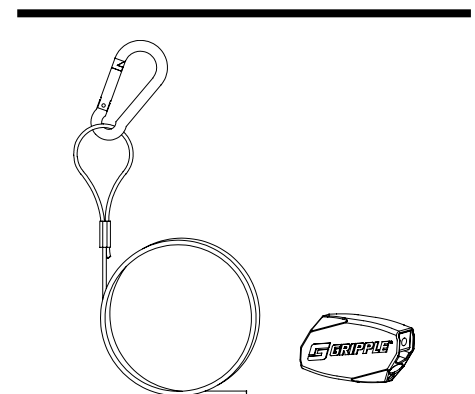
### HFEF10 4 wire suspension with threaded end M10 and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEF10 41GV	1000	225	4	0,21
HFEF10 42GV	2000	225	4	0,30
HFEF10 43GV	3000	225	4	0,39
HFEF10 44GV	4000	225	4	0,47
HFEF10 45GV	5000	225	4	0,55
HFEF10 410GV	10000	225	4	0,99



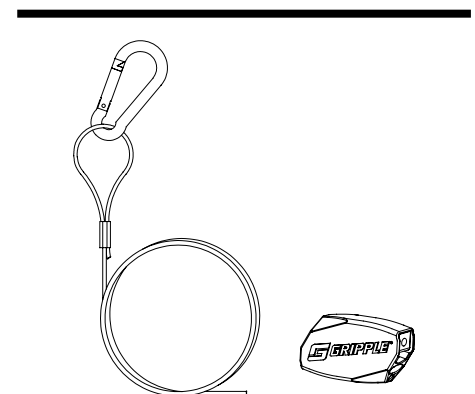
### HFEM 2 wire suspension with carbine and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E4</b>				
HFEM 21E4	1000	45	2	0,05
HFEM 22E4	2000	45	2	0,07
HFEM 23E4	3000	45	2	0,08
HFEM 24E4	4000	45	2	0,09
HFEM 25E4	5000	45	2	0,10
HFEM 210E4	10000	45	2	0,18



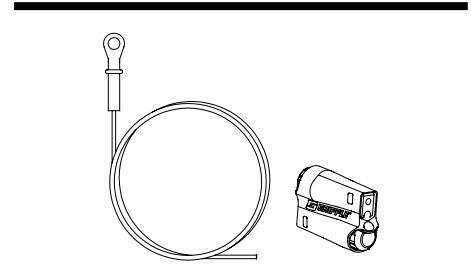
### HFEM 3 wire suspension with carbine and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E4</b>				
HFEM 31E4	1000	90	3	0,08
HFEM 32E4	2000	90	3	0,11
HFEM 33E4	3000	90	3	0,14
HFEM 34E4	4000	90	3	0,18
HFEM 35E4	5000	90	3	0,20
HFEM 310E4	10000	90	3	0,37



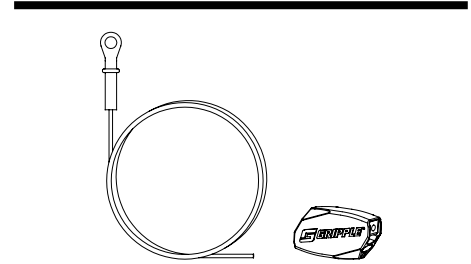
**HFEOEXP 2** wire suspension with eyelet straight and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEOEXP 21GV	1000	45	2	0,05
HFEOEXP 22GV	2000	45	2	0,07
HFEOEXP 23GV	3000	45	2	0,09
HFEOEXP 24GV	4000	45	2	0,10
HFEOEXP 25GV	5000	45	2	0,12
HFEOEXP 210GV	10000	45	2	0,20



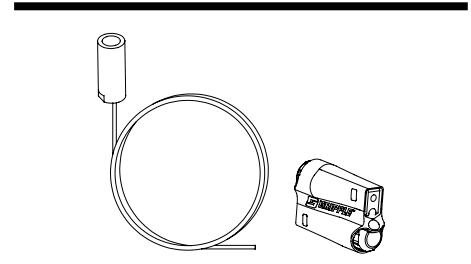
**HFEO 3** wire suspension with eyelet straight and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFEO 31GV	1000	90	3	0,08
HFEO 32GV	2000	90	3	0,13
HFEO 33GV	3000	90	3	0,16
HFEO 34GV	4000	90	3	0,21
HFEO 35GV	5000	90	3	0,38
HFEO 310GV	10000	90	3	0,45



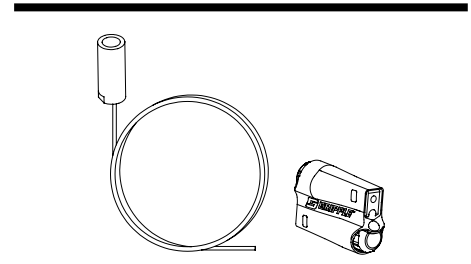
**HFET6EXP 1** wire suspension with threaded transition M6 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFET6EXP 11GV	1000	15	1	0,04
HFET6EXP 12GV	2000	15	1	0,06
HFET6EXP 13GV	3000	15	1	0,06
HFET6EXP 14GV	4000	15	1	0,06
HFET6EXP 15GV	5000	15	1	0,07
HFET6EXP 110GV	10000	15	1	0,12



**HFET6EXP 2** wire suspension with threaded transition M6 and express closure

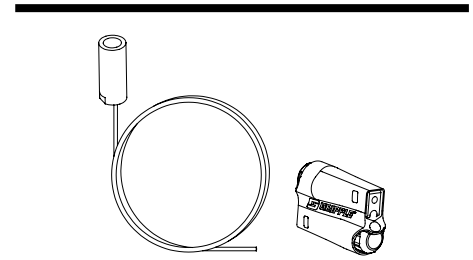
article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFET6EXP 21GV	1000	45	2	0,06
HFET6EXP 22GV	2000	45	2	0,08
HFET6EXP 23GV	3000	45	2	0,10
HFET6EXP 24GV	4000	45	2	0,11
HFET6EXP 25GV	5000	45	2	0,13
HFET6EXP 210GV	10000	45	2	0,22





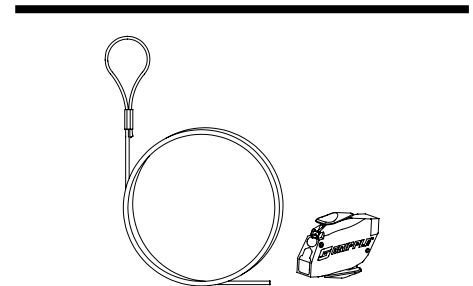
## HFET8EXP 2 wire suspension with threaded transition M8 and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFET8EXP 21GV	1000	45	2	0,06
HFET8EXP 22GV	1000	45	2	0,08
HFET8EXP 23GV	1000	45	2	0,10
HFET8EXP 24GV	1000	45	2	0,11
HFET8EXP 25GV	1000	45	2	0,13
HFET8EXP 210GV	1000	45	2	0,22



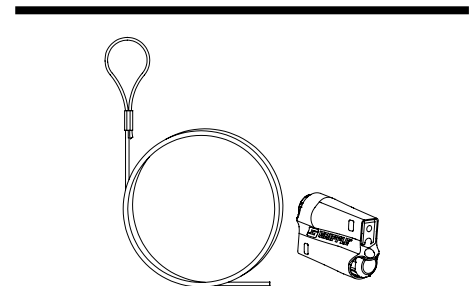
## HFFREXP 1 wire suspension with loop and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFFREXP 11GV	1000	15	1	0,04
HFFREXP 12GV	2000	15	1	0,04
HFFREXP 13GV	3000	15	1	0,06
HFFREXP 14GV	4000	15	1	0,06
HFFREXP 15GV	5000	15	1	0,07
HFFREXP 110GV	10000	15	1	0,11



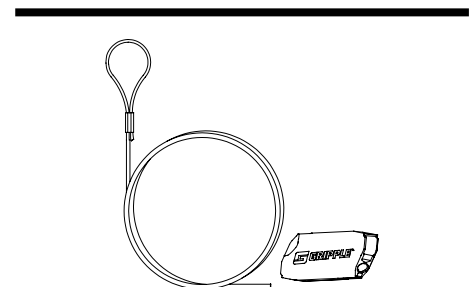
## HFFREXP 2 wire suspension with loop and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFFREXP 21GV	1000	45	2	0,05
HFFREXP 22GV	2000	45	2	0,06
HFFREXP 23GV	3000	45	2	0,08
HFFREXP 24GV	4000	45	2	0,10
HFFREXP 25GV	5000	45	2	0,12
HFFREXP 210GV	10000	45	2	0,21



## HFFR 2 wire suspension with loop and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E4</b>				
HFFR 21E4	1000	45	2	0,03
HFFR 22E4	2000	45	2	0,05
HFFR 23E4	3000	45	2	0,07
HFFR 24E4	4000	45	2	0,10
HFFR 25E4	5000	45	2	0,10
HFFR 210E4	10000	45	2	0,18



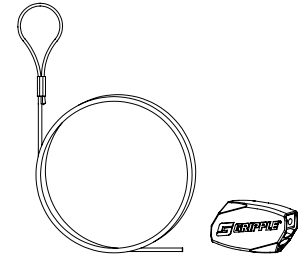
# Fastenings

## Suspension components

### HFFR 3 wire suspension with loop and universal closure

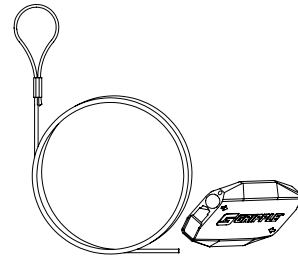
article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFFR 31GV	1000	90	3	0,08
HFFR 32GV	2000	90	3	0,12
HFFR 33GV	3000	90	3	0,16
HFFR 34GV	4000	90	3	0,18
HFFR 35GV	5000	90	3	0,22
HFFR 310GV	10000	90	3	0,39

<b>E4</b>				
HFFR 31E4	1000	90	3	0,08
HFFR 32E4	2000	90	3	0,11
HFFR 33E4	3000	90	3	0,14
HFFR 34E4	4000	90	3	0,18
HFFR 35E4	5000	90	3	0,20
HFFR 310E4	10000	90	3	0,37



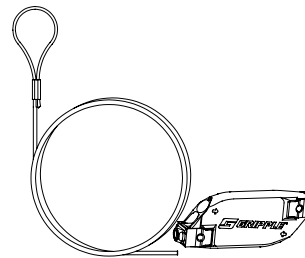
### HFFR 4 wire suspension with loop and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFFR 41GV	1000	225	4	0,22
HFFR 42GV	2000	225	4	0,29
HFFR 43GV	3000	225	4	0,39
HFFR 44GV	4000	225	4	0,45
HFFR 45GV	5000	225	4	0,61
HFFR 410GV	10000	225	4	1,09



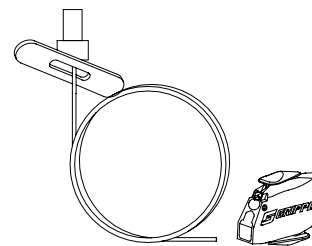
### HFFR 5 wire suspension with loop and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFFR 51GV	1000	325	5	0,40
HFFR 52GV	2000	325	5	0,70
HFFR 53GV	3000	325	5	0,73
HFFR 54GV	4000	325	5	0,89
HFFR 55GV	5000	325	5	1,08
HFFR 510GV	10000	325	5	1,88



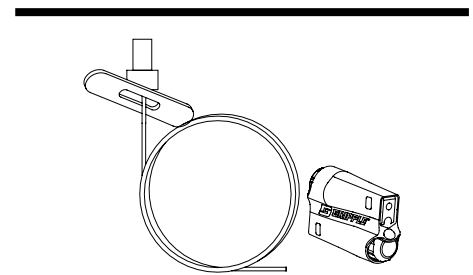
### HFSP EXP 1 wire suspension with cross anchor and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFSP EXP 11GV	1000	15	1	0,04
HFSP EXP 12GV	2000	15	1	0,04
HFSP EXP 13GV	3000	15	1	0,06
HFSP EXP 14GV	4000	15	1	0,06
HFSP EXP 15GV	5000	15	1	0,07
HFSP EXP 110GV	10000	15	1	0,12



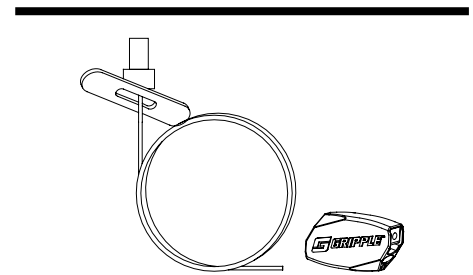
### HFSP EXP 2 wire suspension with cross anchor and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFSP EXP 21GV	1000	45	2	0,05
HFSP EXP 22GV	2000	45	2	0,06
HFSP EXP 23GV	3000	45	2	0,08
HFSP EXP 24GV	4000	45	2	0,10
HFSP EXP 25GV	5000	45	2	0,12
HFSP EXP 210GV	10000	45	2	0,21



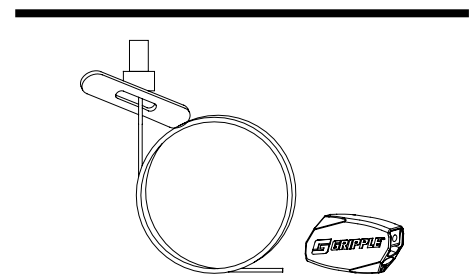
### HFSP 2 wire suspension with cross anchor and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>E2</b>				
HFSP 21E2	1000	45	2	0,05
HFSP 22E2	2000	45	2	0,07
HFSP 23E2	3000	45	2	0,08
HFSP 24E2	4000	45	2	0,09
HFSP 25E2	5000	45	2	0,10
HFSP 210E2	10000	45	2	0,18



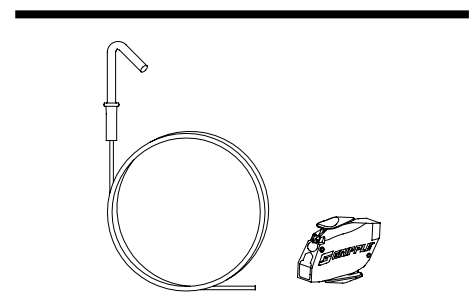
### HFSP 3 wire suspension with cross anchor and universal closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFSP 31GV	1000	90	3	0,08
HFSP 32GV	2000	90	3	0,12
HFSP 33GV	3000	90	3	0,15
HFSP 34GV	4000	90	3	0,20
HFSP 35GV	5000	90	3	0,23
HFSP 310GV	10000	90	3	0,43



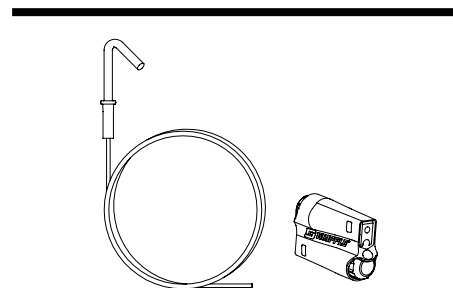
### HFTHEXP 1 wire suspension with trapezium sheet metal hook and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFTHEXP 11GV	1000	15	1	0,04
HFTHEXP 12GV	2000	15	1	0,04
HFTHEXP 13GV	3000	15	1	0,06
HFTHEXP 14GV	4000	15	1	0,06
HFTHEXP 15GV	5000	15	1	0,07
HFTHEXP 110GV	10000	15	1	0,12



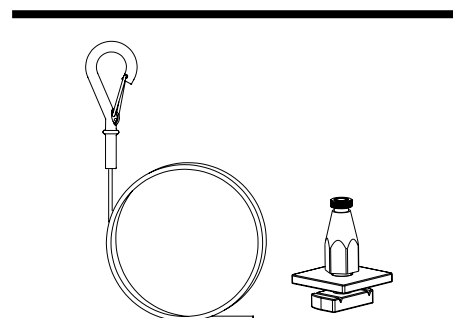
## HFTHEXP 2 wire suspension with trapezium sheet metal hook and express closure

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
HFTHEXP 21GV	1000	45	2	0,05
HFTHEXP 22GV	2000	45	2	0,06
HFTHEXP 23GV	3000	45	2	0,08
HFTHEXP 24GV	4000	45	2	0,10
HFTHEXP 25GV	5000	45	2	0,12
HFTHEXP 210GV	10000	45	2	0,21



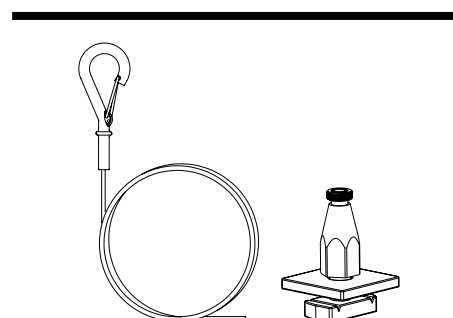
## TPZPEC 2 wire suspension with hook and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEC 21GV	1000	45	2	0,14
TPZPEC 22GV	2000	45	2	0,16
TPZPEC 23GV	3000	45	2	0,17
TPZPEC 24GV	4000	45	2	0,20
TPZPEC 25GV	5000	45	2	0,22
TPZPEC 210GV	10000	45	2	0,28



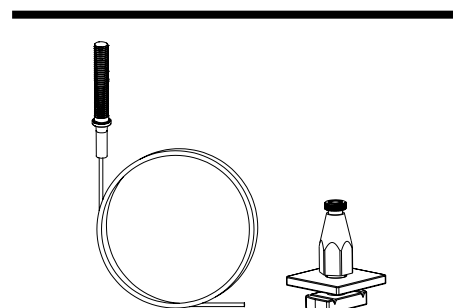
## TPZPEC 3 wire suspension with hook and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEC 31GV	1000	90	3	0,14
TPZPEC 32GV	2000	90	3	0,18
TPZPEC 33GV	3000	90	3	0,21
TPZPEC 34GV	4000	90	3	0,25
TPZPEC 35GV	5000	90	3	0,29
TPZPEC 310GV	10000	90	3	0,48



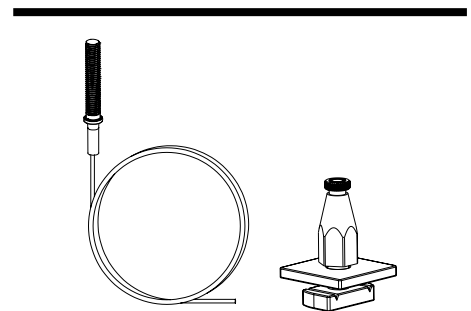
## TPZPEF8 2 wire suspension with threaded end M8 and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEF8 21GV	1000	45	2	0,15
TPZPEF8 22GV	2000	45	2	0,17
TPZPEF8 23GV	3000	45	2	0,19
TPZPEF8 24GV	4000	45	2	0,20
TPZPEF8 25GV	5000	45	2	0,22
TPZPEF8 210GV	10000	45	2	0,31



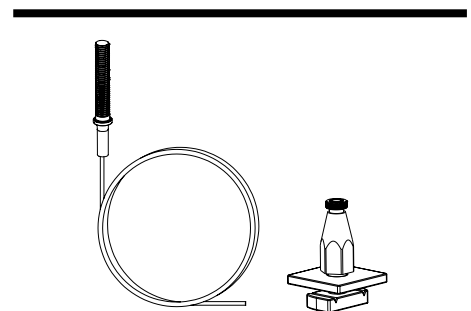
### TPZPEF8 3 wire suspension with threaded end M8 and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEF8 31GV	1000	90	3	0,15
TPZPEF8 32GV	2000	90	3	0,19
TPZPEF8 33GV	3000	90	3	0,23
TPZPEF8 34GV	4000	90	3	0,27
TPZPEF8 35GV	5000	90	3	0,31
TPZPEF8 310GV	10000	90	3	0,47



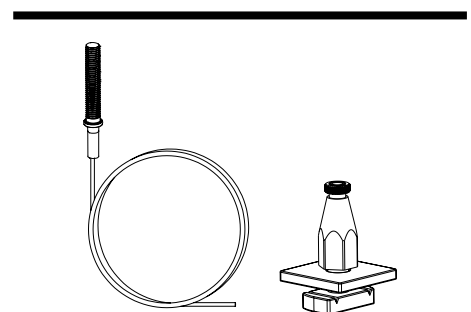
### TPZPEF10 2 wire suspension with threaded end M10 and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEF10 21GV	1000	45	2	0,15
TPZPEF10 22GV	2000	45	2	0,17
TPZPEF10 23GV	3000	45	2	0,19
TPZPEF10 24GV	4000	45	2	0,20
TPZPEF10 25GV	5000	45	2	0,22
TPZPEF10 210GV	10000	45	2	0,31



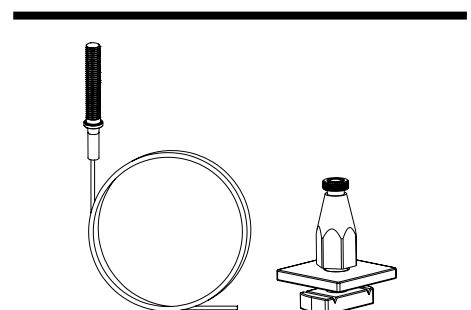
### TPZPEF10 3 wire suspension with threaded end M10 and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEF10 31GV	1000	90	3	0,15
TPZPEF10 32GV	2000	90	3	0,19
TPZPEF10 33GV	3000	90	3	0,22
TPZPEF10 34GV	4000	90	3	0,26
TPZPEF10 35GV	5000	90	3	0,30
TPZPEF10 310GV	10000	90	3	0,47



### TPZPEF10 4 wire suspension with threaded end M10 and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPEF10 41GV	1000	225	4	0,21
TPZPEF10 42GV	2000	225	4	0,30
TPZPEF10 43GV	3000	225	4	0,39
TPZPEF10 44GV	4000	225	4	0,48
TPZPEF10 45GV	5000	225	4	0,56
TPZPEF10 410GV	10000	225	4	0,99

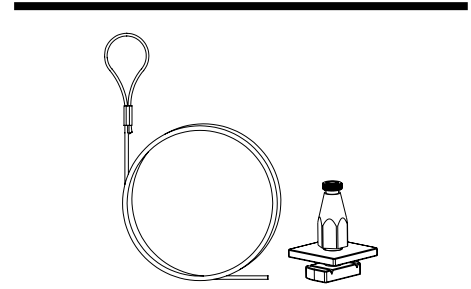


# Fastenings

## Suspension components

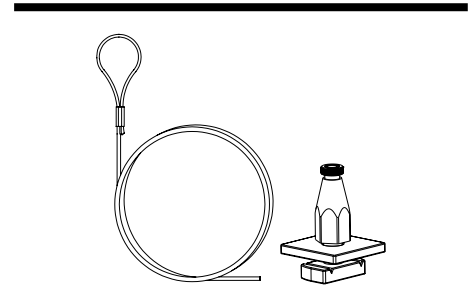
### TPZPFR 2 wire suspension with loop and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPFR 21GV	1000	45	2	0,13
TPZPFR 22GV	2000	45	2	0,14
TPZPFR 23GV	3000	45	2	0,16
TPZPFR 24GV	4000	45	2	0,17
TPZPFR 25GV	5000	45	2	0,19
TPZPFR 210GV	1000	45	2	0,29



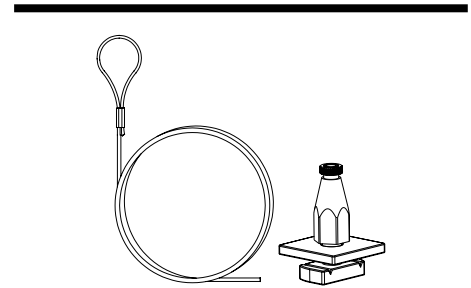
### TPZPFR 3 wire suspension with loop and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPFR 31GV	1000	90	3	0,13
TPZPFR 32GV	2000	90	3	0,17
TPZPFR 33GV	3000	90	3	0,21
TPZPFR 34GV	4000	90	3	0,23
TPZPFR 35GV	5000	90	3	0,27
TPZPFR 310GV	1000	90	3	0,44



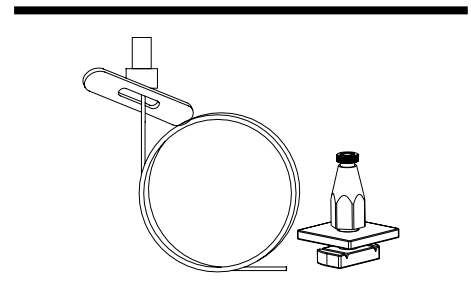
### TPZPFR 4 wire suspension with loop and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPFR 41GV	1000	225	4	0,22
TPZPFR 42GV	2000	225	4	0,29
TPZPFR 43GV	3000	225	4	0,39
TPZPFR 44GV	4000	225	4	0,45
TPZPFR 45GV	5000	225	4	0,62
TPZPFR 410GV	1000	225	4	1,09



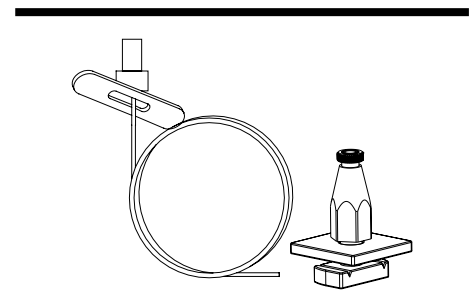
### TPZPSP 2 wire suspension with cross anchor and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPSP 21GV	1000	45	2	0,13
TPZPSP 22GV	2000	45	2	0,14
TPZPSP 23GV	3000	45	2	0,16
TPZPSP 24GV	4000	45	2	0,18
TPZPSP 25GV	5000	45	2	0,20
TPZPSP 210GV	10000	45	2	0,29



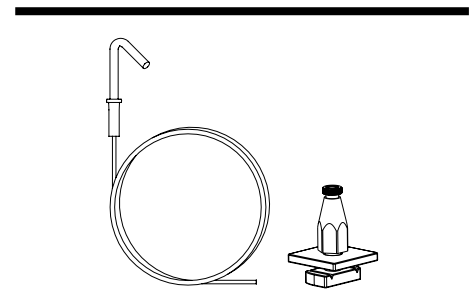
### TPZPSP 3 wire suspension with cross anchor and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPSP 31GV	1000	90	3	0,13
TPZPSP 32GV	2000	90	3	0,17
TPZPSP 33GV	3000	90	3	0,20
TPZPSP 34GV	4000	90	3	0,25
TPZPSP 35GV	5000	90	3	0,28
TPZPSP 310GV	10000	90	3	0,48



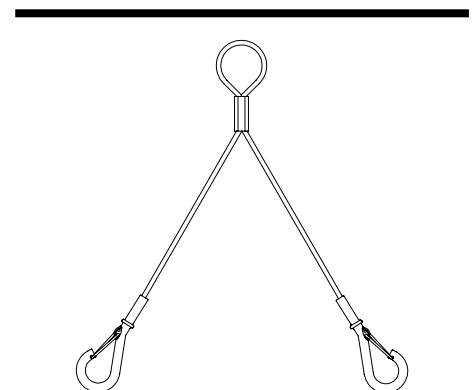
### TPZPTH 2 wire suspension with trapezium sheet metal hook and trapezium closure plus

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
TPZPTH 21GV	1000	45	2	0,13
TPZPTH 22GV	2000	45	2	0,14
TPZPTH 23GV	3000	45	2	0,16
TPZPTH 24GV	4000	45	2	0,18
TPZPTH 25GV	5000	45	2	0,20
TPZPTH 210GV	10000	45	2	0,29



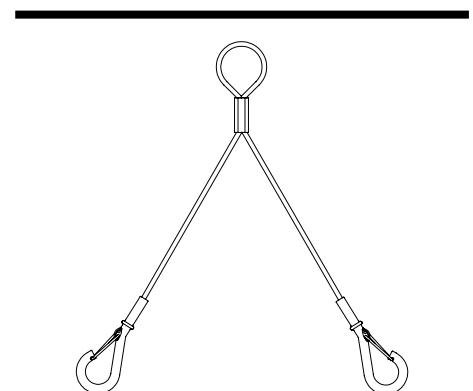
### YAJEC 1 Y-Fit accessory with hook

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
YAJEC 1150GV	150	15	1	0,05
YAJEC 1300GV	300	15	1	0,05
YAJEC 1500GV	500	15	1	0,06
YAJEC 1800GV	800	15	1	0,08



### YAJEC 2 Y-Fit accessory with hook

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
YAJEC 2150GV	150	45	2	0,06
YAJEC 2300GV	300	45	2	0,07
YAJEC 2500GV	500	45	2	0,07
YAJEC 2800GV	800	45	2	0,08

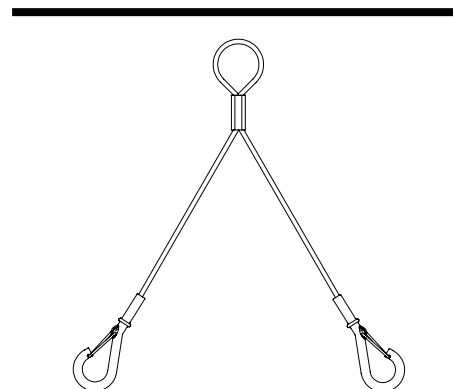


# Fastenings

## Suspension components

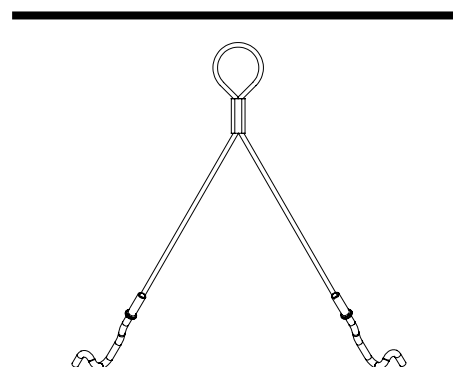
### YAJEC 3 Y-Fit accessory with hook

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
YAJEC 3150GV	150	90	3	0,10
YAJEC 3300GV	300	90	3	0,13
YAJEC 3500GV	500	90	3	0,17
YAJEC 3800GV	800	90	3	0,26



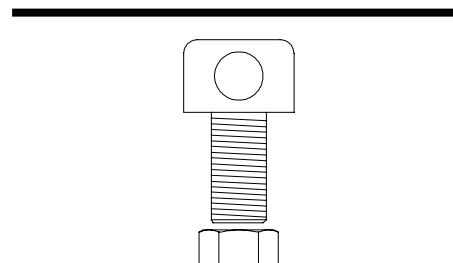
### YAJCT 2 Y-Fit accessory with hook for cable trays

article number	L mm	P <sub>max</sub> kg	Gripple load class	G kg
<b>GV</b>				
YAJCT 2150GV	150	45	2	0,06
YAJCT 2300GV	300	45	2	0,07



### GRIPADAP thread adaptor with hole

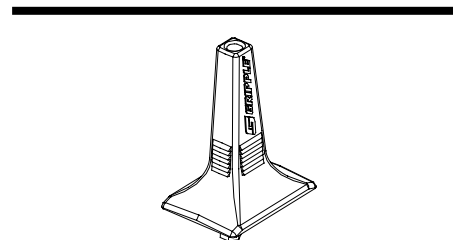
article number	Ø mm	G kg
<b>GV</b>		
GRIPADAP 6GV	6	0,01
GRIPADAP 8GV	8	0,03



### GRIPTRAP trapezium lock

Trapeze lock for arranging several levels on one cable.

article number	Gripple load class	G kg
<b>GV</b>		
GRIPTRAP 2GV	2	0,02
GRIPTRAP 3GV	3	0,03





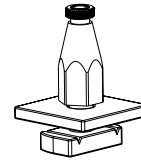
# Fastenings

## Suspension components

### GRIPTRAPP trapezium lock plus

Trapeze lock for arranging several levels on one cable.

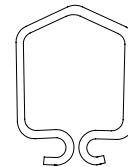
article number	Grip load class	G kg
<b>GV</b>		
<b>GRIPTRAPP 2GV</b>	2	0,10
<b>GRIPTRAPP 3GV</b>	3	0,14
<b>GRIPTRAPP 4GV</b>	4	0,17



### SPRINGCLIP spring clip

Push-in fastening for drills of 6 to 8 mm.

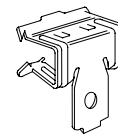
article number	G kg
<b>GV</b>	
<b>SPRINGCLIP GV</b>	0,01



### GCB beam clip

Impact clip, light design. Ideal in combination with hooks (EC).

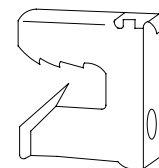
article number	t mm	P <sub>max</sub> kg	G kg
<b>GV</b>			
<b>GCB 24GV</b>	2 - 4	72	0,01
<b>GCB 59GV</b>	5 - 9	90	0,01
<b>GCB 1016GV</b>	10 - 16	90	0,02
<b>GCB 1720GV</b>	17 - 20	90	0,02



### TIGERCLIP Tiger clip

Impact clip. Ideal in combination with hooks (EC).

article number	t mm	P <sub>max</sub> kg	G kg
<b>GV</b>			
<b>TIGERCLIP 28GV</b>	2 - 8	120	0,01
<b>TIGERCLIP 816GV</b>	8 - 16	120	0,01



### GRIPM pigtail anchor bolt

Rapid attachment of a loop in drill holes.

article number	Ø mm	L mm	G kg
<b>GV</b>			
<b>GRIPM 620GV</b>	6	20	0,03
<b>GRIPM 645GV</b>	6	45	0,03
<b>GRIPM 845GV</b>	8	45	0,08



# Fastenings

## Suspension components

### GRIPWIS wire end cap

For secure and accurate attachment of wire cable end.

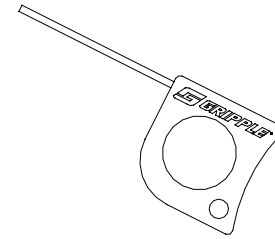
article number	Grippler load class	G kg
<b>GV</b>		
<b>GRIPWIS GV</b>	2 - 3	0,01



### GRIPCLE 1 adjustment key

Replacement key for universal locks.

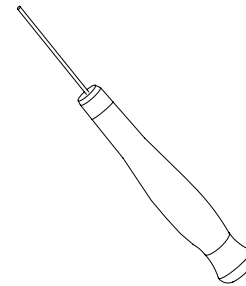
article number	Grippler load class	G kg
<b>GV</b>		
<b>GRIPCLE 1</b>	1 - 3	0,02



### GRIPCLE 2 adjustment key

Replacement key for universal locks.

article number	Grippler load class	G kg
<b>GV</b>		
<b>GRIPCLE 2</b>	4 - 5	0,02



### GRIPPINC wire cutter

Special tool for splice-free shortening of wire cable.

article number	$Q_{Lk}$ kN/m	G kg
<b>GV</b>		
<b>GRIPPINC</b>	1 - 3	0,30
<b>GRIPPINC 6</b>	4 - 5	7,90



# Fastenings

## Bolting fasteners/bolts and nuts

### KLR fixing set

For an application example, see the chapter assembly.

article number	G
	kg/100
<b>GV</b>	
<b>KLR</b>	0,9

accessories included:  
 2 x **FRSV 6x12** round-head screw with short square (page G34)  
 2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)

article number	G
	kg/100
<b>E</b>	
<b>KLR E</b>	0,9

accessories included:  
 2 x **FRSV 6x12E** round-head screw with short square (page G35)  
 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)

article number	G
	kg/100
<b>GV</b>	
<b>KLR 6x25</b>	1,4

accessories included:  
 2 x **FRS 6x25** round-head screw with square, DIN 603 (page G35)  
 2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)

article number	G
	kg/100
<b>E</b>	
<b>KLR 6x25E</b>	1,4

accessories included:  
 2 x **FRS 6x25E** round-head screw with square, DIN 603 (page G35)  
 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)

accessories optional:  
**FRSV** round-head screw with short square (page G34)  
**FRS** round-head screw with square, DIN 603 (page G35)  
**SEMS** hexagon nut, self-locking, DIN 6923 (page G41)

### KLS fixing set

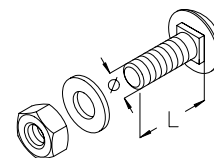
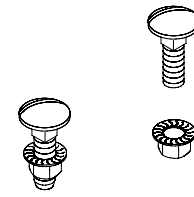
For an application example, see the chapter assembly.

article number	Ø	L	G
	mm	mm	kg/100
<b>GV</b>			
<b>KLS 8x16</b>	8	16	1,8

accessories included:  
 1 x **FRSV 8x16** round-head screw with short square (page G34)  
 1 x **SEMS 8** hexagon nut, self-locking, DIN 6923 (page G41)

article number	Ø	L	G
	mm	mm	kg/100
<b>GV</b>			
<b>KLS 8x25</b>	8	25	2,2

accessories included:  
 1 x **FRS 8x25** round-head screw with square, DIN 603 (page G35)  
 1 x **SEMS 8** hexagon nut, self-locking, DIN 6923 (page G41)



# Fastenings

## Bolting fasteners/bolts and nuts

### KLS fixing set

For an application example, see the chapter assembly.

article number	Ø mm	L mm	G kg/100
<b>GV</b>			
<b>KLS 10x20</b>	10	20	3,9

accessories included:  
 1 x **FRSV 10x20** round-head screw with short square (page G34)  
 1 x **SEMS 10** hexagon nut, self-locking, DIN 6923 (page G41)

article number	Ø mm	L mm	G kg/100
<b>F</b>			
<b>KLS 10x20F</b>	10	20	4

accessories included:  
 1 x **FRSV 10x20F** round-head screw with short square (page G34)  
 1 x **SEM 10F** hexagon-nut, DIN 934 (page G41)  
 1 x **US 10x21F** square washer, DIN 125 (page G39)

article number	Ø mm	L mm	G kg/100
<b>E</b>			
<b>KLS 8x16E</b>	8	16	1,8

accessories included:  
 1 x **FRSV 8x16E** round-head screw with short square (page G35)  
 1 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)

article number	Ø mm	L mm	G kg/100
<b>E</b>			
<b>KLS 8x25E</b>	8	25	2,2

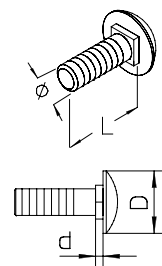
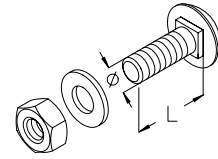
accessories included:  
 1 x **FRS 8x25E** round-head screw with square, DIN 603 (page G35)  
 1 x **SEMS 8E** hexagon nut, self-locking, DIN 6923 (page G41)

article number	Ø mm	L mm	G kg/100
<b>E</b>			
<b>KLS 10x20E</b>	10	20	3,9

accessories included:  
 1 x **FRSV 10x20E** round-head screw with short square (page G35)  
 1 x **SEM 10E** hexagon-nut, DIN 934 (page G41)  
 1 x **US 10x21E** square washer, DIN 125 (page G40)

### FRSV round-head screw with short square

article number	Ø mm	D mm	d mm	L mm	G kg/100
<b>GV</b>					
<b>FRSV 6x12</b>	6	16	1,5	12	0,5
<b>FRSV 6x16</b>	6	16	1,5	16	0,7
<b>FRSV 8x16</b>	8	20	2,0	16	1,3
<b>FRSV 10x20</b>	10	24	2,5	20	2,3
<b>F</b>					
<b>FRSV 10x20F</b>	10	24	2,5	20	2,3

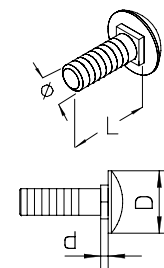


# Fastenings

## Bolting fasteners/bolts and nuts

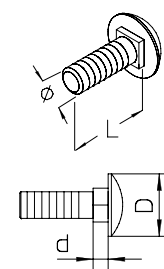
### FRSV round-head screw with short square

article number	Ø mm	D mm	d mm	L mm	G kg/100
<b>E</b>					
FRSV 6x12E	6	16	1,5	12	0,5
FRSV 6x16E	6	16	1,5	16	0,7
FRSV 8x16E	8	20	2,0	16	1,3
FRSV 10x20E	10	24	2,5	20	2,3
<b>E4</b>					
FRSV 6x12E4	6	16	1,5	12	0,5
FRSV 10x20E4	10	24	2,5	20	2,4



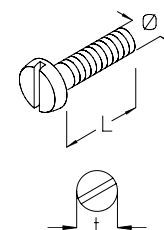
### FRS round-head screw with square, DIN 603

article number	Ø mm	D mm	d mm	L mm	G kg/100
<b>GV</b>					
FRS 6x25	6	16	4	25	0,9
FRS 8x20	8	20	5	20	1,4
FRS 8x25	8	20	5	25	1,5
FRS 8x35	8	20	5	35	1,9
FRS 8x50	8	20	5	50	2,5
FRS 10x30	10	24	6	30	2,8
FRS 12x30	12	30	8	30	4,6
<b>F</b>					
FRS 10x30F	10	24	6	30	2,8
FRS 12x30F	12	30	8	30	4,6
<b>E</b>					
FRS 6x16E	6	16	4	16	0,7
FRS 6x20E	6	16	4	20	0,8
FRS 6x25E	6	16	4	25	0,9
FRS 8x20E	8	20	5	20	1,4
FRS 8x25E	8	20	5	25	1,5
FRS 8x35E	8	20	5	35	1,9
FRS 8x50E	8	20	5	50	2,5
FRS 10x30E	10	24	6	30	2,8
FRS 12x30E	12	30	8	30	4,6



### FKS slotted cylinder head screw, DIN 84

article number	Ø mm	D mm	L mm	t mm	G kg/100
<b>GV</b>					
FKS 6x10	6	12	10	4	0,4
FKS 6x20	6	12	20	4	0,6
FKS 6x25	6	12	25	4	0,7
FKS 8x20	8	16	20	5	1,3
<b>E</b>					
FKS 6x10E	6	12	10	4	0,4
FKS 6x16E	6	12	16	4	0,4
FKS 6x20E	6	12	20	4	0,6
FKS 6x25E	6	12	25	4	0,7

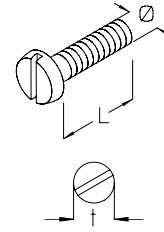


# Fastenings

## Bolting fasteners/bolts and nuts

### FKS slotted cylinder head screw, DIN 84

article number	Ø mm	D mm	L mm	t mm	G kg/100
<b>E4</b>					
<b>FKS 6x16E4</b>	6	12	16	4	0,4

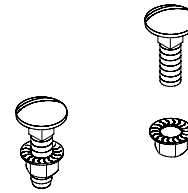


### KLRL clamping assembly

article number	G kg/100
<b>S</b>	
<b>KLRL</b>	1

accessories included:

- 2 x **FRSV 6x16** round-head screw with short square (page G34)
- 2 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)



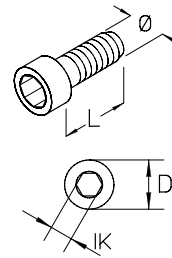
article number	G kg/100
<b>E</b>	
<b>KLRL E</b>	1

accessories included:

- 2 x **FRSV 6x16E** round-head screw with short square (page G35)
- 2 x **SEMS 6E** hexagon nut, self-locking, DIN 6923 (page G41)

### IK hexagon socket head screw, DIN 912

article number	Ø mm	D mm	L mm	IK mm	G kg/100
<b>GV</b>					
<b>IK 6x20</b>	6	10,2	20	5	0,7
<b>IK 8x20</b>	8	13,3	20	6	1,3
<b>IK 8x25</b>	8	13,3	25	6	1,5
<b>IK 8x30</b>	8	13,3	30	6	1,7
<b>IK 8x40</b>	8	13,3	40	6	2,1
<b>IK 10x20</b>	10	16,3	20	8	2,3
<b>IK 10x25</b>	10	16,3	25	8	2,5
<b>IK 10x30</b>	10	16,3	30	8	2,8
<b>IK 10x40</b>	10	16,3	40	8	3,3
<b>IK 12x20</b>	12	18,3	20	10	3,2
<b>IK 12x25</b>	12	18,3	25	10	3,6
<b>IK 12x30</b>	12	18,3	30	10	3,9
<b>IK 12x40</b>	12	18,3	40	10	4,7
<b>IK 12x50</b>	12	18,3	50	10	5,5

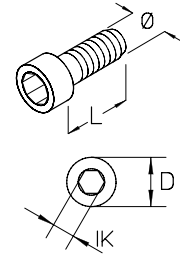


# Fastenings

## Bolting fasteners/bolts and nuts

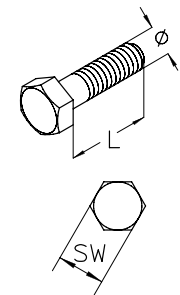
### IK hexagon socket head screw, DIN 912

article number	Ø mm	D mm	L mm	IK mm	G kg/100
<b>E</b>					
IK 8x10E	8	13,3	10	6	1,0
IK 8x20E	8	13,3	20	6	1,3
IK 8x25E	8	13,3	25	6	1,3
IK 8x30E	8	13,3	30	6	1,7
IK 8x40E	8	13,3	40	6	2,1
IK 8x50E	8	13,3	50	6	2,5
IK 10x20E	10	16,3	20	8	2,3
IK 10x25E	10	16,3	25	8	2,5
IK 10x30E	10	16,3	30	8	2,8
IK 10x40E	10	16,3	40	8	3,3
IK 12x20E	12	18,3	20	10	3,2
IK 12x25E	12	18,3	25	10	3,6
IK 12x30E	12	18,3	30	10	3,9
IK 12x40E	12	18,3	40	10	4,7
IK 12x50E	12	18,3	50	10	5,5



### SES hexagon head bolt, DIN 933

article number	Ø mm	L mm	SW mm	G kg/100
<b>GV</b>				
SES 6x16	6	16	10	0,5
SES 6x20	6	20	10	0,6
SES 6x25	6	25	10	0,7
SES 6x30	6	30	10	0,8
SES 8x16	8	16	13	1,1
SES 8x20	8	20	13	1,2
SES 8x25	8	25	13	1,4
SES 8x30	8	30	13	1,4
SES 8x40	8	40	13	1,9
SES 8x110	8	110	13	4,1
SES 10x20	10	20	17(16)	2,1
SES 10x25	10	25	17(16)	2,4
SES 10x30	10	30	17(16)	2,6
SES 10x40	10	40	17(16)	3,1
SES 10x75	10	75	17(16)	4,7
SES 10x90	10	90	17(16)	5,6
SES 10x100	10	100	17(16)	6,1
SES 12x20	12	20	19(18)	3,1
SES 12x25	12	25	19(18)	3,4
SES 12x30	12	30	19(18)	3,8
SES 12x40	12	40	19(18)	4,5
SES 12x50	12	50	19(18)	5,2



# Fastenings

## Bolting fasteners/bolts and nuts

### SES hexagon head bolt, DIN 933

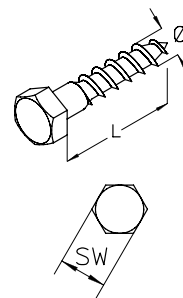
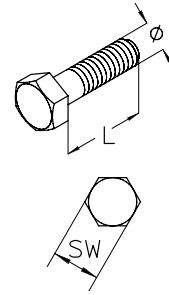
article number	Ø mm	L mm	SW mm	G kg/100
<b>F</b>				
SES 10x20F	10	20	17(16)	2,1
SES 10x25F	10	25	17(16)	2,4
SES 10x30F	10	30	17(16)	2,6
SES 10x55F	10	55	17(16)	3,9
SES 10x75F	10	75	17(16)	4,9
SES 10x90F	10	90	17(16)	5,6
SES 10x100F	10	100	17(16)	6,1
SES 12x20F	12	20	19(18)	3,1
SES 12x30F	12	30	19(18)	3,8
SES 12x40F	12	40	19(18)	4,5
SES 12x50F	12	50	19(18)	5,2
SES 12x70F	12	70	19(18)	6,6

<b>E</b>				
SES 6x16E	6	16	10	0,5
SES 8x16E	8	16	13	1,1
SES 6x20E	6	20	10	0,6
SES 8x20E	8	20	13	1,2
SES 8x25E	8	25	13	1,4
SES 8x30E	8	30	13	1,5
SES 10x20E	10	20	17	2,1
SES 10x30E	10	30	17	2,6
SES 10x75E	10	75	17(16)	4,9
SES 10x100E	10	100	17(16)	6,1

<b>E4</b>				
SES 8x20E4	8	20	13	1,2
SES 8x30E4	8	30	13	1,5
SES 10x20E4	10	20	17	2,1
SES 10x75E4	10	75	17(16)	4,9
SES 10x100E4	10	100	17(16)	6,1

### SEH hexagon wood screw

article number	Ø mm	L mm	SW mm	G kg/100
<b>GV</b>				
SEH 8x50	8	50	13	1,8
SEH 8x60	8	60	13	2,1
SEH 10x50	10	50	17	3,2
SEH 10x60	10	60	17	3,6
SEH 10x80	10	80	17	4,5





# Fastenings

## Bolting fasteners/bolts and nuts

### FR spring ring

article number	Ø mm	D mm	G kg/100
<b>GV</b>			
FR B6	6,1	11,8	0,10
FR B8	8,1	14,8	0,15
FR B10	10,2	18,1	0,20
FR B12	12,2	21,1	0,25
<b>E</b>			
FR B6E	6,1	11,8	0,10
FR B8E	8,1	14,8	0,15
FR B10E	10,2	18,1	0,20
FR B12E	12,2	21,1	0,25
<b>E4</b>			
FR B6E4	6,1	11,8	0,10
FR B8E4	8,1	14,8	0,15
FR B10E4	10,2	18,1	0,20
FR B12E4	12,2	21,1	0,25



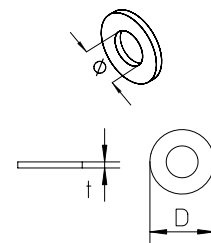
### FS serrated lock washer

article number	Ø mm	D mm	G kg/100
<b>GV</b>			
FS 6	6,4	11,0	0,04
FS 8	8,2	14,0	0,08
FS 10	10,5	18,0	0,13
FS 12	12,5	20,5	0,17
<b>E</b>			
FS 6E	6,4	11,0	0,04
FS 8E	8,2	14,0	0,08
FS 10E	10,5	18,0	0,13
FS 12E	12,5	20,5	0,17



### US 125 square washer, DIN 125

article number	Ø mm	D mm	t mm	G kg/100
<b>GV</b>				
US 6x12	6,4	12,5	1,6	0,1
US 8x17	8,4	17,0	2,0	0,2
US 10x21	10,5	21,0	2,0	0,4
US 13x24	13,0	24,0	2,5	0,6
US 17x30	17,0	30,0	3,0	1,1
<b>F</b>				
US 10x21F	10,5	21,0	2,0	0,4
US 13x24F	13,0	24,0	2,5	0,6
US 17x30F	17,0	30,0	3,0	1,1

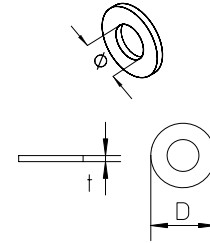


# Fastenings

## Bolting fasteners/bolts and nuts

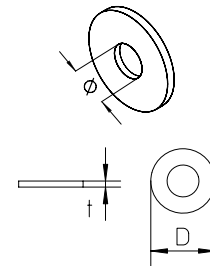
### US 125 square washer, DIN 125

article number	Ø mm	D mm	t mm	G kg/100
<b>E</b>				
US 6x12E	6,4	12,5	1,5	0,1
US 8x17E	8,4	17,0	1,5	0,2
US 10x21E	10,5	21,0	0,0	0,4
US 13x24E	13,0	24,0	2,5	1,2
<b>E4</b>				
US 6x12E4	6,4	12,5	1,5	0,1
US 10x21E4	10,5	21,0	0,0	0,2
US 8x17E4	8,4	17,0	1,5	0,2



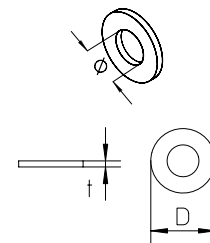
### US 9021 square washer, DIN 9021

article number	Ø mm	D mm	t mm	G kg/100
<b>GV</b>				
US 6x18	6,4	18	1,6	0,3
US 8x25	8,4	25	2,0	0,7
US 10x30	10,5	30	2,5	1,2
US 13x40	13,0	40	3,0	2,7
<b>F</b>				
US 10x30F	10,5	30	2,5	1,2
US 13x40F	13,0	40	3,0	2,7
<b>E</b>				
US 6x18E	6,4	18	1,6	0,3
US 8x25E	8,4	25	2,0	0,7
US 10x30E	10,5	30	2,5	1,2
<b>E4</b>				
US 10x30E4	10,5	30	2,5	1,2



### UVS captive washer

article number	Ø mm	D mm	t mm	G kg/100
<b>PE</b>				
UVS M6	6,0	12,5	1,30	< 0,01
UVS M8	8,0	16,2	1,65	< 0,01
UVS M10	10,5	30,0	2,10	< 0,01
UVS M10x24	10,0	24,0	2,10	< 0,01

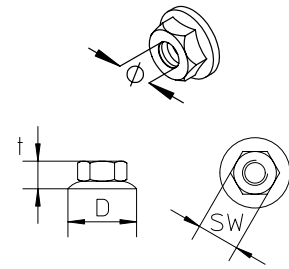


# Fastenings

## Bolting fasteners/bolts and nuts

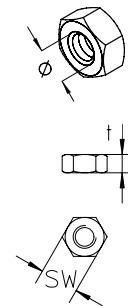
### SEMS hexagon nut, self-locking, DIN 6923

article number	Ø mm	D mm	t mm	SW mm	G kg/100
<b>GV</b>					
SEMS 6	6	14	5,5	10	0,3
SEMS 8	8	17	7,5	13	0,7
SEMS 10	10	21	9,5	15	1,6
<b>E</b>					
SEMS 6E	6	14	5,5	10	0,3
SEMS 8E	8	17	7,5	13	0,7
SEMS 10E	10	21	9,5	15	1,6



### SEM hexagon-nut, DIN 934

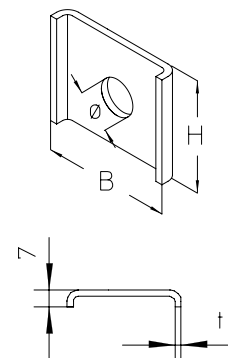
article number	Ø mm	t mm	SW mm	G kg/100
<b>GV</b>				
SEM 6	6	5,0	10	0,3
SEM 8	8	6,5	13	0,5
SEM 10	10	8,0	17(15)	1,2
SEM 12	12	10,0	19(18)	1,7
<b>F</b>				
SEM 10F	10	8,0	17(15)	1,2
SEM 12F	12	10,0	19(18)	1,7
<b>E</b>				
SEM 6E	6	5,0	10	0,3
SEM 8E	8	6,5	13	0,5
SEM 10E	10	8,0	17(15)	1,2
SEM 12E	12	10,0	19(18)	1,7
<b>E4</b>				
SEM 6E4	6	5,0	10	0,3
SEM 8E4	8	6,5	13	0,5
SEM 10E4	10	8,0	17(15)	1,2



### RUS 41 stabilization plate, KHA profiles

For an application example, see the chapter assembly.

article number	H mm	B mm	Ø mm	t mm	G kg/100
<b>F</b>					
RUS 41-L13F	40	46	13	2,5	4,00
<b>E</b>					
RUS 41-L13E	40	46	13	1,8	2,84

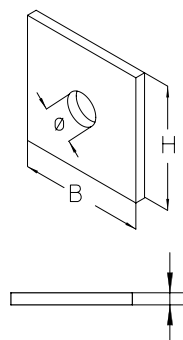


# Fastenings

## Bolting fasteners/bolts and nuts

### RUS 50 mounting plate, KHA profiles

article number	H mm	B mm	Ø mm	t mm	G kg/100
<b>F</b>					
<b>RUS 50-L13F</b>	50	50	13	4	7,54
<b>E</b>					
<b>RUS 50-L13E</b>	50	50	13	4	7,54



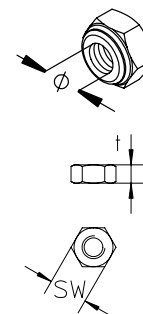
### SSK protection end cap

article number	IK mm	G kg/100
<b>SSK 6</b>		
<b>SSK 6</b>	10	0,1
<b>SSK 8</b>	13	0,1
<b>SSK 10</b>	17	0,2



### SEMSS hexagon-nut, self-locking, DIN 985

article number	Ø mm	t mm	SW mm	G kg/100
<b>GV</b>				
<b>SEMSS 6</b>	6	6	10	0,2
<b>SEMSS 10</b>	10	10	17	1,1
<b>E</b>				
<b>SEMSS 6E</b>	6	6	10	0,2
<b>SEMSS 10E</b>	10	10	17	1,1



# Fastenings

## Channel nuts and bolts

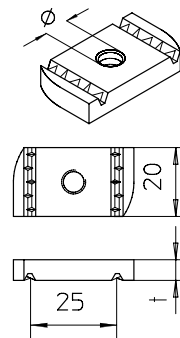
### AM22 channel nut, A41/ KHA 41/ KHAL 41

For an application example, see the chapter assembly.

article number	Ø mm	t mm	G kg/100
<b>GV</b>			
AM22 M6	6	6,0	2,6
AM22 M8	8	6,0	2,4
AM22 M10	10	8,0	3,3
AM22 M12	12	9,5	4,2

<b>F</b>			
AM22 M6F	6	6,0	2,8
AM22 M8F	8	6,0	2,6
AM22 M10F	10	8,0	3,5
AM22 M12F	12	9,0	4,2

<b>E4</b>			
AM22 M6E4	6	6,0	2,6
AM22 M8E4	8	6,0	2,4
AM22 M10E4	10	8,0	3,3
AM22 M12E4	12	9,5	4,2

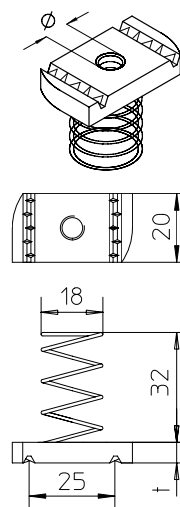


### AMF22 channel spring nut, A41

For an application example, see the chapter assembly.

article number	Ø mm	t mm	G kg/100
<b>GV</b>			
AMF22 M6	6	6,0	2,8
AMF22 M8	8	6,0	2,6
AMF22 M10	10	8,0	3,5
AMF22 M12	12	9,5	4,4

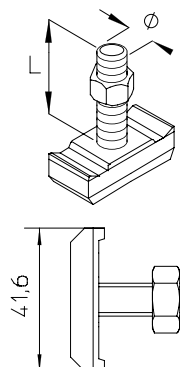
<b>F</b>			
AMF22 M6F	6	6,0	3,0
AMF22 M8F	8	6,0	2,8
AMF22 M10F	10	8,0	3,7
AMF22 M12F	12	9,5	4,7



### HS22 tee-head bolt, A2/ A4

For an application example, see the chapter assembly.

article number	Ø mm	L mm	G kg/100
<b>GV</b>			
HS22 12x30	12	30	9,5
HS22 12x40	12	40	10,0
HS22 12x50	12	50	10,8
HS22 12x60	12	60	11,4
HS22 16x40	16	40	16,2
HS22 16x60	16	60	18,6



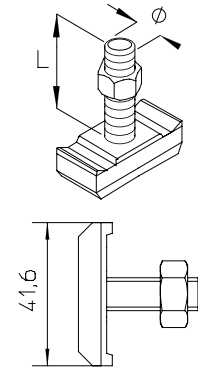
# Fastenings

## Channel nuts and bolts

### HS22 tee-head bolt, A2/ A4

For an application example, see the chapter assembly.

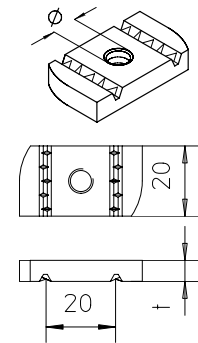
article number	Ø mm	L mm	G kg/100
<b>F</b>			
HS22 10x80F	10	80	9,7
<b>E4</b>			
HS22 10x80E4	10	80	9,7
HS22 12x30E4	12	30	9,6
HS22 12x40E4	12	40	10,1
HS22 12x50E4	12	50	10,9
HS22 12x60E4	12	60	11,5
HS22 16x40E4	16	40	16,3
HS22 16x60E4	16	60	18,7



### AM18 channel nut, A7/ A8

For an application example, see the chapter assembly.

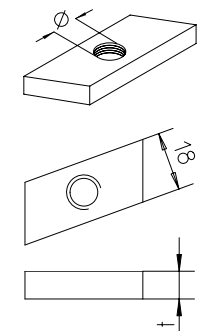
article number	Ø mm	t mm	G kg/100
<b>GV</b>			
AM18 M6	6	6,0	2,6
AM18 M8	8	6,0	2,4
AM18 M10	10	8,0	3,3
AM18 M12	12	9,5	4,2
<b>F</b>			
AM18 M6F	6	6,0	2,8
AM18 M8F	8	6,0	2,6
AM18 M10F	10	8,0	3,5
AM18 M12F	12	9,5	4,5
<b>E4</b>			
AM18 M6E4	6	6,0	3,0
AM18 M8E4	8	6,0	2,9
AM18 M10E4	10	8,0	3,6
AM18 M12E4	12	9,5	3,4



### AMA18 channel nut, A7/ A8

For an application example, see the chapter assembly.

article number	Ø mm	t mm	G kg/100
<b>F</b>			
AMA18 M6F	6	5,0	2,7
AMA18 M8F	8	6,0	3,0
AMA18 M10F	10	8,0	3,8
<b>E</b>			
AMA18 M6E	6	6,0	2,7
AMA18 M8E	8	6,0	3,0
AMA18 M10E	10	8,0	3,8



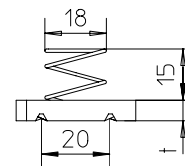
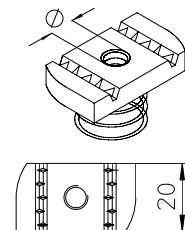
# Fastenings

## Channel nuts and bolts

### AMF18 channel spring nut, A7/ A8

For an application example, see the chapter assembly.

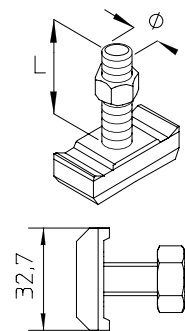
article number	Ø mm	t mm	G kg/100
<b>GV</b>			
<b>AMF18 M6</b>	6	6,0	2,7
<b>AMF18 M8</b>	8	6,0	2,5
<b>AMF18 M10</b>	10	8,0	3,4
<b>AMF18 M12</b>	12	9,5	4,3
<b>F</b>			
<b>AMF18 M6F</b>	6	6,0	2,9
<b>AMF18 M8F</b>	8	6,0	2,7
<b>AMF18 M10F</b>	10	8,0	3,6
<b>AMF18 M12F</b>	12	9,5	4,6



### HS18 tee-head bolt, A7/ A8/ A9

For an application example, see the chapter assembly.

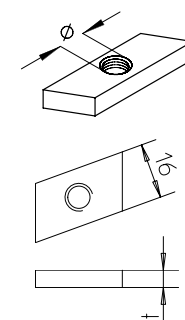
article number	Ø mm	L mm	G kg/100
<b>GV</b>			
<b>HS18 10x30</b>	10	30	5,9
<b>HS18 10x40</b>	10	40	6,3
<b>HS18 10x50</b>	10	50	6,9
<b>HS18 10x60</b>	10	60	7,4
<b>HS18 12x30</b>	12	30	7,4
<b>HS18 12x40</b>	12	40	7,9
<b>HS18 12x60</b>	12	60	9,4
<b>HS18 16x40</b>	16	40	13,4
<b>HS18 16x60</b>	16	60	16,0
<b>HS18 16x80</b>	16	80	18,8
<b>E4</b>			
<b>HS18 10x30E4</b>	10	30	6,0
<b>HS18 10x40E4</b>	10	40	6,5
<b>HS18 10x50E4</b>	10	50	7,0



### AM16 channel nut, B7

For an application example, see the chapter assembly.

article number	Ø mm	t mm	G kg/100
<b>F</b>			
<b>AM16 M6F</b>	6	5,0	1
<b>AM16 M8F</b>	8	5,0	1
<b>E4</b>			
<b>AM16 M6E4</b>	6	5,0	1

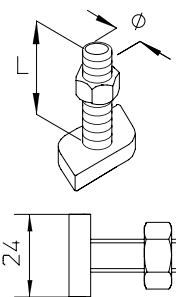


# Fastenings

## Channel nuts and bolts

### HS16 Tee-head bolt

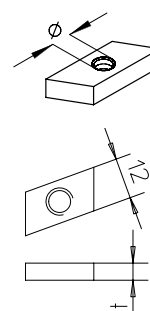
article number	Ø mm	L mm	G kg/100
<b>GV</b>			
HS16 8x20	8	20	3,0
HS16 8x40	8	40	3,9
HS16 10x30	10	30	4,6
HS16 10x50	10	50	5,8



### AM12 channel nut, B3/ B6

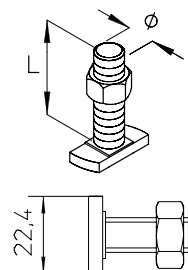
For an application example, see the chapter assembly.

article number	Ø mm	t mm	G kg/100
<b>F</b>			
AM12 M6F	6	5,0	1,0
AM12 M8F	8	5,0	0,9
<b>E</b>			
AM12 M8E	8	5,0	0,9



### HS12 Tee-head bolt

article number	Ø mm	L mm	G kg/100
<b>GV</b>			
HS12 6x30	6	30	1,6
HS12 6x40	6	40	1,7
HS12 8x20	8	20	2,0
HS12 8x30	8	30	2,3
HS12 8x40	8	40	2,6
HS12 10x20	10	20	3,0
HS12 10x30	10	30	3,5
HS12 10x40	10	40	3,9
<b>E4</b>			
HS12 10x20E4	10	20	3,1
HS12 10x30E4	10	30	3,6
HS12 10x40E4	10	40	4,0





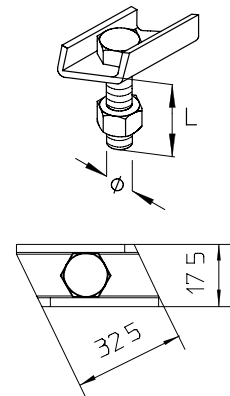
# Fastenings

## Channel nuts and bolts

### AKB channel bolt, A7/ A8/ A9

For an application example, see the chapter assembly.

article number	Ø mm	L mm	G kg/100
<b>AKB 6x25</b>	6	25	2,4
<b>AKB 8x25</b>	8	25	3,5
<b>AKB 8x35</b>	8	35	3,7
<b>AKB 8x45</b>	8	45	4,0
<b>AKB 10x35</b>	10	35	5,4
<b>AKB 10x45</b>	10	45	5,9
<b>AKB 12x35</b>	12	35	7,0
<b>AKB 12x45</b>	12	45	7,7



# Fastenings

## Electrical fastenings

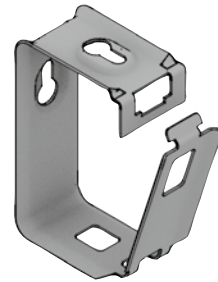
### SH QS multiple cable holder, metal

Multiple cable holder approved for continuous function E30 - E90, for wall and ceiling mounting. Please see the General Building Inspection Test Certificate (P-MPA-E-15-012) for further information.  
The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	number of cables	G kg/100
<b>S</b>		
<b>SH 15Q S</b>	15	3,08
<b>SH 30Q S</b>	30	7,20

accessories optional:

**SD-BS** straddling dowel, fire protection (page G51)



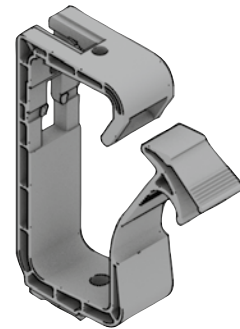
### SH K multiple cable holder, plastic

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature T<sub>max</sub>  
The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	number of cables	T <sub>max</sub> °C	colour	G kg/100
<b>PA</b>				
<b>SH 15 K</b>	15	750	RAL 7035	2,88
<b>SH 30 K</b>	30	750	RAL 7035	4,90
<b>SH 15 FWK</b>	15	960	RAL 7030	2,95
<b>SH 30 FWK</b>	30	960	RAL 7030	5,02

accessories optional:

**KOT K** coupling piece, plastic (page G50)  
**BFS K** quick-mounting clip for all-rounder cable holder, plastic (page G50)  
**BFS ND K** quick-mounting clip for all-rounder cable holder, plastic with nail plug (page G50)  
**SN** screw nail anchor (page G51)  
**KSD** plastic plug-in dowel (page G51)



### SH ND K multiple cable holder, plastic with nail plug

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature T<sub>max</sub>  
The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	number of cables	T <sub>max</sub> °C	colour	G kg/100
<b>PA</b>				
<b>SH 15 ND K</b>	15	750	RAL 7035	3,48
<b>SH 30 ND K</b>	30	750	RAL 7035	5,56

accessories included:

1 x **BFS ND K** quick-mounting clip for all-rounder cable holder, plastic with nail plug (page G50)

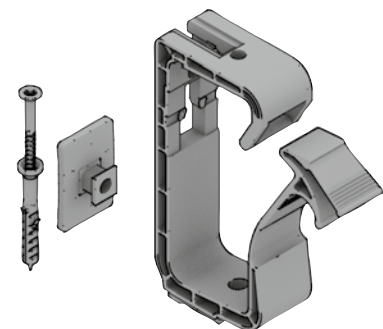
article number	number of cables	T <sub>max</sub> °C	colour	G kg/100
<b>PA</b>				
<b>SH 15 ND FWK</b>	15	960	RAL 7030	3,88
<b>SH 30 ND FWK</b>	30	960	RAL 7030	6,02

accessories included:

1 x **BFS ND FWK** quick-mounting clip for all-rounder cable holder, plastic with nail plug (page G50)

accessories optional:

**KOT K** coupling piece, plastic (page G50)



# Fastenings

## Electrical fastenings

### SHK K cable holder, plastic

flame-resistant according to fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$   
 Suitable for applications with limited installation height. The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	H mm	number of cables	$T_{max}$ °C	colour	G kg/100
<b>PA</b>					
<b>SHK 10 K</b>	58	10	750	RAL 7035	2,27
<b>SHK 20 K</b>	58	20	750	RAL 7035	2,70
<b>SHK 40 K</b>	58	40	750	RAL 7035	4,86

accessories optional:

**SN** screw nail anchor (page G51)  
**KSD** plastic plug-in dowel (page G51)



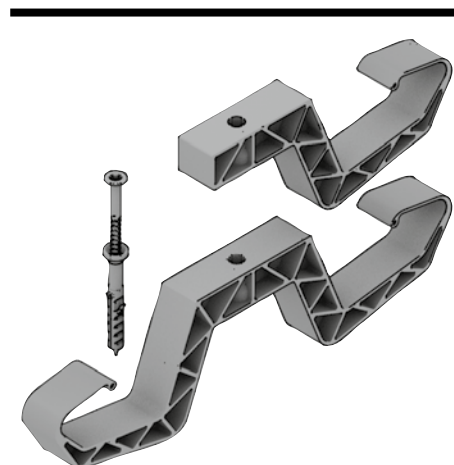
### SHK ND K cable holder, plastic with nail plug

flame-resistant according to fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$   
 Suitable for applications with limited installation height. The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	H mm	number of cables	$T_{max}$ °C	colour	G kg/100
<b>PA</b>					
<b>SHK 10 ND K</b>	58	10	750	RAL 7035	3,16
<b>SHK 20 ND K</b>	58	20	750	RAL 7035	3,64
<b>SHK 40 ND K</b>	58	40	750	RAL 7035	5,40

accessories included:

1 x **SN 6x50** screw nail anchor (page G51)



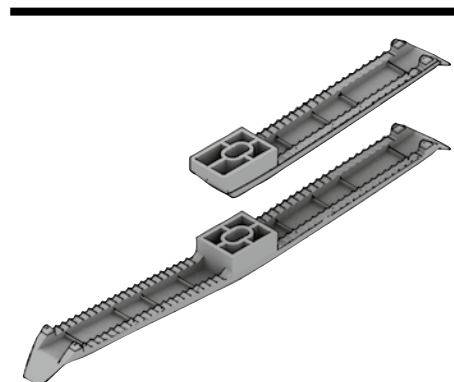
### LK K cable holder, plastic

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$   
 Suitable for applications with low installation height. The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	H mm	number of cables	$T_{max}$ °C	colour	G kg/100
<b>PA</b>					
<b>LK 8 K</b>	16	8	750	RAL 7035	1,23
<b>LK 10 K</b>	16	10	750	RAL 7035	1,11
<b>LK 16 K</b>	16	16	750	RAL 7035	1,73
<b>LK 8 FWK</b>	16	8	960	RAL 7030	1,10
<b>LK 10 FWK</b>	16	10	960	RAL 7030	0,89
<b>LK 16 FWK</b>	16	16	960	RAL 7030	1,60

accessories optional:

**SN** screw nail anchor (page G51)  
**KSD** plastic plug-in dowel (page G51)



# Fastenings

## Electrical fastenings

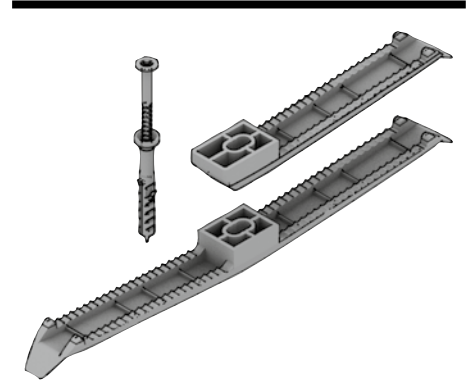
### LK ND K cable holder, plastic with moulded-in nail plug

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$   
 Suitable for applications with low installation height. The information on the number of cables relating to the use of NYM cable (3 x 1.5 mm<sup>2</sup>).

article number	H mm	number of cables	$T_{max}$ °C	colour	G kg/100
<b>PA</b>					
<b>LK 8 ND K</b>	16	8	750	RAL 7035	1,92
<b>LK 10 ND K</b>	16	10	750	RAL 7035	1,68
<b>LK 16 ND K</b>	16	16	750	RAL 7035	2,63
<b>LK 8 ND FWK</b>	16	8	960	RAL 7030	2,24
<b>LK 10 ND FWK</b>	16	10	960	RAL 7030	1,80
<b>LK 16 ND FWK</b>	16	16	960	RAL 7030	2,68

accessories included:

1 x **SN 6x50** screwnail anchor (page G51)



### KOT K coupling piece, plastic

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$

article number	$T_{max}$ °C	colour	G kg/100
<b>PA</b>			
<b>KOT K</b>	750	RAL 7035	0,36
<b>KOT FWK</b>	960	RAL 7030	0,41



### BFS K quick-mounting clip for all-rounder cable holder, plastic

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$

article number	$T_{max}$ °C	colour	G kg/100
<b>PA</b>			
<b>BFS K</b>	750	RAL 7035	0,41
<b>BFS FWK</b>	960	RAL 7030	0,43



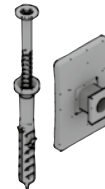
### BFS ND K quick-mounting clip for all-rounder cable holder, plastic with nail plug

flame-resistant according to specification of UL94 V-0 and fire hazard testing VDE 0471/DIN IEC 695 part 2-1, testing temperature  $T_{max}$

article number	$T_{max}$ °C	colour	G kg/100
<b>PA</b>			
<b>BFS ND K</b>	750	RAL 7035	0,91
<b>BFS ND FWK</b>	960	RAL 7030	0,89

accessories included:

1 x **SN 6x50** screwnail anchor (page G51)



# Fastenings

## Electrical fastenings

### SN screwnail anchor

article number	G
	kg
<b>SN 6x50</b>	0,01



### KSD plastic plug-in dowel

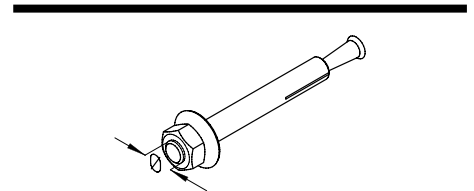
article number	G
	kg
<b>KSD 6x40</b>	0,01



### SD-BS straddling dowel, fire protection

manufacturer's information has to be observed strictly.

article number	Ø	D	t	L <sub>min</sub>	G
	mm	mm	mm	mm	kg/100
<b>GV</b>					
<b>SD-BS 6/5</b>	6	6	0 - 5	46	0,3





# Cable support trough

Cable support trough

H03-H05

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H

## Numeric index

### Cable support trough

#### K

**KTW-A 4-12** cable support trough, Ø 40-120 mm [H05](#)

**KTW-R 10/2-10** cable support trough, Ø 100 mm [H03](#)

**KTW-R 4-12/2-10** cable support trough, Ø 40-120 mm  
[H04](#)

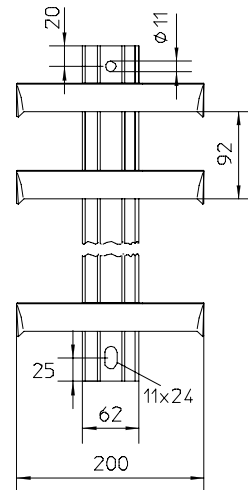
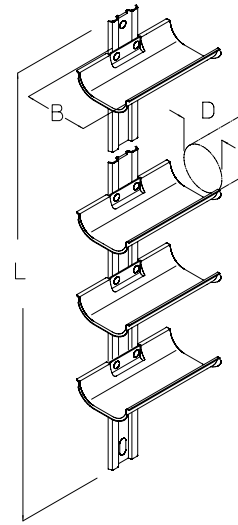


# Cable support trough

## KTW-R 10/2-10 cable support trough, $\varnothing$ 100 mm

For an application example, see the chapter assembly.

article number	B mm	D mm	L mm	G kg
<b>F</b>				
<b>KTW-R 10/2</b>	118	100	237	1,10
<b>KTW-R 10/3</b>	118	100	329	1,60
<b>KTW-R 10/4</b>	118	100	421	2,10
<b>KTW-R 10/5</b>	118	100	518	2,60
<b>KTW-R 10/6</b>	118	100	605	3,10
<b>KTW-R 10/7</b>	118	100	698	3,60
<b>KTW-R 10/8</b>	118	100	789	4,20
<b>KTW-R 10/9</b>	118	100	881	4,70
<b>KTW-R 10/10</b>	118	100	973	5,20



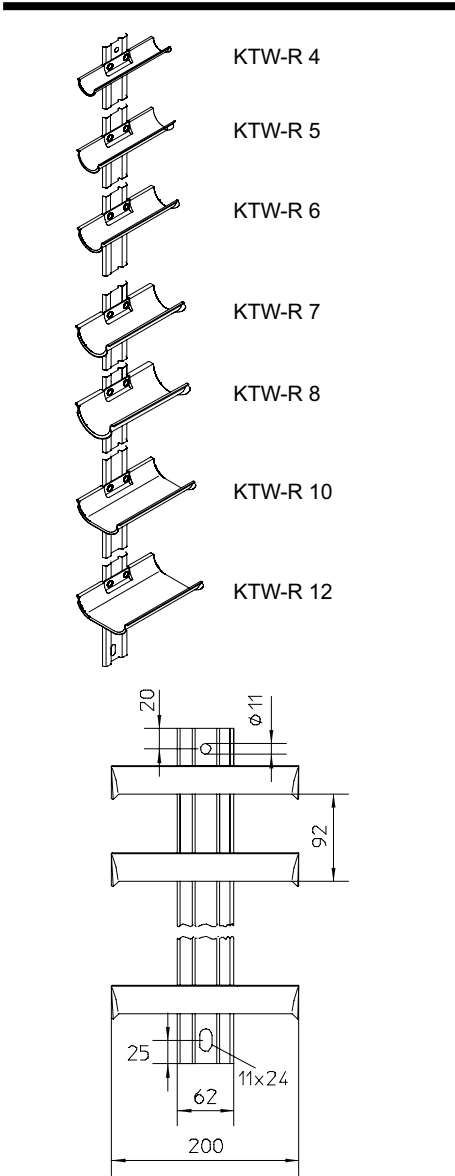
H

# Cable support trough

## KTW-R 4-12/2-10 cable support trough, Ø 40-120 mm

For an application example, see the chapter assembly.

article number	B mm	D mm
<b>KTW-R 4/2-10</b>	56	40
<b>KTW-R 5/2-10</b>	66	50
<b>KTW-R 6/2-10</b>	76	60
<b>KTW-R 7/2-10</b>	86	70
<b>KTW-R 8/2-10</b>	97	80
<b>KTW-R 10/2-10</b>	118	100
<b>KTW-R 12/2-10</b>	138	120

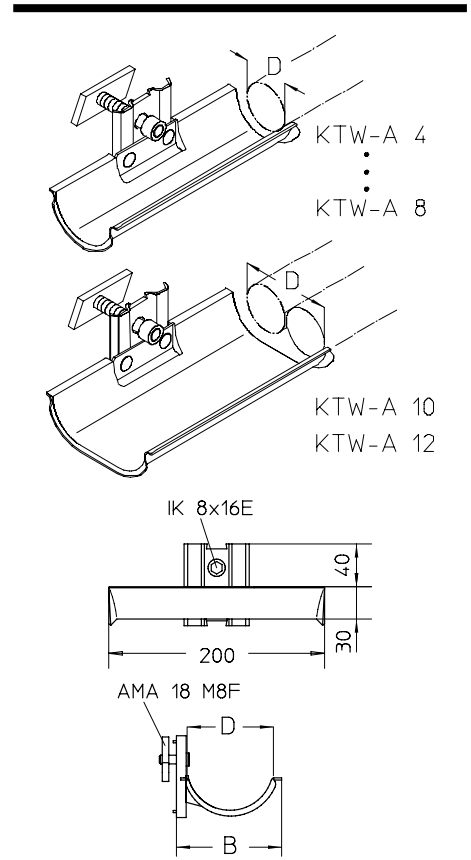


# Cable support trough

## KTW-A 4-12 cable support trough, Ø 40-120 mm

For an application example, see the chapter assembly.

article number	B mm	D mm	G kg
<b>F</b>			
<b>KTW-A 4</b>	56	40	0,30
<b>KTW-A 5</b>	66	50	0,32
<b>KTW-A 6</b>	76	60	0,35
<b>KTW-A 7</b>	86	70	0,39
<b>KTW-A 8</b>	96	80	0,44
<b>KTW-A 10</b>	118	100	0,48
<b>KTW-A 12</b>	138	120	0,55



H



# Line of protection tubes

Line of protection tubes

103-109

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# Numeric index

## Line of protection tubes

### S

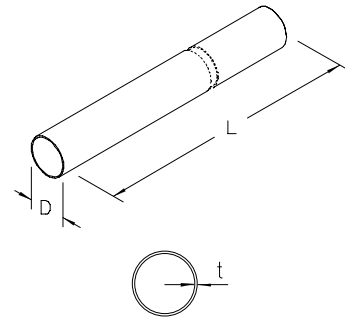
- SR** protection tube [I03](#)
- SRB 45** tube bow [I04](#)
- SRB 90** tube bow [I03](#)
- SRF** floor fastening system [I08](#)
- SRFW** base bracket [I08](#)
- SRHB** protection tube bracket [I05](#)
- SRHD** protection tube bracket, pivoted [I05](#)
- SRK-G** end cap [I09](#)
- SRK-O** final sleeve as edge protective strip [I08](#)
- SRL** protection tube, slotted [I03](#)
- SRM** clamp socket [I04](#)
- SRML** elongated slot socket [I04](#)
- SRMP-A** assembly plate, 165x175 mm [I07](#)
- SRMP-B** assembly plate, 175x260 mm [I07](#)
- SRMP-C** assembly plate, 270x380 mm [I07](#)
- SRS-A** support clamp [I06](#)
- SRSB** switch block, self contained [I05](#)
- SRS-B** tube bar clamp [I06](#)
- SRS-R** tube clamp [I06](#)
- SRS-W** dual fastening clamp [I06](#)

## Line of protection tubes

### SR protection tube, length=6000 mm

For an application example, see the chapter assembly.

