



PRODUCT CATALOG

FIXING SYSTEMS 2026

A large, white silhouette of a mountain range with two prominent peaks, spanning the bottom half of the page.

OBEN SEIN

experience the difference

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» Please notice!

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MEFA PRODUCT OVERVIEW



1
PIPE CLAMPS



2a
PROFILE RAILS
27 - 35



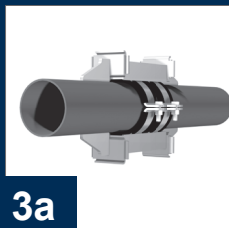
2b
PROFILE RAILS
STEX 35



2c
PROFILE RAILS
STEX 45



2d
PROFILE RAILS
OPTIMUM XLV



3a
FIX POINTS



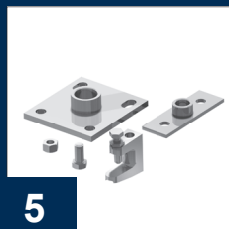
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CONNECTORS
SML



3c
SPRING
INSULATORS



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SLIDING
ELEMENTS



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MOUNTING
ACCESSORIES



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INSULATED
PIPE CLAMPS



7
ANCHORS



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VENTILATION



9
INSULATION
(ON DEMAND)



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WORKING
ACCESSORIES,
TOOLS



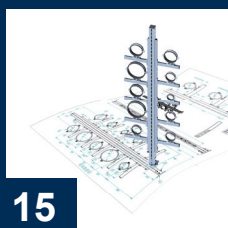
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13
STAINLESS
STEEL



14
CENTUM®



15
PLANNING
SUPPORT

OUTSTANDING PRODUCTS AND ...



COMPLETE **PRODUCT RANGE**

Extensive fastening solutions for HVAC and heavy-duty pipeline construction.

- » from a wide range of pipe clamps for various applications, complex fastening systems for sanitary-, heating-, cooling-, and air-conditioning engineering, to **CENTUM®** heavy-duty program for industrial application
- » in-house production facilities combined with comprehensive logistics providing the basis for optimal product availability and unique, customized solutions



UNIQUE **CUSTOMIZES SOLUTIONS**

Design and realization of technical solutions out of norms – a characteristic of **MEFA**.

- » manufacturing of product and system solutions for all applications
- » development and production of customized products and solutions



ENERGY SOURCES FOR HEAT PUMPS

Systems for heating & cooling of housing and commercial buildings, new constructions and reconstructions.

- » utilization of regenerative energy sources such as sun, wind, rain, ice, geothermal energy, groundwater and process heat
- » combination with heat pumps and low-temperature heating systems
- » cost-effective, environment-friendly, customized



OUR CLAIM: **GREENPLUS**

Our holistic approach to environmental protection and sustainability. From the materials, through production, to use by the customer.

- » from scratch sustainable: **MEFA** products made of steel and rubber lining made of TPE
- » recyclability in packaging and optimized routes within the company and to the customer
- » sustainable heating and cooling (with multiQ) of our own production and logistics facility – energy self-sufficient!

UNIQUE SERVICE



SUPPORTIVE **PLANNING**

Our experienced specialists support the entire scope of planning.

- » admission of data and generation of technical solutions, also on site
- » design of pipeline and air duct alignment, fixpoint calculation
- » structural analysis, parts lists and drawings
- » static load calculation with latest **MEFA** StatiCAL software, also available for our customers
- » extensive product library for Autodesk® REVIT and E3D



RELIABLE **LOGISTICS**

Receiving the goods at the right place and moment.

- » delivery of all goods, including C-profile channels by truck, sea- or airfreight
- » express delivery by courier or MEFA direct logistic



TIME-SAVING **PREFABRICATION**

We ensure functionality of components and provide most efficient dimensioning of prefabricated structural components.

- » no oversizing
- » planning reliability due to coordinated in time logistics
- » reduction of set-up time
- » definite designation and separate packaging units



OBEN SEIN WITH **MEFA**

MEFA is recognized by its customers and suppliers as reliable and solid partner, offering a sophisticated and practice-oriented product portfolio. Outstanding, flexible product solutions as well as sustained reliability of people and operations in **MEFA** guarantee durable added value.

This promise we summarize in our claim „**OBEN SEIN**“.

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» Explanation of terms

Tightening torque	For screws and nuts, the term tightening torque refers to the torque with which a screw connection is tightened or may be tightened.
Support reaction force F_{Ax}	Each component is usually attached to a building structure (support). The support reaction force is the reaction force generated at the connection point as a result of external loads acting on the system. For components such as brackets or cantilevers, a maximum permissible support reaction force is specified; exceeding this value would lead to deformation or failure of the component.
Modulus of elasticity	The modulus of elasticity is a material parameter from materials engineering. It describes the relationship between strain and stress during the deformation of materials in the linear elastic range. The modulus of elasticity is briefly referred to as the modulus of elasticity and is described with the symbol E , with the unit of mechanical stress.
Flame retardant (B1)	B1 = hardly inflammable building material - combustible building material Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102 "Fire behavior of building materials and components" or on a European level according to DIN EN 13501 Classification of building products and types of construction regarding their fire behavior. These building material classes are divided into non-flammable (A) and flammable building materials (B) according to DIN 4102; the EU classification DIN EN 13501 provides for seven Euro classes (A1, A2, B, C, D, E, F) as well as further classes for smoke development (s = smoke): classes s1, s2 and s3, burning droplets/fall off (d = droplets).
FWD 30,60,90	FWD = fire resistance duration The fire resistance or the fire resistance class of a building component stands for the time in which a component retains its function in a standard fire. Defined requirements are set depending on the tested component. FWD30 = fire resistance over 30 minutes FWD60 = fire resistance over 60 minutes FWD90 = fire resistance over 90 minutes
Global safety coefficient γ	The global safety coefficient indicates the factor by which the failure limit of a structure, component or material is designed higher than it would have to be by theoretical determination such as static calculation
Limit torque M_G	Bending moment, which describes the maximum possible moment absorption. For brackets or other components, the limit moment is limited by the maximum permissible deflection.
Max. deforming f	The maximum deforming, e.g. for profile rails, is the deformation between the loaded and unloaded position, which occurs when bending loads are applied transversely to the longitudinal axis.
multiple use for non-structural applications	In the case of multiple fixing, it is assumed that if one anchor or fixing point fails, the load is transferred to adjacent fixing points. This requires a sufficient number of fixing points (at least 3) and a design capable of transferring the loads to the adjacent fixing points (e.g. pipeline). This construction must continue to function even if one fastening point fails. For this purpose, the construction must have sufficient load-bearing capacity and no excessive deformations must occur even if one bearing fails. Classical examples of multiple fixings are pipelines, suspended ceilings or curtain walls.
Sound decoupling	Noise protection refers to measures that reduce the transmission of sound from a sound source to a receiver. The primary purpose of suitable measures (e.g. elastic surfaces, mass, separation of components) is to avoid or reduce the transmission of sound. Structure-borne sound decoupling from rubber materials is one such measure.
Static loads	In strength theory, a distinction is made between different types of stress that can act on a component. Loads are caused by forces acting on the component. Which type of load is applied depends on the direction of action of the force, its position, its distribution and its course over time. The temporal course of a load means whether a force acts permanently or possibly has a dynamic course and is variable over time. Static load: The acting force and its direction of action remain constant.
Yield strength σ_{adm}	The yield strength R_e (σ) is a material parameter and describes the stress up to which a material does not show any permanent plastic deformation under e.g. bending load: - If the yield strength is undershot, the material returns elastically to its original shape after relief. - If the yield point is exceeded, a change in shape remains.
TX drive (e.g. TX 25)	TX (derived from „TORX®“) is a registered trademark for a screw drive whose standardized technical designation is hexalobular internal (according to ISO 10664). The drive sizes are designated by „T“ or „TX“ followed by a number (e.g., TX 25). The available sizes range from T1 to T100.
Heat conductivity	The thermal conductivity λ indicates the heat flow that passes through a 1 m ² large and 1 m thick layer of a fabric at a temperature difference of 1 Kelvin (K). The unit of thermal conductivity is W/(mK). The smaller λ is, the better is the insulating capacity of a building material.
Water vapor diffusion	Water vapor diffusion describes the passage of moisture through a component in the form of water vapor.

PIPE CLAMPS

pipe clamps, u-bolts, pipe clips and accessories



MEFA Pipe clamps



Ø 6 - 60 mm

Pipe clamp Sigma



Ø 12 - 169 mm

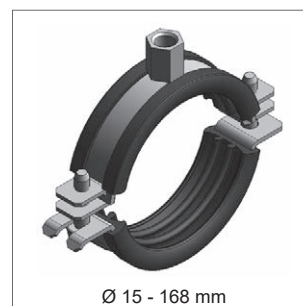
Pipe clamp Talis



Ø 12 - 202 mm

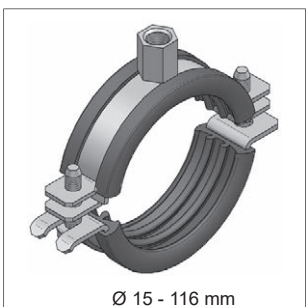
Ø 21 - 122 mm

Pipe clamp Trabant, lined and unlined



Ø 15 - 168 mm

Pipe clamp Omnia MB



Ø 15 - 116 mm

Pipe clamp Omnia MB TSP, lined



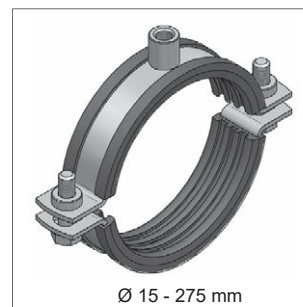
Ø 12 - 46 mm

Sliding pipe clamp Sigma



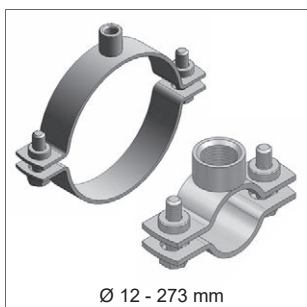
Ø 50 - 116 mm

Sliding pipe clamp Omnia MB



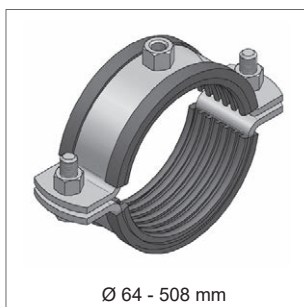
Ø 15 - 275 mm

Pipe clamp Maxima PSM, lined



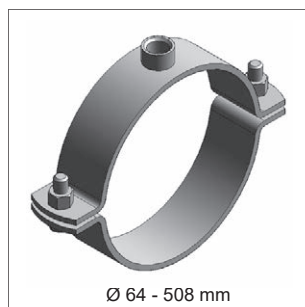
Ø 12 - 273 mm

Pipe clamp Maxima PSM, unlined
Pipe clamp Maxima PSM 3G



Ø 64 - 508 mm

Pipe clamp Titan HD, lined



Ø 64 - 508 mm

Pipe clamp Titan HD, unlined



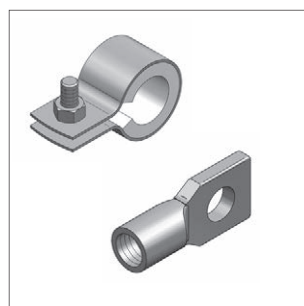
Ø 21 - 324 mm

U-bolt

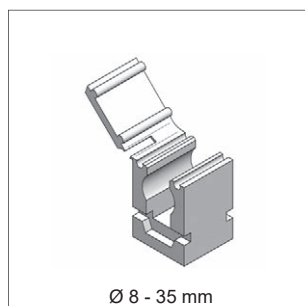


Ø 10 - 42 mm

Pipe clamp Clipstar, lined



Visible pipe clamp, lined



Ø 8 - 35 mm

Pipe clip Clipmaster



Connection adaptor /
Sound insulation lining

i Pipe clamps suitable for :

Insulated pipe clamps	see chapter 6
Ventilation	see chapter 8
Sprinkler	see chapter 12
Stainless steel	see chapter 13
Plant construction	see chapter 14

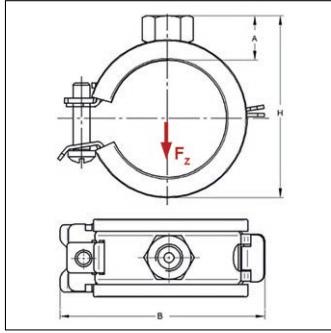
i Tightening torque of locking screws on pipe clamps see chapter 15.

» Pipe clamp Sigma, black, lined

EPDM



Pipe clamp Sigma rubber black



Pipe clamp Sigma



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Sigma safety quick-closure

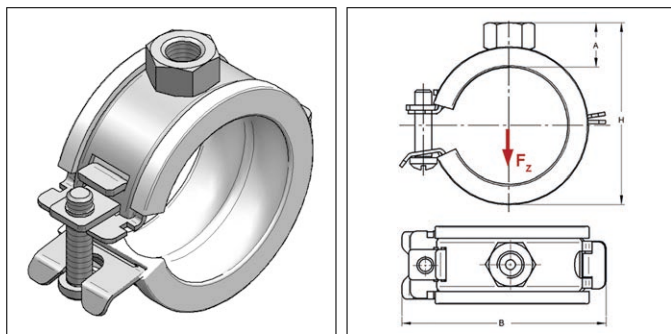
Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 3 mm

Remark: Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
6-10		M8	M5	20x1,0	0,45	23-27	12	33	0,0220	100	14510150
12-15	1/4	M8	M5	20x1,0	0,45	30-33	12	41	0,0260	100	14510151
16-19	3/8	M8	M5	20x1,0	0,45	34-37	12	45	0,0290	100	14510191
25-29	3/4	M8	M5	20x1,0	0,45	43-47	12	56	0,0360	100	14510291
32-35	1	M8	M5	20x1,0	0,45	50-53	12	62	0,0420	100	14510351
40-44	1 1/4	M8	M5	20x1,0	0,45	58-62	12	71	0,0580	50	14510441
48-52	1 1/2	M8	M5	20x1,5	0,80	66-70	12	80	0,0790	50	14510521
53-57		M8	M5	20x1,5	0,80	71-75	12	85	0,0860	50	14510571
58-60	2	M8	M5	20x1,5	0,80	76-79	12	89	0,0910	50	14510601
20-23	1/2	M8	M5	20x1,0	0,45	38-41	12	51	0,0330	100	14510231

» Pipe clamp Sigma, white, lined



Pipe clamp Sigma rubber white

Pipe clamp Sigma

**Specification**

Application area: Pipe clamp for fastening pipes.
 Closure: Sigma safety quick-closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Colour sound insulation lining: white
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 3 mm

Remark: Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12-15	1/4	M8	M5	20x1	0,45	30-33	12	41	0,0260	100	14590151
16-19	3/8	M8	M5	20x1	0,45	34-37	12	45	0,0290	100	14590191
20-23	1/2	M8	M5	20x1	0,45	38-41	12	51	0,0325	100	14590231
25-29	3/4	M8	M5	20x1	0,45	43-47	12	56	0,0360	100	14590291
32-35	1	M8	M5	20x1	0,45	50-53	12	62	0,0415	100	14590351

» Pipe clamp Talis, lined

EPDM



Pipe clamp Talis



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Screw coupling

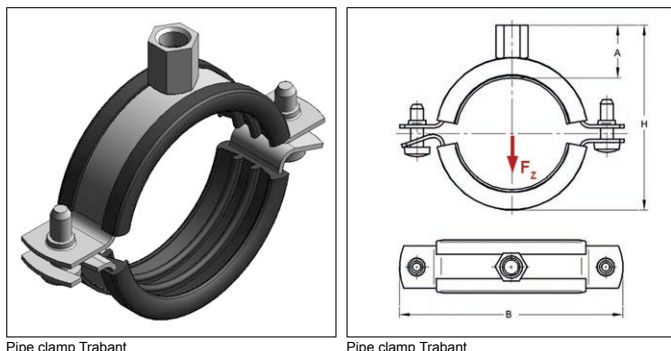
Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 3 mm

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12-14	1/4	M8	M5	20x1,0	1,25	0,0310	100	101234012
15-19	3/8	M8	M5	20x1,0	1,25	0,0330	100	101234015
20-23	1/2	M8	M5	20x1,0	1,25	0,0370	100	101234020
24-28	3/4	M8	M5	20x1,0	1,25	0,0400	100	101234026
31-35	1	M8	M5	20x1,0	1,25	0,0440	100	101234032
38-43	1 1/4	M8	M5	20x1,0	1,25	0,0480	50	101234040
48-51	1 1/2	M8	M5	20x1,0	1,25	0,0540	50	101234048
52-56		M8	M6	20x1,2	1,30	0,0630	50	101234052
57-63	2	M8/M10	M6	20x1,2	1,30	0,0770	50	101234057
63-67		M8/M10	M6	20x1,5	1,50	0,0850	50	101234063
70-73		M8/M10	M6	20x1,5	1,50	0,0910	50	101234070
74-80	2 1/2	M8/M10	M6	20x1,5	1,50	0,101	50	101234074
83-91	3	M8/M10	M6	20x1,5	1,50	0,112	50	101234083
108-114	4	M8/M10	M6	25x1,5	2,00	0,177	50	101234108
120-125		M10/M12	M6	25x2,0	3,00	0,222	25	101234125
130-136		M10/M12	M6	25x2,0	3,00	0,238	25	101234130
136-142	5	M10/M12	M6	25x2,0	3,00	0,250	25	101234136
159-163		M10/M12	M6	25x2,0	3,00	0,280	25	101234159
165-169	6	M10/M12	M6	25x2,0	3,00	0,310	25	101234165

» Pipe clamp Trabant, lined

EPDM



Pipe clamp Trabant

Pipe clamp Trabant



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Snap-in closure

Technical data

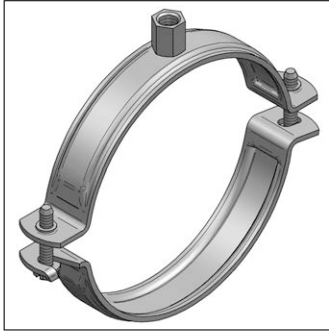
Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 4,5 mm

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

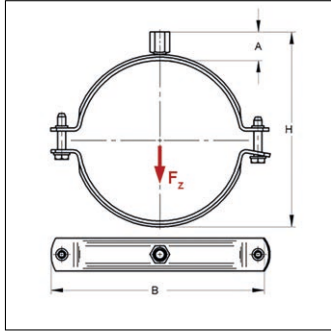
* not certified acc. to RAL GZ-656

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12-15		M8/M10	M6	20x1,0	0,29	40-43	22	59	0,0510	100	042615101
16-20	3/8	M8/M10	M6	20x1,0	0,29	43-48	22	64	0,0540	100	042620101
21-25	1/2	M8/M10	M6	20x1,0	0,29	48-53	22	69	0,0580	100	042625101
26-30	3/4	M8/M10	M6	20x1,0	0,29	53-58	22	75	0,0640	100	042630101
32-37	1	M8/M10	M6	20x1,0	0,29	60-65	22	81	0,0660	100	042637101
42-46	1 1/4	M8/M10	M6	20x1,5	0,89	71-75	23	92	0,0940	50	042646101
48-52	1 1/2	M8/M10	M6	20x1,5	0,89	76-81	23	98	0,101	50	042652101
54-58		M8/M10	M6	20x1,5	0,89	82-87	23	104	0,107	50	042658101
60-65	2	M8/M10	M6	20x1,5	0,89	88-94	23	111	0,114	50	042665101
70-76		M8/M10	M6	25x1,5	0,89	98-104	22	122	0,150	50	042672101
77-83	2 1/2	M8/M10	M6	25x1,5	0,89	104-111	22	127	0,155	50	042677101
85-90	3	M8/M10	M6	25x2,0	1,50	114-119	23	134	0,202	50	0426901
108-114	4	M8/M10	M6	25x2,5	1,90	142-148	26	166	0,253	50	0427141
121-125		M10/M12	M6	25x2,5	2,20	156-162	27	176	0,313	25	04272251 *
132-136		M10/M12	M6	25x2,5	2,20	167-173	27	187	0,337	25	04272361 *
137-141	5	M10/M12	M6	25x2,5	2,20	172-178	27	192	0,343	25	04272411 *
159-163		M10/M12	M6	25x2,5	2,20	194-200	27	215	0,388	25	04272631 *
164-168	6	M10/M12	M6	25x2,5	2,20	199-205	27	220	0,398	25	04272681 *
196-202		M10/M12	M6	25x2,5	2,20	232-238	27	255	0,576	10	04273021 *

» Pipe clamp Trabant, unlined



Pipe clamp Trabant



Pipe clamp Trabant



Specification

Application area: Pipe clamp for fastening pipes.

Closure: Snap-in closure

Technical data

Material: Steel

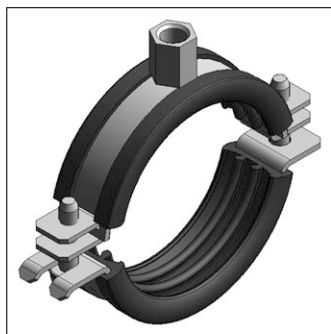
Surface: galvanized

Sound insulation lining: unlined

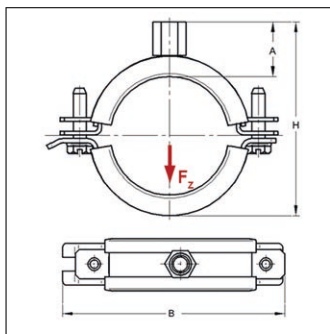
Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15.

Clamping range [mm]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21-24	M8/M10	M6	20x1,0	0,29	40-43	18	59	0,0450	100	042615201
25-29	M8/M10	M6	20x1,0	0,29	44-48	18	64	0,0470	100	042620201
30-34	M8/M10	M6	20x1,0	0,29	49-53	18	69	0,0490	100	042625201
35-39	M8/M10	M6	20x1,0	0,29	54-58	18	75	0,0520	100	042630201
41-48	M8/M10	M6	20x1,0	0,29	60-67	18	91	0,0550	100	042637201
51-55	M8/M10	M6	20x1,5	0,89	71-75	18	92	0,0790	50	042646201
57-61	M8/M10	M6	20x1,5	0,89	77-81	18	98	0,0840	50	042652201
63-67	M8/M10	M6	20x1,5	0,89	83-87	18	104	0,0880	50	042658201
69-74	M8/M10	M6	20x1,5	0,89	89-94	18	111	0,0930	50	042665201
76-85	M8/M10	M6	25x1,5	0,89	95-104	18	122	0,124	50	042672201
84-90	M8/M10	M6	25x1,5	0,89	103-109	18	127	0,130	50	042677201
94-97	M8/M10	M6	25x2,0	1,50	114-119	18	134	0,153	50	0426902
106-110	M8/M10	M6	25x2,5	1,90	132-136	22	153	0,228	50	0427022
114-122	M8/M10	M6	25x2,5	1,90	140-148	22	166	0,242	50	04272142

» Pipe clamp Omnia MB, lined



Pipe clamp Omnia MB



Pipe clamp Omnia MB



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Slewable U-closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 6 mm

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

* not certified acc. to RAL GZ-656

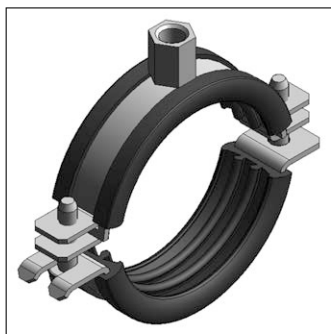
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-20	3/8	M8/M10	M6	20x1,5	1,0	42-47	24	61	0,0780	100	0398020
22-28	1/2-3/4	M8/M10	M6	20x1,5	1,0	49-56	24	68	0,0860	100	0398028
30-35	1	M8/M10	M6	20x1,5	1,0	57-62	24	78	0,0960	100	0398035
38-42	1 1/4	M8/M10	M6	20x2,0	1,6	66-70	24	89	0,117	50	0398042
44-48	1 1/2	M8/M10	M6	20x2,0	1,6	72-76	24	92	0,127	50	0398048
50-54		M8/M10	M6	20x2,0	1,6	78-82	24	101	0,137	50	0398054
56-60	2	M8/M10	M6	20x2,0	1,6	84-88	24	108	0,146	50	0398060
61-65		M8/M10	M6	20x2,0	1,6	91-92	24	113	0,154	50	0398064
70-73		M8/M10	M6	20x2,0	1,6	98-101	24	117	0,169	50	0398073
75-83	2 1/2	M8/M10	M6	20x2,0	1,6	103-108	24	124	0,177	50	0398078
84-90	3	M8/M10	M6	25x2,5	1,8	113-118	25	136	0,259	50	0398089
90-95		M8/M10	M6	25x2,5	1,8	119-124	25	143	0,270	50	0398095
100-105		M8/M10	M6	25x2,5	1,8	129-134	25	152	0,289	50	0398105
108-112		M8/M10	M6	25x2,5	1,8	137-141	25	158	0,304	50	0398112
114-116	4	M8/M10	M6	25x2,5	1,8	143-145	25	165	0,316	25	0398116
121-125		M8/M10	M6	25x2,5	1,8	156-161	25	175	0,329	25	0398125
132-136		M10/M12	M8	25x3,0	2,3	171-175	30	192	0,446	25	03981362 *
137-141	5	M10/M12	M8	25x3,0	2,3	176-180	30	197	0,459	25	03981412 *
159-163		M10/M12	M8	25x3,0	2,3	193-197	30	219	0,514	25	03981632 *
164-168	6	M10/M12	M8	25x3,0	2,3	198-202	30	225	0,526	25	03981682 *
15-20	3/8	M12	M6	20x1,5	1,0	43-48	24	61	0,0950	100	0392014
22-28	1/2-3/4	M12	M6	20x1,5	1,0	50-56	24	68	0,103	100	0392030
30-35	1	M12	M6	20x1,5	1,0	58-63	24	78	0,113	100	0392049
38-42	1 1/4	M12	M6	20x2,0	1,6	67-71	24	89	0,134	50	0392057
44-48	1 1/2	M12	M6	20x2,0	1,6	73-77	24	92	0,144	50	0398448
50-54		M12	M6	20x2,0	1,6	79-83	24	101	0,154	50	0398454

» Pipe clamp Omnia MB, lined

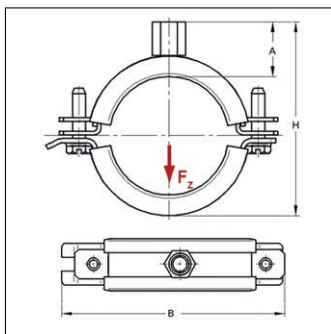
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
56-60	2	M12	M6	20x2,0	1,6	85-89	24	108	0,163	50	0398460
61-65		M12	M6	20x2,0	1,6	92-93	24	113	0,171	50	0398464
70-73		M12	M6	20x2,0	1,6	99-102	24	117	0,186	50	0398473
75-83	2 1/2	M12	M6	20x2,0	1,6	104-109	24	124	0,194	50	0398480
84-89	3	M12	M6	25x2,5	1,8	114-119	25	136	0,276	50	0398489
90-95		M12	M6	25x2,5	1,8	120-125	25	143	0,287	50	0398495
100-105		M12	M6	25x2,5	1,8	130-135	25	152	0,306	50	0398505
108-112		M12	M6	25x2,5	1,8	138-142	25	158	0,321	50	0392219
114-116	4	M12	M6	25x2,5	1,8	144-146	25	165	0,333	25	0398516
121-125		M12	M6	25x2,5	1,8	151-155	25	175	0,346	25	0398525

» Pipe clamp Omnia MB, TSP®, lined

TPE



Pipe clamp Omnia MB



Pipe clamp Omnia MB



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Slewable U-closure

Technical data

Material: Steel
 Surface: Zinc-Nickel
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 6 mm

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. With silicon sound insulation on request. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

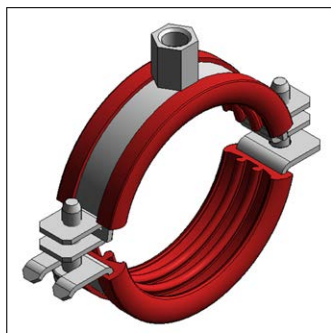
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-20	3/8	M8/M10	M6	20x1,5	1,0	42-47	24	61	0,0780	100	0398020/zn
22-28	1/2-3/4	M8/M10	M6	20x1,5	1,0	49-56	24	68	0,0860	100	0398028/zn
30-35	1	M8/M10	M6	20x1,5	1,0	57-62	24	78	0,0960	100	0398035/zn
38-42	1 1/4	M8/M10	M6	20x2,0	1,6	66-70	24	89	0,117	50	0398042/zn
44-48	1 1/2	M8/M10	M6	20x2,0	1,6	72-76	24	92	0,127	50	0398048/zn
50-54		M8/M10	M6	20x2,0	1,6	78-82	24	101	0,137	50	0398054/zn
56-60	2	M8/M10	M6	20x2,0	1,6	84-88	24	108	0,146	50	0398060/zn
75-83	2 1/2	M8/M10	M6	20x2,0	1,6	103-108	24	124	0,177	50	0398078/zn
84-90	3	M8/M10	M6	25x2,5	1,8	113-118	25	136	0,259	25	0398089/zn
108-112		M8/M10	M6	25x2,5	1,8	137-141	25	158	0,304	50	0398112/zn

» Pipe clamp Omnia MB, TSP®, lined

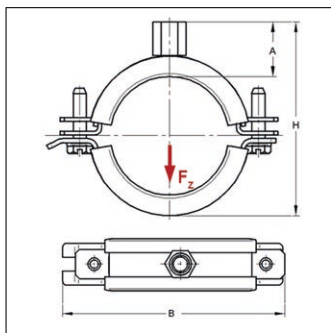
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
114-116	4	M8/M10	M6	25x2,5	1,8	143-145	25	165	0,316	25	0398116/zn

» Pipe clamp Omnia MB, lined, silicone

Silicone



Pipe clamp Omnia MB



Pipe clamp Omnia MB



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Slewable U-closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Silicone
 Colour sound insulation lining: red
 Temperature resistance: -50 up to 250 °C
 Insulation thickness: 6 mm

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-20	3/8	M8/M10	M6	20x1,5	1,0	42-47	24	61	0,0780	100	0398220
22-28	1/2-3/4	M8/M10	M6	20x1,5	1,0	49-56	24	68	0,0860	100	0398228
30-35	1	M8/M10	M6	20x1,5	1,0	57-62	24	78	0,0960	100	0398235
38-42	1 1/4	M8/M10	M6	20x2,0	1,6	66-70	24	89	0,117	50	0398242
44-48	1 1/2	M8/M10	M6	20x2,0	1,6	72-76	24	92	0,127	50	0398248
50-54		M8/M10	M6	20x2,0	1,6	78-82	24	101	0,137	50	0398254
56-60	2	M8/M10	M6	20x2,0	1,6	84-88	24	108	0,146	50	0398260
61-65		M8/M10	M6	20x2,0	1,6	91-92	24	113	0,154	50	0398264
70-73		M8/M10	M6	20x2,0	1,6	98-101	24	117	0,169	50	0398273
75-83	2 1/2	M8/M10	M6	20x2,0	1,6	103-108	24	124	0,177	50	0398278
84-90	3	M8/M10	M6	25x2,5	1,8	113-118	25	136	0,259	50	0398289
90-95		M8/M10	M6	25x2,5	1,8	119-124	25	143	0,270	50	0398295
100-105		M8/M10	M6	25x2,5	1,8	129-134	25	152	0,289	50	0398305
108-112		M8/M10	M6	25x2,5	1,8	137-141	25	158	0,304	50	0398312
114-116	4	M8/M10	M6	25x2,5	1,8	143-145	25	165	0,316	25	0398316
121-125		M8/M10	M6	25x2,5	1,8	156-161	25	175	0,329	25	0398325
132-136		M10/M12	M8	25x3,0	2,3	171-175	30	192	0,446	25	1418336
137-141	5	M10/M12	M8	25x3,0	2,3	176-180	30	197	0,459	25	1418341

» Pipe clamp Omnia MB, lined, silicone

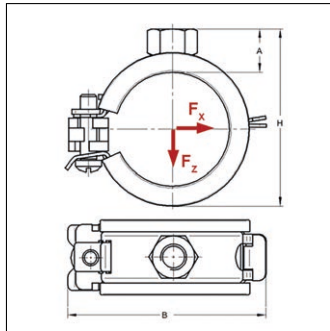
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
159-163		M10/M12	M8	25x3,0	2,3	193-197	30	219	0,514	25	1418363
164-168	6	M10/M12	M8	25x3,0	2,3	198-202	30	225	0,526	25	1418368
15-20	3/8	M12	M6	20x1,5	1,0	43-48	24	61	0,0950	100	0392227
22-28	1/2-3/4	M12	M6	20x1,5	1,0	50-56	24	68	0,103	100	0392235
30-35	1	M12	M6	20x1,5	1,0	58-63	24	78	0,113	100	0392243
38-42	1 1/4	M12	M6	20x2,0	1,6	67-71	24	89	0,134	50	0392251
44-48	1 1/2	M12	M6	20x2,0	1,6	73-77	24	92	0,144	50	0397448
50-54		M12	M6	20x2,0	1,6	79-83	24	101	0,154	50	0397454
56-60	2	M12	M6	20x2,0	1,6	85-89	24	108	0,163	50	0397460
61-65		M12	M6	20x2,0	1,6	92-93	24	113	0,171	50	0397464
70-73		M12	M6	20x2,0	1,6	99-102	24	117	0,186	50	0397473
75-83	2 1/2	M12	M6	20x2,0	1,6	104-109	24	124	0,194	50	0397480
84-89	3	M12	M6	25x2,5	1,8	114-119	25	136	0,276	50	0397489
90-95		M12	M6	25x2,5	1,8	120-125	25	143	0,287	50	0397495
100-105		M12	M6	25x2,5	1,8	130-135	25	152	0,306	50	0397505
108-112		M12	M6	25x2,5	1,8	138-142	25	158	0,321	50	0392405
114-116	4	M12	M6	25x2,5	1,8	144-146	25	165	0,333	25	0397516
121-125		M12	M6	25x2,5	1,8	151-155	25	175	0,346	25	0397525

» Sliding pipe clamp Sigma, lined

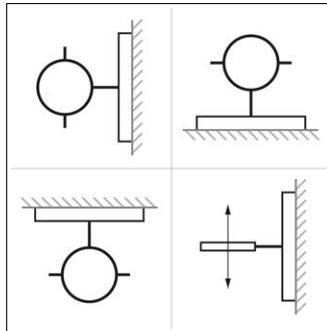
TPE



Sliding pipe clamp Sigma



Sliding pipe clamp Sigma



Installation recommendation

Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Sigma safety quick-closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM flocked
 Colour sound insulation lining: black
 Temperature resistance: -30 up to 70 °C
 Insulation thickness: 3 mm



Remark: With dimensions > 46 mm, unimpeded sliding can no longer be guaranteed. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

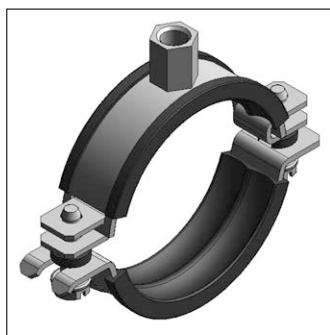
OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F_x [kN]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12	M8	M5	20x1,0	0,08	0,25	33	13	43	0,0270	100	14520121
15	M8	M5	20x1,0	0,08	0,25	35	13	45	0,0310	100	14520151

» Sliding pipe clamp Sigma, lined

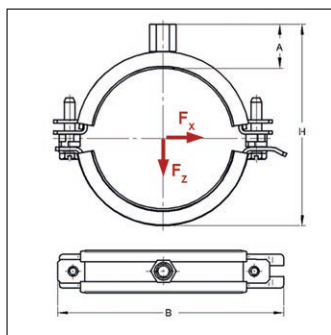
OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F_x [kN]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
16	M8	M5	20x1,0	0,08	0,25	35	13	45	0,0305	100	14520161
18	M8	M5	20x1,0	0,11	0,25	40	13	50	0,0310	100	14520181
20	M8	M5	20x1,0	0,11	0,25	40	13	50	0,0355	100	14520201
22	M8	M5	20x1,0	0,11	0,25	48	13	58	0,0340	100	14520221
25	M8	M5	20x1,0	0,11	0,25	48	13	58	0,0380	100	14520251
28	M8	M5	20x1,0	0,11	0,25	56	13	66	0,0390	100	14520281
32	M8	M5	20x1,0	0,16	0,25	56	13	66	0,0435	100	14520321
35	M8	M5	20x1,0	0,16	0,25	56	13	66	0,0455	100	14520351
38	M8	M5	20x1,0	0,16	0,25	64	13	74	0,0507	50	14520381
40	M8	M5	20x1,0	0,16	0,25	64	13	74	0,0510	50	14520401
42	M8	M5	20x1,0	0,16	0,25	64	13	74	0,0510	50	14520421
46	M8	M5	20x1,5	0,20	0,25	72	13	82	0,0690	50	14520461

» Sliding pipe clamp Omnia MB, lined

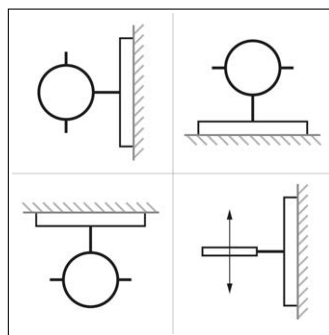
TPE



Sliding pipe clamp Omnia MB



Sliding pipe clamp Omnia MB



installation recommendation



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Slewable U-closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM flocked
 Colour sound insulation lining: black
 Temperature resistance: -30 up to 70 °C

Remark: Suitable connection adapter see chapter 1. With dimensions > 116 mm, unimpeded sliding can no longer be guaranteed. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

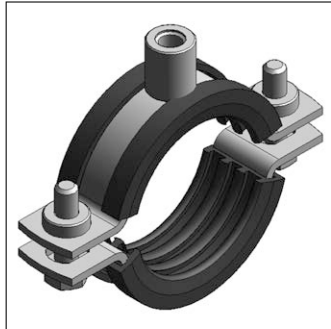
OD [mm]	Connection	Closure screw	Material dimension [mm]	Insulation thickness [mm]	Load F_x [kN]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
50	M8/M10	M6	20x2,0	3,0	0,23	0,5	72-76	24	92	0,120	50	0387250
52	M8/M10	M6	20x2,0	3,0	0,23	0,5	78-82	24	101	0,125	50	0387252
54	M8/M10	M6	20x2,0	3,0	0,23	0,5	78-82	24	101	0,125	50	0387254
56	M8/M10	M6	20x2,0	3,0	0,23	0,5	78-82	24	101	0,126	50	0387256
63	M8/M10	M6	20x2,0	3,0	0,23	0,5	91-92	24	113	0,140	50	0387263
65	M8/M10	M6	20x2,0	3,0	0,23	0,5	91-92	24	113	0,141	50	0387265
69	M8/M10	M6	20x2,0	3,0	0,23	0,5	91-92	24	113	0,141	50	0387269
75	M8/M10	M6	20x2,0	3,0	0,23	0,5	98-101	24	117	0,156	50	0387275
77	M8/M10	M6	20x2,0	3,0	0,25	0,7	103-108	24	124	0,161	50	0387277

» Sliding pipe clamp Omnia MB, lined

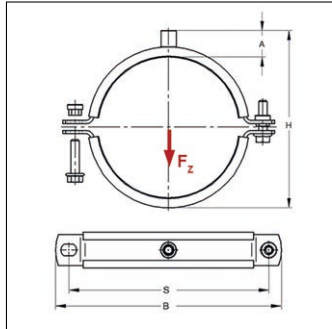
OD [mm]	Connection	Closure screw	Material dimension [mm]	Insulation thickness [mm]	Load F _x [kN]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
81	M8/M10	M6	20x2,0	3,0	0,25	0,7	103-108	24	124	0,163	50	0387281
90	M8/M10	M6	25x2,5	4,5	0,27	1,2	113-118	25	136	0,247	50	0387290
96	M8/M10	M6	25x2,5	4,5	0,30	1,2	119-124	25	143	0,258	50	0387296
110	M8/M10	M6	25x2,5	4,5	0,30	1,4	137-141	25	158	0,286	50	0387310
116	M8/M10	M6	25x2,5	4,5	0,30	1,6	143-145	25	165	0,300	50	0387316

» Pipe clamp Maxima PSM, lined

TPE



Pipe clamp Maxima PSM



Pipe clamp Maxima PSM

Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Pendulum stick nuts

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 6 mm



Delivery time: 5 working days ex works

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request.

Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-19		M8/M10	M8	25x3	1,5	54-58	30	81	57	0,195	1	0068819
20-25	1/2	M8/M10	M8	25x3	1,5	59-64	30	87	63	0,207	1	0068823
26-30	3/4	M8/M10	M8	25x3	1,5	65-69	30	92	68	0,222	1	0068828
31-36	1	M8/M10	M8	25x3	1,5	70-75	30	98	74	0,234	1	0068873
38-45	1 1/4	M8/M10	M8	25x3	1,5	77-84	30	107	83	0,251	1	0068880
47-51	1 1/2	M8/M10	M8	25x3	1,5	86-90	30	113	89	0,273	1	0068881
53-57		M8/M10	M8	25x3	1,5	92-96	30	119	95	0,288	1	0068941
58-64	2	M8/M10	M8	25x3	1,5	97-103	30	126	102	0,300	1	00688083
65-70		M10/M12	M8	30x3	1,7	104-109	30	142	116	0,377	1	008007501
72-78	2 1/2	M10/M12	M8	30x3	1,7	111-117	30	150	124	0,398	1	008010601
84-90	3	M10/M12	M8	30x3	1,7	123-129	30	162	136	0,434	1	008010701
94-100		M10/M12	M8	30x3	1,7	133-139	30	172	146	0,464	1	008010801
102-106		M10/M12	M8	30x3	1,7	141-145	30	178	152	0,488	1	008014801

» Pipe clamp Maxima PSM, lined

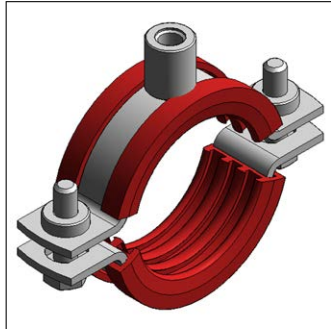
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
108-112		M10/M12	M8	30x3	1,7	147-151	30	184	158	0,506	1	008015901
113-117	4	M10/M12	M8	30x3	1,7	152-156	30	189	163	0,521	1	008016701
120-125		M10/M12	M10	35x4	5,0	161-166	31	209	179	0,810	1	0080168
127-132		M10/M12	M10	35x4	5,0	168-173	31	216	186	0,841	1	0080185
133-136		M10/M12	M10	35x4	5,0	174-177	31	220	190	0,867	1	0088136
137-142	5	M10/M12	M10	35x4	5,0	178-183	31	226	196	0,885	1	0080192
145-150		M10/M12	M10	35x4	5,0	186-191	31	234	204	0,921	1	0080193
152-156		M10/M12	M10	35x4	5,0	193-197	31	240	210	0,952	1	0080198
158-163		M10/M12	M10	35x4	5,0	199-204	31	247	217	0,979	1	0088163
164-168	6	M10/M12	M10	35x4	5,0	205-209	31	252	222	1,01	1	0080222
190-194		M10/M12	M10	35x4	5,0	231-235	31	278	248	1,12	1	0080244
198-203		M10/M12	M10	35x4	5,0	239-244	31	287	257	1,16	1	0080270
207-213		M10/M12	M10	35x4	5,0	248-254	31	297	267	1,20	1	0080293
219-223	8	M10/M12	M10	35x4	5,0	260-264	31	307	277	1,25	1	0080309
225-230		M10/M12	M10	35x4	5,0	266-271	31	314	284	1,28	1	0088230
242-246		M10/M12	M10	35x4	5,0	283-287	31	330	300	1,35	1	0080331
250-255		M10/M12	M10	35x4	5,0	294-299	31	340	310	1,39	1	0080350
270-275	10	M10/M12	M10	35x4	5,0	311-316	31	359	329	1,48	1	0080374
102-106		M16	M8	30x3	1,7	140-144	29	178	152	0,504	1	008162001
108-112		M16	M8	30x3	1,7	146-150	29	184	158	0,522	1	008163901
113-117	4	M16	M8	30x3	1,7	151-155	29	189	163	0,537	1	008165201
120-125		M16	M10	35x4	5,0	160-165	30	209	179	0,826	1	0081646
127-132		M16	M10	35x4	5,0	167-172	30	216	186	0,857	1	0081655
133-136		M16	M10	35x4	5,0	173-176	30	220	190	0,883	1	0081663
137-142	5	M16	M10	35x4	5,0	177-182	30	226	196	0,901	1	0081668
145-150		M16	M10	35x4	5,0	185-190	30	234	204	0,937	1	0081670
152-156		M16	M10	35x4	5,0	192-196	30	240	210	0,968	1	0081674
158-163		M16	M10	35x4	5,0	198-203	30	247	217	0,995	1	0081701
164-168	6	M16	M10	35x4	5,0	204-208	30	252	222	1,02	1	0081710
190-194		M16	M10	35x4	5,0	230-234	30	278	248	1,14	1	0081750
198-203		M16	M10	35x4	5,0	238-243	30	287	257	1,17	1	0081756
207-213		M16	M10	35x4	5,0	247-253	30	297	267	1,21	1	0081786
219-223	8	M16	M10	35x4	5,0	259-263	30	307	277	1,27	1	0081797
225-230		M16	M10	35x4	5,0	265-270	30	314	284	1,29	1	0081809
242-246		M16	M10	35x4	5,0	282-286	30	330	300	1,37	1	0081826
250-255		M16	M10	35x4	5,0	292-297	30	340	310	1,40	1	0081833
270-275	10	M16	M10	35x4	5,0	310-315	30	359	329	1,49	1	0081867
102-106	1/2"		M8	30x3	1,7	135-139	24	178	152	0,482	1	008212001
108-112	1/2"		M8	30x3	1,7	141-145	24	184	158	0,500	1	008213901
113-117	4	1/2"	M8	30x3	1,7	146-150	24	189	163	0,515	1	008215101
120-125		1/2"	M10	35x4	5,0	155-160	25	209	179	0,804	1	0082146
127-132		1/2"	M10	35x4	5,0	162-167	25	216	186	0,835	1	0082155
133-136		1/2"	M10	35x4	5,0	168-171	25	220	190	0,861	1	0082163
137-142	5	1/2"	M10	35x4	5,0	172-177	25	226	196	0,879	1	0082168
145-150		1/2"	M10	35x4	5,0	180-185	25	234	204	0,915	1	0082170
152-156		1/2"	M10	35x4	5,0	187-191	25	240	210	0,946	1	0082197
158-163		1/2"	M10	35x4	5,0	193-198	25	247	217	0,973	1	0082201
164-168	6	1/2"	M10	35x4	5,0	199-203	25	252	222	0,999	1	0082210
190-194		1/2"	M10	35x4	5,0	225-229	25	278	248	1,12	1	0082250
198-203		1/2"	M10	35x4	5,0	233-238	25	287	257	1,15	1	0082254
207-213		1/2"	M10	35x4	5,0	242-248	25	297	267	1,19	1	0082290
219-223	8	1/2"	M10	35x4	5,0	254-258	25	307	277	1,24	1	0082297
225-230		1/2"	M10	35x4	5,0	260-265	25	314	284	1,27	1	0082309
242-246		1/2"	M10	35x4	5,0	277-281	25	330	300	1,35	1	0082327
250-255		1/2"	M10	35x4	5,0	287-292	25	340	310	1,38	1	0082333

» Pipe clamp Maxima PSM, lined

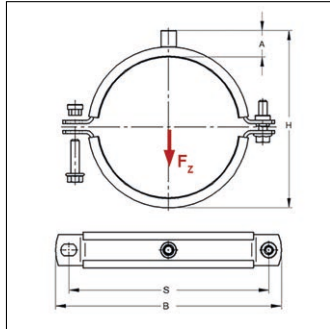
Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
270-275	10	1/2"	M10	35x4	5,0	305-310	25	359	329	1,47	1	0082370

» Pipe clamp Maxima PSM, lined, silicone

Silicone



Pipe clamp Maxima PSM



Pipe clamp Maxima PSM



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Pendulum stick nuts

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Silicone
 Colour sound insulation lining: red
 Temperature resistance: -50 up to 250 °C
 Insulation thickness: 6 mm

Delivery time: 5 working days ex works

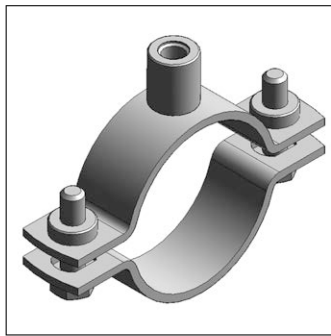
Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request.
 Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-19		M8/M10	M8	25x3	1,5	54-58	30	81	57	0,195	1	00695358
20-25	1/2	M8/M10	M8	25x3	1,5	59-64	30	87	63	0,207	1	0069536
26-30	3/4	M8/M10	M8	25x3	1,5	65-69	30	92	68	0,222	1	0069537
31-36	1	M8/M10	M8	25x3	1,5	70-75	30	98	74	0,234	1	0069538
38-45	1 1/4	M8/M10	M8	25x3	1,5	77-84	30	107	83	0,251	1	0069539
47-51	1 1/2	M8/M10	M8	25x3	1,5	86-90	30	113	89	0,273	1	0069540
53-57		M8/M10	M8	25x3	1,5	92-96	30	119	95	0,288	1	0069541
58-64	2	M8/M10	M8	25x3	1,5	97-103	30	126	102	0,300	1	00695397
65-70		M10/M12	M8	30x3	1,7	104-109	30	142	116	0,377	1	008358001
72-78	2 1/2	M10/M12	M8	30x3	1,7	111-117	30	150	124	0,398	1	008358901
84-90	3	M10/M12	M8	30x3	1,7	123-129	30	162	136	0,434	1	008359601
94-100		M10/M12	M8	30x3	1,7	133-139	30	172	146	0,464	1	008361001
102-106		M10/M12	M8	30x3	1,7	141-145	30	178	152	0,488	1	008362601
108-112		M10/M12	M8	30x3	1,7	147-151	30	184	158	0,506	1	008363501
113-117	4	M10/M12	M8	30x3	1,7	152-156	30	189	163	0,521	1	008363601
120-125		M10/M12	M10	35x4	5,0	161-166	31	209	179	0,810	1	0083662
127-132		M10/M12	M10	35x4	5,0	168-173	31	216	186	0,841	1	0083670

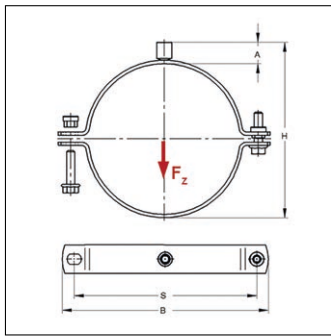
» Pipe clamp Maxima PSM, lined, silicone

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
133-136		M10/M12	M10	35x4	5,0	174-177	31	220	190	0,867	1	0083678
137-142	5	M10/M12	M10	35x4	5,0	178-183	31	226	196	0,885	1	0083679
145-150		M10/M12	M10	35x4	5,0	186-191	31	234	204	0,921	1	0083686
152-156		M10/M12	M10	35x4	5,0	193-197	31	240	210	0,952	1	0083694
158-163		M10/M12	M10	35x4	5,0	199-204	31	247	217	0,979	1	0083708
164-168	6	M10/M12	M10	35x4	5,0	205-209	31	252	222	1,01	1	0083711
190-194		M10/M12	M10	35x4	5,0	231-235	31	278	248	1,12	1	0083742
198-203		M10/M12	M10	35x4	5,0	239-244	31	287	257	1,16	1	0083750
207-213		M10/M12	M10	35x4	5,0	248-254	31	297	267	1,20	1	0083774
219-223	8	M10/M12	M10	35x4	5,0	260-264	31	307	277	1,25	1	0083804
225-230		M10/M12	M10	35x4	5,0	266-271	31	314	284	1,28	1	0083806
242-246		M10/M12	M10	35x4	5,0	283-287	31	330	300	1,35	1	0083839
250-255		M10/M12	M10	35x4	5,0	294-299	31	340	310	1,39	1	0083842
270-275	10	M10/M12	M10	35x4	5,0	311-316	31	359	329	1,48	1	0083878
102-106		M16	M8	30x3	1,7	140-144	29	178	152	0,504	1	008464601
108-112		M16	M8	30x3	1,7	146-150	29	184	158	0,522	1	008465401
113-117	4	M16	M8	30x3	1,7	151-155	29	189	163	0,537	1	008465901
120-125		M16	M10	35x4	5,0	160-165	30	209	179	0,826	1	0084665
127-132		M16	M10	35x4	5,0	167-172	30	216	186	0,857	1	0084670
133-136		M16	M10	35x4	5,0	173-176	30	220	190	0,883	1	0084689
137-142	5	M16	M10	35x4	5,0	177-182	30	226	196	0,901	1	0084692
145-150		M16	M10	35x4	5,0	185-190	30	234	204	0,937	1	0084693
152-156		M16	M10	35x4	5,0	192-196	30	240	210	0,968	1	0084703
158-163		M16	M10	35x4	5,0	198-203	30	247	217	0,995	1	0084719
164-168	6	M16	M10	35x4	5,0	204-208	30	252	222	1,02	1	0084723
190-194		M16	M10	35x4	5,0	230-234	30	278	248	1,14	1	0084750
198-203		M16	M10	35x4	5,0	238-243	30	287	257	1,17	1	0084754
207-213		M16	M10	35x4	5,0	247-253	30	297	267	1,21	1	0084794
219-223	8	M16	M10	35x4	5,0	259-263	30	307	277	1,27	1	0084811
225-230		M16	M10	35x4	5,0	265-270	30	314	284	1,29	1	0084816
242-246		M16	M10	35x4	5,0	282-286	30	330	300	1,37	1	0084832
250-255		M16	M10	35x4	5,0	292-297	30	340	310	1,40	1	0084840
270-275	10	M16	M10	35x4	5,0	310-315	30	359	329	1,49	1	0084870
102-106	1/2"	M8	M8	30x3	1,7	135-139	24	178	152	0,482	1	008513201
108-112	1/2"	M8	M8	30x3	1,7	141-145	24	184	158	0,500	1	008515401
113-117	4	1/2"	M8	30x3	1,7	146-150	24	189	163	0,515	1	008515801
120-125		1/2"	M10	35x4	5,0	155-160	25	209	179	0,804	1	0085165
127-132		1/2"	M10	35x4	5,0	162-167	25	216	186	0,835	1	0085170
133-136		1/2"	M10	35x4	5,0	168-171	25	220	190	0,861	1	0085189
137-142	5	1/2"	M10	35x4	5,0	172-177	25	226	196	0,879	1	0085192
145-150		1/2"	M10	35x4	5,0	180-185	25	234	204	0,915	1	0085200
152-156		1/2"	M10	35x4	5,0	187-191	25	240	210	0,946	1	0085208
158-163		1/2"	M10	35x4	5,0	193-198	25	247	217	0,973	1	0085219
164-168	6	1/2"	M10	35x4	5,0	199-203	25	252	222	0,999	1	0085223
190-194		1/2"	M10	35x4	5,0	225-229	25	278	248	1,12	1	0085250
198-203		1/2"	M10	35x4	5,0	233-238	25	287	257	1,15	1	0085254
207-213		1/2"	M10	35x4	5,0	242-248	25	297	267	1,19	1	0085297
219-223	8	1/2"	M10	35x4	5,0	254-258	25	307	277	1,24	1	0085311
225-230		1/2"	M10	35x4	5,0	260-265	25	314	284	1,27	1	0085316
242-246		1/2"	M10	35x4	5,0	277-281	25	330	300	1,35	1	0085335
250-255		1/2"	M10	35x4	5,0	287-292	25	340	310	1,38	1	0085340
270-275	10	1/2"	M10	35x4	5,0	305-310	25	359	329	1,47	1	0085370

» Pipe clamp Maxima PSM, unlined



Pipe clamp Maxima PSM



Pipe clamp Maxima PSM



Specification

Application area: Pipe clamp for fastening pipes.

Closure: Pendulum stick nuts

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: unlined

Delivery time: 5 working days ex works

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request.

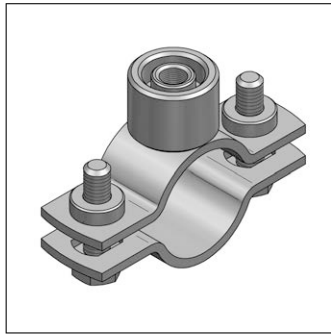
Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12-16		M8/M10	M8	25x3	3,0	39-43	24	69	45	0,158	1	0068835
17-19		M8/M10	M8	25x3	3,0	44-46	24	72	48	0,168	1	00688612
20-23	1/2	M8/M10	M8	25x3	3,0	47-50	24	76	52	0,173	1	0068838
25-29	3/4	M8/M10	M8	25x3	3,0	52-56	24	82	58	0,182	1	0068837
30-35	1	M8/M10	M8	25x3	3,0	57-62	24	88	64	0,192	1	0068836
36-40		M8/M10	M8	25x3	3,0	63-67	24	93	69	0,203	1	0068841
41-46	1 1/4	M8/M10	M8	25x3	3,0	68-73	24	99	75	0,212	1	0068847
48-55	1 1/2	M8/M10	M8	25x3	3,0	75-82	24	108	84	0,225	1	0068856
57-61	2	M8/M10	M8	25x3	3,0	84-88	24	114	90	0,241	1	0068863
63-67		M8/M10	M8	25x3	3,0	90-94	24	120	96	0,253	1	0068882
70-76	2 1/2	M8/M10	M8	25x3	3,0	97-103	24	129	105	0,265	1	00880769
84-90	3	M10/M12	M8	30x3	4,0	111-117	24	150	124	0,347	1	008809301
96-102		M10/M12	M8	30x3	4,0	123-129	24	162	136	0,374	1	008810501
106-112		M10/M12	M8	30x3	4,0	133-139	24	172	146	0,397	1	008811301
114-118	4	M10/M12	M8	30x3	4,0	141-145	24	178	152	0,415	1	008811901
120-124		M10/M12	M8	30x3	4,0	147-151	24	184	158	0,429	1	008812501
125-129		M10/M12	M8	30x3	4,0	152-156	24	189	163	0,440	1	008813001
132-137		M10/M12	M10	35x4	6,3	161-166	25	210	180	0,709	1	0088138
139-144	5	M10/M12	M10	35x4	6,3	168-173	25	217	187	0,734	1	0088145
149-154		M10/M12	M10	35x4	6,3	178-183	25	227	197	0,769	1	0088155
157-162		M10/M12	M10	35x4	6,3	186-191	25	235	205	0,798	1	0088164
164-168	6	M10/M12	M10	35x4	6,3	193-197	25	241	211	0,823	1	0088169
189-193		M10/M12	M10	35x4	6,3	218-222	25	266	236	0,912	1	0088194
195-200		M10/M12	M10	35x4	6,3	224-229	25	273	243	0,934	1	0088201
210-215		M10/M12	M10	35x4	6,3	239-244	25	288	258	0,987	1	0088216
219-225	8	M10/M12	M10	35x4	6,3	248-254	25	298	268	1,02	1	0088228
244-250		M10/M12	M10	35x4	6,3	273-279	25	323	293	1,11	1	0088253
269-273	10	M10/M12	M10	35x4	6,3	298-302	25	346	316	1,20	1	0088274
106-112		M16	M8	30x3	4,0	132-138	23	172	146	0,413	1	008160701
114-118	4	M16	M8	30x3	4,0	140-144	23	178	152	0,431	1	008162101

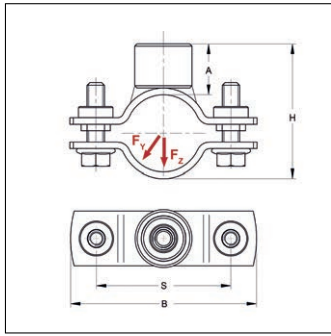
» Pipe clamp Maxima PSM, unlined

Clamping range [mm]	OD [inch]	Connection	Closure screw	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
120-124		M16	M8	30x3	4,0	146-150	23	184	158	0,445	1	008164301
125-129		M16	M8	30x3	4,0	151-155	23	189	163	0,456	1	008164501
132-137		M16	M10	35x4	6,3	160-165	24	210	180	0,725	1	0081654
139-144	5	M16	M10	35x4	6,3	167-172	24	217	187	0,750	1	0081657
149-154		M16	M10	35x4	6,3	177-182	24	227	197	0,786	1	0081667
157-162		M16	M10	35x4	6,3	185-190	24	235	205	0,814	1	0081675
164-168	6	M16	M10	35x4	6,3	192-196	24	241	211	0,839	1	0081704
189-193		M16	M10	35x4	6,3	217-221	24	266	236	0,928	1	0081739
195-200		M16	M10	35x4	6,3	223-228	24	273	243	0,950	1	0081746
210-215		M16	M10	35x4	6,3	238-243	24	288	258	1,00	1	0081762
219-225	8	M16	M10	35x4	6,3	247-253	24	298	268	1,04	1	0081790
244-250		M16	M10	35x4	6,3	272-278	24	323	293	1,13	1	0081818
269-273	10	M16	M10	35x4	6,3	297-301	24	346	316	1,21	1	0081843
106-112		1/2"	M8	30x3	4,0	127-133	18	172	146	0,391	1	008210901
114-118	4	1/2"	M8	30x3	4,0	135-139	18	178	152	0,409	1	008212301
120-124		1/2"	M8	30x3	4,0	141-145	18	184	158	0,423	1	008214401
125-129		1/2"	M8	30x3	4,0	146-150	18	189	163	0,434	1	008215201
132-137		1/2"	M10	35x4	6,3	155-160	19	210	180	0,703	1	0082153
139-144	5	1/2"	M10	35x4	6,3	162-167	19	217	187	0,728	1	0082157
149-154		1/2"	M10	35x4	6,3	172-177	19	227	197	0,763	1	0082173
157-162		1/2"	M10	35x4	6,3	180-185	19	235	205	0,792	1	0082175
164-168	6	1/2"	M10	35x4	6,3	187-191	19	241	211	0,817	1	0082196
189-193		1/2"	M10	35x4	6,3	212-216	19	266	236	0,906	1	0082237
195-200		1/2"	M10	35x4	6,3	218-223	19	273	243	0,928	1	0082247
210-215		1/2"	M10	35x4	6,3	233-238	19	288	258	0,981	1	0082261
219-225	8	1/2"	M10	35x4	6,3	242-248	19	298	268	1,01	1	0082291
244-250		1/2"	M10	35x4	6,3	267-273	19	323	293	1,10	1	0082320
269-273	10	1/2"	M10	35x4	6,3	292-296	19	346	316	1,19	1	0082342

» Pipe clamp Maxima PSM 3G, unlined



Pipe clamp Maxima PSM 3G



Pipe clamp Maxima PSM 3G

Specification

Application area: Clamp pipe clip for fixpoint FGL. Pipe clamp for fixing pipes.

Closure: Pendulum stick nuts

Technical data

Material: Steel

Surface: galvanized

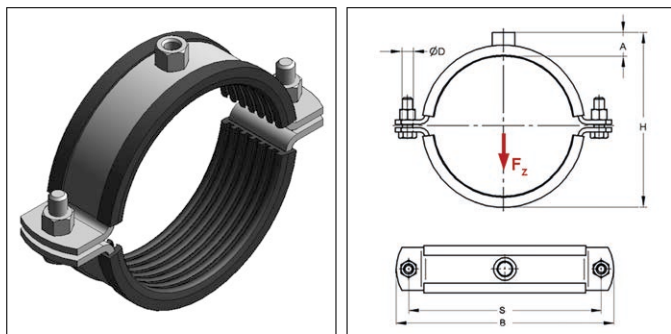
Sound insulation lining: unlined

Tightening torque: 5 Nm

Remark: Tightening torques of the screw plugs and axial forces (permissible load F_y) of the pipe clamp only apply to steel pipes with standard wall thickness. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter. Other dimensions or version with sound insulation available in request.

Clamping range [mm]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Load F_y [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
20-23	M8/M10 + 1/2"	M8	25x3	3	0,7	41-44	23	73	49	0,216	1	0069047
25-29	M8/M10 + 1/2"	M8	25x3	3	0,7	46-50	23	80	56	0,225	1	0069049
30-35	M8/M10 + 1/2"	M8	25x3	3	0,7	51-56	23	87	63	0,235	1	0069053
36-40	M8/M10 + 1/2"	M8	25x3	3	0,7	57-61	23	92	68	0,246	1	0069081
41-46	M8/M10 + 1/2"	M8	25x3	3	0,7	62-67	23	98	74	0,258	1	0069097
48-55	M8/M10 + 1/2"	M8	25x3	3	0,7	74-81	23	107	83	0,268	1	0069127
57-61	M8/M10 + 1/2"	M8	25x3	3	0,7	83-87	23	114	90	0,284	1	0069143

» Pipe clamp Titan HD, lined



Pipe clamp Titan HD

Pipe clamp Titan HD



Specification

Application area: Pipe clamp, sound-insulated for fastening pipes in the heavy load range.

Closure: Screw coupling

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: TPE

Colour sound insulation lining: black

Temperature resistance: -35 up to 100 °C

Insulation thickness: 6 mm

Delivery time: 5 - 8 working days ex works. Exchange and return are excluded.

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

* not certified acc. to RAL

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
60		M12	M12	50x5	3,2	94	22	149	120	0,888	1	0066497
64		M12	M12	50x5	3,2	97	22	154	125	0,918	1	0066504
76	2 1/2	M12	M12	50x5	3,2	109	22	166	137	1,01	1	0066508
89	3	M12	M12	50x5	3,2	122	22	179	150	1,11	1	0066510
108		M12	M12	50x5	3,2	141	22	199	170	1,25	1	0066516
110		M12	M12	50x5	3,2	143	22	201	172	1,26	1	0066532
114	4	M12	M12	50x5	3,2	147	22	205	176	1,29	1	0066559
125		M12	M12	50x5	3,2	158	22	216	187	1,38	1	0066583
127		M12	M12	50x5	3,2	160	22	218	189	1,39	1	0066591
133		M12	M12	50x5	3,2	166	22	224	195	1,44	1	0066605
135		M12	M12	50x5	3,2	168	22	226	197	1,45	1	0066613
140	5	M12	M12	50x5	3,2	173	22	231	202	1,49	1	0066621
152		M12	M12	50x5	3,2	185	22	243	214	1,58	1	0066648
160		M12	M12	50x5	3,2	193	22	251	222	1,64	1	0066680
165	6	M12	M12	50x5	3,2	198	22	256	227	1,68	1	0066699
168		M12	M12	50x5	3,2	201	22	259	230	1,70	1	0066710
177		M12	M12	50x5	11,5	210	22	268	239	1,77	1	0066737
180		M12	M12	50x5	11,5	213	22	271	242	1,79	1	0066753
194		M12	M12	50x5	11,5	227	22	286	257	1,89	1	0066761
200		M12	M12	50x5	11,5	233	22	292	263	1,94	1	0066788
210		M12	M12	50x5	11,5	243	22	302	273	2,01	1	0066818
219	8	M12	M12	50x5	11,5	252	22	311	282	2,08	1	0066826
225		M12	M12	50x5	11,5	258	22	317	288	2,13	1	0066842
245		M12	M12	50x5	11,5	278	22	337	308	2,28	1	0066877
267		M12	M12	50x5	11,5	300	22	359	330	2,44	1	0066893
273	10	M12	M12	50x5	11,5	306	22	365	336	2,49	1	0066907

» Pipe clamp Titan HD, lined

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
01												
280		M12	M12	50x5	11,5	313	22	372	343	2,54	1	0066923
298		M12	M12	50x5	11,5	331	22	390	361	2,67	1	0066931
324	12	M12	M12	50x5	11,5	357	22	416	387	2,87	1	0066958
356		M12	M12	50x5	11,5	389	22	448	419	3,11	1	0066966
368		M12	M12	50x5	11,5	401	22	460	431	3,20	1	0066982
64		M16	M12	50x5	3,2	101	26	154	125	0,935	1	0071516
76	2 1/2	M16	M12	50x5	3,2	113	26	166	137	1,03	1	0071520
89	3	M16	M12	50x5	3,2	126	26	179	150	1,12	1	0071522
108		M16	M12	50x5	3,2	145	26	199	170	1,27	1	0071528
110		M16	M12	50x5	3,2	147	26	201	172	1,28	1	0071536
114	4	M16	M12	50x5	3,2	151	26	205	176	1,31	1	0071552
125		M16	M12	50x5	3,2	162	26	216	187	1,39	1	0071587
127		M16	M12	50x5	3,2	164	26	218	189	1,41	1	0071595
133		M16	M12	50x5	3,2	170	26	224	195	1,45	1	0071609
135		M16	M12	50x5	3,2	172	26	226	197	1,47	1	0071617
140	5	M16	M12	50x5	3,2	177	26	231	202	1,51	1	0071625
152		M16	M12	50x5	3,2	189	26	243	214	1,60	1	0071641
160		M16	M12	50x5	3,2	197	26	251	222	1,66	1	0071684
165	6	M16	M12	50x5	3,2	202	26	256	227	1,69	1	0071692
168		M16	M12	50x5	3,2	205	26	259	230	1,72	1	0071714
177		M16	M12	50x5	11,5	214	26	268	239	1,78	1	0071730
180		M16	M12	50x5	11,5	217	26	271	242	1,81	1	0071757
194		M16	M12	50x5	11,5	231	26	286	257	1,91	1	0071773
200		M16	M12	50x5	11,5	237	26	292	263	1,96	1	0071781
205		M16	M12	50x5	11,5	242	26	297	268	1,99	1	00717836
210		M16	M12	50x5	11,5	247	26	302	273	2,03	1	0071803
219	8	M16	M12	50x5	11,5	256	26	311	282	2,10	1	0071838
225		M16	M12	50x5	11,5	262	26	317	288	2,14	1	0071846
245		M16	M12	50x5	11,5	282	26	337	308	2,29	1	0071870
267		M16	M12	50x5	11,5	304	26	359	330	2,46	1	0071897
273	10	M16	M12	50x5	11,5	310	26	365	336	2,50	1	0071900
280		M16	M12	50x5	11,5	317	26	372	343	2,56	1	0071927
298		M16	M12	50x5	11,5	335	26	390	361	2,69	1	0071935
324	12	M16	M12	50x5	11,5	361	26	416	387	2,88	1	0071943
356		M16	M12	50x5	11,5	393	26	448	419	3,12	1	0071978
368		M16	M12	50x5	11,5	405	26	460	431	3,21	1	0071986
406		M16	M12	50x5	11,5	443	26	498	469	3,50	1	0071994 *
457		M16	M12	50x5	11,5	494	26	549	520	3,88	1	0072003 *
508		M16	M12	50x5	11,5	545	26	600	571	4,26	1	0072014 *
64		1/2"	M12	50x5	3,2	101	26	154	125	0,931	1	0072503
76	2 1/2	1/2"	M12	50x5	3,2	113	26	166	137	1,02	1	0072508
89	3	1/2"	M12	50x5	3,2	126	26	179	150	1,12	1	0072510
108		1/2"	M12	50x5	3,2	145	26	199	170	1,26	1	0072516
110		1/2"	M12	50x5	3,2	147	26	201	172	1,28	1	0072532
114	4	1/2"	M12	50x5	3,2	151	26	205	176	1,31	1	0072559
125		1/2"	M12	50x5	3,2	162	26	216	187	1,39	1	0072583
127		1/2"	M12	50x5	3,2	164	26	218	189	1,40	1	0072591
133		1/2"	M12	50x5	3,2	170	26	224	195	1,45	1	0072605
135		1/2"	M12	50x5	3,2	172	26	226	197	1,46	1	0072613
140	5	1/2"	M12	50x5	3,2	177	26	231	202	1,50	1	0072621
152		1/2"	M12	50x5	3,2	189	26	243	214	1,59	1	0072648
160		1/2"	M12	50x5	3,2	197	26	251	222	1,65	1	0072680
165	6	1/2"	M12	50x5	3,2	202	26	256	227	1,69	1	0072699
168		1/2"	M12	50x5	3,2	205	26	259	230	1,71	1	0072710
177		1/2"	M12	50x5	11,5	214	26	268	239	1,78	1	0072737
180		1/2"	M12	50x5	11,5	217	26	271	243	1,80	1	0072753

» Pipe clamp Titan HD, lined

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
194		1/2"	M12	50x5	11,5	231	26	286	257	1,91	1	0072761
200		1/2"	M12	50x5	11,5	237	26	292	263	1,95	1	0072788
210		1/2"	M12	50x5	11,5	247	26	302	273	2,03	1	0072818
219	8	1/2"	M12	50x5	11,5	256	26	311	282	2,09	1	0072826
225		1/2"	M12	50x5	11,5	262	26	317	288	2,14	1	0072842
245		1/2"	M12	50x5	11,5	282	26	337	308	2,29	1	0072877
267		1/2"	M12	50x5	11,5	304	26	359	330	2,45	1	0072893
273	10	1/2"	M12	50x5	11,5	310	26	365	336	2,50	1	0072907
280		1/2"	M12	50x5	11,5	317	26	372	343	2,55	1	0072923
298		1/2"	M12	50x5	11,5	335	26	390	361	2,69	1	0072931
324	12	1/2"	M12	50x5	11,5	361	26	416	387	2,88	1	0072958
356		1/2"	M12	50x5	11,5	393	26	448	419	3,12	1	0072966
368		1/2"	M12	50x5	11,5	405	26	460	431	3,21	1	0072982
64		1"	M12	50x5	3,2	106	31	154	125	0,979	1	0074507
76	2 1/2	1"	M12	50x5	3,2	118	31	166	137	1,07	1	0074511
89	3	1"	M12	50x5	3,2	131	31	179	150	1,17	1	0074513
108		1"	M12	50x5	3,2	150	31	199	170	1,31	1	0074519
110		1"	M12	50x5	3,2	152	31	201	172	1,32	1	0074535
114	4	1"	M12	50x5	3,2	156	31	205	176	1,35	1	0074551
125		1"	M12	50x5	3,2	167	31	216	187	1,44	1	0074586
127		1"	M12	50x5	3,2	169	31	218	189	1,45	1	0074594
133		1"	M12	50x5	3,2	175	31	224	195	1,50	1	0074608
135		1"	M12	50x5	3,2	177	31	226	197	1,51	1	0074616
140	5	1"	M12	50x5	3,2	182	31	231	202	1,55	1	0074624
152		1"	M12	50x5	3,2	194	31	243	214	1,64	1	0074640
160		1"	M12	50x5	3,2	202	31	251	222	1,70	1	0074683
165	6	1"	M12	50x5	3,2	207	31	256	227	1,74	1	0074691
168		1"	M12	50x5	3,2	210	31	259	230	1,76	1	0074713
177		1"	M12	50x5	11,5	219	31	268	239	1,83	1	0074748
180		1"	M12	50x5	11,5	222	31	271	242	1,85	1	0074756
194		1"	M12	50x5	11,5	236	31	286	257	1,95	1	0074772
200		1"	M12	50x5	11,5	242	31	292	263	2,00	1	0074780
210		1"	M12	50x5	11,5	252	31	302	273	2,07	1	0074802
219	8	1"	M12	50x5	11,5	261	31	311	282	2,14	1	0074829
225		1"	M12	50x5	11,5	267	31	317	288	2,19	1	0074845
245		1"	M12	50x5	11,5	287	31	337	308	2,34	1	0074861
267		1"	M12	50x5	11,5	309	31	359	330	2,50	1	0074896
273	10	1"	M12	50x5	11,5	315	31	365	336	2,55	1	0074918
280		1"	M12	50x5	11,5	322	31	372	343	2,60	1	0074926
298		1"	M12	50x5	11,5	340	31	390	361	2,73	1	0074934
324	12	1"	M12	50x5	11,5	366	31	416	387	2,93	1	0074942
356		1"	M12	50x5	11,5	398	31	448	419	3,17	1	0074969
368		1"	M12	50x5	11,5	410	31	460	431	3,26	1	0074985
406		1"	M12	50x5	11,5	448	31	498	469	3,54	1	0074993 *
457		1"	M12	50x5	11,5	499	31	549	520	3,93	1	0075003 *
508		1"	M12	50x5	11,5	550	31	600	571	4,31	1	0075013 *
194		1 1/4"	M12	50x5	11,5	238	33	286	257	1,98	1	0063941
200		1 1/4"	M12	50x5	11,5	244	33	292	263	2,02	1	0063943
219	8	1 1/4"	M12	50x5	11,5	263	33	311	282	2,17	1	0063951
245		1 1/4"	M12	50x5	11,5	289	33	337	308	2,36	1	0063957
267		1 1/4"	M12	50x5	11,5	311	33	359	330	2,53	1	0063961
273	10	1 1/4"	M12	50x5	11,5	317	33	365	336	2,57	1	0063963
324	12	1 1/4"	M12	50x5	11,5	368	33	416	387	2,95	1	0063978
356		1 1/4"	M12	50x5	11,5	400	33	448	419	3,19	1	0063988
368		1 1/4"	M12	50x5	11,5	412	33	460	431	3,28	1	0063990
406		1 1/4"	M12	50x5	11,5	450	33	498	469	3,57	1	0063998 *

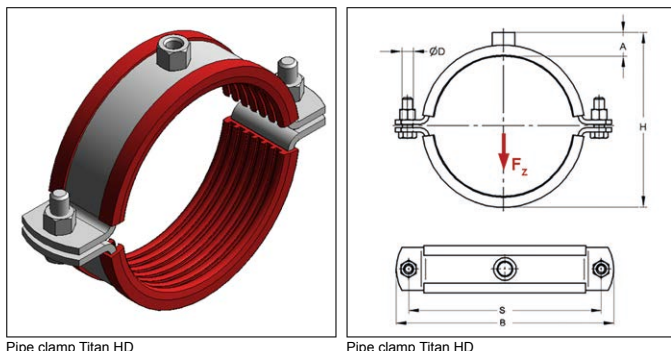
» Pipe clamp Titan HD, lined

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
457		1 1/4"	M12	50x5	11,5	501	33	549	520	3,95	1	00640063 *
508		1 1/4"	M12	50x5	11,5	552	33	600	571	4,33	1	0064016 *
54		without		50x5	3,2	80		143	114	0,686	1	00704982
64		without		50x5	3,2	86		154	125	0,761	1	0070501
76		without		50x5	3,2	98		166	137	0,851	1	0070505
89	3	without		50x5	3,2	111		179	150	0,948	1	0070507
108		without		50x5	3,2	130		199	160	1,09	1	0070513
110		without		50x5	3,2	132		201	162	1,11	1	0070548
114	4	without		50x5	3,2	136		205	166	1,14	1	0070556
133		without		50x5	3,2	155		224	185	1,28	1	0070602
135		without		50x5	3,2	157		226	187	1,29	1	0070610
140	5	without		50x5	3,2	162		231	192	1,33	1	0070629
159		without		50x5	3,2	181		250	212	1,47	1	0070649
165	6	without		50x5	3,2	187		256	217	1,52	1	0070696
168		without		50x5	3,2	190		259	220	1,54	1	0070718
194		without		50x5	11,5	215		285	246	1,74	1	0070777
200		without		50x5	11,5	222		292	252	1,78	1	0070785
210		without		50x5	11,5	232		302	262	1,86	1	0070807
219	8	without		50x5	11,5	241		311	272	1,92	1	0070823
267		without		50x5	11,5	289		359	319	2,28	1	0070890
273	10	without		50x5	11,5	295		365	326	2,33	1	0070904
324	12	without		50x5	11,5	346		416	376	2,71	1	0070947
356		without		50x5	11,5	378		448	408	2,95	1	0070963
368		without		50x5	11,5	390		460	420	3,04	1	0070971
406		without		50x5	11,5	428		498	469	3,33	1	0070979 *
457		without		50x5	11,5	479		549	520	3,71	1	0070989 *
508		without		50x5	11,5	530		600	571	4,09	1	0070996 *

» Pipe clamp Titan HD, lined, silicone

Silicone

01



Pipe clamp Titan HD

Pipe clamp Titan HD



Specification

Application area: Pipe clamp, sound-insulated for fastening pipes in the heavy load range.

Closure: Screw coupling

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: Silicone

Colour sound insulation lining: red

Temperature resistance: -50 up to 250 °C

Insulation thickness: 6 mm

Delivery time: 5 - 8 working days ex works. Exchange and return are excluded.