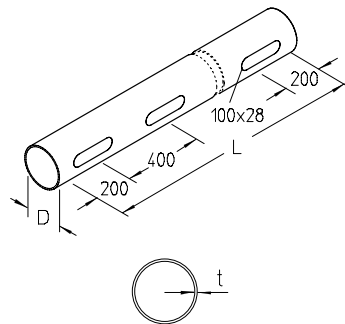
article number	D mm	L mm	t mm	G kg
<b>F</b>				
<b>SR 30F</b>	30	6000	1,5	6,65
<b>SR 60F</b>	60	6000	2,0	17,40
<b>E</b>				
<b>SR 30E</b>	30	6000	1,5	6,65
<b>SR 60E</b>	60	6000	2,0	17,40



### SRL protection tube, slotted, length=6000 mm

For an application example, see the chapter assembly.

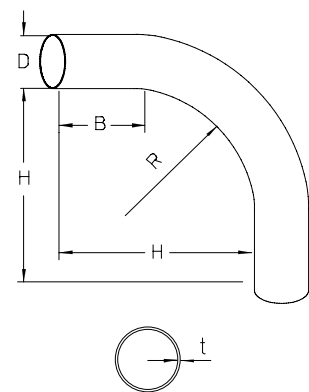
article number	D mm	L mm	t mm	G kg
<b>F</b>				
<b>SRL 60F</b>	60	6000	2	16,30
<b>E</b>				
<b>SRL 60E</b>	60	6000	2	16,30



### SRB 90 tube bow

For an application example, see the chapter assembly.

article number	H mm	B mm	D mm	R mm	t mm	G kg
<b>F</b>						
<b>SRB 90-30F</b>	185	100	30	140	1,5	0,40
<b>SRB 90-60F</b>	225	100	60	150	2,0	1,30
<b>E</b>						
<b>SRB 90-30E</b>	185	100	30	140	1,5	0,40
<b>SRB 90-60E</b>	225	100	60	150	2,0	1,30

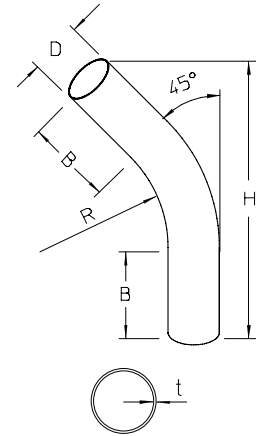


# Line of protection tubes

## SRB 45 tube bow

For an application example, see the chapter assembly.

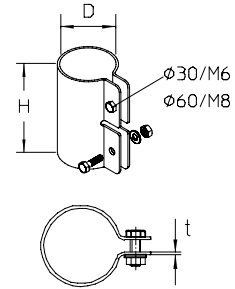
article number	H mm	B mm	D mm	R mm	t mm	G kg
<b>F</b>						
SRB 45-30F	270	100	30	140	1,5	0,30
SRB 45-60F	350	100	60	150	2,0	1,05
<b>E</b>						
SRB 45-30E	270	100	30	140	1,5	0,30
SRB 45-60E	350	100	60	150	2,0	1,05



## SRM clamp socket

For an application example, see the chapter assembly.

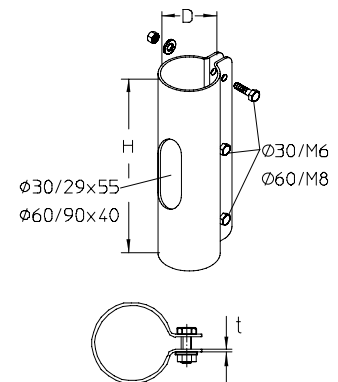
article number	H mm	D mm	t mm	G kg
<b>F</b>				
SRM 30F	80	30	1,5	0,15
SRM 60F	115	60	2,5	0,55
<b>E</b>				
SRM 30E	80	30	1,5	0,15
SRM 60E	115	60	2,5	0,55



## SRML elongated slot socket

For an application example, see the chapter assembly.

article number	H mm	D mm	t mm	G kg
<b>F</b>				
SRML 30F	130	30	1,5	0,20
SRML 60F	180	60	2,5	1,05
<b>E</b>				
SRML 30E	130	30	1,5	0,20
SRML 60E	180	60	2,5	1,05



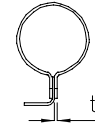
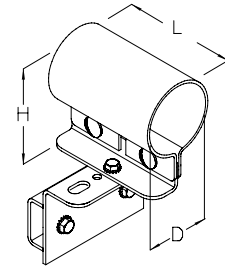


# Line of protection tubes

## SRHD protection tube bracket, pivoted

For an application example, see the chapter assembly.

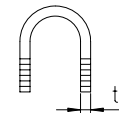
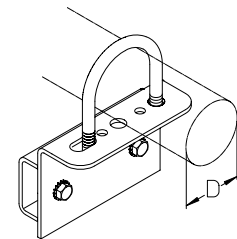
article number	H mm	B mm	D mm	L mm	t mm	G kg
<b>F</b>						
SRHD 30F	62	1,5	30	80	1,5	0,70
SRHD 60F	102	1,5	60	115	2,0	1,20
<b>E</b>						
SRHD 30E	62	1,5	30	80	1,5	0,70
SRHD 60E	102	1,5	60	115	2,0	1,20



## SRHB protection tube bracket

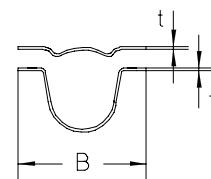
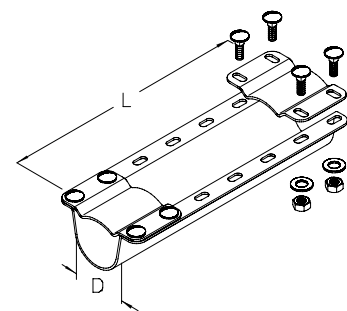
For an application example, see the chapter assembly.

article number	D mm	t mm	G kg
<b>F</b>			
SRHB 30F	31	6	0,52
SRHB 60F	61	10	0,62
<b>E</b>			
SRHB 30E	31	6	0,52
SRHB 60E	61	8	0,62



## SRSB switch block, self contained

article number	B mm	D mm	L mm	t mm	G kg
<b>F</b>					
SRSB 30-300F	85	30	300	2,0	1,05
SRSB 30-400F	85	30	400	2,0	1,28
SRSB 30-500F	85	30	500	2,0	1,52
SRSB 30-600F	85	30	600	2,0	1,75
SRSB 60-300F	120	60	300	2,5	2,00
SRSB 60-400F	120	60	400	2,5	2,20
SRSB 60-500F	120	60	500	2,5	2,60
SRSB 60-600F	120	60	600	2,5	3,00
<b>E</b>					
SRSB 30-300E	85	30	300	2,0	1,05
SRSB 30-400E	85	30	400	2,0	1,28
SRSB 30-500E	85	30	500	2,0	1,52
SRSB 30-600E	85	30	600	2,0	1,75
SRSB 60-300E	120	60	300	2,5	2,00
SRSB 60-400E	120	60	400	2,5	2,44
SRSB 60-500E	120	60	500	2,5	2,89
SRSB 60-600E	120	60	600	2,5	3,33

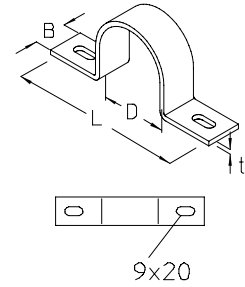


# Line of protection tubes

## SRS-R tube clamp

For an application example, see the chapter assembly.

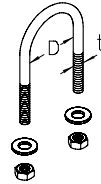
article number	B mm	D mm	L mm	t mm	G kg
<b>F</b>					
<b>SRS-R 30F</b>	25	31	85	2,5	0,06
<b>SRS-R 60F</b>	30	61	160	4,0	0,22
<b>E</b>					
<b>SRS-R 30E</b>	25	31	85	2,5	0,06
<b>SRS-R 60E</b>	30	61	160	4,0	0,22



## SRS-B tube bar clamp

For an application example, see the chapter assembly.

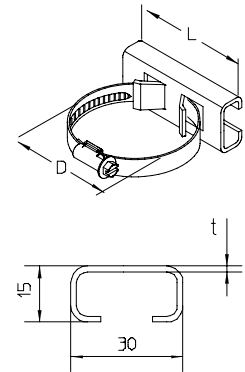
article number	D mm	t mm	G kg
<b>F</b>			
<b>SRS-B 30-6F</b>	31	6	0,03
<b>SRS-B 60-10F</b>	61	10	0,22
<b>E</b>			
<b>SRS-B 30-6E</b>	31	6	0,03
<b>SRS-B 60-8E</b>	61	8	0,22



## SRS-A support clamp

For an application example, see the chapter assembly.

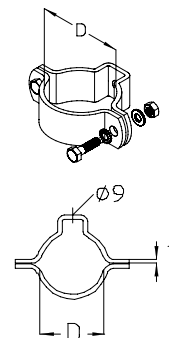
article number	D mm	L mm	t mm	G kg
<b>F</b>				
<b>SRS-A 30F</b>	30	70	1,5	0,06
<b>SRS-A 60F</b>	60	70	1,5	0,08
<b>E</b>				
<b>SRS-A 30E</b>	30	70	1,5	0,06
<b>SRS-A 60E</b>	60	70	1,5	0,08



## SRS-W dual fastening clamp

For an application example, see the chapter assembly.

article number	D mm	t mm	G kg
<b>F</b>			
<b>SRS-W 30F</b>	31	4	0,21
<b>SRS-W 60F</b>	61	4	0,31
<b>E</b>			
<b>SRS-W 30E</b>	31	4	0,21
<b>SRS-W 60E</b>	61	4	0,31



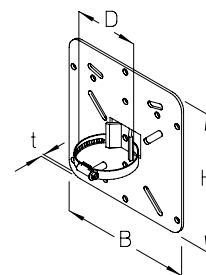
# Line of protection tubes

## SRMP-A assembly plate, 165x175 mm

other dimensions on request

For an application example, see the chapter assembly.

article number	H mm	B mm	D mm	t mm	G kg
<b>F</b>					
<b>SRMP-A 30F</b>	175	165	30	3	0,58
<b>SRMP-A 60F</b>	175	165	60	3	0,60
<b>E</b>					
<b>SRMP-A 30E</b>	175	165	30	3	0,58
<b>SRMP-A 60E</b>	175	165	60	3	0,60

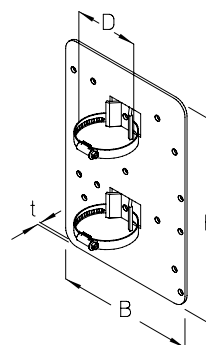


## SRMP-B assembly plate, 175x260 mm

other dimensions on request

For an application example, see the chapter assembly.

article number	H mm	B mm	D mm	t mm	G kg
<b>F</b>					
<b>SRMP-B 30F</b>	260	175	30	3	1,00
<b>SRMP-B 60F</b>	260	175	60	3	1,00
<b>E</b>					
<b>SRMP-B 30E</b>	260	175	30	3	1,00
<b>SRMP-B 60E</b>	260	175	60	3	1,00

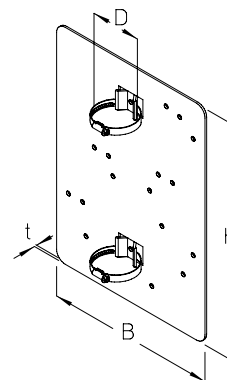


## SRMP-C assembly plate, 270x380 mm

other dimensions on request

For an application example, see the chapter assembly.

article number	H mm	B mm	D mm	t mm	G kg
<b>F</b>					
<b>SRMP-C 60F</b>	380	270	60	3	2,70
<b>E</b>					
<b>SRMP-C 60E</b>	380	270	60	3	2,70

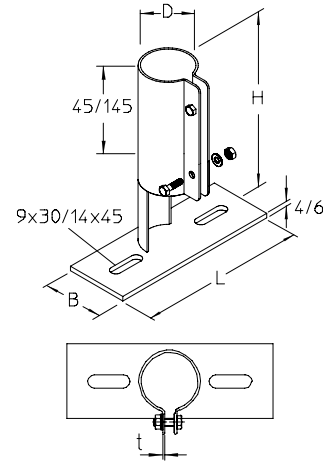


# Line of protection tubes

## SRF floor fastening system

For an application example, see the chapter assembly.

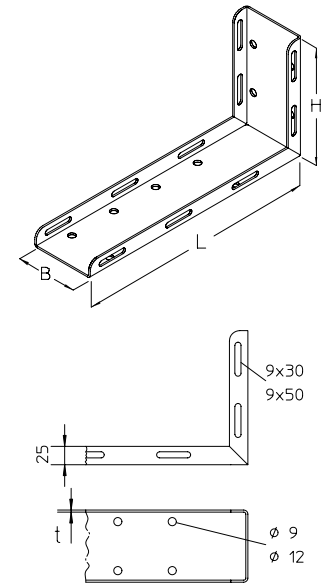
article number	H mm	B mm	D mm	L mm	t mm	G kg
<b>F</b>						
<b>SRF 30F</b>	130	40	31	130	1,5	0,28
<b>SRF 60F</b>	230	80	61	220	2,5	1,75
<b>E</b>						
<b>SRF 30E</b>	130	40	31	130	1,5	0,28
<b>SRF 60E</b>	230	80	61	220	2,5	1,75



## SRFW base bracket

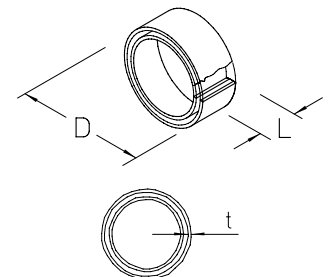
For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
<b>SRFW 30F</b>	100	60	200	2	0,52
<b>SRFW 60F</b>	200	100	400	3	1,95
<b>E</b>					
<b>SRFW 30E</b>	100	60	200	2	0,52
<b>SRFW 60E</b>	200	100	400	3	1,95



## SRK-O final sleeve as edge protective strip

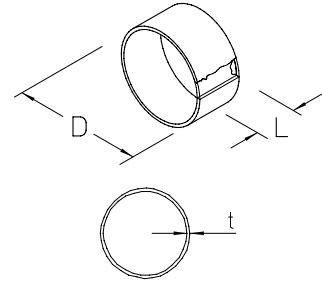
article number	D mm	L mm	t mm	G kg
<b>PVC</b>				
<b>SRK-O 30</b>	30	25	2	0,01
<b>SRK-O 60</b>	60	25	2	0,02



# Line of protection tubes

## SRK-G end cap

article number	D mm	L mm	t mm	G kg
<b>PVC</b>				
<b>SRK-G 30</b>	30	30	2	0,01
<b>SRK-G 60</b>	60	35	2	0,02





# Light channel system

Light channel system

J03-J05

---

# Numeric index

## Light channel system

### A

**AM 8 M5** channel nut [J04](#)

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### K

**KNK** chain [J05](#)

**KNK-NG** chain, emergency link [J05](#)

**KPB** Jointing bracket [J04](#)

**KPD** cover strap [J03](#)

**KPE** end cap [J04](#)

**KPH** holding clip [J05](#)

**KPR 40** support rail for light fittings [J03](#)

**KPV** KPR-coupler [J03](#)

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### S

**SMH** hexagon nut [J05](#)

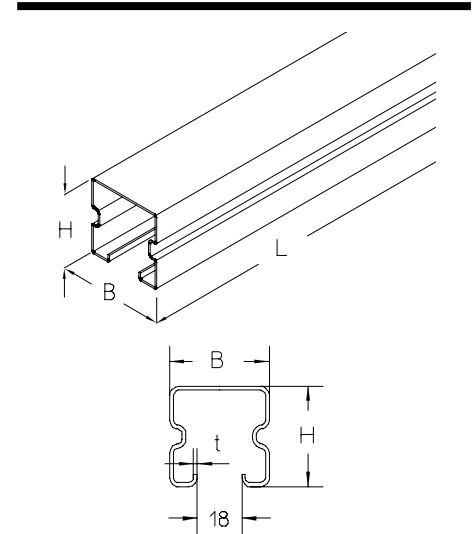


# Light channel system

## KPR 40 support rail for light fittings

For a load diagram, see the chapter planning.  
For an application example, see the chapter assembly.

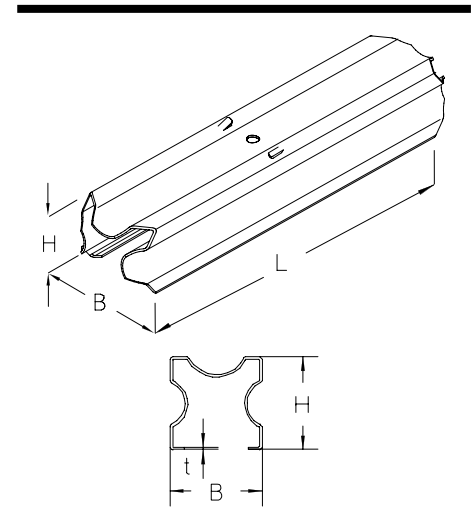
article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KPR 40</b>	40	40	6000	1,5	10,80
<b>KPR 40-3</b>	40	40	3000	1,5	5,40



## KPV KPR-coupler

For an application example, see the chapter assembly.

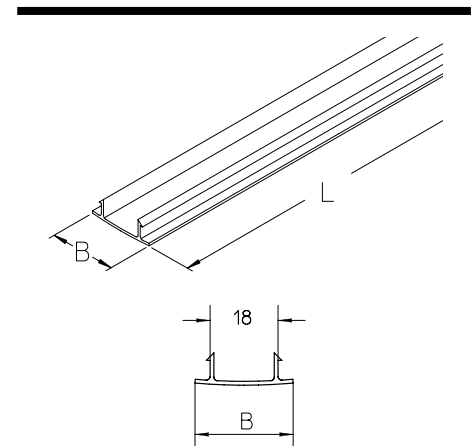
article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>KPV</b>	37	37	300	1	0,31



## KPD cover strap

For an application example, see the chapter assembly.

article number	B mm	L mm	colour	G kg
<b>PVC</b>				
<b>KPD</b>	26	6000	RAL 7011 (iron grey)	0,42
<b>KPD-3</b>	26	3000	RAL 7011 (iron grey)	0,21

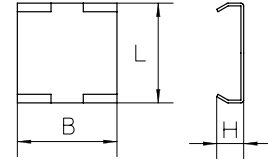
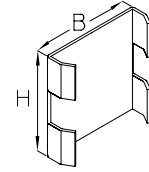


# Light channel system

## KPE end cap

For an application example, see the chapter assembly.

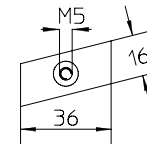
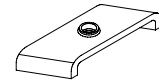
article number	H mm	B mm	L mm	G kg/100
<b>S</b>				
<b>KPE</b>	10	37	37	2,2



## AM 8 M5 channel nut

For an application example, see the chapter assembly.

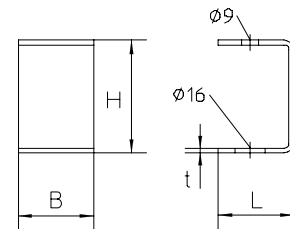
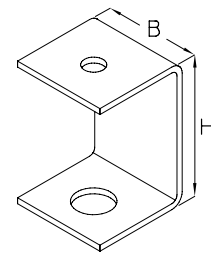
article number	G kg/100
<b>F</b>	
<b>AM 8 M5</b>	1,6



## KPB Jointing bracket

For an application example, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg/100
<b>F</b>					
<b>KPBF</b>	60	40	40	2,5	11



# Light channel system

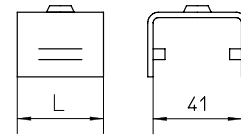
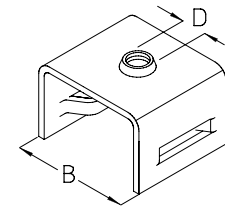
## KPH holding clip

For an application example, see the chapter assembly.

article number	B mm	D mm	L mm	G kg/100
<b>F</b>				
<b>KPH 8F</b>	46	M8	40	7,8
<b>KPH-PG 9</b>	46	R 3/8"	40	6,0

accessories optional:

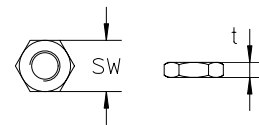
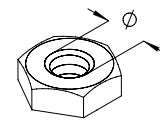
**DAS** wire eyebolt (page G17)  
**SHS** eyebolt (page G17)



## SMH hexagon nut

For an application example, see the chapter assembly.

article number	∅ mm	t mm	SW mm	G kg/100
<b>SMH 8</b>	M8	4,0	13	0,31
<b>SMH-PG 9</b>	R 3/8"	6,0	27	1,93



## KNK chain

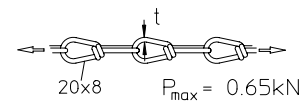
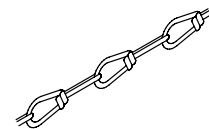
Chain elongation app. 0,1 x length.

For an application example, see the chapter assembly.

article number	t mm	G kg/m
<b>GV</b>		
<b>KNK</b>	3	0,2

accessories optional:

**KNK-NG** chain, emergency link (page G17, J05)



## KNK-NG chain, emergency link

For an application example, see the chapter assembly.

article number	t mm	G kg/100
<b>GV</b>		
<b>KNK-NG</b>	3	0,36





# Ship ladders

Ship ladders

K03-K08

---



K

# Numeric index

## Ship ladders

### S

**SKL** ship ladder [K03](#)

**SLA** ship ladder, branch-T-piece, height=30mm [K05](#)

**SLAA** ship ladder attachment branch-piece [K06](#)

**SLB** ship ladder bend, height=30 mm [K03](#)

**SLF** ship ladder hook [K08](#)

**SLS** ship ladder inside outside riser [K04](#)

**SLV** ship ladder coupler [K06](#)

**SLVV** ship ladder coupler, vertical [K07](#)

**SLW** ship ladder angle [K07](#)

# Ship ladders

## SKL ship ladder, height=30 mm, length=3000 mm

For a load diagram, see the chapter planning.

article number	H mm	B mm	L mm	G kg
<b>B</b>				
SKL 075B	30	75	3000	8,40
SKL 100B	30	100	3000	8,70
SKL 150B	30	150	3000	9,30
SKL 200B	30	200	3000	9,90
SKL 250B	30	250	3000	10,80
SKL 300B	30	300	3000	11,40
SKL 400B	30	400	3000	12,90
SKL 500B	30	500	3000	14,40
<b>M</b>				
SKL 075M	30	75	3000	8,40
SKL 100M	30	100	3000	8,70
SKL 150M	30	150	3000	9,30
SKL 200M	30	200	3000	9,90
SKL 250M	30	250	3000	10,80
SKL 300M	30	300	3000	11,40
SKL 400M	30	400	3000	12,90
SKL 500M	30	500	3000	14,40
<b>F</b>				
SKL 075F	30	75	3000	8,40
SKL 100F	30	100	3000	8,70
SKL 150F	30	150	3000	9,30
SKL 200F	30	200	3000	9,90
SKL 250F	30	250	3000	10,80
SKL 300F	30	300	3000	11,40
SKL 400F	30	400	3000	12,90
SKL 500F	30	500	3000	14,40

accessories optional:

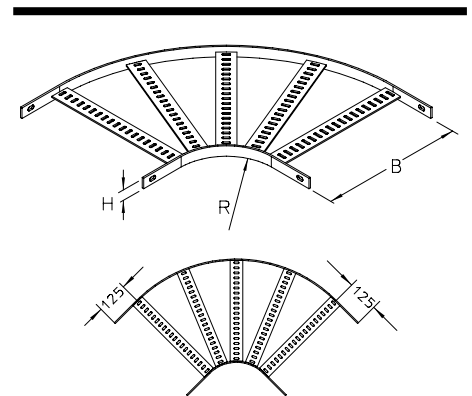
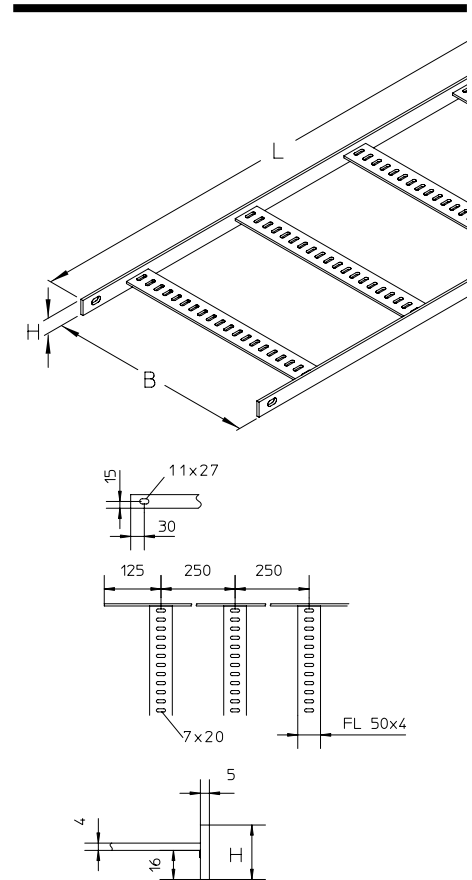
<b>SLW</b>	ship ladder angle	(page K07)
<b>SLV</b>	ship ladder coupler	(page K06)
<b>SLVV</b>	ship ladder coupler, vertical	(page K07)

## SLB ship ladder bend, height=30 mm

article number	H mm	B mm	R mm	G kg
<b>B</b>				
SLB 075B	30	75	100	1,60
SLB 100B	30	100	100	1,70
SLB 150B	30	150	100	2,00
SLB 200B	30	200	100	2,20
SLB 250B	30	250	100	2,80
SLB 300B	30	300	150	3,70
SLB 400B	30	400	150	4,50
SLB 500B	30	500	200	6,10

accessories optional:

<b>SLW</b>	ship ladder angle	(page K07)
<b>SLV</b>	ship ladder coupler	(page K06)
<b>SLVV</b>	ship ladder coupler, vertical	(page K07)



# Ship ladders

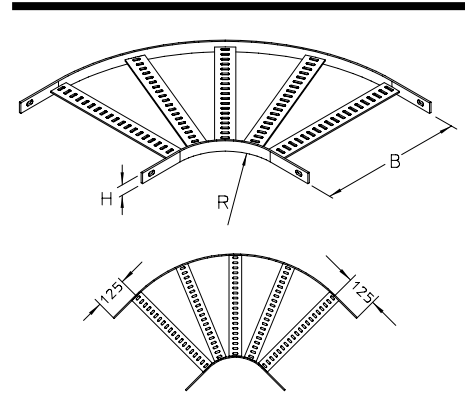
## SLB ship ladder bend, height=30 mm

article number	H mm	B mm	R mm	G kg
<b>M</b>				
SLB 075M	30	75	100	1,60
SLB 100M	30	100	100	1,70
SLB 150M	30	150	100	2,00
SLB 200M	30	200	100	2,20
SLB 250M	30	250	100	2,80
SLB 300M	30	300	150	3,70
SLB 400M	30	400	150	4,50
SLB 500M	30	500	200	6,10

<b>F</b>				
SLB 075F	30	75	100	1,60
SLB 100F	30	100	100	1,70
SLB 150F	30	150	100	2,00
SLB 200F	30	200	100	2,20
SLB 250F	30	250	100	2,80
SLB 300F	30	300	150	3,70
SLB 400F	30	400	150	4,50
SLB 500F	30	500	200	6,10

accessories optional:

- SLW** ship ladder angle (page K07)
- SLV** ship ladder coupler (page K06)
- SLVV** ship ladder coupler, vertical (page K07)



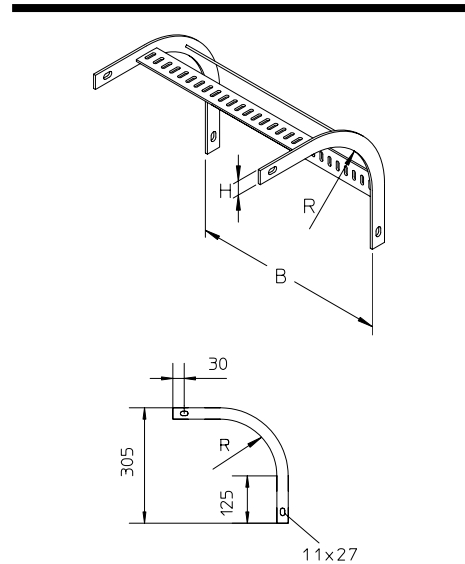
## SLS ship ladder inside outside riser

article number	H mm	B mm	R mm	G kg
<b>B</b>				
SLS 075B	30	75	150	0,90
SLS 100B	30	100	150	1,00
SLS 150B	30	150	150	1,00
SLS 200B	30	200	150	1,30
SLS 250B	30	250	150	1,50
SLS 300B	30	300	150	1,70
SLS 400B	30	400	150	2,80
SLS 500B	30	500	150	3,30

<b>M</b>				
SLS 075M	30	75	150	0,90
SLS 100M	30	100	150	1,00
SLS 150M	30	150	150	1,00
SLS 200M	30	200	150	1,30
SLS 250M	30	250	150	1,50
SLS 300M	30	300	150	1,70
SLS 400M	30	400	150	2,80
SLS 500M	30	500	150	3,30

accessories optional:

- SLW** ship ladder angle (page K07)
- SLV** ship ladder coupler (page K06)
- SLVV** ship ladder coupler, vertical (page K07)





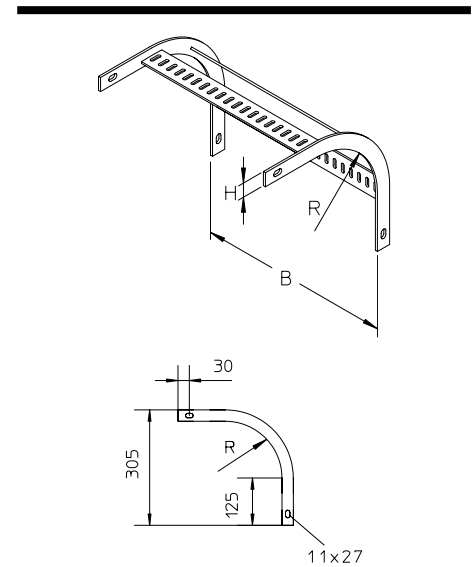
# Ship ladders

## SLS ship ladder inside outside riser

article number	H mm	B mm	R mm	G kg
<b>F</b>				
SLS 075F	30	75	150	0,90
SLS 100F	30	100	150	1,00
SLS 150F	30	150	150	1,00
SLS 200F	30	200	150	1,30
SLS 250F	30	250	150	1,50
SLS 300F	30	300	150	1,70
SLS 400F	30	400	150	2,80
SLS 500F	30	500	150	3,30

accessories optional:

<b>SLW</b>	ship ladder angle	(page K07)
<b>SLV</b>	ship ladder coupler	(page K06)
<b>SLVV</b>	ship ladder coupler, vertical	(page K07)



## SLA ship ladder, branch-T-piece, height=30mm

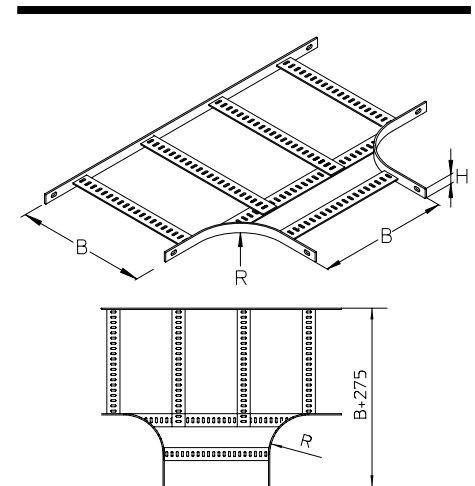
article number	H mm	B mm	R mm	G kg
<b>B</b>				
SLA 075B	30	75	100	2,50
SLA 100B	30	100	100	2,70
SLA 150B	30	150	100	3,20
SLA 200B	30	200	100	3,60
SLA 250B	30	250	100	4,10
SLA 300B	30	300	150	5,40
SLA 400B	30	400	150	6,50
SLA 500B	30	500	200	8,80

<b>M</b>				
SLA 075M	30	75	100	2,50
SLA 100M	30	100	100	2,70
SLA 150M	30	150	100	3,20
SLA 200M	30	200	100	3,60
SLA 250M	30	250	100	4,10
SLA 300M	30	300	150	5,40
SLA 400M	30	400	150	6,50
SLA 500M	30	500	200	8,80

<b>F</b>				
SLA 075F	30	75	100	2,50
SLA 100F	30	100	100	2,70
SLA 150F	30	150	100	3,20
SLA 200F	30	200	100	3,60
SLA 250F	30	250	100	4,10
SLA 300F	30	300	150	5,40
SLA 400F	30	400	150	6,50
SLA 500F	30	500	200	8,80

accessories optional:

<b>SLW</b>	ship ladder angle	(page K07)
<b>SLV</b>	ship ladder coupler	(page K06)
<b>SLVV</b>	ship ladder coupler, vertical	(page K07)



K

# Ship ladders

## SLAA ship ladder attachment branch-piece

article number	H mm	B mm	R mm	G kg
<b>B</b>				
SLAA 075B	30	75	100	1,40
SLAA 100B	30	100	100	1,50
SLAA 150B	30	150	100	1,70
SLAA 200B	30	200	100	1,80
SLAA 250B	30	250	100	2,00
SLAA 300B	30	300	150	2,50
SLAA 400B	30	400	150	2,80
SLAA 500B	30	500	200	3,40
<b>M</b>				
SLAA 075M	30	75	100	1,40
SLAA 100M	30	100	100	1,50
SLAA 150M	30	150	100	1,70
SLAA 200M	30	200	100	1,80
SLAA 250M	30	250	100	2,00
SLAA 300M	30	300	150	2,50
SLAA 400M	30	400	150	2,80
SLAA 500M	30	500	200	3,40
<b>F</b>				
SLAA 075F	30	75	100	1,40
SLAA 100F	30	100	100	1,60
SLAA 150F	30	150	100	1,70
SLAA 200F	30	200	100	1,80
SLAA 250F	30	250	100	2,00
SLAA 300F	30	300	150	2,50
SLAA 400F	30	400	150	2,80
SLAA 500F	30	500	200	3,40

accessories optional:

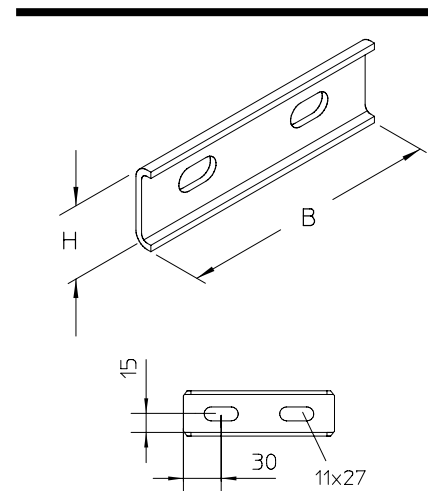
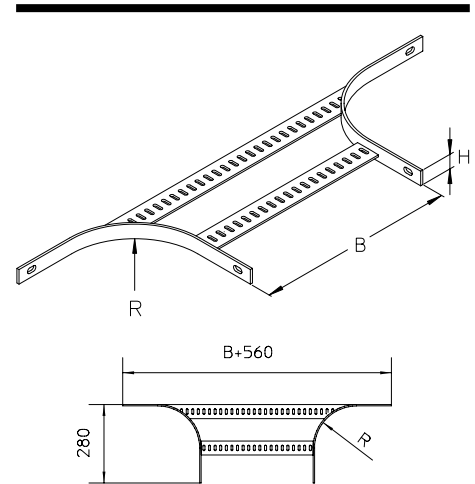
- SLW** ship ladder angle (page K07)
- SLV** ship ladder coupler (page K06)
- SLVV** ship ladder coupler, vertical (page K07)

## SLV ship ladder coupler

article number	H mm	B mm	G kg
<b>B</b>			
SLV B	38	120	0,10
<b>M</b>			
SLV M	38	120	0,10
<b>F</b>			
SLV F	38	0,10	

accessories included:

- 2 x **KLS 10x20F** fixing set (page G34)



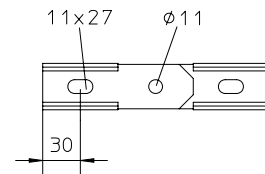
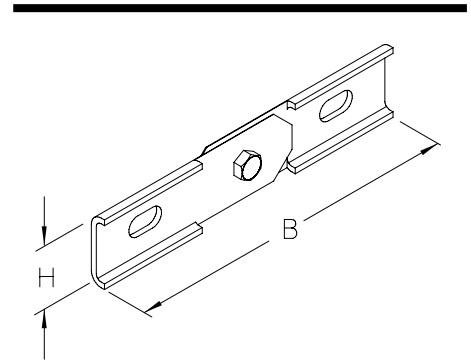
# Ship ladders

## SLVW ship ladder coupler, vertical

article number	H mm	B mm	G kg
<b>B</b>			
<b>SLVW B</b>	38	180	0,20
<b>M</b>			
<b>SLVW M</b>	38	180	0,20
<b>F</b>			
<b>SLVW F</b>	38	180	0,20

accessories included:

2 x <b>KLS 10x20F</b>	fixing set	(page G34)
1 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
1 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

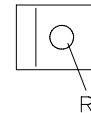
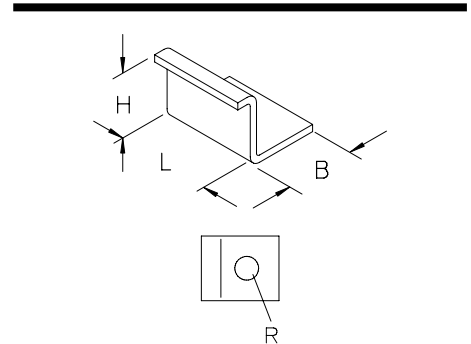


## SLW ship ladder angle

article number	H mm	B mm	L mm	R mm	G kg
<b>B</b>					
<b>SLW 7B</b>	27	31	40	7	0,10
<b>M</b>					
<b>SLW 7M</b>	27	31	40	7	0,10
<b>F</b>					
<b>SLW 7F</b>	27	31	40	7	0,10

accessories included:

1 x <b>SES 6x20E</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>US 6x12E</b>	square washer, DIN 125	(page G40)
1 x <b>SEM 6E</b>	hexagon-nut, DIN 934	(page G41)



article number	H mm	B mm	L mm	R mm	G kg
<b>B</b>					
<b>SLW 10B</b>	27	31	40	11	0,10
<b>M</b>					
<b>SLW 10M</b>	27	31	40	11	0,10
<b>F</b>					
<b>SLW 10F</b>	27	31	40	11	0,10

accessories included:

1 x <b>SES 10x20F</b>	hexagon head bolt, DIN 933	(page G38)
1 x <b>US 10x21F</b>	square washer, DIN 125	(page G39)
1 x <b>SEM 10F</b>	hexagon-nut, DIN 934	(page G41)

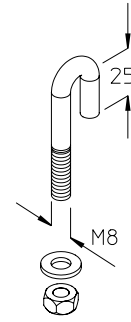
# Ship ladders

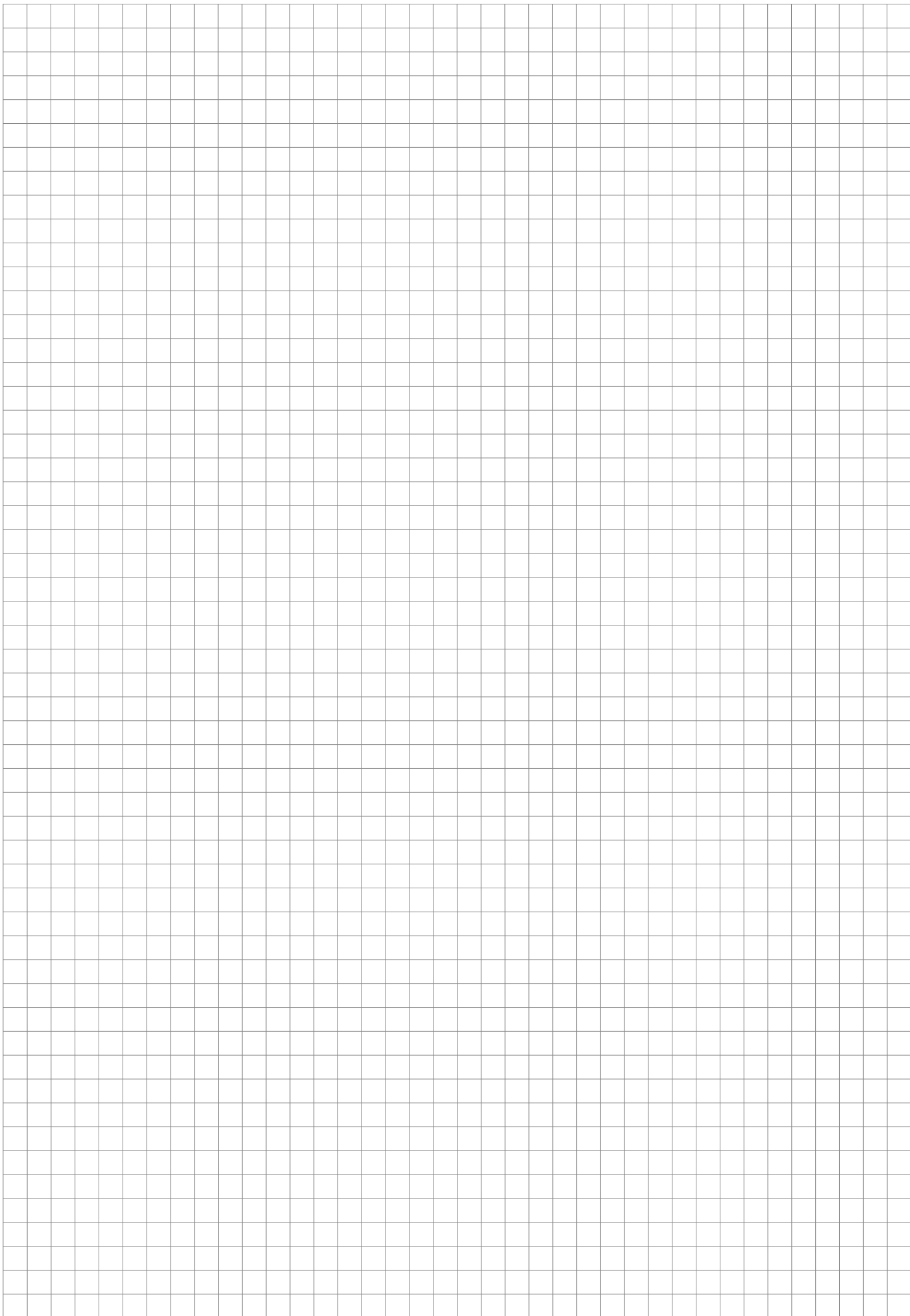
## SLF ship ladder hook

article number	G
	kg
<b>E</b>	
<b>SLF E</b>	0,03

accessories included:

- 1 x **US 8x17E** square washer, DIN 125 (page G40)
- 1 x **SEM 8E** hexagon-nut, DIN 934 (page G41)





K



# Cable channels

Cable channels	L03
Fittings	L04-L05
Accessories	L06-L09
Cover	L10-L13



L

# Numeric index

## Cable channels

### B

**BK** floor duct [L03](#)

**BKA** floor duct branch-piece, height=100 mm [L04](#)

**BKAA** floor duct attachment branch-piece, height=100 mm [L05](#)

**BKAADR** floor duct attachment branch piece cover with turning bolts [L13](#)

**BKAADR-WZB** floor duct attachment branch piece cover with chequered plate [L13](#)

**BKADR** floor duct branch cover with turning bolts [L12](#)

**BKADR-WZB** floor duct branch cover with chequered plate [L12](#)

**BKB** floor duct bend, height=100 mm [L04](#)

**BKB45** floor duct bend, height=100 mm [L04](#)

**BKBDR** floor duct cover with turning bolts [L10](#)

**BKBDR45** floor duct bend cover with turning bolts [L11](#)

**BKBDR45-WZB** floor duct bend cover with chequered plate [L11](#)

**BKBDR-WZB** floor duct cover with chequered plate [L11](#)

**BKDR** floor duct cover with turning bolts [L10](#)

**BKDR-WZB** floor duct cover with chequered plate [L10](#)

**BKDS** floor duct support, height=95 mm [L07](#)

**BKDU** floor duct support, height=100 mm [L06](#)

**BKEB** floor duct end-plate, height=80 mm [L06](#)

**BKH** floor bracket, height=110 mm [L07](#)

**BKK** floor duct cross-piece, height=100 mm [L05](#)

**BKKDR** floor duct crossing cover with turning bolts [L12](#)

**BKKDR-WZB** floor duct crossing cover with chequered plate [L13](#)

**BKOS** floor duct [L03](#)

**BKRT** floor duct barrier strip, height=95 mm [L06](#)

**BKV 100** floor duct coupler, height=95 mm [L06](#)

**BKZ** Z-duct [L07](#)

---

### K

**KHA 41** C-rail, perforated, 41x41 mm [L08](#)

**KHZ** floor duct, height=120 mm [L09](#)



## Cable channels

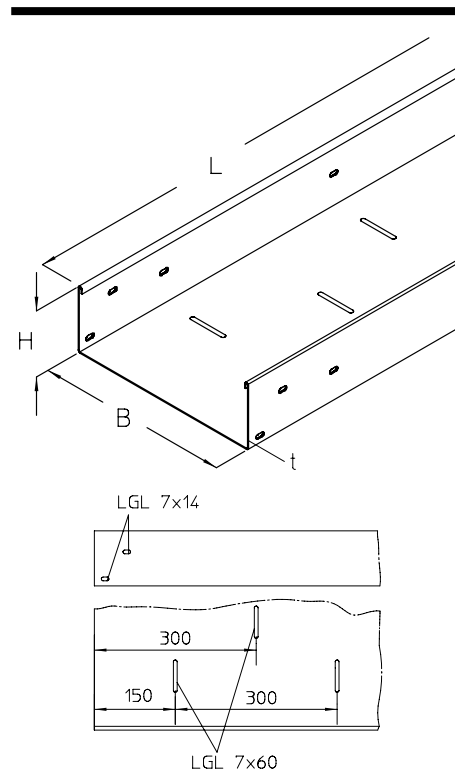
### BK floor duct, perforated, height=100 mm

A separating strip needs to be installed from a width of  $\geq 300$  mm. Two separating strips to be installed from a width of  $\geq 500$  mm.

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>BK 100-10S</b>	102	100	3000	2	15,10
<b>BK 100-20S</b>	102	200	3000	2	20,10
<b>BK 100-30S</b>	102	300	3000	2	25,10
<b>BK 100-40S</b>	102	400	3000	2	30,10
<b>BK 100-50S</b>	102	500	3000	2	34,90
<b>BK 100-60S</b>	102	600	3000	2	39,70

accessories optional:

<b>BKV 100</b>	floor duct coupler, height=95 mm	(page L06)
<b>BKDR</b>	floor duct cover with turning bolts	(page L10)
<b>BKDR-WZB</b>	floor duct cover with chequered plate	(page L10)



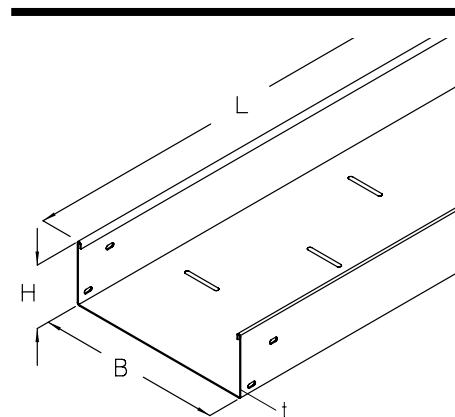
### BKOS floor duct, not perforated, height=100 mm

A separating strip needs to be installed from a width of  $\geq 300$  mm. Two separating strips to be installed from a width of  $\geq 500$  mm.

article number	H mm	B mm	L mm	t mm	G kg
<b>S</b>					
<b>BKOS 100-10S</b>	102	100	3000	2	15,10
<b>BKOS 100-20S</b>	102	200	3000	2	20,10
<b>BKOS 100-30S</b>	102	300	3000	2	25,10
<b>BKOS 100-40S</b>	102	400	3000	2	30,10
<b>BKOS 100-50S</b>	102	500	3000	2	34,90
<b>BKOS 100-60S</b>	102	600	3000	2	39,70

accessories optional:

<b>BKV 100</b>	floor duct coupler, height=95 mm	(page L06)
<b>BKDR</b>	floor duct cover with turning bolts	(page L10)
<b>BKDR-WZB</b>	floor duct cover with chequered plate	(page L10)



# Cable channels

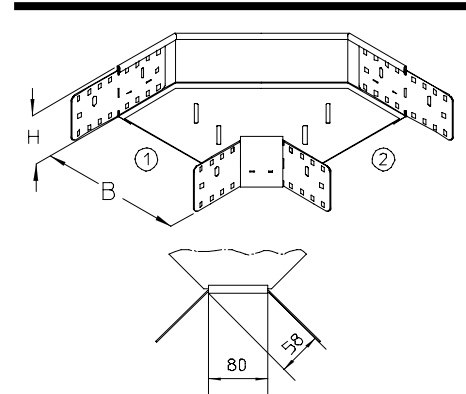
## Fittings

### BKB floor duct bend, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BKB 100-10S</b>	100	100	2,20
<b>BKB 100-20S</b>	100	200	3,00
<b>BKB 100-30S</b>	100	300	4,00
<b>BKB 100-40S</b>	100	400	5,20
<b>BKB 100-50S</b>	100	500	6,60
<b>BKB 100-60S</b>	100	600	8,30

accessories optional:

<b>BKBDR</b>	floor duct cover with turning bolts	(page L10)
<b>BKBDR-WZB</b>	floor duct cover with chequered plate	(page L11)
<b>KLR</b>	fixing set	(page G33)

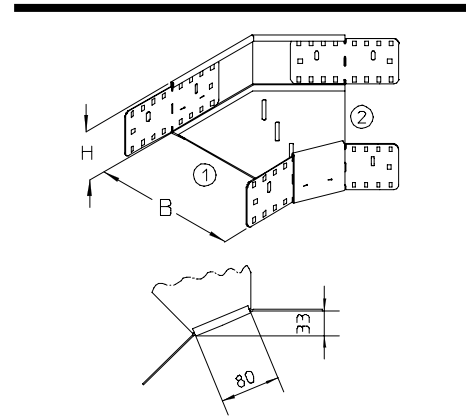


### BKB45 floor duct bend, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BKB45 100-10S</b>	100	100	1,20
<b>BKB45 100-20S</b>	100	200	1,80
<b>BKB45 100-30S</b>	100	300	2,70
<b>BKB45 100-40S</b>	100	400	3,60
<b>BKB45 100-50S</b>	100	500	5,10
<b>BKB45 100-60S</b>	100	600	6,50

accessories optional:

<b>BKBDR45</b>	floor duct bend cover with turning bolts	(page L11)
<b>BKBDR45-WZB</b>	floor duct bend cover with chequered plate	(page L11)
<b>KLR</b>	fixing set	(page G33)

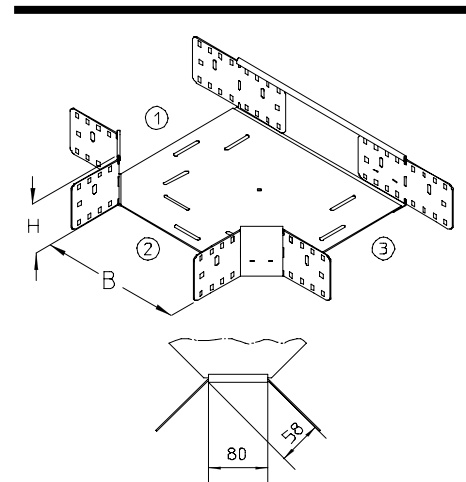


### BAK floor duct branch-piece, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BAK 100-10S</b>	100	100	3,00
<b>BAK 100-20S</b>	100	200	4,30
<b>BAK 100-30S</b>	100	300	5,90
<b>BAK 100-40S</b>	100	400	7,70
<b>BAK 100-50S</b>	100	500	8,70
<b>BAK 100-60S</b>	100	600	12,20

accessories optional:

<b>BKBDR</b>	floor duct cover with turning bolts	(page L10)
<b>BKBDR-WZB</b>	floor duct cover with chequered plate	(page L11)
<b>KLR</b>	fixing set	(page G33)



# Cable channels

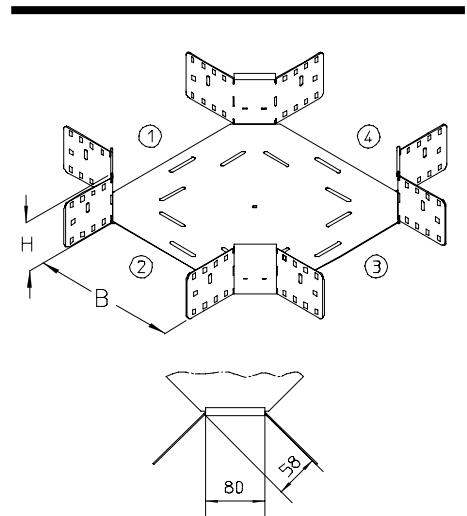
## Fittings

### BKK floor duct cross-piece, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BKK 100-10S</b>	100	100	3,00
<b>BKK 100-20S</b>	100	200	4,50
<b>BKK 100-30S</b>	100	300	6,00
<b>BKK 100-40S</b>	100	400	7,70
<b>BKK 100-50S</b>	100	500	9,70
<b>BKK 100-60S</b>	100	600	12,00

accessories optional:

<b>BKBDR</b>	floor duct cover with turning bolts	(page L10)
<b>BKBDR-WZB</b>	floor duct cover with chequered plate	(page L11)
<b>KLR</b>	fixing set	(page G33)

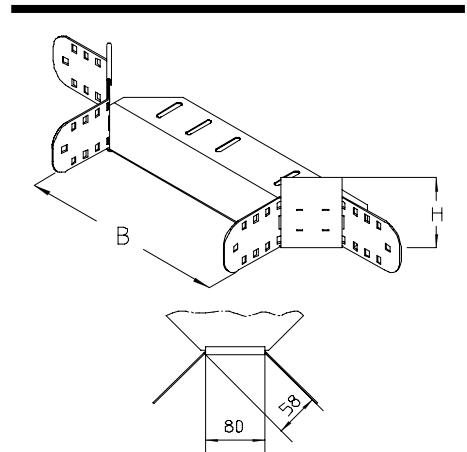


### BKAA floor duct attachment branch-piece, height=100 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BKAA 100-10S</b>	100	100	1,80
<b>BKAA 100-20S</b>	100	200	2,20
<b>BKAA 100-30S</b>	100	300	2,50
<b>BKAA 100-40S</b>	100	400	2,80
<b>BKAA 100-50S</b>	100	500	3,10
<b>BKAA 100-60S</b>	100	600	3,40

accessories optional:

<b>BKAADR</b>	floor duct attachment branch piece cover with turning bolts	(page L13)
<b>BKAADR-WZB</b>	floor duct attachment branch piece cover with chequered plate	(page L13)
<b>KLR</b>	fixing set	(page G33)



# Cable channels

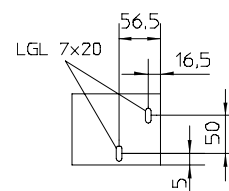
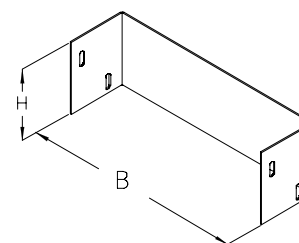
## Accessories

### BKEB floor duct end-plate, height=80 mm

article number	H mm	B mm	G kg
<b>S</b>			
<b>BKEB 100-10S</b>	80	100	0,30
<b>BKEB 100-20S</b>	80	200	0,40
<b>BKEB 100-30S</b>	80	300	0,50
<b>BKEB 100-40S</b>	80	400	0,60
<b>BKEB 100-50S</b>	80	500	0,70
<b>BKEB 100-60S</b>	80	600	1,00

accessories optional:

**KLR** fixing set (page G33)

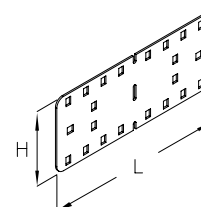


### BKV 100 floor duct coupler, height=95 mm

article number	H mm	L mm	G kg
<b>S</b>			
<b>BKV 100S</b>	95	230	0,34

accessories included:

1 x **RGV 110S** cable tray coupler, height=110 mm (page B38)



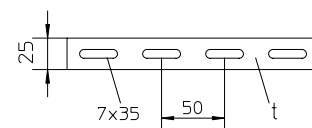
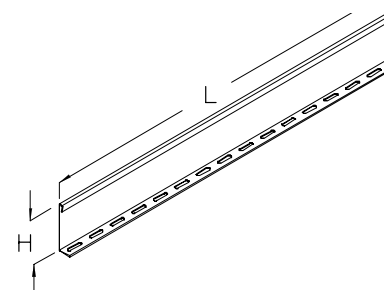
### BKRT floor duct barrier strip, height=95 mm

article number	H mm	L mm	t mm	G kg
<b>S</b>				
<b>BKRT 100S</b>	100	3000	2	3,22

accessories included:

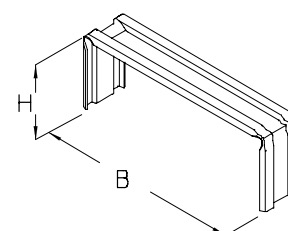
3 x **FRSV 6x12** round-head screw with short square (page G34)

3 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)



### BKDU floor duct support, height=100 mm

article number	H mm	B mm	G kg
<b>F</b>			
<b>BKDU 100-20F</b>	100	200	0,40
<b>BKDU 100-30F</b>	100	300	0,50
<b>BKDU 100-40F</b>	100	400	0,70
<b>BKDU 100-50F</b>	100	500	0,80
<b>BKDU 100-60F</b>	100	600	0,90

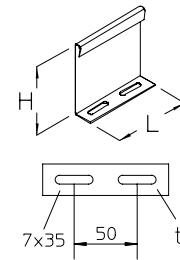


# Cable channels

## Accessories

### BKDS floor duct support, height=95 mm

article number	H mm	L mm	t mm	G kg
<b>S</b>				
<b>BKDS S</b>	100	100	2	0,20

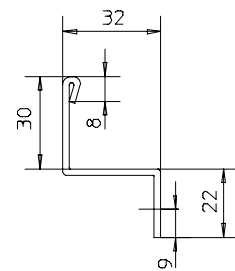
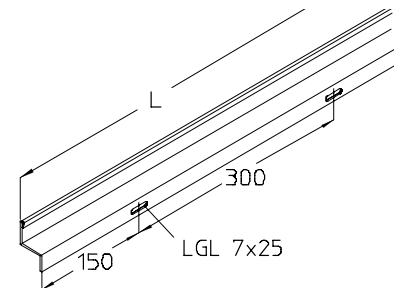


### BKZ Z-duct

article number	B mm	L mm	G kg
<b>S</b>			
<b>BKZ S</b>	32	3000	2,20

accessories included:

- 3 x **FRSV 6x12** round-head screw with short square (page G34)
- 3 x **SEMS 6** hexagon nut, self-locking, DIN 6923 (page G41)

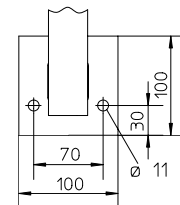
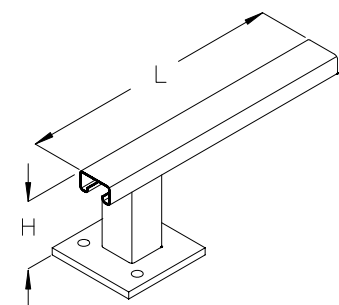


### BKH floor bracket, height=110 mm

article number	H mm	L mm	G kg
<b>F</b>			
<b>BKH 10F</b>	110	100	0,80
<b>BKH 20F</b>	110	200	1,00
<b>BKH 30F</b>	110	300	1,20

accessories optional:

- AM18** channel nut, A7/ A8 (page G44)
- SD** expansion anchor (page G12)



# Cable channels

## Accessories

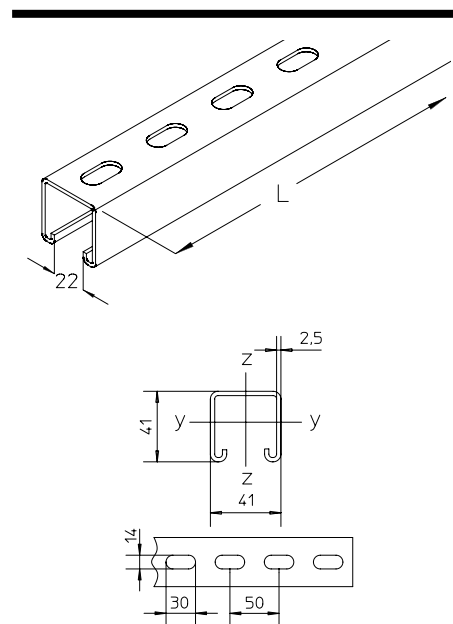
### KHA 41 C-rail, perforated, 41x41 mm

This article is also available made in stainless steel finish, material No. 1.4571 / 1.4404 (V4A).  
 For an application example, see the chapter assembly.  
 For assembly instructions, see the chapter assembly.

article number	H mm	B mm	L mm	t mm	G kg
<b>F</b>					
KHA 41-01F	41	41	100	2,5	0,30
KHA 41-02F	41	41	200	2,5	0,50
KHA 41-03F	41	41	300	2,5	0,80
KHA 41-04F	41	41	400	2,5	1,10
KHA 41-05F	41	41	500	2,5	1,30
KHA 41-06F	41	41	600	2,5	1,60
KHA 41-07F	41	41	700	2,5	1,90
KHA 41-08F	41	41	800	2,5	2,10
KHA 41-09F	41	41	900	2,5	2,40
KHA 41-10F	41	41	1000	2,5	2,60
KHA 41-11F	41	41	1100	2,5	2,90
KHA 41-12F	41	41	1200	2,5	3,20
KHA 41-13F	41	41	1300	2,5	3,40
KHA 41-14F	41	41	1400	2,5	3,70
KHA 41-15F	41	41	1500	2,5	4,00
KHA 41-20F	41	41	2000	2,5	5,30
KHA 41-30F	41	41	3000	2,5	7,90
KHA 41-60F	41	41	6000	2,5	15,90

accessories optional:

<b>AM22</b>	channel nut, A41/ KHA 41/ KHAL 41	(page G43)
<b>AMF22</b>	channel spring nut, A41	(page G43)
<b>RUS 41</b>	stabilization plate, KHA profiles	(page G41)
<b>SKS A</b>	beam clamp set	(page G04)
<b>SA 2</b>	protection end cap	(page F55)
<b>SAI 41</b>	protection end cap	(page F55)



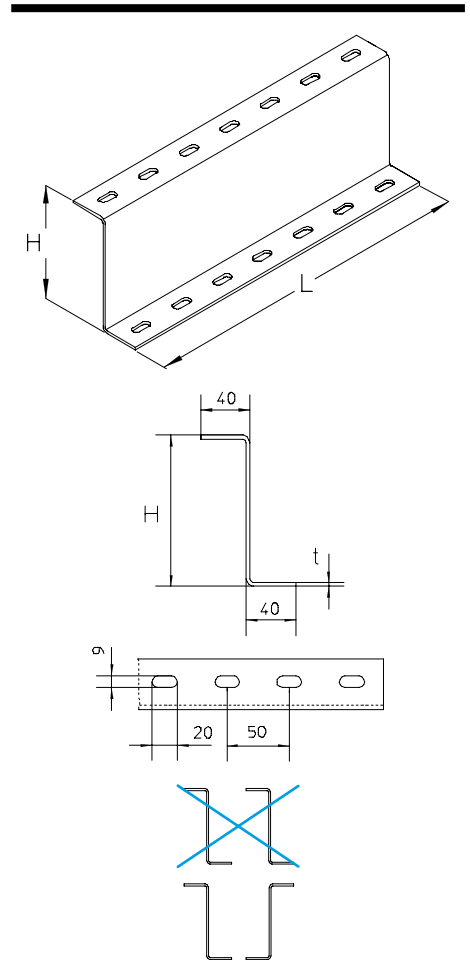
# Cable channels

## Accessories

### KHZ floor duct, height=120 mm

Alternating alignment must be observed while mounting.

article number	H mm	L mm	t mm	G kg
<b>S</b>				
<b>KHZ 120-01S</b>	120	100	3	0,40
<b>KHZ 120-02S</b>	120	200	3	0,90
<b>KHZ 120-03S</b>	120	300	3	1,30
<b>KHZ 120-04S</b>	120	400	3	1,80
<b>KHZ 120-05S</b>	120	500	3	2,20
<b>KHZ 120-06S</b>	120	600	3	2,60
<b>KHZ 120-30S</b>	120	3000	3	12,10



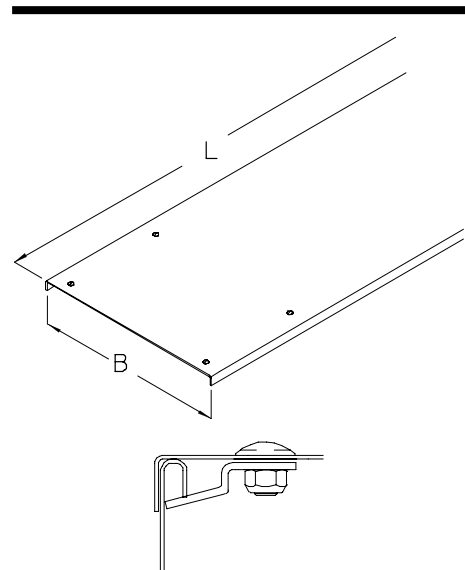
L

# Cable channels

## Cover

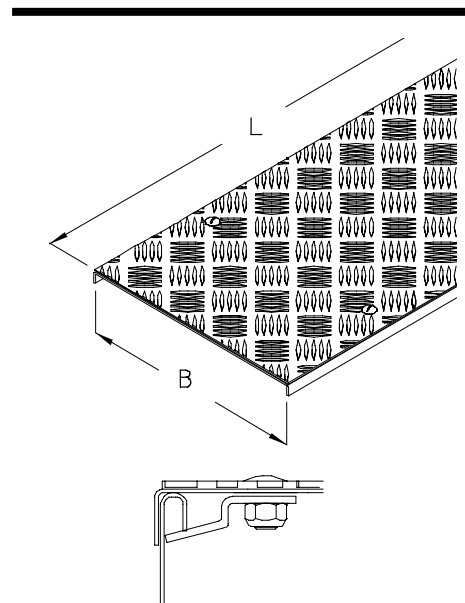
### BKDR floor duct cover with turning bolts

article number	B mm	L mm	G kg
<b>S</b>			
BKDR 10S	100	3000	6,50
BKDR 20S	200	3000	12,00
BKDR 30S	300	3000	18,00
BKDR 40S	400	3000	24,00
BKDR 50S	500	3000	29,00
BKDR 60S	600	3000	33,00