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
64		M12	M12	50x5	3,2	97	22	154	125	0,918	1	0067500
76	2 1/2	M12	M12	50x5	3,2	109	22	166	137	1,01	1	0067504
89	3	M12	M12	50x5	3,2	122	22	179	150	1,11	1	0067506
108		M12	M12	50x5	3,2	141	22	199	170	1,25	1	0067512
110		M12	M12	50x5	3,2	143	22	201	172	1,26	1	0067539
114	4	M12	M12	50x5	3,2	147	22	205	176	1,29	1	0067555
125		M12	M12	50x5	3,2	158	22	216	187	1,38	1	0067571
127		M12	M12	50x5	3,2	160	22	218	189	1,39	1	0067598
133		M12	M12	50x5	3,2	166	22	224	195	1,44	1	0067601
135		M12	M12	50x5	3,2	168	22	226	197	1,45	1	0067628
140	5	M12	M12	50x5	3,2	173	22	231	202	1,49	1	0067636
152		M12	M12	50x5	3,2	185	22	243	214	1,58	1	0067644
160		M12	M12	50x5	3,2	193	22	251	222	1,64	1	0067687
165	6	M12	M12	50x5	3,2	198	22	256	227	1,68	1	0067695
168		M12	M12	50x5	3,2	201	22	259	230	1,70	1	0067717
177		M12	M12	50x5	11,5	210	22	268	239	1,77	1	0067733
180		M12	M12	50x5	11,5	213	22	271	242	1,79	1	0067741
194		M12	M12	50x5	11,5	227	22	286	257	1,89	1	0067768
200		M12	M12	50x5	11,5	233	22	292	263	1,94	1	0067784
210		M12	M12	50x5	11,5	243	22	302	273	2,01	1	0067814
219	8	M12	M12	50x5	11,5	252	22	311	282	2,08	1	0067822
225		M12	M12	50x5	11,5	258	22	317	288	2,13	1	0067849
245		M12	M12	50x5	11,5	278	22	337	308	2,28	1	0067873
267		M12	M12	50x5	11,5	300	22	359	330	2,44	1	0067881
273	10	M12	M12	50x5	11,5	306	22	365	336	2,49	1	0067903
280		M12	M12	50x5	11,5	313	22	372	343	2,54	1	0067911
298		M12	M12	50x5	11,5	331	22	390	361	2,67	1	0067938

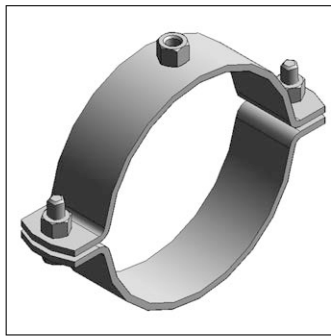
» Pipe clamp Titan HD, lined, silicone

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
							height A [mm]					
324	12	M12	M12	50x5	11,5	357	22	416	387	2,87	1	0067954
356		M12	M12	50x5	11,5	389	22	448	419	3,11	1	0067962
368		M12	M12	50x5	11,5	401	22	460	431	3,20	1	0067989
64		M16	M12	50x5	3,2	101	26	154	125	0,935	1	0076499
76	2 1/2	M16	M12	50x5	3,2	113	26	166	137	1,03	1	0076503
89	3	M16	M12	50x5	3,2	126	26	179	150	1,12	1	0076505
108		M16	M12	50x5	3,2	145	26	199	170	1,27	1	0076511
110		M16	M12	50x5	3,2	147	26	201	172	1,28	1	0076538
114	4	M16	M12	50x5	3,2	151	26	205	176	1,31	1	0076554
125		M16	M12	50x5	3,2	162	26	216	187	1,39	1	0076589
127		M16	M12	50x5	3,2	164	26	218	189	1,41	1	0076597
133		M16	M12	50x5	3,2	170	26	224	195	1,45	1	0076600
135		M16	M12	50x5	3,2	172	26	226	197	1,47	1	0076619
140	5	M16	M12	50x5	3,2	177	26	231	202	1,51	1	0076627
152		M16	M12	50x5	3,2	189	26	243	214	1,60	1	0076643
160		M16	M12	50x5	3,2	197	26	251	222	1,66	1	0076686
165	6	M16	M12	50x5	3,2	202	26	256	227	1,69	1	0076694
168		M16	M12	50x5	3,2	205	26	259	230	1,72	1	0076716
177		M16	M12	50x5	11,5	214	26	268	239	1,78	1	0076732
180		M16	M12	50x5	11,5	217	26	271	242	1,81	1	0076759
194		M16	M12	50x5	11,5	231	26	286	257	1,91	1	0076775
200		M16	M12	50x5	11,5	237	26	292	263	1,96	1	0076783
210		M16	M12	50x5	11,5	247	26	302	273	2,03	1	0076805
219	8	M16	M12	50x5	11,5	256	26	311	282	2,10	1	0076821
225		M16	M12	50x5	11,5	262	26	317	288	2,14	1	0076848
245		M16	M12	50x5	11,5	282	26	337	308	2,29	1	0076872
267		M16	M12	50x5	11,5	304	26	359	330	2,46	1	0076899
273	10	M16	M12	50x5	11,5	310	26	365	336	2,50	1	0076902
280		M16	M12	50x5	11,5	317	26	372	343	2,56	1	0076929
298		M16	M12	50x5	11,5	335	26	390	361	2,69	1	0076937
324	12	M16	M12	50x5	11,5	361	26	416	387	2,88	1	0076945
356		M16	M12	50x5	11,5	393	26	448	419	3,12	1	0076961
368		M16	M12	50x5	11,5	405	26	460	431	3,21	1	0076988
64		1/2"	M12	50x5	3,2	101	26	154	125	0,931	1	0077506
76	2 1/2	1/2"	M12	50x5	3,2	113	26	166	137	1,02	1	0077510
89	3	1/2"	M12	50x5	3,2	126	26	179	150	1,12	1	0077512
108		1/2"	M12	50x5	3,2	145	26	199	170	1,26	1	0077518
110		1/2"	M12	50x5	3,2	147	26	201	172	1,28	1	0077534
114	4	1/2"	M12	50x5	3,2	151	26	205	176	1,31	1	0077550
125		1/2"	M12	50x5	3,2	162	26	216	187	1,39	1	0077585
127		1/2"	M12	50x5	3,2	164	26	218	189	1,40	1	0077593
133		1/2"	M12	50x5	3,2	170	26	224	195	1,45	1	0077607
135		1/2"	M12	50x5	3,2	172	26	226	197	1,46	1	0077615
140	5	1/2"	M12	50x5	3,2	177	26	231	202	1,50	1	0077623
152		1/2"	M12	50x5	3,2	189	26	243	214	1,59	1	0077631
160		1/2"	M12	50x5	3,2	197	26	251	222	1,65	1	0077682
165	6	1/2"	M12	50x5	3,2	202	26	256	227	1,69	1	0077690
168		1/2"	M12	50x5	3,2	205	26	259	230	1,71	1	0077712
177		1/2"	M12	50x5	11,5	214	26	268	239	1,78	1	0077739
180		1/2"	M12	50x5	11,5	217	26	271	243	1,80	1	0077755
194		1/2"	M12	50x5	11,5	231	26	286	257	1,91	1	0077771
200		1/2"	M12	50x5	11,5	237	26	292	263	1,95	1	0077798
210		1/2"	M12	50x5	11,5	247	26	302	273	2,03	1	0077801
219	8	1/2"	M12	50x5	11,5	256	26	311	282	2,09	1	0077828
225		1/2"	M12	50x5	11,5	262	26	317	288	2,14	1	0077844
245		1/2"	M12	50x5	11,5	282	26	337	308	2,29	1	0077879

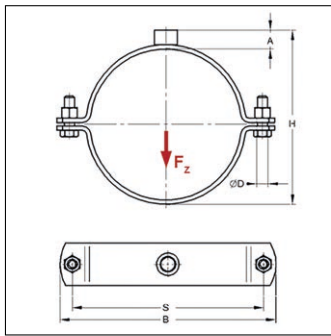
» Pipe clamp Titan HD, lined, silicone

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
267		1/2"	M12	50x5	11,5	304	26	359	330	2,45	1	0077895
273	10	1/2"	M12	50x5	11,5	310	26	365	336	2,50	1	0077909
280		1/2"	M12	50x5	11,5	317	26	372	343	2,55	1	0077925
298		1/2"	M12	50x5	11,5	335	26	390	361	2,69	1	0077933
324	12	1/2"	M12	50x5	11,5	361	26	416	387	2,88	1	0077941
356		1/2"	M12	50x5	11,5	393	26	448	419	3,12	1	0077968
368		1/2"	M12	50x5	11,5	405	26	460	431	3,21	1	0077984
64		1"	M12	50x5	3,2	106	31	154	125	0,979	1	0079498
76	2 1/2	1"	M12	50x5	3,2	118	31	166	137	1,07	1	0079502
89	3	1"	M12	50x5	3,2	131	31	179	150	1,17	1	0079504
108		1"	M12	50x5	3,2	150	31	199	170	1,31	1	0079510
110		1"	M12	50x5	3,2	152	31	201	172	1,32	1	0079537
114	4	1"	M12	50x5	3,2	156	31	205	176	1,35	1	0079553
125		1"	M12	50x5	3,2	167	31	216	187	1,44	1	0079588
127		1"	M12	50x5	3,2	169	31	218	189	1,45	1	0079596
133		1"	M12	50x5	3,2	175	31	224	195	1,50	1	0079618
135		1"	M12	50x5	3,2	177	31	226	197	1,51	1	0079626
140	5	1"	M12	50x5	3,2	182	31	231	202	1,55	1	0079634
152		1"	M12	50x5	3,2	194	31	243	214	1,64	1	0079642
160		1"	M12	50x5	3,2	202	31	251	222	1,70	1	0079685
165	6	1"	M12	50x5	3,2	207	31	256	227	1,74	1	0079693
168		1"	M12	50x5	3,2	210	31	259	230	1,76	1	0079715
177		1"	M12	50x5	11,5	219	31	268	239	1,83	1	0079731
180		1"	M12	50x5	11,5	222	31	271	242	1,85	1	0079758
194		1"	M12	50x5	11,5	236	31	286	257	1,95	1	0079774
200		1"	M12	50x5	11,5	242	31	292	263	2,00	1	0079782
210		1"	M12	50x5	11,5	252	31	302	273	2,07	1	0079804
219	8	1"	M12	50x5	11,5	261	31	311	282	2,14	1	0079820
225		1"	M12	50x5	11,5	267	31	317	288	2,19	1	0079847
245		1"	M12	50x5	11,5	287	31	337	308	2,34	1	0079871
267		1"	M12	50x5	11,5	309	31	359	330	2,50	1	0079898
273	10	1"	M12	50x5	11,5	315	31	365	336	2,55	1	0079901
280		1"	M12	50x5	11,5	322	31	372	343	2,60	1	0079928
298		1"	M12	50x5	11,5	340	31	390	361	2,73	1	0079936
324	12	1"	M12	50x5	11,5	366	31	416	387	2,93	1	0079944
356		1"	M12	50x5	11,5	398	31	448	419	3,17	1	0079960
368		1"	M12	50x5	11,5	410	31	460	431	3,26	1	0079987
194		1 1/4"	M12	50x5	11,5	238	33	286	257	1,98	1	0063845
200		1 1/4"	M12	50x5	11,5	244	33	292	263	2,02	1	0063847
219	8	1 1/4"	M12	50x5	11,5	263	33	311	282	2,17	1	0063853
245		1 1/4"	M12	50x5	11,5	289	33	337	308	2,36	1	0063859
267		1 1/4"	M12	50x5	11,5	311	33	359	330	2,53	1	0063863
273	10	1 1/4"	M12	50x5	11,5	317	33	365	336	2,57	1	0063865
324	12	1 1/4"	M12	50x5	11,5	368	33	416	387	2,95	1	0063881
356		1 1/4"	M12	50x5	11,5	400	33	448	419	3,19	1	0063891
368		1 1/4"	M12	50x5	11,5	412	33	460	431	3,28	1	0063893

» Pipe clamp Titan HD, unlined



Pipe clamp Titan HD



Pipe clamp Titan HD



Specification

Application area: Pipe clamp for fastening pipes in the heavy load range.

Closure: Screw coupling

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: unlined

Delivery time: 5 - 8 working days ex works. Exchange and return are excluded.

Remark: Suitable connection adapter see chapter 1. Permissible loads in the event of fire see chapter 15. Custom-made products on request.

Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

* not certified acc. to RAL

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
							[mm]					
64		M12	M12	50x5	6	85	16	141	112	0,766	1	0066503
76	2 1/2	M12	M12	50x5	6	97	16	153	124	0,842	1	0066507
89	3	M12	M12	50x5	6	110	16	167	138	0,925	1	0066509
108		M12	M12	50x5	6	129	16	186	157	1,05	1	0066515
110		M12	M12	50x5	6	131	16	188	159	1,06	1	0066518
114	4	M12	M12	50x5	6	135	16	192	163	1,08	1	0066520
133		M12	M12	50x5	6	154	16	212	183	1,21	1	0066572
135		M12	M12	50x5	6	156	16	214	185	1,22	1	0066592
140	5	M12	M12	50x5	6	161	16	219	190	1,25	1	0066606
160		M12	M12	50x5	6	181	16	239	210	1,38	1	0066649
165	6	M12	M12	50x5	6	186	16	244	215	1,41	1	0066682
168		M12	M12	50x5	6	189	16	247	218	1,43	1	0066684
194		M12	M12	50x5	16	215	16	273	244	1,59	1	0066754
200		M12	M12	50x5	16	221	16	279	250	1,63	1	0066762
210		M12	M12	50x5	16	231	16	290	261	1,69	1	0066792
219	8	M12	M12	50x5	16	240	16	299	270	1,75	1	0066819
267		M12	M12	50x5	16	288	16	347	318	2,06	1	0066881
273	10	M12	M12	50x5	16	294	16	353	324	2,10	1	0066894
324	12	M12	M12	50x5	16	345	16	404	375	2,42	1	0066955
356		M12	M12	50x5	16	377	16	436	407	2,62	1	0066965
368		M12	M12	50x5	16	389	16	448	419	2,70	1	0066981
64		M16	M12	50x5	6	89	20	141	112	0,783	1	0071515
76	2 1/2	M16	M12	50x5	6	101	20	153	124	0,859	1	0071519
89	3	M16	M12	50x5	6	114	20	167	138	0,942	1	0071521
108		M16	M12	50x5	6	133	20	186	157	1,06	1	0071527
110		M16	M12	50x5	6	135	20	188	159	1,08	1	0071529
114	4	M16	M12	50x5	6	139	20	192	163	1,10	1	0071530
133		M16	M12	50x5	6	158	20	212	183	1,22	1	0071588
135		M16	M12	50x5	6	160	20	214	185	1,23	1	0071596
140	5	M16	M12	50x5	6	165	20	219	190	1,27	1	0071610

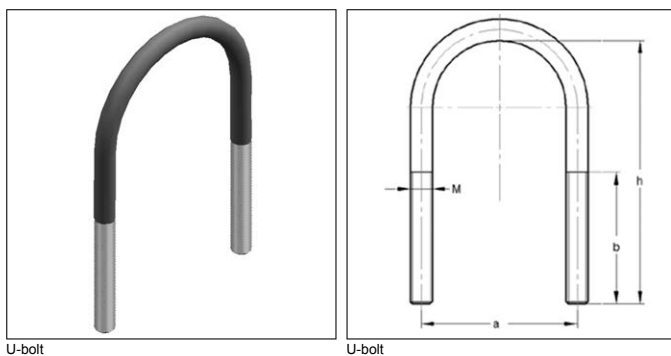
» Pipe clamp Titan HD, unlined

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
160		M16	M12	50x5	6	185	20	239	210	1,39	1	0071642
165	6	M16	M12	50x5	6	190	20	244	215	1,43	1	0071685
168		M16	M12	50x5	6	193	20	247	218	1,44	1	0071687
194		M16	M12	50x5	16	219	20	273	244	1,61	1	0071758
200		M16	M12	50x5	16	225	20	279	250	1,65	1	0071774
210		M16	M12	50x5	16	235	20	290	261	1,71	1	0071784
219	8	M16	M12	50x5	16	244	20	299	270	1,77	1	0071804
267		M16	M12	50x5	16	292	20	347	318	2,07	1	0071873
273	10	M16	M12	50x5	16	298	20	353	324	2,11	1	0071898
324	12	M16	M12	50x5	16	349	20	404	375	2,44	1	0071939
356		M16	M12	50x5	16	381	20	436	407	2,64	1	0071977
368	14	M16	M12	50x5	16	393	20	448	419	2,72	1	0071979
406		M16	M12	50x5	16	431	20	486	457	2,96	1	0071993 *
457		M16	M12	50x5	16	482	20	537	508	3,28	1	00720091 *
508		M16	M12	50x5	16	533	20	588	559	3,61	1	007205082 *
27		1/2"	M12	50x5	6	52	20	101	72	0,544	1	0072490
64		1/2"	M12	50x5	6	89	20	141	112	0,779	1	0072502
76	2 1/2	1/2"	M12	50x5	6	101	20	153	124	0,855	1	0072507
89	3	1/2"	M12	50x5	6	114	20	167	138	0,938	1	0072509
108		1/2"	M12	50x5	6	133	20	186	157	1,06	1	0072514
110		1/2"	M12	50x5	6	135	20	188	159	1,07	1	0072517
114	4	1/2"	M12	50x5	6	139	20	192	163	1,10	1	0072519
133		1/2"	M12	50x5	6	158	20	212	183	1,22	1	0072584
135		1/2"	M12	50x5	6	160	20	214	185	1,23	1	0072592
140	5	1/2"	M12	50x5	6	165	20	219	190	1,26	1	0072606
160		1/2"	M12	50x5	6	185	20	239	210	1,39	1	0072649
165	6	1/2"	M12	50x5	6	190	20	244	215	1,42	1	0072681
168		1/2"	M12	50x5	6	193	20	247	218	1,44	1	0072683
194		1/2"	M12	50x5	16	219	20	273	244	1,61	1	0072754
200		1/2"	M12	50x5	16	225	20	279	250	1,64	1	0072762
210		1/2"	M12	50x5	16	235	20	290	261	1,71	1	0072791
219	8	1/2"	M12	50x5	16	244	20	299	270	1,76	1	0072819
267		1/2"	M12	50x5	16	292	20	347	318	2,07	1	0072892
273	10	1/2"	M12	50x5	16	298	20	353	324	2,11	1	0072894
324	12	1/2"	M12	50x5	16	349	20	404	375	2,43	1	0072955
356		1/2"	M12	50x5	16	381	20	436	407	2,64	1	0072965
368	14	1/2"	M12	50x5	16	393	20	448	419	2,71	1	0072967
64		1"	M12	50x5	6	94	25	141	112	0,827	1	0074505
76	2 1/2	1"	M12	50x5	6	106	25	153	124	0,903	1	0074510
89	3	1"	M12	50x5	6	119	25	167	138	0,986	1	0074512
108		1"	M12	50x5	6	138	25	186	157	1,11	1	0074520
110		1"	M12	50x5	6	140	25	188	159	1,12	1	0074522
114	4	1"	M12	50x5	6	144	25	192	163	1,15	1	0074524
133		1"	M12	50x5	6	163	25	212	183	1,27	1	0074587
135		1"	M12	50x5	6	165	25	214	185	1,28	1	0074595
140	5	1"	M12	50x5	6	170	25	219	190	1,31	1	0074609
160		1"	M12	50x5	6	190	25	239	210	1,44	1	0074641
165	6	1"	M12	50x5	6	195	25	244	215	1,47	1	0074684
168		1"	M12	50x5	6	198	25	247	218	1,49	1	0074686
194	7	1"	M12	50x5	16	224	25	273	244	1,65	1	0074757
200		1"	M12	50x5	16	230	25	279	250	1,69	1	0074773
210		1"	M12	50x5	16	240	25	290	261	1,76	1	0074781
219	8	1"	M12	50x5	16	249	25	299	270	1,81	1	0074803
267		1"	M12	50x5	16	297	25	347	318	2,12	1	0074874
273	10	1"	M12	50x5	16	303	25	353	324	2,16	1	0074897
324	12	1"	M12	50x5	16	354	25	404	375	2,48	1	0074939

» Pipe clamp Titan HD, unlined

OD [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
356		1"	M12	50x5	16	386	25	436	407	2,68	1	0074968
368	14	1"	M12	50x5	16	398	25	448	419	2,76	1	0074970
406		1"	M12	50x5	16	436	25	486	457	3,00	1	0074992 *
457		1"	M12	50x5	16	487	25	537	508	3,33	1	00749995 *
508		1"	M12	50x5	16	538	25	588	559	3,65	1	0075012 *
76		1 1/4"	M12	50x5	6	108	27	154	125	0,928	1	0063905
200		1 1/4"	M12	50x5	16	232	27	279	250	1,72	1	0063942
210		1 1/4"	M12	50x5	16	242	27	290	261	1,78	1	0063947
219	8	1 1/4"	M12	50x5	16	252	27	299	270	1,84	1	0063949
267		1 1/4"	M12	50x5	16	299	27	347	318	2,14	1	0063960
273	10	1 1/4"	M12	50x5	16	305	27	353	324	2,18	1	0063962
324	12	1 1/4"	M12	50x5	16	356	27	404	375	2,51	1	0063975
356		1 1/4"	M12	50x5	16	388	27	436	407	2,71	1	0063987
361		1 1/4"	M12	50x5	16	393	27	441	412	2,74	1	00639885
368	14	1 1/4"	M12	50x5	16	400	27	448	419	2,78	1	0063989
406		1 1/4"	M12	50x5	16	438	27	486	457	3,03	1	0063997 *
457		1 1/4"	M12	50x5	16	489	27	537	508	3,35	1	0064009 *
508		1 1/4"	M12	50x5	16	540	27	588	559	3,67	1	0064010 *
64		without		50x5	6	74		141	112	0,609	1	0070500
76		without		50x5	6	86		153	124	0,685	1	0070504
89	3	without		50x5	6	99		167	138	0,768	1	0070506
108		without		50x5	6	118		186	148	0,889	1	0070512
110		without		50x5	6	120		188	150	0,901	1	0070515
114	4	without		50x5	6	124		192	154	0,927	1	0070514
133		without		50x5	6	143		212	173	1,05	1	0070581
135		without		50x5	6	145		214	175	1,06	1	0070600
140	5	without		50x5	6	150		219	180	1,09	1	0070603
159		without		50x5	6	169		238	200	1,21	1	0070647
165	6	without		50x5	6	175		244	205	1,25	1	0070686
168		without		50x5	6	178		247	208	1,27	1	0070689
194		without		50x5	6	204		273	244	1,44	1	0070751
200		without		50x5	16	210		279	240	1,47	1	0070778
210		without		50x5	16	220		289	250	1,54	1	0070786
219	8	without		50x5	16	229		299	260	1,59	1	0070808
267		without		50x5	16	277		347	307	1,90	1	0070881
273	10	without		50x5	16	283		353	314	1,94	1	0070891
324	12	without		50x5	16	334		404	364	2,26	1	0070945
356		without		50x5	16	366		436	396	2,47	1	0070962
368	14	without		50x5	16	368		448	408	2,54	1	0070964
406		without		50x5	16	416		486	457	2,78	1	0070978 *
457		without		50x5	16	467		537	508	3,11	1	00709887 *
508		without		50x5	16	518		588	559	3,43	1	0070995 *

» U-bolt



U-bolt

U-bolt

**Specification**

Application area: For direct installation of piping onto steel structures and suitable for push-through-assembling into profile rails. Suitable for sprinkler and VdS.

Recommended accessories: Nuts, washer

Type of attachment : When used as bearing 2 nuts and 2 washer are recommended, when used as 4 nuts and 4 washers are recommended.

Technical data

Material: Steel
Surface: galvanized

Remark: Other dimensions according to directive VdS-2092 "Planning and installation".

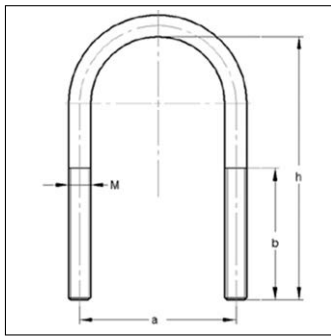
* VdS - G 494 0029

OD [mm]	OD [inch]	Norm	Thread M	Height h [mm]	Center distance a [mm]	Length thread b [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21,3	1/2	similar to DIN 3570	M8	85	30	65	0,0508	100	050702201
26,9	3/4	similar to DIN 3570	M8	85	35	65	0,0623	100	050702801
33,7	1	similar to DIN 3570	M8	95	42	65	0,0701	100	050703501
42,4	1 1/4	similar to DIN 3570	M8	105	51	75	0,0781	100	050704201
48,3	1 1/2	similar to DIN 3570	M8	110	57	75	0,0823	100	050704801
60,3	2	similar to DIN 3570	M10	125	71	75	0,154	100	050706001
76,1	2 1/2	similar to DIN 3570	M10	140	87	75	0,169	100	050707601
88,9	3	similar to DIN 3570	M10	155	100	75	0,187	50	050708901
108,0		similar to DIN 3570	M12	195	121	95	0,338	50	050710801
114,3	4	similar to DIN 3570	M12	200	126	95	0,348	50	050711401
133,0		similar to DIN 3570	M12	215	146	90	0,370	25	0507133
139,7	5	similar to DIN 3570	M12	225	152	95	0,394	25	050714001
159,0		similar to DIN 3570	M12	245	172	95	0,431	25	050715901
168,3	6	similar to DIN 3570	M12	255	180	95	0,449	25	050716801
219,1	8	similar to DIN 3570	M12	300	233	95	0,525	25	0507219 *
273,0	10	DIN 3570	M20	313	302	70	1,66	10	0507273
323,9	12	DIN 3570	M20	364	352	70	1,93	1	0507324

» U-bolt, TSP®



U-bolt



U-bolt

**Specification**

Application area: For direct installation of piping onto steel structures and suitable for push-through-assembling into profile rails.

Recommended accessories: Nuts, washer

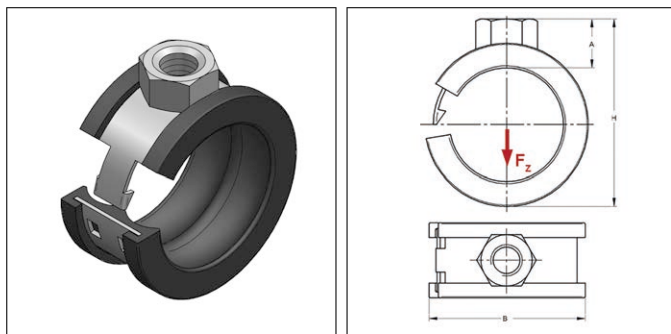
Type of attachment : When used as bearing 2 nuts and 2 washer are recommended, when used as 4 nuts and 4 washers are recommended.

Technical data

Material: Steel
Surface: Zinc-Nickel

OD [mm]	OD [inch]	Norm	Thread M	Height h [mm]	Center distance a [mm]	Length thread b [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
60,3	2	similar to DIN 3570	M10	125	71	75	0,154	1	050706001/zn
76,1	2 1/2	similar to DIN 3570	M10	140	87	75	0,169	1	050707601/zn
88,9	3	similar to DIN 3570	M10	150	100	70	0,179	1	0507089/zn
114,3	4	similar to DIN 3570	M12	200	126	95	0,348	1	050711401/zn
139,7	5	similar to DIN 3570	M12	225	152	95	0,394	1	050714001/zn
168,3	6	similar to DIN 3570	M12	255	180	95	0,449	1	050716801/zn

» Pipe clamp Clipstar, lined



Pipe clamp Clipstar

Pipe clamp Clipstar

**Specification**

Application area: Pipe clamp for fastening pipes.
 Closure: Hook closure

Technical data

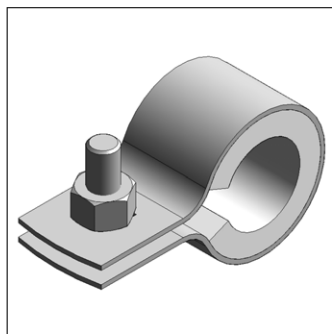
Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 3 mm

Remark: Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

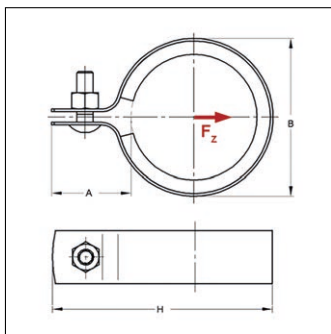
OD [mm]	Connection	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
10	M8	16x0,6	0,3	26	10	22	0,0127	100	0290106
12	M8	16x0,6	0,3	26	10	23	0,0133	100	0290122
15	M8	16x0,6	0,3	30	10	25	0,0151	100	0290157
18	M8	16x0,6	0,3	33	11	28	0,0165	100	0290181
22	M8	16x0,8	0,4	38	11	31	0,0186	100	0290211
35	M8	20x1,0	0,4	51	11	46	0,0336	100	0290351
42	M8	20x1,0	0,4	58	11	55	0,0388	100	0290424

» Visible pipe clamp, lined

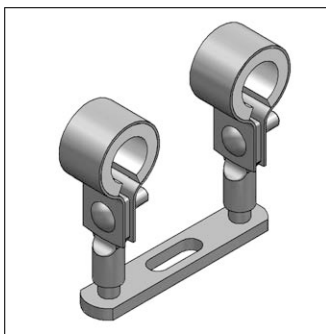
TPE



Visible pipe clamp



Visible pipe clamp



Option for assembly with Double holder + Eye nut



Specification

Application area: Pipe clamp for fastening pipes.
 Recommended accessories: duplo eye nut
 Closure: Screw coupling

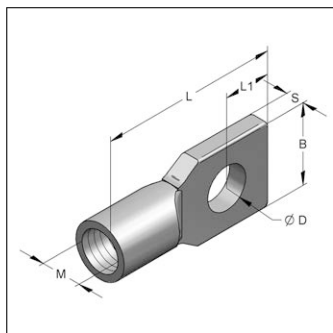
Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Colour sound insulation lining: white
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 5 mm

Remark: For suitable double holders see chapter 5. Determination of the permissible load using static methods from the breaking loads and taking into account a maximum permissible deformation of 1,5 mm or 2% of the maximum expandable pipe diameter.

OD [mm]	OD [inch]	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15		M6	20x1	0,65	56	33	31	0,0350	100	0311150
18	3/8	M6	20x1	0,65	57	31	34	0,0370	100	0311180
22	1/2	M6	20x1	0,65	61	31	38	0,0405	100	0311220

» Duplo eye nut with female thread



Duplo-Eye nut with female thread

Specification

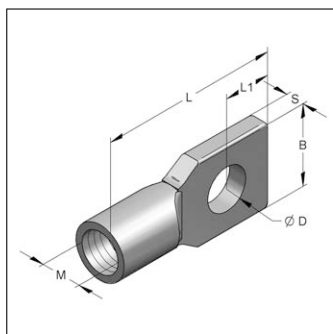
Application area: Duplo eye nut with female thread especially for the visible pipe clamp.

Technical data

Material: Cast zinc
Surface: raw

Female thread M	Hole diameter D [mm]	Length L [mm]	Edge distance hole L1 [mm]	Width B [mm]	Material thickness S [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	9	38	10	17,5	4	1	0,0175	100	0350133
M8	9	38	10	17,5	4	2	0,0166	100	0350141

» Eye adaptor



Eye adaptor

Specification

Application area: For mounting the visible pipe clamp, or between closure flanges.

Recommended accessories: Locking screws M8 according to DIN EN ISO 4017 and nuts according to DIN 934

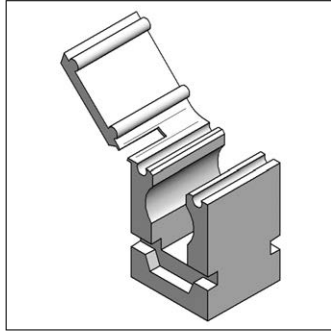
Technical data

Material: Malleable cast iron
Surface: galvanized

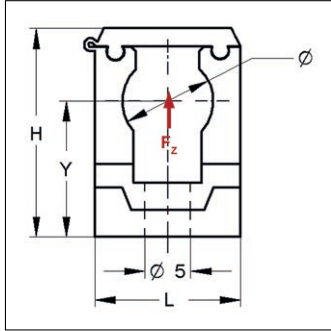
Female thread M	Hole diameter D [mm]	Length L [mm]	Edge distance hole L1 [mm]	Width B [mm]	Material thickness S [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	12	44	13	24	4	2,0	0,0269	50	0350152
M10	12	44	13	24	4	3,5	0,0247	50	0350174

» Pipe clip Clipmaster

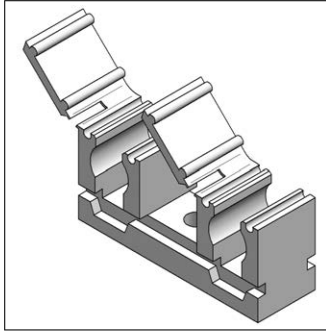
PA



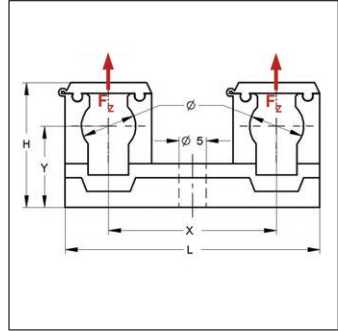
Single clip



Single clip



Double clip



Double clip

Specification

Application area: Weathering- and ageing proof clip for holding a pipeline.

Type of attachment : with wood screws DIN 96

Technical data

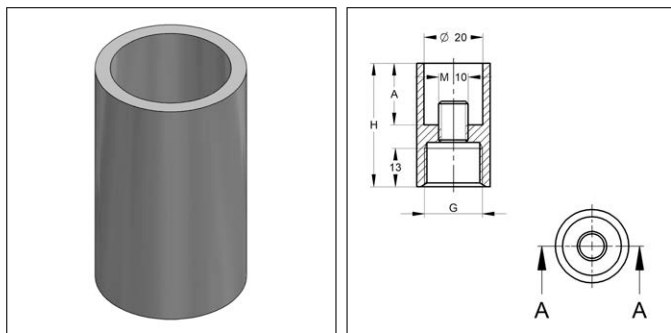
Material: Plastic

Material type: Polyamide 6

Temperature resistance: -40 up to 70 °C

Specification	OD [mm]	Load F_z [kN]	Height H [mm]	Length L [mm]	Center distance X [mm]	Axis height Y [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Single clip	8	0,09	23	16		14	0,0040	100	0401080
Single clip	10	0,25	23	16		15	0,0038	100	0401102
Single clip	12	0,25	23	16		15	0,0035	100	0401129
Single clip	15	0,25	28	20		17	0,0052	100	0401153
Single clip	18	0,35	31	23		19	0,0068	100	0401188
Single clip	22	0,35	35	29		20	0,0095	100	0401226
Single clip	28	0,35	40	35		23	0,0119	100	0401285
Single clip	35	0,35	47	43		26	0,0159	100	0401358
Double clip	10	0,25	23	47	31	15	0,0097	100	0410101
Double clip	12	0,25	23	47	32	15	0,0086	100	0410128
Double clip	15	0,25	28	55	36	17	0,0113	50	0410152
Double clip	18	0,35	31	60	39	19	0,0143	50	0410187
Double clip	22	0,35	35	73	45	20	0,0177	50	0410225

» Connection adaptor for pipe clamps



Connection adaptor for pipe clamps

Connection adapter

Specification

Application area: Thread adapter for pipe clamps with step thread.

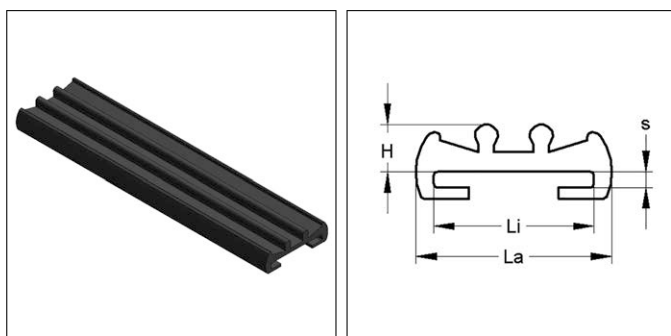
Technical data

Material: Steel
Surface: galvanized

Female thread G	Suitable for nut	Suitable for	Length H [mm]	Length female thread 2 A [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16	M10/M12	Maxima PSM, Omnia MB, Trabant	42	21	0,101	1	0830202
1/2"	M10/M12	Maxima PSM, Omnia MB, Trabant	42	21	0,0856	1	0830204
1/2"	M8/M10	Omnia MB, Trabant	36	15	0,0846	1	0830209

» Sound insulation lining

TPE / Silicone



Sound insulation lining

Sound insulation lining

Specification

Application area: Sound insulation linings for pipe clamps.

Dimension LixH [mm]	Material type	Colour	Width La [mm]	Clamping thickness s [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
20x4,5	TPE	black	26	2	0,100	50	720121401
25x4,5	TPE	black	28	2	0,123	50	720126001
20x6,0	TPE	black	26	2	0,130	50	720021801
25x6,0	TPE	black	28	3	0,164	50	720025001
30x6,0	TPE	black	36	3	0,213	40	720030701
35x6,0	TPE	black	40	4	0,250	40	720035801
50x6,0	TPE	black	56	5	0,341	20	720150801



» Sound insulation lining

Dimension LixH [mm]	Material type	Colour	Width La [mm]	Clamping thickness s [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
20x6,0	Silicone	red	26	2	0,154	50	7241208
25x6,0	Silicone	red	28	3	0,174	50	7241259
30x6,0	Silicone	red	36	3	0,226	50	7241305
35x6,0	Silicone	red	40	4	0,265	50	7241356
50x6,0	Silicone	red	56	5	0,363	50	7241518

MEFA sound insulation lining - technical data

MEFA pipe clamps with sound absorbing lining achieve the permissible level of LAF max ≤ 30 dB (A) according to DIN 4109 at the flow pressure of 3 bar used for weighting on a valve measuring wall with the standardized sound level LAG = 45 dB (A). Test certificates on request.

Material	Elastomer EPDM	Elastomer TPE	Silicone
Shore-hardness (DIN 53505)	60 +/- 5 Shore	60 +/- 3 Shore	60 +/- 5 Shore
Tensile strength	-	-	800 N/cm ²
Ageing, weather and ozone resistance	acc. to DIN 53508 and 53509	acc. to DIN 53508 and 53509	acc. to DIN 53508 and 53509
Temperature resistance	-35 °C up to +100 °C	-35 °C up to +100 °C	-50 °C up to +250 °C
Chemical resistance	Diluted acid and alkaline solutions, hot water, alcoholic solutions.	Diluted acid and alkaline solutions, hot water, alcoholic solutions.	Natural fats, glycerine, ethyl alcohol, alcoholic solutions.
Chemical unstable	Hot oils and fats, fuels, hydrocarbons, further information on request	Hot oils and fats, fuels, hydrocarbons, further information on request	Hot oils and fats, highly concentrated acid and alkaline solutions, hydrocarbons
fire performance (DIN 4102), Building class	B2 (normally flammable)	B2 (normally flammable)	B2 (normally flammable)

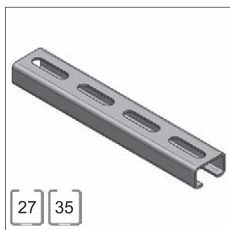
Alternatively, insulation inserts made of glass fibre tape (up to 450 °C) are also available

PROFILE RAILS 27-35

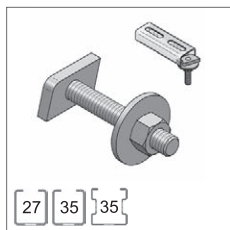
and accessories



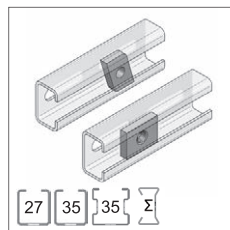
» MEFA rail system 27 - 35



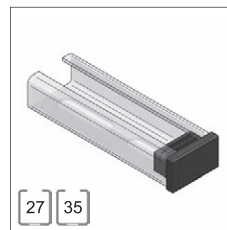
Profile rails 27 - 35



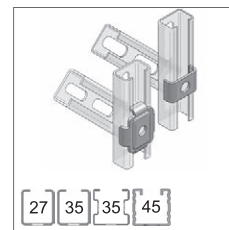
Hammer head screws



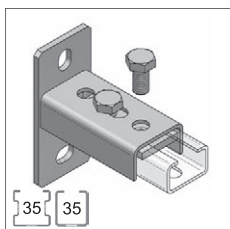
Threaded plate



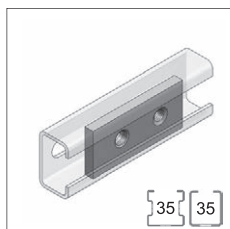
Protecting caps



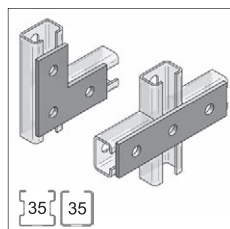
Profile holder



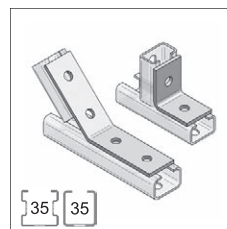
Holder 35



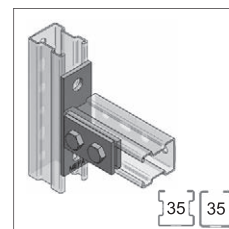
Threaded plate/ hole plate



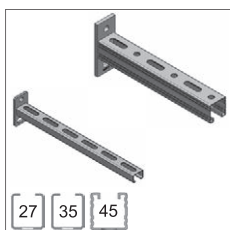
Flat connector



Angles



Connectors

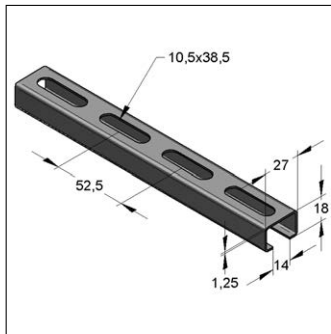


Consoles

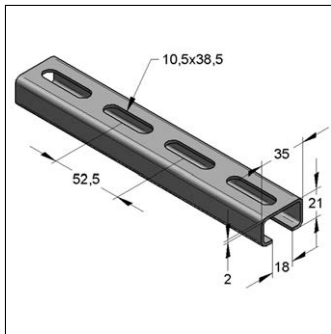
02a

» Profile rails, C-profile

27 35



Profile rail C-profile 27/18



Profile rail C-profile 35/21

02a



Specification

Application area: Lightweight profile rail.

Technical data

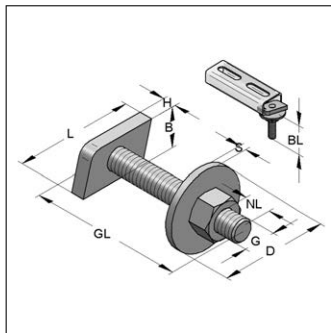
Material: Steel

Remark: For technical overview of mounting rails see end of chapter 2d. For stainless steel mounting rails see chapter 13. Coatings on request. A design in accordance with DIN EN 1993-1-2 (EC) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

Dimension [mm]	Length [m]	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
27/18/1,25	2	pre-galvanized	0,600	800	20	1240013
35/21/2,00	2	pre-galvanized	1,16	192	12	0800022
35/21/2,00	6	pre-galvanized	1,16	576	48	0800026

» Hammer head screw

27 35 35



Hammer head screw

Specification

Application area: Direct attachment of pipe clamps to profile rails.

Type of attachment : glide fast connection

Technical data

Material: Steel

Surface: galvanized

Remark: For load specifications see end of chapter 2b.

* Not suitable for M8/M10 step thread

** Not suitable for M10/M12 step thread

Thread G	Length thread GL [mm]	Profile type	Dimension hammer head LxBxH [mm]	Thickness washer S [mm]	Ø washer D [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	25	22	17x17x5	2	25	9,5	0,0290	100	0692320 *
M8	40	22	17x17x5	2	25	24,5	0,0339	100	0692330
M8	20	27	24x13x4	2	25	6,3	0,0246	100	0695289 *

» Hammer head screw

Thread G	Length thread GL [mm]	Profile type	Dimension hammer head LxBxH [mm]	Thickness washer S [mm]	Ø washer D [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	30	27	24x13x4	2	25	16,3	0,0279	100	0695300
M8	40	27	24x13x4	2	25	26,3	0,0311	100	0695327
M8	30	35, Stex 35	35x18x6	3	35	12,5	0,0594	50	0697044 *
M8	40	35, Stex 35	35x18x6	3	35	22,5	0,0626	50	0697051
M8	50	35, Stex 35	35x18x6	3	35	32,5	0,0659	50	0697060
M8	70	35, Stex 35	35x18x6	3	35	52,5	0,0729	50	0697075
M10	30	35, Stex 35	35x18x6	3	35	10,5	0,0692	50	0697540 **
M10	40	35, Stex 35	35x18x6	3	35	21,0	0,0743	50	0697560
M10	50	35, Stex 35	35x18x6	3	35	31,0	0,0794	50	0697570
M10	70	35, Stex 35	35x18x6	3	35	51,0	0,0896	50	0697590
M12	35	35, Stex 35	35x18x6	3	37	14,0	0,0853	50	0698040
M12	50	35, Stex 35	35x18x6	3	37	29,0	0,0963	50	0698050
M12	70	35, Stex 35	35x18x6	3	37	49,0	0,111	50	0698070

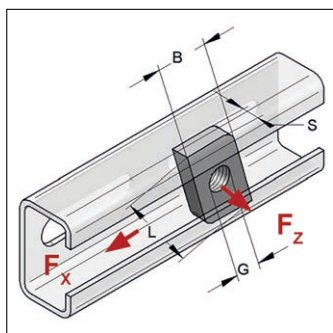
02a

» Threaded plate

27

35

35



Threaded plate

Specification

Application area: For direct mounting of pipe clamps or components.

Recommended accessories: hexagon head screw or threaded pin or rod, washer and hexagon nut

Type of attachment : glide fast connection

Technical data

Material: Steel

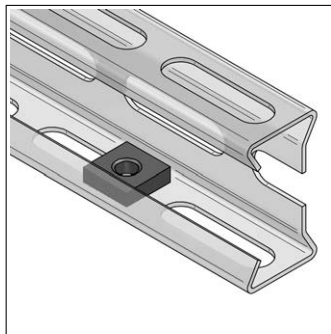
Surface: galvanized

Remark: For load specifications see end of chapter 2b.

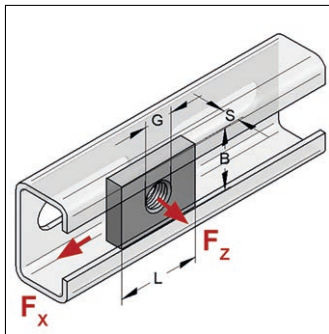
Profile type	Plate type	Thread G	Dimension LxBxS [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
27	28x15	M8	24x13x4	0,0072	100	0750069
35, Stex 35	38x17	M8	35x18x6	0,0235	100	0750077
35, Stex 35	38x17	M10	35x18x6	0,0225	100	0750085
35, Stex 35	38x17	M12	35x18x6	0,0212	100	0750093

» Threaded square plate

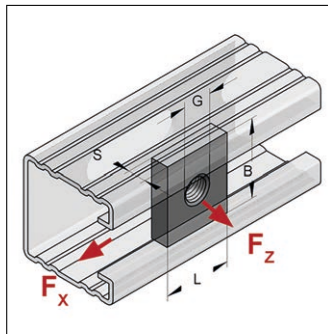
Σ 27 35 45



Threaded plate 17x17 in SIGNUM LP50



Threaded plate 30x22



Threaded plate 30x22

Specification

- Application area:** For fastening between profile rail and connecting component.
- Recommended accessories:** Hexagon screw or threaded bolt/rod, washer and hexagon nut
- Type of attachment :** For a non-slip connection with MEFA profile rails in combination with hexagon screws, threaded pins or rods (FK 4.6), washers and hexagon nuts. The 17x17 threaded plate can also be used for SIGNUM LP50 as a pipe clamp suspension with threaded pin or rod.
- Profile type:** LP50

Technical data

- Material:** Steel
- Surface:** galvanized

Remark: For load specifications see end of chapter 2c.

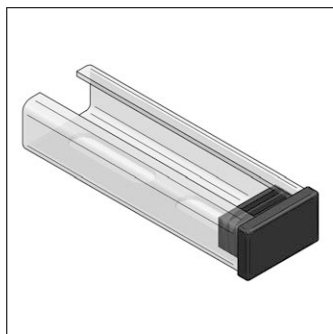
Thread G	Dimension LxBxS [mm]	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	17x17x5	LP50	0,0105	100	0740012
M8	17x17x5	LP50	0,0099	100	0740020
M10	17x17x5	LP50	0,0090	100	0740039
M8	30x22x6	27, 35	0,0293	100	0750808
M10	30x22x6	27, 35	0,0283	100	0750810
M8	35x30x6	35, 45	0,0477	50	0816112
M10	35x30x6	35, 45	0,0467	50	081612001
M12	35x30x6	35, 45	0,0454	50	081613801
M16	35x30x8	35, 45	0,0560	50	0816146

» Protecting cap

27

35

PE



Protecting cap

Specification

Application area: Plastic end caps for mounting rails. To protect the edges and as an optical cover.

Technical data

Material: Plastic
Material type: PE
Colour: black

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
27/18	0,0045	50	0809032
35/21	0,0058	50	0809012

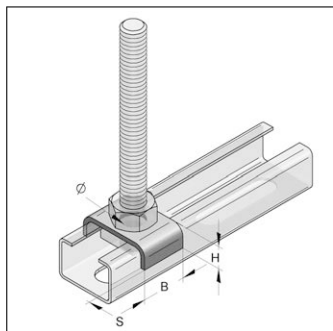
» Profile holder

27

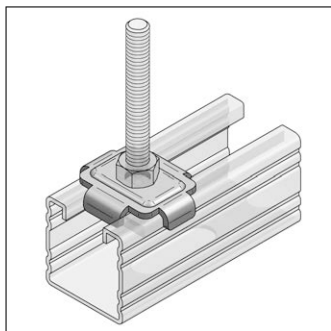
35

35

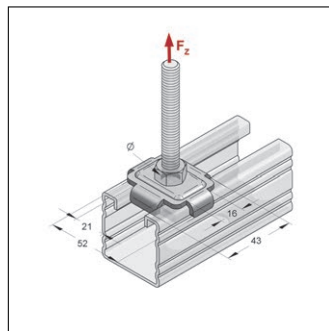
45



Profile holder



Profile holder combi



Specification

Application area: Connecting component for fixing two profile rails lying on top of each other or for rail mounting on the building structure. Prevents the profile rail from bending up.

Technical data

Material: Steel
Surface: galvanized

* part cannot be designed according to fire protection calculation

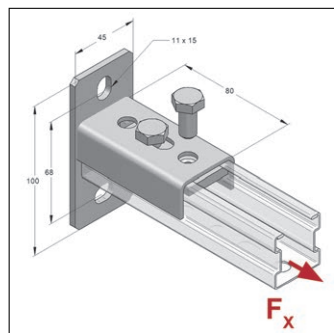
Description	Profile type	Hole-Ø [mm]	for thread	Dimension BxHxS [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Profile holder	27	10,5	M10	20x8,0x2			0,0129	100	0809504
Profile holder combi	35, 45, Stex 35	11,0	M10	43x10,1x3	10	4,7	0,0489	100	08095035
Profile holder combi	35, 45, Stex 35	13,0	M12	43x10,1x3	10	4,7	0,0469	100	08162945

» Profile holder

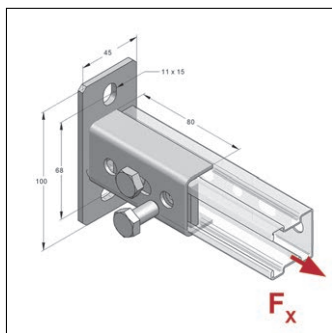
Description	Profile type	Hole-Ø [mm]	for thread	Dimension BxHxS [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Profile holder combi	35, 45, Stex 35	17,0	M16	43x10,1x3	10	4,7	0,0457	100	08163365 *

02a

» Holder 35



Holder 35 vertical



Holder 35 horizontal

Specification

Application area:	Holder for fastening profile rails directly to the building structure, complete with connecting components.
Scope of delivery:	Pre-assembled with: 2-hole threaded plate M10 and Hexagon screw M10
Profile type:	35, Stex 35

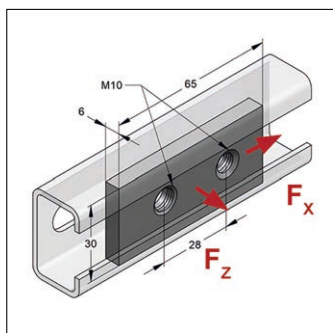
Technical data

Material:	Steel
Surface:	galvanized

Remark: Load specifications refer to the component, not to the connection.

Alignment of plate	Dimension base plate [mm]	Tightening torque [Nm]	Load F_x [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical	100x45x4	25	2	0,374	25	080213402
horizontal	100x45x4	25	2	0,374	25	080213502

» Threaded plate 2-hole



2-hole threaded plate

Specification

Application area: For fastening between profile rail and connecting component.

Profile type: 35, Stex 35

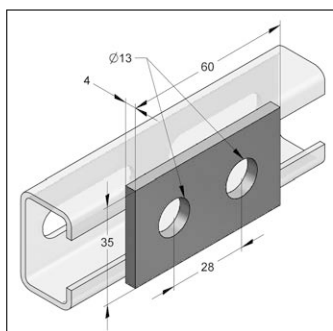
Technical data

Material: Steel

Surface: galvanized

Profile type	Thread	Dimension [mm]	Tightening torque [Nm]	Load F_x [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35, Stex 35	M10	65x30x6	25	1,1	5	0,0880	50	0816092

» 2-hole plate 35/4



2-hole plate 35/4

Specification

Application area: For connections between profile rails and components.

Profile type: 35, Stex 35

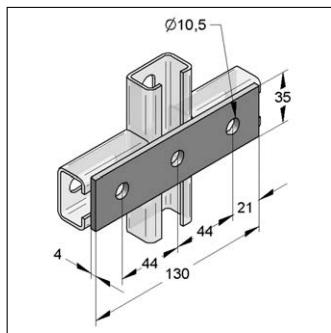
Technical data

Material: Steel

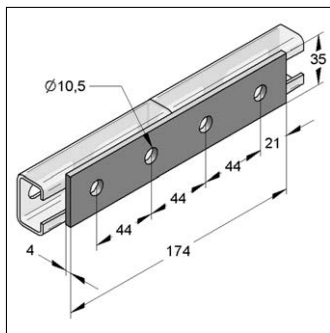
Surface: galvanized

Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
60x35x4	13	0,0588	50	0816086

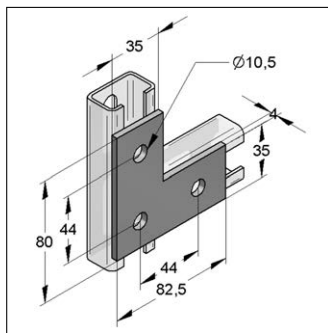
» Flat connector 35/4



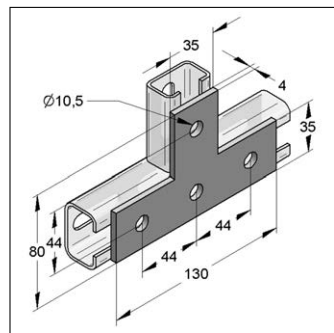
3-hole flat connector 35/4



4-hole flat connector 35/4



Flat connector 35/4 L-shape



Flat connector 35/4 T-shape

Specification

Application area: For butt joints of profiles.

Profile type: 35, Stex 35

Technical data

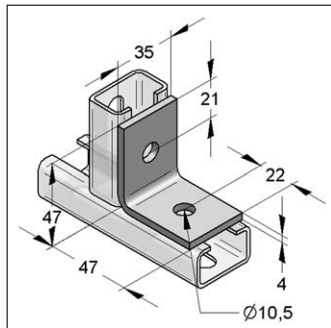
Material: Steel

Surface: galvanized

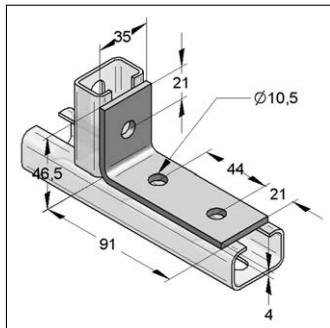
Remark: Permissible loads depend on the connection technology.

Description	Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Flat connector 3-hole	130,0x35x4	10,5	0,137	25	0814457
Flat connector 4-hole	174,0x35x4	10,5	0,184	25	0814465
Flat connector L-shape	82,5x80x4	10,5	0,135	25	0814430
Flat connector T-shape	130,0x80x4	10,5	0,185	25	0814449

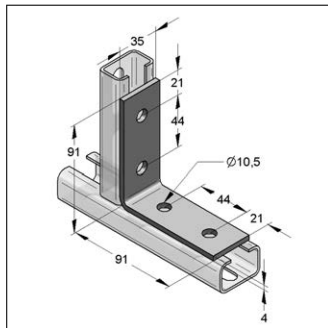
» Angle 35/4



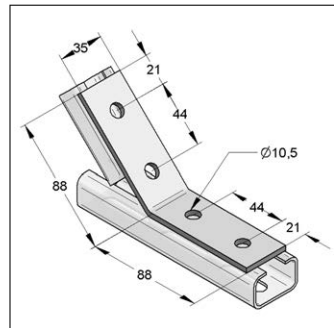
2-hole angle 35/4



3-hole angle 35/4



4-hole angle 35/4 90°



4-hole angle 35/4 135°

Specification

Application area: Angle components for connecting profile rails.

Profile type: 35, Stex 35

Technical data

Material: Steel

Surface: galvanized

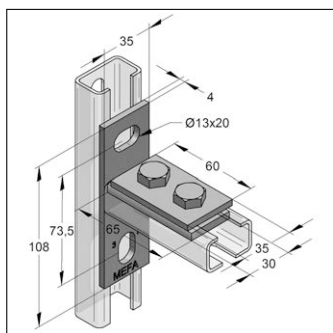
Remark: Permissible loads depend on the connection technology.

Description	Angle [°]	Bracket length [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	90	47x47,0	10,5	0,0932	100	0814510
3-hole	90	91x46,5	10,5	0,139	50	0814520
4-hole	90	91x91,0	10,5	0,185	50	0814530
4-hole	135	88x88,0	10,5	0,185	50	0814540

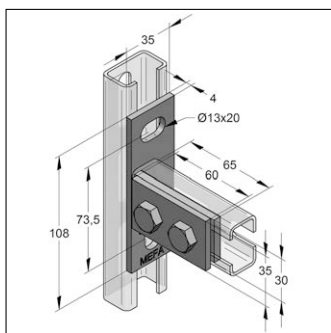
» Connector 35



02a



Connector 35 horizontal



Connector 35 vertical

Specification

Application area: Profile holder to connect two profile rails.
 Scope of delivery: 2-hole threaded plate and hexagon screw
 Type of attachment : not applicable as ceiling support or vertical use (hanging), no use as console connection

Technical data

Material: Steel
 Surface: galvanized

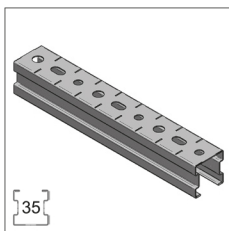
Dimension [mm]	Alignment of plate	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
108x35x4	horizontal	35, Stex 35	0,283	20	081645302
108x35x4	vertical	35, Stex 35	0,283	20	081655802

PROFILE RAILS STEX 35

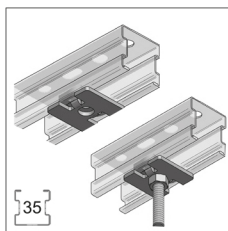
and accessories



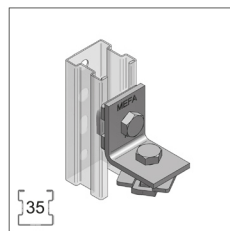
MEFA rail system Stex 35



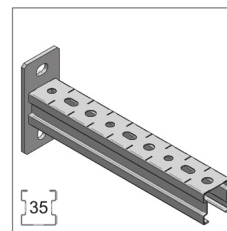
Profile rails Stex 35



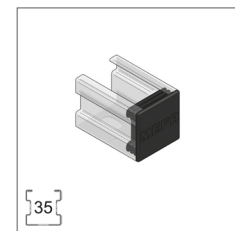
Stex 35 GP and GB



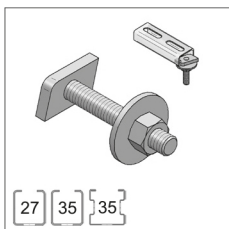
Stex 35-angle



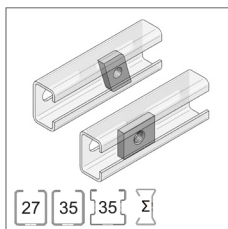
Stex 35-panels



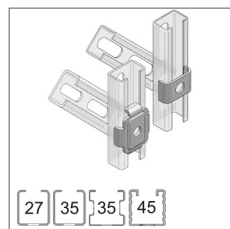
Stex 35 accessory



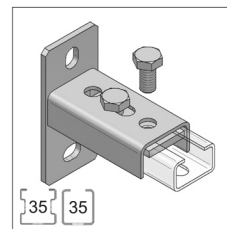
Hammer head screws



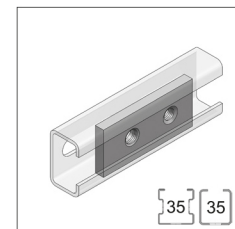
Threaded plate



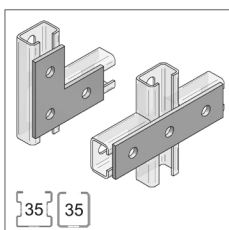
Profile holder



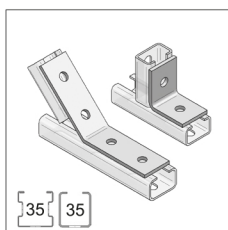
Holder 35



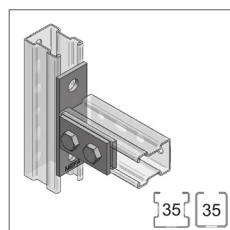
Threaded plate/ hole plate



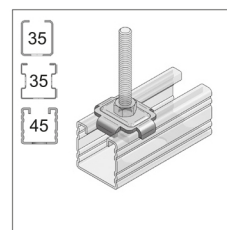
Flat connector



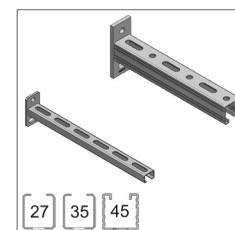
Angles



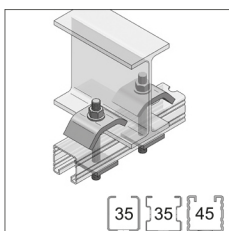
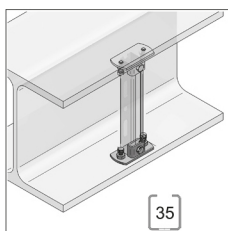
Connectors



Profile holder



Consoles

Girder connection
horizontal

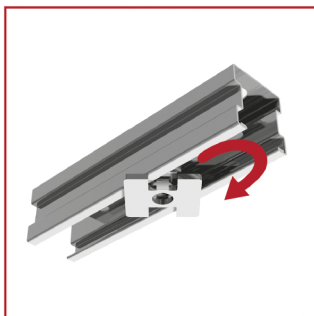
Girder clampings

Quick-fixing system Stex 35

02b



Insert Stex



Turn Stex

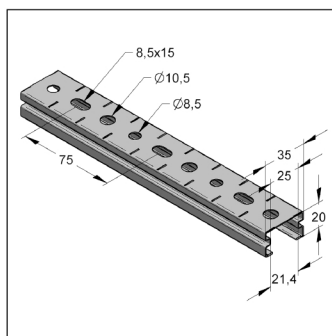


Position Stex

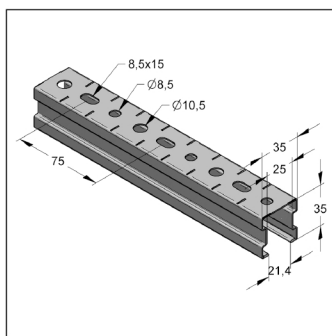


Counter Stex with nut

» Stex 35 profile rail, C-profile



Stex profile rail 35/20



Stex profile rail 35/35



Specification

Application area: Lightweight profile rail with quick connection option.

Specification: Marking for fit-up aid and to cut rails

Type of attachment : glide fast connection

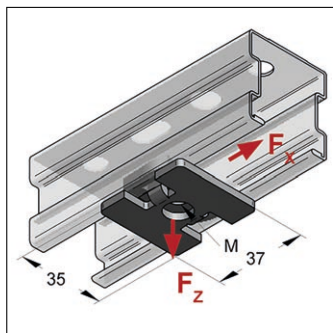
Technical data

Material: Steel

Remark: For load specifications and technical overview of mounting rails see end of chapter 2d. A design in accordance with DIN EN 1993-1-2 (EC) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

Dimension [mm]	Length [m]	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
35/20/0,8	2	pre-galvanized	0,640	336	12	1273520
35/20/0,8	3	pre-galvanized	0,640	504	54	1273523
35/35/1,0	2	pre-galvanized	1,03	252	12	1273538
35/35/1,0	3	pre-galvanized	1,03	378	36	1273539

» Stex 35 threaded plate GP



Stex-threaded plate

Specification

Application area: Quick mounting system for direct pipe clamp attachment or threaded connections on Stex profile rails.

Profile type: Stex 35

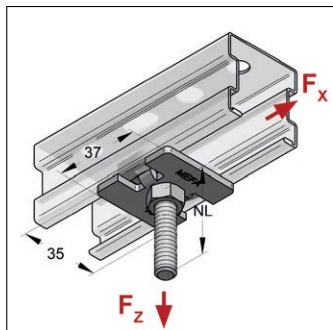
Technical data

Material: Steel
Surface: galvanized

Remark: For load specifications see end of chapter 2b.

Thread M	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	37x35x3	0,0390	50	127201001
M10	37x35x3	0,0383	50	127201101

» Stex 35 threaded bolt GB



Stex threaded bolt

Specification

Application area: Quick-fixing system for direct pipe clamp attachment to Stex profile rails with permanently integrated threaded bolt and nut.

Profile type: Stex 35

Technical data

Material: Steel
Surface: galvanized

Remark: For load specifications see end of chapter 2b.

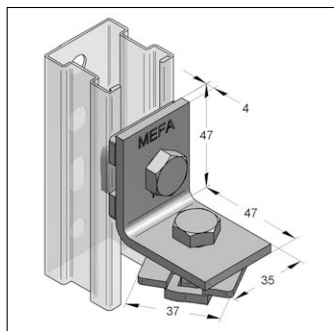
Thread	Length thread [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	50	36	0,0601	50	127805001
M8	70	56	0,0666	50	127807001
M8	90	76	0,0732	50	127809001
M8	110	96	0,0797	25	127811001
M8	130	116	0,0862	25	127813001
M10	50	34	0,0756	50	127005001
M10	70	54	0,0858	50	127007001

» Stex 35 threaded bolt GB

Thread	Length thread [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	90	74	0,0961	50	127009001
M10	110	94	0,106	25	127011001
M10	130	114	0,117	25	127013001

02b

» Stex - universal angle



Stex 35 universal angle, angle with two Stex threaded plates (threaded plates turnable)

Specification

Application area: Quick-fixing angle for connecting two Stex profile rails.

Profile type: Stex 35

Technical data

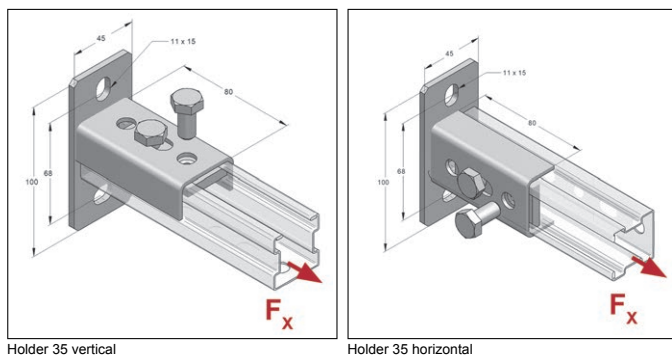
Material: Steel

Surface: galvanized

Remark: For load specifications see end of chapter 2b.

Description	Angle [°]	Bracket length [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	90	47x47	8,5	0,216	25	127201801

» Holder 35

**Specification**

Application area: Holder for fastening profile rails directly to the building structure, complete with connecting components.

Scope of delivery: Pre-assembled with: 2-hole threaded plate M10 and Hexagon screw M10

Profile type: 35, Stex 35

Technical data

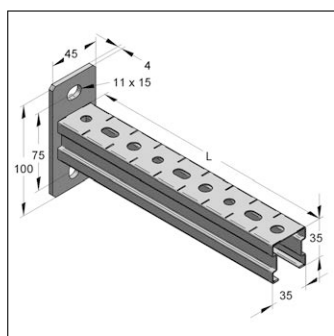
Material: Steel

Surface: galvanized

Remark: Load specifications refer to the component, not to the connection.

Alignment of plate	Dimension base plate [mm]	Tightening torque [Nm]	Load F_x [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical	100x45x4	25	2	0,374	25	080213402
horizontal	100x45x4	25	2	0,374	25	080213502

» Stex - console



Stex console 35/35

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel

Surface: galvanized

Global safety coefficient: 1,35

Remark: Permissible load at a yield strength of $\sigma_{zul} = 160 \text{ N/mm}^2$ and a max. deflection of $f = L/150$. All load specifications refer exclusively to static loads.

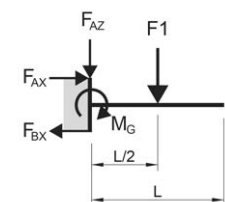
Dimension profile [mm]	Length console L [mm]	Dimension plate [mm]	Alignment of plate	Load F_1 [kN]	Load F_2 [kN]	Load F_{q0} [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35/35/1	150	100x45x4	vertical	2,05	1,02	13,65	0,285	25	1274150
35/35/1	225	100x45x4	vertical	1,37	0,68	6,07	0,362	25	1274225
35/35/1	300	100x45x4	vertical	1,02	0,51	3,41	0,440	25	1274300
35/35/1	375	100x45x4	vertical	0,82	0,41	2,18	0,517	25	1274375

» Stex - console

Dimension profile [mm]	Length console L [mm]	Dimension plate [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load Fq0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35/35/1	450	100x45x4	vertical	0,68	0,34	1,52	0,594	20	1274450
35/35/1	525	100x45x4	vertical	0,59	0,28	1,11	0,671	20	1274525

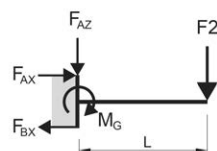
02b

Loading condition F1



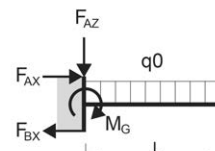
$$F_{AZ} = F1 \quad M_G = F1 \cdot L / 2$$

Loading condition F2



$$F_{AZ} = F2 \quad M_G = F2 \cdot L$$

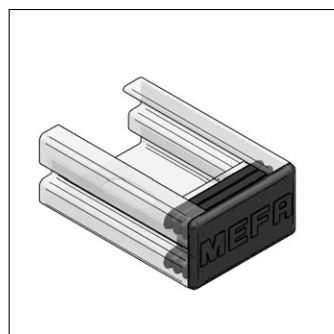
Loading condition q0



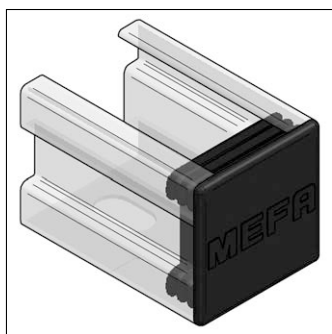
$$F_{AZ} = q0 \cdot L \quad M_G = q0 \cdot L^2 / 2$$

» Stex - protecting cap

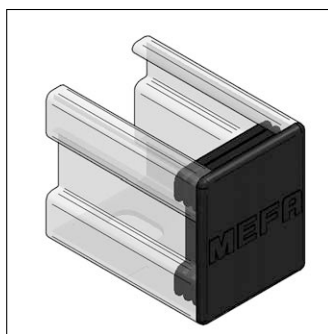
35 PE



Stex protecting cap 35/20



Stex protecting cap 35/35



Stex protecting cap 35/42

Specification

Application area: Plastic end caps for mounting rails. To protect the edges and as an optical cover.

Technical data

Material: Plastic
Material type: PE
Colour: black

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35/20	0,0028	50	1272017
35/35	0,0045	50	1272016
35/42	0,0050	50	1272024

» Admissible loading capacity

global safety coefficient $\gamma = 2$

Profile rail pre-galvanized	Stex threaded bolt, threaded plate			
				
	F_z [kN]	F_x [kN]	M10 4.6 [Nm]	M8 4.6 [Nm]
35/20/0,8	1,5	0,4	12	10
35/35/1,0		0,5		
35/42/1,5	2,5			

Profile rail pre-galvanized	Threaded plate 28 x 15 (24 x 13 x 4)		
			
	F_z [kN]	F_x [kN]	M8 4.6 [Nm]
27/18/1,25	1,4	0,5	10

Profile rail pre-galvanized	Threaded plate 38 x 17 (35 x 18 x 6)				
					
	F_z [kN]	F_x [kN]	M12 4.6 [Nm]	M10 4.6 [Nm]	M8 4.6 [Nm]
35/21/2,0	1,8	0,5	30	25	20
Stex 35/20/0,8					
Stex 35/35/1,0					
Stex 35/42/1,5					

Profile rail pre-galvanized	Threaded square plate 17 x 17 (17 x 17 x 5)				
					
	F_z [kN]	F_x [kN]	M12 4.6 [Nm]	M10 4.6 [Nm]	M8 4.6 [Nm]
22/16/2,0	4,5	0,5	20	15	10

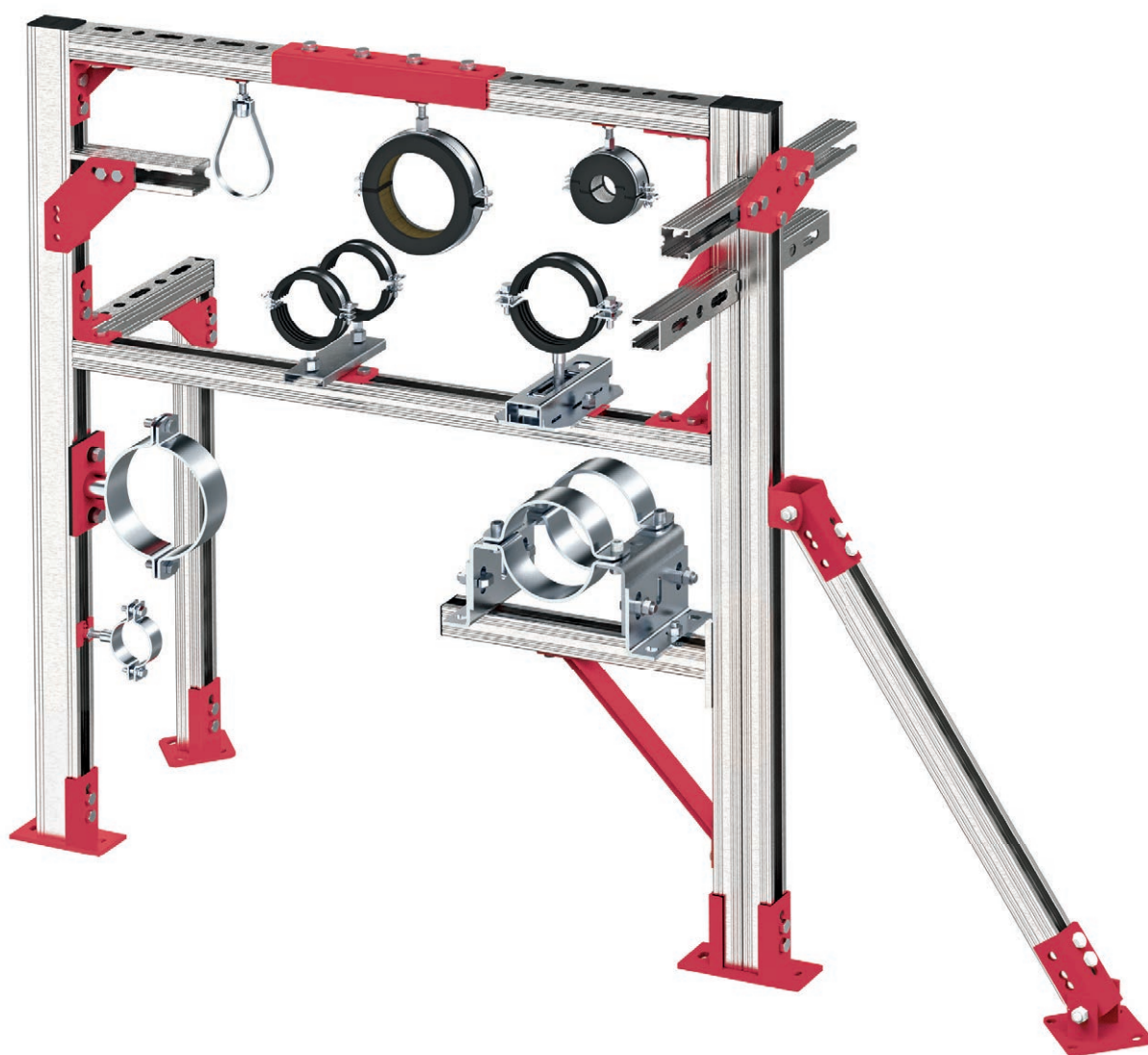
Profile rail pre-galvanized	Threaded square plate 30 x 22 (30 x 22 x 6)				
					
	F_z [kN]	F_x [kN]	M12 4.6 [Nm]	M10 4.6 [Nm]	M8 4.6 [Nm]
27/18/1,25	2,7	0,5	30	25	20
35/21/2,0	4,3				

Note: Load ratings and tightening torques for M8 and M6 screw connections are not technically feasible due to insufficient preload.