### BKDR-WZB floor duct cover with chequered plate

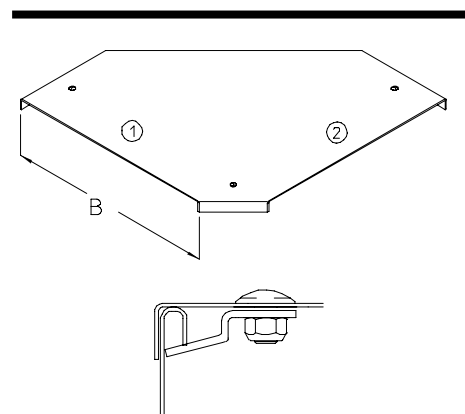
article number	B mm	L mm	G kg
<b>S</b>			
BKDR-WZB 10S	100	3000	8,20
BKDR-WZB 20S	200	3000	15,20
BKDR-WZB 30S	300	3000	22,20
BKDR-WZB 40S	400	3000	29,20
BKDR-WZB 50S	500	3000	40,50
BKDR-WZB 60S	600	3000	46,90



<b>AL</b>			
BKDR-WZB 10AL	100	3000	8,20
BKDR-WZB 20AL	200	3000	15,20
BKDR-WZB 30AL	300	3000	22,20
BKDR-WZB 40AL	400	3000	29,20
BKDR-WZB 50AL	500	3000	40,50
BKDR-WZB 60AL	600	3000	46,90

### BKBDR floor duct cover with turning bolts

article number	B mm	G kg
<b>S</b>		
BKBDR 10S	100	0,50
BKBDR 20S	200	1,10
BKBDR 30S	300	2,00
BKBDR 40S	400	3,20
BKBDR 50S	500	4,60
BKBDR 60S	600	6,30



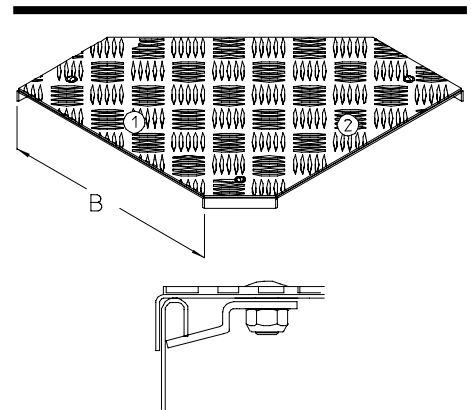


# Cable channels

## Cover

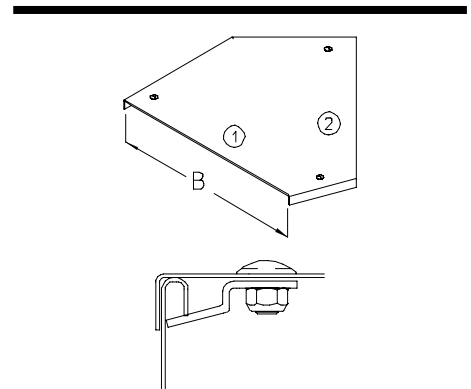
### BKBDR-WZB floor duct cover with chequered plate

article number	B mm	G kg
<b>S</b>		
<b>BKBDR-WZB 10S</b>	100	0,70
<b>BKBDR-WZB 20S</b>	200	1,50
<b>BKBDR-WZB 30S</b>	300	1,60
<b>BKBDR-WZB 40S</b>	400	1,80
<b>BKBDR-WZB 50S</b>	500	6,60
<b>BKBDR-WZB 60S</b>	600	9,10



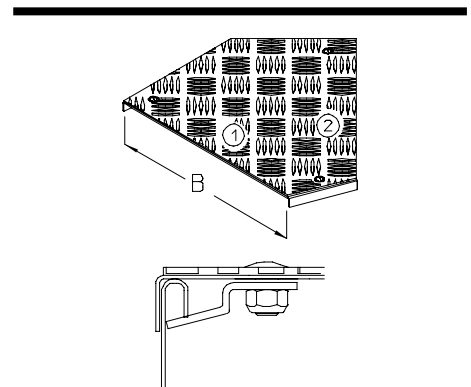
### BKBDR45 floor duct bend cover with turning bolts

article number	B mm	G kg
<b>S</b>		
<b>BKBDR45 10S</b>	100	0,50
<b>BKBDR45 20S</b>	200	0,80
<b>BKBDR45 30S</b>	300	1,20
<b>BKBDR45 40S</b>	400	2,00
<b>BKBDR45 50S</b>	500	2,70
<b>BKBDR45 60S</b>	600	3,60



### BKBDR45-WZB floor duct bend cover with chequered plate

article number	B mm	G kg
<b>S</b>		
<b>BKBDR45-WZB 10S</b>	100	0,60
<b>BKBDR45-WZB 20S</b>	200	1,20
<b>BKBDR45-WZB 30S</b>	300	1,70
<b>BKBDR45-WZB 40S</b>	400	2,90
<b>BKBDR45-WZB 50S</b>	500	3,90
<b>BKBDR45-WZB 60S</b>	600	5,30

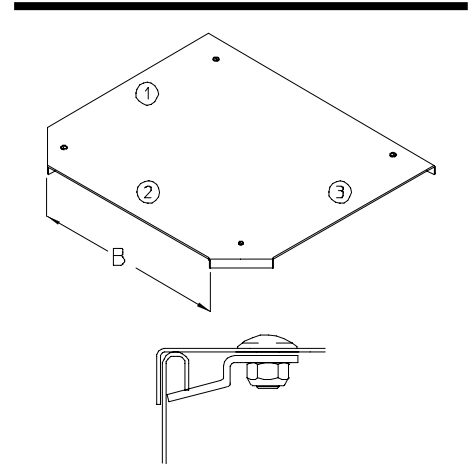


# Cable channels

## Cover

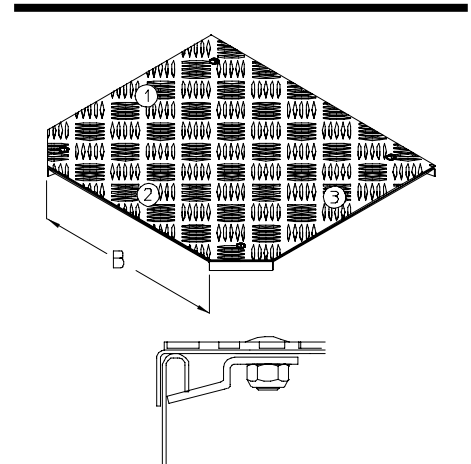
### BKADR floor duct branch cover with turning bolts

article number	B mm	G kg
<b>S</b>		
BKADR 10S	100	0,80
BKADR 20S	200	1,50
BKADR 30S	300	2,60
BKADR 40S	400	4,10
BKADR 50S	500	5,80
BKADR 60S	600	7,90



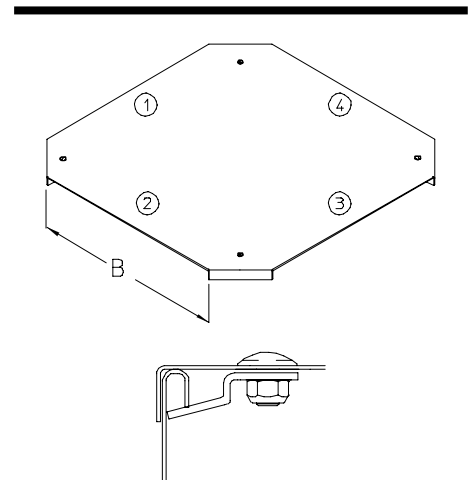
### BKADR-WZB floor duct branch cover with chequered plate

article number	B mm	G kg
<b>S</b>		
BKADR-WZB 10S	100	1,00
BKADR-WZB 20S	200	2,10
BKADR-WZB 30S	300	3,70
BKADR-WZB 40S	400	5,90
BKADR-WZB 50S	500	8,50
BKADR-WZB 60S	600	11,60



### BKKDR floor duct crossing cover with turning bolts

article number	B mm	G kg
<b>S</b>		
BKKDR 10S	100	0,90
BKKDR 20S	200	1,70
BKKDR 30S	300	2,90
BKKDR 40S	400	4,40
BKKDR 50S	500	6,20
BKKDR 60S	600	8,30

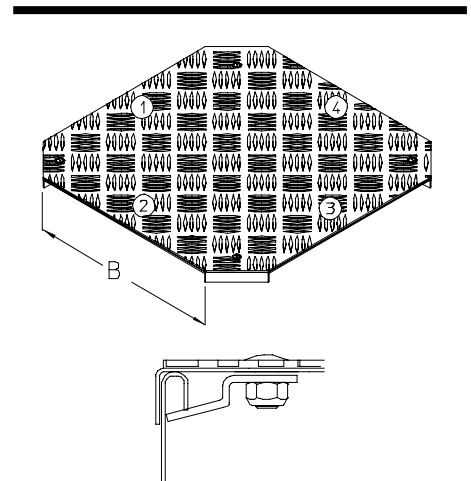


# Cable channels

## Cover

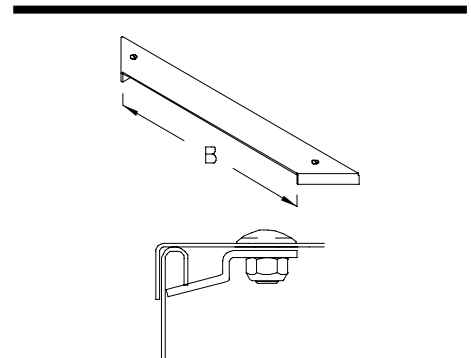
### BKKDR-WZB floor duct crossing cover with chequered plate

article number	B mm	G kg
<b>S</b>		
<b>BKKDR-WZB 10S</b>	100	1,10
<b>BKKDR-WZB 20S</b>	200	2,40
<b>BKKDR-WZB 30S</b>	300	4,10
<b>BKKDR-WZB 40S</b>	400	6,40
<b>BKKDR-WZB 50S</b>	500	9,00
<b>BKKDR-WZB 60S</b>	600	12,10



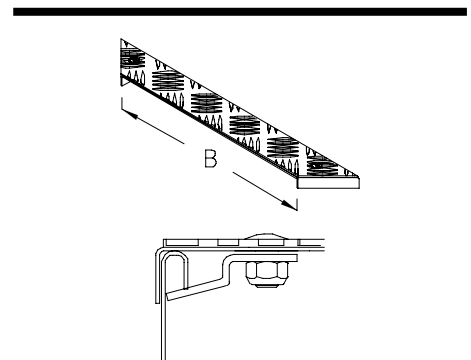
### BKAADR floor duct attachment branch piece cover with turning bolts

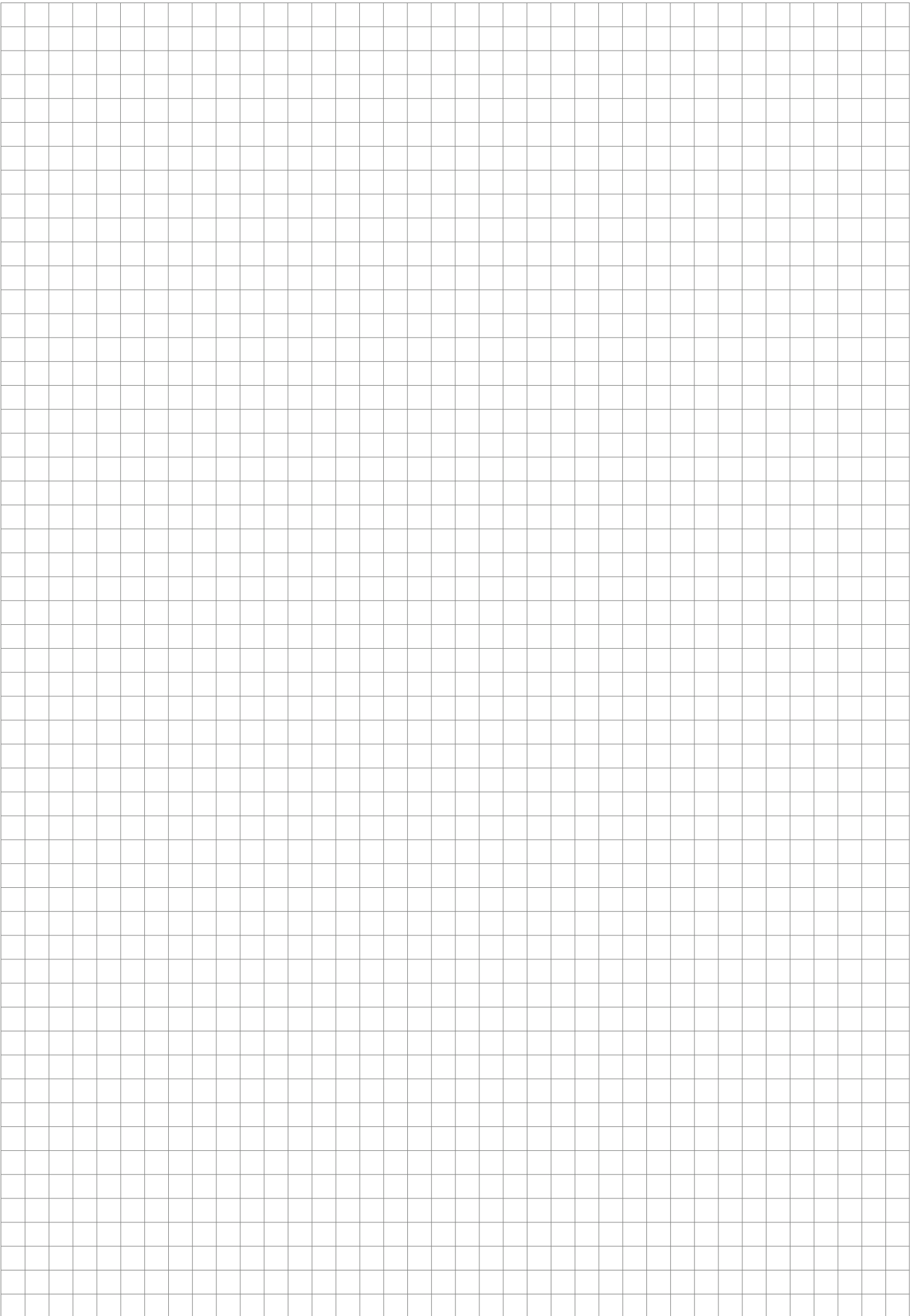
article number	B mm	G kg
<b>S</b>		
<b>BKAADR 10S</b>	100	0,30
<b>BKAADR 20S</b>	200	0,40
<b>BKAADR 30S</b>	300	0,50
<b>BKAADR 40S</b>	400	0,60
<b>BKAADR 50S</b>	500	0,60
<b>BKAADR 60S</b>	600	0,70



### BKAADR-WZB floor duct attachment branch piece cover with chequered plate

article number	B mm	G kg
<b>S</b>		
<b>BKAADR-WZB 10S</b>	100	0,40
<b>BKAADR-WZB 20S</b>	200	0,60
<b>BKAADR-WZB 30S</b>	300	0,70
<b>BKAADR-WZB 40S</b>	400	0,80
<b>BKAADR-WZB 50S</b>	500	0,90
<b>BKAADR-WZB 60S</b>	600	1,10





# Planning

Technical informationen	<a href="#">M02-M13</a>
How to choose the right cable support system?	<a href="#">M14-M17</a>
Wire mesh cable trays	<a href="#">M18</a>
Cable trays	<a href="#">M19-M21</a>
Cable ladders	<a href="#">M22-M23</a>
Wide-span systems	<a href="#">M24-M25</a>
Brackets	<a href="#">M26-M30</a>
Ceiling fixed suspensions	<a href="#">M31</a>
Brackets – KSL system	<a href="#">M32</a>
Brackets/-support KHU system	<a href="#">M33-M35</a>
Brackets/-support KHI system	<a href="#">M36-M37</a>
Brackets/-support KHA system	<a href="#">M38</a>
Profile rails	<a href="#">M39-M42</a>
Single-span girder with centric single load	<a href="#">M44</a>



- The technical information is provided to
- inform you about protective measures against corrosion
  - help you finding the suitable products for your application
  - inform you about available, custom-made products.

In order to make the use of this catalogue easier for you we use tokens and symbols. You find the explanations on the inner pocket of the back side page. If you should have any technical questions or requests about available non-standard products we are glad to help you from our headquarters in Berlin or our branch offices at any time.

Subject to technical modifications.

### Corrosion prevention

Prior to choosing materials for the passing of cables it is recommended to take a look at the corrosive environmental conditions at the construction site and to determine the corrosion prevention accordingly.

For installations in regular environment, zinc coatings have proven to be protective for steel against corrosion. However, the protective zinc coat is being reduced by various climatic influences throughout the years. The following table shows the loss of coating per year:

#### Environmental influence and corrosion risk

Corrosion-category	Loss of thickness $\mu\text{m}/\text{year}$	Typical environment	
		outdoors	indoors
C1 inconsiderable	$\geq 0.1$	-	Heated buildings like offices, stores, schools, hotels
C2 slight	$> 0.1$ until 0.7	Little pollution, like rural areas	Not heated buildings with formation of condensate like store houses
C3 moderate	$> 0.7$ until 2.1	City and industrial environments with moderate pollution	Production plants with high humidity, like laundry, brewery and dairy
C4 strong	$> 2.1$ until 4.2	Industrial areas and coastlines with moderate salt impact	Chemical plants, swimming pools
C5-I very strong (industrial)	$> 4.2$ until 8.2	Industrial environment with high humidity and aggressive atmosphere	Buildings or areas with almost permanent condensation and pollution
C5-M very strong (ocean)	$> 4.2$ until 8.2	Coastlines and offshore areas with high salt impact	Buildings or areas with almost permanent condensation and pollution

(Source: EN ISO 12944-2)

The loss of thickness per year multiplied with the expected life span of the construction determines the necessary thickness of zinc coating. There are mainly three zinc coatings that differ in thickness of coating, adhesive strength and appearance.

### Galvanic zinc (EN ISO 4042)

The small parts are zinced by means of electrolysis bath in which the zinc ions apply very evenly to the metal. The zinc coat is app.  $5 \mu\text{m}$  thick, light glossy, and has an additional protection by succeeding bi chromium conditioning against abrasion.

Nuts and bolts (without further marking) in the catalogue are galvanic zinc coated **GV**. They are used for connecting Sendzimir zinc coated construction elements.

### Hot galvanized according to the Sendzimir procedure (EN 10346)

The steel strapping (thickness up to 2 mm) is coated in the steel-mill with zinc (flow path procedure). The result is an evenly spread and highly adhesive zinc coat with an average thickness of  $19 \mu\text{m}$ .

Damage to the zinc coat caused by cutting, punching or drilling does not result in progressing corrosion because the neighbouring zinc is dissolving under the impact of (air-) humidity and builds a protective, brown coating layer of zinc hydroxide over the blank metal. The „migration“ of zinc ions protects free areas up until app. 2 mm width. These articles are marked with the symbol **S**.

### Hot dip galvanized (EN ISO 1461)

The parts are hot dip galvanized after processing in liquid zinc (app. 450 C). Chemical reactions lead to various zinc-iron alloys, which are especially firmly connected to the steel core. These alloys are usually coated with a „pure zinc layer“. Depending on the speed of the reaction, steel composition, time of dipping, cooling process etc., a „growing through“ to the surface of the zinc-iron alloy is possible as well.

Therefore the appearance of the surface varies from dull dark grey to light glossy. This is no indication of thickness of zinc coating or quality of corrosion prevention. Humid environment can also cause a forming of zinc-hydroxide-carbonate (so called white rust). This does not influence the efficiency of the corrosion prevention. Cutting edges need to be protected with cold zinc paint (see catalogue chapter A).

According to EN ISO 1461 the average local thickness of the coating is at least

- 45 µm for material thicknesses up to 1.5 mm
- 55 µm for material thicknesses from 1.5 up to 3 mm
- 70 µm for material thicknesses from 3 up to 6 mm

The EN ISO 1461 complies basically with  
BS EN ISO 1461 in Great Britain  
EN ISO 1461 in France  
NEN EN 1461 in USA

All types of cable trays and medium- heavy/heavy support systems are deliverable conditional of manufacturing in hot dip galvanized. This program is marked with the symbol **F**.

### Stainless steel

Considering the aspects of high corrosion resistance, easily cleanable surface, ability of recycling, and fire resistance, stainless steel becomes increasingly the material of first choice. Especially for the chemical, paper, textile and food industry, in sewages, refineries, car tunnels and in off-shore areas it is being commonly used.

Regarding the long lasting life cycle of such constructions, stainless steel is often times the economically most suitable solution in spite of the higher initial investment. In case of insufficient corrosion resistance the investments are accelerated by business interruption, rearrangement of cable loads, exchange of structural components.

Compared to various plastic materials stainless steel features through high firmness, resistance against fire and heat, as well as the emission free manner in case of fire and mechanical processing.

The commonly used material No.: 1.4301 is marked with the short description X5CrNi 18-10 according to EN 10088-3 and has been approved by the German Institute for Construction Engineering in Berlin under the general admittance Z-30.3-6 for construction processes.

Assignment to recent and outdated norms:

EN 10088-3	1.4301 X5CrNi 18-10
AISI	304
UNS	S 30400
BS	304 S31
AFNOR	Z7CN 18-09

PUK offers a complete high-grade steel program made of: bracket supports, brackets, cable trays, ladders, vertical ladders, profile rails and cable clamps.

Nuts and bolts comply to steel-group A2 (according to ISO 3506). This is indicated with the symbol **E**.


# Corrosion prevention

## Technical information

The stainless steel program is available on request in material No. 1.4404 with the short appellation X2CrNiMo 17-12-2 (according to EN 10088-2 and -3) and has been also certified by the German Institute for Construction Engineering in Berlin. Nuts and bolts comply to steel-group A4 (according to ISO 3506).

Assignment to recent and outdated norms:

EN 10088-3	1.4404 X2CrNiMo 17-12-2
AISI	316 L
UNS	S 31603
BS	316 S 11
AFNOR	Z3CND17-11-02
DIN 17440	1.4404

Alternatively available in 1.4571. This steel type is marked with .

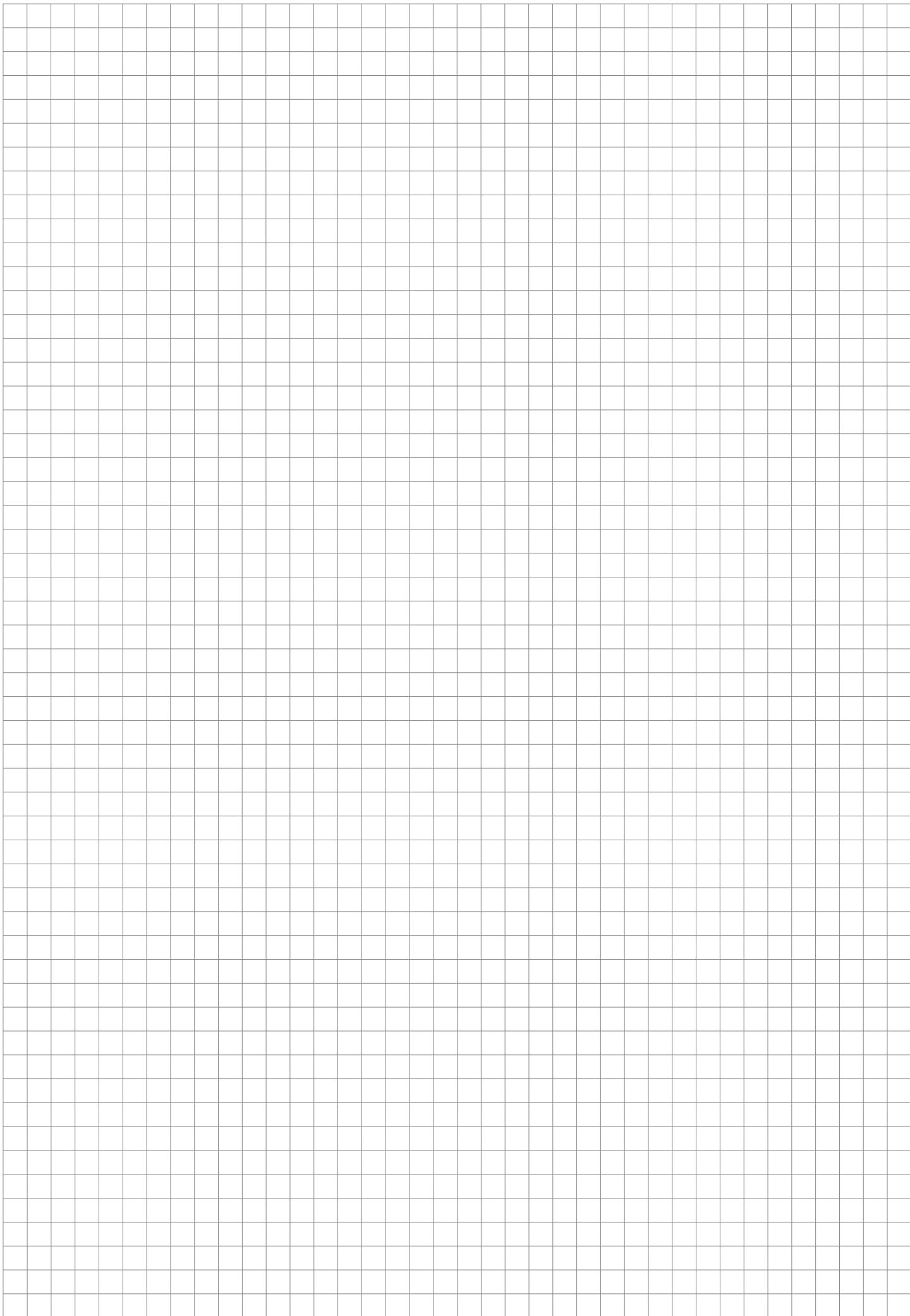
Other materials of the same corrosion category available on request.

For special applications (light- and cable support constructions in car tunnels according to ZTV-ING) the high alloyed material No. 1.4529 is available.

### Plastic Coating

For the use in zinc aggressive environments (pH index < 6 or > 12.5) or for indication through colours, zinc-coated construction parts can be coated with plastic on request (for example with epoxy or polyester).





M

### Cable trays

The choice is made based on:

1. the number or volume of cables to be passed in a cable tray (load carrying capacity of the tray)
2. the distance between the support points of the tray (type of the tray)
3. the distance between the support points of the tray (load carrying capacity of the tray)

#### Re 1. Cable capacity/usable diameter

If the cable volume (type of cables, size, number) is not known, table 1 can help with the estimation: For cables of any size the volume needed is multiplied with the number of cables in order to determine the total sum. The result is the minimum cross section area of the cable tray needed, which may have to be extended by a standby factor). The regulations of the VDE 0100 regarding the load of cable trays must be observed in all cases.

**Table 1: Space requirements for cables type NYY**

Cable NYY	Diameter (mm)	Space per cable (app.)	Number of cables		
4 x 1.5	12.5	1.5 cm <sup>2</sup>	x	=	
4 x 2.5	14.0	1.8 cm <sup>2</sup>	x	=	
4 x 6	16.5	3.0 cm <sup>2</sup>	x	=	
4 x 16	22.0	5.0 cm <sup>2</sup>	x	=	
4 x 35	31.0	12.0 cm <sup>2</sup>	x	=	
4 x 70	41.0	16.0 cm <sup>2</sup>	x	=	
				$A \geq \sum$	cm <sup>2</sup>

(Source: EN ISO 12944-2)

The usable diameter area (A) of each cable tray is specified in the catalogue. If needed, several cable trays must be installed in parallel.

#### Re 2. Type of cable tray/weight of cable

If the total weight of the cables is unknown, table 2 can help with the estimation: For any cable size, the cable weight is multiplied by the number of cables to determine the total sum. The result is the estimated cable load (Q).



All specifications for carrying capacity listed in this catalogue relate to the respective product. The carrying capacity of the installed system depends on the actual configuration and specifically on the operational discharge of load into the structure.

**Table 2: Weight of cables type NYY**

Cabel NYY	Weight of cable (app.)	Number of cables		
4 x 1.5	2.3 N/m	x	=	
4 x 2.5	3.0 N/m	x	=	
4 x 6.0	5.2 N/m	x	=	
4 x 16	11.0 N/m	x	=	
4 x 35	22.0 N/m	x	=	
4 x 70	41.0 N/m	x	=	
			$Q = \sum$	N/m

With regard to security, the highest possible cable load is pivotal. It is calculated by multiplying the usable diameter by the specific cable weight\*. The result ( $Q_{Lk}$ ) for each cable tray is listed in this catalogue.

* type of cable tray	Cable	specific cable weight
cable ladder	performance cable ( $Q_{Lk}$ )	2.8 N/m pro cm <sup>2</sup>
cable tray	control cable ( $Q_{Sk}$ )	1.5 N/m pro cm <sup>2</sup>
wire-mesh cable tray		

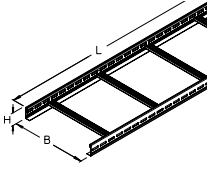
#### Re 3. Distance between supports (StA)

The recommended distance between supports is 1.5 meters. Nevertheless, the actual possible distance between supports can be considerably higher (up to 10 m), depending on available points of fastening (pillars, supporting structures).

The capacity diagrams of the cable trays list the maximal load capacity ( $Q_{max}$ ) a cable tray can carry securely with the given support distance.

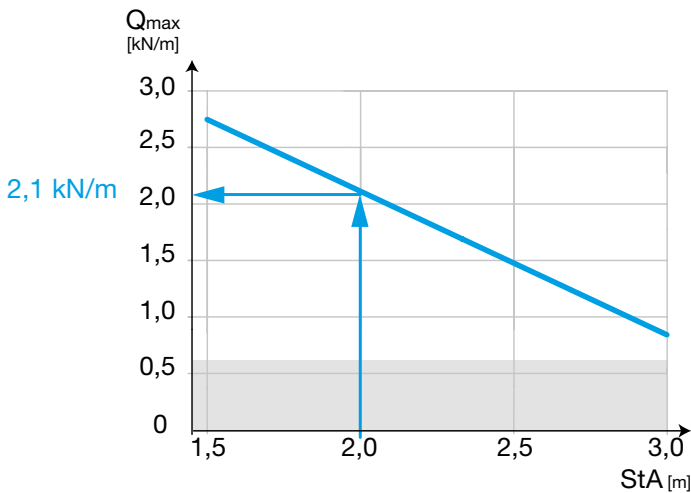
Please observe the following calculation examples!

**How to determine the additional load based on the example LGG 60-40 with a support distance StA of 2,0 m**



**LGG 60** Cable ladder, height = 60 mm

Article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F   E</b>						
LGG 60-20	60	200	6000	81	0.23	2.64
LGG 60-30	60	300	6000	122	0.34	2.87
LGG 60-40	60	400	6000	162	0.45	3.1
LGG 60-50	60	500	6000	203	0.57	3.33
LGG 60-60	60	600	6000	243	0.68	3.56



The difference between the maximum load capacity and the possible cable load equals the highest permissible additional load:

$$Q_{\max} = 2.10 \text{ kN/m}$$

$$Q_{LK} = -0.45 \text{ kN/m}$$

$$\text{add. load} = 1.65 \text{ kN/m}$$

The cable tray load diagrams furthermore provide the maximum permissible support distance figures when the load is known.

**How to determine the maximum support distance StA based on the example LGG 60-60:**

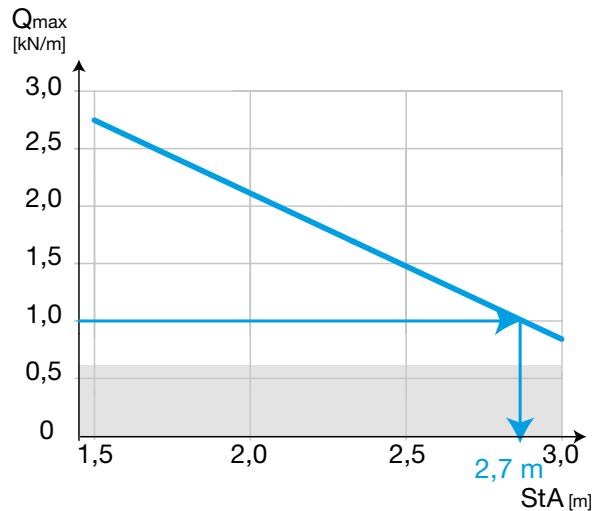
**LGG 60** Cable ladder, height = 60 mm

Article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F   E</b>						
LGG 60-20	60	200	6000	81	0.23	2.64
LGG 60-30	60	300	6000	122	0.34	2.87
LGG 60-40	60	400	6000	162	0.45	3.10
LGG 60-50	60	500	6000	203	0.57	3.33
LGG 60-60	60	600	6000	243	0.68	3.56

$$\text{Cable load} = 0.68 \text{ kN/m}$$

$$\text{add. load} = 0.40 \text{ kN/m}$$

$$Q_{\max} = 1.08 \text{ kN/m}$$



Maximum distance between supports is 2.7 meters.

The load capacity diagrams allow for a security reserve of at least 70% until possible failure (according to DIN EN 61537). Nevertheless cable trays may not be used for walking! If the maximum load capacity ( $Q_{\max}$ ) or the maximum distance between supports of the selected cable tray is insufficient, types with a higher load capacity must be considered. If these do not meet the requirements either, a cable tray type with a higher load capacity must be chosen:

light ⇒ heavy:

Wire-mesh cable tray ⇒ cable tray ⇒ cable ladder ⇒ wide-span cable tray



### Wide-span cable trays

are suitable for wide distances between supports. The load carrying capacity of such “cable bridges” primarily depends on the firmness and thus on the height of the side profiles. However, an increased side height also means an increased volume capacity and thus a higher maximum cable load.

This generally leads to the risk of unplanned overloads/overstress; therefore the wide-span cable trays offer the following solutions to said risk:

- an elevated cable tray bottom
- electrically welded connection of side rail and rung
- almost symmetric torsion-free side rail profiles
- at least 70% of security reserve in the load carrying capacity specifications\* (see explanations EN 61537)

This information applies to all wide-span cable trays if side rail supports (WPHS) are mounted at the support point (bracket).



Cable trays may not be used for walking or as ladders. Wide-span cable trays may have a higher volume capacity than load carrying capacity depending on the distance between supports. Specifications on load carrying capacity based on the distance between supports need to be complied with.

### Supporting structures

As a rule, supporting structures for the trace route contain on ceilings of steel bracket and ceiling bracket support (stem) and on walls of wall bracket or bracket support and stem bracket.

In order to select construction pieces of sufficient weight load ability, firstly the load of each cable tray at the support point must be determined:

Bracket load  $P = (\text{cable load } Q + \text{weight of cable tray } w + \text{additional load}) \times \text{distance between supports } StA$

$$P = (Q + w) \times StA$$

### 1. Bracket (extension)

The load carrying capacity of the bracket ( $P_{max}$ ) must be higher than the above determined bracket load ( $P$ ).

Please note that the load carrying capacity of the cable tray depends on the width of the selected cable tray ( $B_2$ ). The load carrying capacity tables always presume the respective size of cable tray/bracket ( $L \approx B_1 \approx B_2$ ).

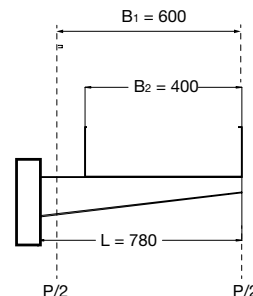
However, if the bracket is considerably longer and the cable tray is laid flush with the bracket tip, the following is valid by approximation: For example Konsole KWS 070 and cable ladder LGG 60-40:

#### KWS Wall bracket, heavy

Article number	B mm	L mm
<b>F</b>		
<b>KWS 020</b>	200	280
<b>KWS 030</b>	300	380
<b>KWS 040</b>	400	480
<b>KWS 050</b>	500	580
<b>KWS 060</b>	600	680
<b>KWS 070</b>	600	780

#### LGG 60 Cable ladder

Article number	H mm	B mm
<b>S   F   E</b>		
<b>LGG 60-20</b>	60	200
<b>LGG 60-30</b>	60	300
<b>LGG 60-40</b>	60	400
<b>LGG 60-50</b>	60	500
<b>LGG 60-60</b>	60	600



applies as follows:

$$P_{zul} \approx P_{max} \left( \frac{L - \frac{B_1}{2}}{L - \frac{B_2}{2}} \right)$$

L = Length of the bracket

B<sub>1</sub> = verified width of the cable tray

(at  $L \leq 580$  mm  $B_1 \approx L$ ;

at  $L > 580$  mm  $B_1 = 600$  mm)

B<sub>2</sub> = selected width of the cable tray

The load carrying capacity specifications correspond to the values verified and certified according to EN 61537.

### 2. Ceiling bracket support (stem)

Ceiling bracket supports are stressed mainly by bending forces in case of one sided mounting of cable trays. Each individual bracket causes a so-called bending moment ( $M_i$ ) in the stem which is determined by the bracket load ( $P_i$ ) and overhang length ( $l_i$ ) – ( $M = P \times l$ ). The overhang length depends on the bracket length ( $L$ ) and on the width of cable tray ( $B$ ).

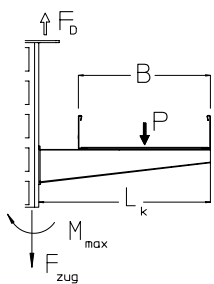
The sum of the individual bending moments ( $M_i$ ) must not exceed the permissible moment ( $M_{max}$ ). The  $M_{max}$  for every stem is specified in the catalogue.

If cable trays are mounted to both stem sides, the above said must apply to each of the two sides, since a one-sided equipment with cables (during the laying of cables) can usually not be excluded.

In order to simplify the choice of the suitable stem, the maximum bracket load ( $P_{max}$ ) is specified for every cable tray width ( $B$ ) with the corresponding bracket length ( $L_k$ ).

If only one cable tray is to be fastened to the stem on one side (or only cable trays of equal width), the table determines directly whether  $P \leq P_{max}$  (resp.  $\sum P_i \leq P_{max}$ ) applies.

#### Example: KDI



**KDI** Bracket support, heavy, profile

B mm	$L_k$ mm	$P_{max L > 1000}$ kN	$P_{max L < 1000}$ kN	$F_d/P$
100	120	20.0	14.5	1.3
200	220	13.8	10.0	1.6
300	320	10.5	7.6	1.9
400	420	8.5	6.2	2.3
500	520	7.1	5.2	2.6
600	620	6.1	4.4	3.0

$$L \leq 1000: M_{max} = 1600 \text{ Nm}$$

$$L > 1000: M_{max} = 2200 \text{ Nm} \quad F_{zug} = 20 \text{ kN}$$

#### Example: LGG 60-40

$$B = 400, \text{ stem length} < 1 \text{ m}$$

$$P_{max} = 6,2 \text{ kN}$$

If cable trays of different widths require a one-sided mounting to the stem, the share of the maximum load must be calculated for each individual cable tray width:  $P_B/P_{B_{max}}$ .

The sum of all these shares for the selected stem must be  $\leq 1.0$ :

$$\sum \frac{P_B}{P_{B_{max}}} < 1$$

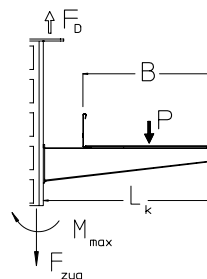
Example: Two cable ladders, type LGG 60, have to be mounted single-sided to brackets on a ceiling bracket support.

The distance between the supports (StA) is 1.5 meters.

#### LGG 60 Cable ladder, height = 60 mm

Article number	H mm	B mm	L mm	A cm <sup>2</sup>	$Q_{sk}$ kN/m	G kg/m
<b>S   F   E</b>						
LGG 60-20	60	200	6000	81	0.23	2.64
LGG 60-30	60	300	6000	122	0.34	2.87
LGG 60-40	60	400	6000	162	0.45	3.10
LGG 60-50	60	500	6000	203	0.57	3.33
LGG 60-60	60	600	6000	243	0.68	3.56

#### KDU 60 Bracket support, heavy



B mm	$L_k$ mm	$P_{max L > 1000}$ kN	$P_{max L < 1000}$ kN	$F_d/P$
100	120	19.3	12.5	1.2
200	220	12.9	8.3	1.5
300	320	9.7	6.2	1.9
400	420	7.7	5.0	2.2
500	520	6.4	4.2	2.6
600	620	5.5	3.6	2.9

# Choice of products

## Technical information

cable ladder width	B <sub>1</sub> = 400 mm	B <sub>2</sub> = 600 mm
bracket length	L <sub>1</sub> = 420 mm	L <sub>2</sub> = 620 mm
cable load (based on catalogue):	Q <sub>LK</sub> = 450 N/m	Q <sub>2</sub> = 680 N/m
plus weight of cable ladder:	31 N/m	35,6 N/m
equals sum of load:	481 N/m	715,6 N/m
Sum of load	481 N/m	715,6 N/m
multiplied by distance between supports	x 1.5 m	x 1.5 m
equals bracket load:	P <sub>1</sub> = 721,5 N	P <sub>2</sub> = 1.073,4 N

For bracket support KDU 60 (based on catalogue): P<sub>max 400</sub> = 5.0 kN P<sub>max 600</sub> = 3.6 kN

The sum of shares equals: 
$$\sum \frac{P_B}{P_{B \max}} = \frac{721.5 \text{ N}}{5,000 \text{ N}} + \frac{1.073.4 \text{ N}}{3,600 \text{ N}} = 0.44 (< 1)$$

According to the above calculation, the selected bracket support may be used. However, if

$$\sum \frac{P_B}{P_{B \max}} > 1$$

either a bracket support with a higher load capacity must be used or the support distance must be reduced.

The load capacity specifications correspond to the values verified and certified according to DIN EN 61537.



In the process of laying cables, high additional loads can occur. These additional loads may not be discharged into the cable support system.

# Discharge of load into the construction piece

## Technical information



All specifications for carrying capacity listed in this catalogue relate to the respective product. The carrying capacity of the installed system depends on the actual configuration and specifically on the operational discharge of load into the construction piece. In the process of laying cables, high additional loads can occur. These additional loads may not be discharged into the cable support system.

The following illustration can merely serve as additional support when applying dowel approvals; the approval specifications alone are binding.

### Permissible dowel load $F_{zul}$

The vectorial overlay of various strength components effective at the anchorage point (e.g. shear force and vertical extraction force) yields the dowel load that must be lower /equal compared to the allowable dowel load listed in the approval (generally applies to all diagonal pull directions). The allowable dowel load depends on the anchorage ground material (concrete grade, brickwork stone type, etc.) as well as on its voltage load:

- cracked concrete tension zone
- verified concrete compression zone (e.g. concrete wall, support, the upper concrete beam half).

In cases of doubt, consult the responsible structural engineer.

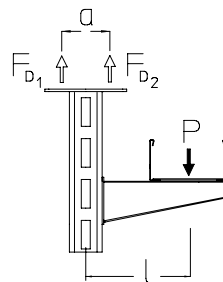
### Reduction

The allowable dowel load must be reduced,

- if several dowels have a smaller distance between each other than measure  $a$  (centre to centre distance).
- if the distance between the dowel and a structure edge or corner is smaller than measure  $a_r$  (edge distance).

The factor for the calculation of the dowel load  $F_D$  is listed in the catalogue (applies to anchors with heavier loads).

### Example: Ceiling bracket support



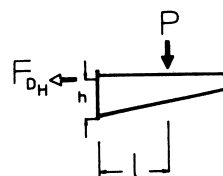
$$F_{D1} = \frac{P}{2} - P \cdot \frac{l}{a}$$

$$F_{D2} = \frac{P}{2} + P \cdot \frac{l}{a}$$

$$\rightarrow \frac{F_D}{P} = \frac{1}{2} + \frac{l}{a}$$

By a double-sided equipment of the bracket support the higher dowel load is always reduced.

### Example: Wall bracket



$$F_{DV} = P$$

$$F_{DH} = P \cdot \frac{l}{h}$$

$$\rightarrow \frac{F_D}{P} = \sqrt{1 + \left(\frac{l}{h}\right)^2}$$

When planning the route, please generally observe that the filling volume of the cable trays may exceed the carrying capacity of the cable trays. A sufficient extent of reserves must be included; if needed multi-layer reserves should be allowed for.

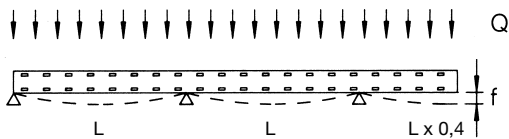
See the two examples from practice on the following pages!

**Cable support systems**

Among other things, the DIN EN 61537 regulates the following. The procedure in which mechanical characteristics of cable support elements are to be tested.

To be tested are:

- a) Cable trays including connectors in specific configurations (end field, (without connector), middle field)



L = delivery length

The conditions do not correspond to those of the most advantageous continuous support applications.

- b) Brackets as single construction components, i. e. without the stiffening effect of mounted cable trays.

The load bearing capacity specifications are based on the measured loads at a still permissible level of deformation ( $f_{zul}$ ) of the test samples. Cable support elements in the particular standard version (Sendzimir/hot dip galvanized) were tested.

**Cable trays**

were tested under a specially developed testing condition ensuring that components which bend elastically under loads are strained evenly across the surface.

$f_{zul}$  (longitudinal direction) = 0.01 x support spacing

$f_{zul}$  (transverse direction) = 0.05 x cable tray width,

**Arms/brackets**

Under a vertical load the tips of the arms may lower by:

$f_{zul} = 0.05 \times \text{arm length (however } \leq 30 \text{ mm)}$

**Studs (bracket holders)**

- a) Studs are bent by the effects of sideway forces; the permitted offset is:

$$f_{zul} = 0.05 \times \text{stud length}$$

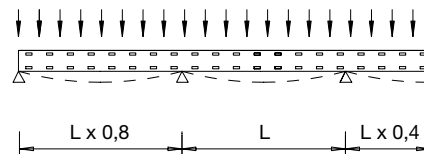
- b) tested in combination with beams under force effect,
- c) pulled by a centric load.

In each case the highest stud length was tested.

**Safety**

The tested elements must withstand a load that exceeds its permissible level by at least 70%. Possible failures are not equivalent to the breakage of the component (total failure) but rather consist of a deformation, significant enough that no further increase of load bearing capacity can be registered (hammock). Consequentially, cable support elements made of metal that indicates its load condition (including overloading) by deformation are preferable to spontaneously breaking support systems made of plastic.

Wide-span systems are tested differently as follows:



according to IEC 61537 (DIN EN 61537) 10.3.2 testing method II



# DIN EN 61537 | Equipotential Bonding

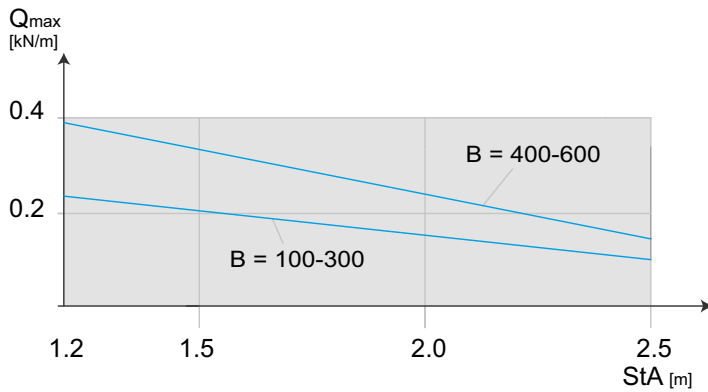
## Technical information

When planning the route, please generally observe that the filling volume of the cable trays may exceed the carrying capacity of the cable trays. A sufficient extent of reserves must be included; if needed multi-layer reserves should be allowed for.

### Equipotential bonding

Cable ladders and cable trays are mounted with screw connections. The equipotential bonding is certified according to DIN EN 61537.

#### Example wire tray G 50:

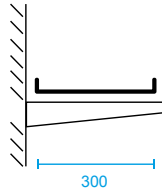


$Q_{sk}$  Cable load based on filling volume A at maximum width B

# Example wall bracket

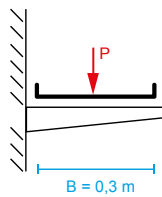
## How to choose the right cable support system?

### How to choose the right cable support system?



From the tender: cable tray perforated **B** = 300 mm, **H** = 60 mm, doweled to a concrete wall with a support distance **StA** = 1.5 m.

#### 1. Selecting the cable tray



**Specification:** Cable tray with a height of 60 mm and a width of 300 mm, resulting in: **RG 60-30S**. In order to calculate the bracket load **P**, the cable load  $Q_{sk}$  = ? must be determined first.

#### 2. Determining the cable load $Q_{sk}$

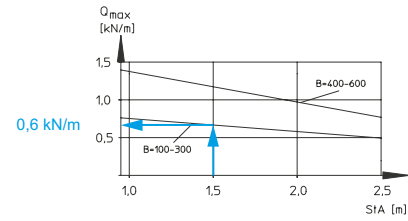
### RG 60

Cable tray, height = 60 mm

Article number	H mm	B mm	A cm <sup>2</sup>	$Q_{sk}$ kN/m	G kg/m
<b>S</b>					
<b>RG 60-10</b>	60	100	56	0.09	1.5
<b>RG 60-20</b>	60	200	113	0.17	1.93
<b>RG 60-30</b>	60	300	171	0.26	2.5
<b>RG 60-40</b>	60	400	228	0.34	3.57

The maximum cable load with regard to the loading capacity of cable trays is  $Q_{sk}$  = 0.26 kN/m.

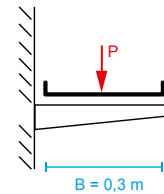
#### 3. Determining the bearing capacity



With its 0.6 kN/m, the verified bearing capacity is significantly above the possible loading capacity of 0.26 kN/m.

$$Q_{max} \text{ 0,6 kN/m} > Q_{sk} \text{ 0,26 kN/m} \checkmark$$

#### 4. Determining the bracket load P



The bracket load **P** is determined by the cable load  $Q_{sk}$  multiplied by the support distance **StA** (1.5 m from price list)

$$P = Q_{sk} \times StA$$

$$P = 0.26 \text{ (kN/m)} \times 1.50 \text{ (m)} = 0.39 \text{ kN}$$

#### 5. Dimensioning the wall bracket

### KW

Wall bracket, standard

Article number	H mm	B mm	L mm	$P_{max}$ kN	$F_v/P$	G kg
<b>F</b>						
<b>KW 010</b>	34	100	120	1.4	3.1	0.13
<b>KW 015</b>	34	150	170	1.4	4.1	0.16
<b>KW 020</b>	56	200	220	2.0	3.0	0.35
<b>KW 030</b>	56	300	320	2.0	4.0	0.50
<b>KW 040</b>	75	400	420	2.4	3.6	0.80

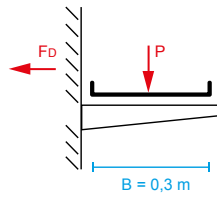
Calculated bracket load **P** = 0.39 kN, verified bracket load  $P_{max}$  for **KW 030F** = 2.0 kN.

$$P_{max} = 2,0 \text{ kN} > P = 0,39 \text{ kN} \checkmark$$

# Example wall bracket

How to choose the right cable support system?

## 6. Determining the dowel extraction force



The dowel extraction force  $F_d$  is determined based on statics and dowel approval for  $B = 300 \text{ mm}$ .

## 7. Ratio dowel extraction force $F_d$ to bracket load $P$

**KW** Wall bracket, standard

Article number	H mm	B mm	L mm	$P_{\text{max}}$ kN	$F_d/P$	G kg
<b>F</b>						
KW 010	34	100	120	1.4	3.1	0.13
KW 015	34	150	170	1.4	4.1	0.16
KW 020	56	200	220	2.0	3.0	0.35
KW 030	56	300	320	2.0	4.0	0.50
KW 040	75	400	420	2.4	3.6	0.80

With bracket load  $P = 0.39 \text{ kN}$ , the dowel extraction force  $F_d$  is calculated as follows:

$$F_d/P = 4.0 \Rightarrow F_d = P \times 4.0$$

$$F_d = 0.39 \text{ (kN)} \times 4.0 = 1.56 \text{ kN}$$

## 8. Choice of dowel

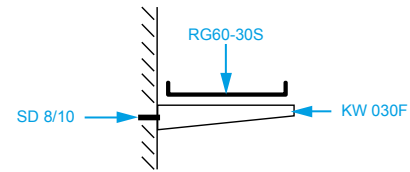
**SD** Straddling dowel

Article number	$\emptyset$ mm	D mm	t mm	$P_{\text{zul}}$ kN	$L_{\text{min}}$ mm	G kg/100
<b>GV</b>						
SD 8/10	8	8	0-10	2.4	55	3.5
SD 8/30	8	8	0-30	2.4	55	4.4
SD 10/10	10	10	0-10	4.3	75	6.2

For **SD 8/10**, the dowel approval results in a permissible dowel extraction force in cracked concrete of **2.4 kN**. The calculated dowel extraction force is **1.56 kN**.

**$P_{\text{zul}} 2,40 \text{ kN} > F_d 1,56 \text{ kN}$**  ✓

## Result of the dimensioned support system



### From the tender:

perforated cable tray  $B = 300 \text{ mm}$ ,  $H = 60 \text{ mm}$ , support distance  $StA = 1.5 \text{ m}$

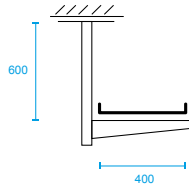
### Result

- cable tray type **RG 60-30S**
- wall bracket type **KW 030F**
- dowel type **SD 8/10**

# Example stem bracket

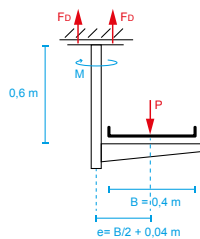
How to choose the right cable support system?

## How to choose the right cable support system



From the tender: cable tray perforated **B** = 400 mm, **H** = 60 mm, doweled 600 mm below concrete ceiling with a support distance **StA** = 1.5 m.

### 1. Selecting the cable tray



**Specification:** Cable tray with a height of 60 mm and a width of 400 mm, resulting in: **RG 60-40S**

In order to calculate **P**, the cable load **Q<sub>sk</sub>** = ? must be determined first.

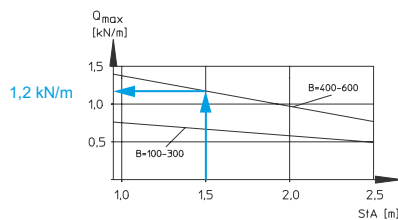
### 2. Determining the cable load Q<sub>sk</sub>

#### RG 60 Cable tray, height= 60 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S</b>					
RG 60-10	60	100	56	0.09	1.5
RG 60-20	60	200	113	0.17	1.93
RG 60-30	60	300	171	0.26	2.5
RG 60-40	60	400	228	0.34	3.57

The maximum cable load with regard to the loading capacity of cable trays is **Q<sub>sk</sub>** = 0.34 kN/m.

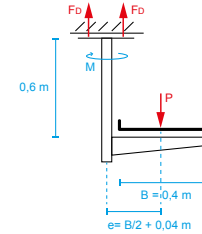
### 3. Determining the bearing capacity



At 1.2 kN/m, the verified bearing capacity with **StA** = 1.5 m is significantly above the possible loading capacity of 0.34 kN/m.

$$Q_{\max} 1,2 \text{ kN/m} > Q_{\text{SK}} 0,34 \text{ kN/m} \checkmark$$

### 4. Determining the bracket load P



The bracket load **P** is determined by the cable load **Q<sub>sk</sub>** multiplied by the support distance **StA** (1.5 m from price list)

$$P = Q_{\text{SK}} \times \text{StA}$$

$$P = 0.34 \text{ (kN/m)} \times 1.50 \text{ (m)} = 0.51 \text{ kN}$$

### 5. Dimensioning the stem bracket

#### KW Bracket, standard

Article number	H mm	B mm	L mm	P <sub>max</sub> kN	F <sub>D</sub> /P	G kg
<b>F</b>						
KW 010	34	100	120	1.4	3.1	0.13
KW 015	34	150	170	1.4	4.1	0.16
KW 020	56	200	220	2.0	3.0	0.35
KW 030	56	300	320	2.0	4.0	0.50
KW 040	75	400	420	2.4	3.6	0.80
KW 050	96	500	520	2.1	3.4	1.40
KW 060	96	600	620	2.1	4.0	1.60

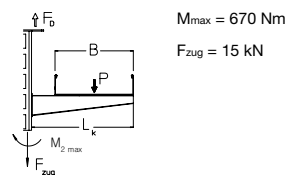
Calculated bracket load **P** = 0.51 kN, verified bracket load **P<sub>max</sub>** for **KW 040 F** = 2.4 kN

$$P_{\max} = 2,4 \text{ kN} > P = 0,51 \text{ kN} \checkmark$$

### 6. Dimensioning the ceiling stem

#### KDU 57 Bracket support, 57 x 30 mm

B mm	L <sub>K</sub> mm	P <sub>max</sub> kN	F <sub>D</sub> /P
100	120	6.9	1.4
200	220	4.5	1.9
300	320	3.4	2.3
400	420	2.7	2.8
500	520	2.2	3.2
600	620	1.9	3.7

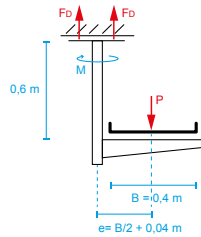


$$P_{\max} = 2,7 \text{ kN} > P = 0,51 \text{ kN} \checkmark$$

# Example stem bracket

How to choose the right cable support system?

## 7. Determining the dowel extraction force



The dowel extraction force  $F_D$  is determined based on statics and dowel approval for  $B = 400$  mm.

## 8. Dowel calculation

### KDU 57 Bracket support, 57 x 30 mm

B mm	$L_k$ mm	$P_{max}$ kN	$F_D/P$
100	120	6.9	1.4
200	220	4.5	1.9
300	320	3.4	2.3
400	420	2.7	2.8
500	520	2.2	3.2
600	620	1.9	3.7

Using bracket load  $P = 0.51$  kN, the dowel extraction force  $F_D$  is calculated as follows:

$$F_D/P = 2.8 \Rightarrow F_D = P \times 2.8$$

$$F_D = 0.51 \text{ (kN)} \times 2.8 = 1.428 \text{ kN}$$

## 9. Choice of dowel

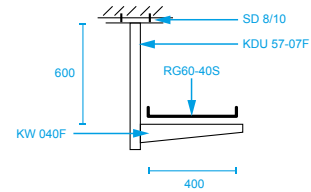
### SD Straddling dowel

Article number	$\varnothing$ mm	D mm	t mm	$P_{zul}$ kN	$L_{min}$ mm	G kg/100
<b>GV</b>						
SD 8/10	8	8	0 - 10	2.4	55	3.5
SD 8/30	8	8	0 - 30	2.4	55	4.4
SD 10/10	10	10	0 - 10	4.3	75	6.2

For **SD 8/10**, the dowel approval results in a permissible dowel extraction force in cracked concrete of **2.4 kN**.

2,40 kN > 1,428 kN ✓

## Result of the dimensioned support system



### From the tender

Perforated cable tray  $B = 400$  mm,  $H = 60$  mm, doweled 600 mm below concrete ceiling, support distance  $StA = 1.5$  m

- cable tray type **RG 60-40S**
- stem bracket type **KW 040F**
- ceiling stem type **KDU 57-07F**
- dowel type **SD 8/10**

# Wire-mesh cable trays

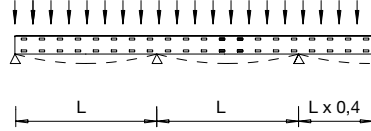
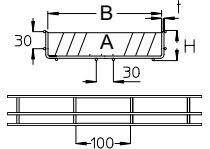
Load diagrams | Technical information

## G 50 Wire-mesh cable tray, height = 53 mm

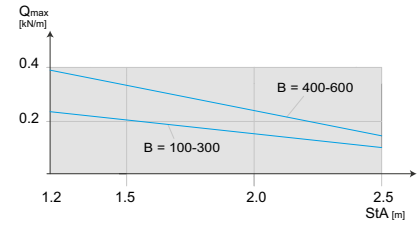
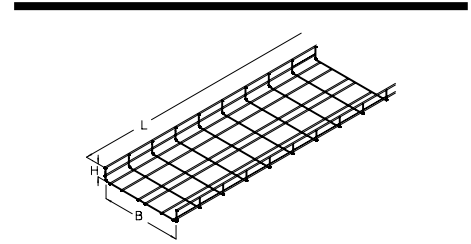
Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F   E</b>					
<b>G 50-10</b>	53	100	45	0.07	0.77
<b>G 50-20</b>	53	200	90	0.14	1.07
<b>G 50-30</b>	53	300	135	0.20	1.37
<b>G 50-40</b>	53	400	176	0.26	2.10
<b>G 50-50</b>	53	500	220	0.33	2.47
<b>G 50-60</b>	53	600	264	0.40	2.83



according to  
DIN EN 61537



Q<sub>sk</sub> Cable load based on filling volume A at maximum width B

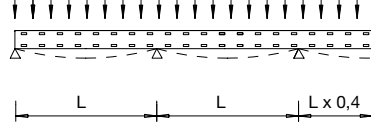
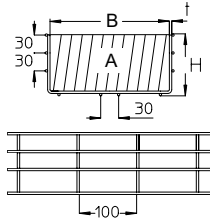


## G 100 Wire-mesh cable tray, height = 103 mm

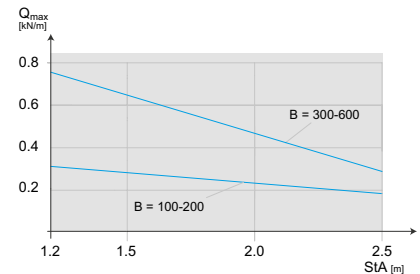
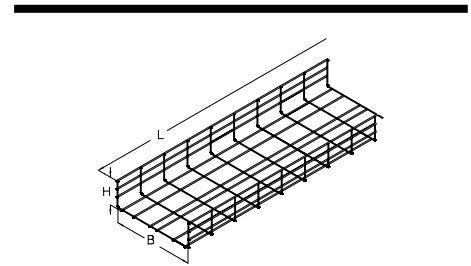
Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F   E</b>					
<b>G 100-10</b>	103	100	95	0.14	1.07
<b>G 100-20</b>	103	200	190	0.29	1.37
<b>G 100-30</b>	103	300	282	0.42	2.10
<b>G 100-40</b>	103	400	376	0.56	2.47
<b>G 100-50</b>	103	500	470	0.71	2.83
<b>G 100-60</b>	103	600	564	0.85	3.20



according to  
DIN EN 61537



Q<sub>sk</sub> Cable load based on filling volume A at maximum width B

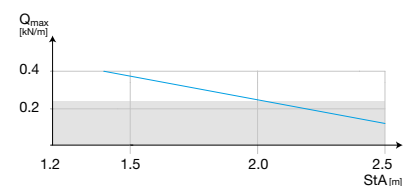
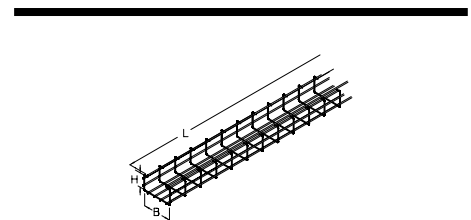
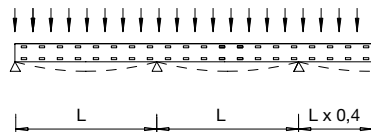
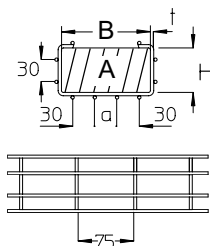


## GI Wire-mesh cable tray, height = 60 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F   E</b>					
<b>GI 06</b>	60	60	33	0.05	1.37
<b>GI 12</b>	60	120	67	0.10	1.73
<b>GI 20</b>	60	200	113	0.17	1.87
<b>GI 30</b>	60	300	165	0.25	2.27



according to DIN EN  
61537

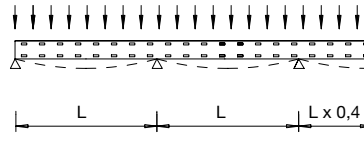
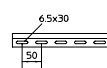
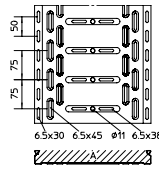


**R/RG 35** Cable tray, height = 35 mm

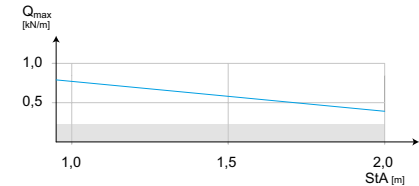
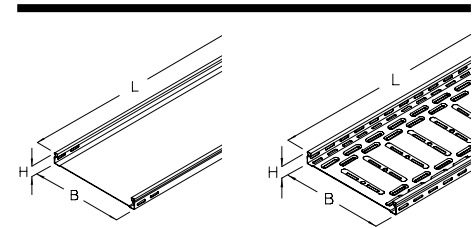
Article number		H	B	A	$Q_{sk}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>R 35-10</b>	<b>RG 35-10</b>	35	100	31	0.05	1.10
<b>R 35-20</b>	<b>RG 35-20</b>	35	200	63	0.10	1.70
<b>R 35-30</b>	<b>RG 35-30</b>	35	300	96	0.15	2.23



according to  
DIN EN 61537



$Q_{sk}$  Cable load based on filling volume A at maximum width B

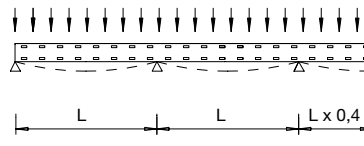
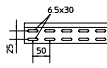
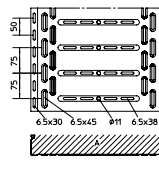


**R/RG 60** Cable tray, height = 60 mm

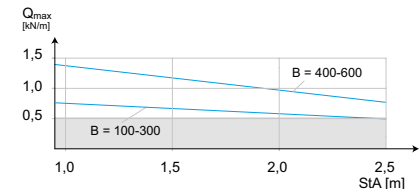
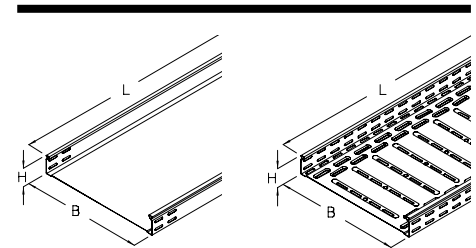
Article number		H	B	A	$Q_{sk}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>R 60-10</b>	<b>RG 60-10</b>	60	100	56	0.09	1.50
<b>R 60-20</b>	<b>RG 60-20</b>	60	200	113	0.17	1.93
<b>R 60-30</b>	<b>RG 60-30</b>	60	300	171	0.26	2.50
<b>R 60-40</b>	<b>RG 60-40</b>	60	400	228	0.34	3.57
<b>R 60-50</b>	<b>RG 60-50</b>	60	500	286	0.43	4.77
<b>R 60-60</b>	<b>RG 60-60</b>	60	600	343	0.52	5.50



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$Q_{sk}$  Cable load based on filling volume A at maximum width B

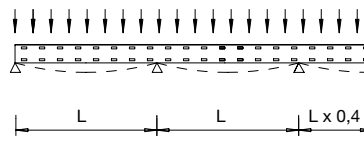
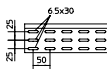
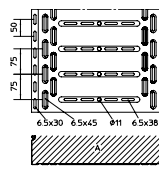


**R/RG 85** Cable tray, height = 85 mm

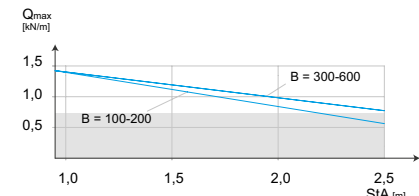
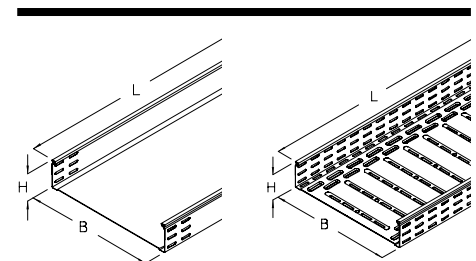
Article number		H	B	A	$Q_{sk}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>R 85-10</b>	<b>RG 85-10</b>	85	100	81	0.12	1.60
<b>R 85-20</b>	<b>RG 85-20</b>	85	200	163	0.25	2.20
<b>R 85-30</b>	<b>RG 85-30</b>	85	300	246	0.37	3.20
<b>R 85-40</b>	<b>RG 85-40</b>	85	400	328	0.49	3.87
<b>R 85-50</b>	<b>RG 85-50</b>	85	500	411	0.62	5.10
<b>R 85-60</b>	<b>RG 85-60</b>	85	600	493	0.74	5.83



according to  
DIN EN 61537



$Q_{sk}$  Cable load based on filling volume A at maximum width B

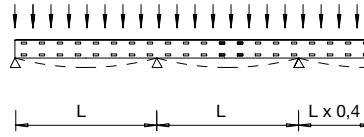
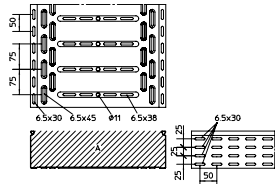


## R/RG 110 Cable tray, height = 110 mm

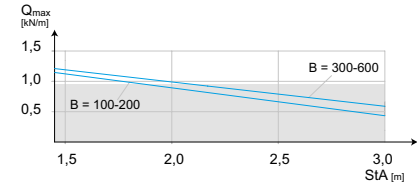
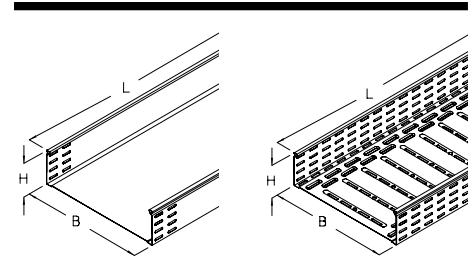
Article number		H	B	A	$Q_{SK}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>S   F   E</b>						
<b>R 110-10</b>	<b>RG 110-10</b>	110	100	106	0.16	1.87
<b>R 110-20</b>	<b>RG 110-20</b>	110	200	213	0.32	2.43
<b>R 110-30</b>	<b>RG 110-30</b>	110	300	321	0.48	3.50
<b>R 110-40</b>	<b>RG 110-40</b>	110	400	428	0.64	4.70
<b>R 110-50</b>	<b>RG 110-50</b>	110	500	536	0.81	5.43
<b>R 110-60</b>	<b>RG 110-60</b>	110	600	643	0.97	6.17



according to  
DIN EN 61537



$Q_{SK}$  Cable load based on filling volume A at maximum width B

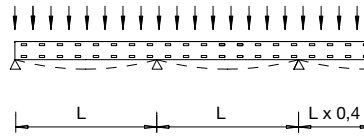
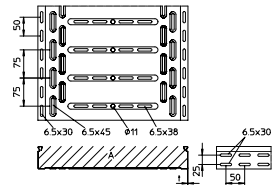


## RS/RGS 60 Cable tray, height = 60 mm

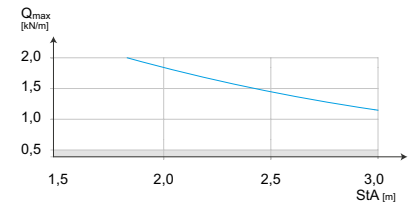
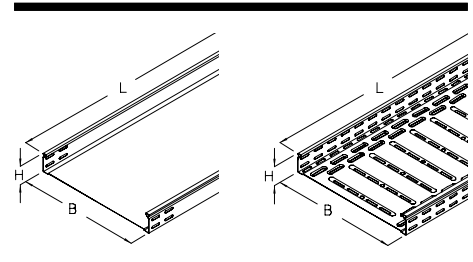
Article number		H	B	A	$Q_{SK}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>S   F</b>						
<b>RS 60-10</b>	<b>RGS 60-10</b>	60	100	56	0.09	2.93
<b>RS 60-20</b>	<b>RGS 60-20</b>	60	200	113	0.17	3.80
<b>RS 60-30</b>	<b>RGS 60-30</b>	60	300	171	0.26	4.90
<b>RS 60-40</b>	<b>RGS 60-40</b>	60	400	228	0.34	6.00
<b>RS 60-50</b>	<b>RGS 60-50</b>	60	500	286	0.43	7.10
<b>RS 60-60</b>	<b>RGS 60-60</b>	60	600	343	0.52	8.20



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$Q_{SK}$  Cable load based on filling volume A at maximum width B

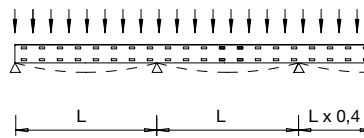
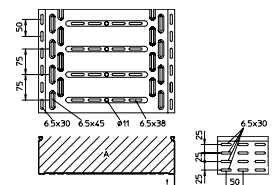


## RS/RGS 110 Cable tray, height = 110 mm

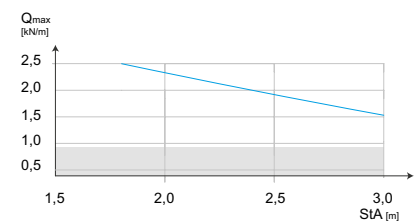
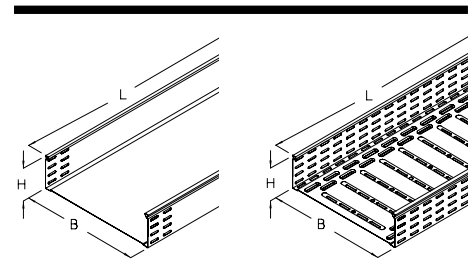
Article number		H	B	A	$Q_{SK}$	G
not perforated	perforated	mm	mm	cm <sup>2</sup>	kN/m	kg/m
<b>S   F</b>						
<b>RS 110-10</b>	<b>RGS 110-10</b>	110	100	106	0.16	3.63
<b>RS 110-20</b>	<b>RGS 110-20</b>	110	200	213	0.32	4.83
<b>RS 110-30</b>	<b>RGS 110-30</b>	110	300	321	0.48	5.93
<b>RS 110-40</b>	<b>RGS 110-40</b>	110	400	428	0.64	7.03
<b>RS 110-50</b>	<b>RGS 110-50</b>	110	500	536	0.81	8.13
<b>RS 110-60</b>	<b>RGS 110-60</b>	110	600	643	0.97	9.23



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$Q_{SK}$  Cable load based on filling volume A at maximum width B





# Cable trays

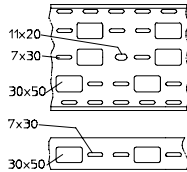
Load diagrams | Technical informationen

## RI Installation tray, height = 58 mm

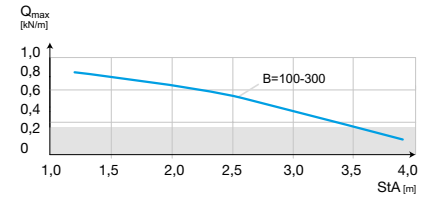
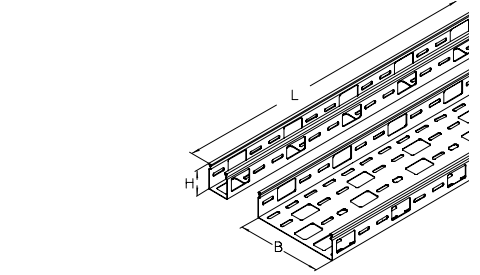
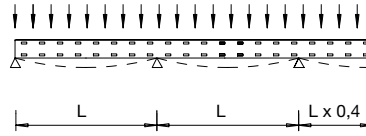
Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>sk</sub> kN/m	G kg/m
<b>S   F</b>					
<b>RI 60-05</b>	58	48	26	0.04	1.17
<b>RI 60-10</b>	58	98	55	0.08	1.50
<b>RI 60-15</b>	58	148	84	0.13	1.90
<b>RI 60-20</b>	58	198	113	0.17	2.10
<b>RI 60-30</b>	58	298	171	0.26	2.67



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**Q<sub>sk</sub>** Cable load based on filling volume A at maximum width B



# Cable ladders

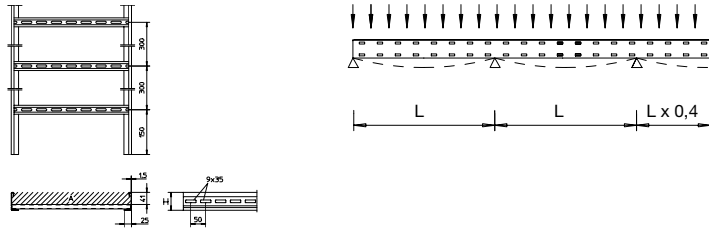
load diagrams | Technical informationen

## LGG 60 Cable ladder, height = 60 mm

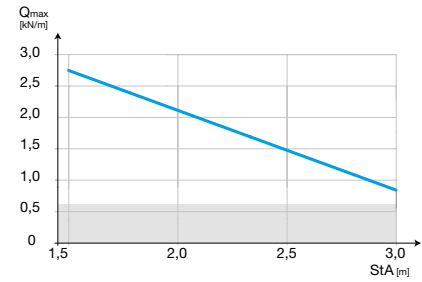
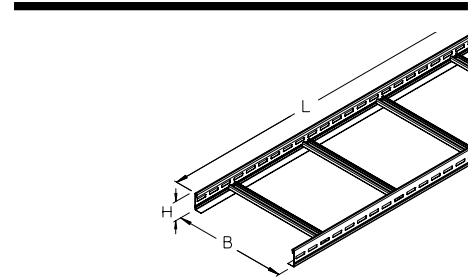
Article number	H mm	B mm	L mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F   E</b>						
<b>LGG 60-20</b>	60	200	6000	81	0.23	2.64
<b>LGG 60-30</b>	60	300	6000	122	0.34	2.87
<b>LGG 60-40</b>	60	400	6000	162	0.45	3.10
<b>LGG 60-50</b>	60	500	6000	203	0.57	3.33
<b>LGG 60-60</b>	60	600	6000	243	0.68	3.56



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Q<sub>LK</sub> Cable load based on filling volume A at maximum width B

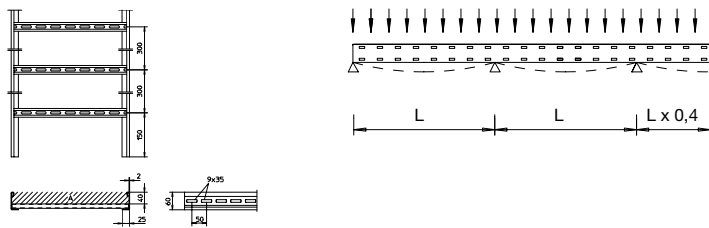


## LGGS 60 Cable ladder, height = 60 mm

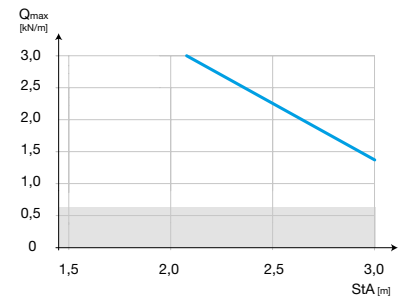
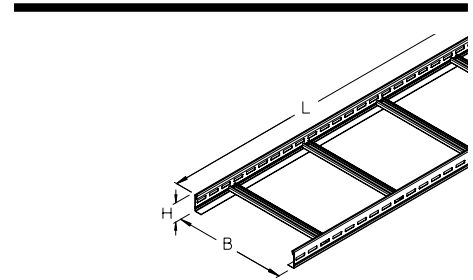
Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F</b>					
<b>LGGS 60-20</b>	60	200	81	0.23	3.47
<b>LGGS 60-30</b>	60	300	122	0.34	3.76
<b>LGGS 60-40</b>	60	400	162	0.45	4.06
<b>LGGS 60-50</b>	60	500	203	0.57	4.35
<b>LGGS 60-60</b>	60	600	243	0.68	4.65



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Q<sub>LK</sub> Cable load based on filling volume A at maximum width B



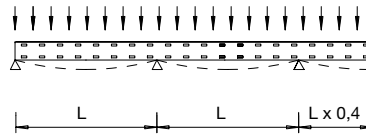
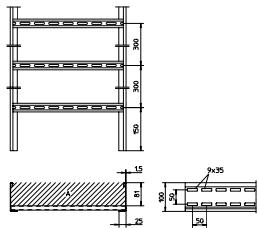
## LGG 100 Cable ladder, height = 100 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F   E</b>					
<b>LGG 100-20</b>	100	200	161	0.45	3.46
<b>LGG 100-30</b>	100	300	242	0.68	3.69
<b>LGG 100-40</b>	100	400	322	0.9	3.92
<b>LGG 100-50</b>	100	500	403	1.13	4.15
<b>LGG 100-60</b>	100	600	483	1.35	4.37

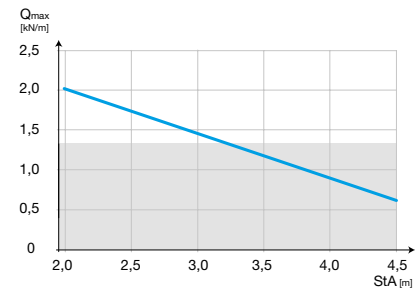
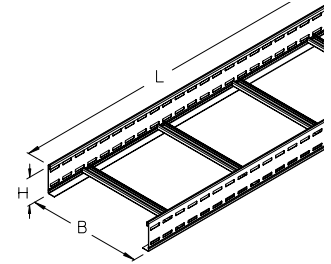


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Q<sub>LK</sub> Cable load based on filling volume A at maximum width B



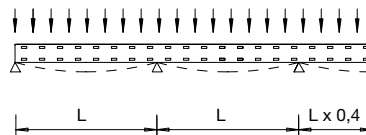
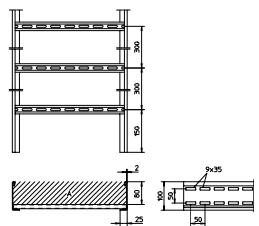
## LGGS 100 Cable ladder, height = 100 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F</b>					
<b>LGGS 100-20</b>	100	200	161	0.45	4.53
<b>LGGS 100-30</b>	100	300	242	0.68	4.82
<b>LGGS 100-40</b>	100	400	322	0.9	5.12
<b>LGGS 100-50</b>	100	500	403	1.13	5.41
<b>LGGS 100-60</b>	100	600	483	1.35	5.71

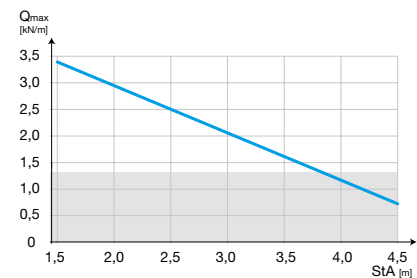
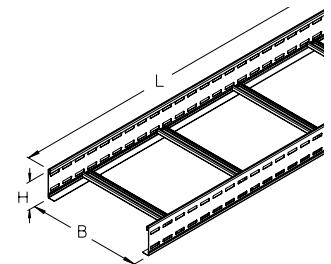


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Q<sub>LK</sub> Cable load based on filling volume A at maximum width B



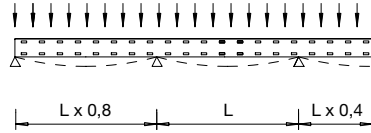
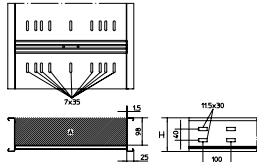
# Wide-span systems

Load diagrams | Technical informationen

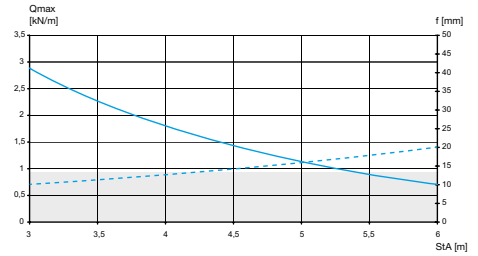
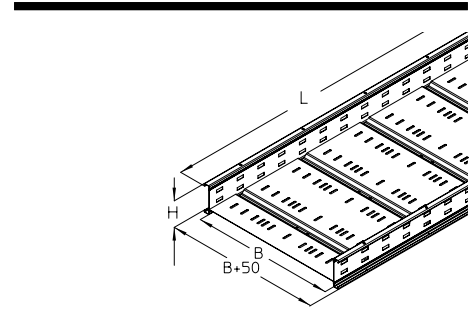
## WPR 120 Wide-span cable tray, height = 120 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F</b>						
<b>WPR 120-20</b>	120	200	196	0.29	0.55	6.07
<b>WPR 120-30</b>	120	300	294	0.44	0.82	7.02
<b>WPR 120-40</b>	120	400	392	0.59	1.10	7.99
<b>WPR 120-50</b>	120	500	490	0.74	1.37	8.97
<b>WPR 120-60</b>	120	600	588	0.88	1.65	9.95

according to  
DIN EN 61537  
(test method II 10.3.2)



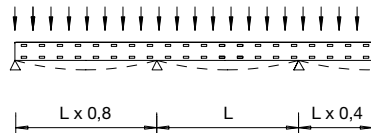
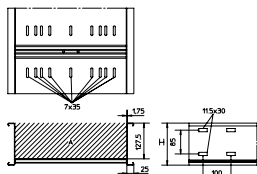
Q<sub>SK</sub> Cable load based on filling volume A at maximum width B  
Q<sub>LK</sub> Cable load based on filling volume A at maximum width B



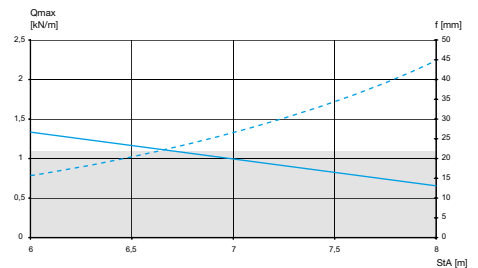
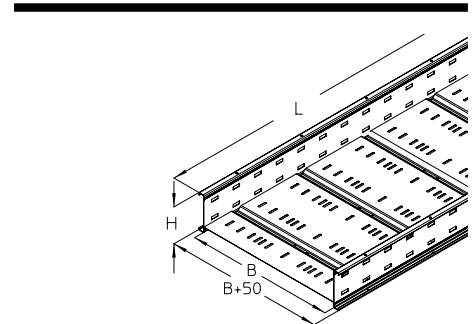
## WPR 150 Wide-span cable tray, height = 150 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	G kg/m
<b>S   F</b>					
<b>WPR 150-20</b>	150	200	256	0.38	7.14
<b>WPR 150-30</b>	150	300	384	0.58	7.90
<b>WPR 150-40</b>	150	400	512	0.77	8.69
<b>WPR 150-50</b>	150	500	640	0.96	9.48
<b>WPR 150-60</b>	150	600	768	1.15	10.26

according to IEC 61537  
DIN EN 61537  
(test method II 10.3.2)



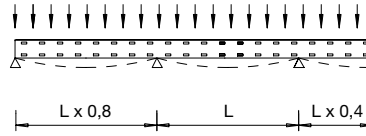
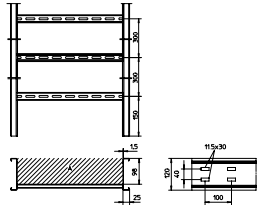
Q<sub>SK</sub> Cable load based on filling volume A at maximum width B



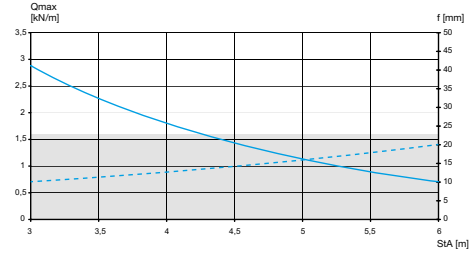
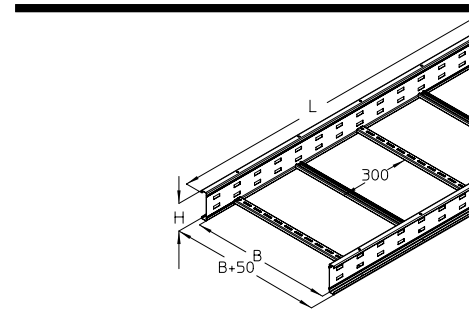
## WPL 120 Wide-span cable tray, height = 120 mm

Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>SK</sub> kN/m	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F</b>						
WPL 120-20	120	200	196	0.29	0.55	4.56
WPL 120-30	120	300	294	0.44	0.82	4.79
WPL 120-40	120	400	392	0.59	1.10	5.02
WPL 120-50	120	500	490	0.74	1.37	5.25
WPL 120-60	120	600	588	0.88	1.65	5.47

according to IEC 61537  
DIN EN 61537  
(test method II 10.3.2)



Q<sub>SK</sub> Cable load based on filling volume A at maximum width B  
Q<sub>LK</sub> Cable load based on filling volume A at maximum width B

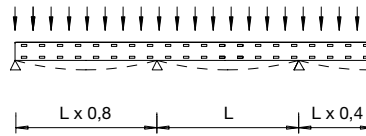
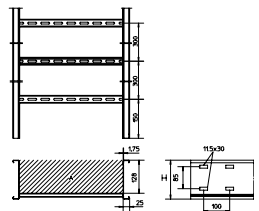


## WPL 150 Wide-span cable tray, height = 150 mm

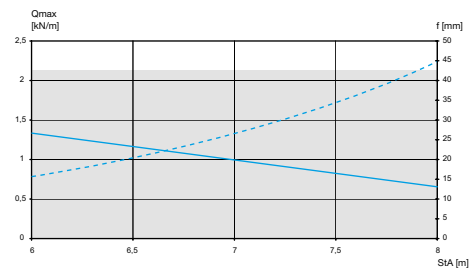
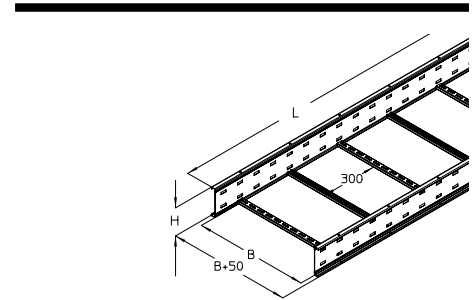
Article number	H mm	B mm	A cm <sup>2</sup>	Q <sub>LK</sub> kN/m	G kg/m
<b>S   F   E</b>					
WPL 150-20	150	200	256	0.72	6.01
WPL 150-30	150	300	384	1.08	6.24
WPL 150-40	150	400	512	1.43	6.47
WPL 150-50	150	500	640	1.79	6.70
WPL 150-60	150	600	768	2.15	6.93



according to IEC 61537  
DIN EN 61537  
(test method II 10.3.2)



Q<sub>LK</sub> Cable load based on filling volume A at maximum width B

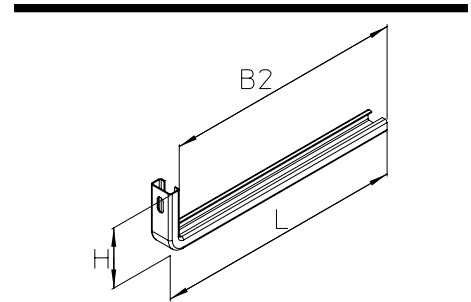
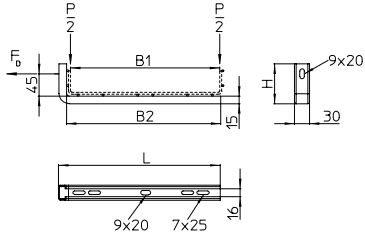


# Brackets

Load diagrams | Technical information

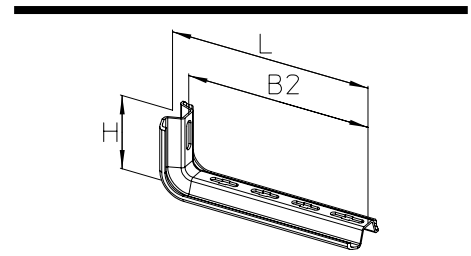
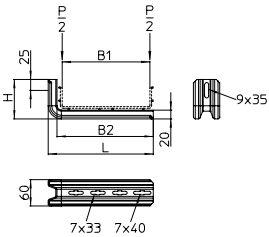
## KWLL Wall bracket, light-duty

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S   F</b>							
<b>KWLL 010</b>	80	100	110	125	0.3	2.0	0.13
<b>KWLL 020</b>	80	200	210	225	0.3	3.0	0.21
<b>KWLL 030</b>	80	300	310	325	0.3	4.0	0.28



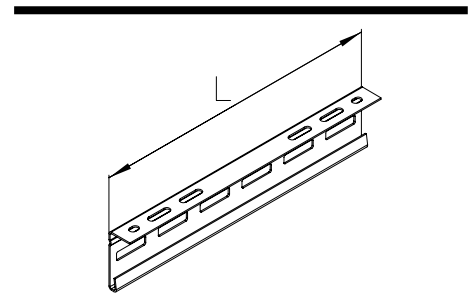
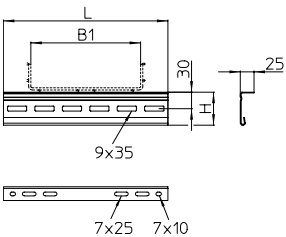
## KSL Wall bracket, light-duty

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S   F</b>							
<b>KSL 010</b>	90	100	120	140	1.3	2.8	0.36
<b>KSL 015</b>	90	150	170	190	1.0	3.4	0.45
<b>KSL 020</b>	90	200	220	240	0.9	4.1	0.53
<b>KSL 025</b>	90	250	270	290	0.7	4.8	0.61
<b>KSL 030</b>	90	300	320	340	0.6	5.5	0.69
<b>KSL 040</b>	90	400	420	440	0.5	6.9	0.86



## KWW Wall bracket, standard

Article number	H mm	B1 mm	L mm	G kg
<b>F</b>				
<b>KSL 020</b>	60	100	200	0.22
<b>KSL 030</b>	60	200	300	0.34
<b>KSL 040</b>	60	300	400	0.46
<b>KSL 050</b>	60	400	500	0.57
<b>KSL 060</b>	60	500	600	0.69
<b>KSL 070</b>	60	600	700	0.81

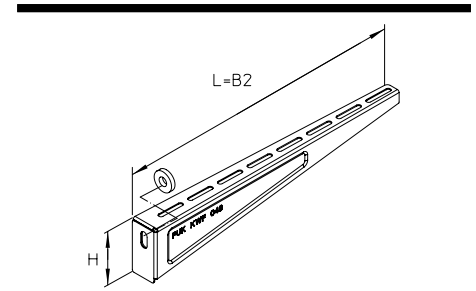
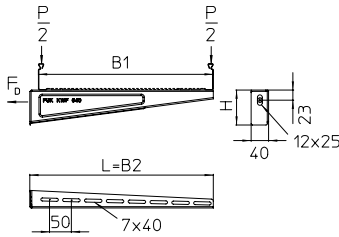


# Brackets

Load diagrams | Technical informationen

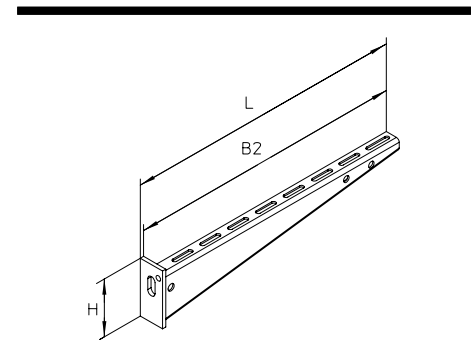
## KWF Wall/handle bracket, light-duty

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S   F</b>							
<b>KWF 010</b>	80	100	120	120	1.2	1.58	0.24
<b>KWF 020</b>	80	200	220	220	1.2	2.33	0.32
<b>KWF 030</b>	80	300	320	320	1.2	3.15	0.47
<b>KWF 040</b>	80	400	420	420	1.2	3.99	0.54

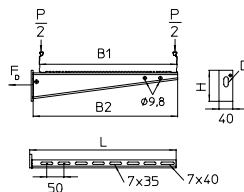


## KW Wall/handle bracket, standard

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>GV   F</b>							
<b>KW 010</b>	45	100	115	124	1.4	3.1	0.13
<b>KW 015</b>	45	150	170	174	1.4	4.1	0.17
<b>KW 020</b>	70	200	215	225	2.0	3.0	0.32
<b>KW 030</b>	70	300	315	326	2.0	4.0	0.44
<b>KW 040</b>	90	400	415	426	2.4	3.6	0.80
<b>KW 050</b>	110	500	515	528	2.1	3.4	1.33
<b>KW 060</b>	110	600	615	628	2.1	4.0	1.55
<b>KW 070</b>	110	700	715	728	3.0	5.7	2.27



<b>E   E4</b>							
<b>KW 010</b>	45	100	115	124	1.5	3.1	0.15
<b>KW 015</b>	45	150	170	174	1.5	4.1	0.16
<b>KW 020</b>	70	200	215	225	1.5	3.0	0.31
<b>KW 030</b>	70	300	315	326	1.5	4.0	0.42
<b>KW 040</b>	90	400	415	426	2.2	3.6	0.72
<b>KW 050</b>	110	500	515	528	2.2	3.4	1.10
<b>KW 060</b>	110	600	615	628	2.2	4.0	1.26



L < 220, D=Ø11  
L >= 220, D=13x30



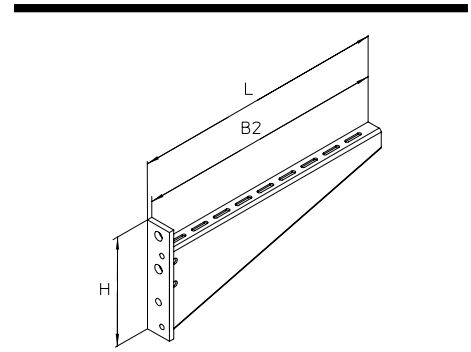
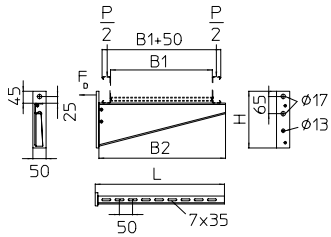
M

# Brackets

Load diagrams | Technical information

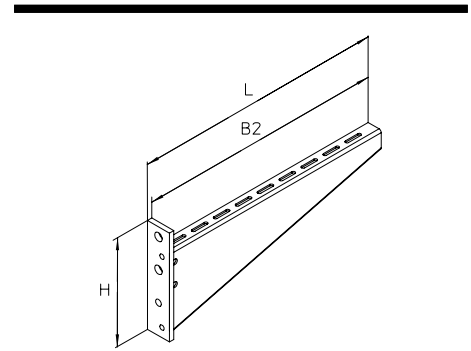
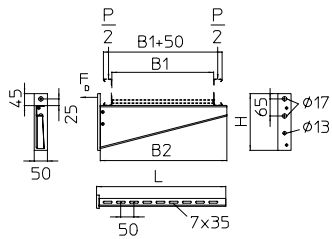
## KWS Wall/handle bracket, medium duty

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>GV   F   E   E4</b>							
<b>KWMS 010</b>	110	100	115	128	3.8	1.36	0.53
<b>KWMS 020</b>	110	200	215	228	3.8	1.84	0.76
<b>KWMS 030</b>	110	300	315	328	3.8	2.32	0.99
<b>KWMS 040</b>	110	400	415	428	3.8	2.86	1.21
<b>KWMS 050</b>	110	500	515	528	3.8	3.42	1.43
<b>KWMS 060</b>	110	600	615	628	3.8	3.99	1.65



## KWS Wall/handle bracket, heavy

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F   E   E4</b>							
<b>KWS 020</b>	215	200	270	290	7.0	1.31	2.04
<b>KWS 030</b>	215	300	370	390	6.7	1.49	2.40
<b>KWS 040</b>	215	400	470	490	6.5	1.69	2.78
<b>KWS 050</b>	215	500	570	592	6.3	1.91	2.95
<b>KWS 060</b>	215	600	670	692	6.1	2.13	3.29
<b>KWS 070</b>	215	700	770	792	5.2	2.60	3.64
<b>KWS 080</b>	215	800	870	892	4.4	3.07	3.97
<b>KWS 090</b>	215	900	970	992	3.6	3.56	4.32
<b>KWS 100</b>	215	1000	1070	1092	2.8	4.06	4.67



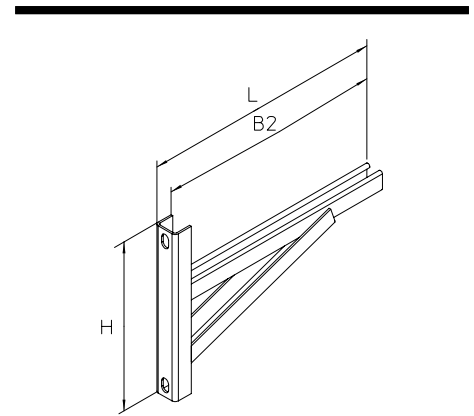
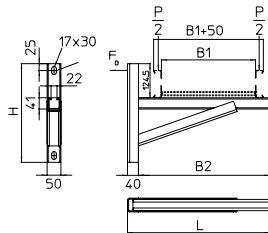


# Brackets

Load diagrams | Technical informationen

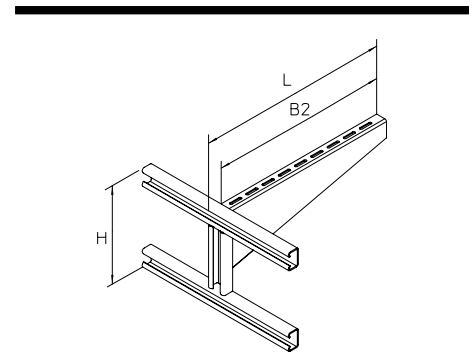
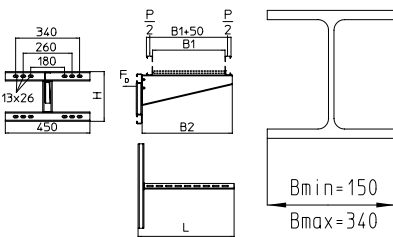
## KWSS Wall/handle bracket, very heavy

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>							
<b>KWSS 020</b>	290	200	275	320	10.0	0.76	2.59
<b>KWSS 030</b>	320	300	375	420	10.0	0.86	3.37
<b>KWSS 040</b>	360	400	475	520	10.0	0.91	4.18
<b>KWSS 020</b>	390	500	575	620	10.0	0.97	4.96
<b>KWSS 060</b>	360	600	675	720	10.0	1.26	5.51
<b>KWSS 070</b>	390	700	775	820	10.0	1.44	6.28
<b>KWSS 080</b>	420	800	875	920	10.0	1.56	7.08
<b>KWSS 090</b>	445	900	975	1020	10.0	1.66	7.85
<b>KWSS 100</b>	490	1000	1075	1120	10.0	1.72	8.65



## KIS Wall bracket, heavy

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>F</b>							
<b>KIS 020</b>	265	200	275	310	7.0	0.66	4.32
<b>KIS 030</b>	265	300	375	410	6.7	0.76	4.65
<b>KIS 040</b>	265	400	475	510	6.5	0.86	5.00
<b>KIS 050</b>	265	500	575	610	6.3	0.97	5.34
<b>KIS 060</b>	265	600	675	710	6.1	1.09	5.68
<b>KIS 070</b>	265	600	775	810	5.2	1.33	6.02
<b>KIS 080</b>	265	600	875	910	4.4	1.57	6.36
<b>KIS 090</b>	265	600	975	1010	3.6	1.83	6.70
<b>KIS 100</b>	265	600	1075	1110	2.8	2.08	7.04



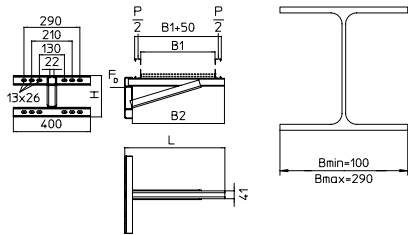
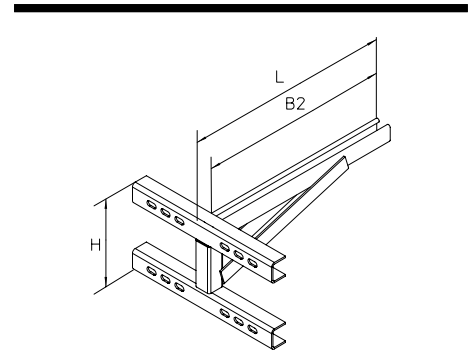
M

# Brackets

Load diagrams | Technical informationen

## KISS Wall bracket, very heavy

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_d/P$	G kg
<b>F</b>							
<b>KISS 020</b>	150	200	275	310	10.0	0.93	4.66
<b>KISS 030</b>	185	300	375	410	10.0	0.91	5.42
<b>KISS 040</b>	215	400	475	510	10.0	0.92	6.17
<b>KISS 050</b>	250	500	575	610	10.0	0.92	6.93
<b>KISS 060</b>	280	600	675	710	10.0	0.92	7.70
<b>KISS 070</b>	315	600	775	810	10.0	0.99	8.44
<b>KISS 080</b>	345	600	875	910	10.0	1.06	9.21
<b>KISS 090</b>	380	600	975	1010	10.0	1.10	9.96
<b>KISS 100</b>	410	600	1075	1110	10.0	1.15	10.71

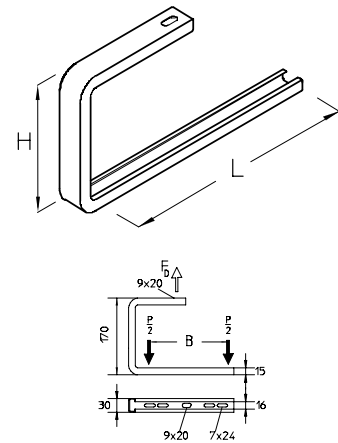


# Ceiling fixed suspensions

Load diagrams | Technical informationen

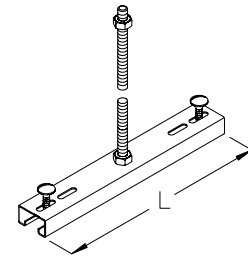
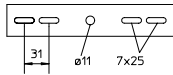
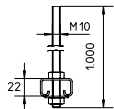
## DB Ceiling-fixed bracket

Article number	H mm	B mm	L mm	P <sub>max</sub> kN	F <sub>D</sub> /P	G kg
<b>S</b>						
DB 10	170	100	120	0.60	1.2	0.25
DB 20	170	200	220	0.40	1.1	0.36
DB 30	170	300	320	0.28	1.1	0.47
<b>E</b>						
DB 10	170	100	120	0.50	1.2	0.30
DB 20	170	200	220	0.35	1.1	0.44
DB 30	170	300	320	0.25	1.1	0.58



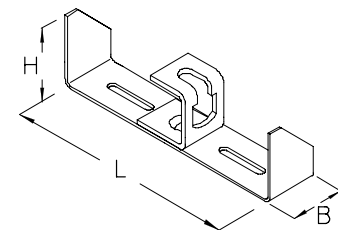
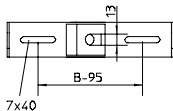
## GBAR Central hanger

Article number	B mm	L mm	P <sub>max</sub> kN	F <sub>D</sub> /P	G kg
<b>S   E</b>					
GBAR 10	100	60	0.7	1	0.62
GBAR 20	200	160	0.7	1	0.75
GBAR 30	300	260	0.7	1	0.88



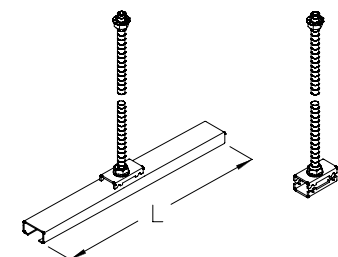
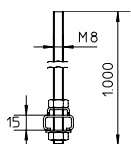
## MA 60 Middle hanger

Article number	H mm	B mm	L mm	G kg
<b>S</b>				
MA 60-10	56	40	90	0.26
MA 60-20	56	40	190	0.36
MA 60-30	56	40	290	0.45



## GBAG Central hanger

Article number	B mm	L mm	P <sub>max</sub> kN	F <sub>D</sub> /P	G kg
<b>S   E</b>					
GBAG 10	100	80	0.5	1	0.42
GBAG 20	200	180	0.5	1	0.50
GBAG 30	300	280	0.5	1	0.57



GBAG 20  
GBAG 30

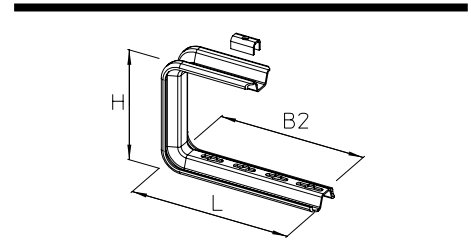
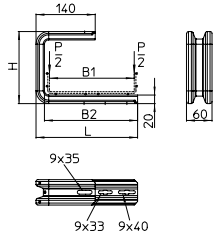
GBAG 10

# Brackets – KSL system

Load diagrams | Technical information

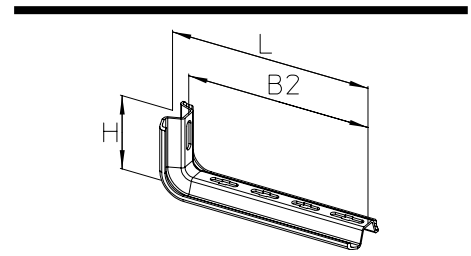
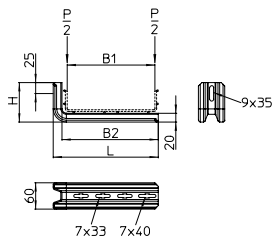
## DKSL Ceiling fixed bracket, light-duty

Artikelnummer	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S</b>							
<b>DKSL 010</b>	170	100	120	140	0.9	3.1	0.86
<b>DKSL 020</b>	170	200	220	240	0.5	2.1	0.84
<b>DKSL 030</b>	170	300	320	340	0.4	2.7	1.00
<b>DKSL 040</b>	170	400	420	440	0.3	3.3	1.18



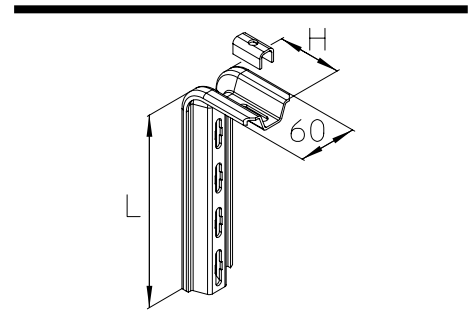
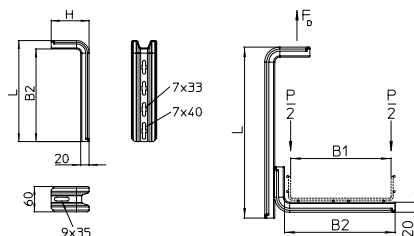
## KSL Wall bracket, light-duty

Article number	H mm	B1 mm	B2 mm	L mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S   F</b>							
<b>KSL 010</b>	90	100	120	140	1.3	2.8	0.36
<b>KSL 015</b>	90	150	170	190	1.0	3.4	0.45
<b>KSL 020</b>	90	200	220	240	0.9	4.1	0.53
<b>KSL 025</b>	90	250	270	290	0.7	4.8	0.61
<b>KSL 030</b>	90	300	320	340	0.6	5.5	0.69
<b>KSL 040</b>	90	400	420	440	0.5	6.9	0.86



## KSLW Ceiling bracket, light-duty

Article number	H mm	B1 mm	B2 mm	$L_k$ mm	$P_{max}$ kN	$F_D/P$	G kg
<b>S   F</b>							
<b>KSLW 010</b>	90	100	120	140	1.8	3.4	0.41
<b>KSLW 015</b>	90	150	170	190	1.4	4.1	0.50
<b>KSLW 020</b>	90	200	220	240	1.1	4.8	0.59
<b>KSLW 025</b>	90	250	270	290	1.0	5.5	0.68
<b>KSLW 030</b>	90	300	320	340	0.8	6.2	0.76
<b>KSLW 040</b>	90	400	420	440	0.6	7.6	0.95
<b>KSLW 050</b>	90	500	520	540	-	-	1.13
<b>KSLW 060</b>	90	520	620	640	-	-	1.29

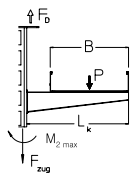


# Bracket support – KHU system

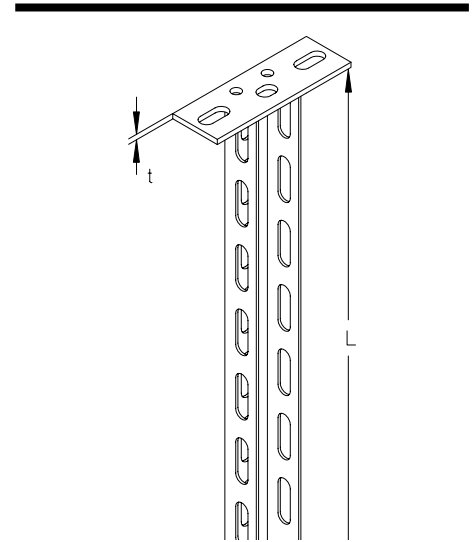
Load diagrams | Technical informationen

## KDU 40 Bracket support, 40x30 mm

B mm	L <sub>k</sub> mm	P <sub>max</sub> kN	F <sub>D</sub> /P
100	120	4.3	1.6
200	220	2.7	2.1
300	320	2.0	2.7
400	420	1.5	3.3

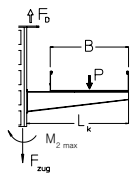


$M_{2,max} = 380 \text{ Nm}$   
 $F_{zug} = 10 \text{ kN}$

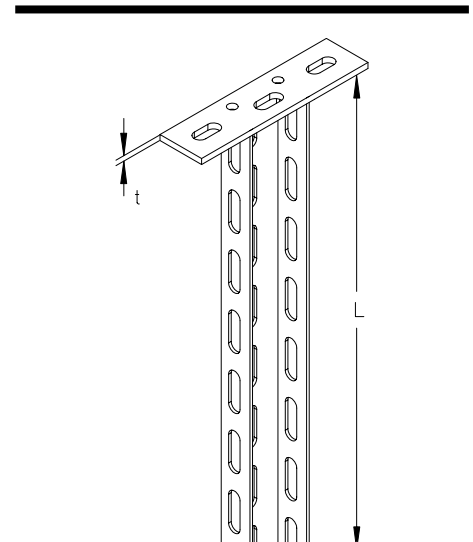


## KDU 57 Bracket support, 57x30 mm

B mm	L <sub>k</sub> mm	P <sub>max</sub> kN	F <sub>D</sub> /P
100	120	6.9	1.4
200	220	4.5	1.9
300	320	3.4	2.3
400	420	2.7	2.8
500	520	2.2	3.2
600	620	1.9	3.7

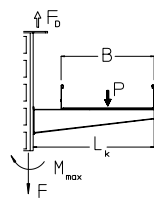


$M_{2,max} = 670 \text{ Nm}$   
 $F_{zug} = 15 \text{ kN}$

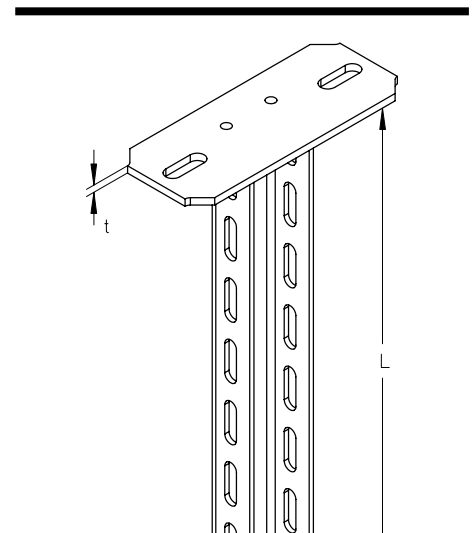


## KDU 60 Bracket support, heavy

B mm	L <sub>k</sub> mm	P <sub>max</sub> L > 1000 kN	P <sub>max</sub> L < 1000 kN	F <sub>D</sub> /P
100	120	19.3	12.5	1.2
200	220	12.9	8.3	1.5
300	320	9.7	6.2	1.9
400	420	7.7	5	2.2
500	520	6.4	4.2	2.6
600	620	5.5	3.6	2.9



$L \leq 1000: M_{max} = 1000 \text{ Nm}$   
 $L > 1000: M_{max} = 1250 \text{ Nm}$   
 $F_{zug} = 16 \text{ kN}$



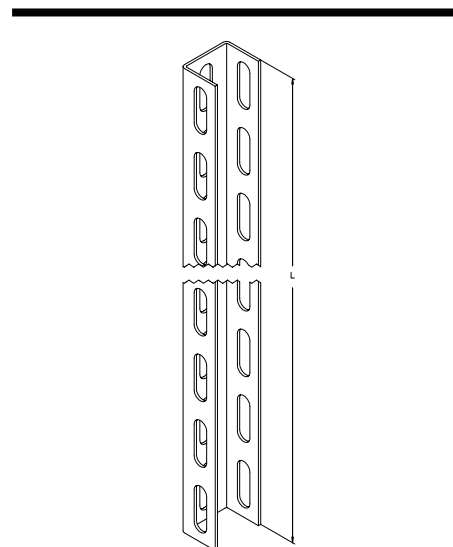
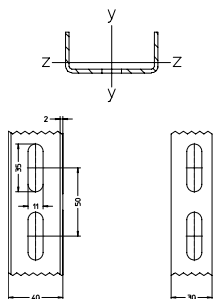
M

# Bracket support – KHU system

Load diagrams | Technical informationen

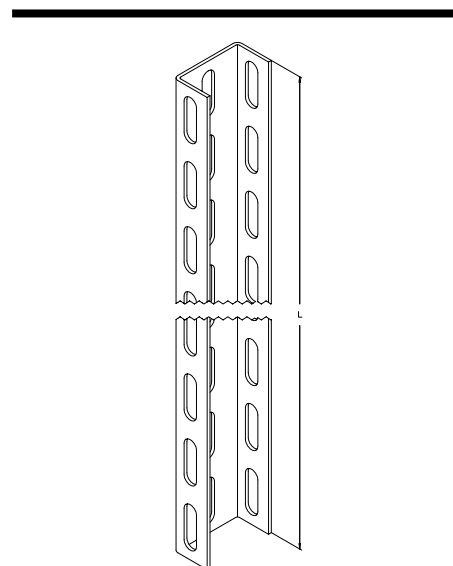
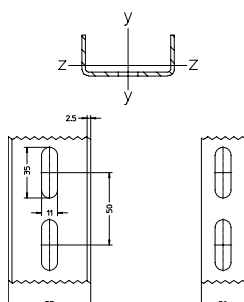
## KHU 40 Bracket support, 40 x 30 mm

H mm	B mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
40	30	1.22	1.68	0.62	3.33	1.30	1.34



## KHU 57 Bracket support, 57 x 30 mm

H mm	B mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
57	30	1.92	3.33	0.79	9.50	1.79	2.04

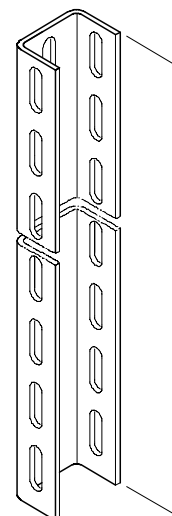


# Bracket support – KHU system

Load diagrams | Technical informationen

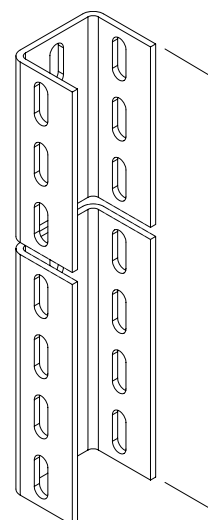
## KHU 60 Bracket support

H mm	B mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
60	40	3.75	7.03	2.47	21.1	6.73	3.52



## KHU 80 Bracket support

H mm	B mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
80	60	7.23	18.87	7.61	75.48	30.12	6.65

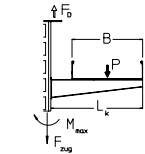


# Bracket support – KHI system

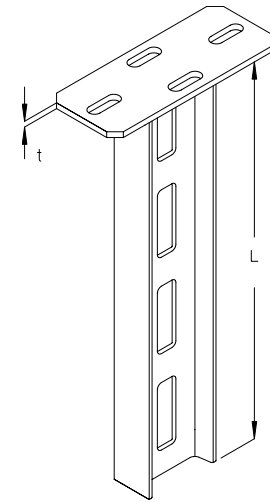
Load diagrams | Technical informationen

## KDI Bracket support, heavy, profile 100

B mm	L <sub>K</sub> mm	P <sub>max</sub> L > 1000 kN	P <sub>max</sub> L < 1000 kN	F <sub>D</sub> /P
100	120	20.0	14.5	1.3
200	220	13.8	10.0	1.6
300	320	10.5	7.6	1.9
400	420	8.5	6.2	2.3
500	520	7.1	5.2	2.6
600	620	6.1	4.4	3.0

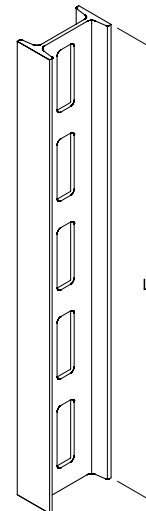
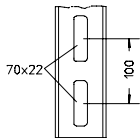
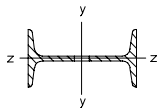


L ≤ 1000: M<sub>max</sub> = 1600 Nm  
 L > 1000: M<sub>max</sub> = 2200 Nm  
 F<sub>zug</sub> = 20 kN



## KHI Bracket support, Type KT

H mm	B mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
80	42	6.71	19.5	3.0	77.8	6.29	5.85





# Bracket support – KHI system

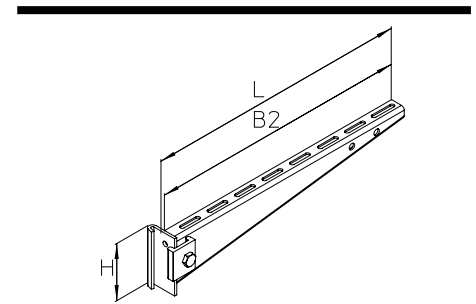
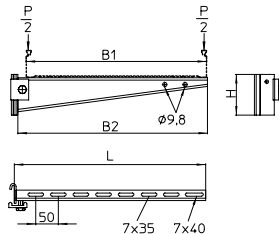
Load diagrams | Technical informationen

## KT Bracket, standard, KDI/KHI

Article number	H mm	B1 mm	B1 mm	L mm	P <sub>max</sub> kN	G kg
<b>GV   F</b>						
<b>KT 010</b>	50	100	120	124	2.0	0.24
<b>KT 020</b>	70	200	220	224	2.0	0.56
<b>KT 030</b>	70	300	320	324	2.0	0.77
<b>KT 040</b>	90	400	420	424	2.0	0.87
<b>KT 050</b>	110	500	520	524	2.0	1.40
<b>KT 060</b>	110	600	620	624	2.0	1.55



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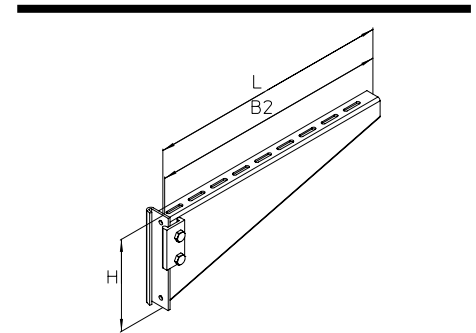
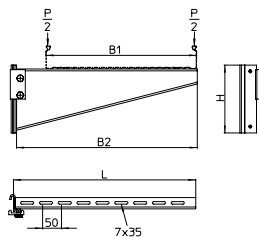


## KTS Bracket, heavy, KDI/KHI

Article number	H mm	B1 mm	B2 mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>						
<b>KTS 020</b>	180	200	280	284	7.0	1.63
<b>KTS 030</b>	180	300	380	384	6.3	1.99
<b>KTS 040</b>	180	400	480	484	5.5	2.36
<b>KTS 050</b>	180	500	580	584	4.9	2.73
<b>KTS 060</b>	180	600	680	684	4.3	3.09
<b>KTS 070</b>	180	600	780	784	3.6	3.46
<b>KTS 080</b>	180	600	880	884	3.0	3.81
<b>KTS 090</b>	180	600	980	984	2.3	4.18
<b>KTS 100</b>	180	600	1080	1084	1.7	4.55



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Sicherheit  
Regelmäßige  
Produktions-  
Überwachung  
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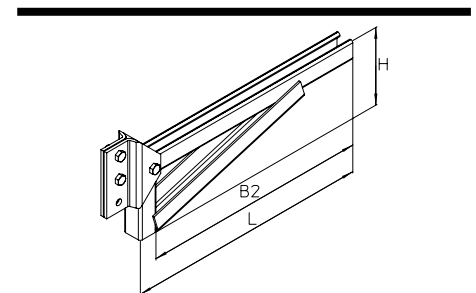
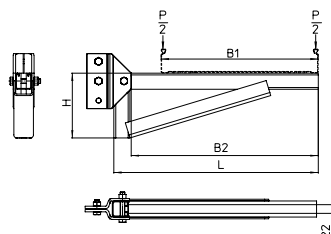


## KTSS Bracket, very heavy, KDI/KHI

Article number	H mm	B1 mm	B2 mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>						
<b>KTSS 020</b>	100	200	280	321	12.0	3.16
<b>KTSS 030</b>	135	300	380	421	12.0	3.94
<b>KTSS 040</b>	165	400	480	521	12.0	4.71
<b>KTSS 050</b>	200	500	580	621	12.0	5.50
<b>KTSS 060</b>	230	600	680	721	12.0	6.29



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Regelmäßige  
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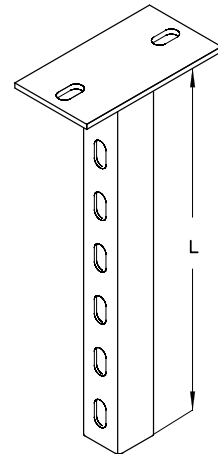
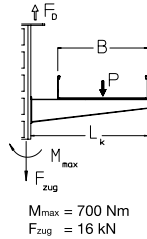


# Bracket support – KHA system

Load diagrams | Technical information

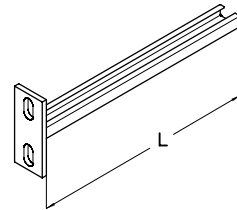
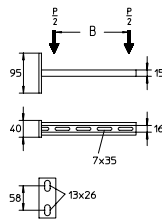
## KDAG 41 Ceiling fixed bracket, profile 41

Article number	B mm	L <sub>k</sub> mm	P <sub>max</sub> kN	F <sub>D</sub> /P
<b>F</b>				
<b>KDAG 41</b>	100	125	4.2	1.4
<b>KDAG 41</b>	200	225	2.7	1.9
<b>KDAG 41</b>	300	325	2.0	2.3
<b>KDAG 41</b>	400	425	1.6	2.8
<b>KDAG 41</b>	500	525	1.4	3.3
<b>KDAG 41</b>	600	625	1.2	3.8



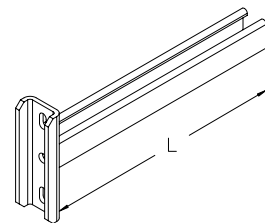
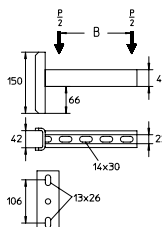
## KA 30 Bracket, light for ceiling-fixed bracket support systems, profile 41

Article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>KA 30-010</b>	100	125	0.5	0.2
<b>KA 30-015</b>	150	175	0.5	0.3
<b>KA 30-020</b>	200	225	0.5	0.3
<b>KA 30-025</b>	250	275	0.5	0.4
<b>KA 30-030</b>	300	325	0.5	0.4
<b>KA 30-040</b>	400	425	0.5	0.5



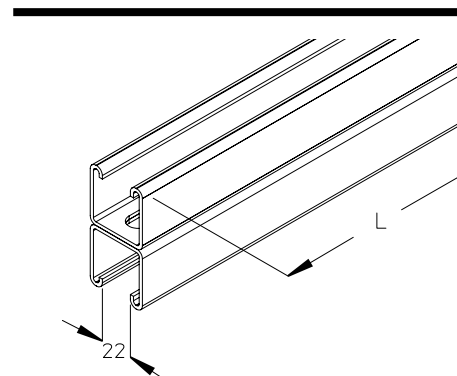
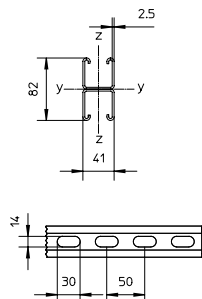
## KA 41 Bracket, standard, for ceiling-fixed bracket support systems, profile 41

Article number	B mm	L mm	P <sub>max</sub> kN	G kg
<b>F</b>				
<b>KA 41-010</b>	100	125	3.7	1.0
<b>KA 41-015</b>	150	175	3.7	1.1
<b>KA 41-020</b>	200	225	3.7	1.2
<b>KA 41-025</b>	250	275	3.7	1.4
<b>KA 41-030</b>	300	325	3.7	1.5
<b>KA 41-040</b>	400	425	3.7	1.6
<b>KA 41-050</b>	500	525	3.7	1.8
<b>KA 41-060</b>	600	625	3.7	1.9



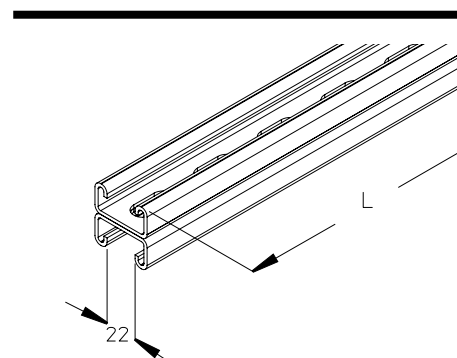
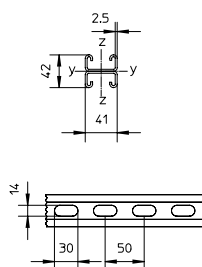
**KHA 82** profile rail as mounting profile 41 x 82 mm, perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>F</b>							
<b>KHA 82</b>	82	5.98	8.64	8.76	35.41	17.95	5.22



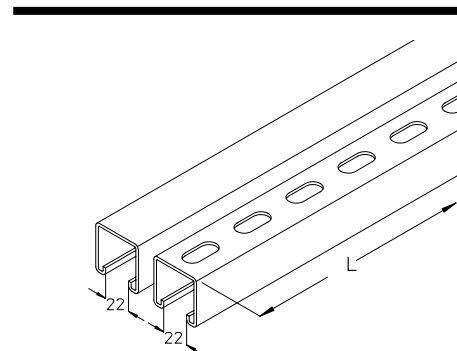
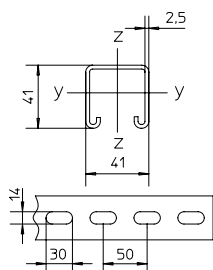
**KHA 42** profile rail as mounting profile 41 x 42 mm, perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>F</b>							
<b>KHA 42</b>	42	3.93	2.80	5.12	5.87	10.50	3.55



**A 41/KHA 41** profile rail as profile 41 x 41 mm, perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>B   F</b>							
<b>A 41</b>	41	3.30	3.19	4.50	7.31	9.22	2.76
<b>F</b>							
<b>KHA 41</b>	41	2.98	2.82	4.35	5.95	8.98	2.61

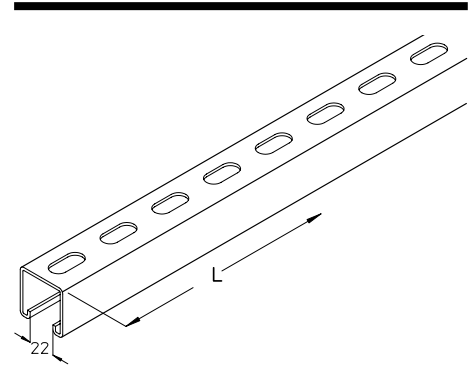
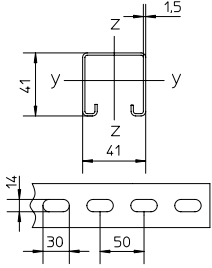


# Profile rails

Load diagrams | Technical informationen

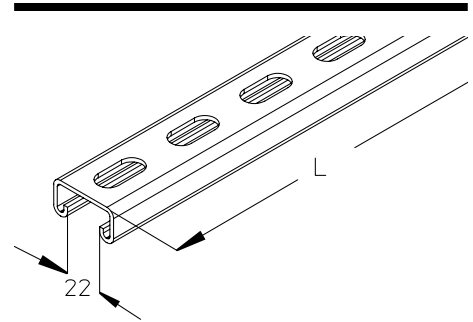
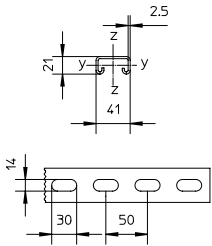
## KHAL 41 profile rail, 41 x 41 mm, perforated

Article number	H mm	A cm <sup>2</sup>	$W_y$ cm <sup>3</sup>	$W_z$ cm <sup>3</sup>	$I_y$ cm <sup>4</sup>	$I_z$ cm <sup>4</sup>	G kg/m
<b>S   F</b>							
<b>KHAL 41</b>	41	1.89	2.01	2.91	4.15	5.96	1.56



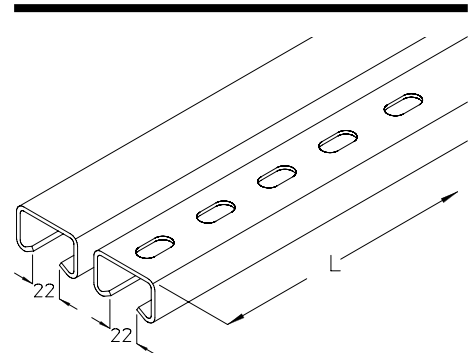
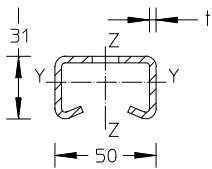
## KHA 21 profile rail 41 x 21 mm, perforated

Article number	H mm	A cm <sup>2</sup>	$W_y$ cm <sup>3</sup>	$W_z$ cm <sup>3</sup>	$I_y$ cm <sup>4</sup>	$I_z$ cm <sup>4</sup>	G kg/m
<b>F   E4</b>							
<b>KHA 21</b>	21	1.95	0.92	2.56	1.02	5.25	1.77



## A 2/KHA 2 profile rail, 50 x 31 mm, not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	$W_y$ cm <sup>3</sup>	$W_z$ cm <sup>3</sup>	$I_y$ cm <sup>4</sup>	$I_z$ cm <sup>4</sup>	G kg/m
<b>B   F</b>							
<b>A 2</b>	30	3.84	2.45	5.42	4.33	13.54	3.22
<b>F</b>							
<b>KHA 2</b>	30	3.42	2.31	5.40	3.77	13.49	3.03

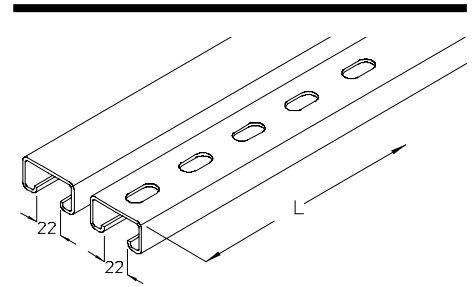
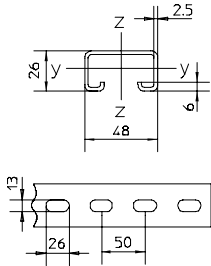


# Profile rails

Load diagrams | Technical informationen

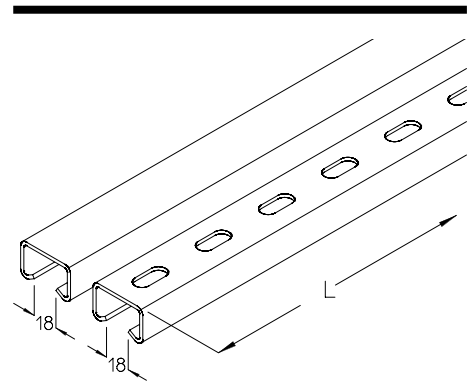
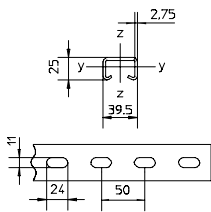
## A 4/KHA 4 profile rail, 48x26 mm, not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>B   F</b>							
<b>A 4</b>	26	2.85	1.76	3.85	2.64	9.23	2.39
<b>F</b>							
<b>KHA 4</b>	26	2.54	1.66	3.83	2.29	9.18	2.27



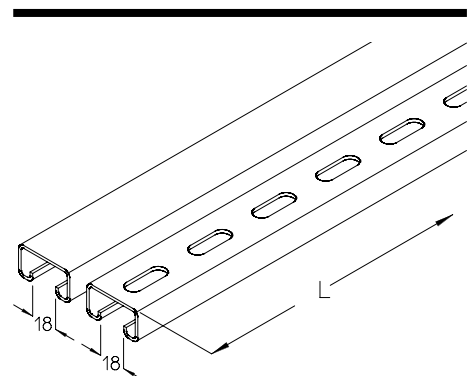
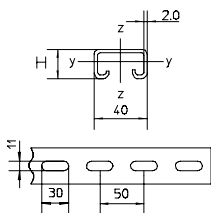
## A 9/KHA 9 profile rail 40 x 25 mm. not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>B   F</b>							
<b>A 9</b>	25	2.56	1.33	2.86	1.97	5.65	2.14
<b>F</b>							
<b>KHA 9</b>	25	2.26	1.25	2.85	1.70	5.62	1.98



## A 8/KHA 8 profile rail, 40x22 mm, not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>B   F</b>							
<b>A 8</b>	22	1.96	1.10	2.25	1.34	4.32	1.68
<b>F</b>							
<b>KHA 8</b>	22	1.74	1.05	2.24	1.18	4.48	1.54

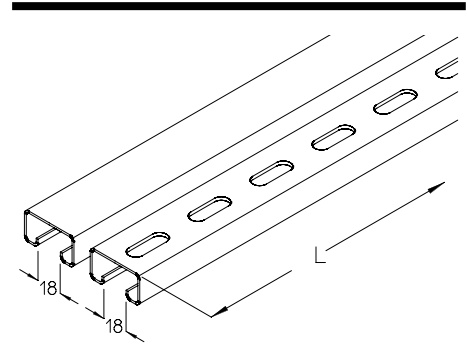
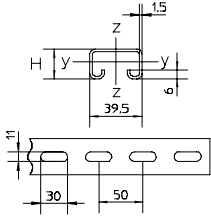


# Profile rails

Load diagrams | Technical information

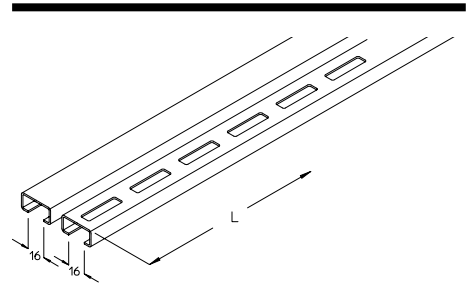
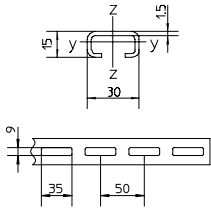
## A 7/KHA 7 profile rail, 40 x 22 mm, not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>S   E</b>							
<b>A 7</b>	22	1.49	0.90	1.75	1.10	3.46	1.17
<b>KHA 7</b>	22	1.32	0.80	1.69	0.91	3.34	1.09



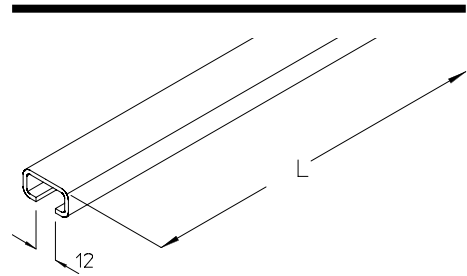
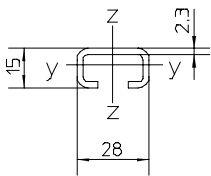
## B 7/KHB 7 profile rail, 30 x 15 mm, not perforated/perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>S   F   E   B</b>							
<b>B 7</b>	15	0.95	0.32	0.83	0.30	1.26	0.75
<b>S   F   E</b>							
<b>KHB 7</b>	15	0.84	0.30	0.83	0.25	1.25	0.67



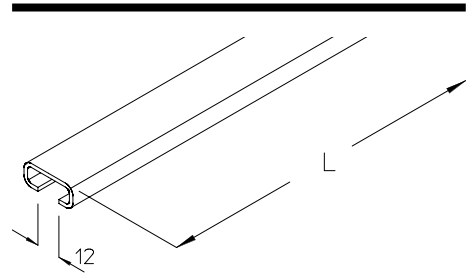
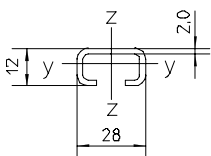
## B 6 profile rail, 28 x 15 mm, not perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>F   E   E4   B</b>							
<b>B 6</b>	15	1.41	0.46	1.05	0.41	1.47	1.11



## B 3 profile rail, 28 x 12 mm, not perforated

Article number	H mm	A cm <sup>2</sup>	W <sub>y</sub> cm <sup>3</sup>	W <sub>z</sub> cm <sup>3</sup>	I <sub>y</sub> cm <sup>4</sup>	I <sub>z</sub> cm <sup>4</sup>	G kg/m
<b>F   E4   B</b>							
<b>B 3</b>	12	1.13	0.29	0.80	0.21	1.12	0.89

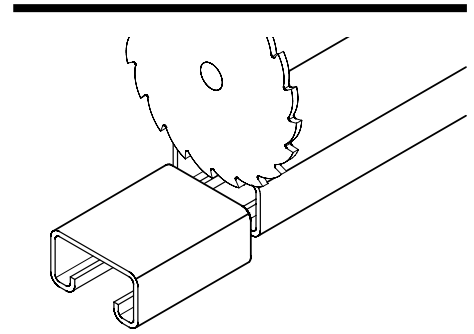


# Profile rails

Load diagrams | Technical informationen

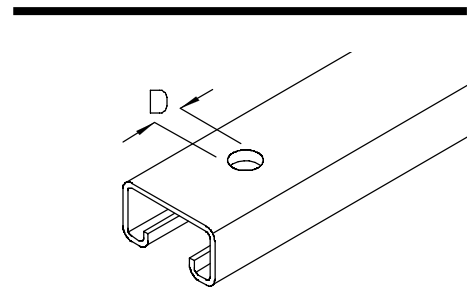
## PRS Cut

Article number	A 2 A 4 A 41	A 7 A 8 A 9	B 3 B 6 B 7	B 12 B 15
<b>PRS A</b>	•	•		
<b>PRS B</b>			•	•



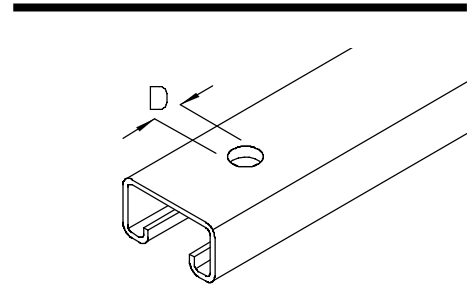
## RL Round hole

Article number	D mm	L mm	A 2 A 4 A 41	A 7 A 8 A 9	B 3 B 6 B 7	B 12 B 15
<b>RL 7</b>	7		•	•	•	•
<b>RL 9</b>	9		•	•	•	
<b>RL 11</b>	11		•	•		
<b>RL 13</b>	13		•	•		



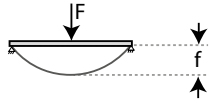
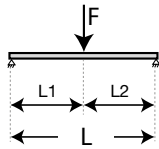
## LGL Elongated hole

Article number	D mm	L mm	A 2 A 4 A 41	A 7 A 8 A 9	B 3 B 6 B 7	B 12 B 15
<b>LGL 7x10</b>	7	10	•	•	•	•
<b>LGL 9x20</b>	9	20	•	•	•	
<b>LGL 11x24</b>	11	24	•	•		
<b>LGL 13x26</b>	13	26	•	•		



# Single-spam girder with centric single load

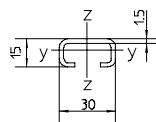
## Technical information



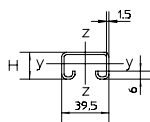
The values in the table are valid for hot-dip galvanised profiles with a centric force application  $F$ , allowing for the maximum permissible tension  $\sigma_{zul}$ , respectively the maximum permissible deflection  $f$  ( $L/100$ ).

The values include a safety factor of 1.35 against failure load.

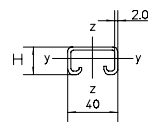
### Maximum load $F_{max}$ [N] and the corresponding deflection $f$ [mm]



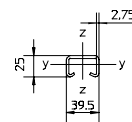
KHB 7



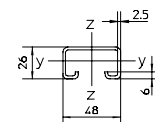
KHA 7



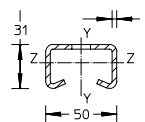
KHA 8



KHA 9

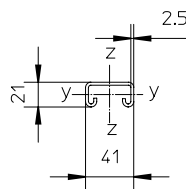


KHA 4

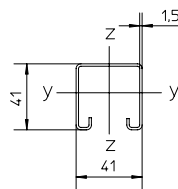


KHA 2

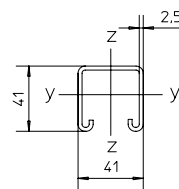
Span L cm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm
25	757	0.4	2023	0.3	2528	0.3	3362	0.2	4577	0.2	5816	0.2
50	376	1.5	1007	1.3	1259	1.3	1673	1.0	2280	1.0	2896	0.9
75	248	3.4	667	3.1	834	2.9	1107	2.3	1511	2.3	1918	2.1
100	183	6.0	496	5.4	619	5.1	822	4.1	1123	4.1	1426	3.7
125	143	9.2	392	8.4	489	7.9	648	6.3	889	6.3	1127	5.7
150	116	12.9	322	11.9	402	11.2	531	9.0	730	9.1	926	8.1
175	96	17.1	271	16.0	338	15.0	446	12.0	616	12.1	780	10.9
200	75	20.0	227	20.0	290	19.1	381	15.3	528	15.5	668	13.9
225	60	22.5	179	22.5	239	22.5	329	18.9	459	19.2	580	17.2
275	40	27.5	120	27.5	160	27.5	251	26.3	356	27.2	447	24.3
300	34	30.0	101	30.0	134	30.0	220	30.0	302	30.0	396	27.9



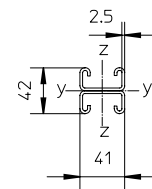
KHA 21



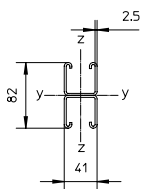
KHAL 41



KHA 41



KHA 42



KHA 82

Span L cm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm	$F_{max}$ N	$f$ mm
25	2272	0.3	5060	0.2	7083	0.2	7077	0.2	21863	0.1
50	1127	1.3	2524	0.7	3532	0.7	3525	0.7	10912	0.4
75	741	3.1	1676	1.7	2344	1.6	2326	1.7	7253	0.9
100	545	5.4	1250	3.0	1748	2.9	1723	3.0	5417	1.5
125	425	8.2	993	4.6	1387	4.5	1357	4.5	4311	2.4
150	343	11.4	821	6.5	1145	6.4	1108	8.4	3569	3.4
175	282	15.0	696	8.8	970	8.6	927	8.4	3035	4.6
200	236	18.7	602	11.3	837	11.1	788	10.6	2632	5.9
225	198	22.4	528	14.2	732	13.8	678	13.0	2315	7.4
275	133	27.5	418	20.5	577	19.9	510	17.9	1847	10.8
300	112	30.0	376	24.0	517	23.1	444	20.2	1669	12.6



# Assembly

Cable trays Assembling instruction	<a href="#">N02-N07</a>
Wide-span cable ladders WPL Assembly Instruction	<a href="#">N08-N13</a>
Wide-span cable trays WPR Assembly instruction	<a href="#">N14-N19</a>
Support systems Assembly instruction	<a href="#">N20-N28</a>
Wire-mesh cable trays Application examples	<a href="#">N29-N32</a>
Cable trays Application examples	<a href="#">N33-N39</a>
Cable ladders Application examples	<a href="#">N39-N41</a>
Wide-span systems Application examples	<a href="#">N42-N50</a>
Vertical Ladders Application examples	<a href="#">N51-N54</a>
Support systems Application examples	<a href="#">N55-N64</a>
Cable support trough Application examples	<a href="#">N65</a>
Line of protection tubes Application examples	<a href="#">N66</a>
Light channel system Application examples	<a href="#">N67-N68</a>

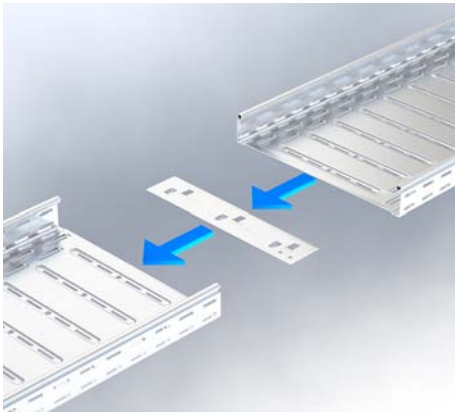


# Cable trays

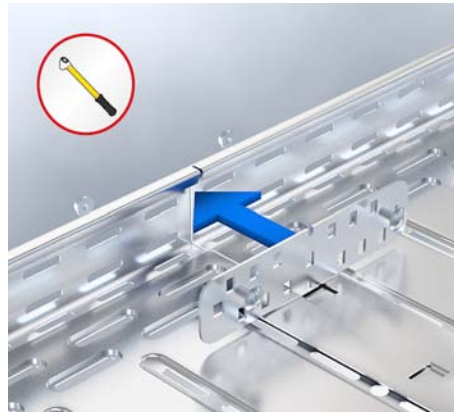
## Assembling instruction



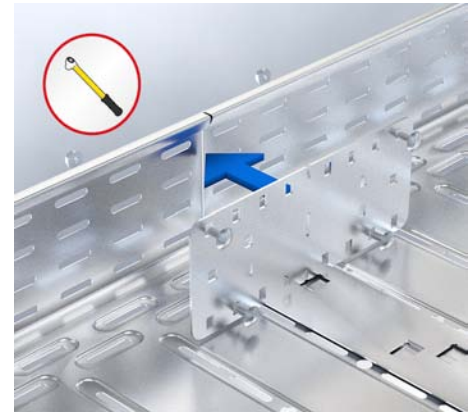
Cable trays serve the bridging of medium-size fitting distances. The support structures must be planned by engineering experts and observing the permissible torque of all screw connections.



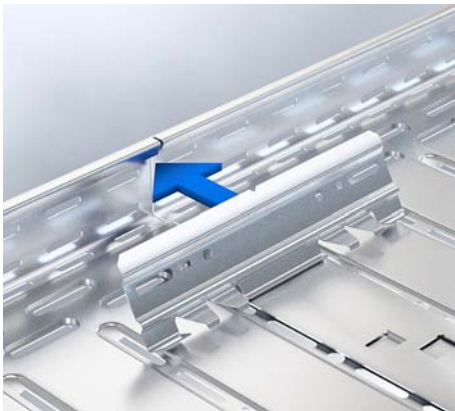
**1 | Floor connector**  
From 100 mm nominal width attach floor connector (VB) to the cable tray bottom.