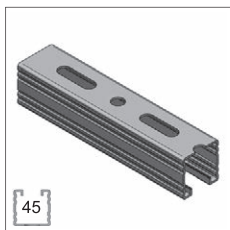
PROFILE RAILS 45

and accessories

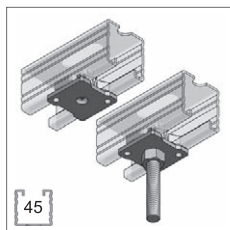
02c



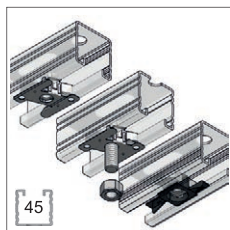
MEFA rail system 45



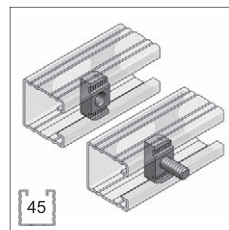
Profile rails 45



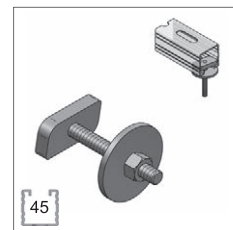
Stex 45 GP and GB



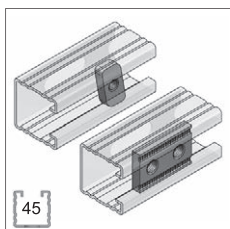
Stex 45 MP, MTB & MP-S



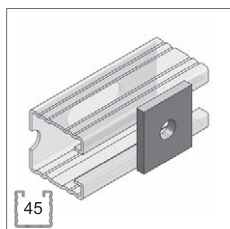
Tooth plates / -bolts



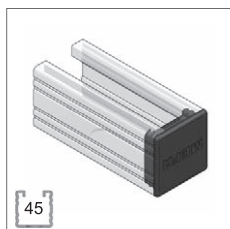
Hammer head screws



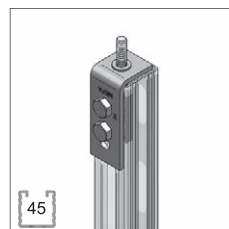
Threaded-/ tooth plates



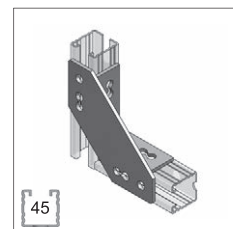
Perforated plates



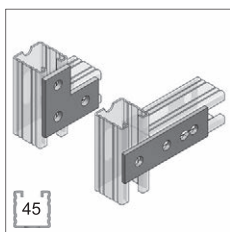
Protecting caps



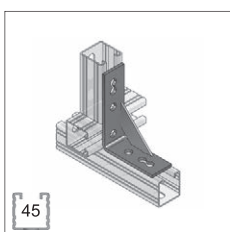
Head adapter



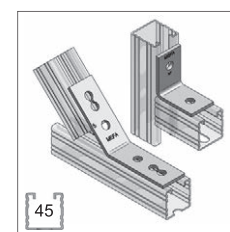
Universal knot



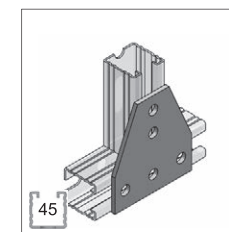
Flat connectors



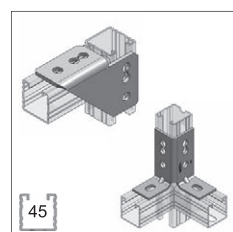
Knot triangles



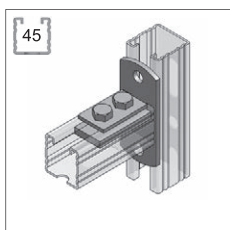
Angles



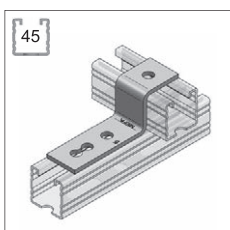
Lugs



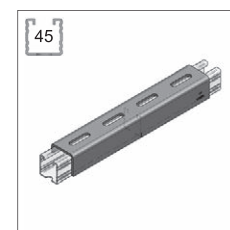
Corner angle



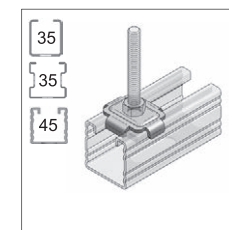
Connector



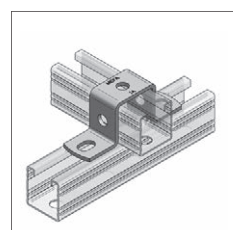
3-hole step angle



Connector



Profile holder



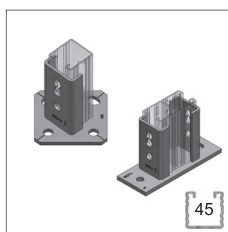
Head profile

02c

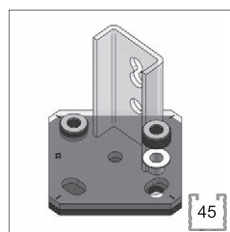
» MEFA rail system 45



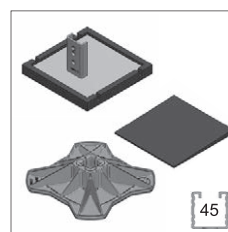
Suspending console



Holder



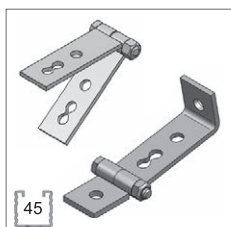
Sound-decoupling Set



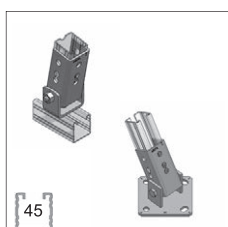
Rooftop holder/BIG
FOOT®/Universal wedge



Support joint/Turnbuckle



Joint connector



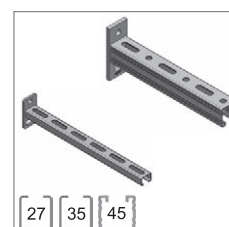
Joint holder



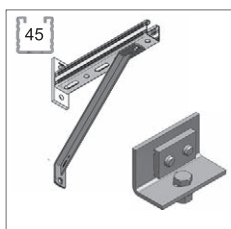
Consoles without
and with braces



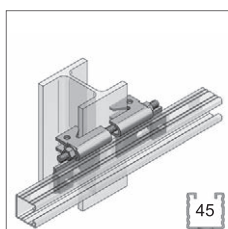
Carrier console



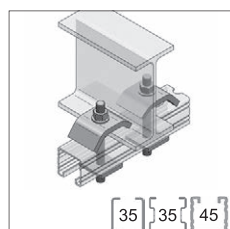
Consoles



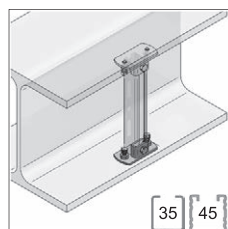
Brace 45°; Adapter angle



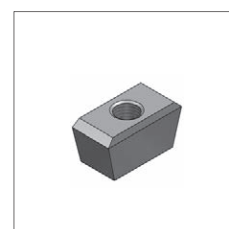
Girder connection vertical



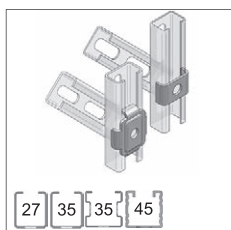
Girder connection
horizontal



Girder clampings



Wedge nut for ceiling



Profile holder

02c

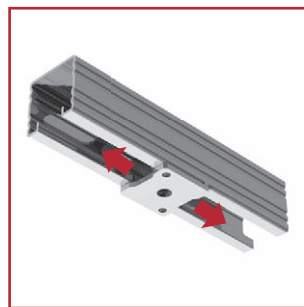
» Quick-fixing system Stex 45



Insert Stex



Turn Stex

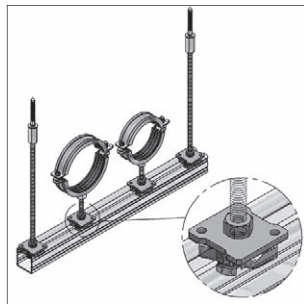


Position Stex



Counter with nut

02c

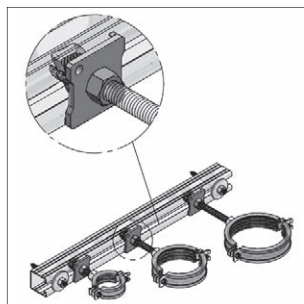


» Stex 45 threaded plate GP

optional with connection M8, M10 or M12

Your advantages:

- tooth and counter plate can be replaced by one-part Stex 45 threaded plate
- insert Stex 45 threaded plate into profile rail, rotate it 90°, plug threaded pin and counter nut in and screw pipe clamp onto profile rail
- tooth plate guarantees a form-locking connection with profile rail
- after turning, Stex 45 threaded plate automatically locks in profile rail
- after turning, Stex 45 threaded plate can be positioned in profile rail by moving
- threaded pins or threaded rods can be turned in easily

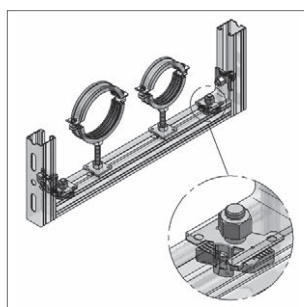


» Stex 45 threaded bolt GB

optional with threaded pin M8, M10 or M12

Your advantages:

- tooth and counter plate, as well as threaded pin can be replaced by onepart Stex 45 threaded bolt
- insert Stex 45 threaded bolt into profile rail, rotate it 90°, plug threaded pin and counter nut in and screw pipe clamp onto profile rail
- length- and height differences up to 30 mm can be balanced without any tools
- due to different bolt lengths, differences up to 130 mm can be realised

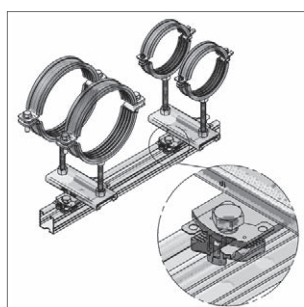


» Stex 45 mounting bolt MTB

for mounting rail constructions

Your advantages:

- insert mounting bolt into profile rail, rotate it 90°, position component and counter with nut
- circumstantial insertion of tooth bolts and tooth plates is not necessary
- holds itself in the mounting rail
- simplifies mounting of connection parts in rail constructions

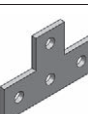


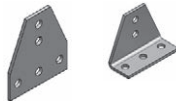
» Stex 45 mounting plate MP

for mounting the rail constructions or add-on-part

Your advantages:

- insert mounting bolt into profile rail, rotate it 90°, position component and screw the bolt
- circumstantial insertion of tooth bolt and tooth plates is not necessary
- profile rail keeps on its own, no holder necessary
- simplifies mounting of add-on-parts like sliding elements or connection parts in rail constructions

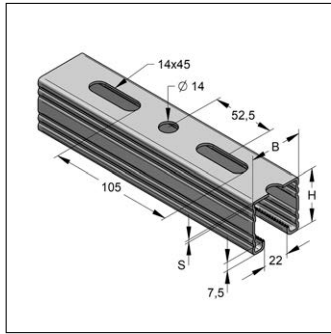
System components		Profile type							Recommended connecting parts				
		45/26	45/45	45/60	45/75	45/90	45/120	45/150	MP M12	MTB	Tooth plate M12	Threaded square plate M12	2-hole tooth plate M12
Identification - catalogue page		Part-No.							1280012	1280001	0818103	081613801	0818110
	2-hole angle 40/5	■	■	■	■	■	■	■	○	●	○	□▲○	
									Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	
	3-hole angle 40/5	■	■	■	■	■	■	■	○	●	○	□▲○	▲○
	L								Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1+ 1 MP
	K	■	■	■	■	■	■	■					3 hex. screws M12x35
	4-hole angle 40/5	■	■	■	■	■	■	■	○	●	○	□▲○	○
	45°								Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
	90°												
	135°	■	■	■	■	■	■	■					
	4-hole knot triangle	■	■	■	■	■	■	■	○	●	○	□▲○	○
	Page 2/33								Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
	4-hole Universal knot	□	■	□	□	□	□	□					
	5-hole knot triangle	■	■	■	■	■	■	■	○	●	○	□▲○	○
									Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	Quantity: 5 scope of delivery with nut	Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	Quantity: 2+ 1 MP Accessory: 5 hex. screws M12x25
	3-hole flat connector	■	■	■	■	■	■	■	○	●	○	▲○	
									Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
	4-hole flat connector	■	■	■	■	■	■	■	○	●	○	▲○	
									Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
	Flat connector 40/6 L-shape	■	■	■	■	■	■	■	○	●	○	▲○	
									Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
	Flat connector 40/6 T-shape	■	■	■	■	■	■	■	○	●	○	▲○	
									Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
	2-hole Universal knot	□	■	□	□	□	□	□	○	●	○	○	
									Quantity: 2 Accessory: 2 6 hex. screws 8.8 M12x25 *	Quantity: 2 scope of delivery with nut *	Quantity: 2 scope of delivery with nut *	Quantity: 2 Accessory: 2 6 hex. screws 8.8 M12x25*	
	4-hole corner angle	□	■	□	□	□	□	□	○	●	○	▲○	▲○
	left								Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
	right	□	■	□	□	□	□	□					
	Cross strap	■	■	■	■	■	■	■	□○	□○	●	▲○□	▲●
									Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	Quantity: 5 scope of delivery with nut	Quantity: 6 Accessory: 6 hex. screws 8.8 M12x25	Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	Quantity: 2+ 2 MP + 6 hex. screws M12x25
■ standard conditional ● optimal ○ alternative ▲ suitable for bolting in profile													

» System components		Profile type							Recommended connecting parts				
		45/26	45/45	45/60	45/75	45/90	45/120	45/150	Mounting plate M12	Mounting bolt	Tooth plate M12	Threaded square plate M12	2-hole tooth plate M12
													
Identification - catalogue page		Part-No.							1280012	1280001	0818103	081613801	0818110
	T-lug												
	not angled	0816574	■	■	■	■	■	■	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 1 2 threaded plate 4 hex. screws M12x25
	90° angled	0816870	■	■	■	■	■	■					
	4-hole corner plate	08165900	■	■	■	■	■	■					
									Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 4 hex. screws M12x25
	Angle connector	08123000	□	■	□	□	□	□					
	Angle connector 90°	08123200	□	■	□	□	□	□	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 1 Accessory: 2 hex. screws M12x25
	Angle connector 180°	08123100	□	■	□	□	□	□					
	Head profile 26	08162326	■										
	45	08162445		■					Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
	60	0816253			■								
	75	08162875				■							
	90	08162690					■						
	120	0816274						■					
	150	081628150						■					
	3-hole step angle 45	08141245		■									
	3-hole step angle 60	08141300			■				Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1 1 MP 3 hex. screws M12x25
	Profile holder combi												
	13 mm - hole Ø	08162945	■	■	■	■	■	■	Quantity: 1 Accessory: 1 hex. screw 8.8 M12x30 + H		Quantity: 1 Accessory: 1 hex. screw M12x30 + H	Quantity: 1 Accessory: 1 hex. screw M12/16x30+H	
	17 mm - hole Ø	08163365	■	■	■	■	■	■					
	Connector												
	45	08162002	□	■	■	■	■	■	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
	Holder												
	45/26-52 v/h	0812001	■	■		□	□	□	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory: 2 hex. screws 8.8 M12x25
	45/26-52 v/h	0812002	■	■	□		□	□					
	45/60-75 vertical	08121802		□	■		■						
	Holder												
	45/90	08120952					■		Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25		Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
	45/120	08121002						■					
	45/150	08121452						■					
	Joint holder												
	vertical / horizontal	08120601	■	■	■	■	□	□	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1+ 1 MP Acc.: 3 hex. screws M12x25
	Joint holder with plate												
	vertical / horizontal	08122601	■	■	■	■	□	□	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory: 2 hex. screws 8.8 M12x25
  	Connector	Page 2/36											
	Joint holder	Page 2/49											
	Joint connector	Page 2/46											
■ standard conditional ● optimal ○ alternative ▲ suitable for bolting in profile													

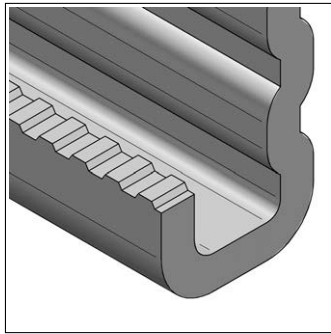
■ standard conditional ● optimal ○ alternative ▲ suitable for bolting in profile

» Profile rail 45, C-profile

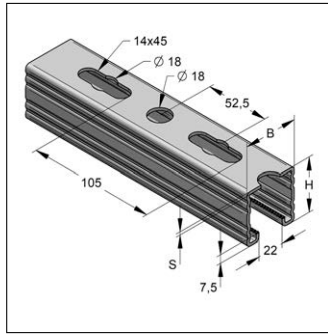
45



Profiles up to material thickness 2.0 mm



Detail of the gearing



Profiles from material thickness 2,5 mm and profile 45/60/2,0

02c



Specification

Application area: Medium weight mounting rail with quick connection option.

Specification: Toothed profile.

Type of attachment : form-locking connection

Technical data

Material: Steel

Remark: For technical overview of mounting rails see end of chapter 2d. For stainless steel mounting rails see chapter 13. Mounting rails with coatings on request. For hot-dip galvanized parts dimensional deviations of up to 1 mm are possible. A design in accordance with DIN EN 1993-1-2 (EC3) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

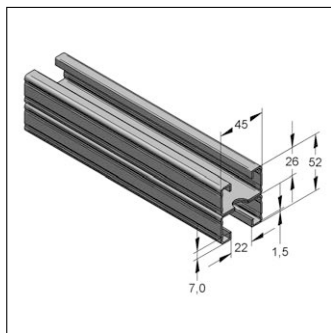
** MPA approved

* not certified acc. to RAL

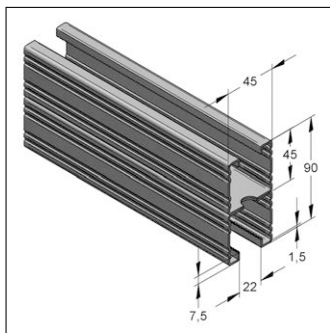
Dimension BxHxS [mm]	Length [m]	TSP	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
45/26/1,5	2	no	pre-galvanized	1,34	200	10	08202622
45/26/1,5	6	no	pre-galvanized	1,34	600	60	08202662
45/45/1,5	2	no	pre-galvanized	1,89	120	10	082045215
45/45/1,5	6	no	pre-galvanized	1,89	360	60	082045615
45/45/2,0	2	no	pre-galvanized	2,45	120	10	082045220
45/45/2,0	6	no	pre-galvanized	2,45	360	60	082045620
45/45/2,5	3	no	pre-galvanized	2,96	180	30	0820453251 **
45/45/2,5	6	no	pre-galvanized	2,96	360	30	0820456251 **
45/60/2,0	6	no	pre-galvanized	2,78	240	30	0810758 *
45/60/3,0	6	no	pre-galvanized	4,06	240	30	0810762
45/75/3,0	6	no	pre-galvanized	4,82	180	30	08207562
45/26/1,5	6	yes	Zinc-Magnesium	1,34	600	60	08202667 *
45/45/1,5	6	yes	Zinc-Magnesium	1,89	360	60	082045617 *
45/45/2,5	3	yes	hot-dip galvanized	3,21	180	30	0820453252
45/45/2,5	6	yes	hot-dip galvanized	3,21	360	30	0820456252
45/60/3,0	6	yes	hot-dip galvanized	4,35	240	30	0810770
45/75/3,0	6	yes	hot-dip galvanized	5,15	180	30	08207561 *

» Profile rail 45, C-profile

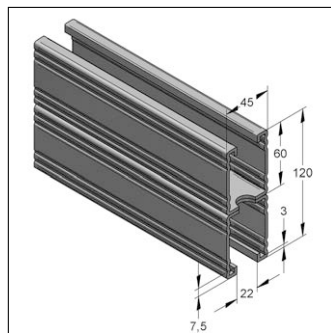
45



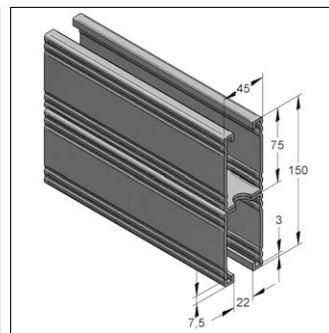
Profile rail C-profile 45/52/1,5



Profile rail C-profile 45/90/1,5



Profile rail C-profile 45/120/3,0



Profile rail C-profile 45/150/3,0



02c

Specification

Application area: Medium weight mounting rail with quick connection option.

Specification: Toothed C-profile rail. Double rails are perforated and welded.

Type of attachment : form-locking connection

Technical data

Material: Steel

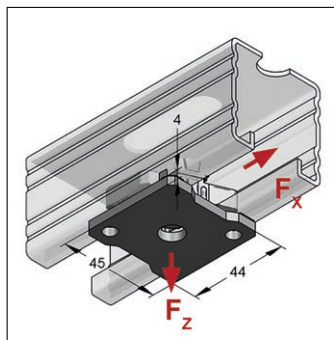
Remark: For technical overview of mounting rails see end of chapter 2d. For stainless steel mounting rails see chapter 13. Mounting rails with coatings on request. For hot-dip galvanized parts dimensional deviations of up to 1 mm are possible. A design in accordance with DIN EN 1993-1-2 (EC3) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

* not certified acc. to RAL

Dimension [mm]	Length [m]	TSP	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
45/52/1,5	6	no	pre-galvanized	2,69	240	30	08215262
45/90/1,5	6	no	pre-galvanized	3,78	180	24	0821901615
45/90/2,0	6	no	pre-galvanized	4,90	180	24	0821901620
45/90/2,5	6	no	pre-galvanized	5,92	180	24	0821901625
45/120/3,0	6	no	pre-galvanized	8,12	120	24	0810825
45/150/3,0	6	no	pre-galvanized	9,64	96	24	08225062
45/90/2,5	6	yes	hot-dip galvanized	6,35	180	24	0821902625
45/120/3,0	6	yes	hot-dip galvanized	8,63	120	24	0810833
45/150/3,0	6	yes	hot-dip galvanized	10,24	96	24	08225061 *

» Stex 45 threaded plate GP

45



Stex 45 threaded plate GP

02c

**Product description**

Optionally with connection M8, M10 or M12.

Your advantages:

- Instead of a toothed plate and a lock plate, use only the one-piece Stex 45 GP threaded plate.
- Insert threaded plate GP into profile rail, turn by 90°, screw in threaded pin, attach counter nut and mount pipe clamp.
- Form-locking connection in profile rail due to toothed plate.
- After turning, the Stex threaded plate automatically locks into the profile rail teeth. This is noticeable by a distinct clicking sound when sliding along the rail.
- Threaded pins or threaded rods can be screwed in effortlessly.

Specification

Application area: Quick fixing system for direct attachment of pipe clamps or threaded connections.

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

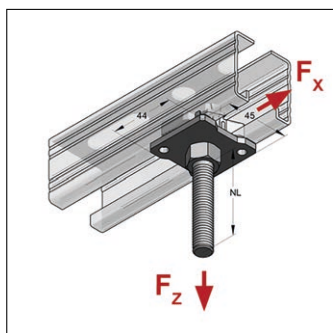
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

* not certified acc. to RAL

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	45x44x4	0,113	30	1280508 *
M10	45x44x4	0,111	30	1280510
M12	45x44x4	0,103	30	1280512

» Stex 45 threaded bolt GB



Stex 45 threaded bolt GB

Product description

Optionally with threaded pin M8, M10 or M12.

Your advantages:

- Instead of a toothed plate, threaded pin, and lock plate, now just the one-piece Stex 45 threaded bolt.
- Insert the GB threaded bolt into the mounting rail, rotate it 90°, place the lock nut on it, and screw on the pipe clamp.
- A form-fit connection in the mounting rail is achieved through the toothed plate.
- Continuously adjust length or height differences up to 30 mm without sawing or tools.
- With different bolt lengths, distances of up to 130 mm can be achieved.

Specification**Technical data**

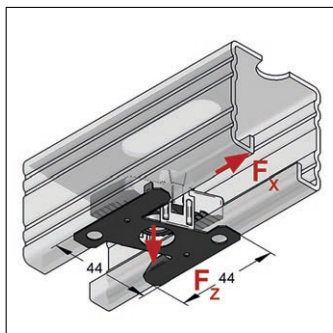
Application area:	Quick-fixing system for direct pipe clamp attachment to Stex profile rails with permanently integrated threaded bolt and nut.	Material:	Steel
Type of attachment :	form-locking connection	Surface:	galvanized
Profile type:	45		

Remark: For load specifications see end of chapter 2c.

Thread	Length thread [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	50	11	0,134	40	1281050
M8	70	31	0,141	20	1281070
M8	90	51	0,147	20	1281090
M8	110	71	0,154	20	1281110
M8	130	91	0,160	20	1281130
M10	50	10	0,147	40	1282050
M10	70	30	0,157	20	1282070
M10	90	50	0,166	20	1282090
M10	110	70	0,178	20	1282110
M10	130	90	0,188	20	1282130
M12	50	7	0,159	40	1283050
M12	70	27	0,174	20	1283070
M12	90	47	0,189	20	1283090
M12	110	67	0,203	20	1283110
M12	130	87	0,218	20	1283130

» Stex 45 mounting plate MP

45



Stex 45 mounting plate MP

02c

**Product description**

For assembling rail structures or attachments

Your advantages:

- Insert mounting plate into profile rail, turn by 90°, position, place component and screw in bolt.
- No complicated insertion of tooth bolts or tooth plates required.
- Self-retaining in MEFA profile rail.
- Simplifies the installation of add-on components such as sliding elements and connecting components in rail structures.

Specification

Application area: Quick fixing system for direct attachment of pipe clamps or threaded connections.

Recommended accessories: hexagon screw FK 8.8

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

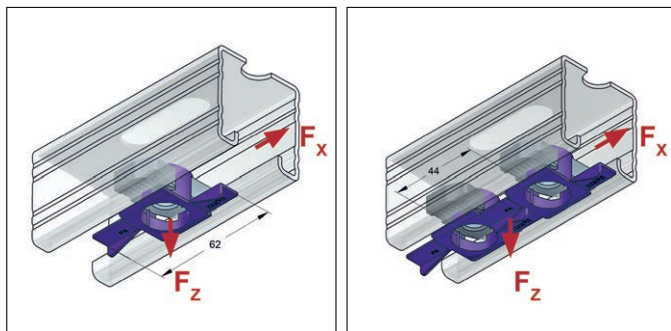
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

* not certified acc. to RAL

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	44x44	0,0590	30	1280006 *
M8	44x44	0,0576	30	1280008 *
M10	44x44	0,0553	30	1280010
M12	44x44	0,0524	30	1280012

» Stex 45 mounting plate MP-S, TSP®



Stex 45 mounting plate MP-S

two Stex MP-S pushed together results in hole distance 44 mm

02c



Product description

- Quick mounting for mounting rail 45
- For screwing into the rail slot
- Tooth plate S with zinc-nickel coating
- With plastic cage
- Area of application: Indoor areas with high humidity and outdoor areas (corrosivity categories C4 high)
- With M8, M10 or M12 thread

Specification

Application area: Quick fixing system for direct attachment of pipe clamps or threaded connections.

Recommended accessories: hexagon screw FK 8.8

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

Surface: Zinc-Nickel

Material cage: Plastic

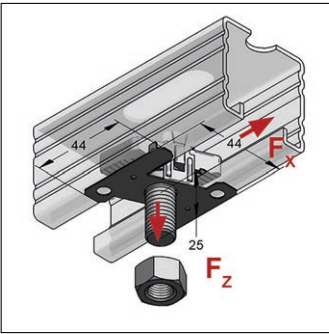
Materialname cage: Polyamide 6

Remark: For load specifications see end of chapter 2c.

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	38x62	0,0474	50	081810401
M10	38x62	0,0460	50	081810501
M12	38x62	0,0441	50	081810601

» Stex 45 mounting bolt MTB

45



Stex 45 mounting bolt MTB incl. nut M12



Product description

For assembly of rail constructions

Your advantages:

- Your advantages: Insert mounting bolt MTB into profile rail, turn by 90°, position, place component and tighten with nut.
- No complicated insertion of tooth bolts or tooth plates required.
- Self-retaining in MEFA profile rail.
- Simplifies the installation of connecting components in rail structures.

Specification

Application area: Quick-fixing system with permanently integrated threaded bolt and nut for the structural connection of components on profile rails.

Type of attachment : form-locking connection

Profile type: 45

Technical data

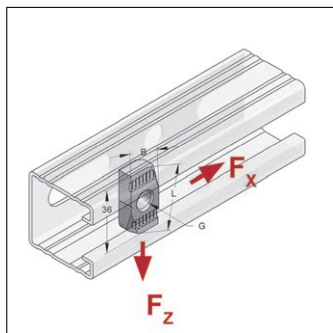
Material: Steel

Surface: galvanized

Remark: For load specifications see end of chapter 2c.

Thread	Length thread [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	40	25	0,0981	40	1280001

» Tooth plate S



Tooth plate S



02c

Specification

Application area: For connecting two profile rails or fastening connecting parts.

Recommended accessories: Hexagon screw, threaded bolt/rod, washers, hexagon nut

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

Surface: galvanized

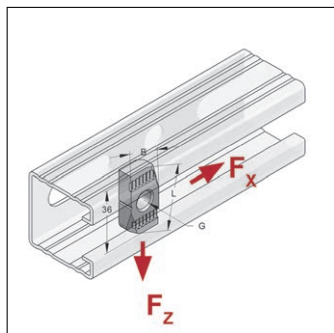
Remark: For load specifications see end of chapter 2c.

* part is not designed according to fire protection calculation

Thread G	Dimension LxB [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	34x21	0,0525	100	0818000 *
M8	36x20	0,0456	100	081810103 *
M10	36x20	0,0441	100	081810203
M12	36x20	0,0423	100	081810303

» Tooth plate S, TSP®

45



Tooth plate S

02c

**Specification**

Application area: For connecting two profile rails or fastening connecting parts.

Recommended accessories: Hexagon screw, threaded bolt/rod, washers, hexagon nut

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

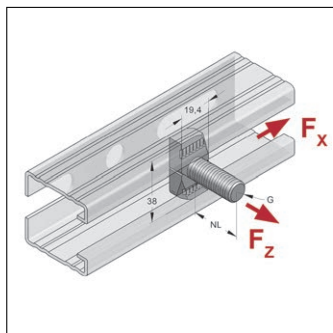
Surface: Zinc-Nickel

Remark: For load specifications see end of chapter 2c.

Thread G	Dimension LxB [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	36x20	0,0453	100	081810102/zn
M10	36x20	0,0438	100	081810202/zn
M12	36x20	0,0423	100	081810303/zn

» Tooth bolt

45



Tooth bolt

Specification

Application area: Toothed plate with bolt for direct attachment of pipe clamps to profile rails or connection of profile rails.

Recommended accessories: washer and hexagon nut

Type of attachment : form-locking connection

Profile type: 45

Technical data

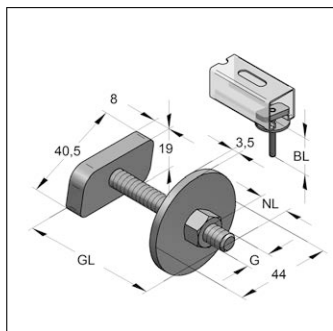
Material: Steel
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

Thread G	Length thread [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	26	19	0,0713	100	081693602
M10	26	19	0,0677	100	081694402
M12	31	24	0,0792	100	081695202

» Hammer head screw 45

45



Hammer head screw

Specification

Application area: Direct attachment of pipe clamps to profile rails.

Type of attachment : glide fast connection

Technical data

Material: Steel
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

* Not suitable for M8/M10 step thread

** Not suitable for M10/M12 stepped threads

Thread G	Length thread GL [mm]	Profile type	Dimension [mm]	Thickness washer [mm]	Ø washer [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	35	45	40,5x19x8	3,5	44	9,5	0,0987	50	0698735 *
M8	40	45	40,5x19x8	3,5	44	14,5	0,100	50	0698740
M8	50	45	40,5x19x8	3,5	44	24,5	0,104	50	0698750

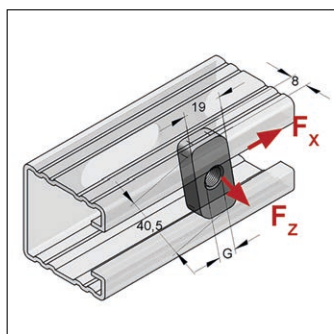
» Hammer head screw 45

Thread G	Length thread GL [mm]	Profile type	Dimension [mm]	Thickness washer [mm]	Ø washer [mm]	Usable length NL [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	70	45	40,5x19x8	3,5	44	44,5	0,110	50	0698770
M10	35	45	40,5x19x8	3,5	44	8,0	0,109	50	0699235 **
M10	50	45	40,5x19x8	3,5	44	23,0	0,116	50	0699250
M10	70	45	40,5x19x8	3,5	44	43,0	0,127	50	0699270
M12	40	45	40,5x19x8	3,5	44	11,0	0,123	50	0699740
M12	50	45	40,5x19x8	3,5	44	21,0	0,130	50	0699750
M12	70	45	40,5x19x8	3,5	44	41,0	0,145	50	0699770

02c

» Threaded plate 45

45



Threaded plate

Specification

Application area: For direct mounting of pipe clamps or components.

Recommended accessories: Hexagon screw or threaded bolt/rod, washers and hexagon nut

Type of attachment : glide fast connection

Technical data

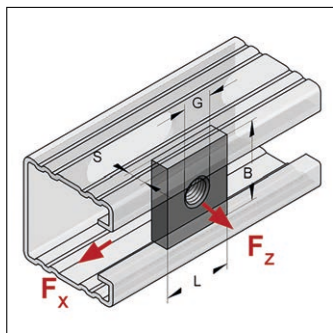
Material: Steel

Surface: galvanized

Remark: For load specifications see end of chapter 2c.

Profile type	Plate type	Thread G	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	40x22	M8	40,5x19x8	0,0421	100	0750107
45	40x22	M10	40,5x19x8	0,0407	100	0750115
45	40x22	M12	40,5x19x8	0,0391	100	0750123

» Threaded square plate



Threaded plate 30x22

Specification

Application area: For fastening between profile rail and connecting component.

Recommended accessories: Hexagon screw or threaded bolt/rod, washer and hexagon nut

Type of attachment : glide fast connection

Profile type: 35, 45

Technical data

Material: Steel

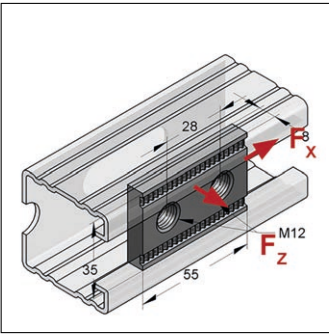
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

Thread G	Dimension LxBxS [mm]	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	35x30x6	35, 45	0,0477	50	0816112
M10	35x30x6	35, 45	0,0467	50	081612001
M12	35x30x6	35, 45	0,0454	50	081613801
M16	35x30x8	35, 45	0,0560	50	0816146

» 2-hole tooth plate

45



Tooth plate 2-hole

02c



Specification

Application area: Toothed plate for connecting two profile rails or fastening connecting parts.

Recommended accessories: Hexagon screw FK 8.8, connecting parts

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

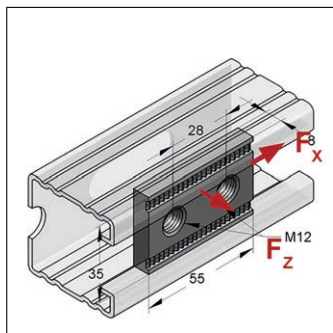
Surface: galvanized

Remark: For load specifications see end of chapter 2c.

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	55x35x8	0,106	50	0818110

» 2-hole tooth plate, TSP®

45



Tooth plate 2-hole



02c

Specification

Application area: Toothed plate for connecting two profile rails or fastening connecting parts.

Recommended accessories: Hexagon screw FK 8.8, connecting parts

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Steel

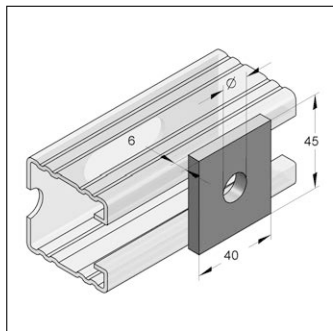
Surface: Zinc-Nickel

Remark: For load specifications see end of chapter 2c.

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	55x35x8	0,106	50	0818110/zn

» Perforated plate

45



Perforated plate

Specification

Application area: Perforated plate without thread for connecting profile rails.

Profile type: 45

Technical data

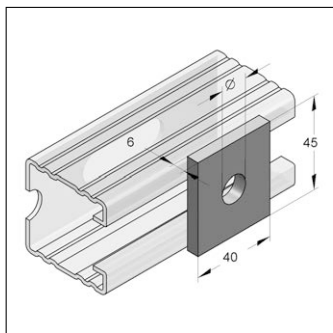
Material: Steel

Surface: galvanized

Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45x40x6	13	0,0801	50	0814016
45x40x6	17	0,0756	50	0814017

» Perforated plate, TSP®

45



Perforated plate

02c



Specification

Application area: Perforated plate without thread for connecting profile rails.

Profile type: 45

Technical data

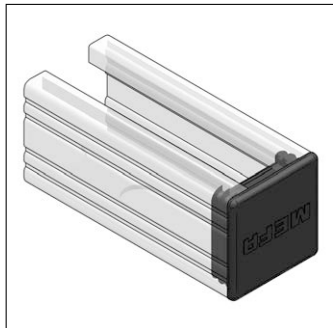
Material: Steel

Surface: hot-dip galvanized

Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45x40x6	13	0,0834	50	0814016/fvz

» Protecting cap 45

45 XLV PE



Protecting cap

Specification

Application area: Plastic end caps for mounting rails. To protect the edges and as an optical cover.

Technical data

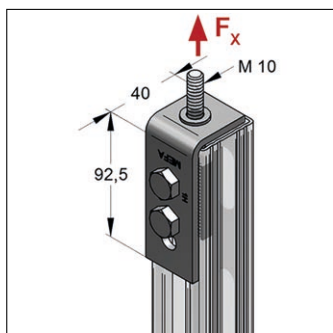
Material: Plastic

Material type: PE

Colour: black

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/26	0,0065	50	0819005
45/45	0,0078	50	0819036
45/60	0,0146	50	0819042
45/75	0,0188	50	0819046

» Head adapter



Head adapter K

Specification

Application area: Connection angle for the head-side thread connection for profile rails.

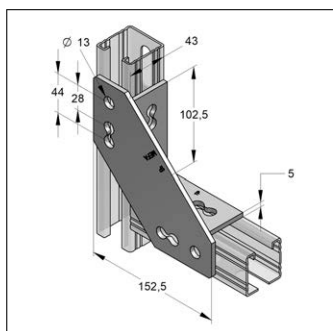
Profile type: 45/45

Technical data

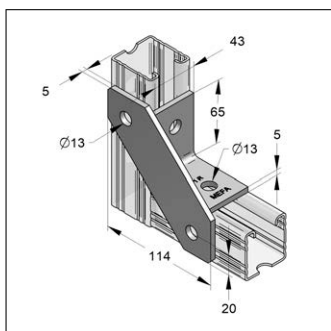
Material: Steel
Surface: galvanized

Description	Thread	Load F_x [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Head adapter	M10	1	0,398	10	081656710

» Universal knot



Universal knot 4-hole



Universal knot K 2-hole

Specification

Application area: Corner joint of C-profile channels. Even with changing rail slot position.

Profile type: 45

Technical data

Material: Steel
Surface: galvanized

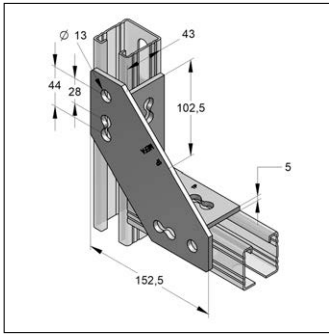
Remark: Permissible loads depend on the connection technology.

* only for moment-free rail connections

Dimension [mm]	Specification	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
152,5x152,5x5	4-hole	0,826	10	08141602
114,0x114,0x5	2-hole	0,459	25	08141603 *

» Universal knot, TSP®

45



Universal knot 4-hole

02c

**Specification**

Application area: Corner joint of C-profile channels. Even with changing rail slot position.

Profile type: 45

Remark: Permissible loads depend on the connection technology.

Technical data

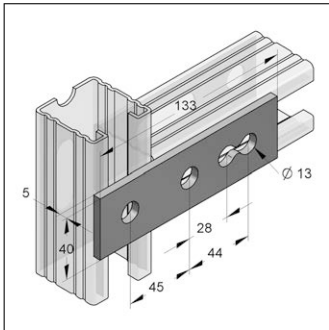
Material: Steel

Surface: Zinc-Nickel

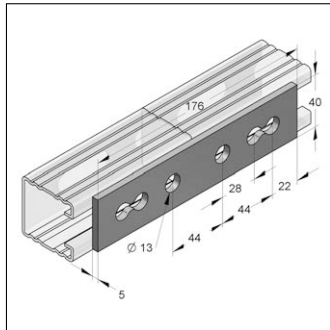
Dimension [mm]	Specification	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
152,5x152,5x5	4-hole	0,826	10	08141602/zn

» Flat connector 45

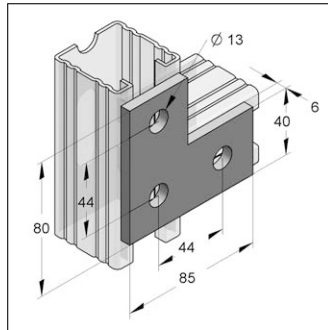
45



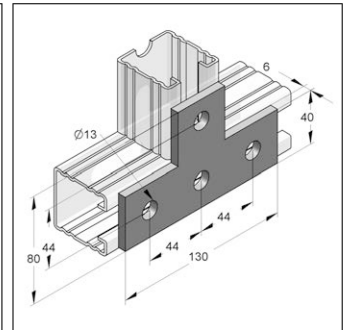
3-hole flat connector 40/5



4-hole flat connector 40/5



L-shaped flat connector 40/5



T-shaped flat connector 40/6

Specification

Application area: For butt joints of profiles.

Profile type: 45

Technical data

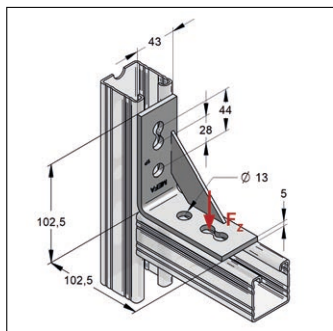
Material: Steel

Surface: galvanized

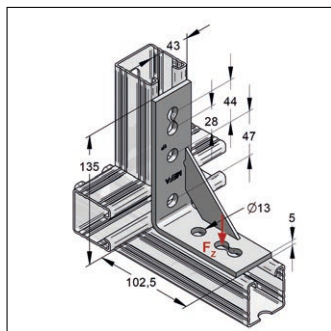
Remark: Permissible loads depend on the connection technology. Only for moment-free rail connections.

Description	Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Flat connector 3-hole	133x40x5	13	0,192	25	0814331
Flat connector 4-hole	176x40x5	13	0,250	25	0814349
Flat connector L-shape	85x80x6	13	0,221	25	0814307
Flat connector T-shape	130x80x6	13	0,301	25	0814315

» Knot triangle



4-hole knot triangle



5-hole knot triangle

Specification

Application area: Corner connection of C-profile rails 45.

Profile type: 45

Technical data

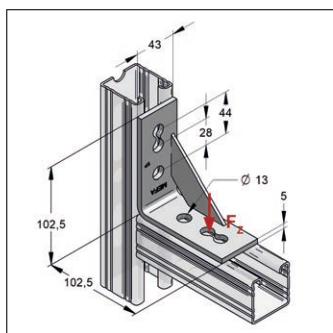
Material: Steel

Surface: galvanized

Remark: Load specifications without C-profile refer to the component not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

Description	Angle [°]	Bracket length [mm]	Hole-Ø [mm]	Load F_z without profile [kN]	Load F_z with profile [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
4-hole	90	102,5x102,5	13	2	6	0,350	25	08140702
5-hole	90	135,0x102,5	13	2	6	0,401	25	08141702

» Knot triangle, TSP®



4-hole knot triangle

**Specification**

Application area: Corner connection of C-profile 45.

Profile type: 45

Technical data

Material: Steel

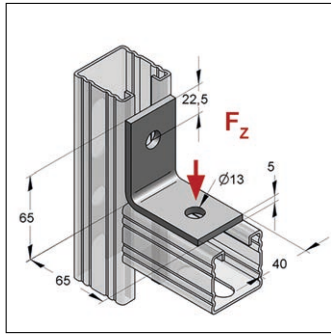
Surface: Zinc-Nickel

Remark: Load specifications without C-profile refer to the component, not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

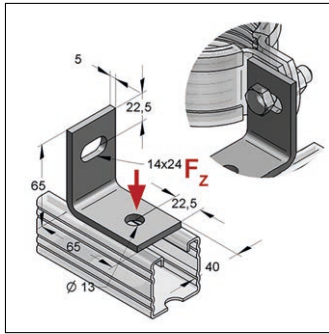
Description	Angle [°]	Bracket length [mm]	Hole-Ø [mm]	Load F_z without profile [kN]	Load F_z with profile [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
4-hole	90	102,5x102,5	13	2	6	0,350	25	08140702/zn

» Angle 40/5

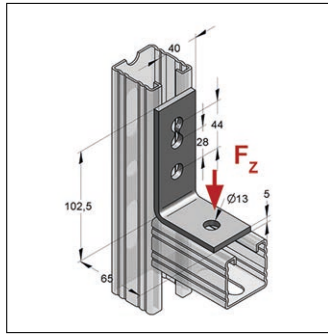
45



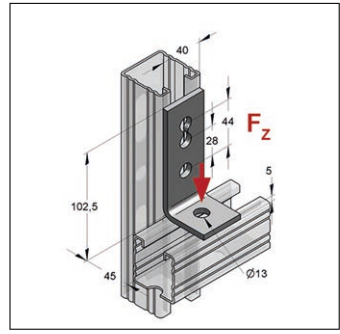
2-hole angle 40/5



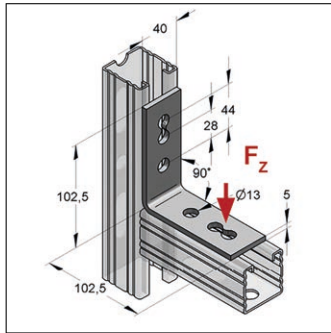
2-hole angle 40/5, with elongated hole, vertical



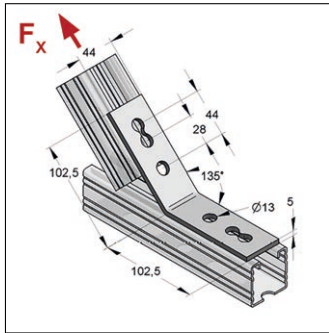
3-hole angle 40/5 L



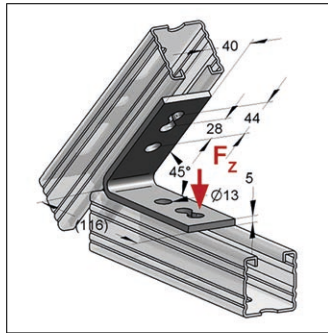
3-hole angle 40/5 K



4-hole angle 40/5 90°



4-hole angle 40/5 135°



4-hole angle 40/5 45°

Specification

Application area: Angle components for connecting profile rails.

Profile type: 45

Technical data

Material: Steel

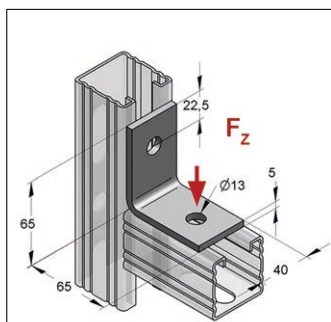
Surface: galvanized

Remark: Load specifications without C-profile refer to the component not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

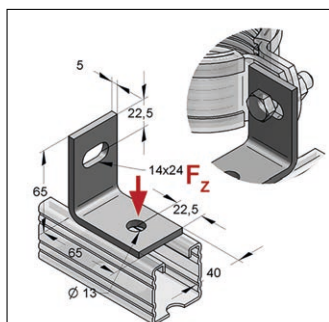
Description	Angle [°]	Bracket length [mm]	Load F_Z without profile [kN]	Load F_Z with profile [kN]	Load F_X [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	90	65,0x65,0	1	2,5		0,184	50	081402400
2-hole horizontal elongated hole horizontal	90	65,0x65,0	1	2,5		0,178	50	08147300
3-hole L	90	102,5x65,0	1	2,5		0,234	25	08140300
3-hole K	90	102,5x45,0	1	2,5		0,202	50	08140400
4-hole	90	102,5x102,5	1	2,5		0,283	50	08140500
4-hole	135	102,5x102,5			6,6	0,293	50	08140600
4-hole	45	116,0x116,0		2,5		0,336	25	08141000

» Angle 40/5, TSP®

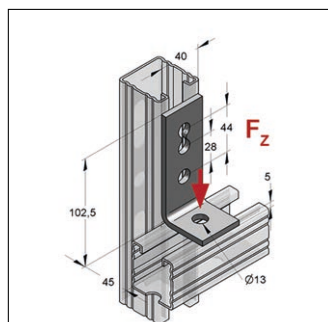
45



2-hole angle 40/5



2-hole angle 40/5, with elongated hole, vertical



3-hole angle 40/5 K

02c



Specification

Application area: Angle components for connecting profile rails.

Profile type: 45

Technical data

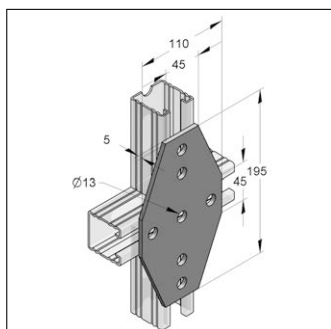
Material: Steel

Remark: Load specifications without C-profile refer to the component, not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

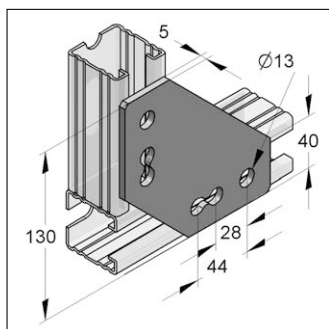
Description	Angle [°]	Bracket length [mm]	Load F_Z without profile [kN]	Load F_Z with profile [kN]	Surface	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	90	65,0x65	1	2,5	hot-dip galvanized	0,193	50	081402400/fvz
2-hole elongated hole horizontal	90	65,0x65	1	2,5	Zinc-Nickel	0,178	50	08147300/zn
3-hole K	90	102,5x45	1	2,5	Zinc-Nickel	0,202	50	08140400/zn

» Plate

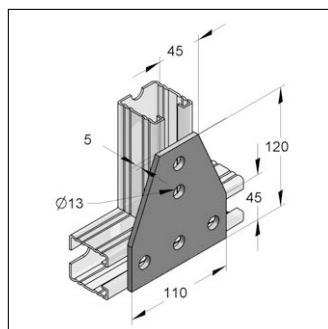
45



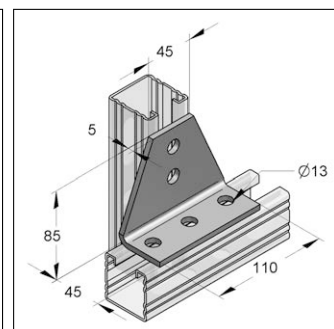
Cross plate



4-hole corner plate



T-plate, not angled



T-plate, angled 90°

Specification

Application area: For butt joints of profiles.

Profile type: 45

Technical data

Material: Steel

Surface: galvanized

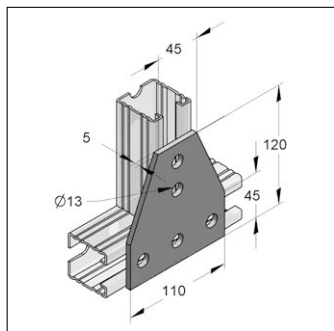
Remark: Permissible loads depend on the connection technology.

Description	Angle [°]	Bracket length [mm]	Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Cross plate			195x110x5	13	0,626	10	0816582
Corner plate			130x40x5	13	0,417	10	08165900
T-plate			120x110x5	13	0,404	25	0816574

» Plate

Description	Angle [°]	Bracket length [mm]	Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-plate angled	90	85x45		13	0,412	25	0816870

» Plate, TSP®



T-plate, not angled



Specification

Application area: For butt joints of profiles.
 Profile type: 45

Technical data

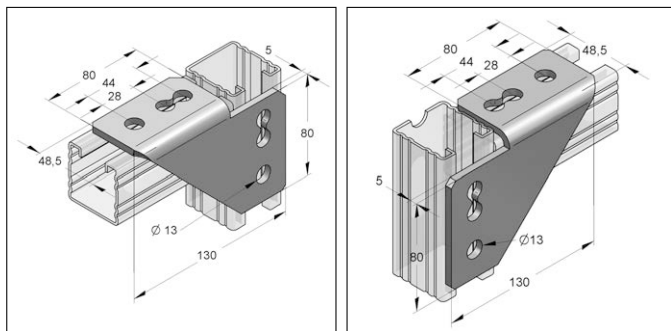
Material: Steel
 Surface: hot-dip galvanized

Remark: Permissible loads depend on the connection technology

Description	Dimension [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-plate	120x110x5	13	0,421	25	0816574/fvz

» Corner angle

45



4-hole corner angle right

4-hole corner angle left

Specification

Application area: Angle component for the production of corner constructions 90°.

Profile type: 45

Remark: Permissible loads depend on the connection technology.

Technical data

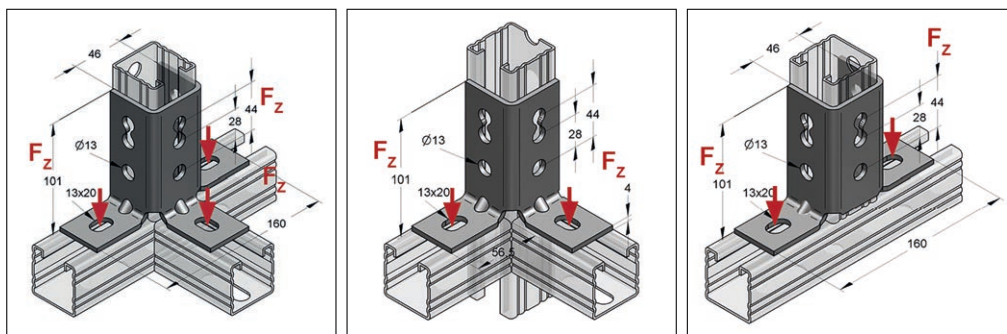
Material: Steel

Surface: galvanized

Alignment	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
right	0,384	15	08147200
left	0,384	15	08147100

» Angle connector

45



Angle connector C 45

Angle connector C 45 90°

Angle connector C 45 180°

Specification

Application area: For connecting profile rails.

Installation advise: First attach the lugs then secure the mounting rail in the U-profile.

Technical data

Material: Steel

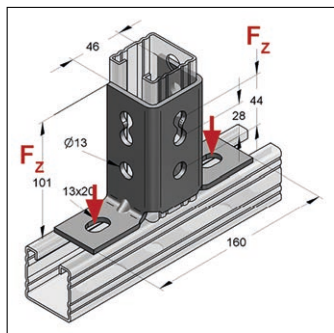
Surface: galvanized

Remark: 2-hole toothed plates must be used for lateral screw connections. Load specifications without C-profile refer to the component not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

mounting angle [°]	Profile type	Load F_Z with profile [kN]	Load F_Z without profile [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90+180	45	4	2,5	0,548	15	08123000
90	45	4	2,5	0,367	15	08123200
180	45	4	2,5	0,481	15	08123100

» Angle connector, TSP®

45



Angle connector C 45 180°

02c



Specification

Application area: For connecting profile rails.

Installation advise: First attach the tabs then secure the mounting rail in the U-profile.

Technical data

Material: Steel

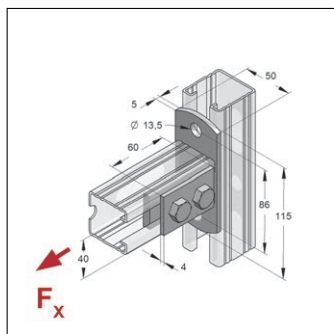
Surface: Zinc-Nickel

Remark: 2-hole toothed plates must be used for lateral screw connections. Load specifications without C-profile refer to the component not to the connection. Load specifications with C-profile refer to the component that is attached to the end of the profile on both sides.

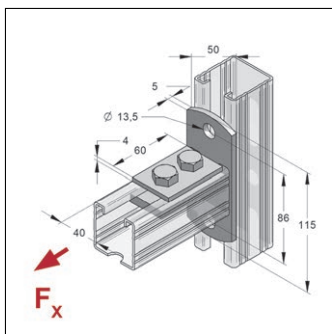
mounting angle [°]	Profile type	Load F_z with profile [kN]	Load F_z without profile [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
180	45	4	1,5	0,481	15	08123100/zn

» Connector 45

45



Connector 45 vertical



Connector 45 horizontal

Specification

Application area: Connection of profile rails, moment-free connections only (not for connection of consoles).

Scope of delivery: 2-hole threaded plate, hexagon screw

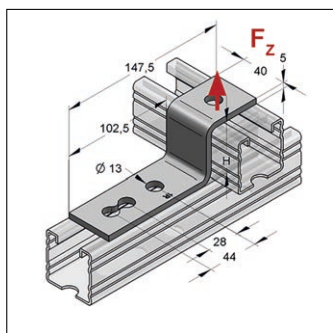
Technical data

Material: Steel

Surface: galvanized

Dimension [mm]	Alignment of plate	Profile type	Load F_x [kN]	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
115x50x5	vertical	45/45	1,5	25	0,501	25	081656602
115x50x5	horizontal	45/45	1,5	25	0,501	25	081646502

» 3-hole corresponding angle 40/5



Step angle 40/5

Specification

Application area: Connecting component for fixing two crossing profile rails.

Profile type: 45

Technical data

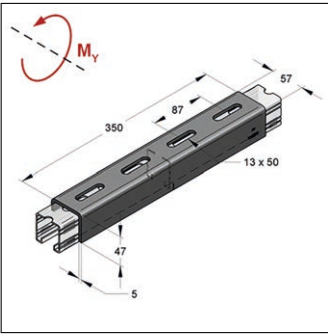
Material: Steel
Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

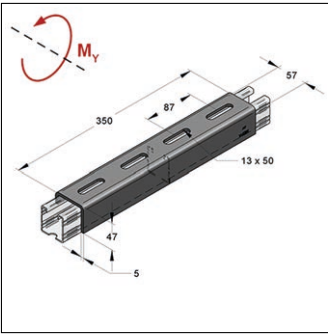
Height [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	1	0,277	25	08141245
60	1	0,301	25	08141300

» Connector 45

45



Connector 45 rail slot at bottom



Connector 45 rail slot at top

Specification

- Application area: For the statically loadable connection or extension of C-profile rails of the profile system 45.
- Recommended accessories: 4x tooth plate S M12, 4x hexagon screw M12x25, 4x washer 13x24x2,5
- Installation advise: For double profiles and single rails from 45/60, we recommend using two connectors.
- Profile type: 45

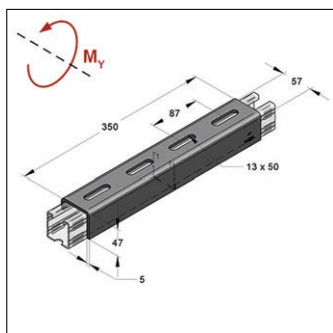
Remark: For assembly instructions see chapter 15.

Technical data

- Material: Steel
- Surface: galvanized

Limited torque M_y [Nm]	Length [mm]	Width [mm]	Height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
675	350	57	47	1,47	10	08162002

» Connector 45, TSP®



Connector 45 rail slot at top



02c

Specification

- Application area:** For the statically loadable connection or extension of C-profile rails of the profile system 45.
- Recommended accessories:** 4x tooth plate S M12, 4x hexagon screw M12x25, 4x washer 13x24x2,5 (DIN 125)
- Installation advise:** For double profiles and single rails from 45/60, we recommend using two connectors.
- Profile type:** 45

Technical data

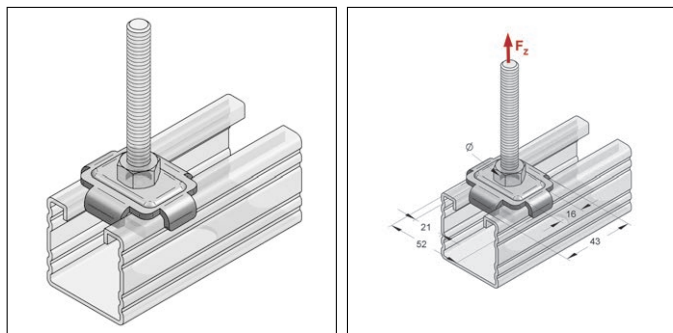
- Material:** Steel
- Surface:** hot-dip galvanized

Remark: For assembly instructions see chapter 15.

Limited torque M_y [Nm]	Length [mm]	Width [mm]	Height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
675	350	57	47	1,52	10	08162002/fvz

» Profile holder combi

35 35 45



Profile holder combi

02c



Specification

Application area: Connecting component for fixing two profile rails lying on top of each other or for rail mounting on the building structure. Prevents the profile rail from bending up.

Technical data

Material: Steel
Surface: galvanized

* part cannot be designed according to fire protection calculation

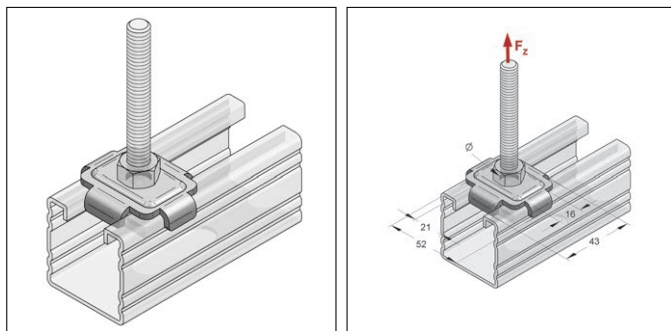
Description	Profile type	Hole-Ø [mm]	for thread	Dimension BxHxS [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Profile holder combi	35, 45, Stex 35	11	M10	43x10,1x3	10	4,7	0,0489	100	08095035
Profile holder combi	35, 45, Stex 35	13	M12	43x10,1x3	10	4,7	0,0469	100	08162945
Profile holder combi	35, 45, Stex 35	17	M16	43x10,1x3	10	4,7	0,0457	100	08163365 *

» Profile holder combi, TSP®

35

35

45



Profile holder combi

02c



Specification

Application area: Connecting component for fixing two profile rails lying on top of each other or for rail mounting on the building structure. Prevents the profile rail from bending up.

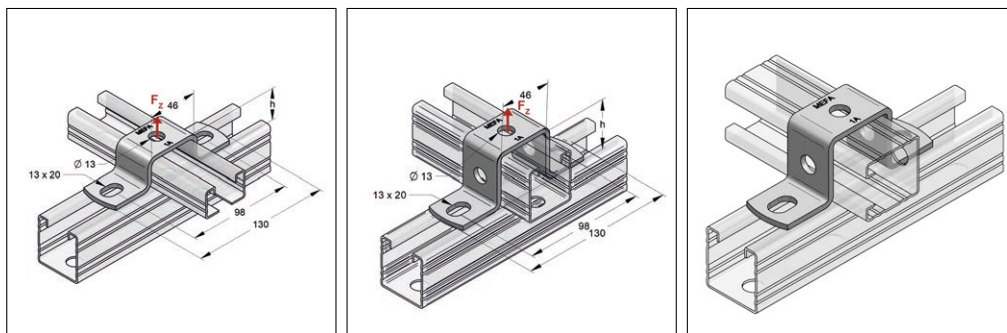
Technical data

Material: Steel
Surface: hot-dip galvanized

Description	Profile type	Hole-Ø [mm]	for thread	Dimension BxHxS [mm]	Tightening torque [Nm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Profile holder combi	35, 45, Stex 35	11	M10	43x10,1x3	10	4,7	0,0523	100	08095035/fvz
Profile holder combi	35, 45, Stex 35	13	M12	43x10,1x3	10	4,7	0,0501	100	08162945/fvz
Profile holder combi	35, 45, Stex 35	17	M16	43x10,1x3	10	4,7	0,0490	100	08163365/fvz

» Head profile

45



Head profile 45/26

Head profile 45/45

Head profile 45/45 Rail turned

Specification

Application area: Connecting component for fixing two crossing profile rails.

Technical data

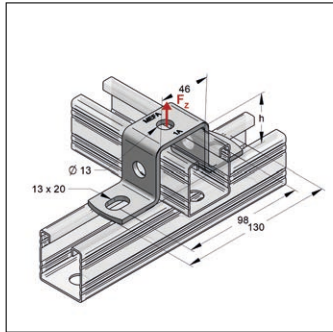
Material: Steel
Surface: galvanized

Profile type	Height h [mm]	Material thickness [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/26	26	4	3,5	0,176	25	08162326
45/45	45	4	3,5	0,208	25	08162445
45/52	52	4	3,5	0,235	25	08162452
45/60	60	4	3,5	0,253	25	0816253
45/75	75	4	3,5	0,286	25	08162875
45/90	90	4	3,5	0,313	25	08162690

» Head profile

Profile type	Height h [mm]	Material thickness [mm]	Load F_Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/120	120	4	3,5	0,387	25	0816274
45/150	150	4	3,5	0,454	1	081628150

» Head profile, TSP®



Head profile 45/45



Specification

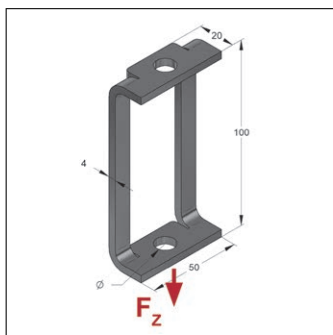
Application area: Connecting component for fixing two crossing profile rails.

Technical data

Material: Steel
Surface: hot-dip galvanized

Profile type	Height h [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/45	45	0,219	25	08162445/fvz

» 2-hole suspending console



2-hole suspending console 100/50/4

Technical data

Material: Steel
Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

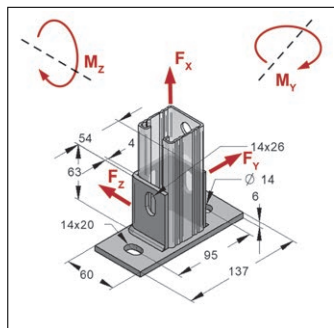
Hole-Ø [mm]	Height [mm]	Width [mm]	Thickness [mm]	Load F_Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
8,5	100	50	4	1,9	0,109	50	0812190

» 2-hole suspending console

Hole-Ø [mm]	Height [mm]	Width [mm]	Thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
10,5	100	50	4	1,9	0,107	50	0812191

» Holder LC for C-profile rail 45

45



Holder LC

Specification

Application area: For fixation of profile rails on construction.

Recommended accessories: tooth plate S M12, hexagon screw

Type of attachment : on the building structure

Technical data

Material: Steel

Surface: galvanized

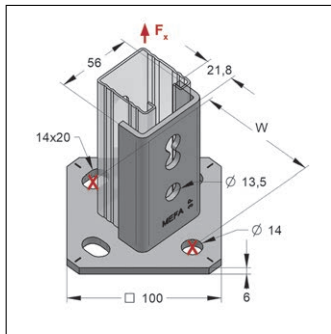
Profile type	Alignment of plate	Dimension [mm]	Hole distance [mm]	max. profile height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/45	vertical / horizontal	137x60x6	95	45	0,621	25	0812006

Loads and limited torque for holder LC

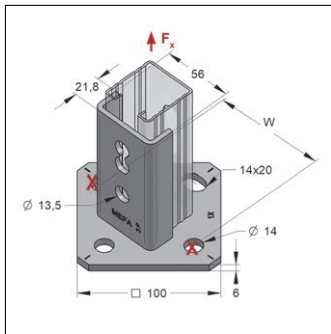
	F_x [kN]	F_z [kN]	F_y [kN]	M_y / M_z [Nm]
Screw position: in the rail slot	3,9	3,0	3,0	-
Screw position: in back of the rail	2,0	3,0	3,0	-
Screw position: in the rail slot and the back of the rail	5,9	3,0	3,0	250

» Holder for C-profile rail 45

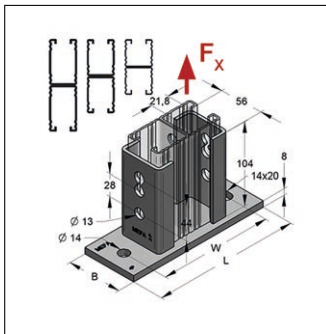
45



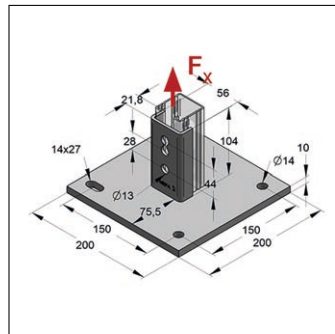
Holder 45 horizontal, required dowel holes at X



Holder 45 vertical, required dowel holes at X



Holder for double C-profile rail



Holder for C-profile rail

02c



Specification

Technical data

Application area: For fixation of profile rails on construction.

Material: Steel

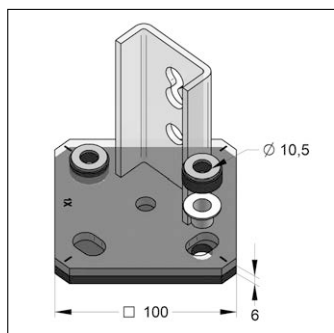
Recommended accessories: Threaded plates, hexagon screw

Type of attachment : on the building structure, necessary dowel holes at X

Remark: Load specifications refer to the component, not to the connection. For hot-dip galvanized parts, dimensional deviations up to 1 mm are possible.

Profile type	Alignment of plate	Dimension LxBxS [mm]	Hole distance W [mm]	max. profile height [mm]	Load F _x [kN]	TSP	Surface	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/26 - 45/52	vertical / horizontal	100x100x6	88	52	15,0	no	galvanized	0,716	10	0812001
45/26 - 45/52	vertical / horizontal	100x100x6	88	52	15,0	yes	hot-dip galvanized	0,746	10	0812002
45/60 - 45/75	vertical	160x70x8	118	75	7,3	yes	hot-dip galvanized	1,01	10	08121802
45/90	vertical	186x70x8	144	90	13,7	yes	hot-dip galvanized	1,40	10	08120952
45/120	vertical	216x70x8	174	120	13,7	yes	hot-dip galvanized	1,54	5	08121002
45/150	vertical	246x70x8	204	150	13,5	yes	hot-dip galvanized	1,68	5	08121452
45/26 - 45/150	vertical / horizontal	200x200x10	150	150	10,0	yes	hot-dip galvanized	3,48	5	08197000

» Sound-decoupling set holder 45 v/h



Sound-decoupling Set v/h

02c



Specification

Scope of delivery: 1x rubber pad, 2x insulating sleeve, 2x rubber ring, 2x washer

Specification: Suitable for holder 45/26-52 v/h. Washers with integrated insulating ring.

Installation advise: only suitable for pressure load.

Profile type: 45

Technical data

Material: Rubber

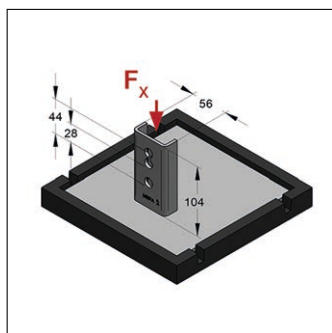
Material type: EPDM

Temperature resistance: -35 up to 100 °C

Dimension [mm]	for thread	Weight [kg/set]	Packing unit [set]	Part-No.
100x100x6	M10	0,0867	1	0812003

» Rooftop holder for rooftop constructions, TSP®

45



Rooftop holder 45

02c

**Specification**

- Application area:** For the elevation of supporting structures on flat roofs.
- Installation advise:** The use of roof brackets on gravel or extensive greening is not recommended.
- Scope of delivery:** 1x rubber pad, 1x holder, 2x hexagon screws M12 x 25, 1x 2-hole tooth plate
- Recommended accessories:** Separation fleece: recommended for use on PVC membrane roof surfaces to prevent migration of plasticizer.
- Profile type:** 45/26 - 45/120

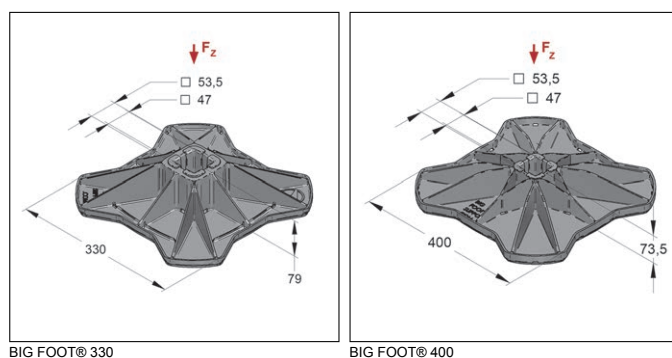
Technical data

- Material:** Steel
- Surface:** hot-dip galvanized

Remark: The permissible floor load must be checked on site. Wind and snow loads must be considered separately.

Model	Dimension steel plate [mm]	Dimension rubber pad [mm]	Load F_x [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	200x200x6	225x225x17	4	3,71	2	08197500

» Rooftop holder BIG FOOT®



BIG FOOT® 330

BIG FOOT® 400

Specification

Application area:	For the elevation of supporting structures on flat roofs.
Profile type:	45
Specification:	BIG FOOT® with attached EPDM base and integrated water drain.
Installation advise:	The use of roof brackets on gravel or extensive greening is not recommended.
Scope of delivery:	1x holder foot, 1x adapter for rail system 45
Recommended accessories:	Separating fleece as additional protection for the roof membrane. Angled bases are available to compensate for roof slopes.

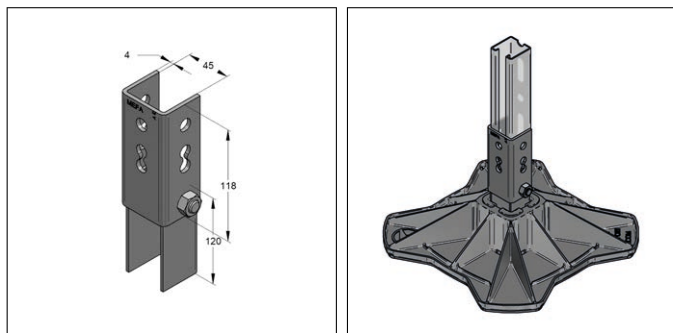
Technical data

Material:	Plastic
Material type:	Polyamide 6
Material pad:	EPDM
Temperature resistance:	-20 up to 80 °C

Remark: The permissible floor load must be checked on site. Wind and snow loads must be considered separately.

Model	Dimension [mm]	Area [cm²]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
330	330x330	828,62	7,5	1,00	2	08197624
400	400x400	1246,08	7,5	1,90	2	08197625

» Joint adapter for BIG FOOT®, TSP®



Joint adapter

Assembly

02c

**Specification**

Application area: Accessories for roof brackets to compensate for a roof pitch.

Installation advise: The joint adapter is inserted into the BIG FOOT® roof holder for installation.

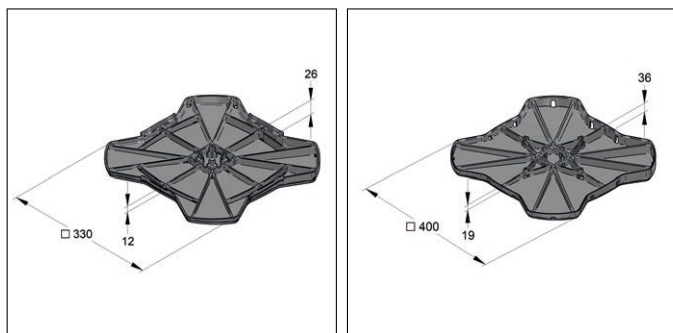
Technical data

Material: Steel

Surface: Zinc-Nickel

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	0,875	1	08197623/zn

» Angled base for BIG FOOT®



BIG FOOT® Angled base 330

BIG FOOT® Angled base 400

Specification

Application area: Accessories for the BIG FOOT® roof brackets to compensate a roof pitch.

Specification: BIG FOOT® slope wedge with bonded EPDM carpet pad and integrated water drainage.

Recommended accessories: separating fleece as additional protection for the roof cladding.

Technical data

Material: Plastic

Material type: Polyamide 6

Material pad: EPDM

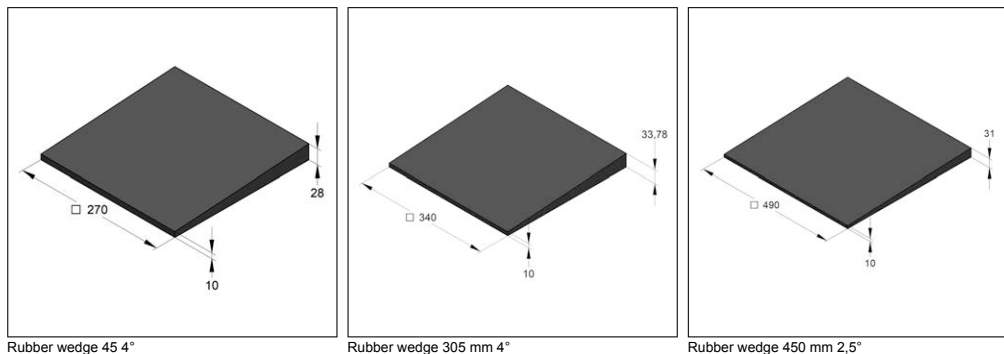
Temperature resistance: -40 up to 80 °C

Dimension [mm]	Area [cm²]	Tilt [°]	Suitable for	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
330x330	828,62	2,5	BIG FOOT® 330	0,600	1	08197628

» Angled base for BIG FOOT®

Dimension [mm]	Area [cm²]	Tilt [°]	Suitable for	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
400x400	1246,08	2,5	BIG FOOT® 400	1,20	1	08197629

» Universal wedge for rooftop holder



Rubber wedge 45 4°

Rubber wedge 305 mm 4°

Rubber wedge 450 mm 2,5°

Specification

Application area: Accessory for rooftop holder to compensate the roof pitch.

Technical data

Material: Rubber

Dimension [mm]	Tilt [°]	Suitable for	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
270x270	4,0	Rooftop holder 45	1,73	1	08197598
340x340	4,0	BIG FOOT® 305	2,25	1	08197604
490x490	2,5	BIG FOOT® 400 and roof top holder XL 80	4,47	1	08197617

» Separation fleece for rooftop holder



Separation fleece

Specification

Application area: Recommended for use on PVC membrane roof surfaces to prevent migration of plasticizer.

Technical data

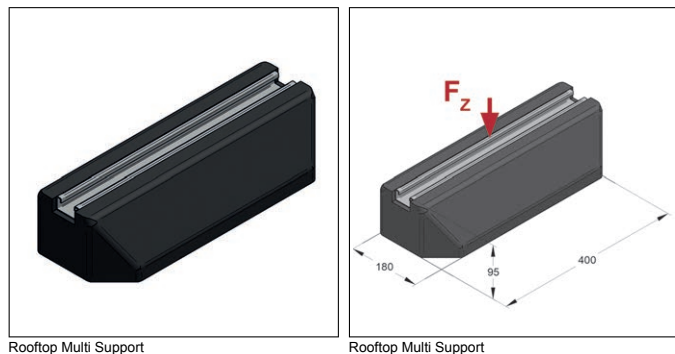
Material: Plastic

Dimension [mm]	Suitable for	Colour	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
345x345x3,5	Rooftop holder 45 and BIG FOOT® 305	black	0,0300	1	08197603
492x492x3,5	BIG FOOT® 450	black	0,0600	1	08197613

» Separation fleece for rooftop holder

Dimension [mm]	Suitable for	Colour	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
600x600x3,5	BIG FOOT® 400 and roof top holder XL 80	white	0,0890	1	08197618

» Rooftop Multi Support, TSP®



Rooftop Multi Support

Rooftop Multi Support

Specification

Application area: Recessed aluminum rail (40 x 20 mm) allows easy installation and fixation with simultaneous structure-borne sound insulation of equipment, ventilation ducts and conduits on flat roofs.

Recommended accessories: Toothed plate S with zinc-nickel coating, separating fleece for installation on roofs with PVC roofing membranes to prevent the transfer of plasticizers into the roofing membrane.

Installation advise: The rooftop holder multi support can be screwed on as a base for rail holders or ventilation units. Two can also be used on each side to prevent larger devices from tipping over.

Technical data

Material holder: recycled, UV-resistant rubber SBR

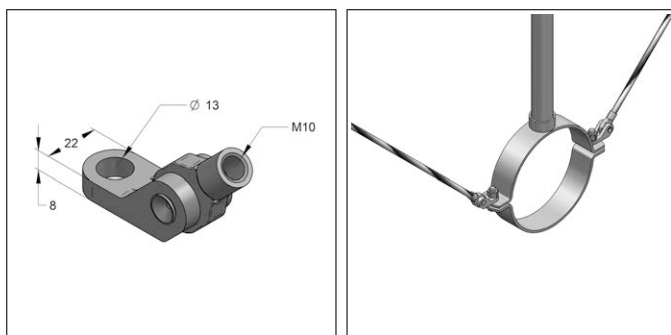
Material profile: Aluminium

Temperature resistance: -40 up to 80 °C

Remark: The permissible floor load must be checked on site. Wind and snow loads must be considered separately.

Dimension [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
400x95x180	1,28	3,50	1	08197620

» Support joint



Support joint

Support joint with bracing



02c

Specification

Application area: Support joint with M10 eyelet for tensioning M10 threaded rods at any angle on pipe clamps, profiles, connection threads or closure flange.

Technical data

Material: Steel
Surface: Zinc-Nickel

Remark: Load specifications refer to the component not to the connection.

Hole-Ø [mm]	Thread	Angle [°]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
13	M10	0-60	0,138	20	08120750

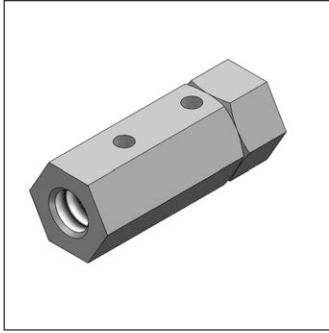
Support joint- Loads



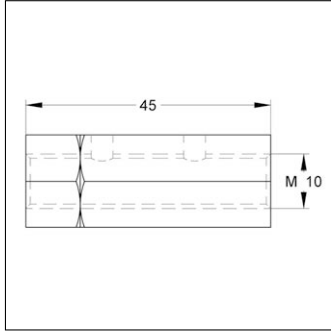
Admissible loads F_{β}

Angle β	F_{β}^* [kN]
0 - 45°	10
45 - 60°	4

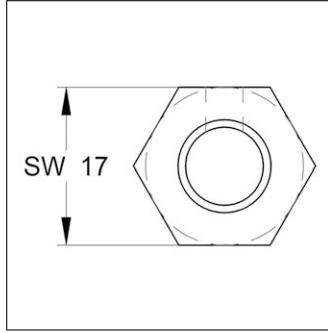
» Hexagonal turnbuckle



Hexagonal turnbuckle



Hexagonal turnbuckle



Hexagonal turnbuckle

Specification

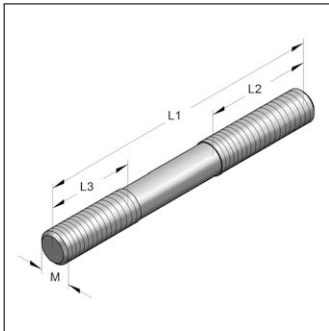
Application area: Adjustment of tensioning.
 Recommended accessories: Support joint, threaded rods and bolts left right
 Norm: DIN 1479

Technical data

Material: Steel
 Surface: galvanized

Thread	Length [mm]	Adjustability [mm]	Tension load [kN]	Wrench size	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	45	21	11	17	0,0580	10	08120760

» Threaded pin left-hand right-hand



Threaded rod left / right

Specification

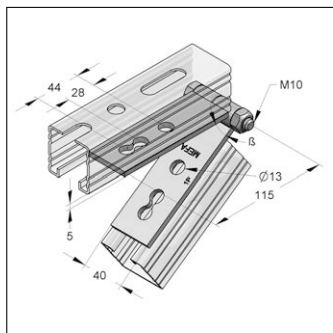
Application area: Adjustment of tensioning.
 Recommended accessories: Support joint, threaded rod and hexagonal turnbuckle

Technical data

Material: Steel
 Surface: galvanized
 Strength class: 4.6

Thread M	Length L1 [mm]	Length thread L2 [mm]	Length thread L3 [mm]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	60	25	25	14,2	0,0212	10	08120770

» Joint connector for C-profile rails



Joint connector for C-profile rails

Specification

Application area: For fixing two mounting rails in any angular position.
 Profile type: 45

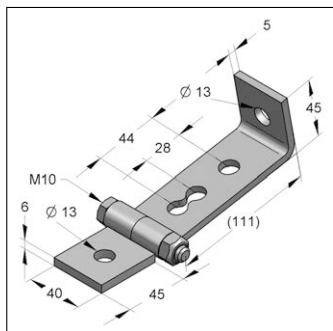
Technical data

Material: Steel
 Surface: galvanized

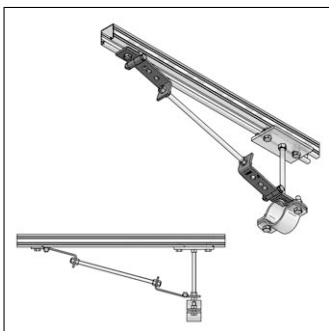
Remark: For load-bearing values see profile joint connectors in chapter 2c.

Dimension [mm]	Angle β [°]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
115x40x5	0-160	0,461	25	08122200

» Joint angle



Joint angle



Mounting example Joint angle with bracing

Specification

Application area: For tensioning M12 threaded rods with any angular position.
 Installation advise: Attachment to the rail or directly to the substrate is possible. For upright mounting consider shear forces in radial tubular axle.