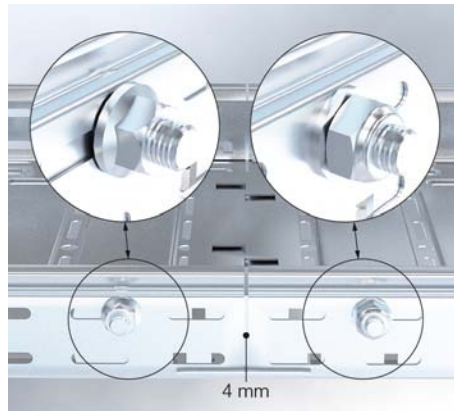
**2 | Side connector**  
Push the side connector (RGV) into the cable tray side rail, screw each side rail tight using a clamping screw (KLR), then push in the connecting tray and screw to the side connector (RGV).



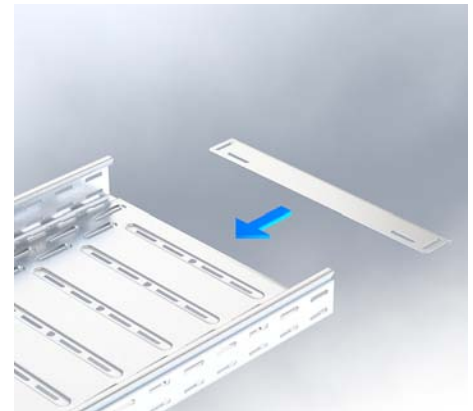
**3 | Side connector**  
Type R 35, RG 35, R 60, RG 60, and RI 60 cable trays are to be screwed using one clamping screw (KLR) per side rail. Type R 85, RG 85, R 110, and RG 110 cable trays are to be screwed with two clamping screws per side rail (top and bottom).



**4 | Snap-lock connectors**  
Alternatively, the cable tray RG 60 can be latched on the inside below the head of the side rail using the snap-lock connector (RGVS 60) without tools. Push the snap-lock connector against the tray bottom by hand until a positive locking into place in the tray bottom occurs.



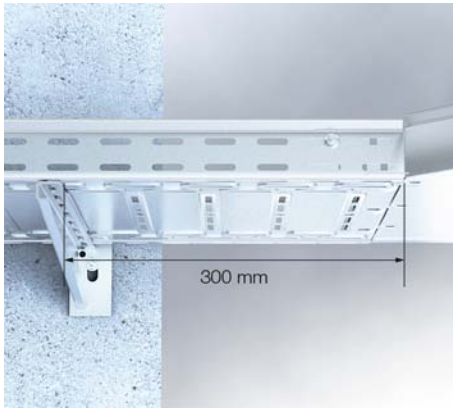
**5 | Fixed and floating bearings**  
In case of extreme variations in temperature, a fixed and free bearing in the joint must be allowed for.  
Left view: Fixed bearing (with pre-stamped washer, FRSV+SEMS)  
Right view: floating bearing (with free washer FRSV+-SEMSS+US) and a clearance of 4 mm.



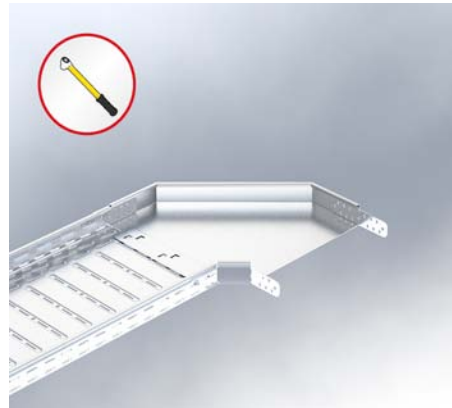
**6 | End plate**  
In case of open support ends and a horizontal change in direction by  $< 30^\circ$  open tray bottom. For cable tray ends or open changes in direction, push tray end plate (REB) into the bottom of the cable tray and screw together.

# Cable trays

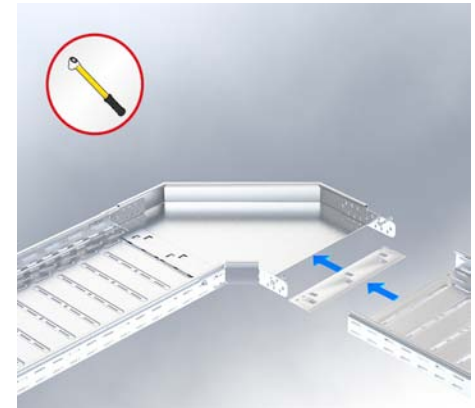
## Assembling instruction



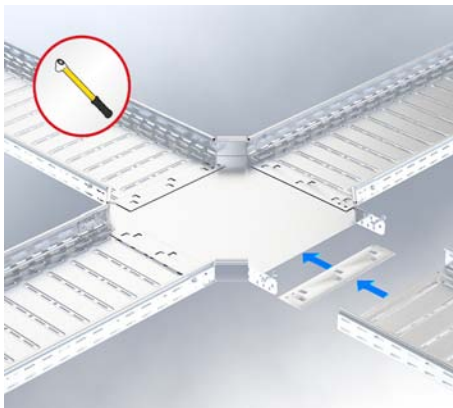
**7 | Support distance to formed part end**  
Applies to all formed parts or changes in direction or open ends: The maximum distance of 300 mm with regard to the formed part end and the support must be observed.



**8 | Horizontal curve**  
Insert the horizontal curve (RB) and the floor connector (VB) into the cable tray and screw together in one place per side rail. For type R 85, RG 85, R 110 and RG 110 cable trays, screw in two places per side rail as described for RB.



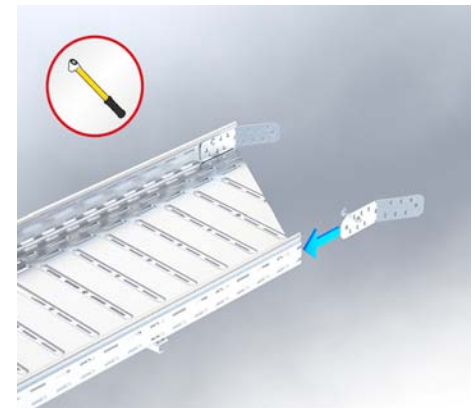
**9 | Horizontal curve**  
Insert connecting tray and floor connector (VB) into horizontal curve (RB) and screw together in one place per side rail. For type R 85, RG 85, R 110 and RG 110 cable trays, screw in two places per side rail as described for RB.



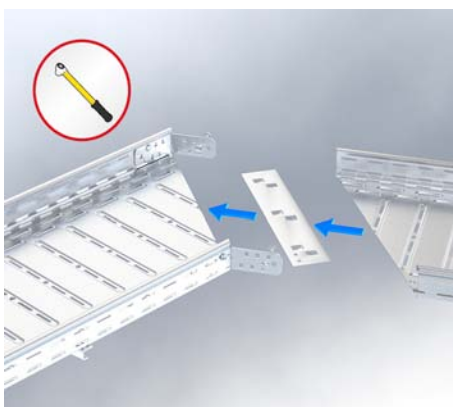
**10 | Junction**  
Insert cable tray junction (RK) and floor connector (VB) into cable tray and screw together in one place per side rail. For type R 85, RG 85, R 110 and RG 110 cable trays, screw in two places per side rail as described for RB.



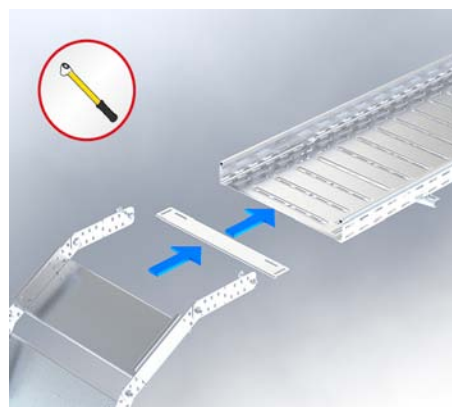
**11 | Horizontal change in direction**  
For a horizontal change in direction without normed formed components, mitre the cable tray as required, deburr and cold-galvanise it.



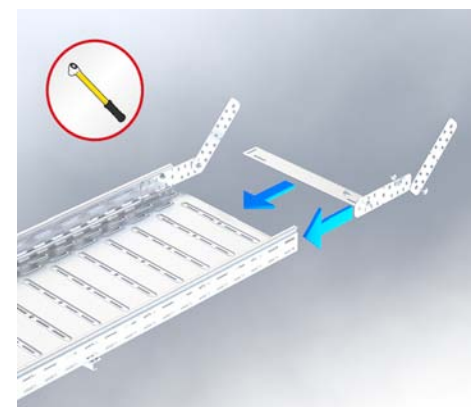
**12 | Horizontal change in direction**  
Bend both side connectors (RGV) to the necessary angle, insert into the side rails of the cable tray and screw together as described for RGV (see image 3).



**13 | Horizontal change in direction**  
Place floor connector (VB) of corresponding length inside the cable tray bottom, push connecting cable tray into side connectors (RGV) and screw together as described for RGV (see image 3).



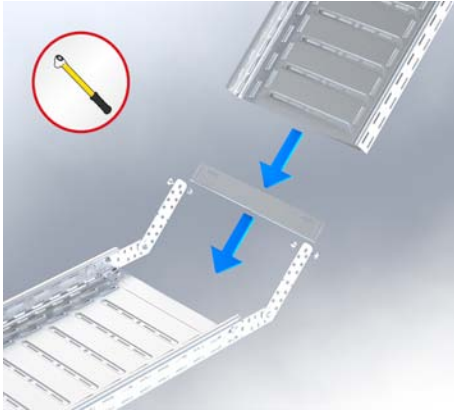
**14 | Curve**  
Push flexible cable tray curve (RVB) into cable trays and screw together as described for RGV (see image 3). Insert the cable tray end plates at the ends of cable trays, push into the bottom of the cable trays and screw together as described for RGV (see image 6).



**15 | Vertical change in direction**  
Vertical change in direction without formed component: Push tray end plate (REB) into the bottom of the cable tray and screw together as described for RGV (see image 3). Screw one RGV to each side rail with projection.

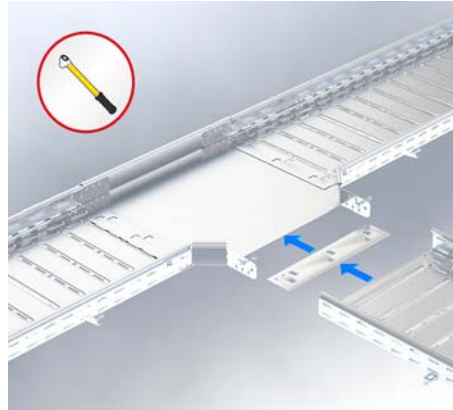
# Cable trays

## Assembling instruction



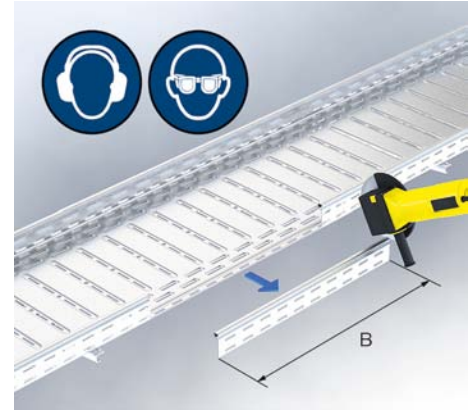
### 16 | Vertical change in direction

Insert connecting cable tray into the side connectors (RGV) and screw together (see image 3). At the cable tray ends, push cable tray end plates (REB) into the bottom of the cable tray and screw together (see image 6).



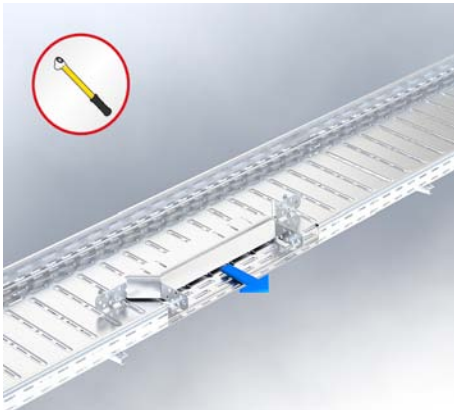
### 17 | Joint

Push joint (RA) and floor connector (VB) into the cable tray and screw together as described for RGV (see image 3). For type R 85, RG 85, R 110 and RG 110 cable trays, screw in two places as described for RB (see image 8).



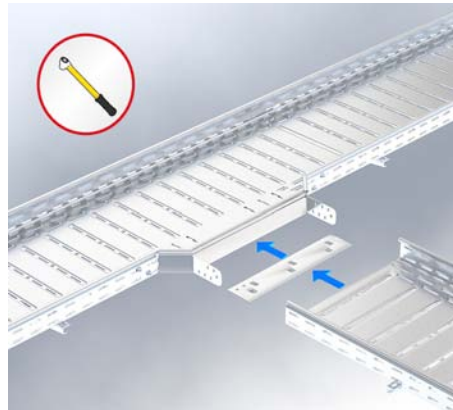
### 18 | Extension joint

Installation of extension joints manufactured on site (RAA). Cut out the side rail of the cable tray flush with the bottom in width B = the connecting cable tray width + 120 mm, deburr and cold-galvanise.



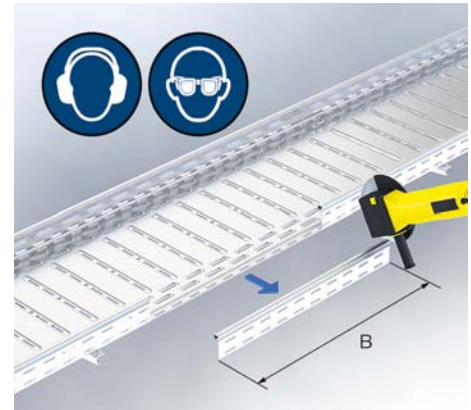
### 19 | Extension joint

Attach extension joint (RAA) and screw in one place per side rail. For type R 85, RG 85, R 110 and RG 110 cable trays screw together in two places as described for RB (see image 8).



### 20 | Extension joint

Insert connecting cable tray and floor connector (VB) into the extension joint (RAA) and screw together as described for RGV (see image 3).



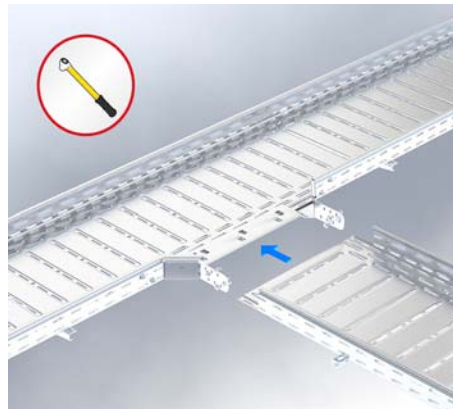
### 21 | Extension angle

Installation of tray extension angles (RAE). Cut out the side rail of the cable tray flush to the bottom in width B = the extension cable tray width + 120 mm.



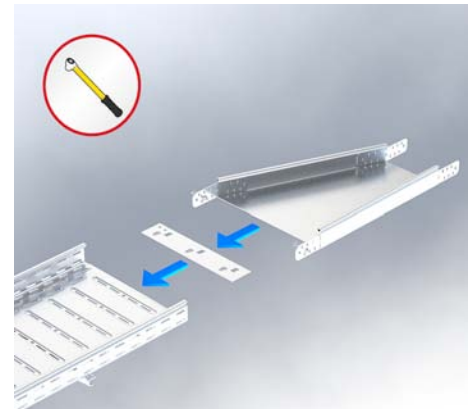
### 22 | Extension angle

Insert tray extension angles (RAE) into the cable trays and screw to the bottom in one place per side rail. Attach floor connector (VB).



### 23 | Extension angle

Trim extension trays by 60 mm per side rail, push onto the extension angles and screw together in one place per side rail.

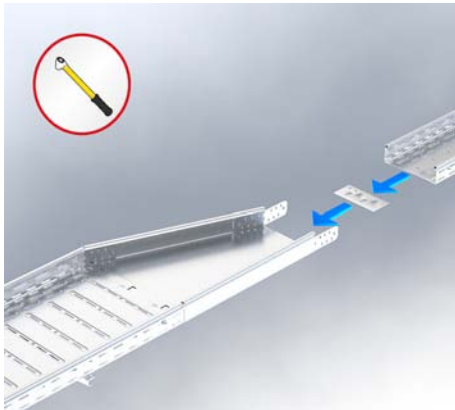


### 24 | Reduction

Insert cable tray reduction (RR) and floor connector (VB) into the cable tray and screw together in one place per side rail. For type R 85, RG 85, R 110 and RG 110 cable trays screw together in two places as described for RB (see image 8).

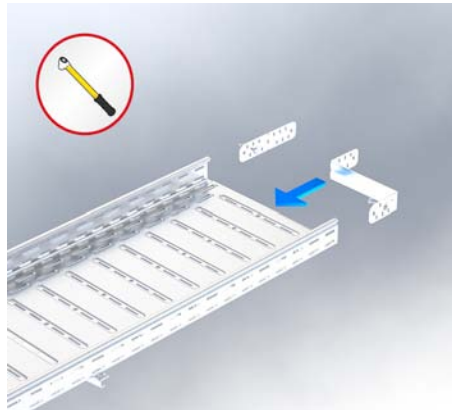
# Cable trays

## Assembling instruction



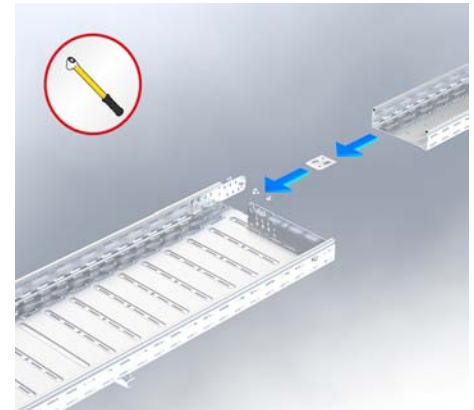
### 25 | Reduction

Insert extension cable tray and floor connector (VB) into cable tray reduction (RR) and screw together as described for RGV (see image 3).



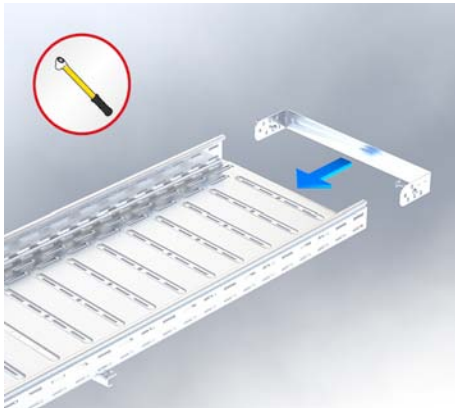
### 26 | Reduction using a closing plate

Cable tray reduction using a tray closing plate (RAB) and a side connector (RGV). Bend tray closing plate (RAB) into a z-shape and screw side connector (RGV) and tray end plate (RAB) as described for RGV (see image 3).



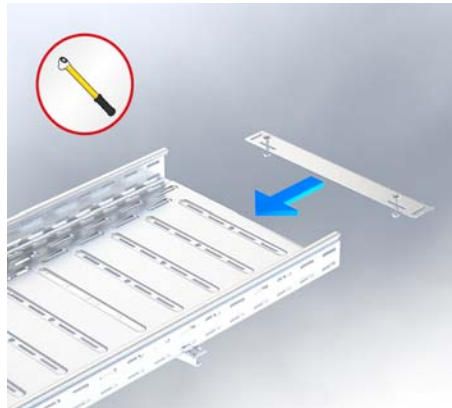
### 27 | Reduction using a closing plate

Insert extension cable tray and floor connector (VB) into the cable tray reduction (RAB) and screw together as described for RGV (see image 3).



### 28 | Closing plate

Closing of a cable tray using a tray closing plate (RAB). Bend tray closing plate into a u-shape and push into the cable tray. Screw together as described for RGV (see image 3).



### 29 | End plate

Mounting of the tray end plate for the protection of the inbound or outbound cables. Push tray end plate (REB) onto cable tray and screw to the bottom in two places if the width is at least 200 mm.



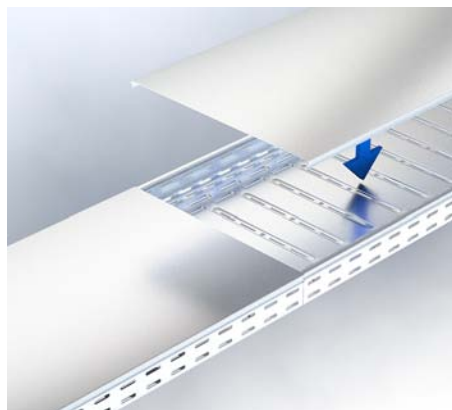
### 30 | Barrier strip

Screw barrier strip in three places (approx. 100 mm between both barrier strip ends as well as in the middle).



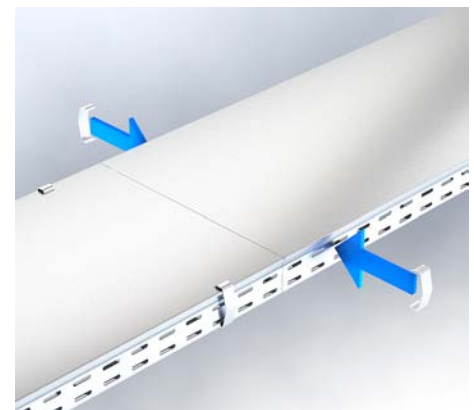
### 31 | Assembly plate

Screw the assembly plate (MP-RG) for electric components to the side rail of the cable tray in two places.



### 32 | Cover

Place the tray cover (RD) onto the cable tray and push against the side rail until a positive locking into place in the side rail occurs. For indoor use only!

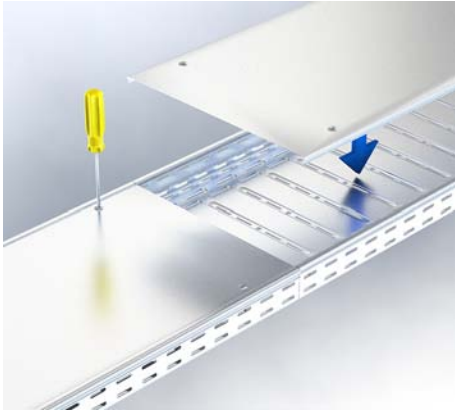


### 33 | Brackets

Place the cover brackets (RDKL) sideways onto the tray cover (RD) and push against the cover bracket (RDKL) until a positive locking into place with the cable tray bottom occurs. For indoor use only! 6 pieces / 3 metres

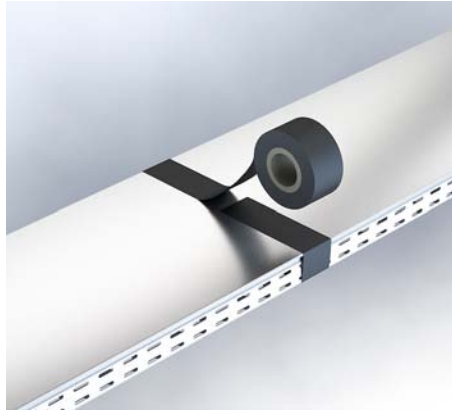
# Cable trays

## Assembling instruction



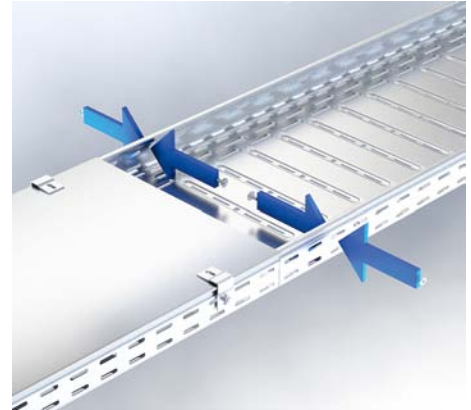
### 34 | Turning bolt

The tray cover with a turning bolt (RDR) should be mounted as described for RD (see image 32). In addition, turn the turning bolt using a screwdriver until the slit in the screw head points lengthwise towards the cable tray. For indoor use only!



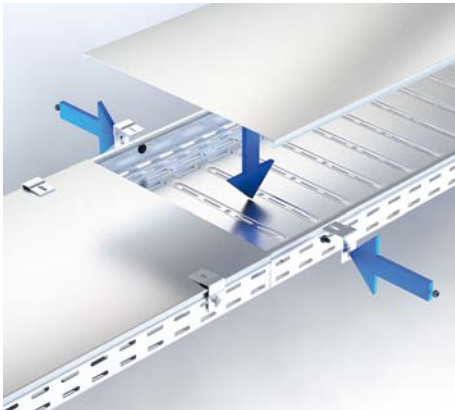
### 35 | Adhesive metal strip

Place the tray cover (RD) onto the cable tray (see image 32), then remove the separating foil of the adhesive metal strip (MKB) and wrap the strip around the cover and around the cable tray. For indoor use only!



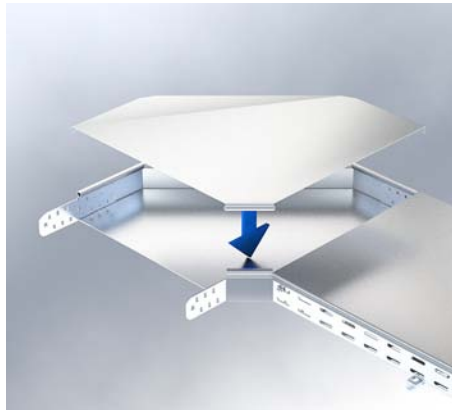
### 36 | Storm safety angle

Lead the screw (KLR) of the storm safety angle (RD-SW) on the inside through the cable tray. Push the anti-loss washer (UVS M6) on the screw.



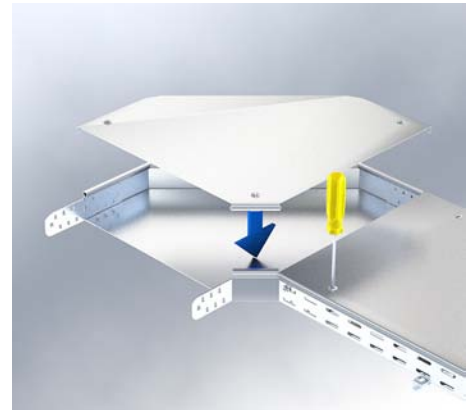
### 37 | Storm safety angle

Fasten the tray cover (RD) to the cable tray (see image 32), place the storm safety angle (RD-SW) from the outside onto the cover and screw using the screw nut SEMS M6. Suitable for outdoor use! 6 pieces / 3 metres



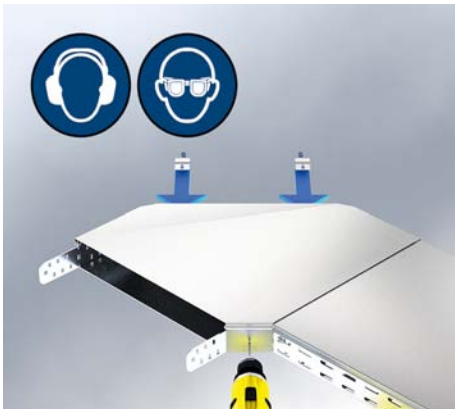
### 38 | Curve cover

As described for the cable tray covers (RD) (see image 32), the formed components, e.g. the curve cover (RBD), should be placed on the cable tray curve, pushing against the side rail until a positive locking into place in the side rail occurs. For indoor use only!



### 39 | Curve cover

The formed component covers with turning bolt, e.g. the tray curve cover (RDBR), are mounted with a turning bolt (RDR) as described for the tray cover (see image 34).



### 40 | Storm safety angle

Storm safety angles (RD-SW-L) for formed components covers are mounted as described for the tray cover (RD) (see image 38). In addition, the through holes should be made using an RD-SW-L as a drilling template. RAA 2 pieces, RB 3 pieces and RA and RK 4 pieces



### 41 | Cutting and sectioning work

Perform cutting and sectioning work with greatest care and observe the occupational safety.



### 42 | Galvanising

All cutting and sectioning points must be galvanised with cold zinc paint (KZF) or cold zinc spray (KZS) by the customer after the deburring.

# Cable trays

## Assembling instruction

### Legend Accessories

#### FRSV 6x12



#### US 6x12



#### SEMS M6



#### SEMSS M6



#### SEM M6



#### KLR



### Symbols



Wear protection glasses



Wear ear protection



Observe tightening torque for fasteners

**S**

Sendzimir-hot-dip galvanised according to DIN EN 10346

**F**

Hot-dip galvanised according to DIN EN ISO 1461

**E**

High-grade steel material No. 1.4301 (V 2A)

### Screw tightening torques (recommended)

Bolt diameter	Strength category screw (DIN 267 part 3)	Strength category nut (DIN 267 part 4)	Screw tightening torque (Nm) acc. VDI 2230
<b>M6</b>	4.6	5	4
<b>M6 E</b>	4.6	A2 50	4

# Wide-span cable ladders WPL

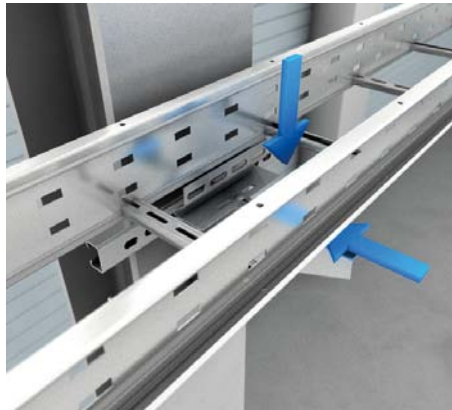
## Assembly Instruction



Wide-span cable ladders bridge large fastening gaps. The support structures must be planned according to engineering practice and it is a must to use side rail bearers with the brackets. All bolted connections must be tightened correctly.



**1 | Flange mounting clamp**  
Bolt the rear flange mounting clamp (WPHS) to the bracket.



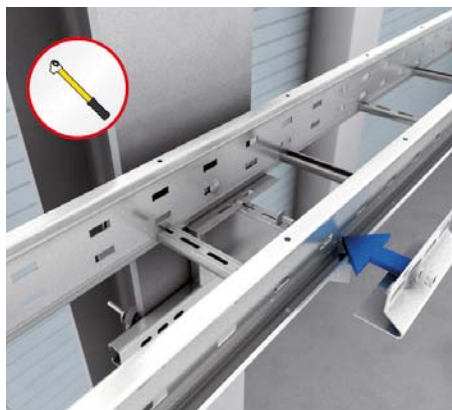
**2 | Carefully position**  
Carefully position the wide-span cable ladder and push it against the fixed flange mounting clamp. Make sure the wide-span cable ladder is in the correct position!



**3 | Correctly positioned**  
Correct: Make sure the bracket is correctly positioned between the rungs of the wide-span cable ladder.



**4 | Wide-span cable ladder's**  
Attention: The mounting clamp (WPHS) has to be bolted to the bracket, even if a rung is positioned directly above the bracket.



**5 | Side rail bearer**  
Push the front flange mounting clamp (WPHS) onto the bracket and bolt the wide-span cable ladder, bracket, and WPHS together.

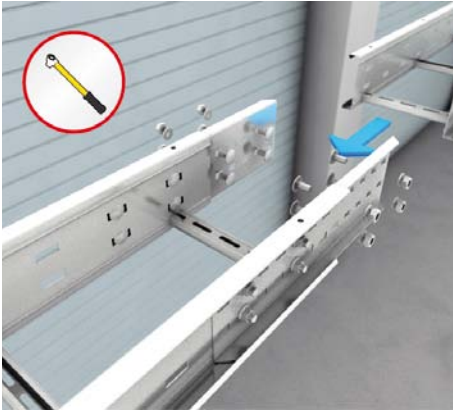


**6 | Wide-span coupler**  
Insert edge connectors (WPV) into the wide-span cable ladder's side rails and secure them with four clamping screws (KLS 10x20) per side rail.



# Wide-span cable ladders WPL

## Assembly Instruction



**7 | Connecting ladder**  
 Insert the connecting ladder into the wide-span coupler (WPV), leaving a gap of 4 mm between the ends of the two ladders. Then, secure the second ladder to the coupler (WPV), tightening the self-locking hexagon nuts (SEMSS 10 or SEMB 10) with a torque of 3 Nm.



**8 | Fixed bearing**  
 Left: fixed bearing (with integral washer). Center: the 4 mm gap between the ends of the two ladders. Right: floating bearing (with unmounted washer). (Connector accessories see table on page 6)



**9 | Horizontal bend**  
 Insert a horizontal bend (WPLB) into the wide-span cable ladder and fix it in place with two bolts per side rail.



**10 | Connecting ladder**  
 Insert the next connecting ladder into the horizontal bend (WPLB) and secure it with two bolts per side rail.



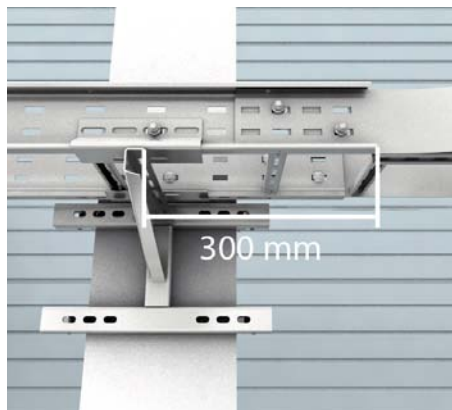
**11 | Wide-span branch piece**  
 Insert a wide-span branch piece (WPLA) into the wide-span cable ladder and attach it with two bolts per side rail.



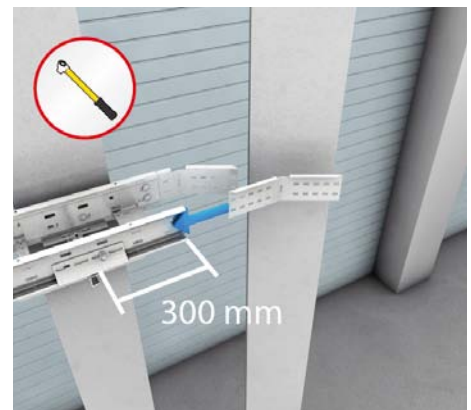
**12 | Outside riser**  
 Insert an outside riser (WPLF) into the wide-span cable ladder and bolt it in two places per side rail. Then, insert a connecting ladder into the outside riser (WPLF) and secure it with two bolts per side rail.



**13 | Inside riser**  
 Insert an inside riser (WPLS) into the wide-span cable ladder and fix it in place with two bolts per side rail. Then, insert a connecting ladder into the inside riser (WPLS) and bolt it in two places per side rail.



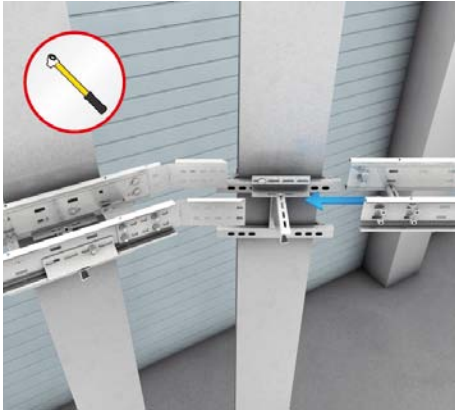
**14 | Fittings**  
 For all fitting parts to make directional changes, please make sure, that the distance between the end of the wide-span ladder and the bracket cannot exceed 300 mm.



**15 | Horizontal directional changes**  
 For horizontal directional changes of less than 30° note: First, bend both couplers (WPVH) to the required angle on site. Then, insert them into the wide-span cable ladder and secure them with four bolts per side rail.

# Wide-span cable ladders WPL

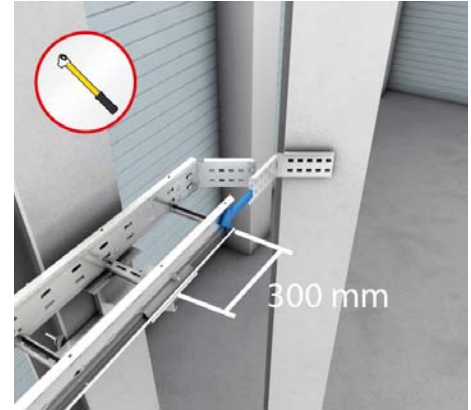
## Assembly Instruction



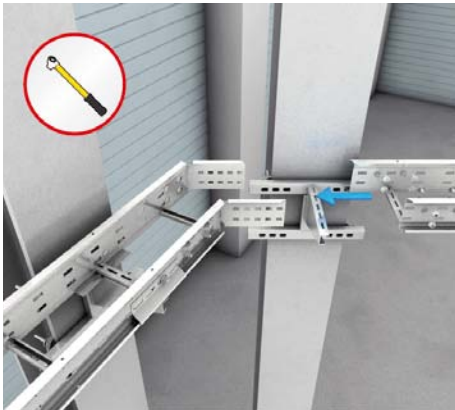
**16 | Wide-span coupler**  
Now, insert a connecting cable ladder into the coupler (WPVH) and fix it in place with four bolts per side rail.



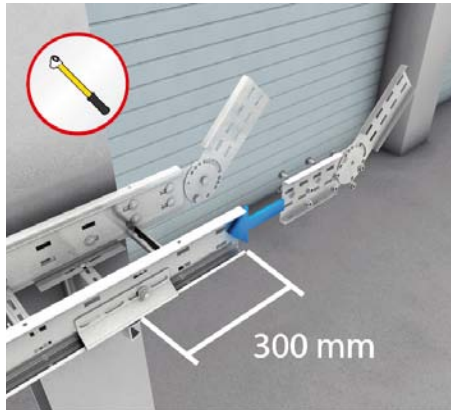
**17 | Horizontal directional changes**  
For horizontal directional changes of more than 30° note, that you have to create a mitre joint for the wide-span cable ladder at the required angle, then, as necessary, remove any extra rungs. Afterwards deburr and cold-galvanise.



**18 | Wide-span couplers**  
First, bend both wide-span couplers (WPVH) to the required angle on site. Then, insert them into the wide-span cable ladder and secure them with four bolts per side rail. The distance between the end of the wide-span ladder and the bracket cannot exceed 300 mm.



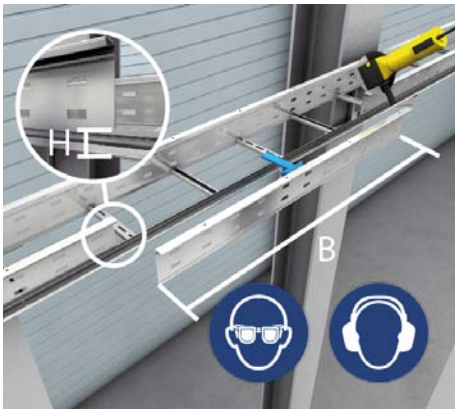
**19 | Connecting cable**  
Insert a connecting cable ladder into the coupler (WPVH) and fix it in place with four bolts per side rail.



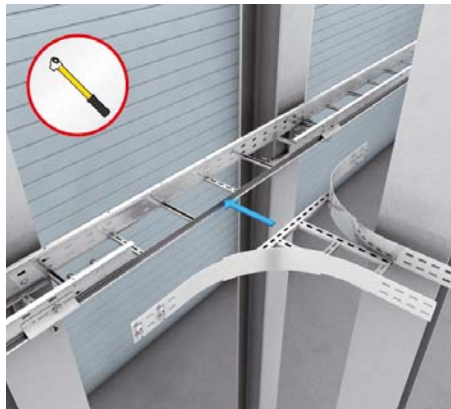
**20 | Vertical directional changes**  
For vertical directional changes note, that you have to first adjust both vertical couplers (WPVV) to the required angle and fix them in place with bolts. Then insert the couplers into the wide-span cable ladder and bolt them in four places per side rail. The distance between the end of the wide-span ladder and the bracket cannot exceed 300 mm.



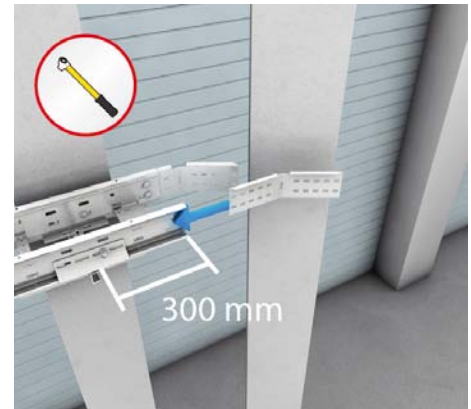
**21 | Vertical wide-span couplers**  
Insert a connecting cable ladder into the couplers (WPVV) and attach it with four bolts per side rail.



**22 | Attachment branch-piece**  
To fit an attachment branch-piece (WPLAA), a portion of the connecting side rail must be removed. Cut a length of 900 mm + the width of the connecting cable tray from the side rail of the wide-span cable ladder ("B" in the photo). Don't cut through the whole height of the side rail: H=23 mm must be left at the base of the side rail to support the branch-piece.



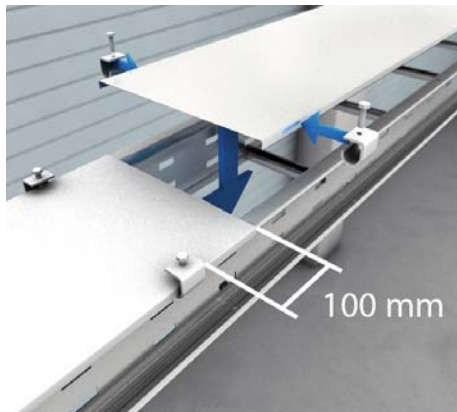
**23 | Attachment branch-piece**  
Attach a branch-piece (WPLAA) with four bolts per side rail.



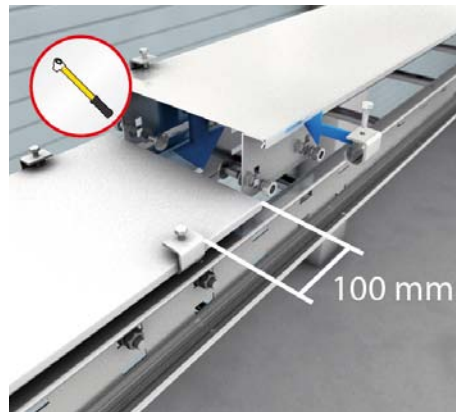
**24 | Attachment branch-piece**  
Insert a connecting ladder into the branch-piece (WPLAA) and fix it in place with four bolts per side rail.

# Wide-span cable ladders WPL

## Assembly Instruction



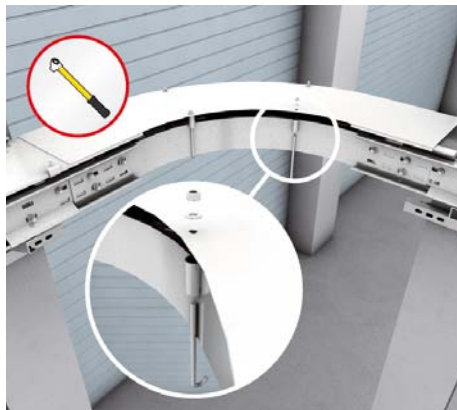
**25 | Cover clamps**  
Secure covers (WPD) with cover clamps (WPD-K) at 100 mm from each end of the cover and in the middle. (6 pieces / 3m)



**26 | Secure elevated covers**  
Secure elevated covers (WPD) with cover clamps (WPD-K and WPDA) at 100 mm from each end of the cover and in the middle. (6 pieces / 3m)



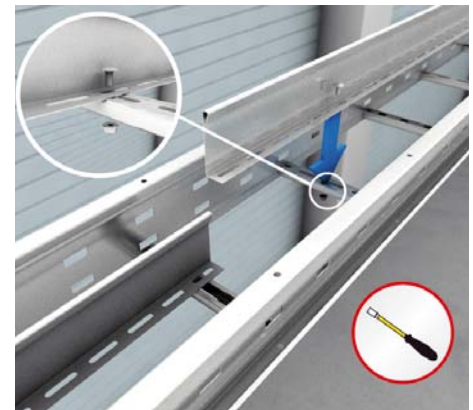
**27 | Cover clamps**  
Attach covers to wide-span cable ladder fittings (WPBD, WPAD or WPKD) with cover clamps (WPFDK) at every hole.



**28 | Fittings**  
Bolt elevated covers to wide-span cable ladder fittings (WPBD, WPAD or WPKD) with cover clamps (WPFDKA) at every hole.



**29 | End plate**  
Attach the end plate (WPKAB) to the desired rung of the cable ladder by bolting it with the provided channel nut AM16 in two places.



**30 | Barrier strip**  
Using a socket wrench, secure the barrier strip (WPTR) in the front, middle, and back.



**31 | Cutting**  
Cutting must be performed with the greatest care, complying to all industrial safety regulations.



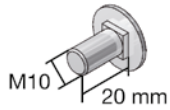
**32 | Galvanised**  
After the deburring, all cut areas must be galvanised with cold zinc paint (KZF) or cold zinc spray (KZS) on site.

# Wide-span cable ladders WPL

## Assembly Instruction

### Legend Accessories

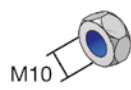
#### FRSV 10x20



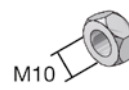
#### SEMS 10



#### SEMB 10



#### SEM 10



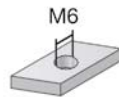
#### US 10x21



#### SEMSS 10



#### AM16



### Underline Symbols



Wear protection glasses



Wear ear protection



Correct



Wrong



Observe tightening torque for fasteners



Attention!

**S**

Sendzimir-hot-dip galvanised according to DIN EN 10346

**F**

Hot-dip galvanised according to DIN EN ISO 1461

**E**

High-grade steel material No. 1.4301 (V 2A)

### Screw tightening torques (recommended)

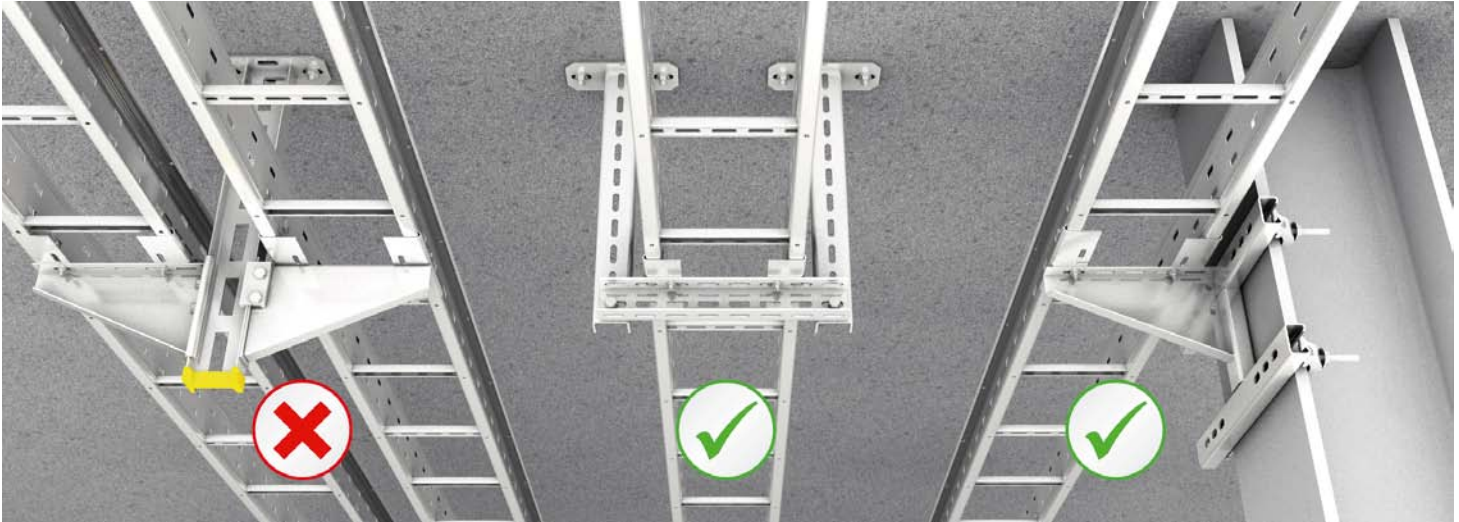
Bolt diameter	Strength category screw (DIN 267 part 3)	Strength category nut (DIN 267 part 4)	Screw tightening torque (Nm) acc. VDI 2230
<b>M6</b>	4.6	5	4
<b>M8</b>	4.6	5	8
<b>M10</b>	4.6	5	16
<b>M12</b>	4.6	5	32
<b>M16</b>	4.6	5	76
<b>M6</b>	8.8	8	14
<b>M8</b>	8.8	8	34
<b>M10</b>	8.8	8	68
<b>M12</b>	8.8	8	117
<b>M16</b>	8.8	8	291

### connector accessories

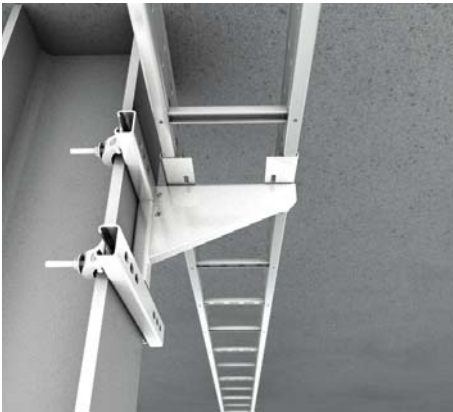
	fixed bearing (16 Nm)		floating bearing (3 Nm)		
<b>S</b>	FRSV 10x20	SEMS 10	FRSV 10x20	SEMSS 10	US 10x21
<b>F</b>	FRSV 10x20F	SEM 10F	US 10x21F	FRSV 10x20F	SEMB 10F
<b>E</b>	FRSV 10x20E	SEM 10E	US 10x21E	FRSV 10x20E	SEMSS 10E

# Wide-span cable ladders WPL

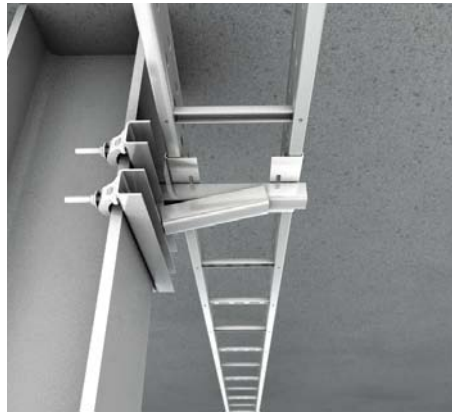
## Assembly Instruction



Supporting structures must be torsion free! Wide-span cable ladders must not be attached to ceiling profiles (single- or double-sided). Only installation with (wall) brackets or pendant suspension is acceptable.



**1 | Heavy-duty wall bracket**  
Heavy-duty wall bracket (KIS) are clamped to steel support with side-rail support (WPHS-K) and clamping claws (SKS H).



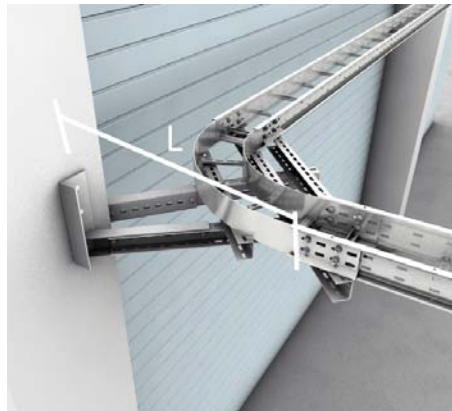
**2 | Heavy-duty wall bracket**  
Heavy-duty wall bracket (KISS) are clamped to steel support with side-rail support (WPHS-A) and clamping claws (SKS M).



**3 | Heavy-duty wall bracket**  
Heavy-duty wall bracket (KWS) are mounted on concrete wall with bracket rail support (WPHS-K).



**4 | Heavy-duty wall bracket**  
Heavy-duty wall bracket (KWSS) are mounted on concrete wall with bracket rail support (WPHS-A).



**5 | Horizontal**  
Heavy-duty corner installation (EBW) for horizontal 90° bends with side rail support (WPHS-K) has to be mounted on a concrete support.  
L = width of wide-span cable ladder + 560 mm

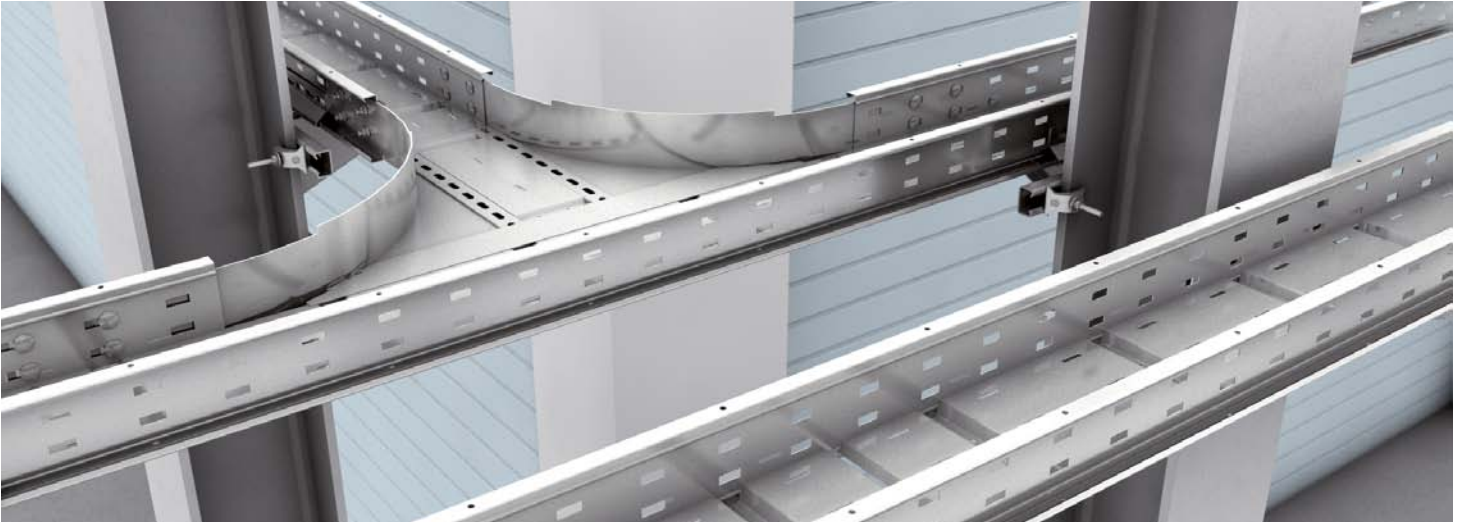


**6 | Profiles**  
Pendant suspension from profiles (e.g. KHU 60) with crossbeam and side-rail support (WPHS-K) are anchored to concrete ceiling.



# Wide-span cable trays WPR

## Assembly instruction



Wide-span cable trays are for bridging large fastening gaps. The fastening constructions must be planned by engineer and the use of side rail bearers on the brackets must be strictly kept. The permissible torque must be comply with in all screw connections.



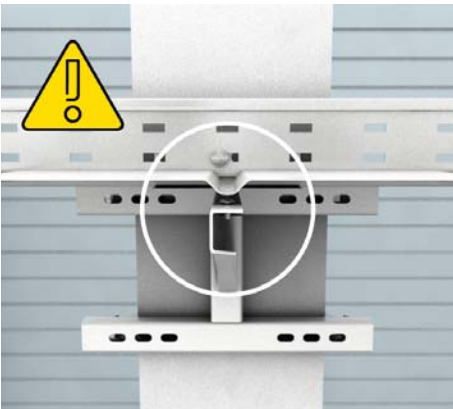
**1 | Flange mounting clamp**  
Screw backside flange mounting clamp (WPHS) on the bracket.



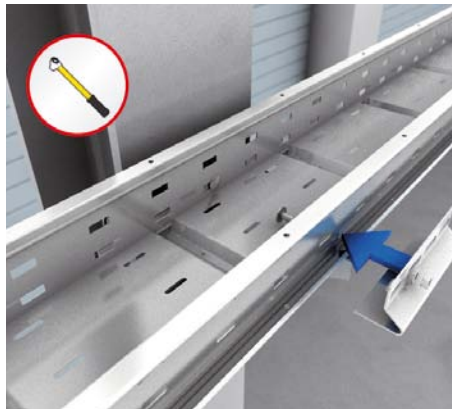
**2 | Flange mounting clamp**  
Place wide-span cable tray in position and push against screwed flange mounting clamp (WPHS). Make sure the wide-span cable tray is in the correct position!



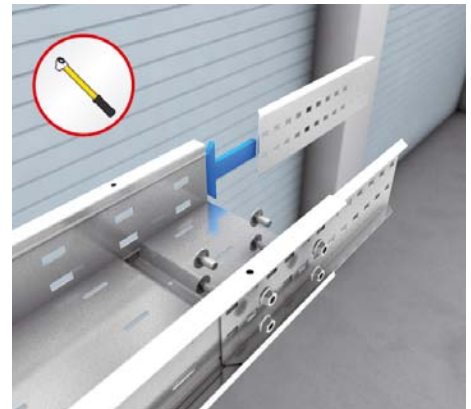
**3 | Correctly positioned**  
Make sure the bracket is positioned correctly between the seams of the wide-span cable tray.



**4 | Wide-span cable ladder's**  
Attention: The mounting clamp (WPHS) has to be bolted to the bracket, even if a rung is positioned directly above the bracket.



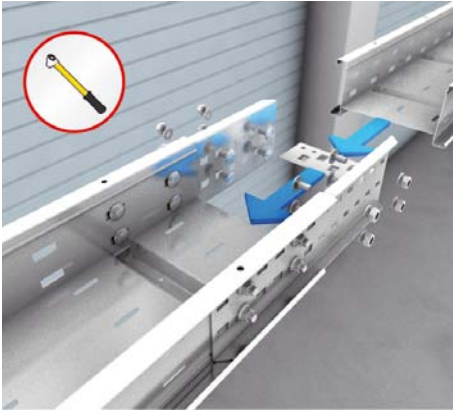
**5 | Flange mounting clamp**  
Push flange mounting clamp (WPHS) onto the bracket and screw together with the wide-span cable tray and the bracket.



**6 | Wide-span coupler**  
Push wide-span coupler (WPV) into the side rail of the wide-span cable tray and screw four times per side rail with clamping screw (KLS 10x20).

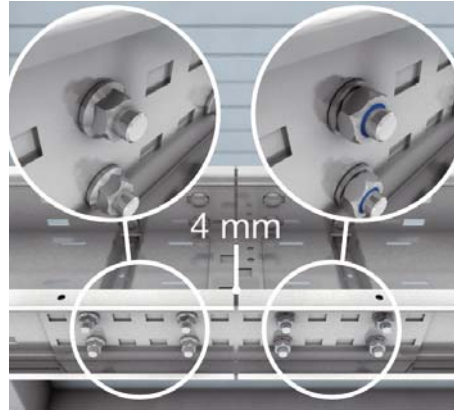
# Wide-span cable trays WPR

## Assembly instruction



### 7 | Connection plate

Insert connection plate (VB) on the bottom of the wide-span cable tray, push in connecting tray with a space of 4 mm and screw to coupler (WPV) using self-securing screw nuts (SEMSS 10 or SEMB 10). Permissible torque: 3 Nm.



### 8 | Fixed and floating bearing

View: left fixed bearing (with integral washer), right loose bearing (with loose washer) and a 4 mm clearance. Connector accessories see page 6.



### 9 | Horizontal bend

Insert horizontal bend (WPRB) with connection plate (VB) into wide-span cable tray and screw two times per side rail.



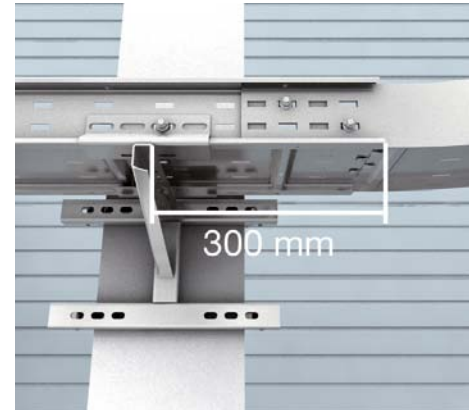
### 10 | Connecting tray

Insert connecting tray with connection plate (VB) into horizontal bend (WPRB) and screw two times per side rail.



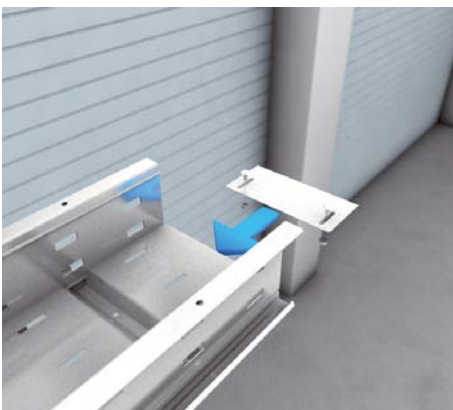
### 11 | Branch-piece

Insert branch-piece (WPRB) with connection plate (VB) into wide-span cable tray and screw two times per side rail.



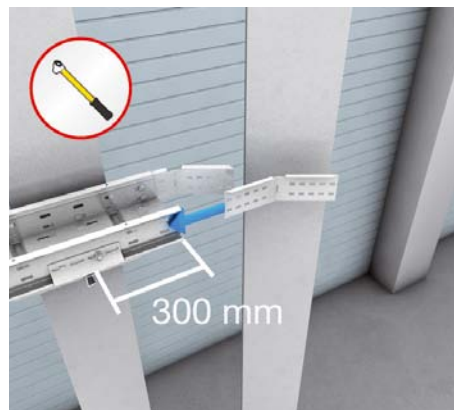
### 12 | Maximum space

It applies to all formed components or turnarounds: The maximum space of 300 mm with regard to formed component end and bracket must be complied to.



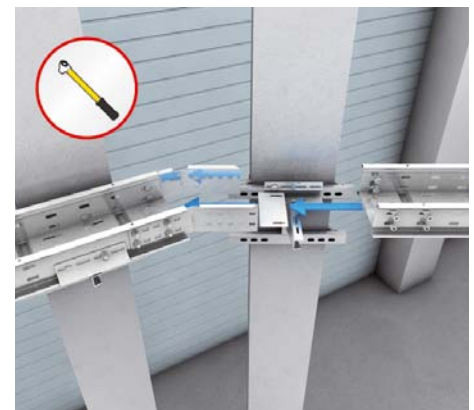
### 13 | Horizontal directional changes

Horizontal turnaround < 30 degrees – open tray bottom. Insert wide-span tray end plate (WPRES) into wide-span cable tray bottom at the wide-span cable tray ends or at open turnarounds and screw together.



### 14 | Horizontal directional changes

Bend both side connectors (WPVH) into the angle required for the construction. Insert into the side rails of the wide-span cable tray and screw four times per side rail. The maximum space of 300 mm must be kept with regard to the wide-span tray end and bracket.



### 15 | Horizontal directional changes

Push connector cable tray into the coupler (WPVH) and screw four times per side rail.

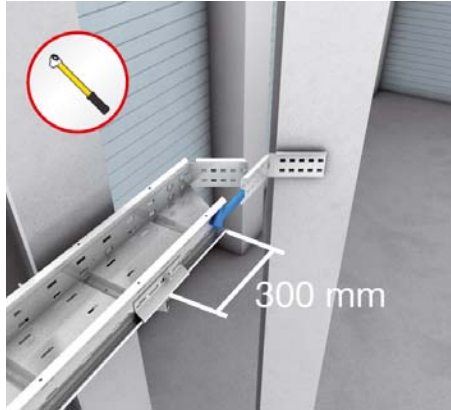
# Wide-span cable trays WPR

## Assembly instruction



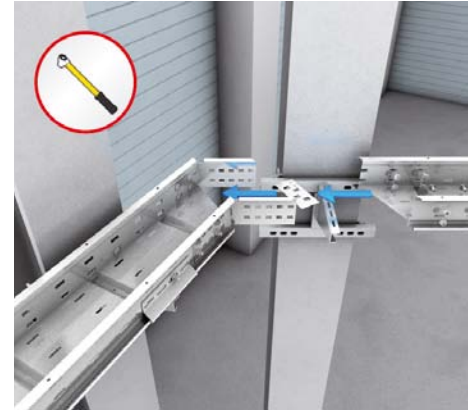
### 16 | Horizontal directional change

Horizontal turnaround > 30 degrees – closed tray bottom. Mitre wide-span cable tray as required, deflash and



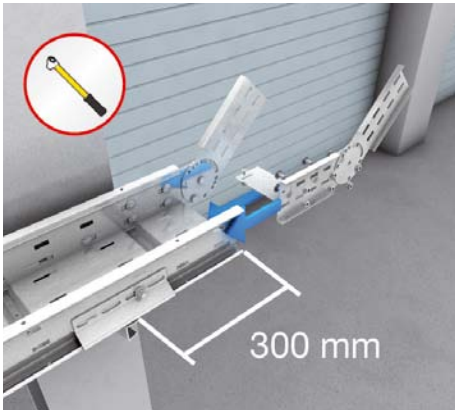
### 17 | Wide-span coupler

Bend both wide-span coupler (WPVH) into the angle required for the construction. Insert into the side rails of the wide-span cable tray and screw four times per side rail. The maximum space of 300 mm must be kept with respect to the wide-span tray end and the bracket.



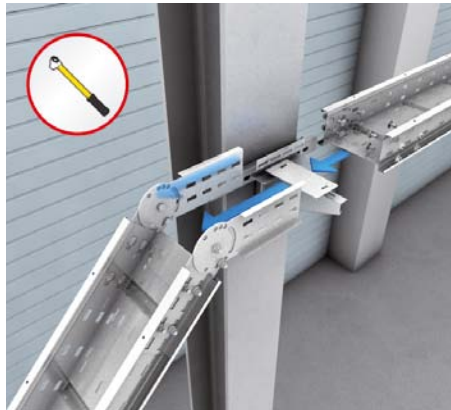
### 18 | Connection plate

Insert connection plate (VB) into bottom of the wide-span cable tray, push connecting cable tray into coupler (WPVH) and screw four times per side rail.



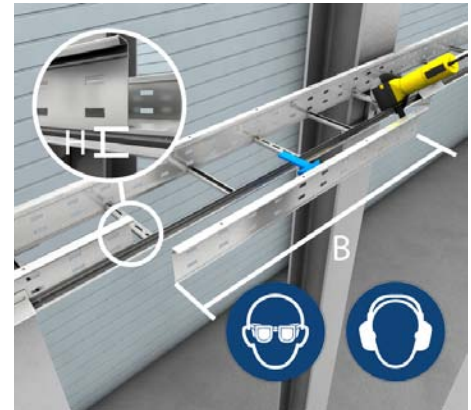
### 19 | Vertical directional change

To install a vertical turnaround, adjust and screw both couplers (WPVV) to the angle required for the construction, push into the side rails of the wide-span cable tray and screw four times per side rail. The maximum space of 300 mm must be kept with respect to the wide-span cable tray end and the bracket.



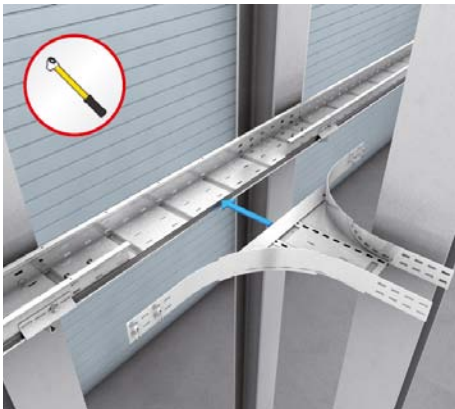
### 20 | Vertical directional change

Insert connecting tray into coupler (WPVV) and screw four times per side rail. Insert wide-span tray end plate (WPRES) into wide-span cable tray bottom at the wide-span cable tray ends or at open turnarounds and screw together.



### 21 | Branch-piece

To install branch-piece (WPRAA) cut out the side rail of the wide-span cable tray in a width B = connecting cable tray width + 900 mm flush with the floor (H = 23 mm).



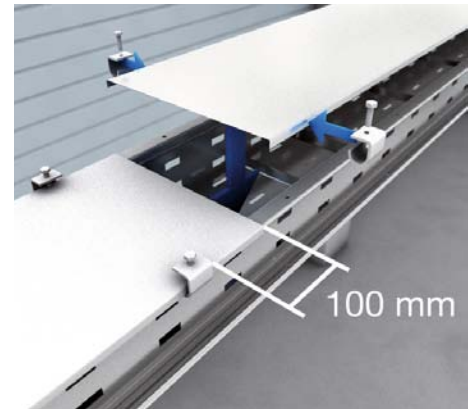
### 22 | Branch-piece

Attach branch-piece (WPRAA) and screw four times per side rail side.



### 23 | Branch-piece

Insert connecting tray with connection plate (VB) into extension branch-piece (WPRAA) and screw four times per side rail.



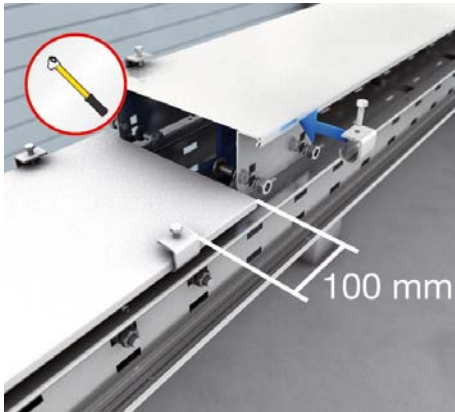
### 24 | Cover

Secure covers (WPD) with cover clamps (WPD-K) with a space of 100 mm from the cover ends and in the centres of the covers.



# Wide-span cable trays WPR

## Assembly instruction



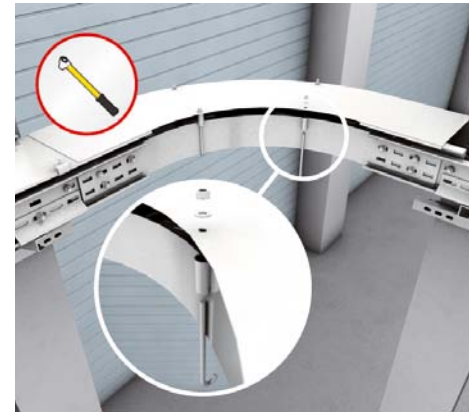
### 25 | Cover clamps

Secure elevated covers (WPD) with cover clamps (WPD-K and WPD-A) with a space of 100mm from the cover ends and in the centres of the covers.



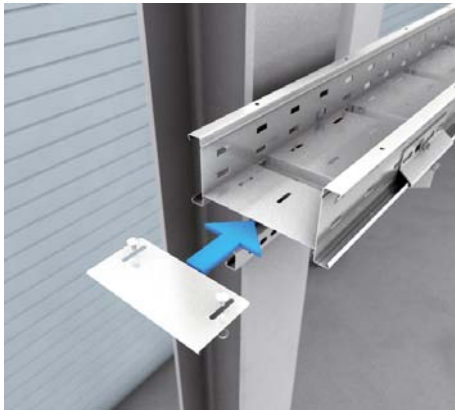
### 26 | Cover clamps

Screw covers onto the wide-span cable tray form parts (WPBD, WPAD or WPKD) with cover clamps (WPFDK) into all drill holes of the covers.



### 27 | Cover clamps

Screw elevated covers onto the wide-span cable tray form parts (WPBD, SPAD or WPKD) with cover clamps (WPFDKA) into all drill holes of the covers.



### 28 | Wide-span cable tray end plate

Push wide-span cable tray panel sheet (WPREB) up against tray bottom and screw tight.



### 29 | Barrier strip

Screw barrier strip (WPTR) three times (front, middle, back).



### 30 | Cutting and severing work

Cutting and severing work must be done with greatest care complying to all industrial safety regulations.



### 31 | Galvanize

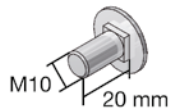
All cutting and partition areas must be galvanised by customers with cold zinc paint (KZF) or cold zinc spray (KZS) after the deburring on site.

# Wide-span cable trays WPR

## Assembly instruction

### Legend Accessories

#### FRS 10x20



#### SEMS 10



#### SEMSS 10



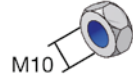
#### KLS 10x20



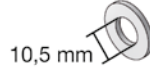
#### SEM 10



#### SEMB 10



#### US 10x21



### Underline Symbols



Wear protection glasses



Wear ear protection



Correct



Wrong



Observe tightening torque for fasteners



Attention!

**S**

Sendzimir-hot-dip galvanised according to DIN EN 10346

**F**

Hot-dip galvanised according to DIN EN ISO 1461

**E**

High-grade steel material No. 1.4301 (V 2A)

### Screw tightening torques

Bolt diameter	Strength category screw (DIN 267 part 3)	Strength category nut (DIN 267 part 4)	Screw tightening torque (Nm) acc. VDI 2230
<b>M10</b>	4.6	5	16
<b>M10</b>	8.8	8	68

### connector accessories

	fixed bearing (16 Nm)			floating bearing (3 Nm)		
<b>S</b>	FRSV 10x20	SEMS 10		FRSV 10x20	SEMSS 10	US 10x21
<b>F</b>	FRSV 10x20F	SEM 10F	US 10x21F	FRSV 10x20F	SEMB 10F	US 10x21
<b>E</b>	FRSV 10x20E	SEM 10E	US 10x21E	FRSV 10x20E	SEMSS 10E	US 10x21E

# Wide-span cable trays WPR

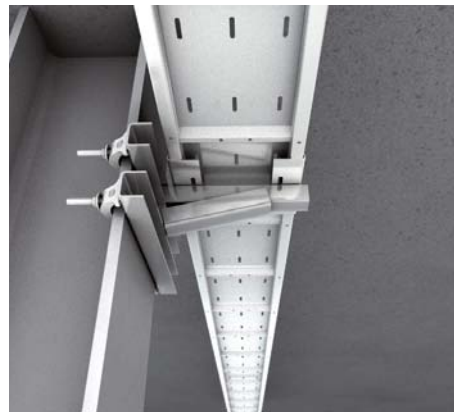
## Assembly instruction



Supporting structures must be assemble torsion-free! The assembly to ceiling profiles (one- or double-sided) is prohibited. Solely the assembly to (wall) brackets or pendant suspensions is allowed.



**1 | Heavy wall bracket KIS**  
Heavy wall bracket (KIS) are to be clamped to steel support with side-rail support (WPHS-K) and clamping claws (SKS H).



**2 | Heavy wall bracket KISS**  
Heavy wall bracket (KISS) are to be clamped to steel support with side-rail support (WPHS-A) and clamping claws (SKS M).



**3 | Heavy wall bracket KWS**  
Heavy wall bracket (KWS) are to be plugged to concrete wall with bracket rail support (WPHS-A).



**4 | Heavy wall bracket KWSS**  
Heavy wall bracket (KWSS) are to be plugged to concrete wall with bracket rail support (WPHS-A).



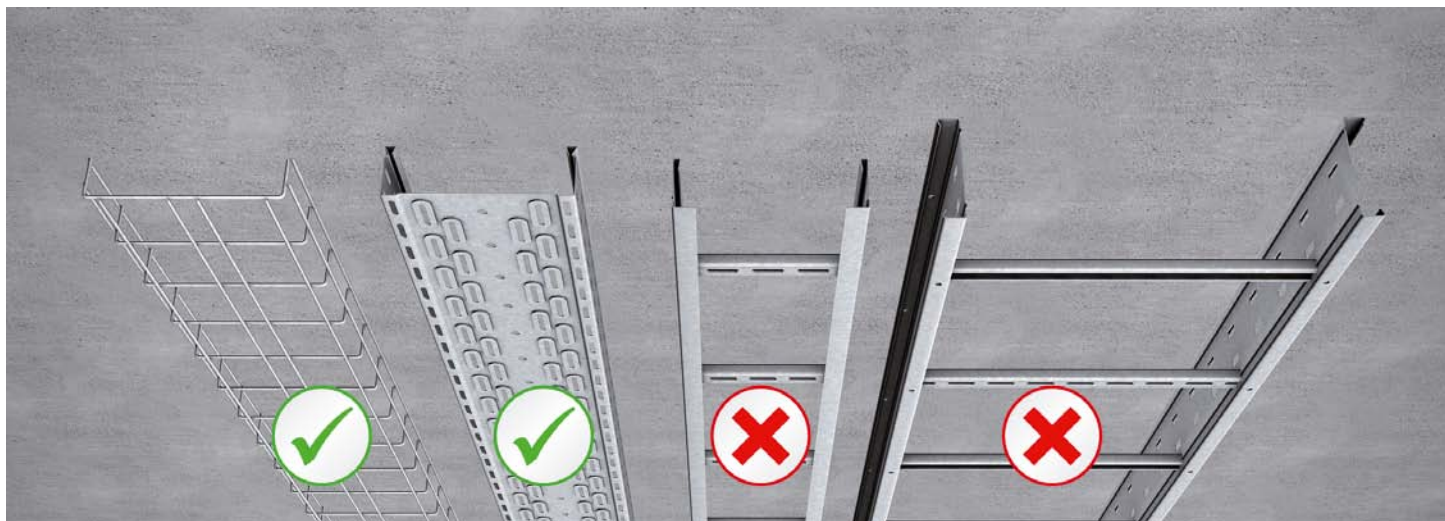
**5 | Heavy corner installation EBW**  
Heavy corner installation (EBW) for horizontal 90-degree turnarounds with side rail support (WPHS-K) are to be plugged to concrete support.  
L = width of wide-span cable tray + 560 mm



**6 | Pendant suspension**  
Pendant suspension from profiles (e.g. KHU 60) with equaliser bar and side-rail support (WPHS-K) are to be plugged to concrete ceiling.

# Support systems | Light-duty

## Assembling instruction



Installation instruction for support systems of wire-mesh cable trays and cable trays attached directly to concrete.



**1 | Wall mounting with bracket KWLL**  
To install the bracket KWLL use a dowel such as e.g. SD 8/30\*. Please make sure to use the small washer of the dowel between the anchor nut and the large washer US 8x25\*.



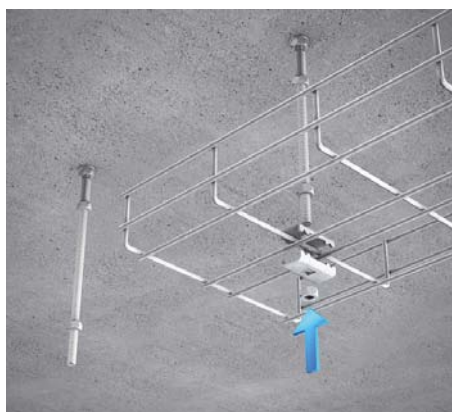
**2 | Wall mounting with bracket KSLW**  
To install the bracket KSLW use a dowel such as e.g. SD 8/30\*. The spacer KSL-SP must be positioned before the dowel.



**3 | Wall mounting with bracket KWF**  
To install the bracket KWF use a dowel such as e.g. SD 10/10\*.



**4 | Wall mounting with bracket KWW**  
To install the bracket KWW use a dowel such as e.g. SD 8/10\*. Please use the outer slots of the profile to fixate the bracket.



**5 | Central suspension for wire-mesh cable tray of up to 100 mm width**  
Connect the central hanger GBAG 10 to the dowel using a hexagonal connector VM M8\*. Mount the connectors GV 30 with the wire-mesh cable tray inbetween.



**6 | Central suspension for wire mesh cable tray of up to 300 mm width**  
Connect the central hanger GBAG 20/30 to the dowel using a hexagonal connector VM M8\*. Mount the connector GV 30 as well as the profile rails with the wire-mesh cable tray inbetween both.

\* The article is not included in the scope of delivery and must be ordered separately.

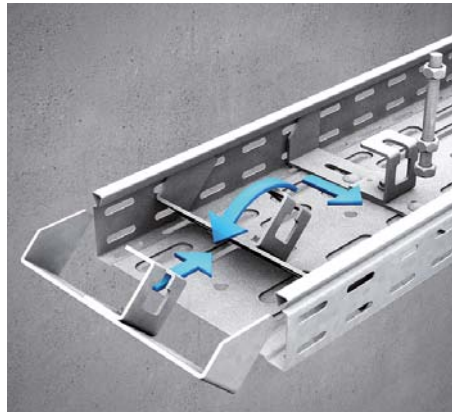
# Support systems | Light-duty

## Assembling instruction



### 7 | Central suspension for cable trays of up to 300 mm width

Connect the central hanger GBAR to the dowel using a hexagonal connector VM M10\*. Dismount the profile rails and remount together with the cable trays.



### 8 | Central suspension for cable trays of up to 300 mm width

Insert the central hanger MA into the cable tray in a tilted position and clip together by turning the MA. Insert the pre-mounted threaded rod GB M10\* sideways into the central hanger MA and secure using a hexagonal nut SEM 10\*.



### 9 | Ceiling mounting with ceiling-fixed bracket DB

To install the bracket DB use dowels such as e.g. SD 8/30\*. Please make sure to use the small washer of the dowel between the anchor nut and the large washer US 8x25\*.



### 10 | Ceiling mounting with bracket support KDU 40

To install the KDU 40 use two dowels such as e.g. SD 8/10\*. Secure the bracket KWF using KHUSS 40 support piece set. The protection cap SU 40\* is fitted to the bracket bottom, if needed.



### 11 | Ceiling mounting with head plate BGU 40 and U-profile KHU 40

To install the BGU 40 use two dowels such as e.g. SD 8/10\*. Mount the U-profile KHU 40 to the head plate BGU 40 using head screw set KLS 10x20\*. Secure the bracket KWF using KHUSS 40 support piece set. The protection cap SU 40\* is fitted to the bracket bottom, if needed.



### 11 A | Ceiling mounting with bracket support KDU 40 at reduced load – without supporting piece KHUSS 40

To install the KDU 40 use two dowels such as e.g. SD 8/10\*. The bracket KWF is mounted with full thread hexagonal head screw 10x20\* and two washers US 10x21\* onto bracket support. The protection cap SU 40\* is fitted to the bracket bottom, if needed.



### 12 | Ceiling mounting with bracket support KSLW

To install the KSLW use dowels such as e.g. SD 8/30\*. The spacer KSL-SP must be positioned before the bracket support. Mount the bracket KSL using head screw FRS 8x20 and hexagonal nut SEMS 8.



### 13 | Ceiling mounting with ceiling-fixed bracket KDAG 41

To install the KDAG 41 use two dowels such as e.g. SD 8/10\*. Install the bracket KA 30 using full thread hexagonal head screw set SES 10x20\*, channel spring nut AMF22 M10\*. The protection cap SA\* is fitted to the bracket bottom, if needed.



### 14 | Ceiling mounting with head plate BGA 41 and C-profile KHA 41

To install the BGA 41 together with the KHA 41 use two dowels such as e.g. SD 8/10\*. Attach the C-profile to the KHA 41 by using head screw set KLS 10x20\*. Fasten the bracket KA using full thread hexagonal head screw set SES 10x20\* and channel nut spring AMF22 M10\*. The protection cap SA\* is fitted to the bracket bottom, if needed.

\* The article is not included in the scope of delivery and must be ordered separately.

## Support systems | Light-duty

### Assembling instruction



#### 15 | Ceiling mounting with trapezoid-sheet hanger TBS

Fold out the trapezoid-sheet, then attach the hanger using full thread hexagonal head screw set SES 8x110 and hexagonal nuts SEM 8. Then it is possible to connect various types of accessories such as threaded rods or hexagonal nuts for mounting trays and other light-duty systems.



#### 16 | Ceiling suspension with pendulum suspension

Connect threaded rods GB M8 to dowel using hexagonal connector VM M8, then mount C-profile KHA 8 onto the rods from the bottom.

# Support systems | Light-duty

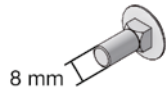
## Assembling instruction

### Legend Accessories

**GB-M8**



**FRS 8x20**



**SEMS 8**



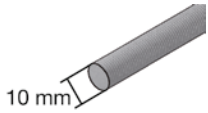
**US 8x25**



**SD 8/10**



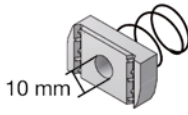
**GB-M10**



**KLS 10x20**



**AMF22 M10**



**US 8x17**



**SD 8/30**



**SES 8x110**



**SEM 8**



**VM M8**



**SD 10/10**



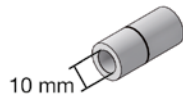
**SES 10x20**



**SEM 10**



**VM M10**



**US 10x21**



### Legend of Symbols



Correct



Wrong



Observe tightening torque for fasteners

### Screw tightening torques (recommended)

Bolt diameter	relative strength marking for screws (acc. to DIN 267 part 3)	relative strength marking for nuts (acc. to DIN 267 part 4)	property class (Nm) acc. to VDI 2230
<b>M8</b>	4.6	5	8
<b>M10</b>	4.6	5	16
<b>M12</b>	4.6	5	32
<b>M8</b>	8.8	8	34
<b>M10</b>	8.8	8	68
<b>M12</b>	8.8	8	117

# Support systems | Medium-duty

## Assembling instruction



Installation instruction for support systems of wire-mesh cable trays, cable trays and cable ladders attached directly to concrete.



**1 | Wall mounting with bracket KW**  
To install the bracket KW use dowels such as e.g. SD 10/10\*.



**2 | Ceiling mounting with ceiling-fixed bracket DKSL**  
To install DKSL use dowels such as e.g. SD 8/30\*. The spacer KSL-SP must be positioned between the dowel and the bracket.



**3 | Ceiling mounting with bracket support KDU 57**  
To install KDU 57 use two dowels such as e.g. SD 10/10\*. Secure the bracket KW using KHUSS 57 support piece set. The protection cap SU 57\* is fitted to the bracket bottom, if needed.



**4 | Ceiling mounting with head plate BGU 57 and U-profile KHU 57**  
To install the BGU 57 use two dowels such as e.g. SD 10/10\*. Mount the U-profile KHU 57 to the head plate BGU 57 using head screw set KLS 10x20\*. Secure the bracket KW using KHUSS 57 support piece set. The protection cap SU 57\* is fitted to the bracket bottom, if needed.



**5 | Ceiling mounting with ceiling-fixed bracket KDAG 41**  
To install KDAG 41 use two dowels such as e.g. SD 10/10\*. Then attach the bracket KA 41 using full thread hexagonal head screw set SES 10x20\* and channel spring nut AMF22 M10\*. The protection cap SU 57\* is fitted to the bracket bottom, if needed.



**6 | Ceiling mounting with heavy bracket support KDU 60**  
To install KDU 60 use two dowels such as e.g. SD 10/10\*. Then attach the bracket KW using head screw set KLS 10x20\*. If the bracket is longer than 500 mm, screw the support piece KHUSS together with the bracket. The protection cap SU 60\* is fitted to the bracket bottom, if needed.

\* The article is not included in the scope of delivery and must be ordered separately.



# Support systems | Medium-duty

## Assembling instruction



### 7 | Ceiling mounting with head plate BGU 60 and U-profile KHU 60

To install BGU 60 use two dowels such as e.g. SD 10/10\*. Secure the U-profile with full thread hexagonal head screw set SES 10x20, hexagonal nut SEM 10 and washer US 10x21. Mounting the bracket KW is done as with KDU 60. The protective cap SU 60\* is fitted to the bracket bottom, if needed.



### 8 | Ceiling mounting with heavy bracket support KDI

To install KDI use two dowels such as e.g. SD 10/10\*. Fasten the bracket KT using the enclosed spacer. The protection cap SI\* is fitted to the bracket bottom, if needed.



### 9 | Ceiling mounting with heavy bracket support KDI

To install KDI use two dowels such as e.g. SD 10/10\*. Fasten the bracket KTS using the enclosed spacer. The protection cap SI\* is fitted to the bracket bottom, if needed.



### 10 | Ceiling mounting with head plate BGI with I-profile KHI

To install BGI use two dowels such as e.g. SD 10/10\*. Attach the I-profile using head screw FRS 10x30 and hexagonal nut SEM 10. Mounting KHI is done as with KDI. The protection cap SI\* is fitted to the bracket bottom, if needed.



### 11 | Ceiling suspension with pendulum suspension

Connect threaded rods GB M10 to dowel using hexagonal connector VM M10, then mount C-profile KHA 41 onto the rods from the bottom.



### 12 | Ceiling suspension with pendulum suspension

Connect threaded rods GB M10 to dowel using hexagonal connector VM M10, then mount U-profil KHU 57 onto the rods from the bottom.

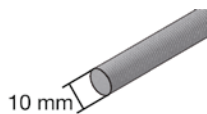
\* The article is not included in the scope of delivery and must be ordered separately.

# Support systems | Medium-duty

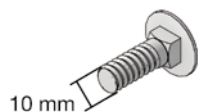
## Assembling instruction

### Legend Accessories

**GB-M10**



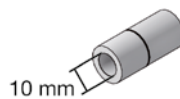
**FRS 10x30**



**SEM 10**



**VM M10**



**SD 8/30**



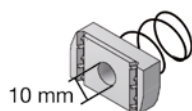
**SES 10x20**



**KLS 10x20**



**AMF22 M10**



**US 10x21**



**SD 10/10**



### Legend of Symbols



Correct



Wrong



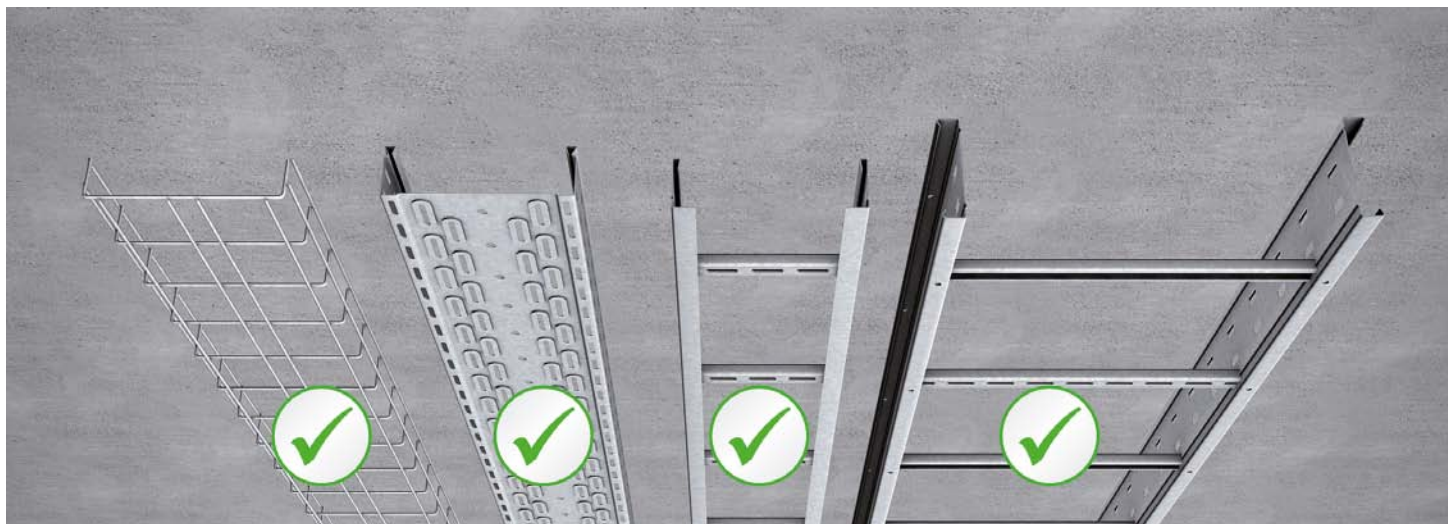
Observe tightening torque for fasteners

### Screw tightening torques (recommended)

Bolt diameter	relative strength marking for screws (acc. to DIN 267 part 3)	relative strength marking for nut (acc. to DIN 267 part 4)	property class (Nm) acc. to VDI 2230
<b>M8</b>	4.6	5	8
<b>M10</b>	4.6	5	16
<b>M12</b>	4.6	5	32
<b>M8</b>	8.8	8	34
<b>M10</b>	8.8	8	68
<b>M12</b>	8.8	8	117

# Support systems | Heavy-duty

## Assembling instruction



Installation instruction for support systems of wire-mesh cable trays, cable trays, cable ladders and wide-span cable ladders attached directly to concrete.



**1 | Wall mounting with heavy bracket KWS**  
To install KWS use dowels such as e.g. SD 12/10\*  
Please make sure to use the top drill hole to fixate the bracket.



**2 | Wall mounting with heavy bracket KWSS**  
To install KWSS use dowels such as e.g. SD 12/10\*.  
Please make sure to use the top and bottom drill holes to fixate the bracket.



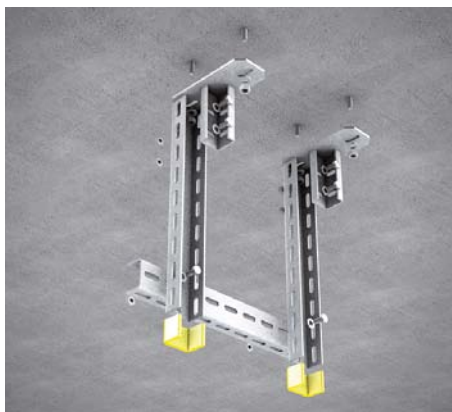
**3 | Mounting to steel beam using heavy bracket KIS**

To install KIS use four beam clamps SKS H\*.



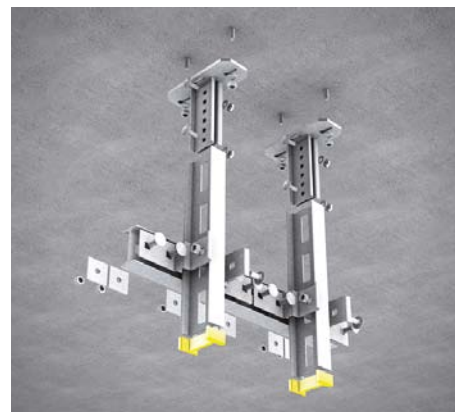
**4 | Mounting to steel beam using heavy bracket KISS**

To install KISS use four beam clamps SKS M\*.



**5 | Ceiling suspension with pendulum suspension**

Fasten head plates BGI 60 with two dowels each, e.g. SD 12/10\*. Secure the U-profile using the full thread hexagonal head screw set SES 10x20, hexagonal nut SEM 10 and washer US 10x21, both horizontally and vertically.



**6 | Ceiling suspension with pendulum suspension**

Fasten head plates BGI with two dowels each, e.g. SD 12/10\*. Secure the I-profiles horizontally to the head plates using head screw FRS 10x30 and hexagonal nut SEM 10. Screw the profile that is vertically to the support connector HKIQ.

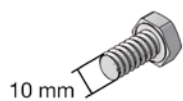
\* The article is not included in the scope of delivery and must be ordered separately.

# Support systems | Heavy-duty

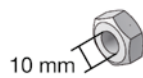
## Assembling instruction

### Legend Accessories

#### SES 10x20



#### SEM 10



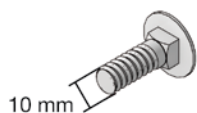
#### SD 12/10



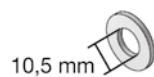
#### SKS M



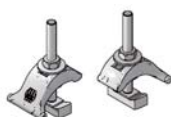
#### FRS 10x30



#### US 10x21



#### SKS H



### Legend of Symbols



Correct



Wrong



Observe tightening torque for fasteners

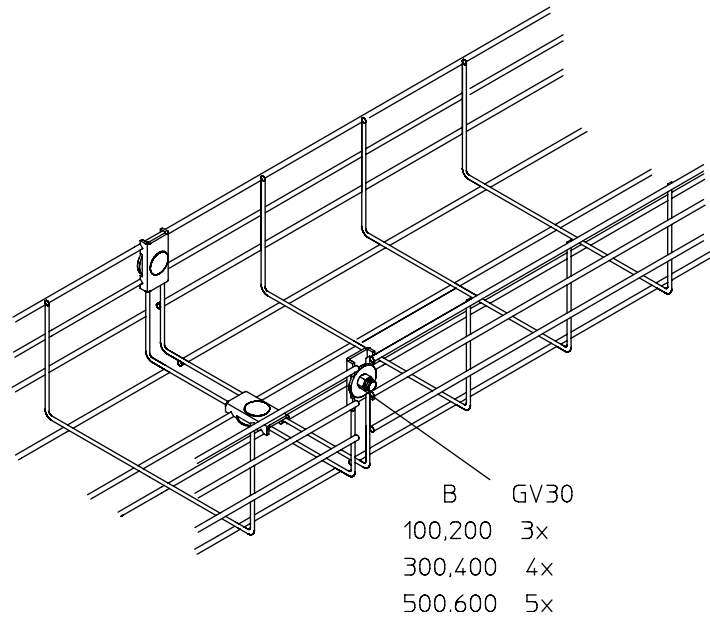
### Screw tightening torques (recommended)

Bolt diameter	relative strength marking for screws (acc. to DIN 267 part 3)	relative strength marking for nuts (acc. to DIN 267 part 4)	property class (Nm) acc. to VDI 2230
<b>M8</b>	4.6	5	8
<b>M10</b>	4.6	5	16
<b>M12</b>	4.6	5	32
<b>M8</b>	8.8	8	34
<b>M10</b>	8.8	8	68
<b>M12</b>	8.8	8	117

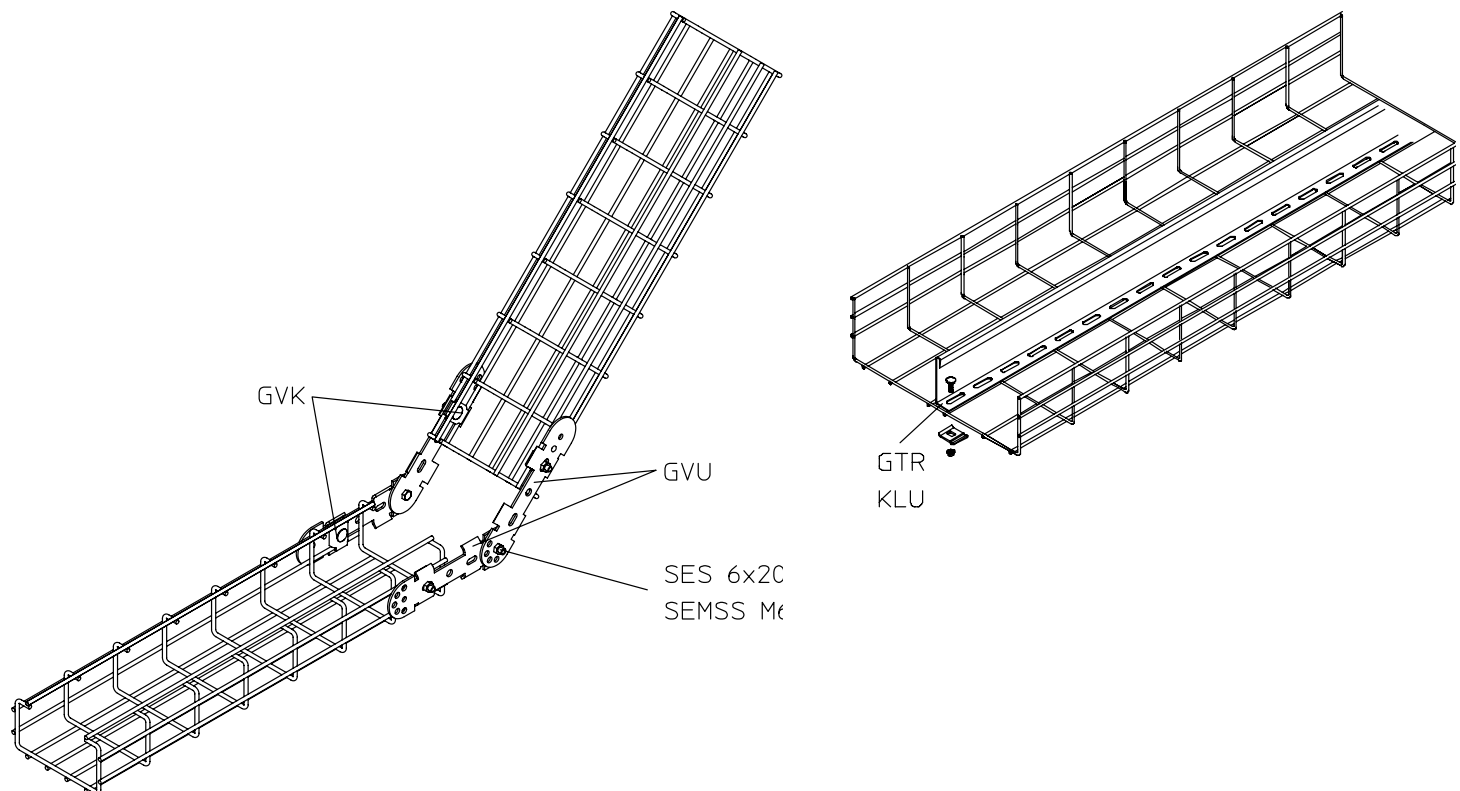
# Wire-mesh cable trays

## Application examples

### End-to-end assembly



### Upstream and assembly of separating strip

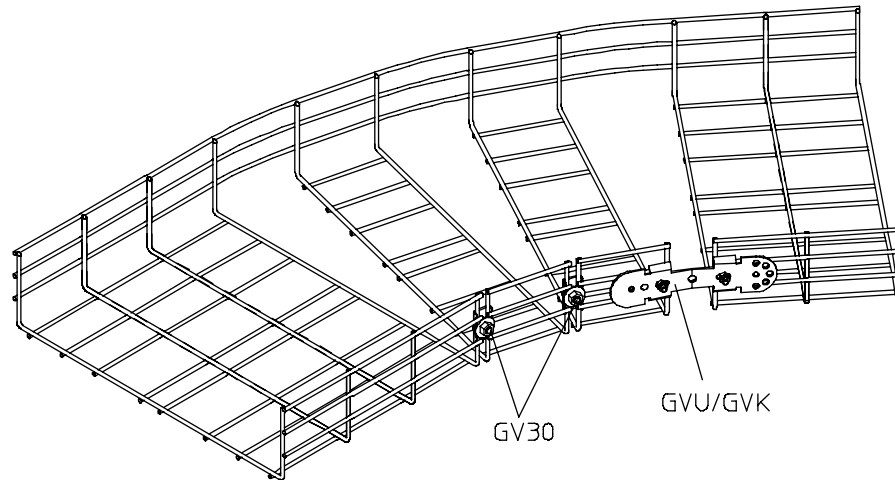


# Wire-mesh cable trays

## Application examples

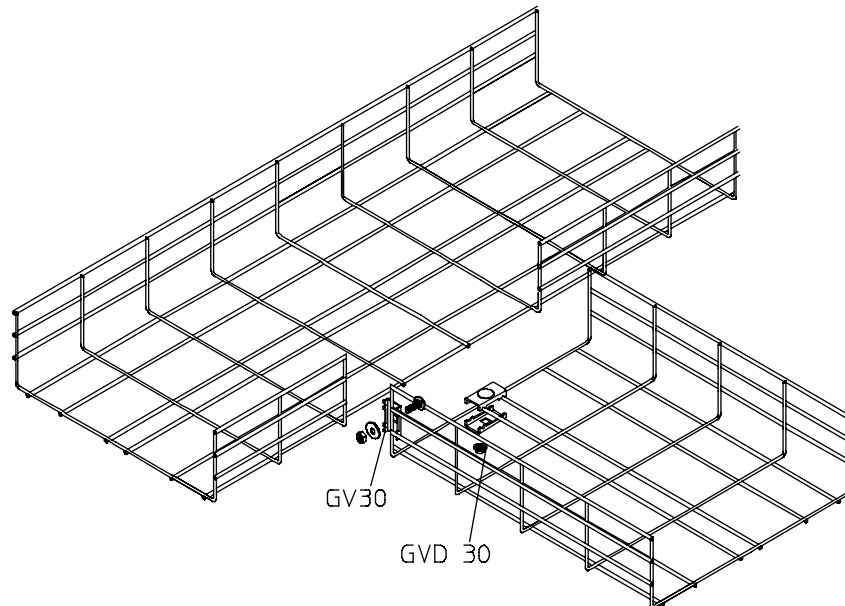
### Horizontal elbow

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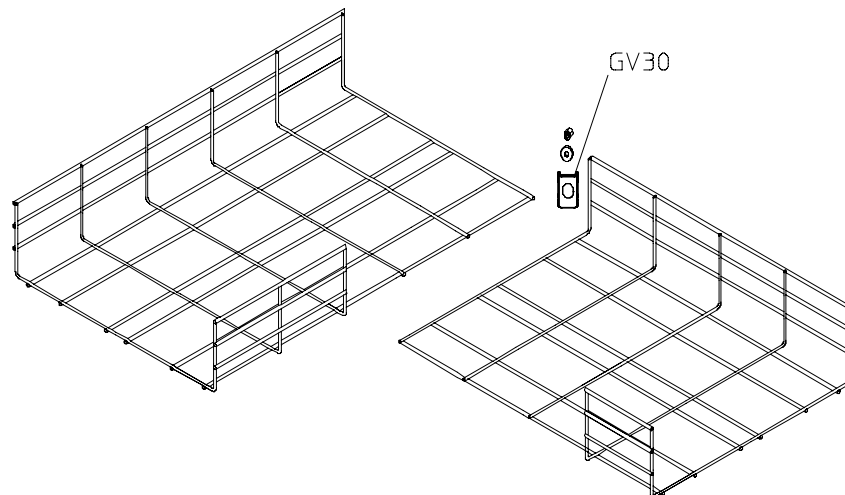
### T-piece

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### 90°-elbow

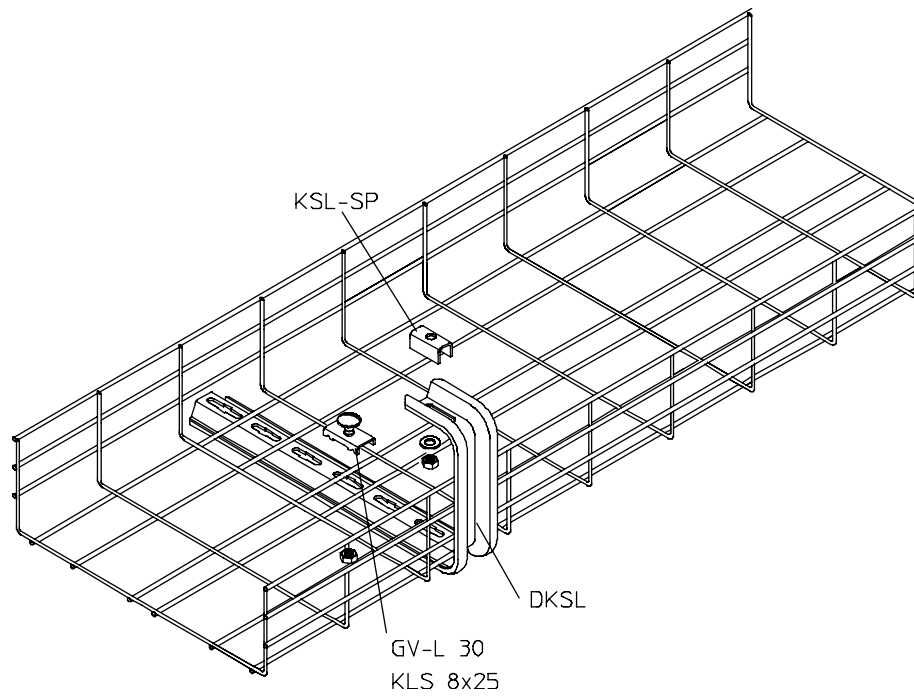
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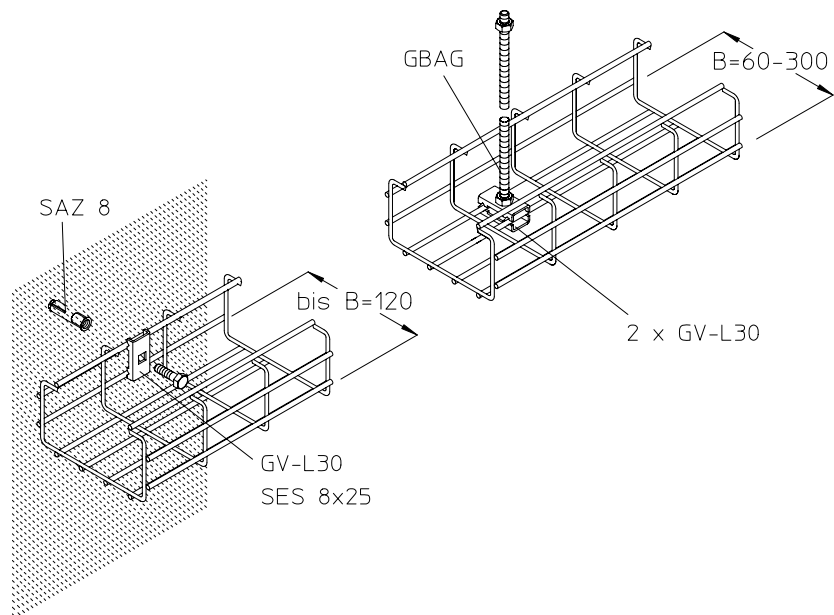
# Wire-mesh cable trays

## Application examples

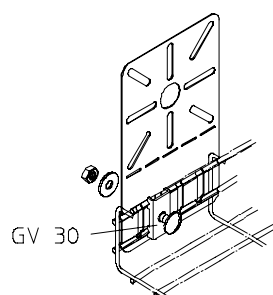
### Assembly with ceiling bracket



### Wall and ceiling assembly with central suspension



### Mounting plate installation

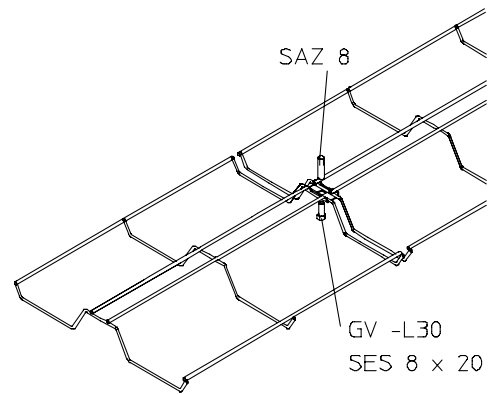
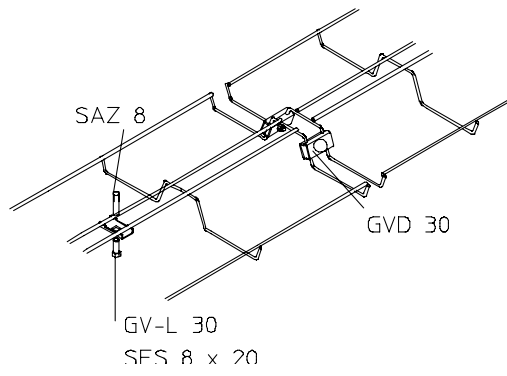


# Wire-mesh cable trays

## Application examples

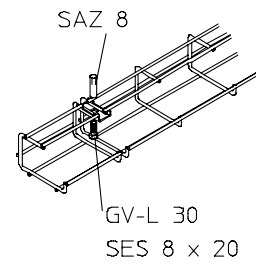
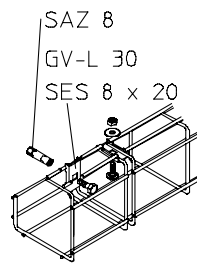
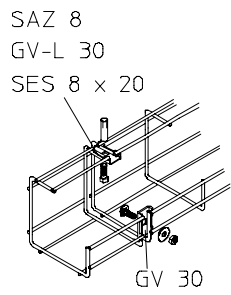
### End-to-end assembly and direct ceiling assembly

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### Wall-mounting and direct ceiling assembly

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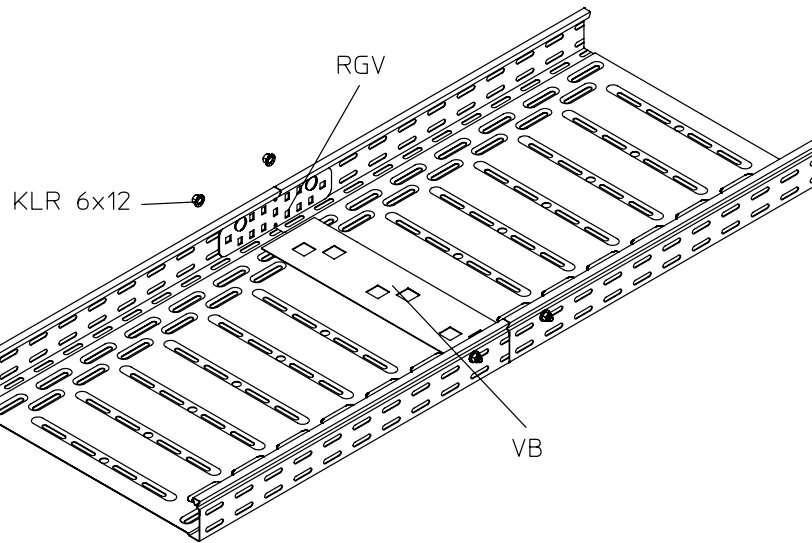




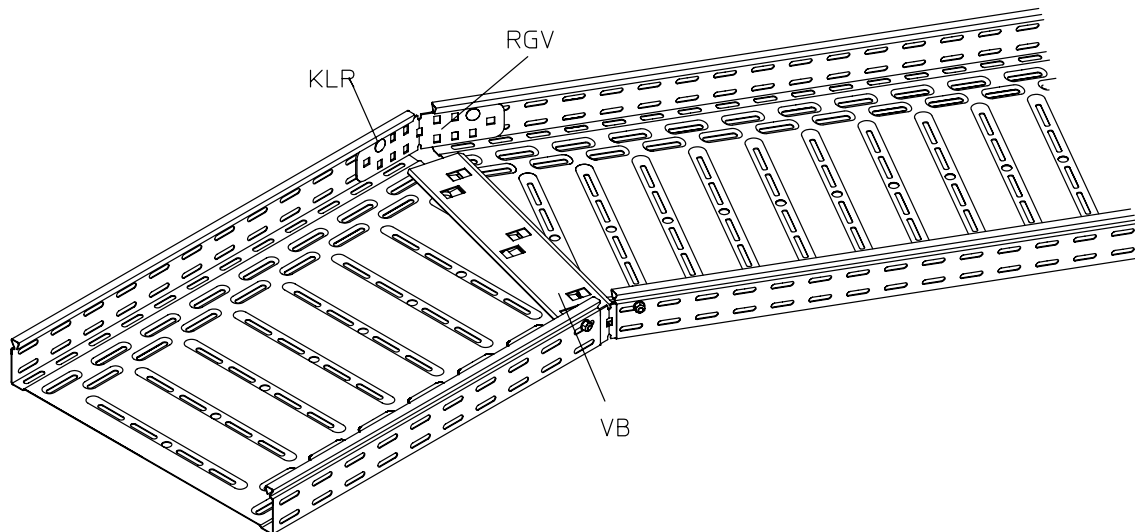
# Cable trays

## Application examples

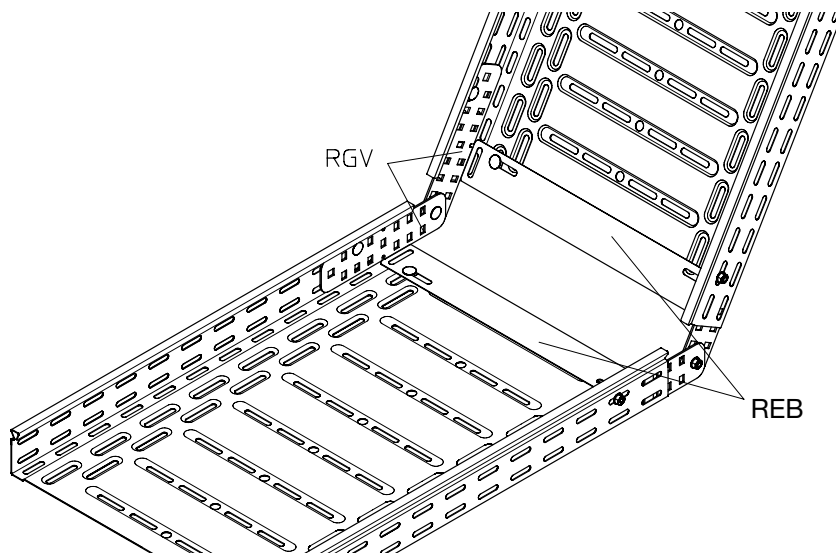
### End-to-end assembly



### Flexible horizontal elbow assembly



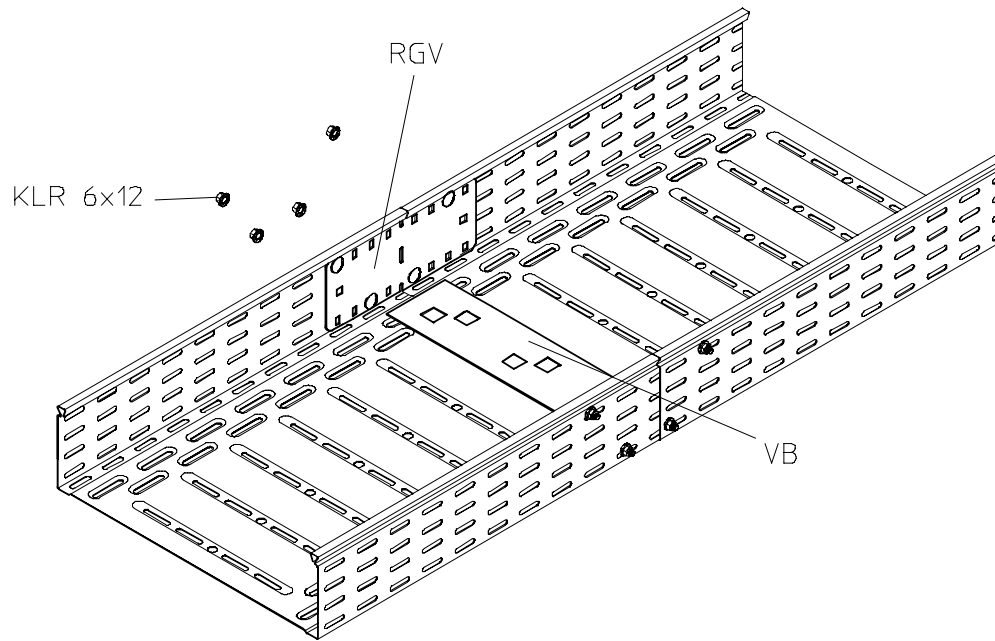
### Upstream



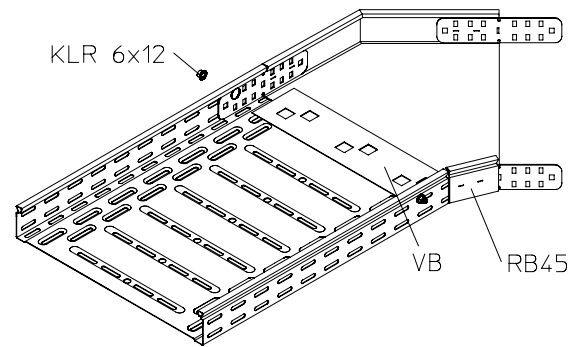
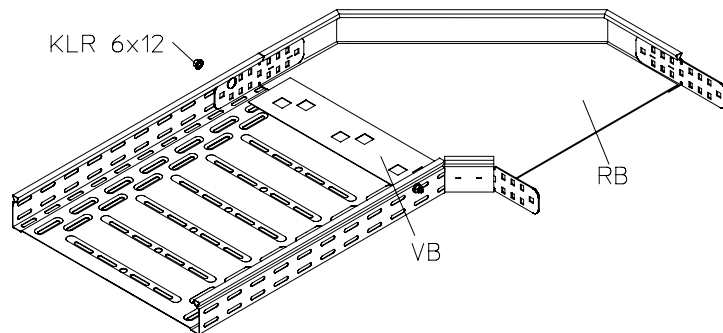
# Cable trays

## Application examples

### End-to-end assembly with RG 85 and RG 110



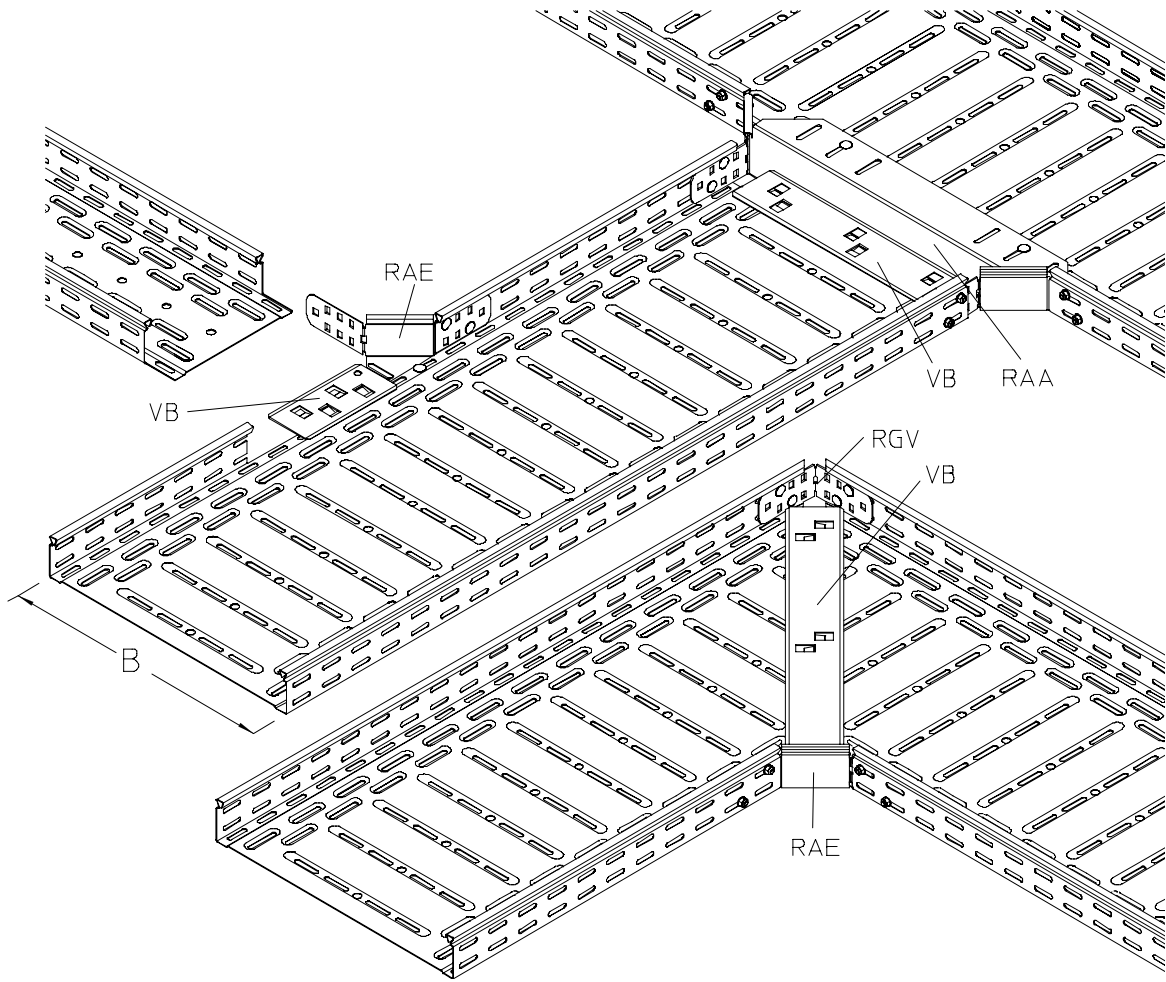
### 90° / 45° elbow assembly



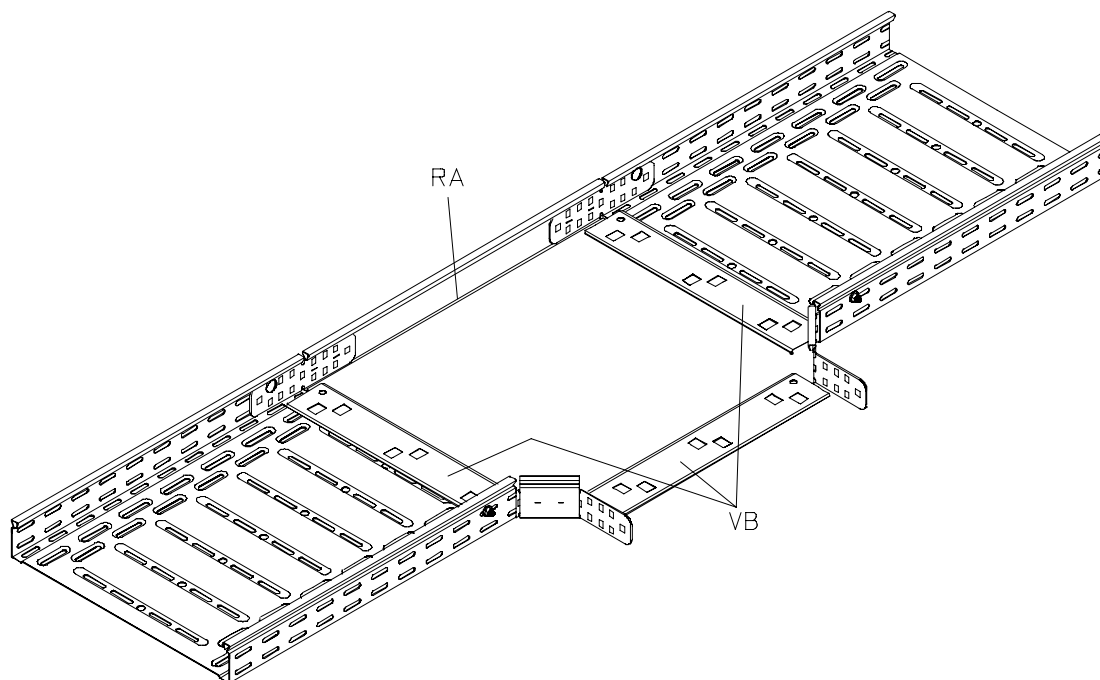
# Cable trays

## Application examples

T-piece, flexible | 90°-elbow, flexible



T-piece

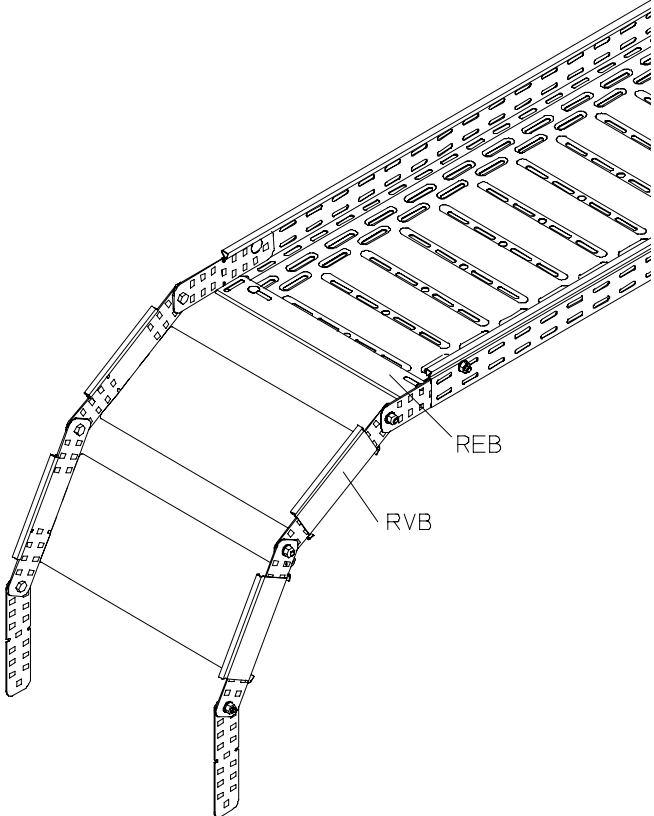


# Cable trays

## Application examples

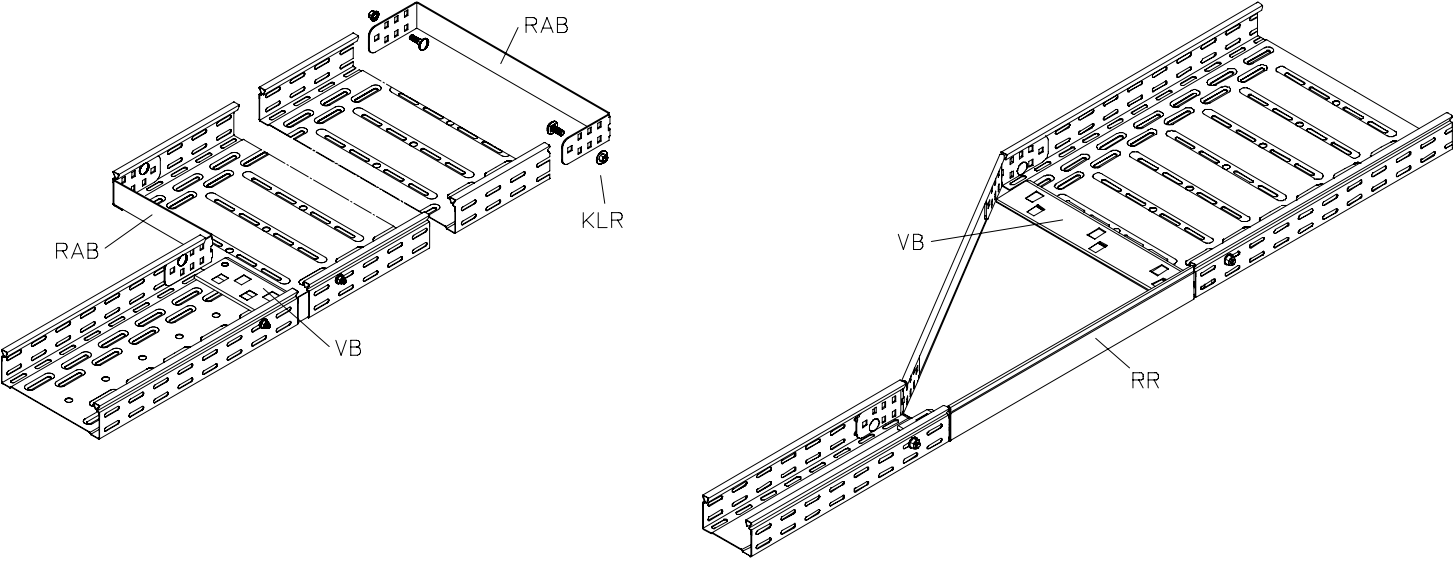
### Upward and downward piece

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### Reducer

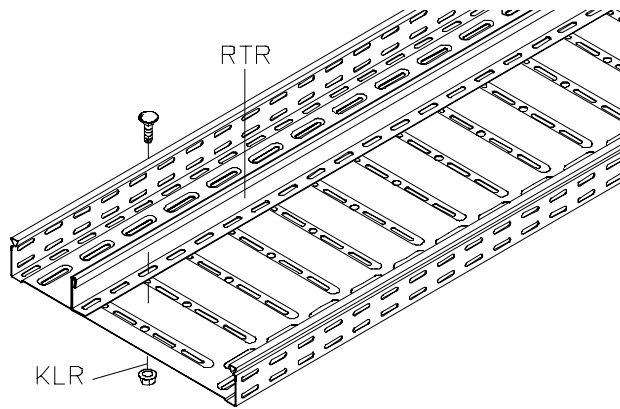
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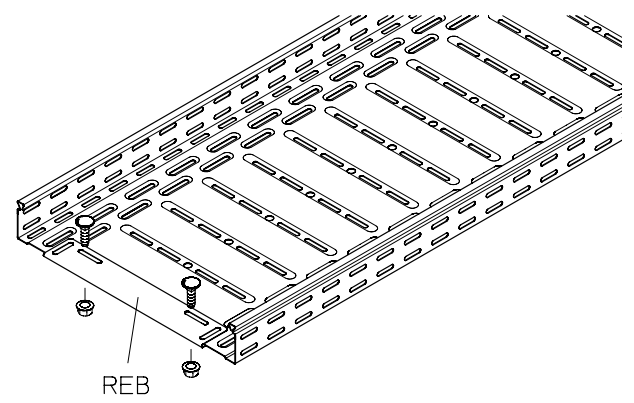
# Cable trays

## Application examples

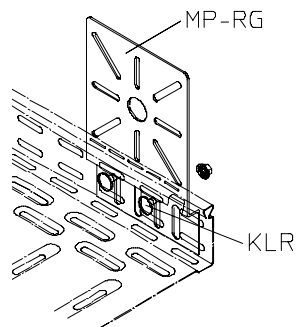
### Assembly of separating strip



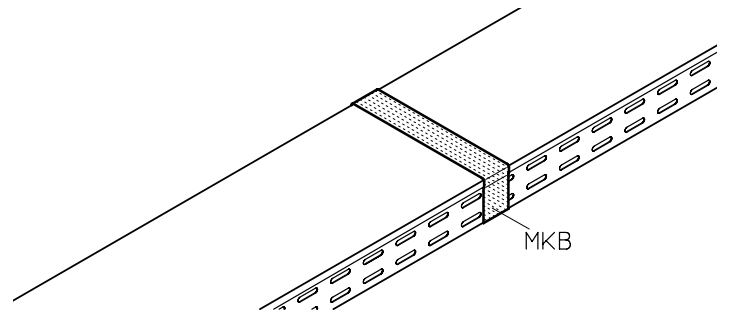
### End piece assembly



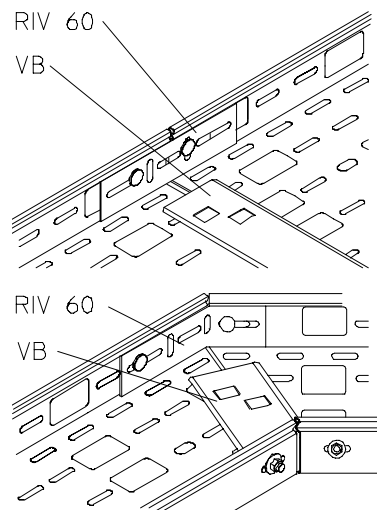
### Mounting plate installation



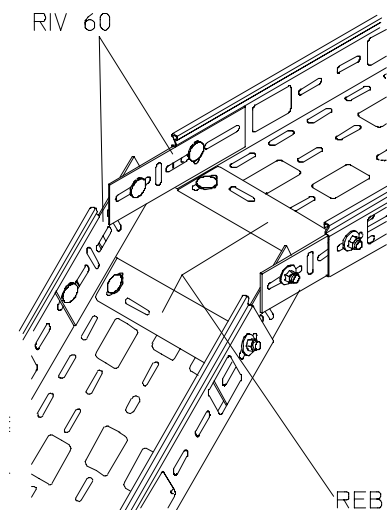
### Protecting the cover with tape



### End-to-end assembly | Flexible horizontal elbow assembly



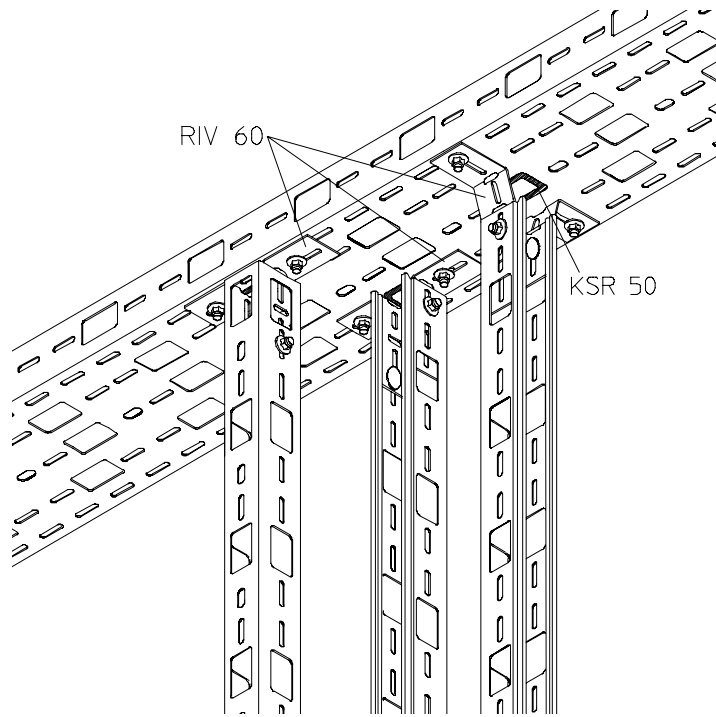
### Upstream



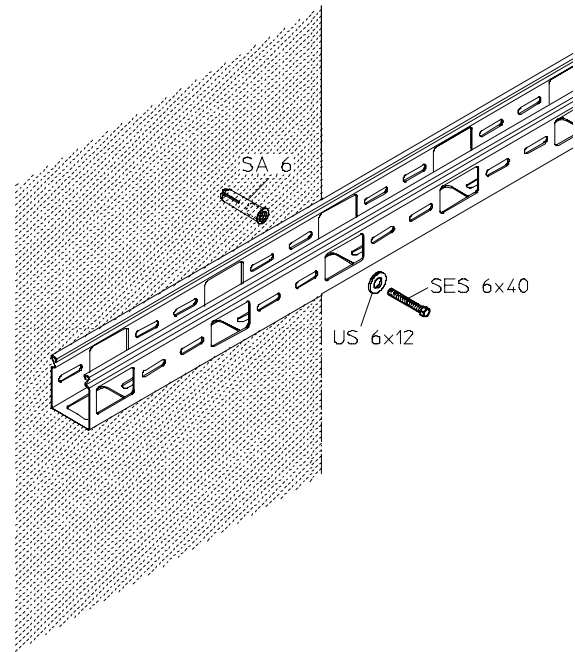
# Cable trays

## Application examples

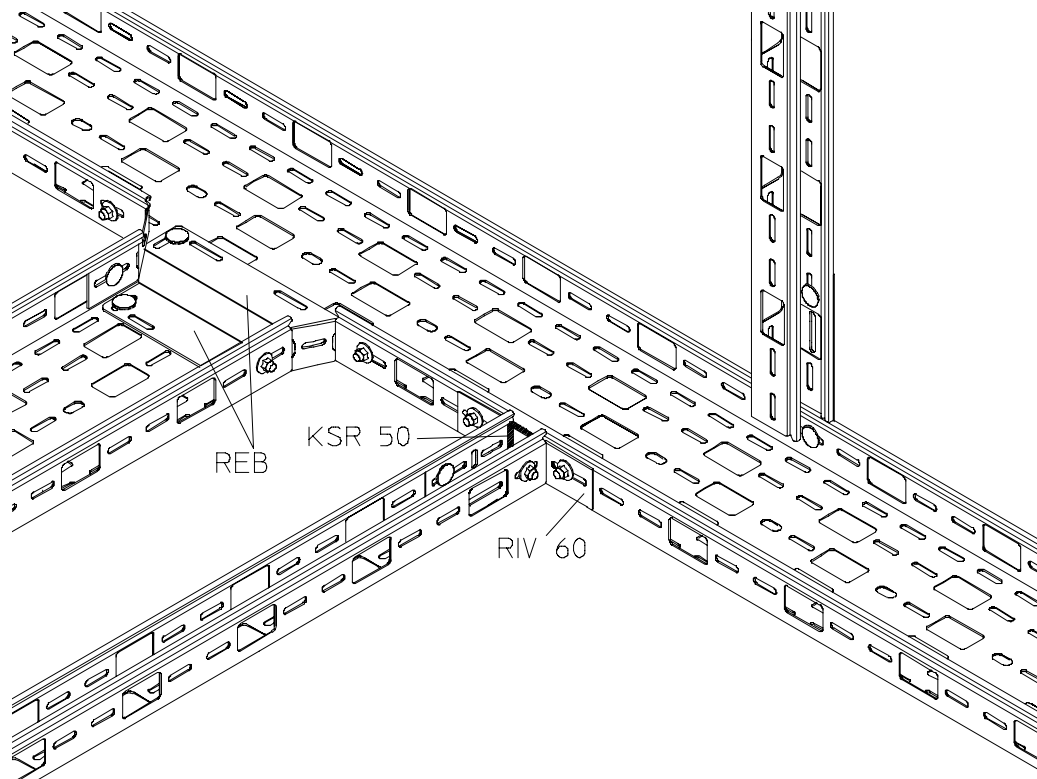
### Vertical connection by RIV 60



### Direct wall-mounting



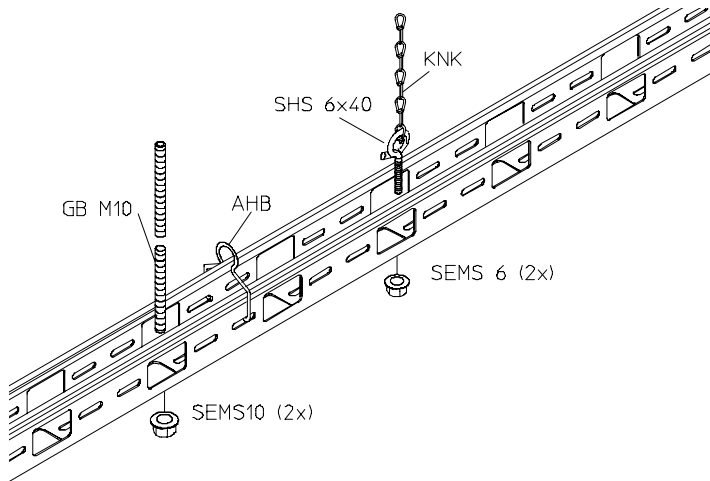
### T-piece



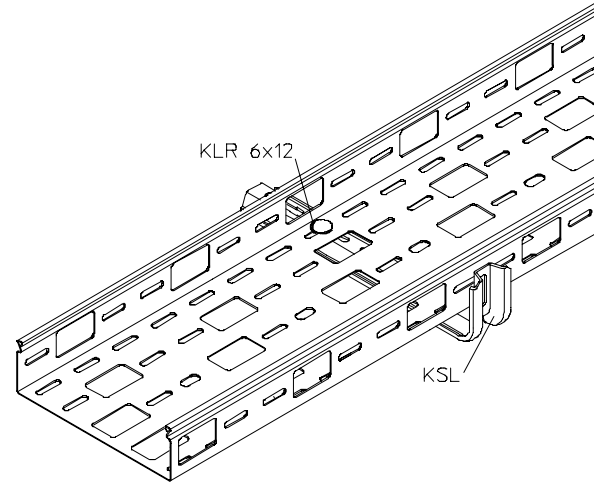
# Cable trays | Cable ladders

## Application examples

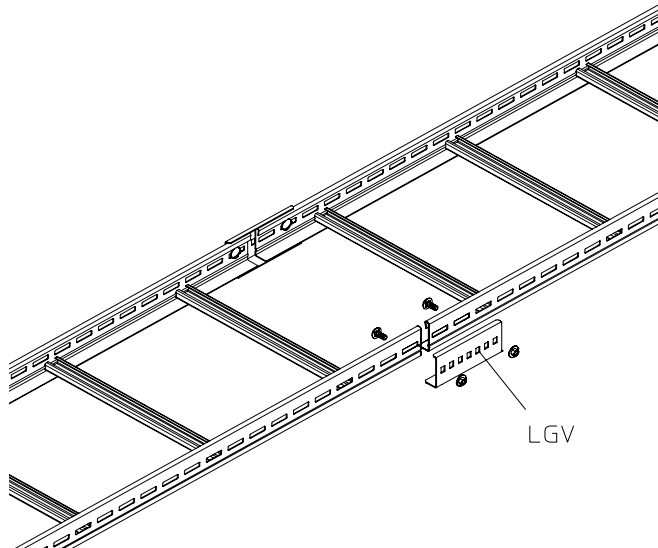
### Ceiling-mounting with threaded rod and knotted link chain