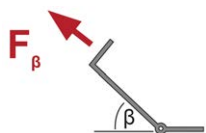
Technical data

Material: Steel
 Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

Width [mm]	Thickness [mm]	Hole-Ø [mm]	Angle β [°]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
40	5	13	0-90	0,407	20	08122300

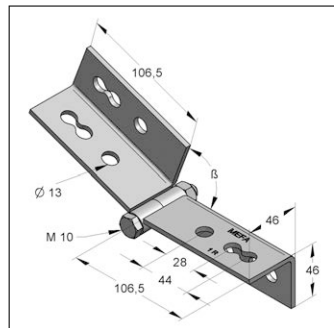
Joint angle - Loads



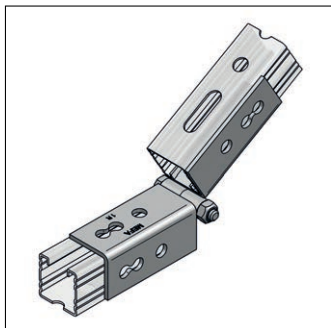
Admissible load F_β

Angle β	0°	30°	45°	60°	90°
F_{β}^* [kN]	4,5	5,2	4,0	3,2	2,8

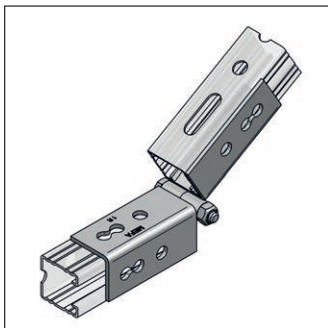
» Profile joint connector



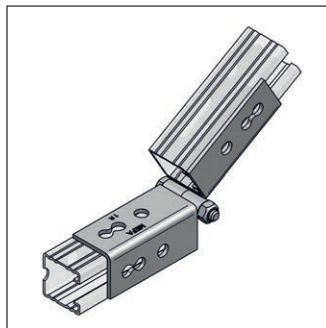
Profile joint connector



Rail position freely selectable



Rail position freely selectable



Rail position freely selectable

Specification

Application area: For fixing two mounting rails in any angular position.

Recommended accessories: 2 x Tooth plate 2-hole, 4 x hexagon bolts
M12 x 25

Profile type: 45

Technical data

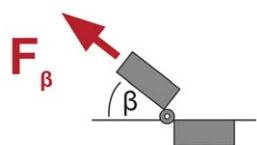
Material: Steel

Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

Angle β [°]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
30-90	13	0.662	10	08122700

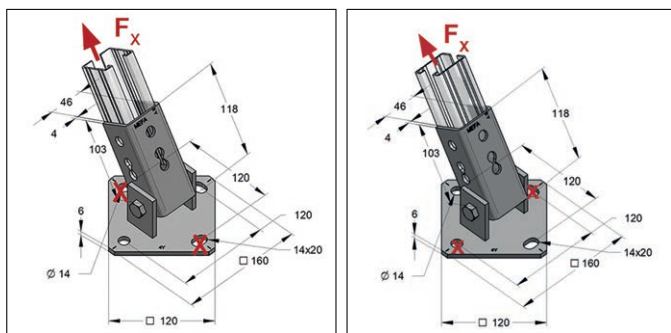
Profile joint connector - Loads



Admissible loads F_β

Angle β	30°	45°	60°	90°
F_{β}^* [kN]	6,0	4,24	3,45	3,0

» Joint holder with plate v/h



Joint holder with plate v/h

Joint holder with plate v/h - profile horizontal

Specification

Application area: Holder for making braces up to 90° with profile rails.

Recommended accessories: 1 x Toothed plate 2-hole, 2 x Hexagon head screw M12x25, 2 x Washer DIN 125

Profile type: 45

Technical data

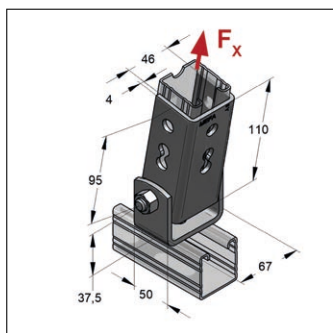
Material: Steel

Surface: galvanized

Remark: Required dowel holes at X. Load specifications refer to the component not to the connection.

Dimension plate [mm]	Load F_X [kN]	Tightening torque M12 [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
120x120x6	10	50	1,43	10	08122601

» Joint holder for profile rails



Joint holder vertical / horizontal

Specification

Application area: Holder for making braces up to 90° with profile rails.

Recommended accessories: 1 x Toothed plate 2-hole, 2 x Hexagon head screw M12x25, 2 x Washer DIN 125

Profile type: 45

Technical data

Material: Steel

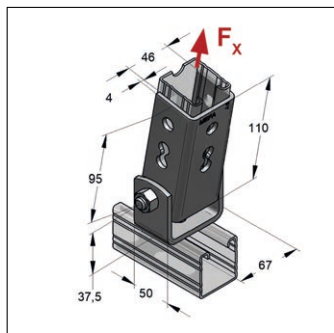
Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

Alignment	Hole-Ø [mm]	Load F_X [kN]	Tightening torque M12 [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical/horizontal	13	10	50	0,816	15	08120601

» Joint holder for profile rails, TSP®

45



Joint holder vertical / horizontal

02c



Specification

Application area: Holder for making braces up to 90° with profile rails.

Recommended accessories: 1 x Toothed plate 2-hole, 2 x Hexagon head screw M12x25, 2 x Washer DIN 125

Profile type: 45

Technical data

Material: Steel

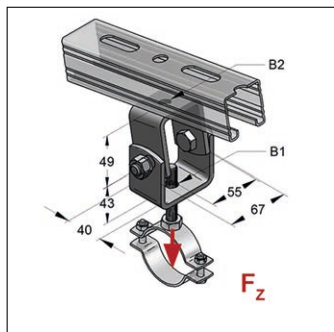
Surface: Zinc-Nickel

Remark: Load specifications refer to the component not to the connection.

Alignment	Hole-Ø [mm]	Load F_x [kN]	Tightening torque M12 [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical/horizontal	13	10	50	0,816	10	08120601/zn

» Joint holder with terminal hole

45



Joint holder with terminal hole

Specification

Application area: Bracket for bracing threaded rods or on sloping roof and floor structures.

Type of attachment : continuously adjustable

Technical data

Material: Steel

Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

Connection B1	Connection B2	Terminal hole B1 [mm]	Terminal hole B2 [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8-M12	M8-M12	13	13	10	0,604	25	081207201
M8-M12	M16	13	17	10	0,595	15	081208001

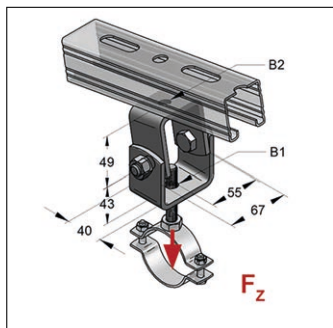
» Joint holder with terminal hole

Connection B1	Connection B2	Terminal hole B1 [mm]	Terminal hole B2 [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16	M16	17	17	10	0,591	15	081217701

» Joint holder with terminal hole, TSP®

45

02c



Joint holder with terminal hole



Specification

Application area: Bracket for bracing threaded rods or on sloping roof and floor structures.

Type of attachment : continuously adjustable

Technical data

Material: Steel

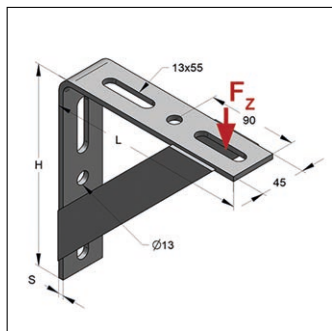
Surface: hot-dip galvanized

Remark: Load specifications refer to the component not to the connection.

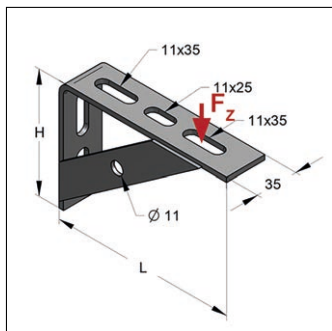
Connection B1	Connection B2	Terminal hole B1 [mm]	Terminal hole B2 [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8-M12	M8-M12	13	13	10	0,620	1	081207201/fvz

» Angle bracket with braces

45



Angle bracket



Knot bracket L

02c

Specification

Application area: Angle bracket with two struts, suitable for mounting rails or for wall mounting.

Technical data

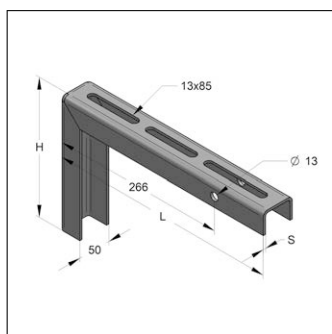
Material: Steel
Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

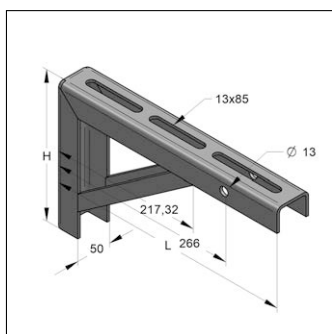
Description	Dimension HxLxS [mm]	Load F _z [kN]	Load at length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Angle bracket with 2 braces	200x200x5	5,0	150	1,06	15	0814083
Angle bracket with 2 braces	300x300x5	5,0	250	1,68	10	0814091
Knot bracket L with 1 brace	100x152x4	2,5	120	0,299	25	0803100

» Universal console

45



Universal console



Universal console with brace

Specification

Application area: Console solid from U-profiles.

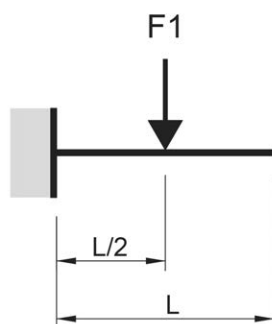
Technical data

Material: Steel
Surface: galvanized

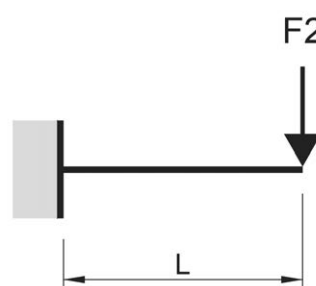
Remark: Load specifications refer to the component not to the connection.

Dimension HxLxS [mm]	Specification	Load F ₁ [kN]	Load F ₂ [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
200x200x4	without brace	6,5	4,0	1,01	15	0814201
200x350x4	without brace	5,0	3,0	1,64	10	081421901
350x550x4	without brace	4,0	1,5	2,73	6	081422701
200x350x4	with brace	6,2	4,9	2,03	10	081423501
350x550x4	with brace	6,5	3,7	4,14	6	081424301

Loading condition F1



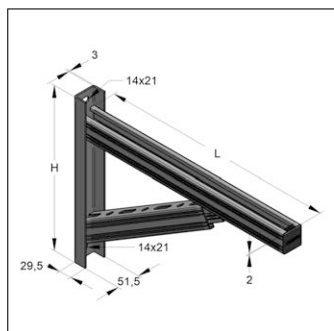
Loading condition F2



» Carrier console 45/45/2,0 mm, TSP®

45

02c



Carrier console with brace



Specification

Application area: Console with welded strut as equipment base in the outdoor area.

Scope of delivery: with protective cap

Profile type: 45/45

Technical data

Material: Steel

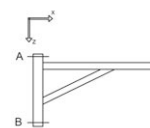
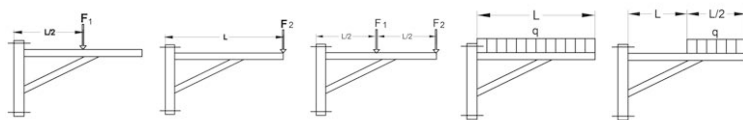
Surface: hot-dip galvanized

Global safety coefficient: 1,54

Remark: Load specifications refer to the component not to the connection and only to static loads.

Dimension HxLxS [mm]	Hole distance [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
330x420x2	284,5	2,66	6	180470421/fvz
365x525x2	319,5	3,29	6	180470526/fvz
395x630x2	349,5	3,94	6	180470631/fvz
485x735x2	439,5	4,73	6	180470736/fvz
485x840x2	439,5	5,01	6	180470841/fvz

Carrier console - Loading condition and admissible loads

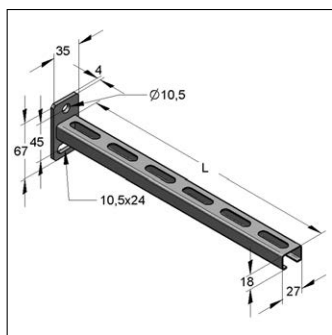


bearing reaction forces

L	F1	F2	F1=F2	q(0-L)	q(L/2-L)	F _{Ax} =	F _{Bx} =	F _{Az} =
420 mm	7,00 kN					5,08 kN	-5,08 kN	7,01 kN
		2,60 kN				3,77 kN	-3,77 kN	2,61 kN
			2,05 kN			4,46 kN	-4,46 kN	4,11 kN
				16,00 kN/m		4,87 kN	-4,87 kN	6,73 kN
					19,50 kN/m	4,46 kN	-4,46 kN	4,11 kN
525 mm	7,50 kN					6,07 kN	-6,07 kN	7,51 kN
		2,60 kN				4,21 kN	-4,21 kN	2,61 kN
			2,05 kN			4,98 kN	-4,98 kN	4,11 kN
				13,20 kN/m		5,61 kN	-5,61 kN	6,94 kN
					15,80 kN/m	5,04 kN	-5,04 kN	4,16 kN
630 mm	7,60 kN					6,76 kN	-6,76 kN	7,62 kN
		2,60 kN				4,77 kN	-4,77 kN	2,70 kN
			2,05 kN			5,47 kN	-5,47 kN	4,12 kN
				11,00 kN/m		6,16 kN	-6,16 kN	6,95 kN
					13,10 kN/m	5,51 kN	-5,51 kN	4,14 kN
735 mm	7,30 kN					6,04 kN	-6,04 kN	7,32 kN
		2,60 kN				3,78 kN	-3,78 kN	2,30 kN
			2,30 kN			5,71 kN	-5,71 kN	4,62 kN
				11,50 kN/m		7,00 kN	-7,00 kN	8,47 kN
					13,60 kN/m	6,21 kN	-6,21 kN	5,02 kN
840 mm	7,50 kN					7,10 kN	-7,10 kN	7,52 kN
		2,60 kN				2,45 kN	-2,45 kN	1,31 kN
			1,39 kN			3,95 kN	-3,95 kN	2,80 kN
				8,30 kN/m		6,60 kN	-6,60 kN	6,99 kN
					8,50 kN/m	5,07 kN	-5,07 kN	3,59 kN

» Console C-profile 27/18/1,25 mm

27



Console C-profile 27/18/1,25 mm

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
 Surface: galvanized
 Global safety coefficient: 1,35

Remark: From a length of 630 mm limitation torque MG and bearing strengths FAX, FBx not valid anymore. All loads referring to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
157,5	vertical	0,47	0,23	2,94	0,159	25	18010158

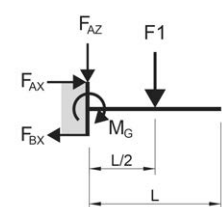
» Console C-profile 27/18/1,25 mm

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
210,0	vertical	0,35	0,17	1,66	0,190	25	18010210
262,5	vertical	0,28	0,14	1,06	0,222	25	18010263
315,0	vertical	0,23	0,12	0,74	0,253	25	18010315

Console 27/18/1,25 - Static values

Limitation torque	M_G :	36,74 Nm
Reaction force	F_{AX} :	0,82 kN
Reaction force	F_{BX} :	0,82 kN
M_G, F_{AX}, F_{BX} on	F_1 :	up to L = 630,5 mm
	F_2 :	up to L = 315,5 mm
	q_0 :	up to L = 420,5 mm

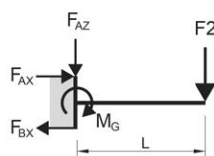
Loading condition F1



$$F_{AZ} = F_1$$

$$M_G = F_1 \cdot L / 2$$

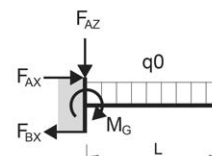
Loading condition F2



$$F_{AZ} = F_2$$

$$M_G = F_2 \cdot L$$

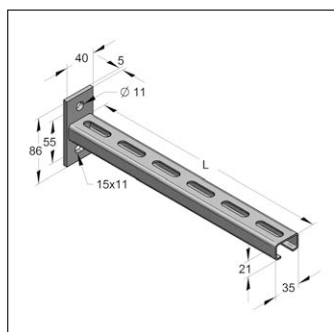
Loading condition q0



$$F_{AZ} = q_0 \cdot L$$

$$M_G = q_0 \cdot L^2 / 2$$

» Console C-profile 35/21/2,0 mm



Console C-profile 35/21/2,0 mm

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,35

Remark: Load limitation due to admissible bending $L/150$. From a length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads refer to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
157,5	vertical	1,19	0,60	7,57	0,307	25	18020158
210,0	vertical	0,89	0,45	4,26	0,368	25	18020210
262,5	vertical	0,72	0,36	2,72	0,429	25	18020263
315,0	vertical	0,60	0,30	1,89	0,490	25	18020315
420,0	vertical	0,45	0,19	1,06	0,612	25	18020420

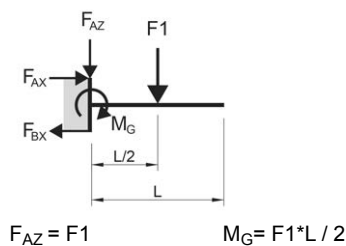
» Console C-profile 35/21/2,0 mm

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
525,0	vertical	0,36	0,12	0,62	0,734	25	18020525

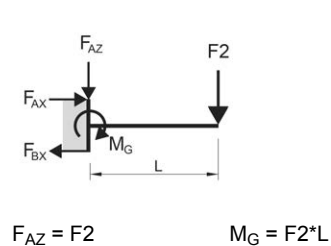
Console 35/21/2,0 - Static values

Limitation torque	M_G :	93,86 Nm
Reaction force	F_{AX} :	1,71 kN
Reaction force	F_{BX} :	1,71 kN
M_G , F_{AX} , F_{BX} on	$F1$:	up to L = 630,0 mm
	$F2$:	up to L = 315,0 mm
	$q0$:	up to L = 472,5 mm

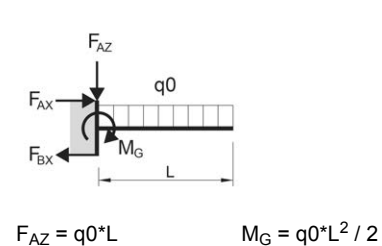
Loading condition F1



Loading condition F2

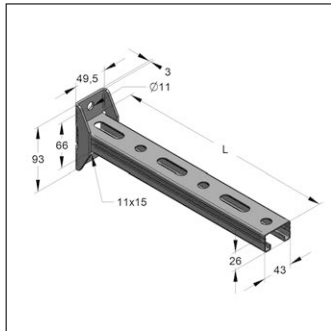


Loading condition q0



» Console C-profile 45/26/1,5 mm S

45



Console C-profile 45/26/1,5 mm S

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,35

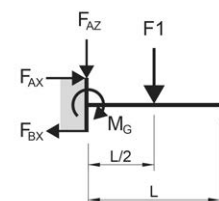
Remark: Load limitation due to admissible bending $L/150$. From a length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads refer to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
210	vertical	1,18	0,59	5,60	0,419	25	18035021001
315	vertical	0,78	0,39	2,49	0,560	25	18035031501
420	vertical	0,59	0,29	1,40	0,701	20	18035042001
525	vertical	0,47	0,22	0,90	0,841	15	18035052501

Console 45/26/1,5 S - Static Values

Limitation torque	M_G :	123,50 Nm
Reaction force	F_{AX} :	1,96 kN
Reaction force	F_{BX} :	1,96 kN
M_G , F_{AX} , F_{BX} on	F_1 :	up to $L = 945$ mm
	F_2 :	up to $L = 420$ mm
	q_0 :	up to $L = 630$ mm

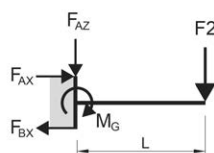
Loading condition F1



$$F_{AZ} = F_1$$

$$M_G = F_1 \cdot L / 2$$

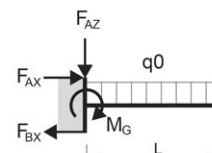
Loading condition F2



$$F_{AZ} = F_2$$

$$M_G = F_2 \cdot L$$

Loading condition q0



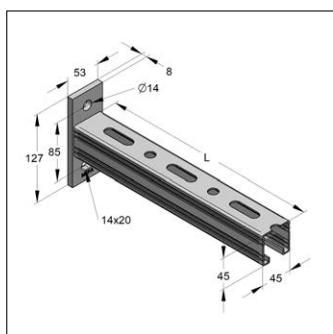
$$F_{AZ} = q_0 \cdot L$$

$$M_G = q_0 \cdot L^2 / 2$$

02c

» Console C-profile 45/45/2,0 mm

45



Console C-profile 45/45/2,0 mm



Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

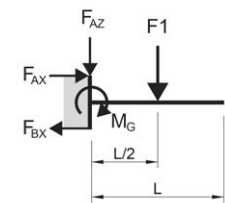
Technical data

Material: Steel
Global safety coefficient: 1,54

Remark: Consoles with 45/45/2,5 see chapter 12. Load limitation due to admissible bending $L/150$. From a length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads refer to static loads.

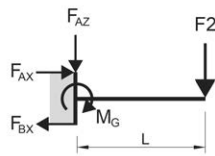
Length console L [mm]	Alignment of plate	TSP	Surface	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
210	vertical	no	galvanized	4,98	2,49	23,70	0,885	15	180450210
315	vertical	no	galvanized	3,32	1,66	10,53	1,14	15	180450315
420	vertical	no	galvanized	2,49	1,24	5,92	1,40	10	180450420
525	vertical	no	galvanized	1,99	1,00	3,79	1,66	10	180450525
630	vertical	no	galvanized	1,66	0,82	2,63	1,92	5	180450630
735	vertical	no	galvanized	1,42	0,61	1,93	2,18	5	180450735
1050	vertical	no	galvanized	1,00	0,30	0,75	2,96	5	180451050
315	vertical	yes	hot-dip galvanized	3,32	1,66	10,53	1,23	15	180450315/fvz
420	vertical	yes	hot-dip galvanized	2,49	1,24	5,92	1,52	10	180450420/fvz
525	vertical	yes	hot-dip galvanized	1,99	1,00	3,79	1,80	10	180450525/fvz

Loading condition F1



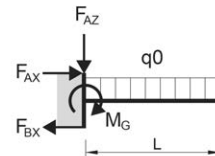
$$F_{AZ} = F1 \quad M_G = F1 \cdot L / 2$$

Loading condition F2



$$F_{AZ} = F2 \quad M_G = F2 \cdot L$$

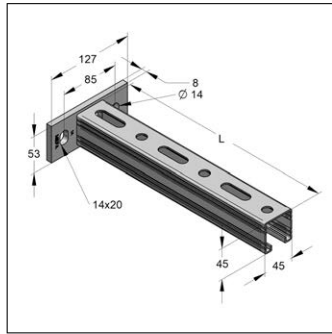
Loading condition q0



$$F_{AZ} = q0 \cdot L \quad M_G = q0 \cdot L^2 / 2$$

» Console C-profile 45/45/2,0 mm, plate horizontal

45



Console C-profile 45/45/2,0 mm horizontal

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,35

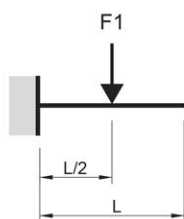
Remark: Consoles with 45/45/2.5 see chapter 12. From a Length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads referring to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
210	horizontal	3,68	1,84	17,52	0,885	15	180460210
315	horizontal	2,45	1,23	7,78	1,14	15	180460315
420	horizontal	1,84	0,92	4,38	1,40	10	180460420
525	horizontal	1,47	0,74	2,80	1,66	10	180460525

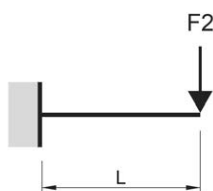
Console 45/45/2,0 - Static Values

Limitation torque	M_G :	522,00 Nm
Reaction force	F_{AX} :	6,15 kN
Reaction force	F_{BX} :	6,15 kN
M_G , F_{AX} , F_{BX} on	F1:	up to L = 1155 mm
	F2:	up to L = 525 mm
	q0:	up to L = 735 mm

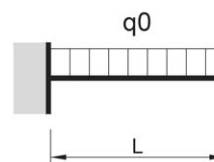
Loading condition F1



Loading condition F2



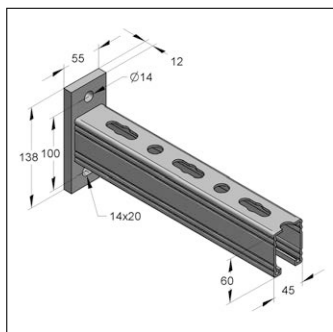
Loading condition q0



» Console C-profile 45/60/3,0 mm

45

02c



Console C-profile 45/60/3,0 mm

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,35

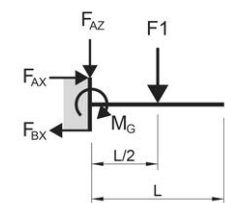
Remark: Load limitation due to admissible bending $L/150$. From a Length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads refer to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
525	vertical	4,36	2,18	8,30	2,80	5	18050525
630	vertical	3,63	1,82	5,77	3,23	5	18050630
735	vertical	3,11	1,45	4,24	3,65	5	18050735
840	vertical	2,72	1,11	3,24	4,08	5	18050840

Console 45/60/3,0 - Static Values

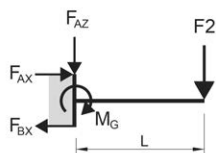
Limitation torque	M_G :	1144,44 Nm
Reaction force	F_{AX} :	11,44 kN
Reaction force	F_{BX} :	11,44 kN
M_G , F_{AX} , F_{BX} on	F1:	up to L = 1155 mm
	F2:	up to L = 630 mm
	q0:	up to L = 840 mm

Loading condition F1



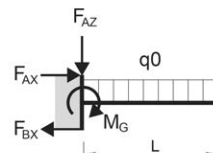
$$F_{AZ} = F1 \quad M_G = F1 \cdot L / 2$$

Loading condition F2



$$F_{AZ} = F2 \quad M_G = F2 \cdot L$$

Loading condition q0

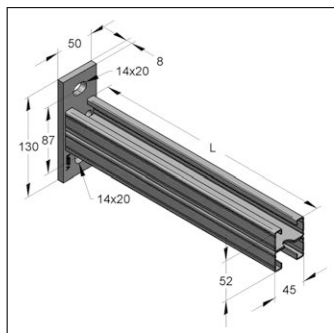


$$F_{AZ} = q0 \cdot L \quad M_G = q0 \cdot L^2 / 2$$

» Double console C-profile 45/52/1,5 mm

45

02c



Double console C-profile 45/52/1,5 mm

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,35

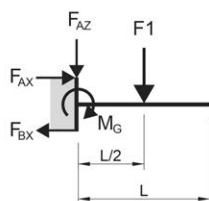
Remark: From a length of 630 mm limitation torque MG and bearing strengths FAX, FBx not valid anymore. All loads referring to static loads.

Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
315	vertical	2,93	1,47	9,30	1,21	15	18070315
420	vertical	2,20	1,10	5,23	1,50	10	18070420
525	vertical	1,76	0,88	3,35	1,78	10	18070525
630	vertical	1,47	0,73	2,33	2,06	5	18070630

Console 45/52/1,5 - Static Values

Limitation torque	M _G :	461,54 Nm
Reaction force	F _{AX} :	5,31 kN
Reaction force	F _{BX} :	5,31 kN
M _G , F _{AX} , F _{BX} on	F1:	up to L = 1155 mm
	F2:	up to L = 735 mm
	q0:	up to L = 945 mm

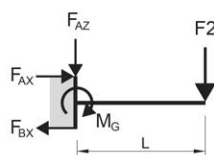
Loading condition F1



$$F_{AZ} = F1$$

$$M_G = F1 \cdot L / 2$$

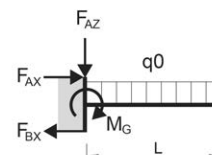
Loading condition F2



$$F_{AZ} = F2$$

$$M_G = F2 \cdot L$$

Loading condition q0



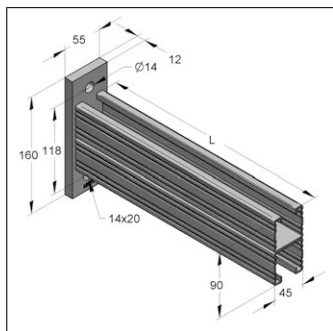
$$F_{AZ} = q0 \cdot L$$

$$M_G = q0 \cdot L^2 / 2$$

» Double console C-profile 45/90/2,0 mm

45

02c



Double console C-profile 45/90/2,0 mm



Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Steel
Global safety coefficient: 1,54

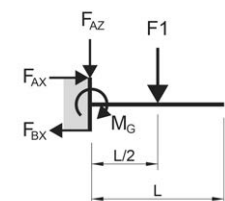
Remark: From a length of 630 mm limitation torque M_G and bearing strengths F_{AX} , F_{BX} not valid anymore. All loads referring to static loads.

Length console L [mm]	Alignment of plate	TSP	Surface	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
630	vertical	no	galvanized	4,97	2,48	7,88	3,90	5	180900630
735	vertical	no	galvanized	4,26	2,13	5,79	4,42	5	180900735
840	vertical	no	galvanized	3,72	1,86	4,43	4,94	5	180900840
945	vertical	no	galvanized	3,31	1,66	3,50	5,45	5	180900945
1050	vertical	no	galvanized	2,98	1,49	2,84	5,97	5	180901050
630	vertical	yes	hot-dip galvanized	4,97	2,48	7,88	4,19	5	180900630/fvz
840	vertical	yes	hot-dip galvanized	3,72	1,86	4,43	5,31	5	180900840/fvz

Console 45/90/2,0 - Static Values

Limitation torque	M_G :	1564,12 Nm
Reaction force	F_{AX} :	13,03 kN
Reaction force	F_{BX} :	13,03 kN
M_G , F_{AX} , F_{BX} on	$F1$:	up to L = 1155 mm
	$F2$:	up to L = 1155 mm
	$q0$:	up to L = 1155 mm

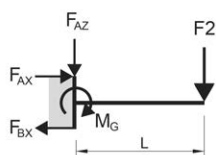
Loading condition F1



$$F_{AZ} = F1$$

$$M_G = F1 \cdot L / 2$$

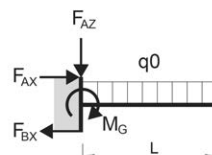
Loading condition F2



$$F_{AZ} = F2$$

$$M_G = F2 \cdot L$$

Loading condition q0



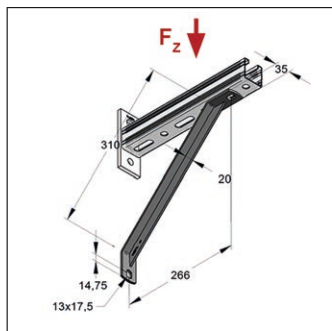
$$F_{AZ} = q0 \cdot L$$

$$M_G = q0 \cdot L^2 / 2$$

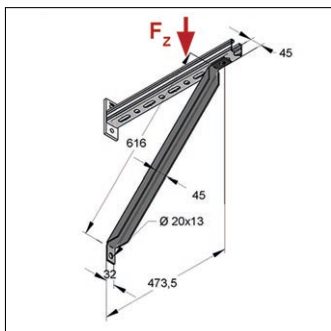
» Brace 45°



02c



Brace 45° short



Brace 45° long

Specification

Application area: To increase the loading capacity of consoles and wall brackets.

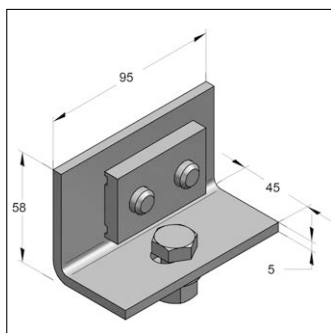
Installation advise: For installation in slot position, we recommend using Stex MP.

Technical data

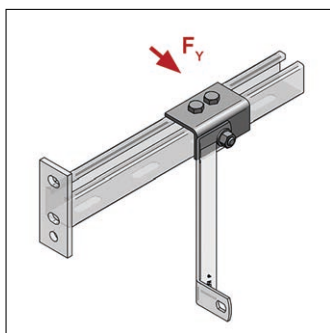
Material: Steel
Surface: galvanized

Length [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
310	11,5	0,673	25	0815101
616	10,0	2,07	10	0815102

» Adapter angle



Adapter angle



Mounting example

Specification

Application area: Angle for lateral bracing of consoles.
 Scope of delivery: 3 x hexagon screws M12 x 25, 1 x 2-hole tooth plate, 1 x washer 13 x 24 x 2,5, 1x nut M12
 Profile type: 45

Technical data

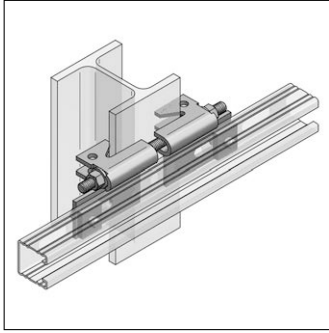
Material: Steel
 Surface: galvanized

Remark: Loads refer to the component and not to the connection.

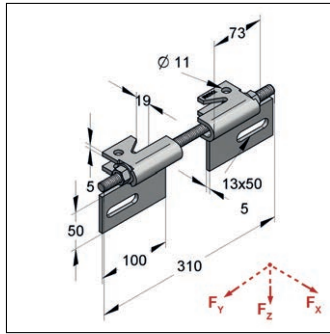
Description	Angle [°]	Bracket length [mm]	Hole-Ø [mm]	Load F_y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3-hole	90	58x45	13	10	0,583	5	08151500

» Beam connection vertical, TSP®

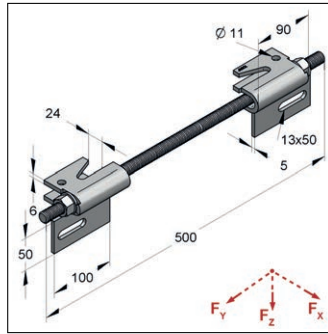
45



Beam connection vertical



Type D III



Type D IV

02c



Specification

- Application area:** Vertical clamping connection of profile rails at steel girder.
- Scope of delivery:** 2 x guide cleat, 1 x threaded rod FK 8.8, 2 x nut, 2 x washer
- Recommended accessories:** 2x screw M12x25, 2x washer and 2x threaded square plates or 2x tooth plate
- Installation advise:** Fix lugs on load anticipated side. Can be combined with rail system 45. Screwing of profile rail on lug of guide clamp through profile base.

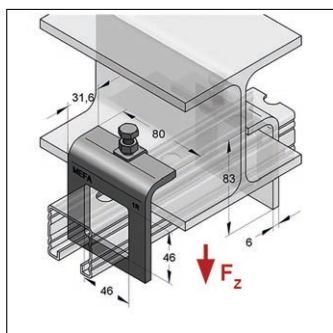
Technical data

- Material:** Steel
- Surface:** hot-dip galvanized

Remark: Assembly instructions see chapter 15.

Type	Clamping thickness [mm]	Clamping width [mm]	Threaded rod type	Tightening torque [Nm]	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
D III	8-15	100-220	M12x310	64	4	4	4	1,13	1	08146103
D IV	13-20	110-360	M16x500	64	4	4	4	2,05	1	08146104

» Clamping claw



Clamping claw

Specification

Application area: Production of a firm clamping connection for profile rails on steel girders.

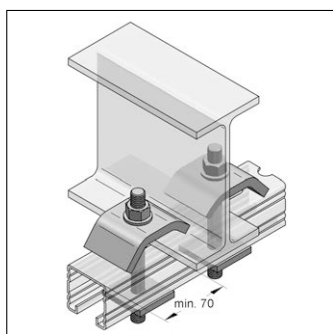
Technical data

Material: Steel
Surface: galvanized

Remark: Load specifications refer to 2 clamping claws.

Profile type	Load F_z [kN]	Tightening torque [Nm]	Clamping thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	6	8	17	0,336	50	08165071

» Clamping claw (set) steel



Clamping claw (set) steel

Specification

Application area: Clamping claws for making a firm clamping connection for profile rails on steel girders.

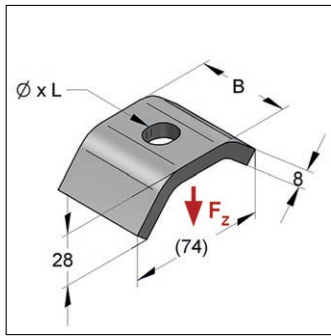
Technical data

Material: Steel
Surface: galvanized

Scope of delivery: 2 x clamping claws, 2 x threaded bolts, 4 x hexagon nuts, 2 x perforated plates, 2 x washers DIN 125

Profile type	Threaded pin type	max. profile height [mm]	max. clamping thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35, Stex 35	M10x110	42	26	0,549	20	0814595
45	M12x130	60	26	0,922	10	0819527

» Clamping claw



Clamping claw

Specification

Application area: Half part for clamping claws assembly kit.

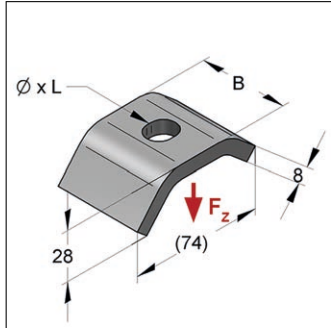
Technical data

Material: Steel
Surface: galvanized

Remark: Load specifications refer to the component not to the connection.

Profile type	for thread	Elongated hole Ø x L [mm]	Hole-Ø [mm]	Tightening torque [Nm]	Load F_z [kN]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35, Stex 35	M10	12x18		5	6,7	35	0,170	50	0814591
45	M12	14x18		5	8,2	50	0,246	50	0816515
45	M16		18	10	11,9	50	0,243	25	0819519

» Clamping claw, TSP®



Clamping claw



Specification

Application area: Half part for clamping claws assembly kit.

Technical data

Material: Steel
Surface: hot-dip galvanized

Remark: Load specifications refer to the component not to the connection.

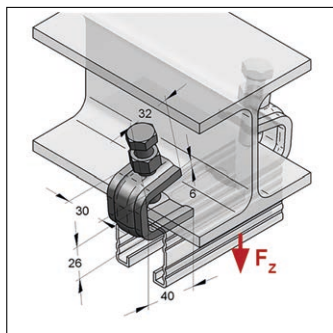
Profile type	for thread	Elongated hole Ø x L [mm]	Tightening torque [Nm]	Load F_z [kN]	Width [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	M12	14x18	5	8,2	50	0,254	20	0816515/fvz

» Rail clamp

35

35

45



Rail clamp

Specification

Application area: For mounting the C-profile rail on steel girder.
 Profile type: 35, 45, Stex 35/35 + 35/42

Technical data

Material: Steel
 Surface: galvanized
 Screw type: M12, SW 19
 Type screw nut: M12x50, SW19

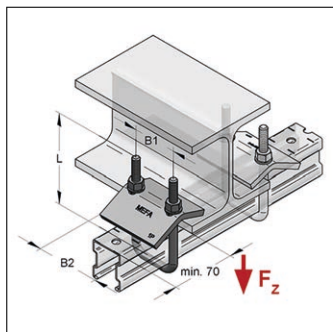
max. clamping thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
23	5	0,226	20	0816477

» Clamping bow

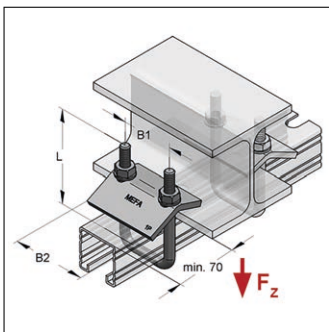
35

35

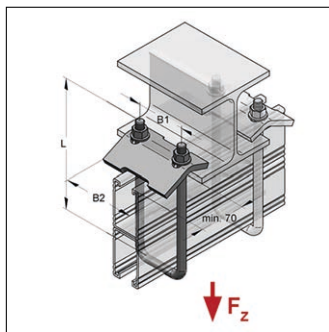
45



Clamping bow M8 35



Clamping bow M10 45/60



Clamping bow M12 45/150

Specification

Application area: For mounting of C-profile rail on steel girder.
 Scope of delivery: 1x U-bolt pipe hanger, 1x tensioning bracket, 2x nuts DIN 934, 2x serrated lock washer

Installation advise: In case of horizontal mounting of pipes, the maximum loads of the clamping bow can differ to quoted loads due to torque of lever arm. Per anchorage point two clamping bows should be plugged in. Application loads refer to one set of clamping bows. Application loads of C-profile rail should be noticed.