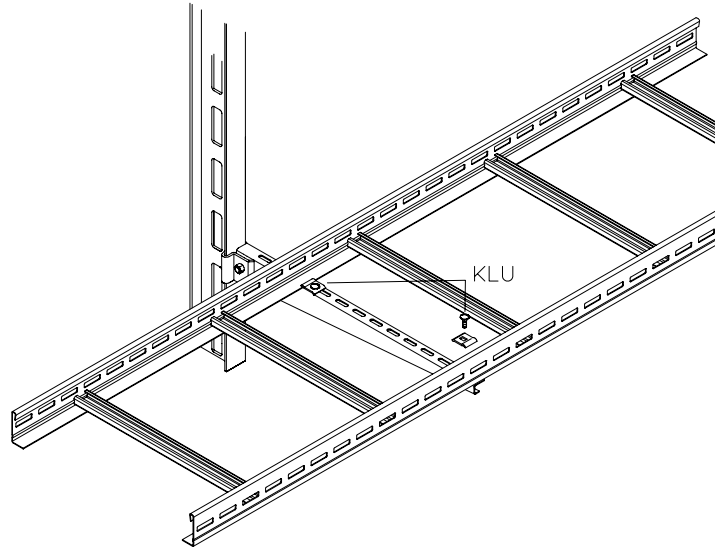
### Assembly with ceiling fixation



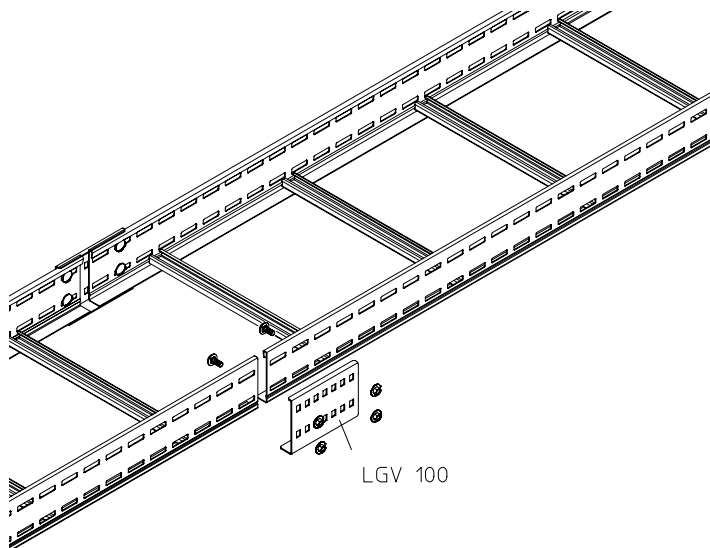
### End-to-end assembly with LGG 60



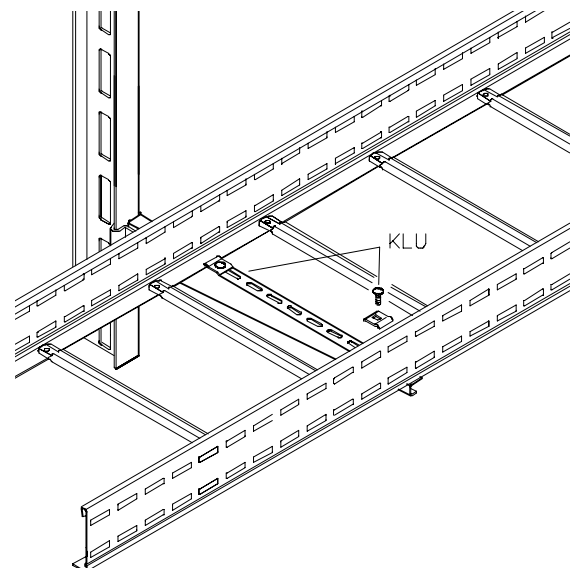
### Bracket mounting



### End-to-end assembly with LGG 100



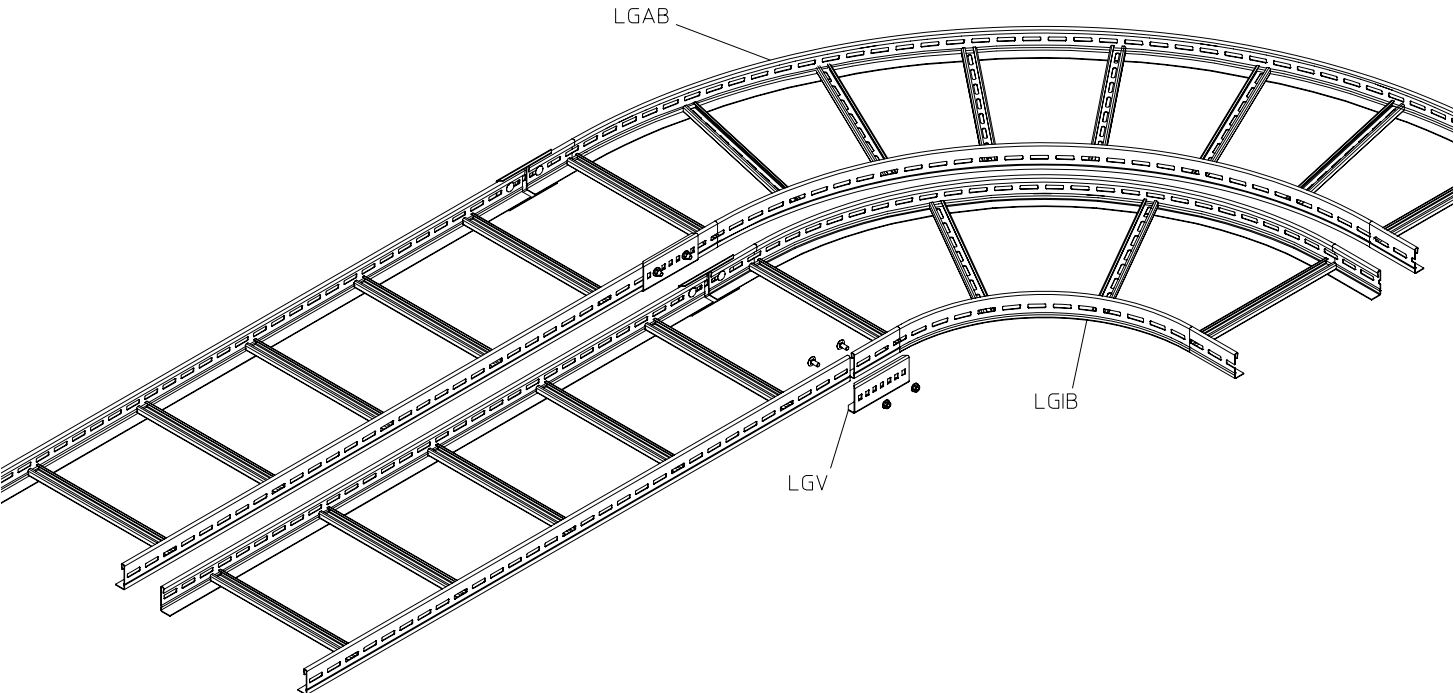
### Bracket mounting



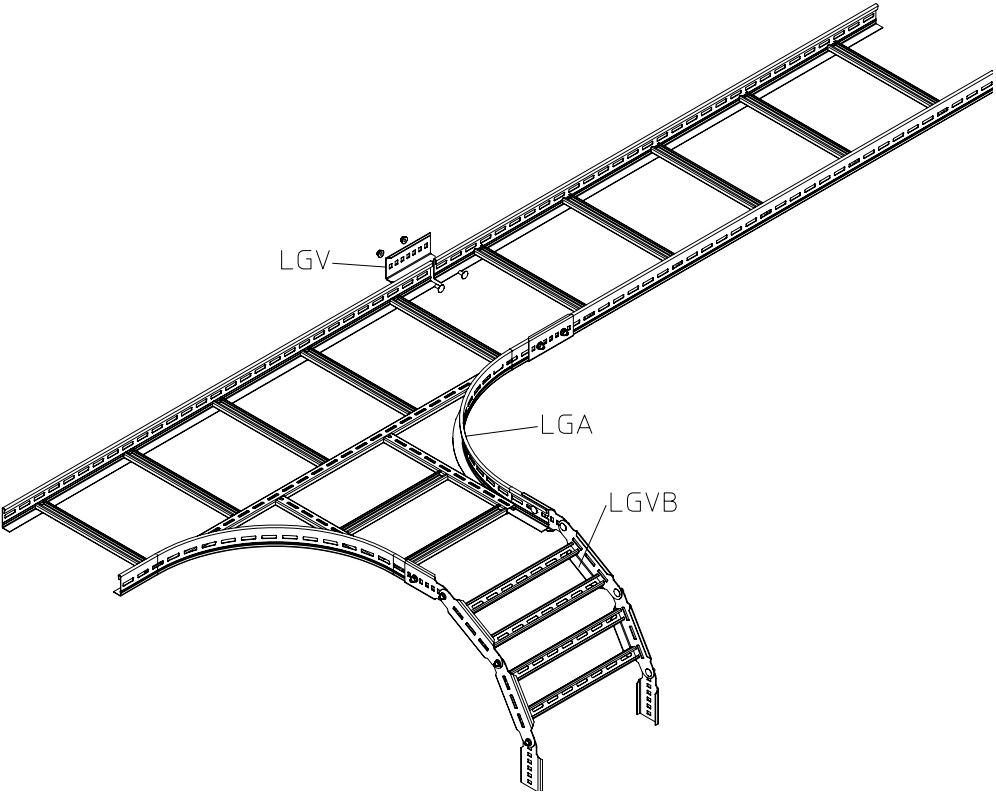
# Cable ladders

## Application examples

### Inner elbow and outer elbow



### T-piece and downstream

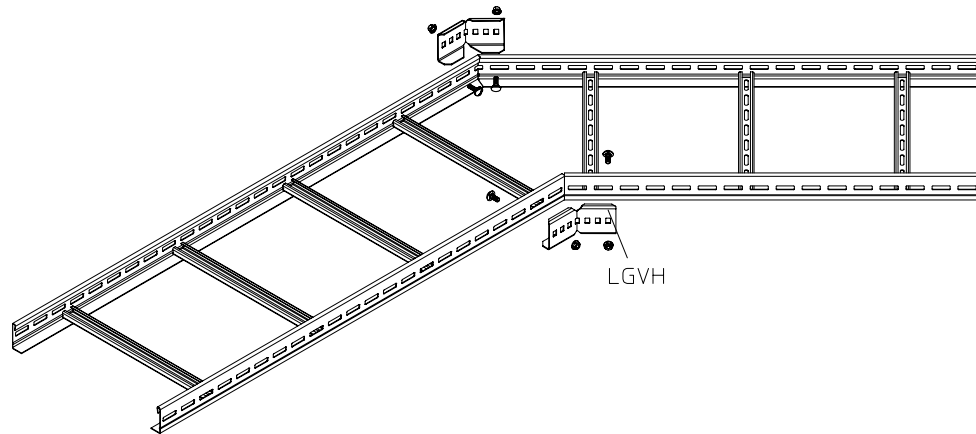




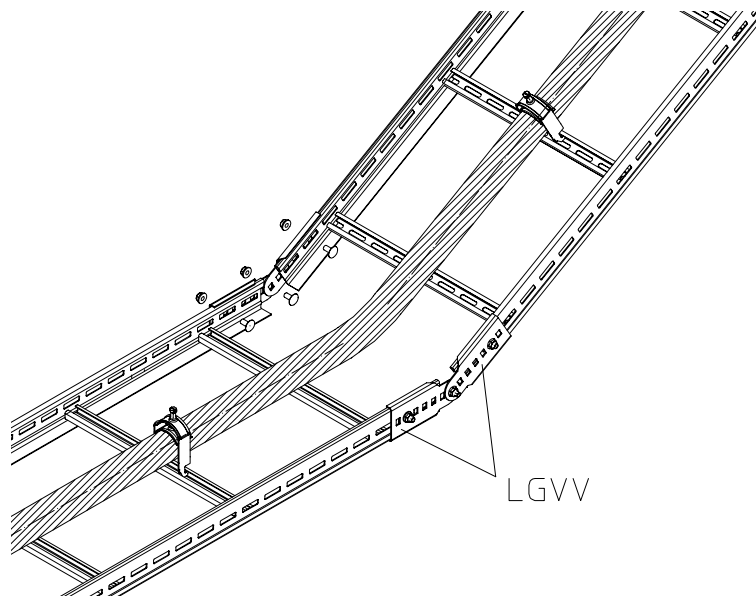
# Cable ladders

## Application examples

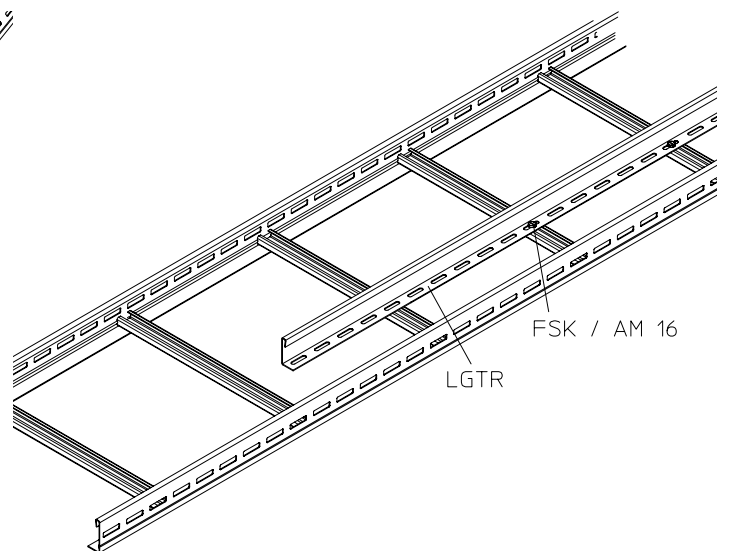
### Flexible horizontal elbow assembly



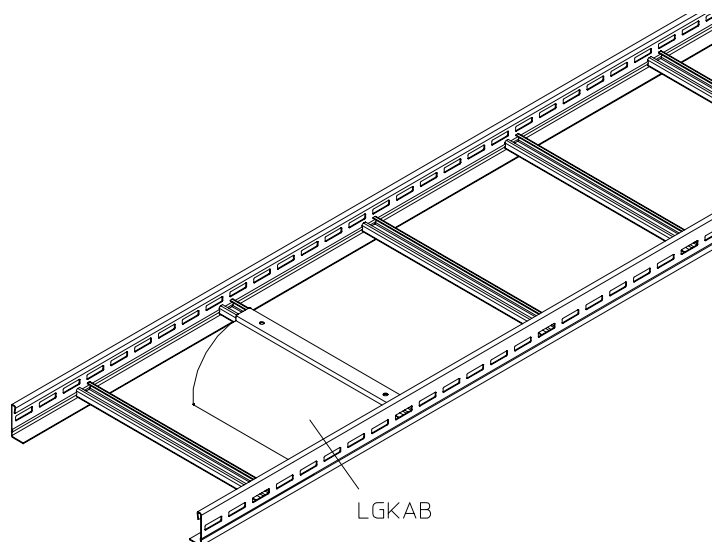
### Upstream



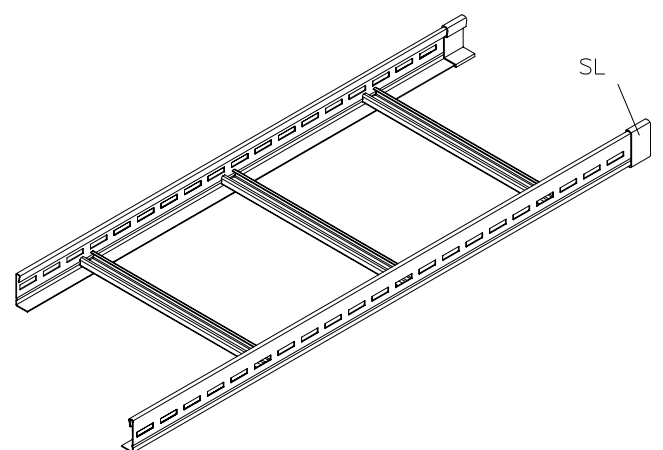
### Assembly of separating strip



### End plate



### Protecting cap

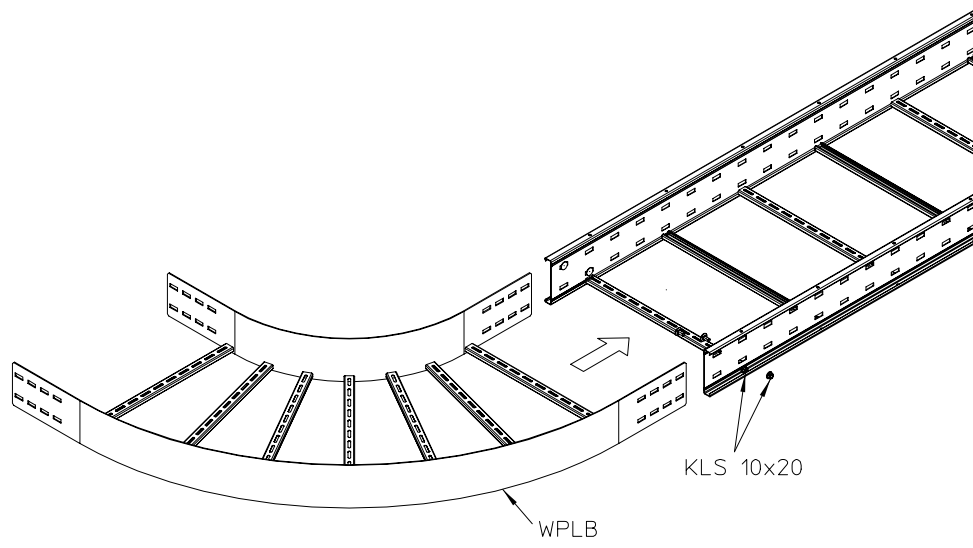


# Wide-span systems

## Application examples

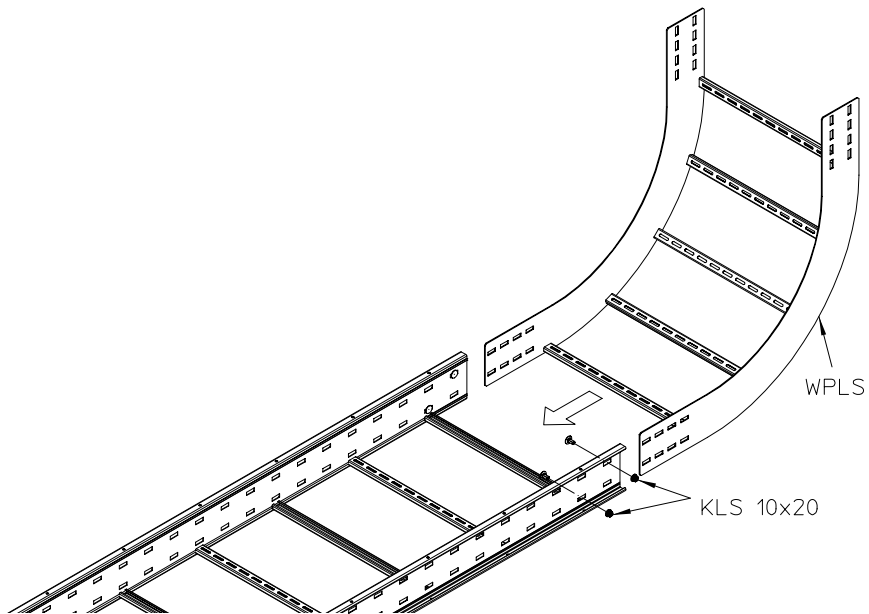
### 90°-elbow

---



### Inside riser

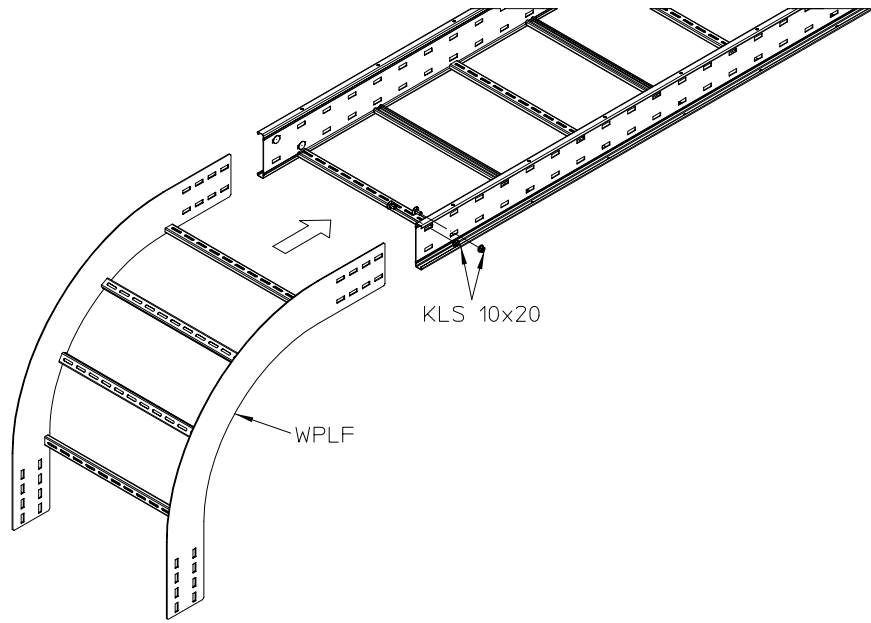
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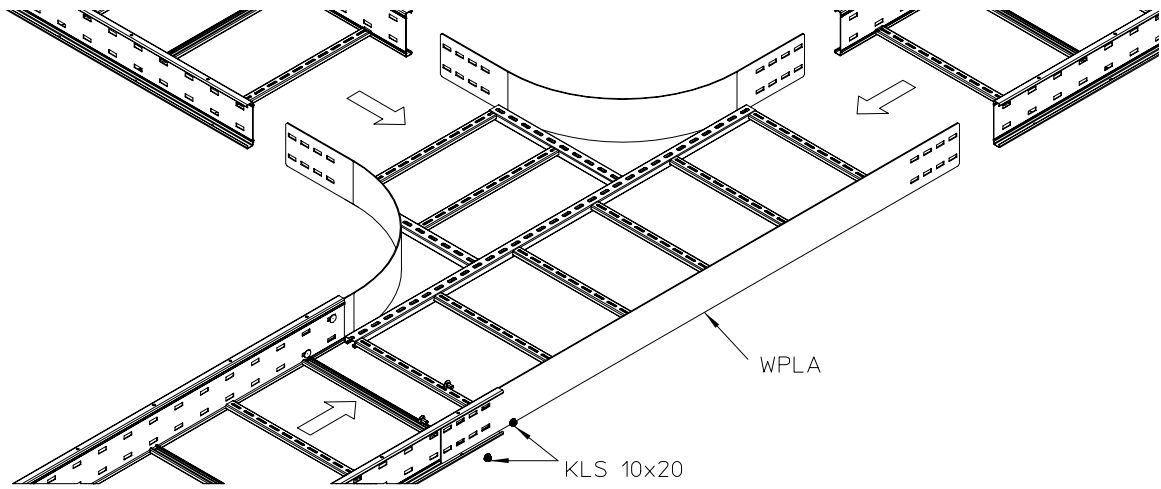
# Wide-span systems

## Application examples

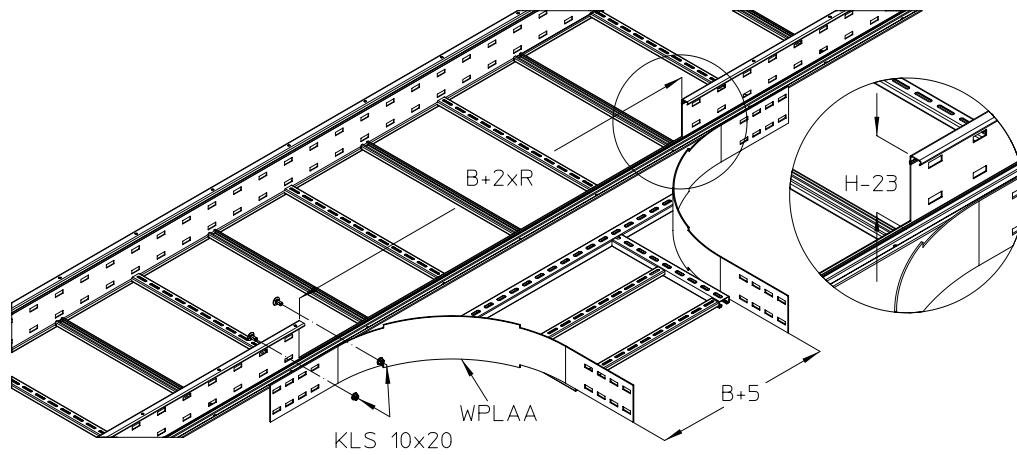
### Outside riser



### T-piece



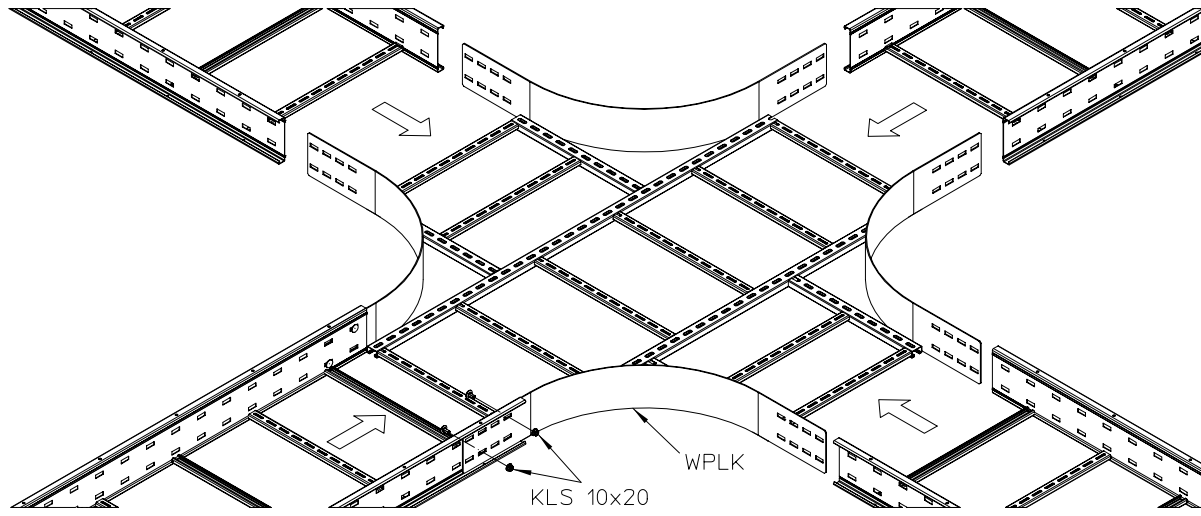
### Flexible T-piece



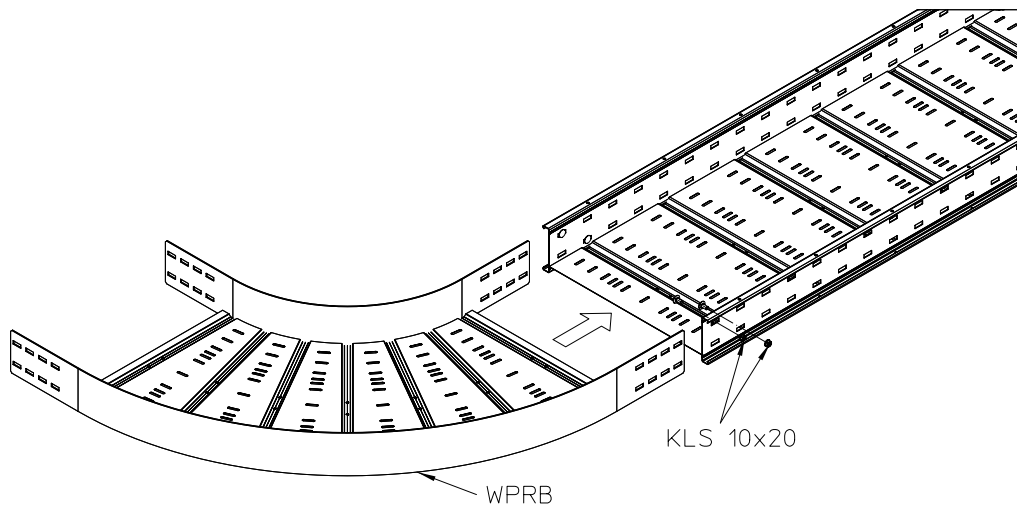
# Wide-span systems

## Application examples

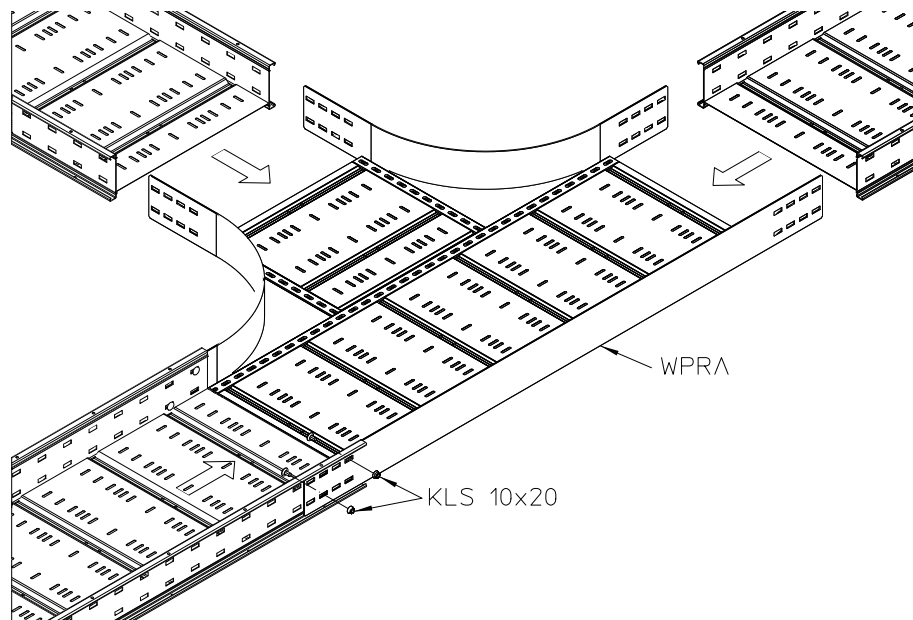
### Cable tray crossing



### 90° elbow



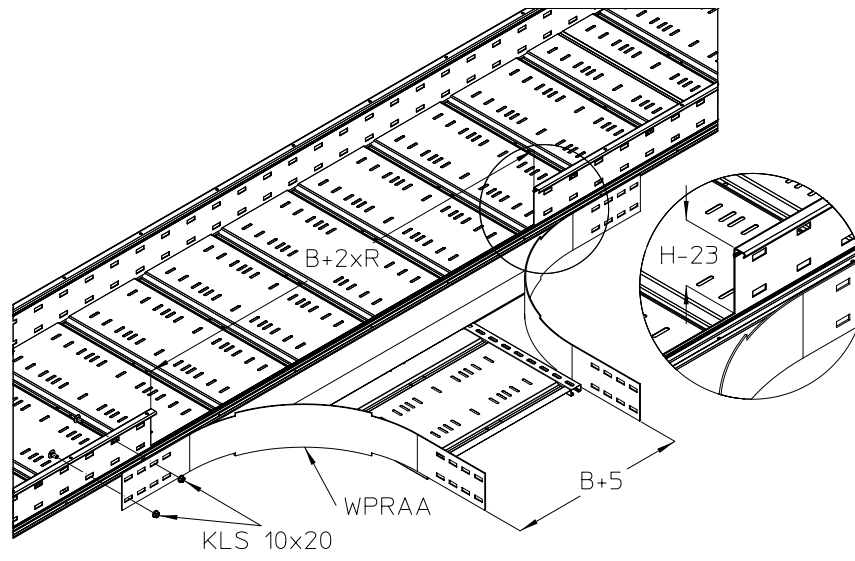
### T-piece



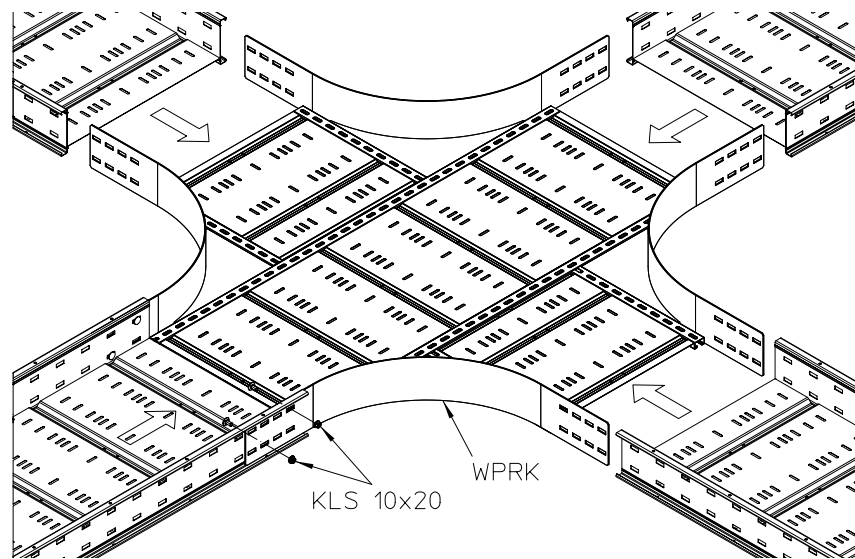
# Wide-span systems

## Application examples

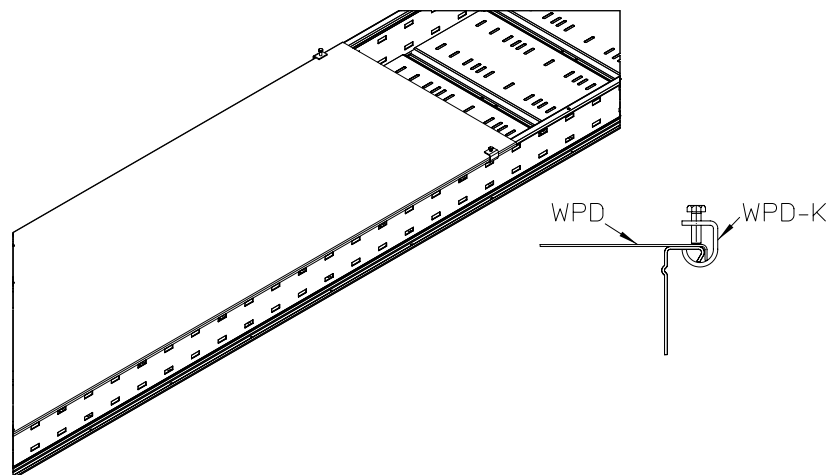
### Flexible T-piece



### Crossing



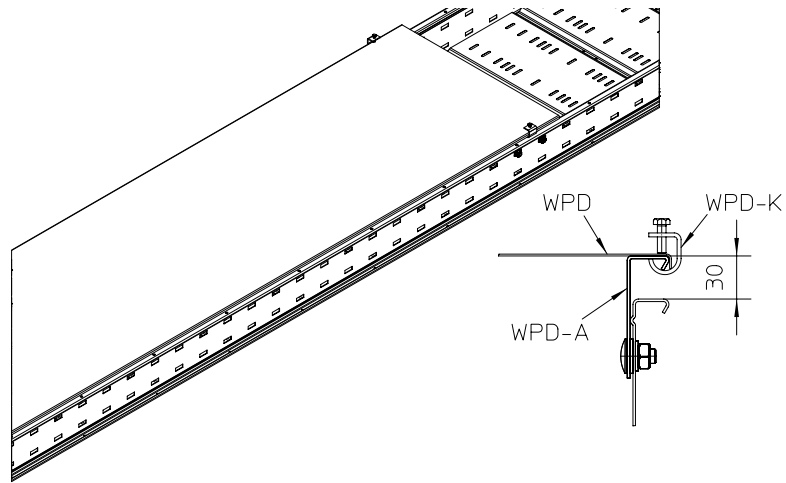
### Cover assembly



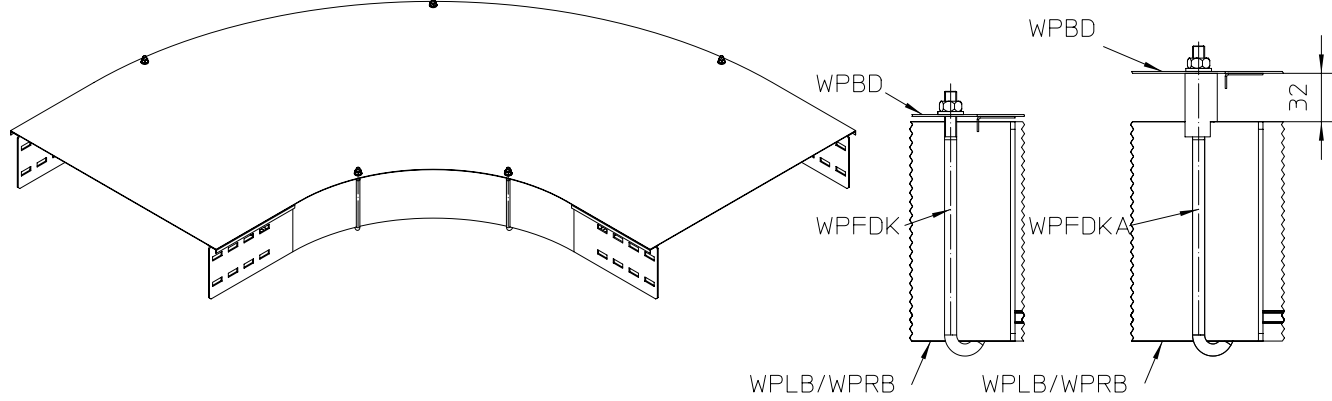
# Wide-span systems

## Application examples

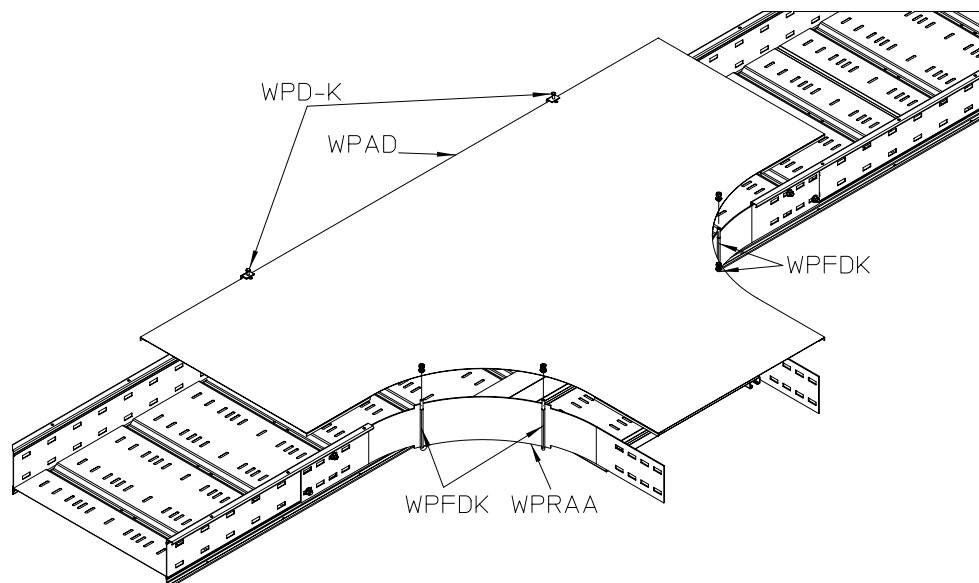
### Elevated ceiling assembly



### Fittings cover for elbow



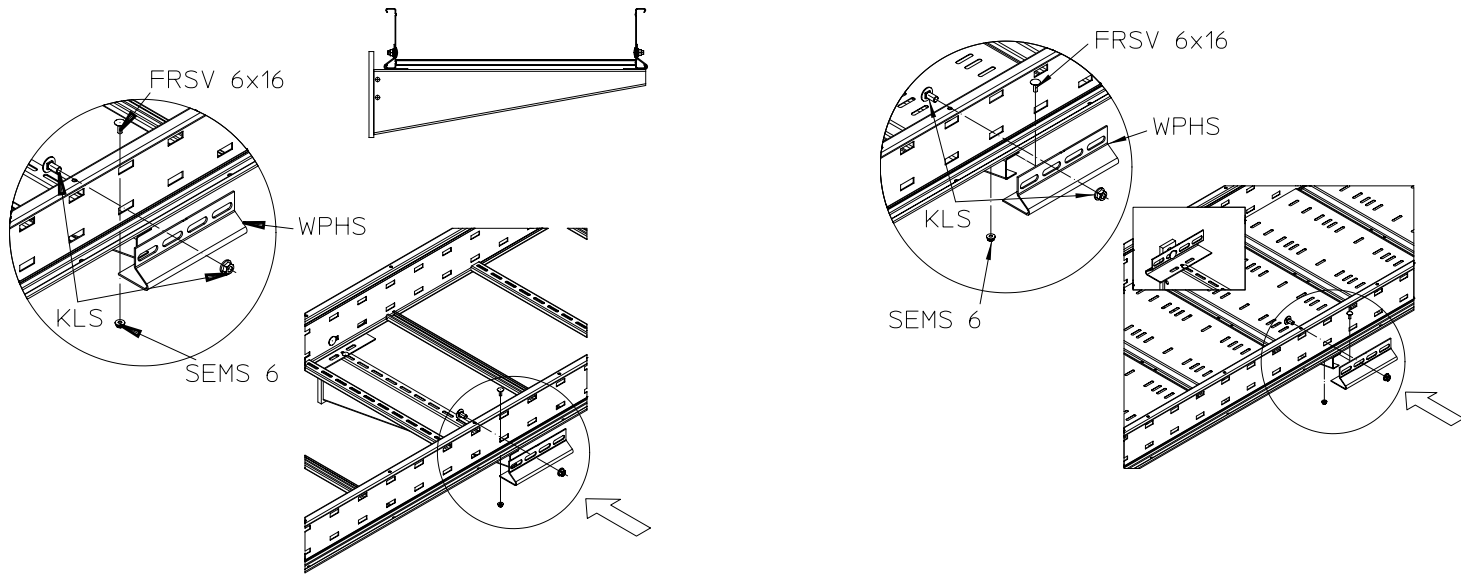
### Fittings cover for T-piece



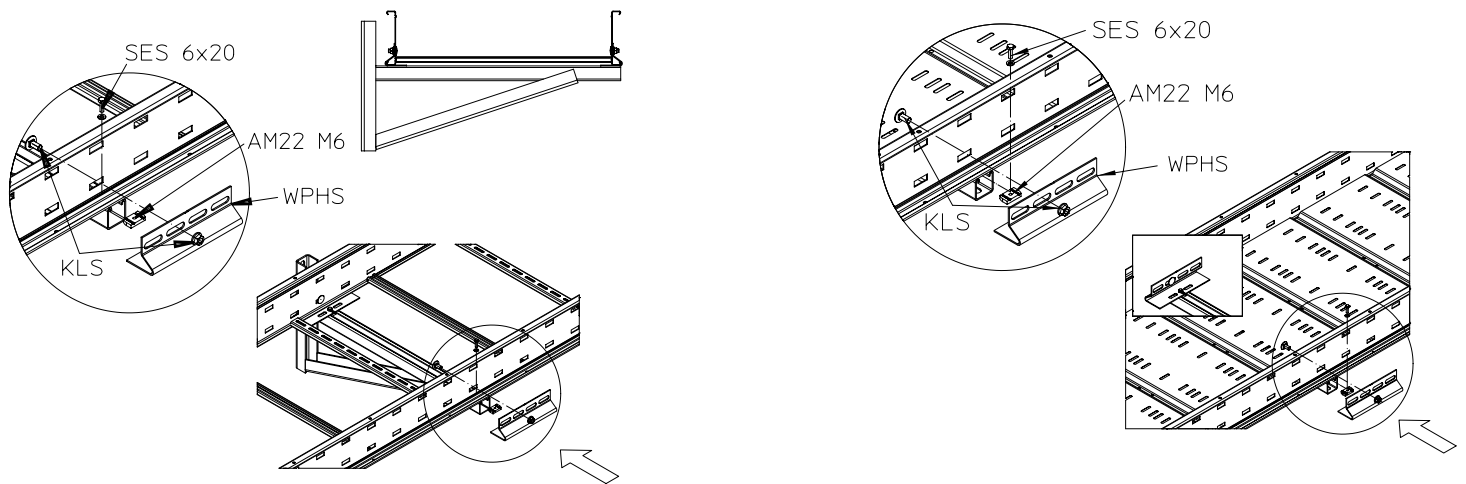
# Wide-span systems

## Application examples

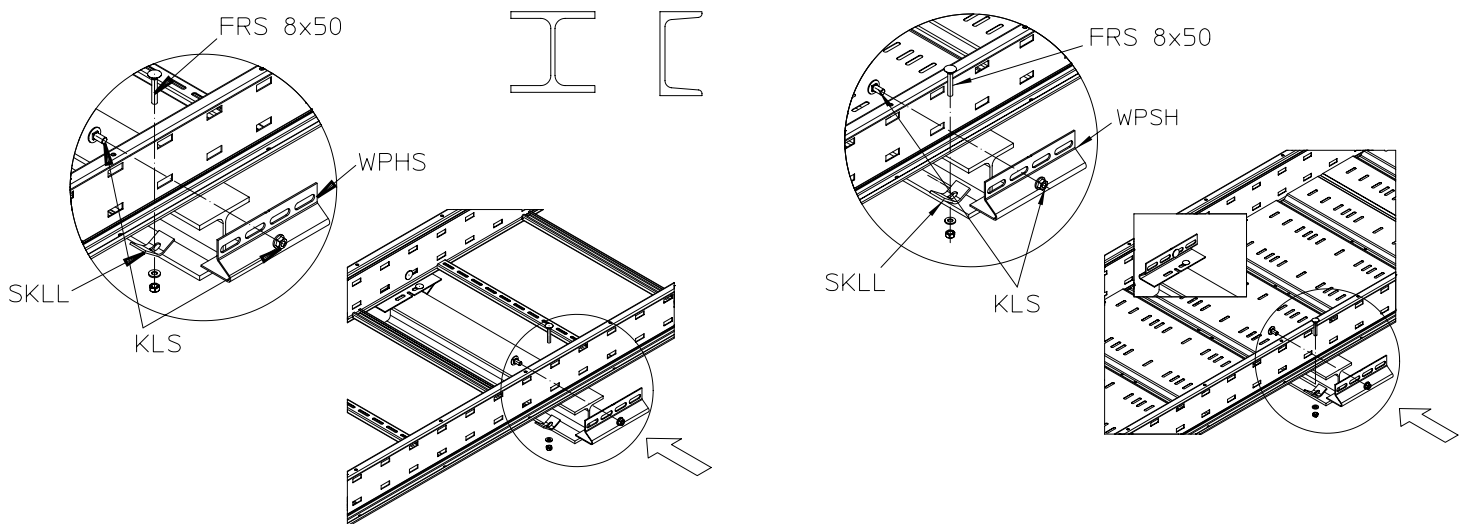
### Flange mounting clamp (brackets)



### Flange mounting clamp for KWS mounting



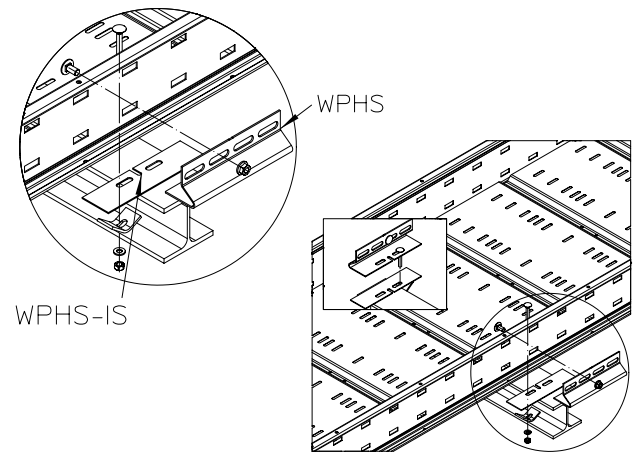
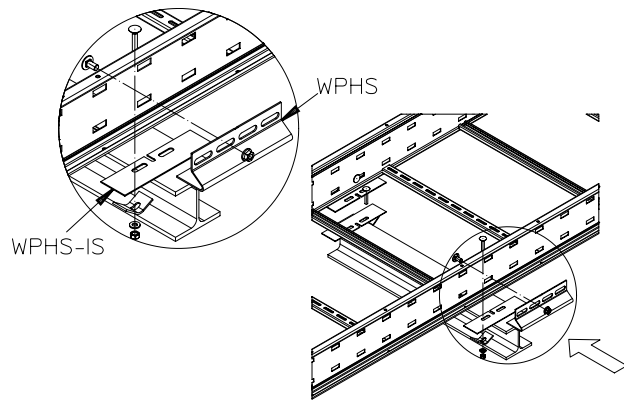
### Flange mounting clamp for mounting on steel beams



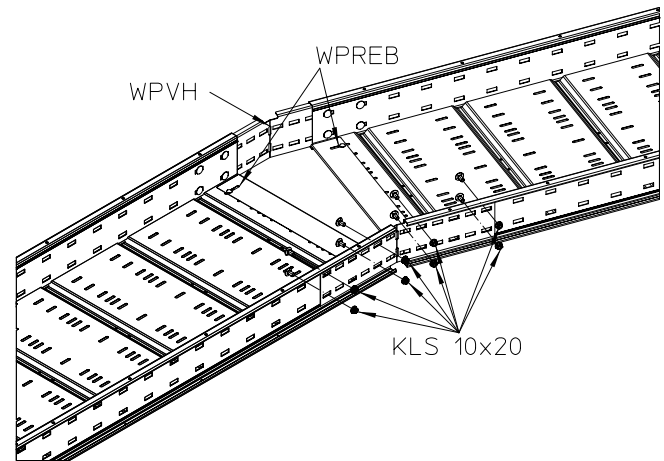
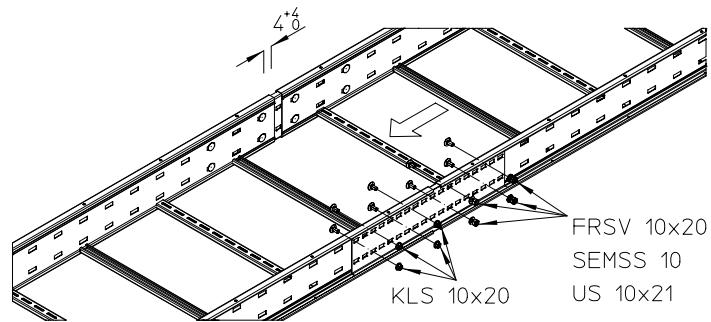
# Wide-span systems

## Application examples

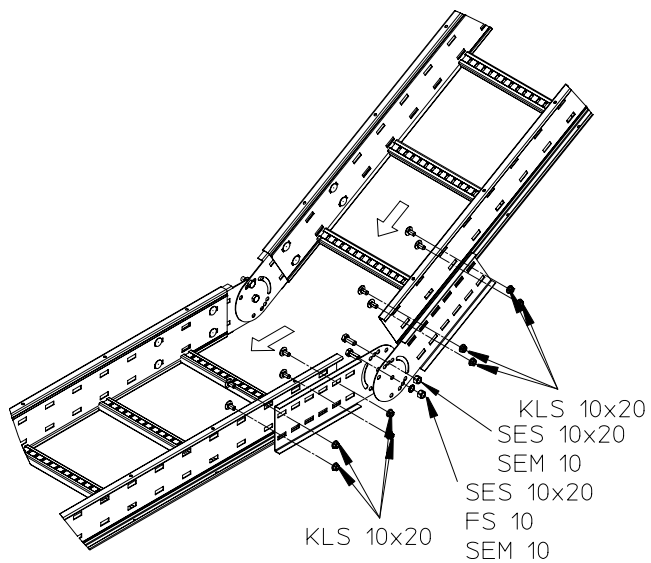
### Flange mounting clamp for mounting on steel beams with insulating tape



### End-to-end assembly



### Upstream



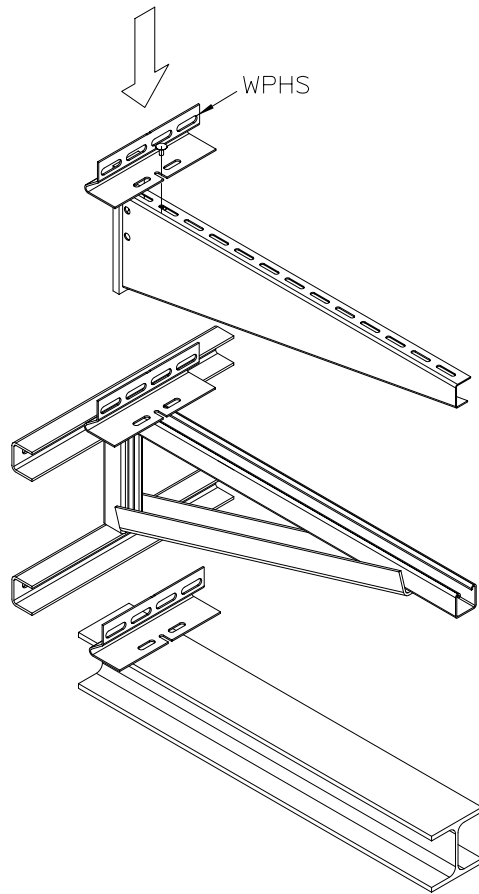


# Wide-span systems

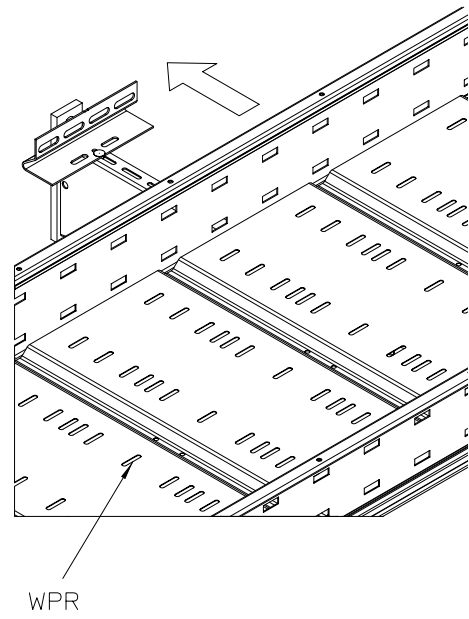
## Application examples

### Flange mounting clamp support for KLS mounting

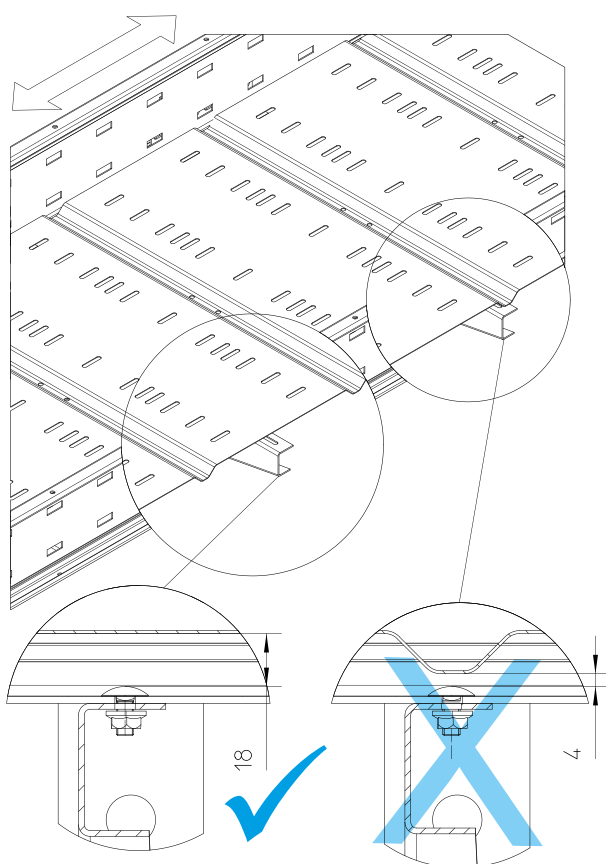
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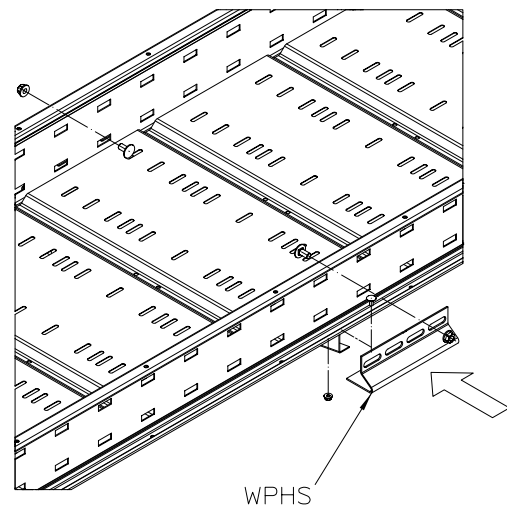
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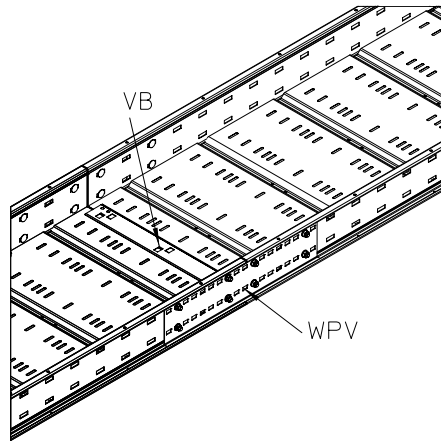
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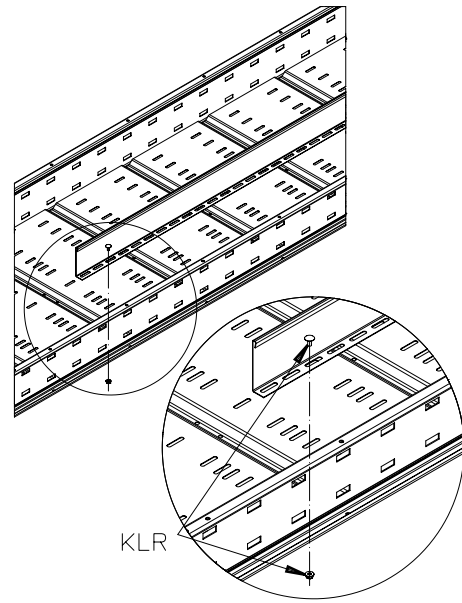
# Wide-span systems

## Application examples

### End-to-end assembly



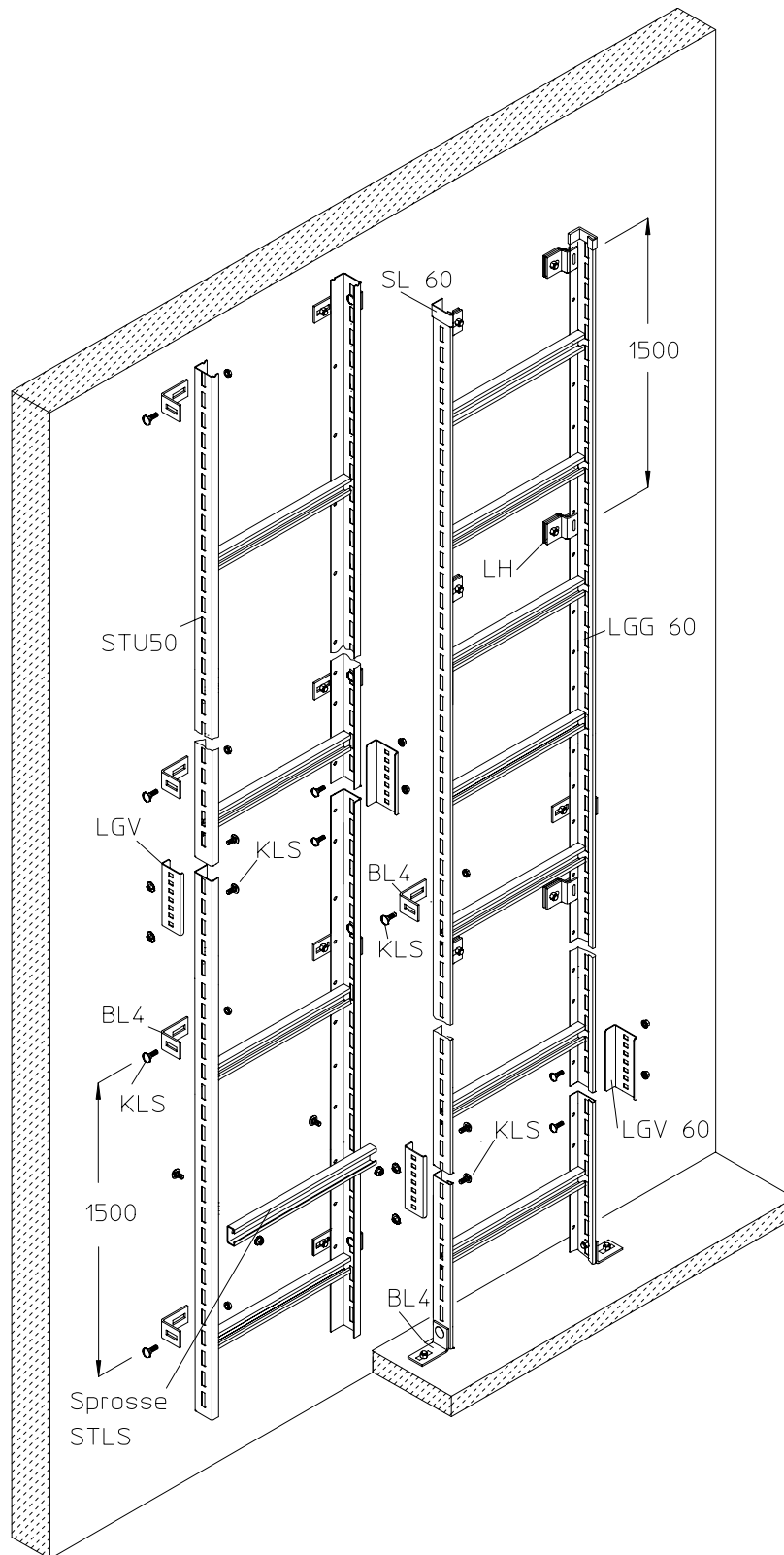
### Assembly of separating strip



# Vertical ladders

## Application examples

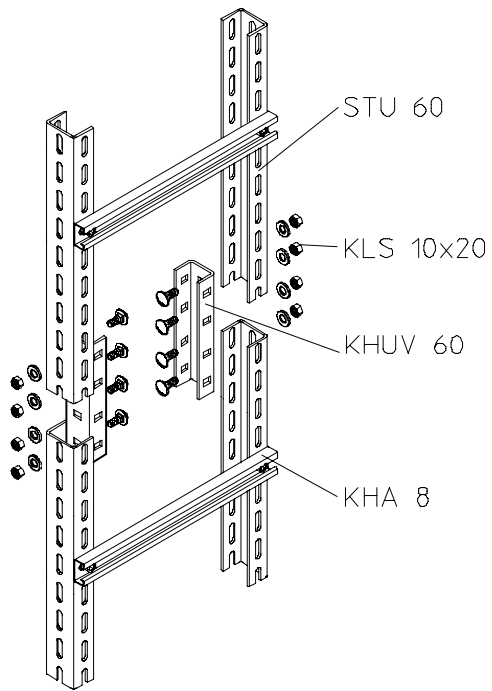
Direct wall-mounting / Assembly with foot plate



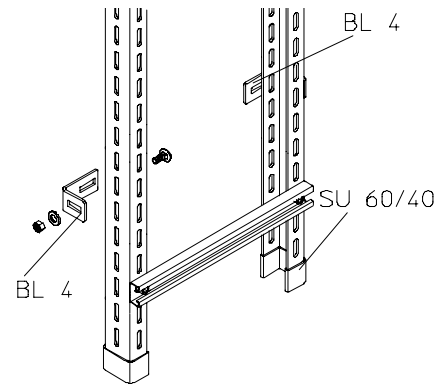
# Vertical ladders

## Application examples

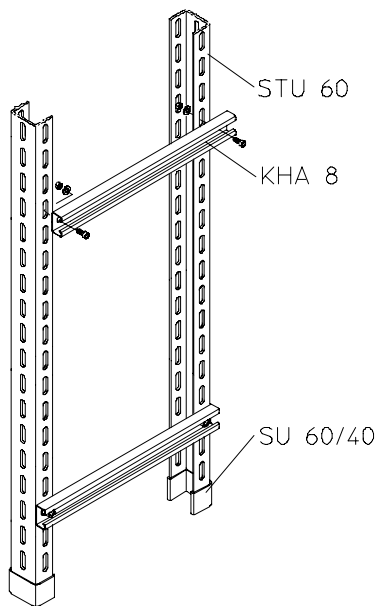
### Vertical ladder extension



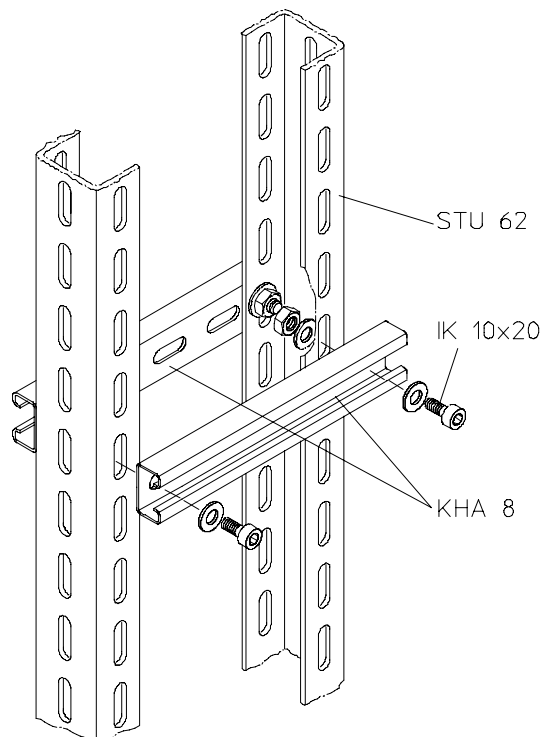
### Direct wall-mounting



### STU 60



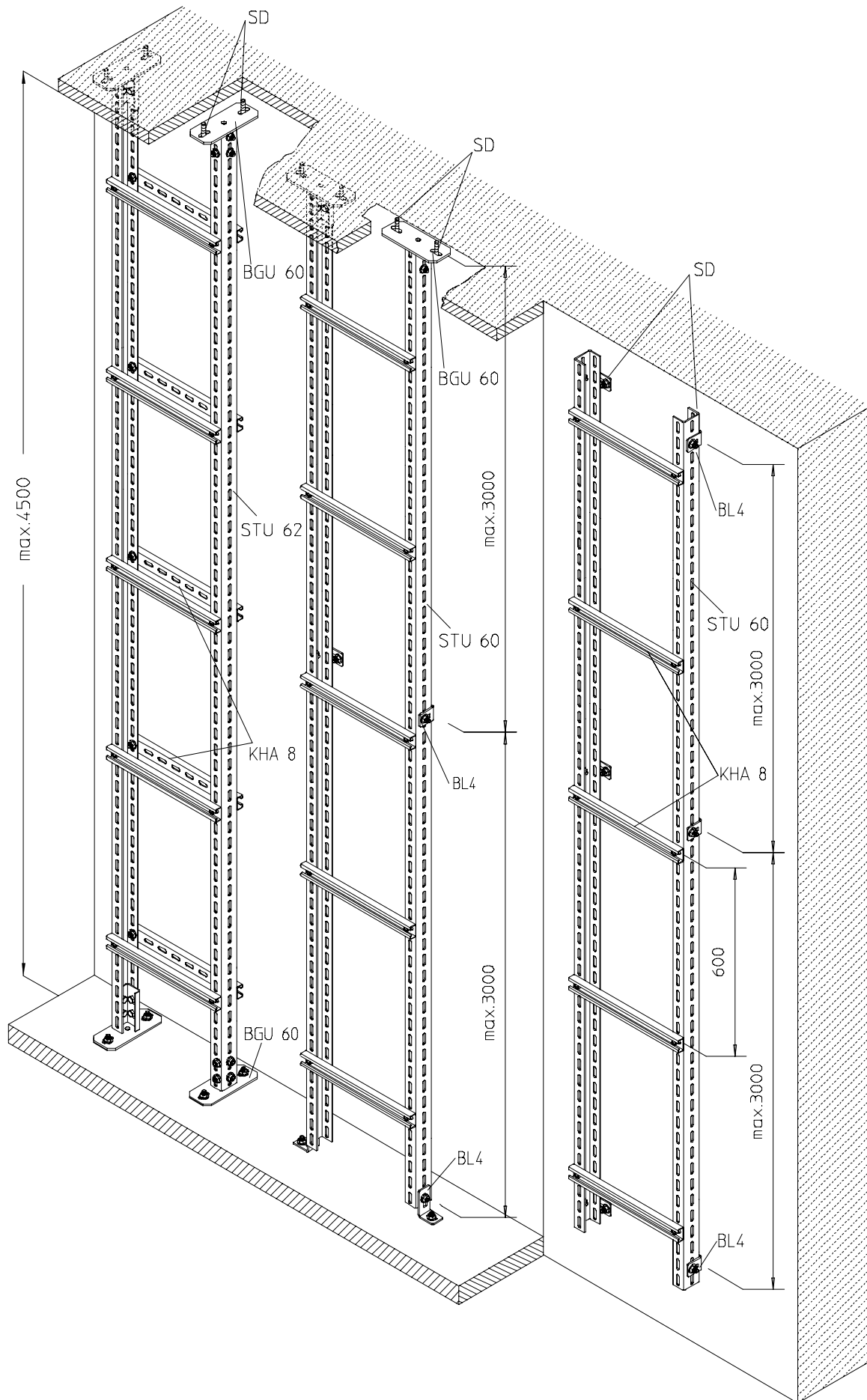
### STU 62



# Vertical ladders

## Application examples

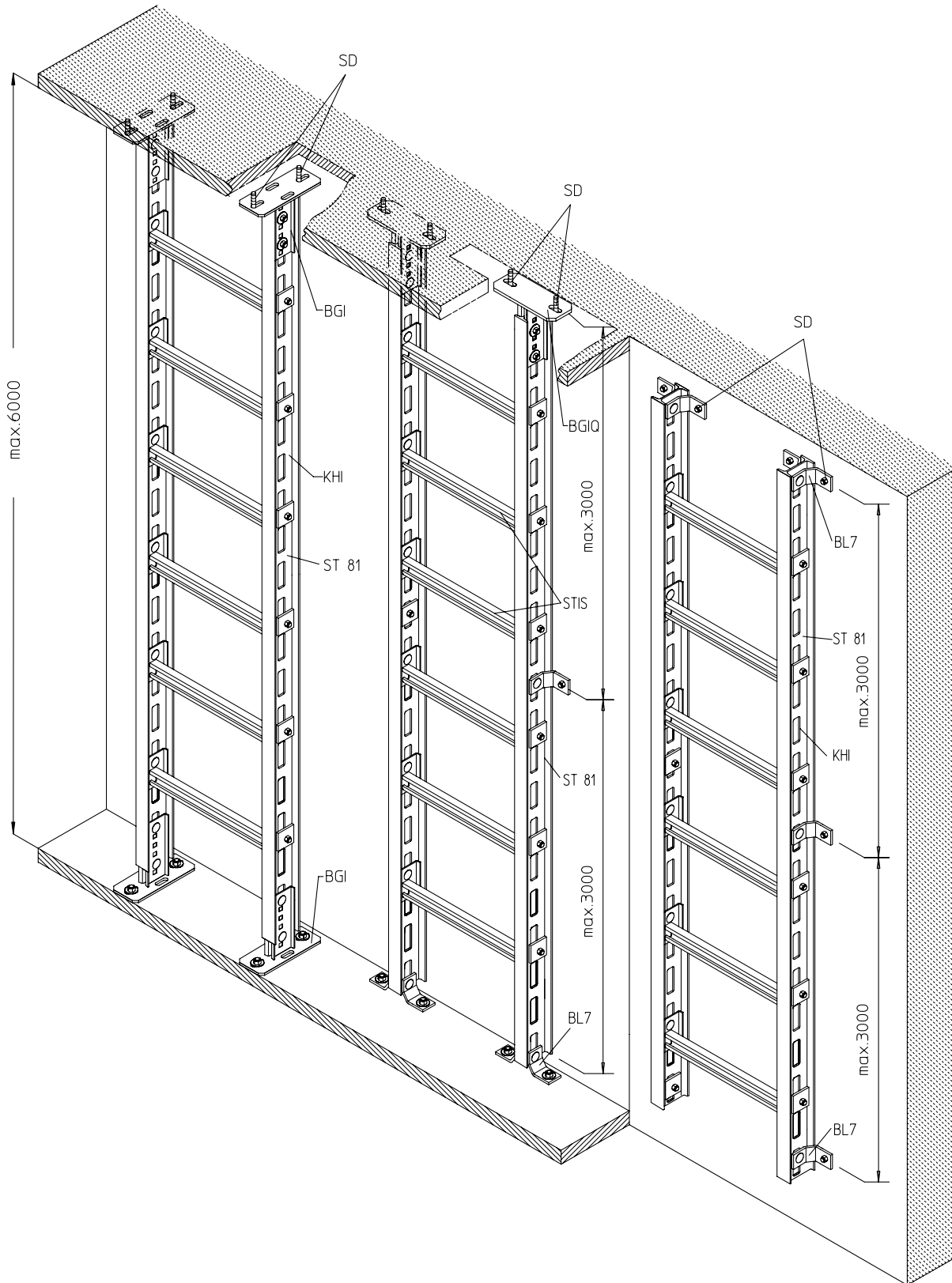
Direct wall-mounting / Assembly with foot plate and head plate



# Vertical ladders

## Application examples

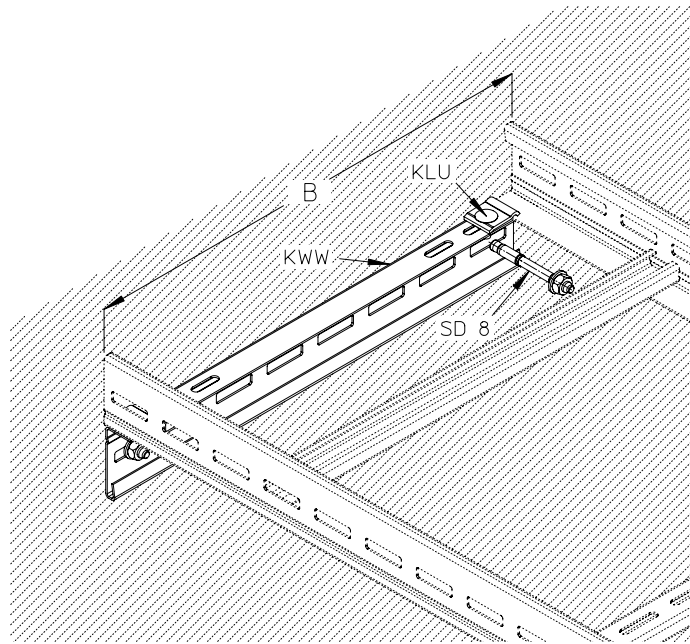
Direct wall-mounting / Assembly with foot plate and head plate



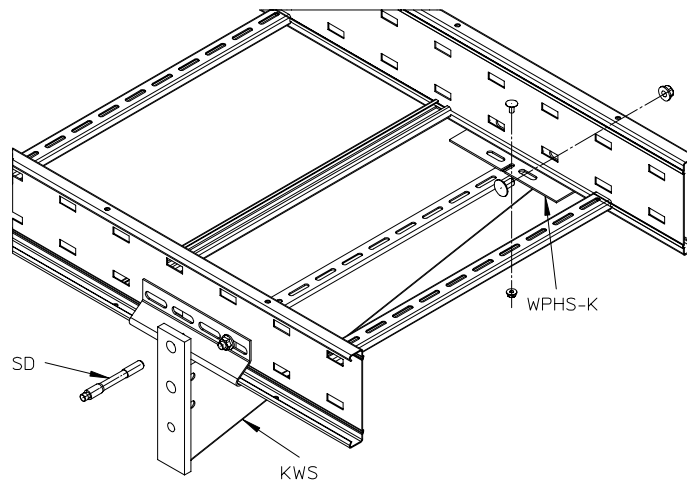
# Support systems

## Application examples

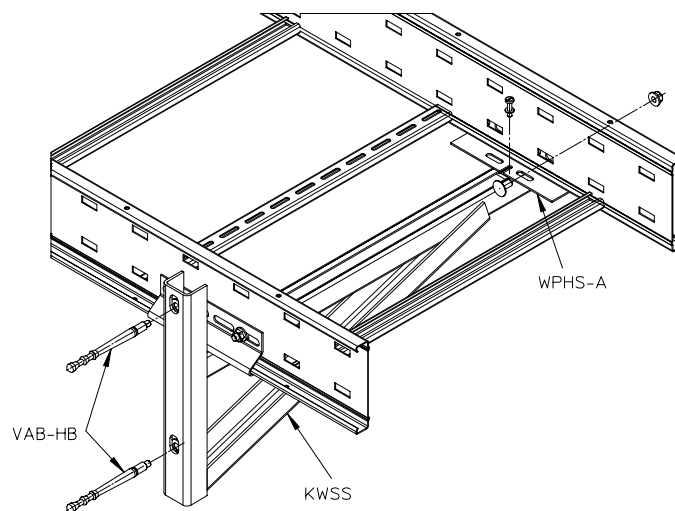
### Assembly on wall angle



### Assembly of KWS



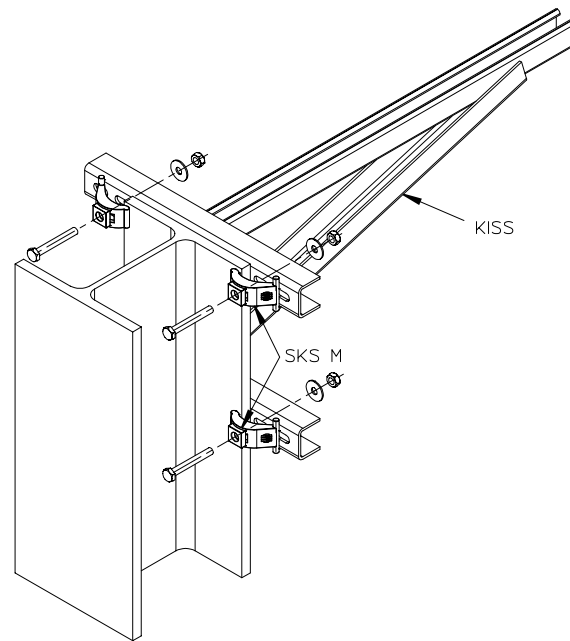
### Assembly of KWSS



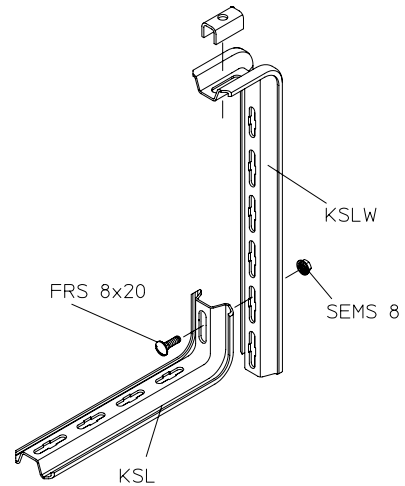
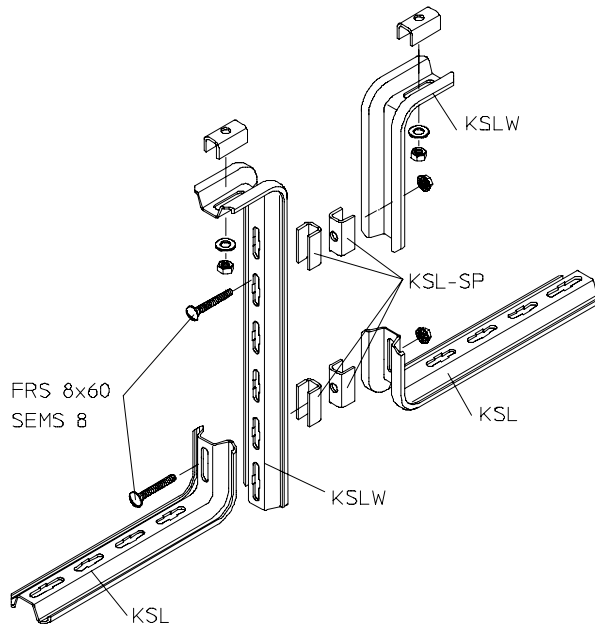
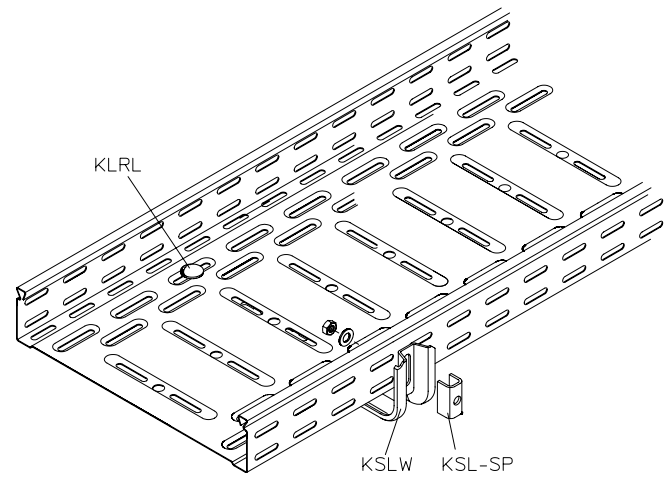
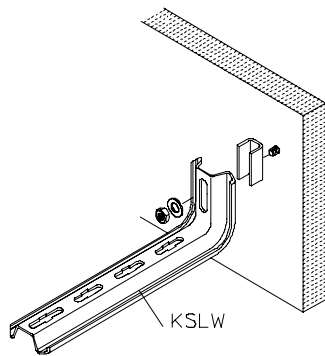
# Support systems

## Application examples

### Assembly on steel beams



### KSL-system / wall and ceiling assembly





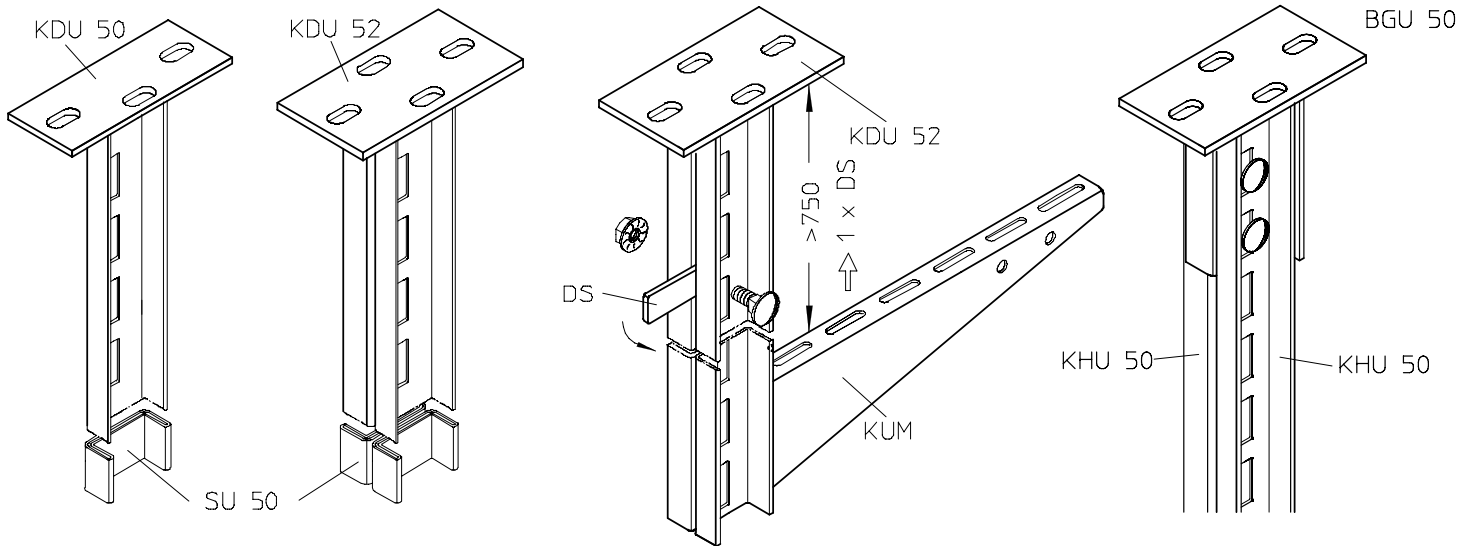
# Support systems

## Application examples

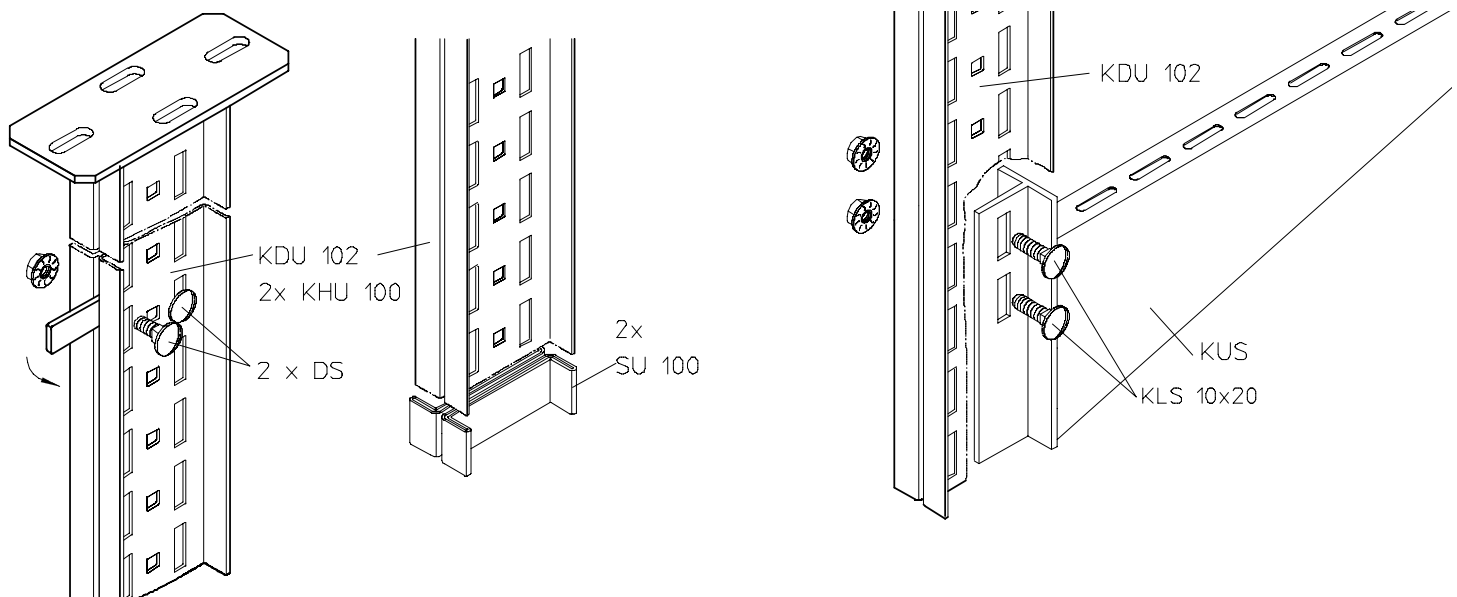
### Bracket assembly



### Bracket assembly



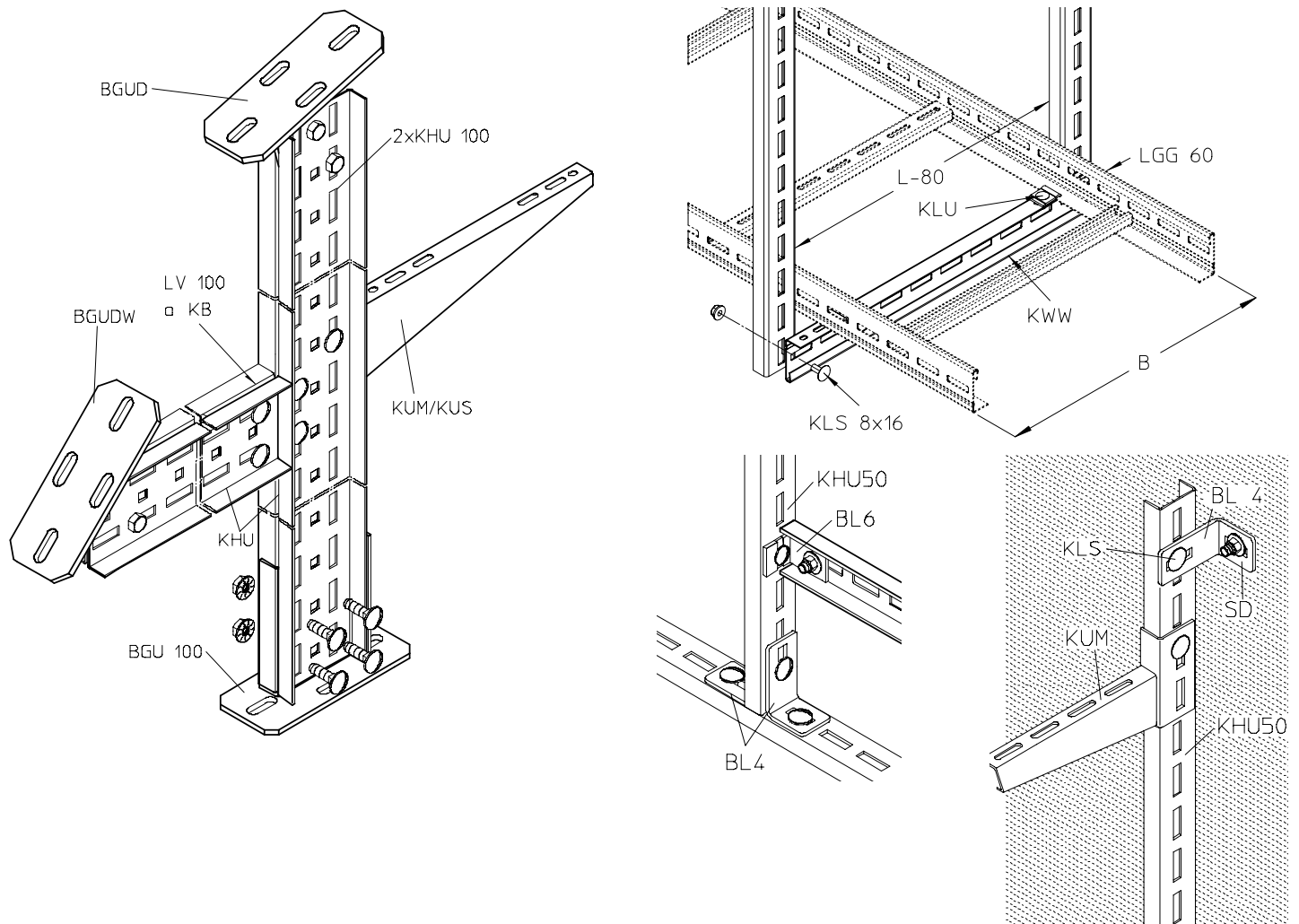
### Bracket assembly



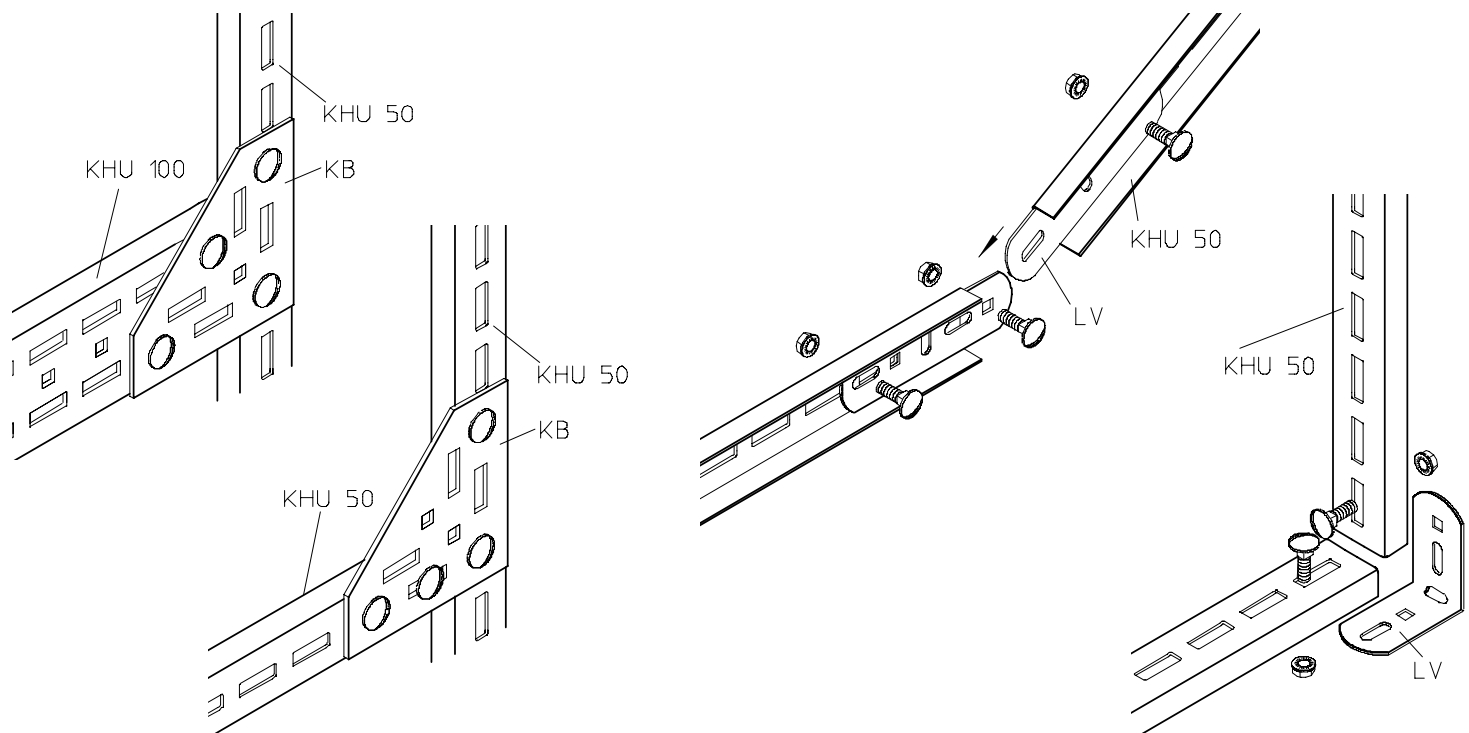
# Support systems

## Application examples

### Assembly of KHU



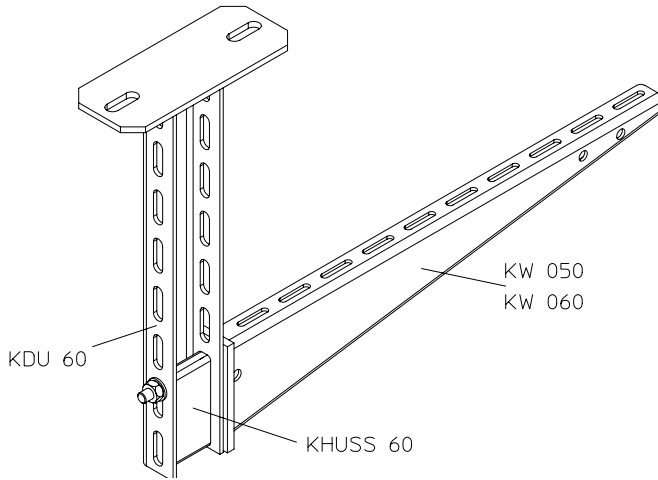
### Assembly of KHU



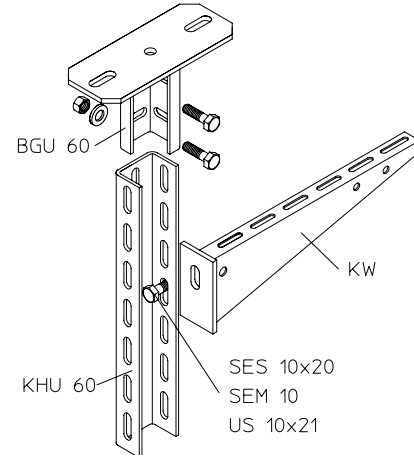
# Support systems

## Application examples

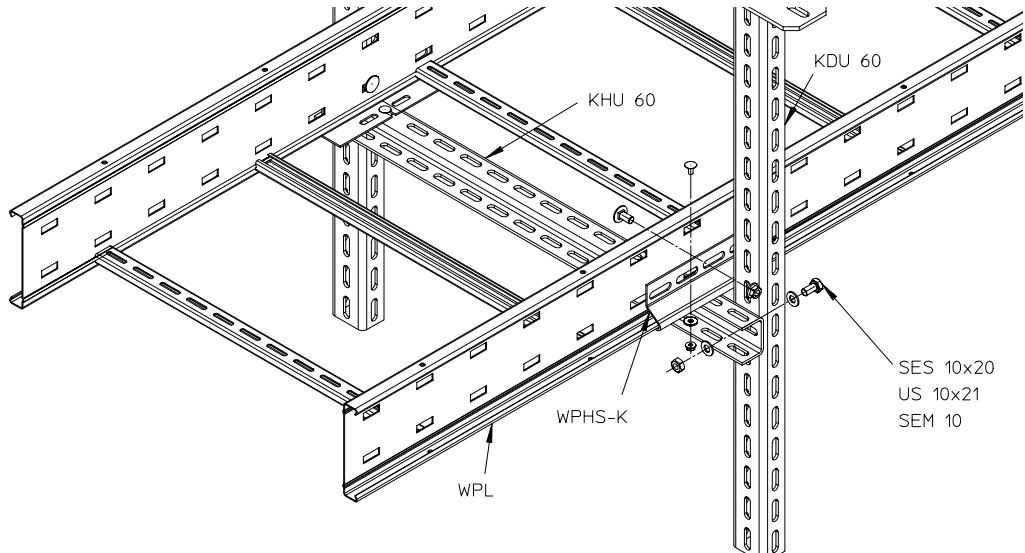
### Bracket assembly



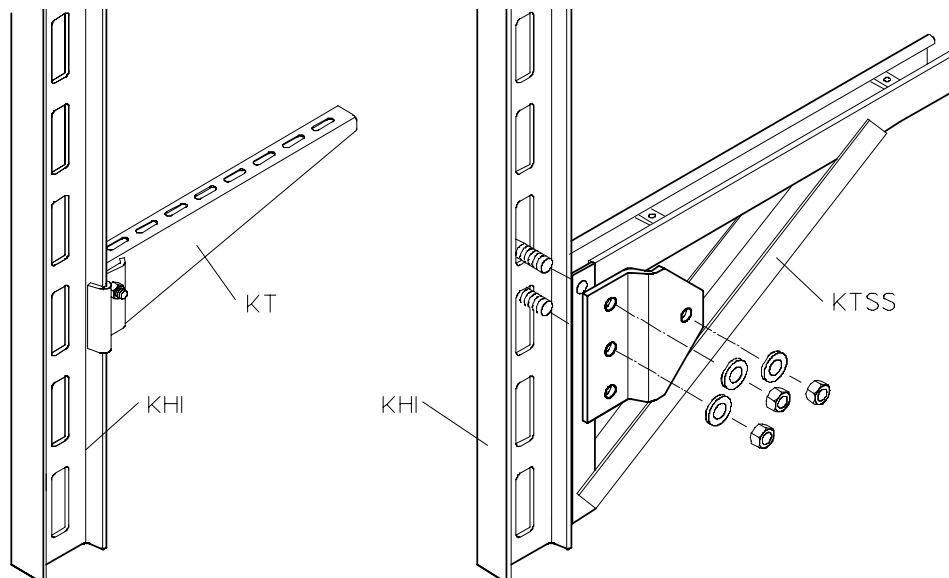
### Bracket assembly



### Profile assembly



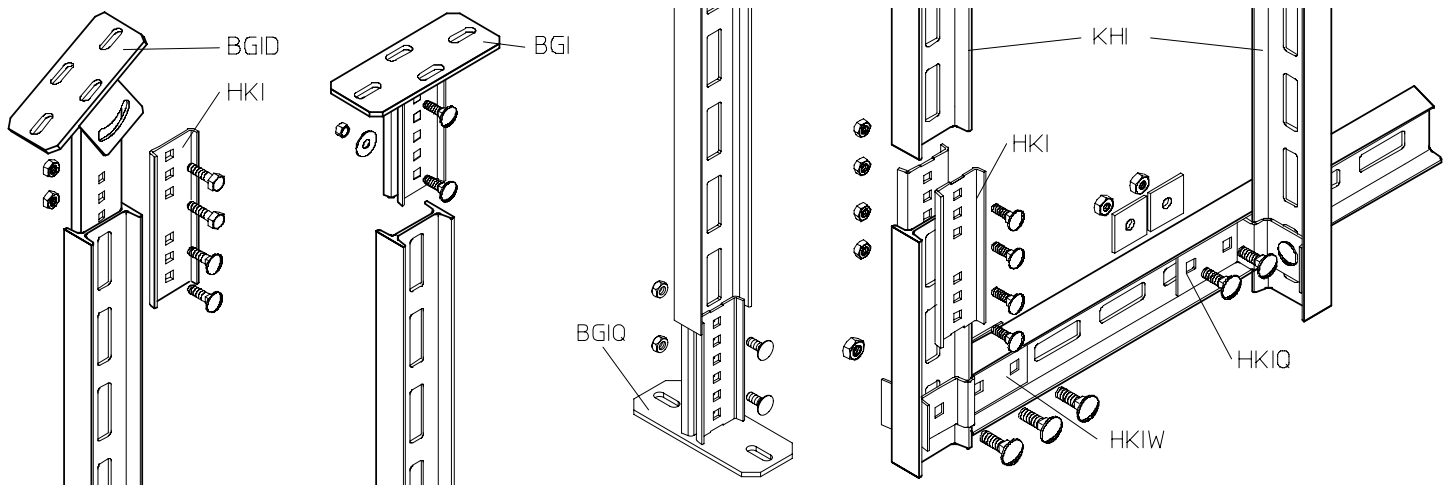
### Bracket assembly



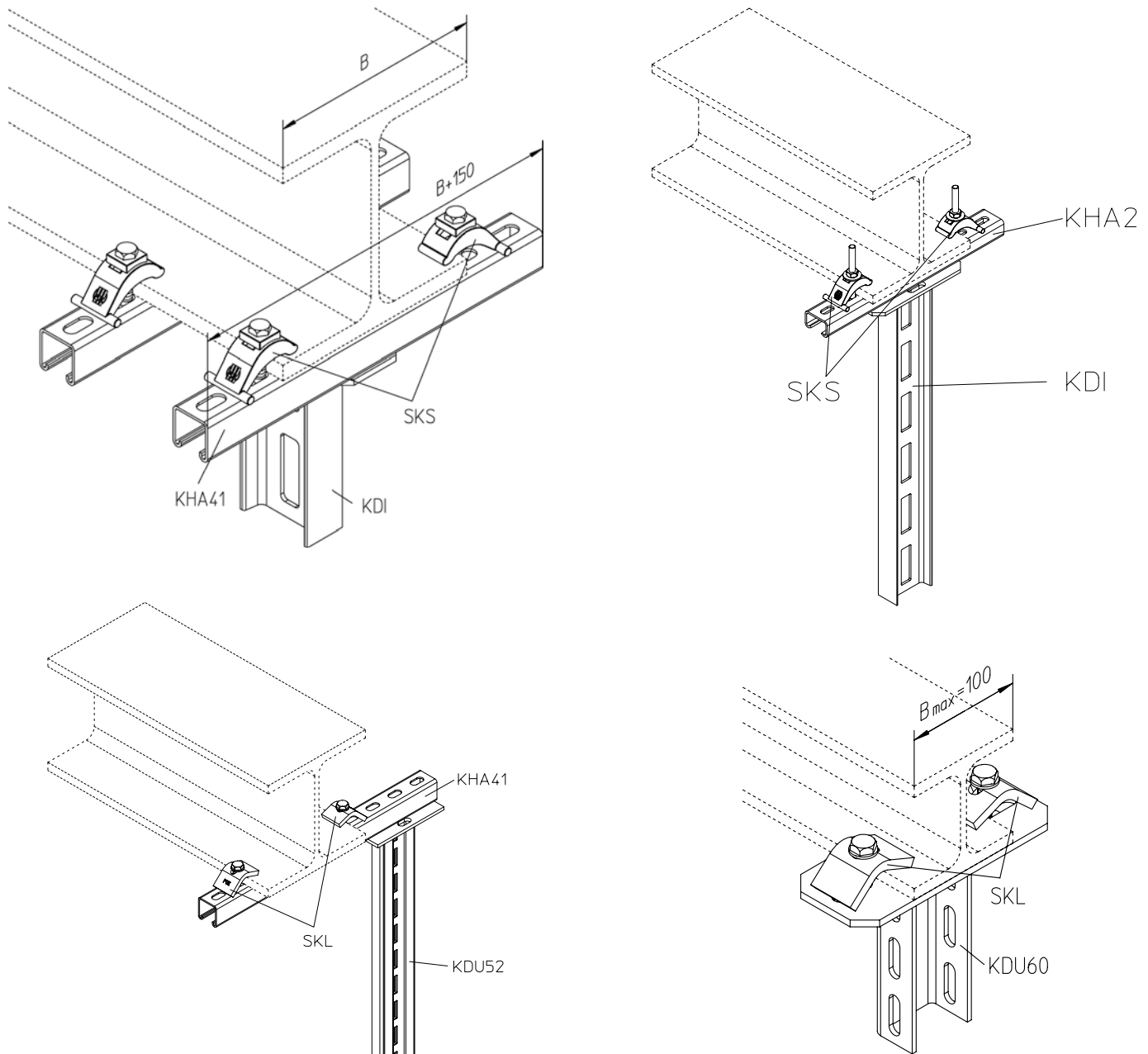
# Support systems

## Application examples

### Assembly of KHI



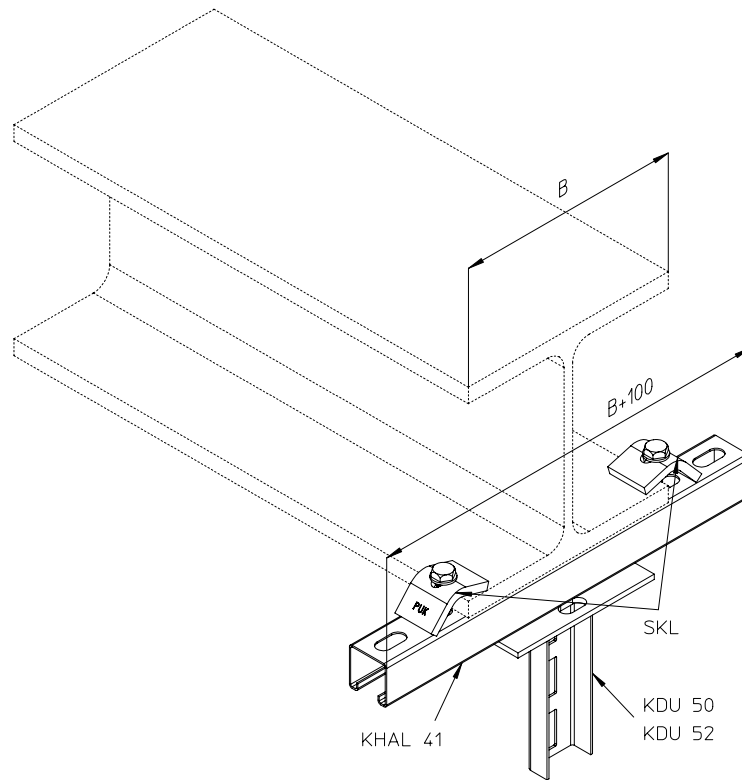
### Clamping assembly on steel beams



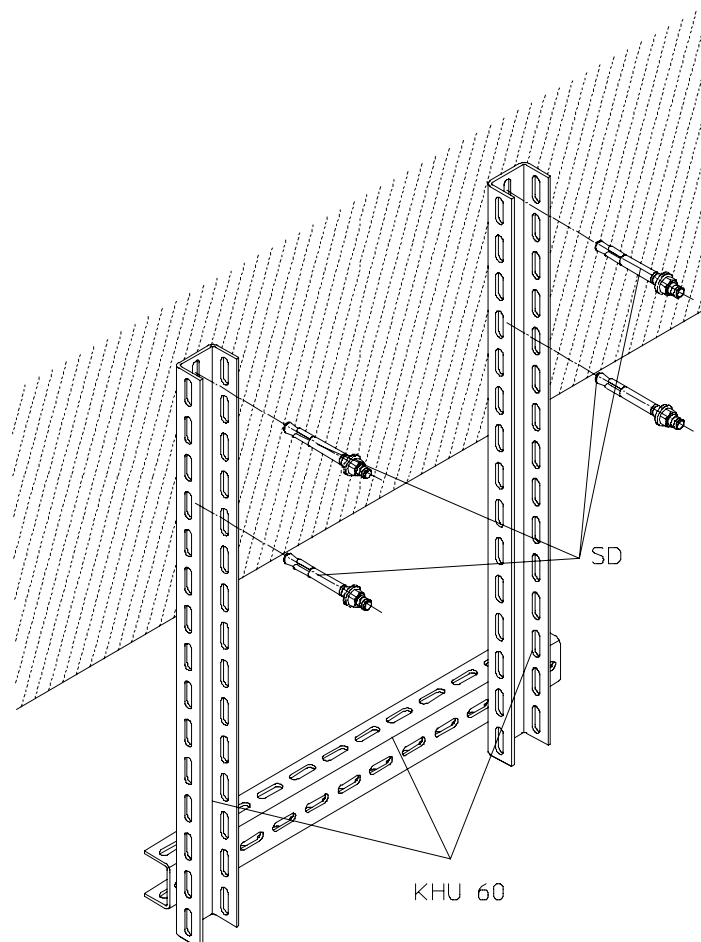
# Support systems

## Application examples

### Strut assembly



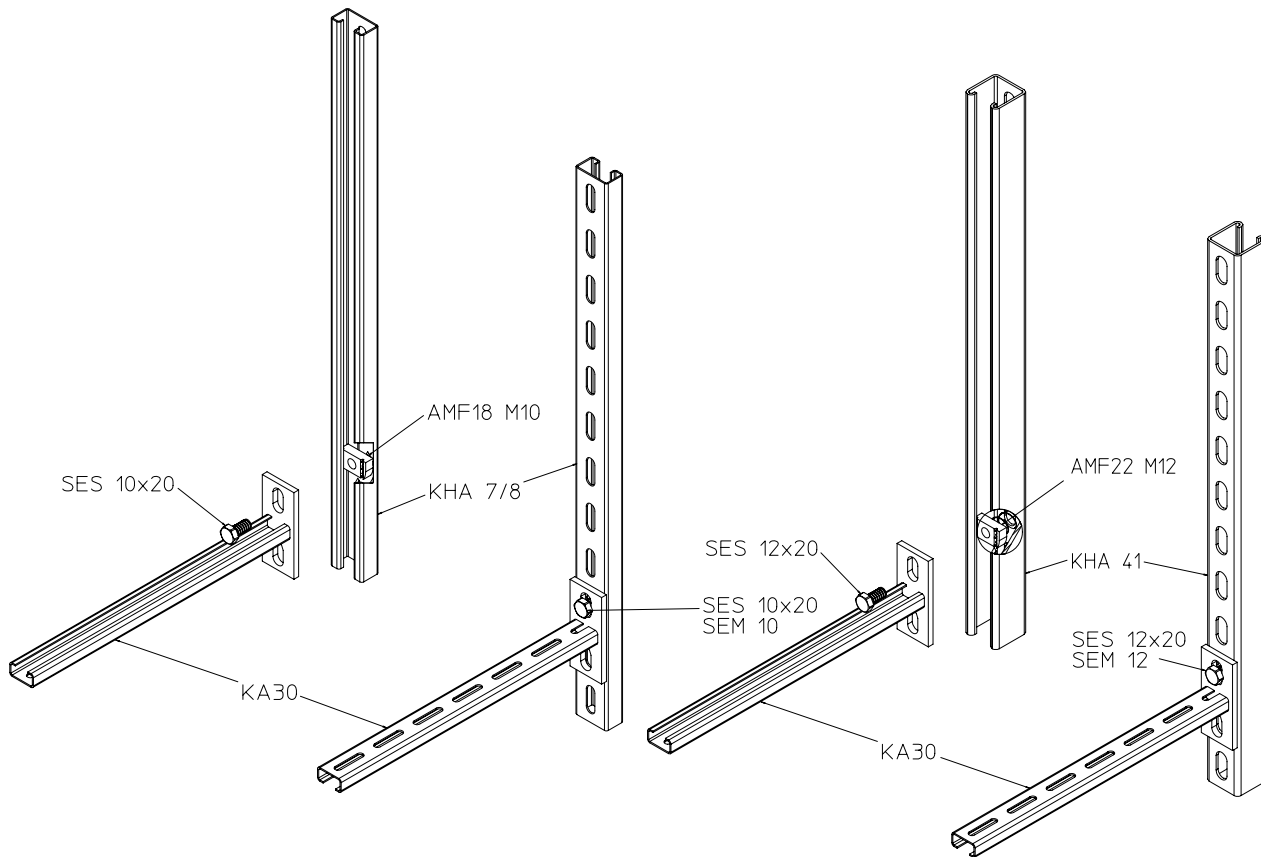
### Profile assembly for concrete beams



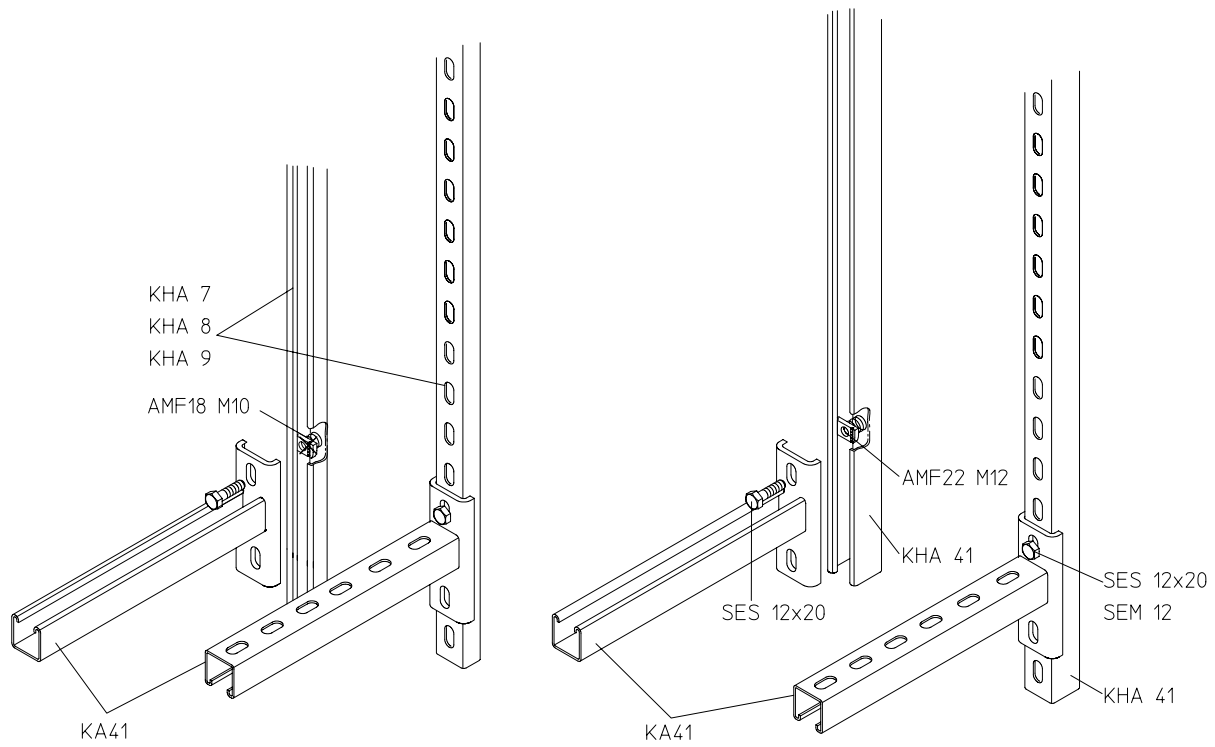
# Support systems

## Application examples

### Strut assembly



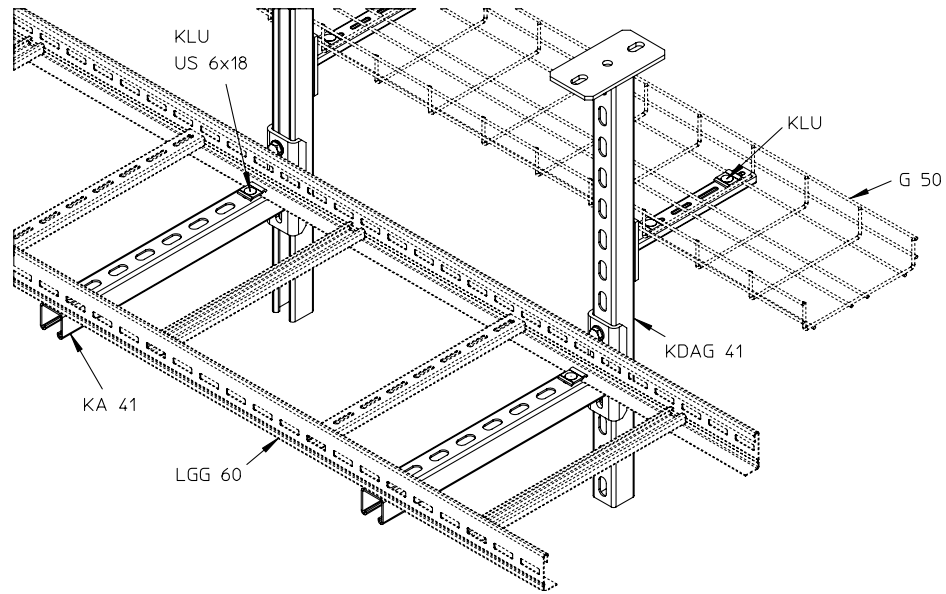
### Strut assembly



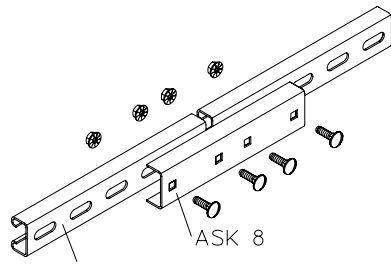
# Support systems

## Application examples

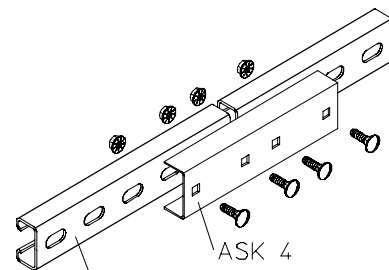
### Strut assembly



### C-rail connection

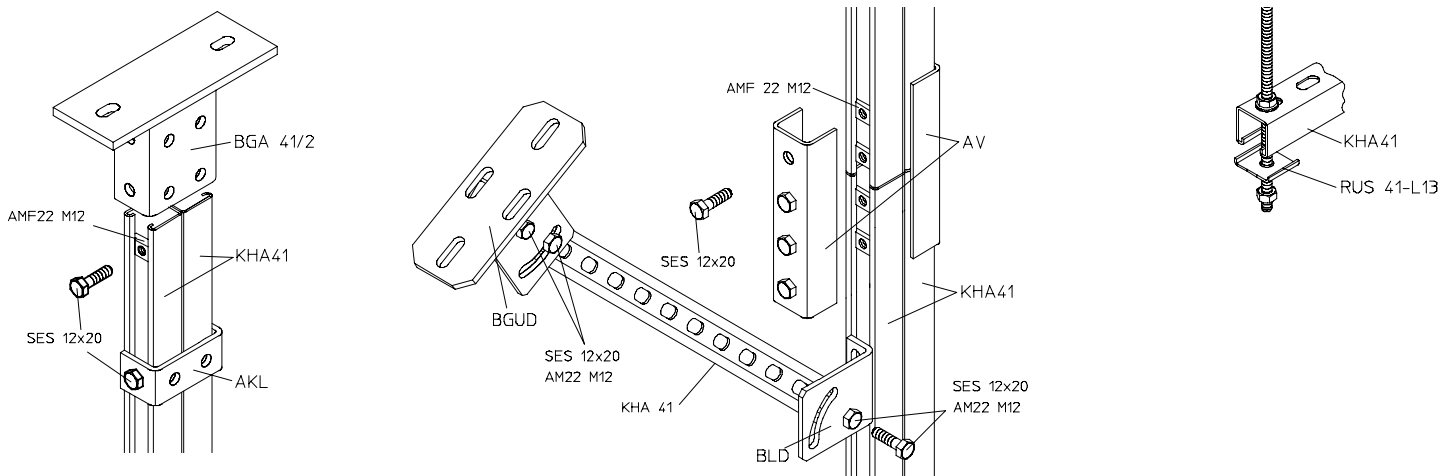


A7, A8, A9  
 KHA 7, KHA 8, KHA 9  
 39,5/22, 40/22, 39,5/25



A4; KHA4  
 48/26

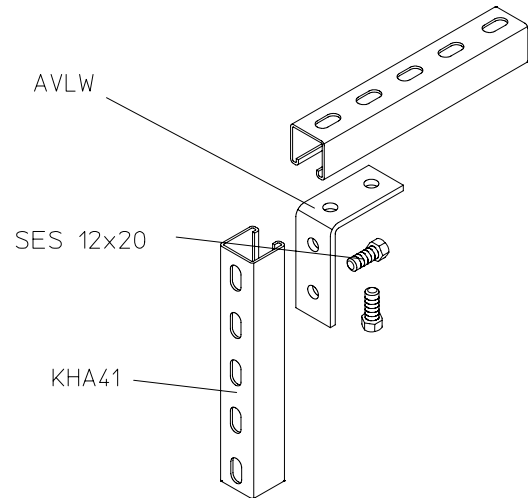
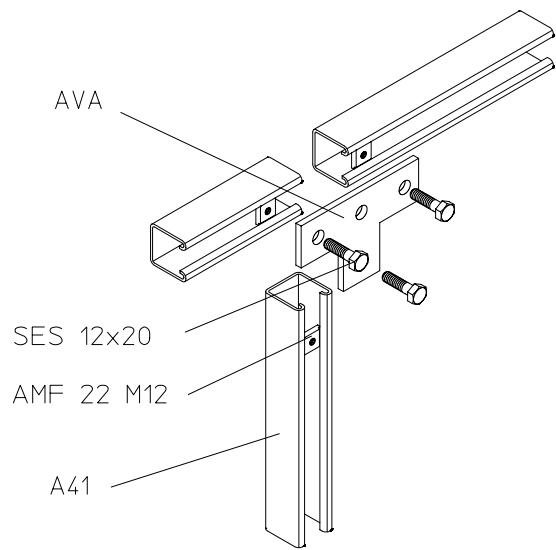
### Strut assembly



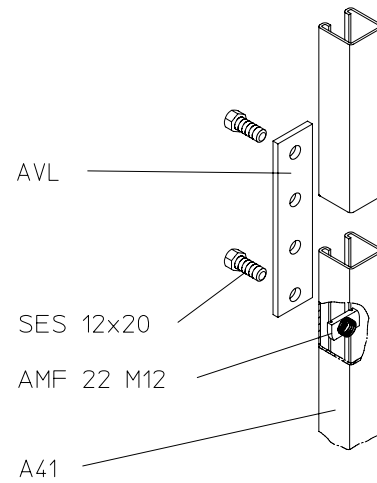
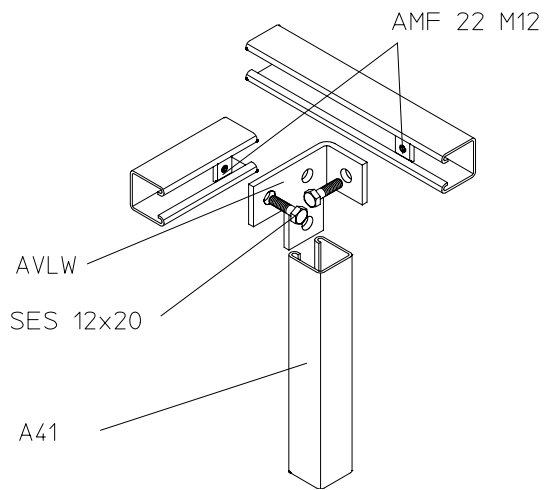
# Support systems

## Application examples

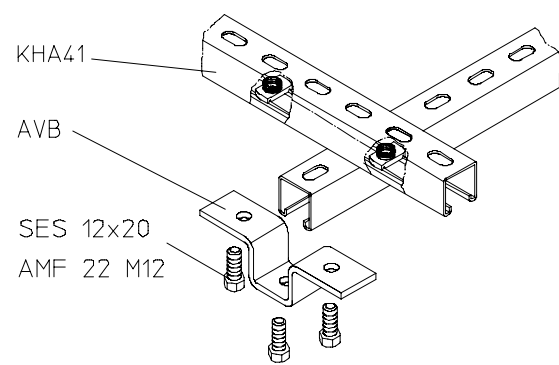
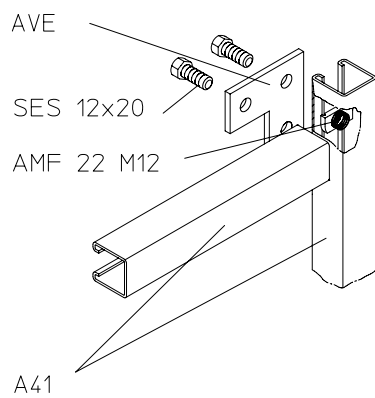
### Strut assembly



### Strut assembly



### Strut assembly

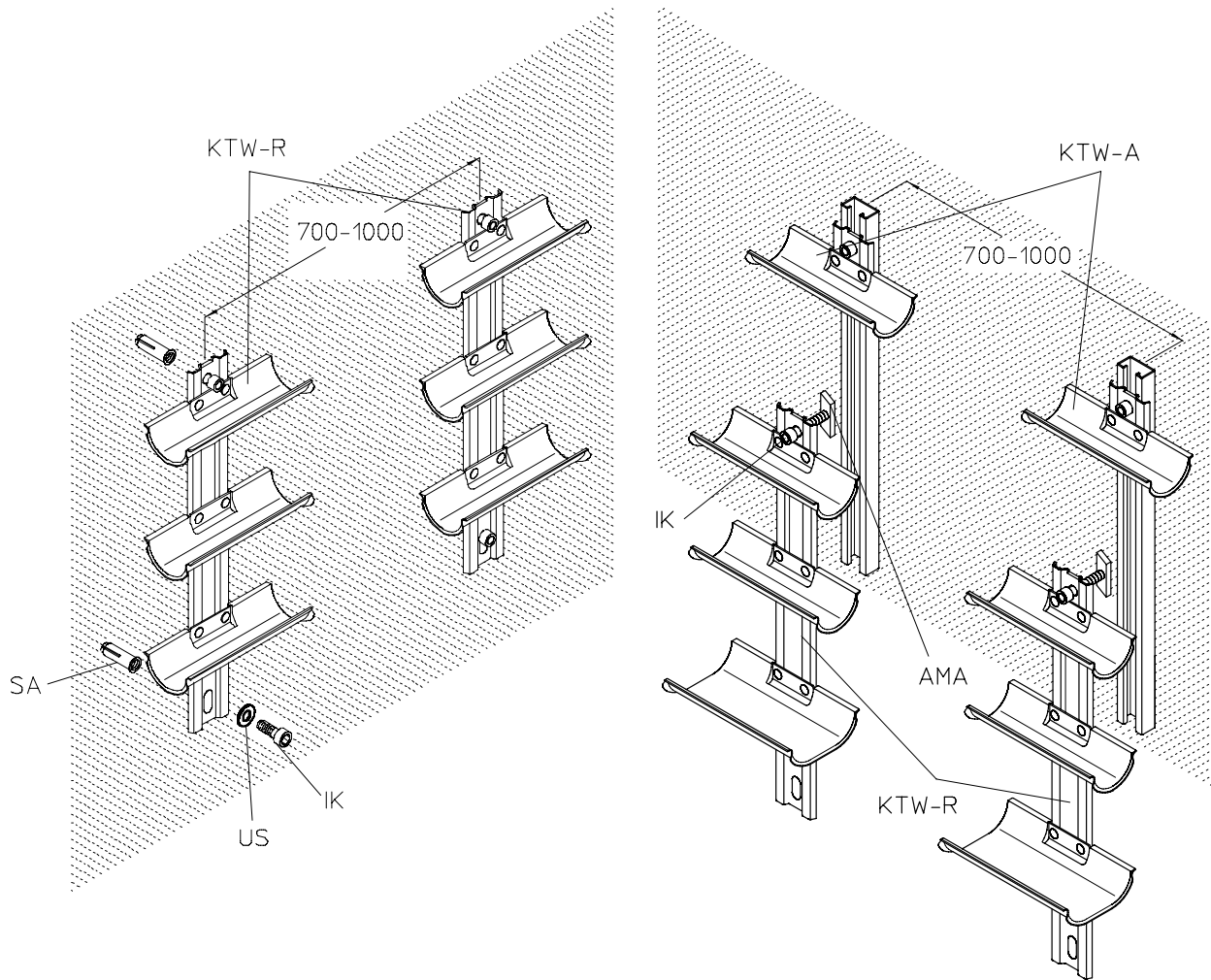




# Cable support trough

## Application examples

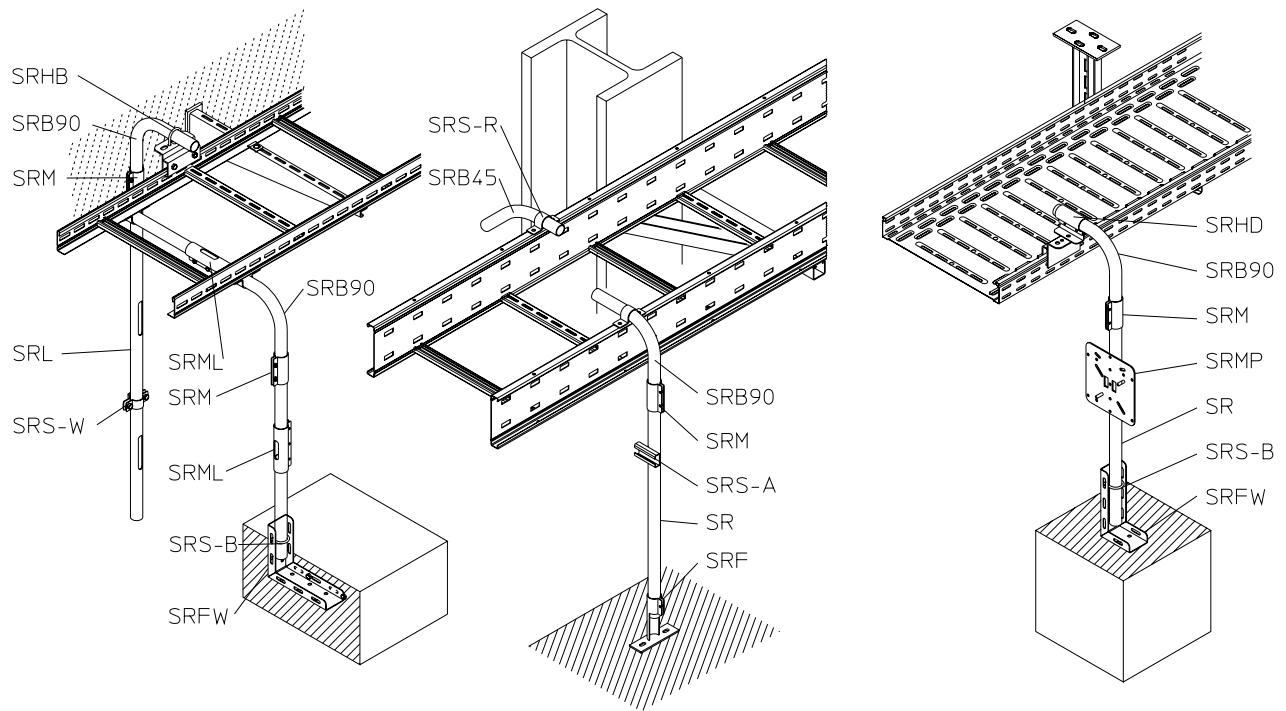
### Cable support trough



# Line of protection tubes

## Application examples

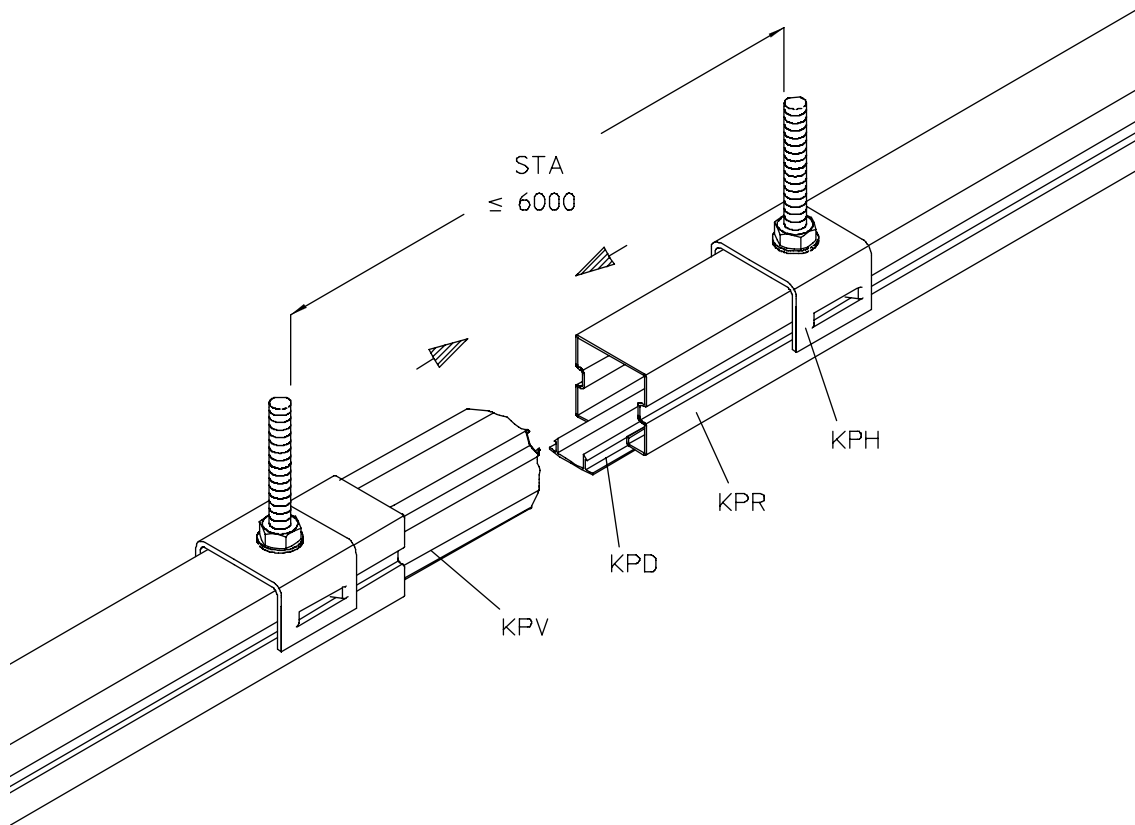
### Protective tube assembly



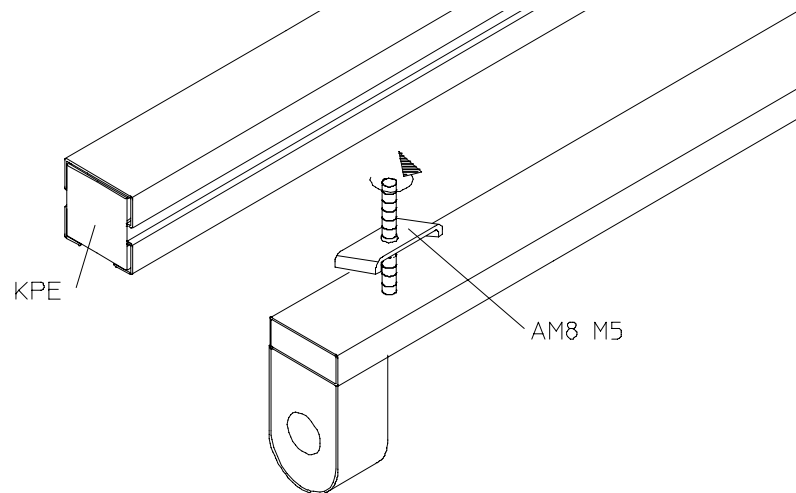
# Lighting channel system

## Application examples

### Lighting channel system



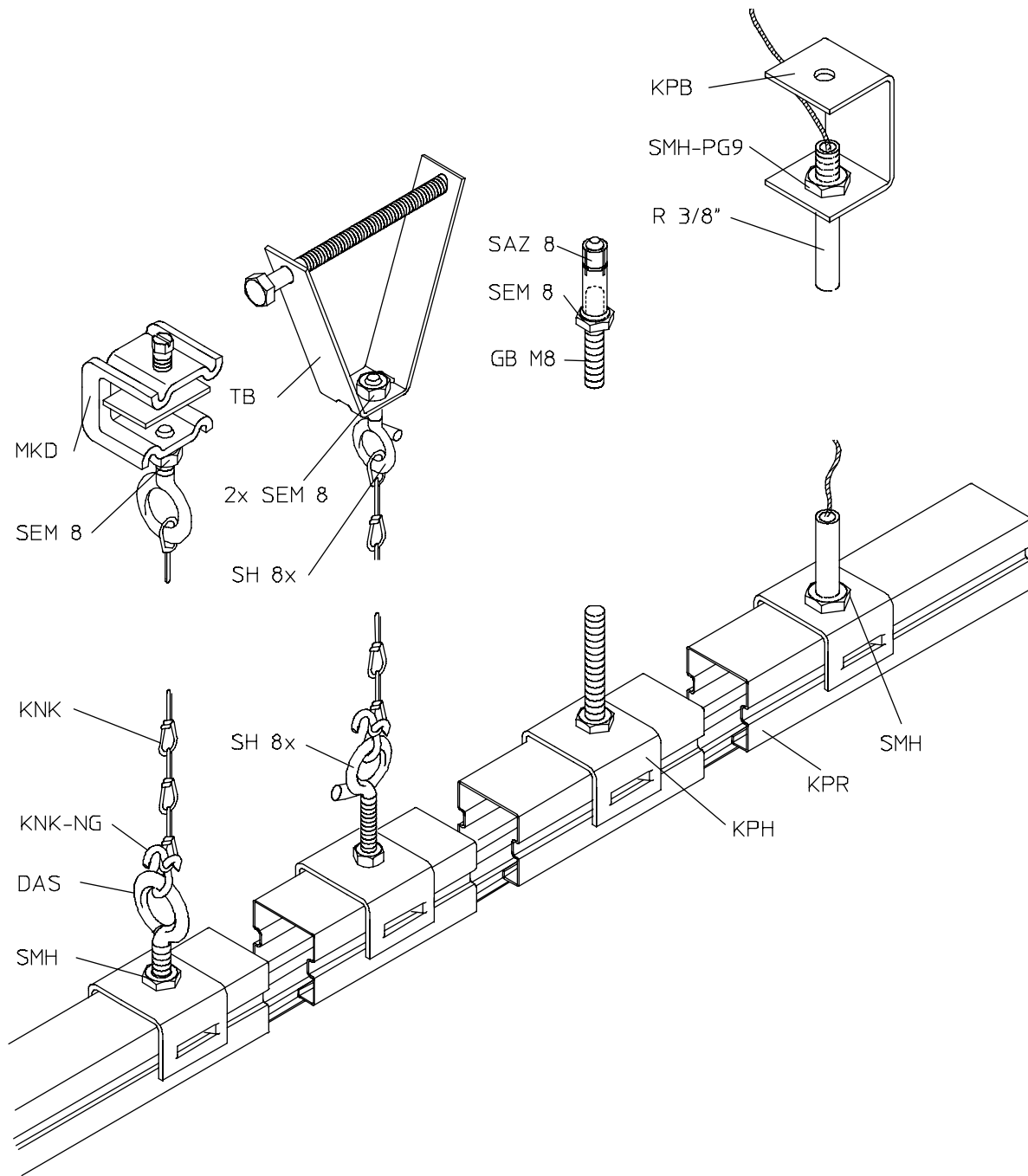
### Lamp mounting on lighting channel system

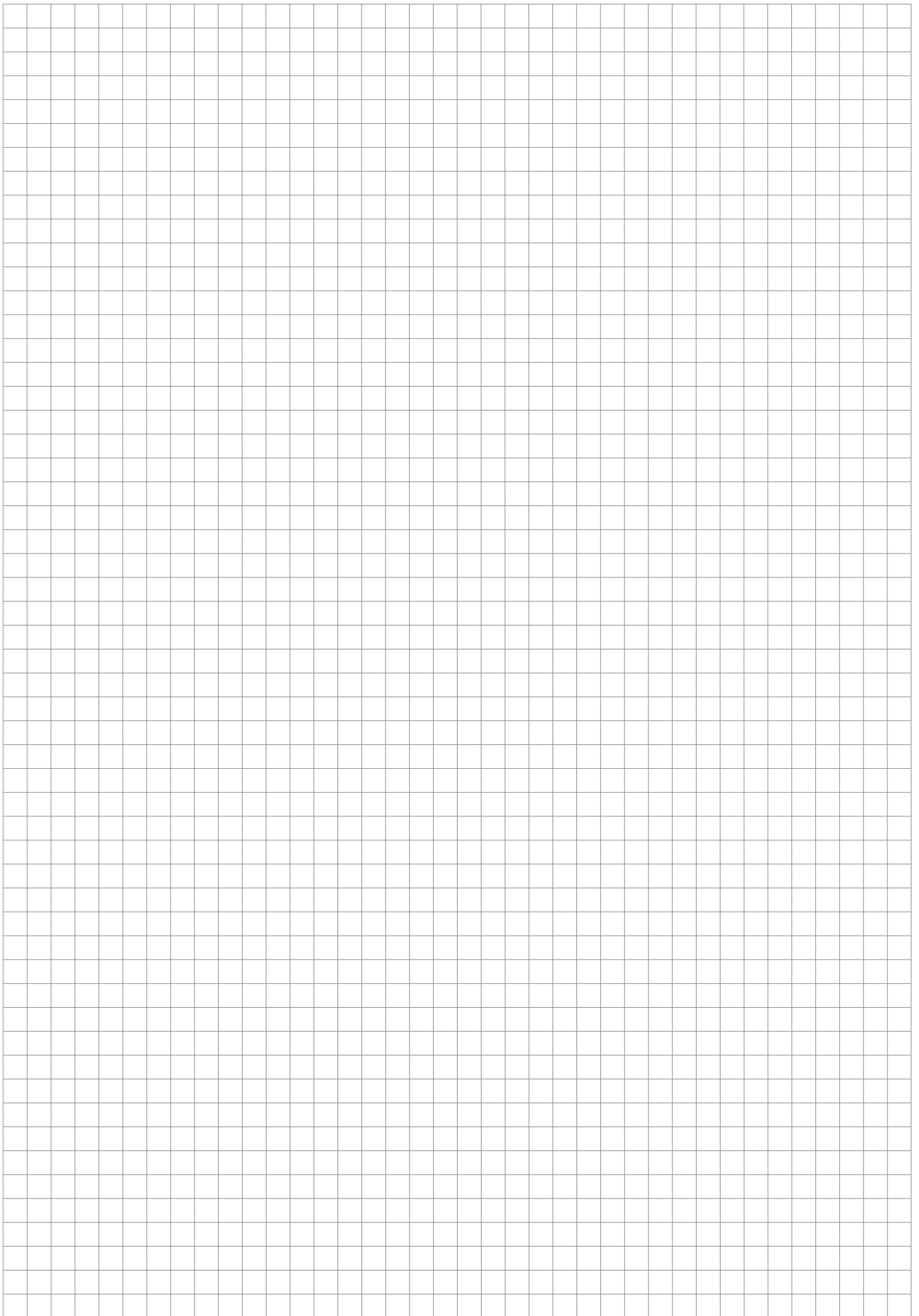


# Lighting channel system

## Application examples

### Ceiling assembly of lighting channel system





# Product line index

## A

### Wire-mesh cable trays A03-A06

wire mesh cable tray G 100 A04  
wire mesh cable tray G 50 A03  
wire mesh cable tray GI A05  
wire-mesh cable support G-shape GTDW A05  
wire-mesh cable support W-shape GTD 30 A06

### Accessories A07-A11

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cold zinc spray KZS A11

wire-mesh cable tray barrier strip GTR 100 A10  
wire-mesh cable tray barrier strip GTR 50 A09  
wire-mesh cable tray barrier strip GTR 60 A10  
wire-mesh cable tray coupler GV 30 A07  
wire-mesh cable tray coupler GVD 30 A08  
wire-mesh cable tray coupler GV-L 30 A08  
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Wire-mesh cable tray coupler clamp GVK A09

## B

### Cable trays B03-B15

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cable tray R 60 B04  
cable tray R 85 B09  
cable tray RG 110 B13  
cable tray RG 35 B03  
cable tray RG 60 B07  
cable tray RG 85 B09  
cable tray RGL 60 B06  
cable tray RGS 110 B14  
cable tray RGS 60 B08  
cable tray RGS 85 B10  
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### Fittings B16-B33

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cable tray attachment branch-piece, height=85 mm RAA 85 B23  
cable tray attachment corner, height=110 mm RAE 110 B21  
cable tray attachment corner, height=60 mm RAE 60 B20  
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cable tray bend, height=110 mm RB45 110 B20  
cable tray bend, height=35 mm RB 35 B16  
cable tray bend, height=60 mm RB 60 B16  
cable tray bend, height=60 mm RB45 60 B18  
cable tray bend, height=85 mm RB 85 B17  
cable tray bend, height=85 mm RB45 85 B19  
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cable tray branch-piece, height=35 mm RA 35 B24  
cable tray branch-piece, height=60 mm RA 60 B25  
cable tray branch-piece, height=85 mm RA 85 B25  
cable tray crossover, height=110 mm RK 110 B28  
cable tray crossover, height=35 mm RK 35 B27  
cable tray crossover, height=60 mm RK 60 B27  
cable tray crossover, height=85 mm RK 85 B28  
cable tray reducer, height=110 mm RR 110 B33  
cable tray reducer, height=35 mm RR 35 B31  
cable tray reducer, height=60 mm RR 60 B32  
cable tray reducer, height=85 mm RR 85 B32  
cable tray vertical bend, height=110 mm RVB 110 B31  
cable tray vertical bend, height=35 mm RVB 35 B29  
cable tray vertical bend, height=60 mm RVB 60 B30  
cable tray vertical bend, height=85 mm RVB 85 B30

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assembly plate MP-RG B41

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cable tray barrier strip, height=35 mm RTR 35 B39  
cable tray barrier strip, height=60 mm RTR 60 B40  
cable tray barrier strip, height=85 mm RTR 85 B40  
cable tray closing panel, height=110 mm RAB 110 B35  
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cable tray closing panel, height=85 mm RAB 85 B35  
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cable tray coupler, height=35 mm RGV 35 B37  
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cable tray snap coupler RGVs B38  
cold zinc paint KZF B42  
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cable installation tray cover with bar lock RIDR B45  
cable protection ring KSR B45  
cable tray coupler, height=60 mm RIV 60 B43  
cable tray end-plate REB B43

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cable tray attachment branch-piece cover with bar lock RAADR B51  
cable tray attachment corner cover RAED B49  
cable tray bend cover RBD B47  
cable tray bend cover RBD45 B49  
cable tray bend cover with bar lock RBDR B48  
cable tray bend cover with bar lock RBDR45 B49  
cable tray branch-piece cover RAD B51  
cable tray branch-piece cover with bar lock RADR B52  
cable tray cover RD B46  
cable tray cover clamp RDKL 110 B47  
cable tray cover clamp RDKL 60 B47  
cable tray cover with bar lock RDR B46  
cable tray cross-piece cover RKD B52  
cable tray cross-piece cover with bar lock RKDR B53  
cable tray reducer cover RRD B53  
cable tray reducer cover with bar lock RRDR B54  
cable tray storm protection angle RD-SW B47

## C

### Cable ladders C03-C06

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cable ladder LGG 60 C03  
cable ladder LGGs 100 C06  
cable ladder LGGs 60 C04

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cable ladder branch-piece, height=60 mm LGA 60 C10  
cable ladder cross-piece, height=100 mm LGK 100 C12  
cable ladder cross-piece, height=60 mm LGK 60 C11  
cable ladder inside bend, height=100 mm LGIB 100 C07  
cable ladder inside bend, height=60 mm LGIB 60 C07  
cable ladder outside bend, height=100 mm LGAB 100 C08  
cable ladder outside bend, height=60 mm LGAB 60 C08  
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cable ladder vertical bend, height=60 mm LGVB 60 C09

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cable ladder barrier strip, height=80 mm LGTR 100 C18  
cable ladder coupler, height=100 mm LGV 100 C15  
cable ladder coupler, height=100 mm LGVH 100 C16  
cable ladder coupler, height=100 mm LGV 100 C17  
cable ladder coupler, height=60 mm LGV 60 C15  
cable ladder coupler, height=60 mm LGVH 60 C15  
cable ladder coupler, height=60 mm LGVV 60 C16  
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Fiber cement plate EL C20  
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wide-span cable tray, height=120 mm WPR 120 D05  
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wide-span attachment branch-piece, height=150 mm WPLAA 150 D10  
wide-span bend, height=150 mm WPLB 150 D07  
wide-span branch-piece, height=120 mm WPLA 120 D09  
wide-span cable ladder bend WPLB 120 D07  
wide-span cable ladder branch-piece WPLA 150 D10  
wide-span cable tray attachment branch-piece, height=120 mm WPRAA 120 D13  
wide-span cable tray attachment branch-piece, height=150 mm WPRAA 150 D13  
wide-span cable tray bend WPRB 120 D12  
wide-span cable tray bend WPRB 150 D12  
wide-span cable tray branch-piece WPR 120 D12  
wide-span cable tray branch-piece WPR 150 D13  
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wide-span cross-piece, height=120 mm WPRK 120 D14  
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wide-span branch-piece cover WPAD D18  
wide-span cover WPD D15

wide-span cross-piece cover WPKD [D19](#)  
wide-span inside riser cover WPSD [D17](#)  
wide-span outside riser cover WPF D [D18](#)

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Corner fixing EBW [D20](#)

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end plate WPREB [D28](#)

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flange mounting clamp (C-profiles) WPHS-A [D22](#)  
flange mounting clamp (profiles) WPHS-P [D22](#)

isolation strip WPHS-IS [D23](#)

protection end cap SWP [D28](#)

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wide-span cable ladder barrier strip WPTR 150 [D27](#)  
wide-span coupler, height=120 mm WPV 120 [D23](#)  
wide-span coupler, height=150 mm WPV 150 [D24](#)  
wide-span coupler, height=150 mm WPVV 150 [D26](#)  
wide-span coupler, horizontal WPVH 120 [D24](#)  
wide-span coupler, horizontal WPVH 150 [D25](#)  
wide-span coupler, vertical WPVV 120 [D25](#)

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## E

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vertical ladder ST 81 [E13](#)  
vertical ladder ST 82 [E15](#)  
vertical ladder STU 50 [E04](#)  
vertical ladder STU 50-3E [E05](#)  
vertical ladder STU 60 [E07](#)  
vertical ladder STU 62 [E10](#)

#### Accessories of STU 50 [E17-E20](#)

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cable ladder coupler, height=50 mm LGVV 50 [E18](#)  
cable ladder coupler, horizontal LGVH 50 [E17](#)  
corner angle, profile U50/ U60/ U100 BL 4 [E20](#)

ladder support LH [E18](#)

protection end cap SU 50/36 [E17](#)

rung STLS [E19](#)  
rung STUS [E19](#)

#### Accessories of ST 81/82 [E21-E24](#)

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cold zinc spray KZS [E24](#)  
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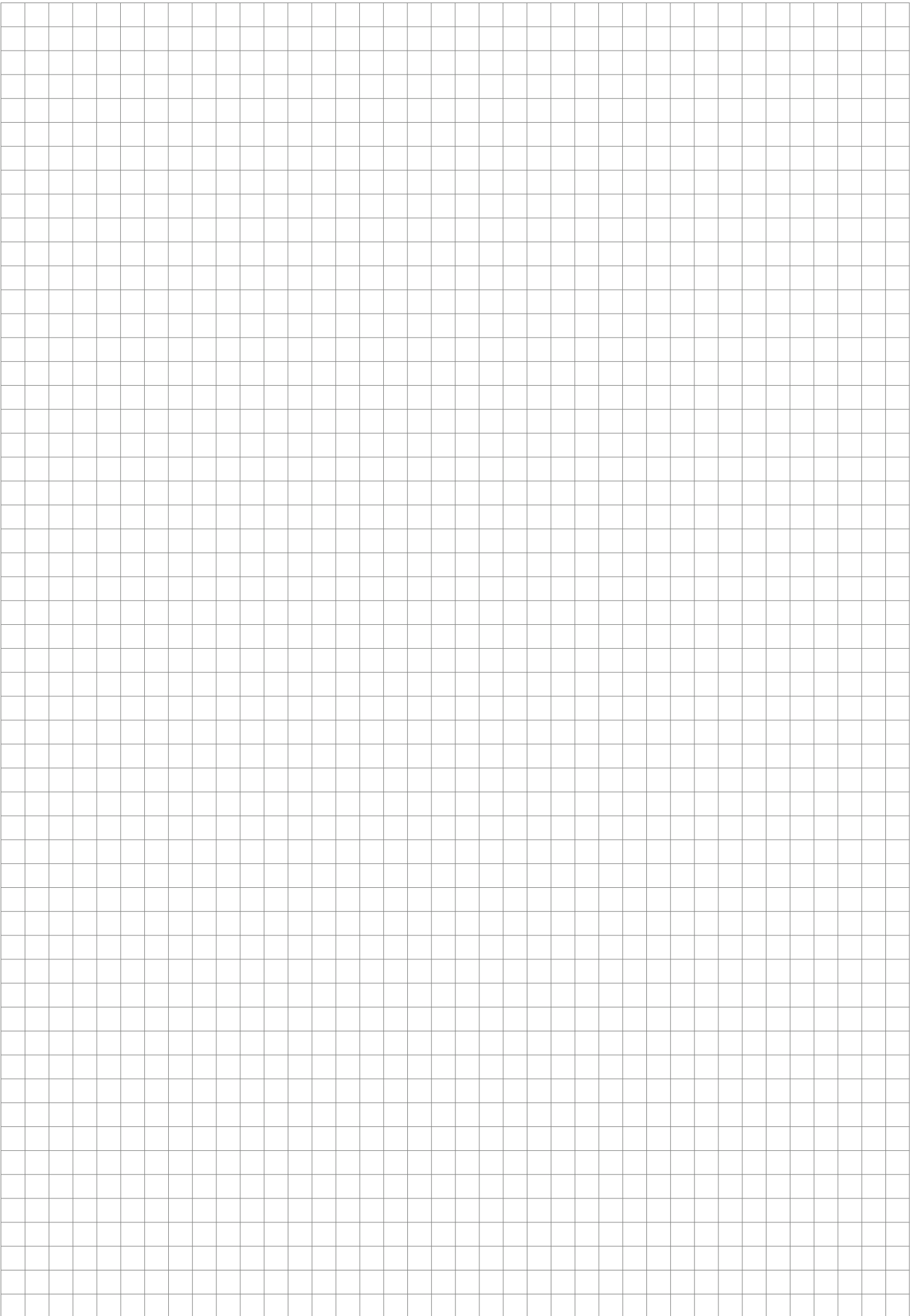
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## Y

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A	Cross section (useable) of cable tray
a	Wire distance
B	Width
D   Ø	Diameter
d	Thickness
F <sub>D</sub>	dowel load
G	Weight per piece
H	Height
H <sub>max</sub>	Maximum height
IK	Internal hexagon
k	Clamping range
L	Length
L <sub>min</sub>	Minimum length
I <sub>y</sub>	Torque of inertia around y-axis
I <sub>z</sub>	Torque of inertia around z-axis
M	Torque
I	Capacity
P	Load
P <sub>max</sub>	Maximum permissible load
P <sub>zul</sub>	Permissible load
Q <sub>LK</sub>	Distributed load power cable
Q <sub>SK</sub>	Distributed load control cable
R	Radius
StA	Distance between supports
SW	Wrench size
t	Material thickness
T	Depth
W <sub>y</sub>	Resisting torque around y-axis
W <sub>z</sub>	Resisting torque around z-axis
<b>B</b>	Steel, untreated and non-corrosive
<b>E</b>	Stainless steel, material no. 1.4301 (ANSI 304) (V2A)
<b>E4</b>	Stainless steel, material no. 1.4571 (ANSI 316 Ti) / 1.4404 (ANSI 316 L)
<b>EPDM</b>	Ethylene-propylene-caoutchouc
<b>F</b>	Hot-dip galvanized, according to EN ISO 1461
<b>GV</b>	Fastenings galvanized, according to ISO 4042
<b>M</b>	Sand blasted and imprimer
<b>PA</b>	Polyamide
<b>PE</b>	Polyethylen
<b>PVC</b>	Polyvinyl chloride
<b>S</b>	Continously hot galvanized (Sendzimir process) (EN 10346) (10244-2 for wire)
	Do not walk upon!
	TÜV approved
<b>GL</b>	Certified according to Germanischer Lloyd



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