Technical data

Material: Steel
 Surface: galvanized

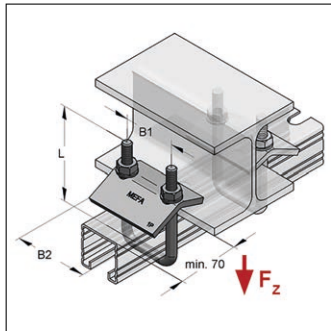
Thread	Profile type	Profile height [mm]	Length U-bolt L [mm]	Center distance U-bolt B1 [mm]	Width tensioning bracket B2 [mm]	max. clamping thickness [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	35, Stex 35	20-42	100	48	70	26	8	3,5	0,307	20	0816710

» Clamping bow

Thread	Profile type	Profile height [mm]	Length U-bolt L [mm]	Center distance U-bolt B1 [mm]	Width tensioning bracket B2 [mm]	max. clamping thickness [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	45	26-60	100	56	80	26	15	4,0	0,401	20	0816720
M10	45	75-90	140	56	80	26	15	4,0	0,440	20	0816730
M12	45	75-90	150	59	110	29	30	7,0	0,749	20	08167401
M12	45	120-150	210	59	100	29	30	7,0	0,831	20	08167501

02c

» Clamping bow, TSP®



Clamping bow M10 45/60



Specification

Application area: For mounting of C-profile rail on steel girder.

Scope of delivery: 1 U-bolt pipe hanger, 1 tensioning bracket, 2 nuts DIN 934, 2 serrated lock washer

Installation advise: In case of horizontal mounting of pipes, the maximum loads of the clamping bow can differ to quoted loads due to torque of lever arm. Per anchorage point two clamping bows should be plugged in. Application loads refer to one set of clamping bows. Application loads of C-profile rail should be noticed.

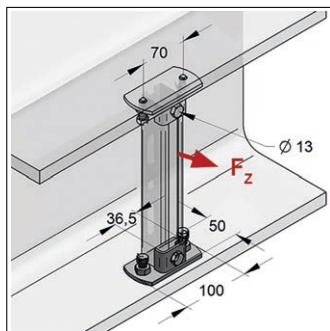
Technical data

Material: Steel

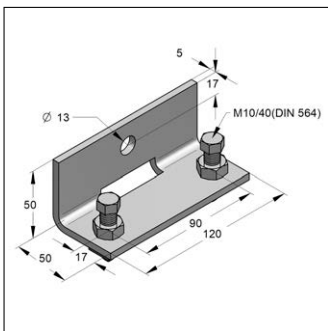
Surface: Zinc-Nickel

Thread	Profile type	Profile height [mm]	Length U-bolt L [mm]	Center distance U-bolt B1 [mm]	Width tensioning bracket B2 [mm]	max. clamping thickness [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	45	26-60	100	56	80	26	15	4	0,401	1	0816720/zn
M10	45	75-90	140	56	80	26	15	4	0,440	1	0816730/zn

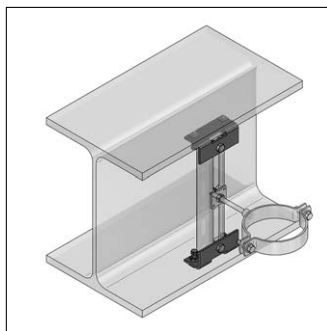
» Beam clamping



Girder clamping 35



Girder clamping L 45



02c

Product description

For clamping C-profile rail to a steel beam profile. Suitable for steel profiles from IPE 120 or U 160.

This allows simple and quick pipe clamp fastenings to be implemented in steel beam profiles. Welded square nuts are located on the rear of the beam clamping.

Specification

Application area: For clamped fixation at steel girder (IPE 120 or U 160).

Recommended accessories: threaded square plate 30x22 (Beam clamping device 35), threaded square plate 35x30 (Beam clamping device L 45)

Installation advise: Tightening torque 10 Nm. For a rail fastening two girder clampings are required.

Technical data

Material: Steel

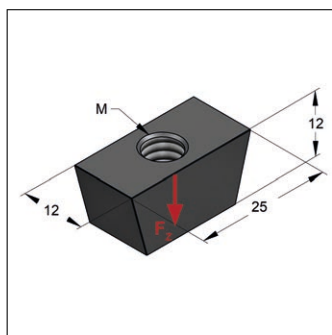
Surface: galvanized

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35/21, Stex 35/35 + 35/42	0,301	20	9999695
45/45	0,501	20	08163910

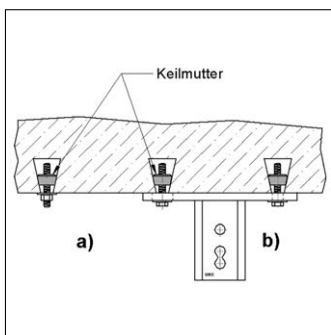
Beam clamping - Load on girders at a length of ≤ 400 mm

Identification	in combination with profile rail	load F_z [kN]
Beam clamping 35	35/21	2,0
Beam clamping 35	Stex 35/35	2,0
Beam clamping 35	Stex 35/42	3,0
Beam clamping L 45	45/45	3,0

» Wedge nut for ceiling



Wedge nut for ceiling



Assembly example

02c

Specification

Application area: For ceilings 38 / 51 x 150 type "HOLORIB" and "HOESCH".

Recommended accessories: a) For single fastening 1x wedge nut, 1x threaded pin M8 or M10 at least 50 mm long, 1x washer DIN 125 M8 or M10, 1x hexagon nut M8 or M10. b) For fastening brackets for composite ceilings 1x holder for C-profile. 4x wedge nut, 4x hexagon screw M8 or M10 50 mm long, 2x washer DIN 125 M8 or M10

Technical data

Material: Steel

Surface: galvanized

Remark: The maximum load of the HOLORIB ceiling (system: Montana) is 9 kN/m² and a maximum of 4 fixing points per m².

Thread M	Dimension [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	25x12x12	1,50	0,0213	100	0819715
M10	25x12x12	2,25	0,0194	100	0819722

» Admissible loading capacity according to RAL-GZ 655-D

in combination with Stex 45, 2-hole tooth plate, tooth plate S, tooth bolt
global safety coefficient $\gamma = 2$

Profile rail pre-galvanized	Stex 45 threaded bolt, Stex 45 mounting plate, Stex 45 mounting bolt			
			M12 8.8	M10 8.8
	F _z [kN]	F _x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5	4,11	3,86	45	40
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/60/2,0				
45/90/2,0 D	10,94	4,41		
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0				
45/150/3,0 D				

Profile rail pre-galvanized	2-hole tooth plate		
			M12 8.8
	F _z [kN]	F _x [kN]	tightening torque [Nm]
45/26/1,5	5,57	10,00	45
45/52/1,5 D			
45/45/1,5			
45/90/1,5 D			
45/45/2,0			
45/60/2,0			
45/90/2,0 D	13,97	12,81	
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0			
45/150/3,0 D			

Profile rail pre-galvanized	Tooth plate S*, Stex 45 mounting plate MP-S*, tooth bolt (M12)			
			M12 8.8	M10 8.8
	F _z [kN]	F _x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5	4,50	3,91	45	40
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/60/2,0				
45/90/2,0 D	13,86	4,32		
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0				
45/150/3,0 D				

» Admissible loading capacity according to RAL-GZ 655-D

in combination with Stex 45, 2-hole tooth plate, tooth plate S, tooth bolt
global safety coefficient $\gamma = 2$

Profile rail hot-dip galvanized zinc magnesium	Stex 45 threaded bolt, Stex 45 mounting plate, Stex 45 mounting bolt			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5*	10,94	2,95	45	40
45/45/1,5*				
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0*				
45/150/3,0 D*				

Profile rail hot-dip galvanized zinc magnesium	2-hole threaded plate		
			M12 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/26/1,5*	13,97	4,38	45
45/45/1,5*			
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0*			
45/150/3,0 D*			

Profile rail hot-dip galvanized zinc magnesium	Tooth plate S*, Stex 45 mounting plate MP-S*, tooth bolt (M12)			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5*	13,86	2,90	45	40
45/45/1,5*				
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0*				
45/150/3,0 D*				

* without approval according to RAL-GZ 655-D

» Admissible loading capacity

in combination with Stex45, threaded bolt GB, threaded plate, threaded square plate
global safety coefficient $\gamma = 2$

Profile rail pre-galvanized	Stex 45 GB, threaded bolt GB		
			M12 4.6
	F _z [kN]	F _x [kN]	tightening torque [Nm]
45/26/1,5	4,11	2,80	29
45/52/1,5 D			
45/45/1,5			
45/90/1,5 D			
45/45/2,0			
45/60/2,0			
45/90/2,0 D			
45/45/2,5	9,54	2,80	
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0			
45/150/3,0 D			

Profile rail pre-galvanized	Threaded plate 40 x 22 (40,5 x 19 x 8)		
			M12 8.8
	F _z [kN]	F _x [kN]	tightening torque [Nm]
45/26/1,5	4,24	1,10	40
45/52/1,5 D			
45/45/1,5			
45/90/1,5 D			
45/45/2,0			
45/60/2,0			
45/90/2,0 D			
45/45/2,5	10,00	1,10	
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0			
45/150/3,0 D			

Profile rail pre-galvanized	Threaded square plate M10 and M12 35 x 30 x 6, (M16 35 x 30 x 8)*			
			M12 8.8 (M16 8.8)	M10 8.8
	F _z [kN]	F _x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5	2,80 (3,23)*	1,45 (1,70)*	40 (45)*	35
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/60/2,0				
45/90/2,0 D				
45/45/2,5	8,6 (8,8)*	1,75 (2,00)*		
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0				
45/150/3,0 D				

* Values in brackets only for M16 35 x 30 x 8

» Admissible loading capacity

in combination with Stex45, threaded bolt GB, threaded plate, threaded square plate
global safety coefficient $\gamma = 2$

Profile rail hot-dip galvanized zinc magnesium	Stex 45 GB, threaded bolt GB		
			M12 4.6
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/26/1,5*	9,54	2,36	29
45/45/1,5*			
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0*			
45/150/3,0 D*			

Profile rail hot-dip galvanized zinc magnesium	Threaded plate 40 x 22		
			M12 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/26/1,5*	10,00	1,74	45
45/45/1,5*			
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0*			
45/150/3,0 D*			

Profile rail hot-dip galvanized zinc magnesium	Threaded square plate M10 and M12 35 x 30 x 6, (M16 35 x 30 x 8)**			
			M12 8.8 (M16 8.8)	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5*	8,60 (8,80)**	1,60 (1,90)**	40 (45)**	35
45/45/1,5*				
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0*				
45/150/3,0 D*				

* without approval according to RAL-GZ 655-D

** Values in brackets only for M16 35 x 30 x 8

Note: Load ratings and tightening torques for M8 and M6 screw connections are not technically feasible due to insufficient preload.

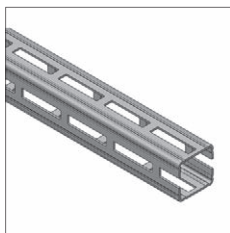
PROFILE RAILS OPTIMUM XLV

and accessories

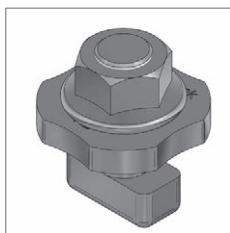
02d



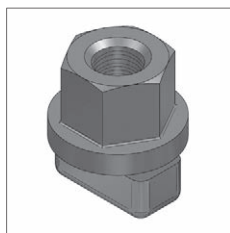
» MEFA Profile rail OPTIMUM XLV



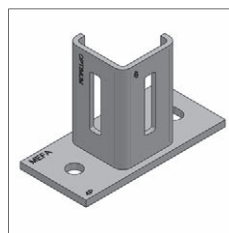
OPTIMUM XLV
45/45



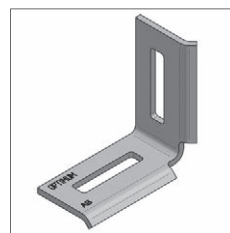
OPTI-Lock



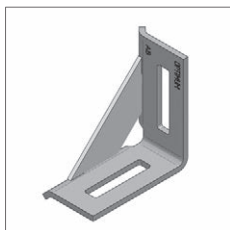
OPTIMUM XLV
Direct connector



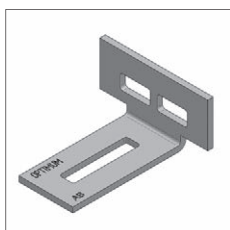
OPTIMUM XLV Holder



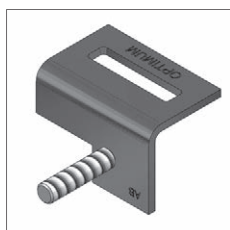
OPTIMUM XLV
Angle 2-hole



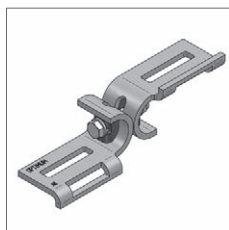
OPTIMUM XLV
Knot triangle



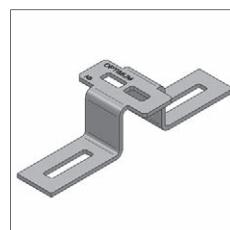
OPTIMUM XLV
Angle horizontal



OPTIMUM XLV Adapter



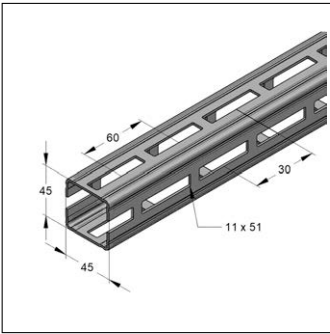
OPTIMUM XLV
3D-joint



OPTIMUM XLV
Head profile

02d

» OPTIMUM XLV profile, TSP®



OPTIMUM XLV profile

02d



Product description

- Torsionally rigid and practical
- Connection in any position and situation thanks to 4-sided connectivity
- Stepless installation possible
- C4 high-coated, ideally suited for indoor and outdoor use
- CE-compliant profile

Specification

Technical data

Application area: Profile for the medium load range. Material: Steel

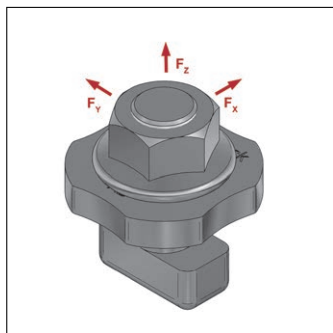
Specification: closed profile

Remark: Suitable protecting caps see chapter 2c. For technical overview of mounting rails see end of chapter 2d. A design in accordance with DIN EN 1993-1-2 (EC) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

Dimension [mm]	Length [m]	TSP	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
45/45/2	3	yes	Zinc-Magnesium	2,08	180	18	08244001
45/45/2	6	yes	Zinc-Magnesium	2,08	360	24	08244002



» OPTI-Lock, TSP®



OPTI-Lock



02d

Product description

- Screw connection system with anti-rotation device for quick and easy installation
- locking nut with flange is fixed in a specific position
- no rotating during installation
- The OPTI-Lock fits perfectly with a 1/4 turn
- saves time and makes installation easier

Specification

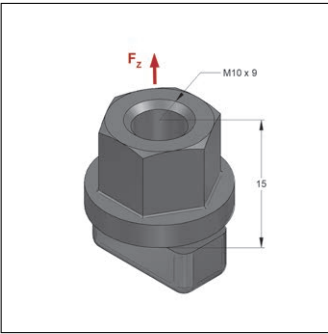
Specification: friction-lock connection

Technical data

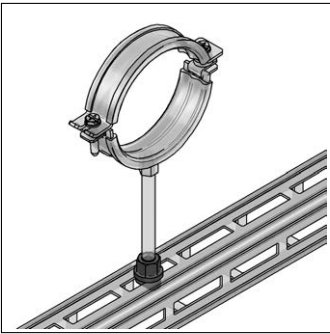
Material: Steel
 Surface: Zinc-Nickel
 Tightening torque: 50 Nm

Thread	Length thread [mm]	Strength class	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	15	8.8	3	8	4,5	0,0550	50	08246001

» OPTIMUM XLV direct connector, TSP®



OPTIMUM XLV direct connector



Assembly example

02d



Product description

- for directly attaching a pipe clamp

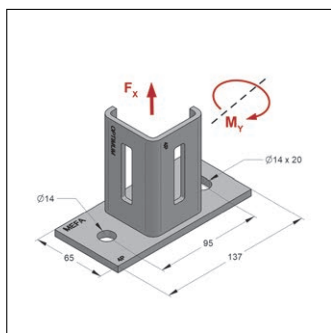
Technical data

Material: Steel
Surface: Zinc-Nickel

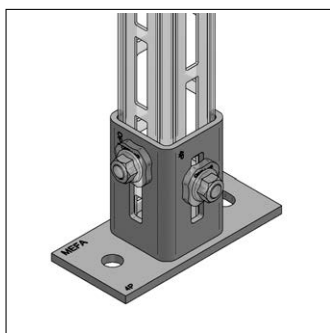
Thread	Wrench size	Height collar nut [mm]	Tightening torque [Nm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	16	15	25	4,5	0,0360	50	08245009



» OPTIMUM XLV holder, TSP®



OPTIMUM XLV holder



Assembly example



Product description

- The holder's construction is 3-sided and circumferential
- OPTIMUM XLV profile is secured in the holder
- can absorb high torques

Specification

Application area: For mounting the OPTIMUM XLV profiles.

Recommended accessories: OPTI-Lock M10x15

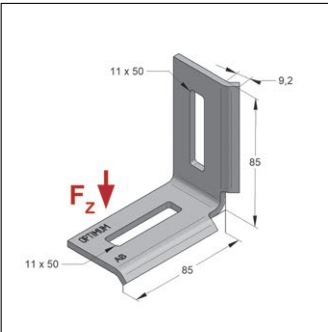
Technical data

Material: Steel

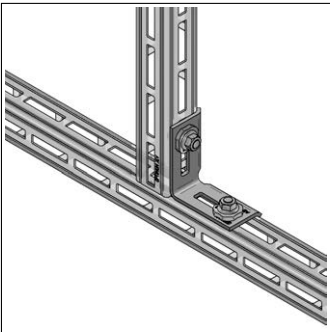
Surface: Zinc-Nickel

Dimension base plate [mm]	Load F_x [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
137x65x6	6	0,2	0,674	10	08245001

» OPTIMUM XLV angle 2-hole, TSP®



OPTIMUM XLV angle 2-hole



Assembly example

02d



Product description

- with side edge as installation help
- no twisting during installation

Specification

Application area: For connecting OPTIMUM XLV mounting profiles.

Recommended accessories: OPTI-Lock M10x15

Technical data

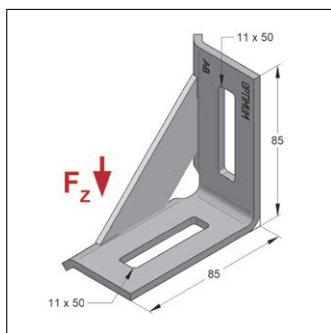
Material: Steel

Surface: Zinc-Nickel

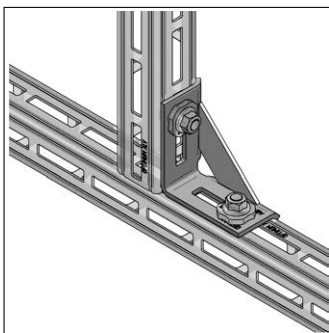
Angle [°]	Bracket length [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90	85x85	2	0,192	25	08245005



» OPTIMUM XLV knot triangle, TSP®



OPTIMUM XLV knot triangle



Assembly example



Specification

Application area: For stable angle connections of OPTIMUM XLV profiles with increased load capacity.

Recommended accessories: OPTI-Lock M10x15

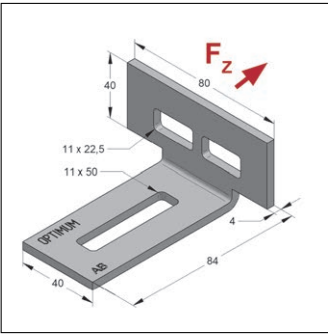
Technical data

Material: Steel

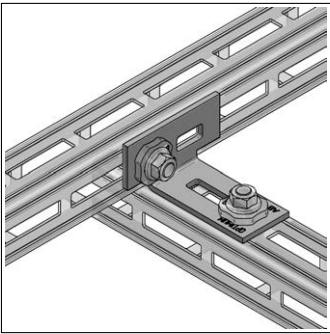
Surface: Zinc-Nickel

Angle [°]	Bracket length [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90	85x85	3	0,303	25	08245004

» OPTIMUM XLV angle horizontal, TSP®



OPTIMUM XLV angle horizontal



Assembly example

02d



Product description

- The horizontal wing allows overlapping constructions and connection to other rail systems

Specification

Application area: For connecting OPTIMUM XLV mounting profiles, as well as the mounting rail 45, C-profile and Stex 35.

Recommended accessories: OPTI-Lock M10x15

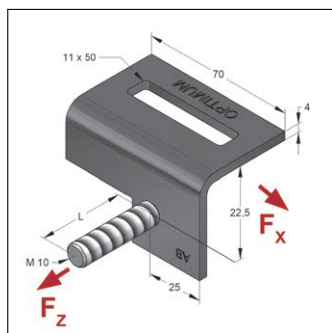
Technical data

Material: Steel
Surface: Zinc-Nickel

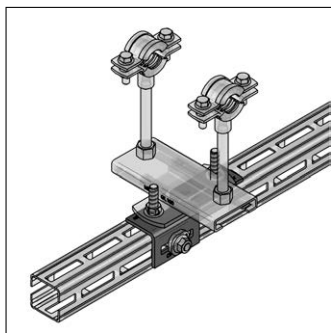
Angle [°]	Bracket length [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90	80x40	3	0,165	25	08245003



» OPTIMUM XLV adapter, TSP®



OPTIMUM XLV adapter



Assembly example



Specification

Application area: For adapting components such as base plates, Z-guides for sliding plates, ceiling hangers, sliding parts with lugs, roller bearings, etc.

Recommended accessories: OPTI-Lock M10x15

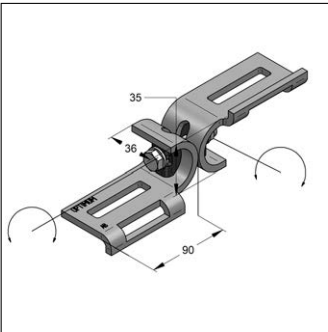
Installation advise: The adapter must be used in pairs. The distance between them can be freely selected depending on the component part.

Technical data

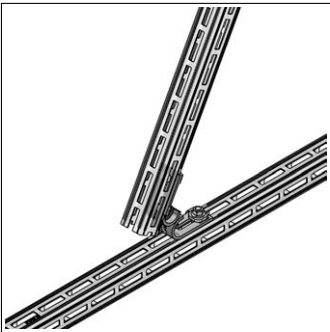
Material: Steel
Surface: Zinc-Nickel
Tightening torque bolt: 10 Nm

Thread	Length thread L [mm]	Load F_x [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	20	6	9	0,159	10	08245008
M10	40	6	9	0,171	10	08245010

» OPTIMUM XLV 3D-joint, TSP®



OPTIMUM XLV 3D-joint



Assembly example

02d



Product description

- mounting and installation in many different positions
- flexible and infinitely variable connection of the OPTIMUM XLV profile and the 45 mounting rail

Specification

Recommended accessories: OPTI-Lock M10x15

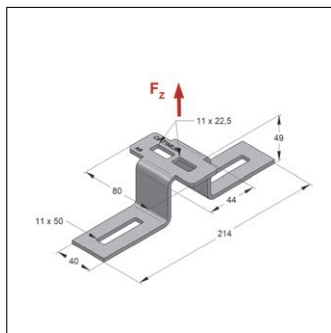
Technical data

Material: Steel
Surface: Zinc-Nickel

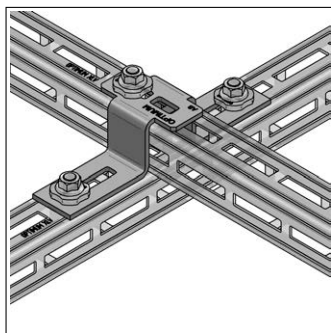
Bracket length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90x90	0,418	10	08245006



» OPTIMUM XLV head profile, TSP®



OPTIMUM XLV head profile



Assembly example



Specification

Application area: Connecting component for fixing two crossing profile rails.

Recommended accessories: OPTI-Lock M10x15

Technical data

Material: Steel

Surface: Zinc-Nickel

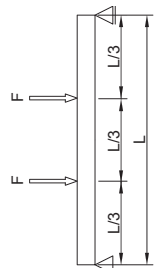
Height [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
49	4	2,5	0,368	25	08245007

» Loads of profile rails, galvanized: loads for 1 x F

		System 35				System 45 (toothed)																OPTIMUM XLV							
		35/20/0,8	35/21/2,0	35/35/1,0	35/42/1,5	fbv	fbv/zm	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/45/2,5	45/60/2,0	45/60/3,0	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5	45/90/1,5	45/90/2,0	45/90/2,5	45/90/2,5	45/120/3,0	45/120/3,0	45/150/3,0	45/150/3,0	45/45/2,0	
Surface	fbv	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	zm
	F	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
	L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
	500	0,31	1,82	1,02	0,69	1,04	2,64	3,36	3,70	3,48	4,58	6,02	5,66	9,09	8,55	3,07	4,40	7,40	7,96	8,67	7,63	7,63	7,63	8,11	8,11	8,11	8,11	8,11	3,63
	750	0,16	1,21	0,68	0,42	0,69	1,76	2,24	2,46	2,32	3,05	4,01	3,77	6,06	5,69	2,04	4,40	6,65	7,96	7,53	7,63	7,63	7,63	8,11	8,11	8,11	8,11	8,11	2,42
	1000		0,91	0,51	0,24	0,42	1,32	1,68	1,84	1,73	2,28	3,00	2,82	4,54	4,26	1,53	3,88	4,98	6,00	5,64	7,63	7,63	7,63	8,11	8,11	8,11	8,11	8,11	1,81
	1250		0,73	0,35	0,15	0,27	1,05	1,34	1,47	1,38	1,82	2,39	2,25	3,62	3,40	1,22	3,10	3,98	4,79	4,50	7,63	7,63	7,63	8,11	8,11	8,11	8,11	8,11	1,45
	1500		0,54	0,24	0,10	0,18	0,80	1,02	1,15	1,15	1,52	1,99	1,87	3,01	2,83	1,01	2,58	3,31	3,98	3,74	6,44	6,05	8,11	8,11	8,11	8,11	8,11	8,11	1,05
	1750		0,40	0,18		0,13	0,59	0,74	0,84	0,84	1,30	1,70	1,59	2,57	2,42	0,78	2,20	2,83	3,40	3,19	5,51	5,17	8,11	8,11	8,11	8,11	8,11	8,11	0,77
2000		0,30	0,14		0,10	0,44	0,56	0,64	0,63	1,05	1,36	1,35	2,24	2,10	0,59	1,92	2,46	2,97	2,79	4,81	4,51	7,51	7,51	7,51	7,51	7,51	7,51	0,58	
2250		0,24	0,11			0,35	0,44	0,50	0,49	0,83	1,06	1,06	1,99	1,86	0,46	1,70	2,18	2,63	2,47	4,26	3,99	6,66	6,66	6,66	6,66	6,66	6,66	0,46	
2500		0,19				0,28	0,35	0,40	0,39	0,66	0,85	0,85	1,64	1,63	0,37	1,52	1,96	2,36	2,21	3,82	3,58	5,97	5,97	5,97	5,97	5,97	5,97	0,37	
2750		0,15				0,23	0,29	0,32	0,32	0,54	0,70	0,69	1,34	1,34	0,30	1,37	1,76	2,12	2,00	3,46	3,24	5,42	5,42	5,42	5,42	5,42	5,42	0,3	
3000		0,12				0,19	0,23	0,26	0,26	0,45	0,57	0,57	1,12	1,11	0,25	1,14	1,47	1,77	1,76	3,16	2,96	4,95	4,95	4,95	4,95	4,95	4,95	0,25	
3250		0,10				0,15	0,19	0,22	0,21	0,38	0,48	0,48	0,94	0,94	0,20	0,97	1,24	1,49	1,49	2,90	2,71	4,55	4,55	4,55	4,55	4,55	4,55	0,21	
3500						0,13	0,16	0,18	0,18	0,32	0,40	0,40	0,80	0,79	0,17	0,82	1,06	1,27	1,27	2,68	2,5	4,21	4,21	4,21	4,21	4,21	4,21	0,17	
3750						0,11	0,14	0,15	0,15	0,27	0,34	0,34	0,68	0,68	0,14	0,71	0,91	1,09	1,09	2,41	2,32	3,91	3,91	3,91	3,91	3,91	3,91	0,15	
4000							0,11	0,13	0,12	0,23	0,29	0,29	0,59	0,58	0,12	0,61	0,79	0,95	0,94	2,10	2,10	3,65	3,65	3,65	3,65	3,65	3,65	0,12	
4250							0,10	0,10	0,10	0,20	0,25	0,24	0,51	0,51	0,10	0,54	0,69	0,83	0,82	1,84	1,83	3,42	3,42	3,42	3,42	3,42	3,42	0,11	
4500										0,17	0,21	0,21	0,44	0,44		0,47	0,60	0,72	0,71	1,62	1,61	3,21	3,21	3,21	3,21	3,21	3,21	-	
4750										0,15	0,18	0,18	0,39	0,38		0,41	0,53	0,63	0,63	1,44	1,43	2,90	2,90	2,90	2,90	2,90	2,90	-	
5000										0,13	0,15	0,15	0,34	0,33		0,36	0,46	0,56	0,55	1,28	1,27	2,59	2,59	2,59	2,59	2,59	2,59	-	
5250										0,11	0,13	0,12	0,29	0,29		0,32	0,41	0,49	0,48	1,14	1,13	2,32	2,32	2,32	2,32	2,32	2,32	-	
5500											0,11	0,10	0,26	0,25		0,28	0,36	0,43	0,42	1,02	1,01	2,09	2,09	2,09	2,09	2,09	2,09	-	
5750													0,22	0,21		0,25	0,32	0,38	0,37	0,91	0,90	1,89	1,89	1,89	1,89	1,89	1,89	-	
6000													0,19	0,18		0,22	0,28	0,33	0,32	0,81	0,80	1,71	1,71	1,71	1,71	1,71	1,71	-	

Surface property
fbv: pre-galvanized
fsv: hot-dip galvanized
zm: zinc magnesium

Calculation according to RAL-GZ 655-C
 Safety $X = 1,54$
 max. bending $\delta_{zul} = L/200$
 module of elasticity $E = 210000 \text{ N/mm}^2$



» Loads of profile rails, galvanized: loads for 3 x F

		System 45 (toothed)														OPTIMUM XLV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		System 35														45/150/3,0 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D	45/45/2,0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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» Loads of profile rails, galvanized: loads for distributed load

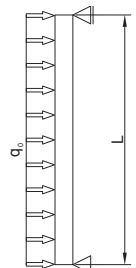
		System 35				SIGNUM LP50	System 45 (toothed)																OPTIMUM XLV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 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D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv	45/150/3,0 D	fbv

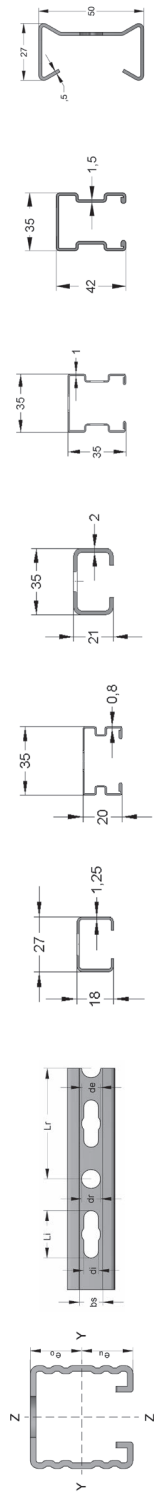
Surface property

fbv: pre-galvanized
fsv: hot-dip galvanized
zm: zinc magnesium

Calculation according to RAL-GZ 655-C

Safety $X = 1,54$
max. bending $\delta_{zul} = L/200$
module of elasticity $E = 210000 \text{ N/mm}^2$

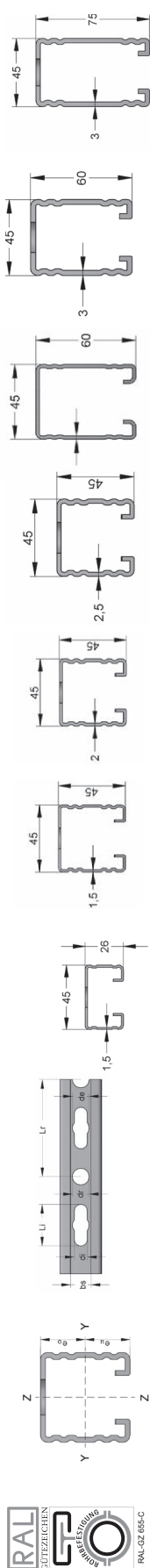




SIGNUM LP50

Surface pre-galvanized									
Material according to DIN EN 10346		S250	S250	S250	S250	S250	S250	S250	S250
Elastic limit	f _y	N/mm ²	250	250	250	250	250	250	250
Weight/ meter	G/m	kg/m	0,60	0,64	1,16	1,03	1,63	1,07	1,07
Surface hot-dip galvanized according to DIN EN ISO 1461									
Material according to DIN EN 10025-2		-	-	-	-	-	-	-	-
Elastic limit	f _y	N/mm ²	-	-	-	-	-	-	-
Weight/meter	G/m	kg/m	-	-	-	-	-	-	-
Area (least cross section of the profile rail)	A _k	cm ²	0,68	0,74	1,40	1,03	1,99	1,29	1,29
Slot width	b _s	mm	14,0	21,0	17,0	21,0	22,0	11,0	11,0
Grid dimension	l _r	mm	52,5	25,0	52,5	25,0	25,0	50,0	50,0
Diameter round hole	d _r	mm	-	8,5+10,5	-	8,5+10,5	8,5+10,5	-	-
Diameter elongated hole x length	d _l x l _l	mm x mm	10,5 x 38,5	8,5 x 15,0	10,5 x 38,5	8,5 x 15,0	8,5 x 15,0	11 x 40	11 x 40
Extension diameter elongated hole	d _e	mm	-	-	-	-	-	-	-
Characteristic values YY-axis									
Moment of inertia	I _y	cm ⁴	0,29	0,40	0,80	1,86	4,17	5,01	5,01
Section modulus	W _y	cm ³	0,31	0,39	0,71	1,04	1,87	2,01	2,01
Centroid distance	e _o	cm	0,85	0,97	0,96	1,72	1,97	2,50	2,50
Centroid distance	e _u	cm	0,95	1,03	1,14	1,78	2,33	2,50	2,50
Radius of inertia	i _y	cm	0,65	0,74	0,76	1,34	1,44	1,97	1,97
Characteristic values ZZ-axis									
Moment of inertia	I _z	cm ⁴	0,90	1,53	2,83	2,21	4,05	1,26	1,26
Section modulus z-axis	W _z	cm ³	0,67	0,87	1,61	1,26	2,31	0,87	0,87
Centroid distance	e _z	cm	1,35	1,75	1,75	1,75	1,75	1,54	1,54
Radius of inertia	i _z	cm	1,15	1,44	1,42	1,46	1,43	1,37	1,37
Approvals/quality marks									
RAL quality mark	RAL-GZ 655-C	x	x	x	x	x	x	x	no

» Profile rail overview, pre- and hot-dip galvanized



Profile rail

Surface pre-galvanized

Material according to DIN EN 10346

Elastic limit

Weight/ meter

45/26/1,5 45/45/1,5 45/45/2,0 45/45/2,5 45/60/2,0 45/60/3,0 45/75/3,0

S250 S250 S250 S250 S250 S250 S250
250 250 250 250 250 250 250
1,34 1,89 2,45 2,96 2,76 4,06 4,82

Surface hot-dip galvanized according to DIN EN ISO 1461

Material according to DIN EN 10025-2

Elastic limit

Weight/meter

- - - S235JR

- - - 235 235 235
- - - 3,21 4,35 5,15

Area (least cross section of the profile rail)

Slot width

Grid dimension

Diameter round hole

Diameter elongated hole x length

Extension diameter elongated hole

1,49 2,29 2,98 3,53 3,34 4,52 5,66
22,0 22,0 22,0 22,0 22,0 22,0 22,0
105,0 105,0 105,0 105,0 105,0 105,0 105,0
14,0 14,0 14,0 18,0 18,0 18,0 18,0
14,0 x 45,0 14,0 x 45,0 14,0 x 45,0 14,0 x 45,0 14,0 x 45,0 14,0 x 45,0 14,0 x 45,0
- - - 18,0 18,0 18,0 18,0 18,0

Characteristic values YY-axis

Moment of inertia

Section modulus

Centroid distance

Centroid distance

Radius of inertia

1,42 6,14 7,79 8,81 14,46 18,67 35,36
1,06 2,71 3,45 3,80 4,70 6,18 9,34
1,34 2,23 2,24 2,19 2,92 3,02 3,71
1,26 2,27 2,26 2,31 3,08 2,98 3,79
0,98 1,64 1,62 1,58 2,08 2,03 2,50

Characteristic values ZZ-axis

Moment of inertia

Section modulus Z-axis

Centroid distance

Radius of inertia

5,15 8,35 10,65 12,69 12,93 17,15 21,90
2,29 3,71 4,73 5,64 5,74 7,62 9,74
2,25 2,25 2,25 2,25 2,25 2,25 2,25
1,86 1,91 1,89 1,90 1,96 1,95 1,96

Approvals/quality marks

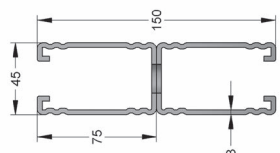
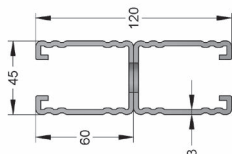
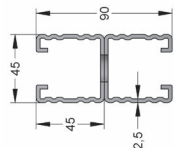
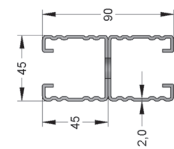
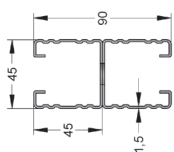
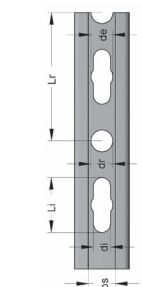
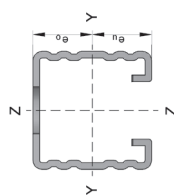
RAL quality mark

RAL-GZ 655-C

x x x x no x x

» Profile rail overview, pre- and hot-dip galvanized

02d



Profile rail double

45/52/1,5 D

45/90/1,5 D

45/90/2,0 D

45/90/2,5 D

45/120/3,0 D

45/150/3,0 D

Surface pre-galvanized

Material according to DIN EN 10346

Elastic limit

 f_y
N/mm²

Weight/meter

 G/m
kg/m

Surface hot-dip galvanized according to DIN EN ISO 1461

Material according to DIN EN 10025-2

Elastic limit

 f_y
N/mm²

Weight/meter

 G/m
kg/m

Area (least cross section of the profile rail)

 A_k
cm²

Slot width

 b_s
mm

Grid dimension

 l_r
mm

Diameter round hole

 d_r
mm

Diameter elongated hole x length

 $d_l \times l_l$
mm x mm

Extension diameter elongated hole

 d_e
mm

Characteristic values YY-axis

Moment of inertia

 I_y
cm⁴

Section modulus

 W_y
cm³

Centroid distance

 e_o
cm

Centroid distance

 e_u
cm

Radius of inertia

 i_y
cm

Characteristic values ZZ-axis

Moment of inertia

 I_z
cm⁴

Section modulus z-axis

 W_z
cm³

Centroid distance

 e_z
cm

Radius of inertia

 i_z
cm

Approvals/quality marks

RAL quality mark

RAL-GZ 655-C

x

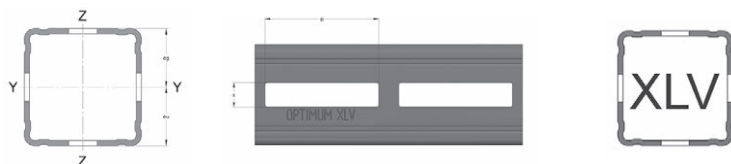
x

x

x

x

» Profile rail overview OPTIMUM XLV Zinc-Magnesium



Profile rail

OPTIMUM XLV

45/45/2,0

Surface Zinc-Magnesium in accordance with DIN EN 10346

Material according to DIN EN 10025-2

Elastic limit	f_y	N/mm ²	250
Weight/ meter	G/m	kg/m	2,07
Area (least cross section of the profile rail)	A_k	cm ²	2,47
Grid dimension	l_r	mm	-
Diameter round hole	d_r	mm	-
Diameter elongated hole x length	$d_l \times l_l$	mm x mm	11,0 x 51,0
Extension diameter elongated hole	d_e	mm	-

Characteristic values YY-axis

Moment of inertia	I_y	cm ⁴	8,04
Section modulus	W_y	cm ³	3,73
Centroid distance	e_o	cm	2,25
Centroid distance	e_u	cm	2,25
Radius of inertia	i_y	cm	1,80

Characteristic values ZZ-axis

Moment of inertia	I_z	cm ⁴	8,04
Section modulus z-axis	W_z	cm ³	3,73
Centroid distance	e_z	cm	2,25
Radius of inertia	i_z	cm	2,25

Approvals/quality marks

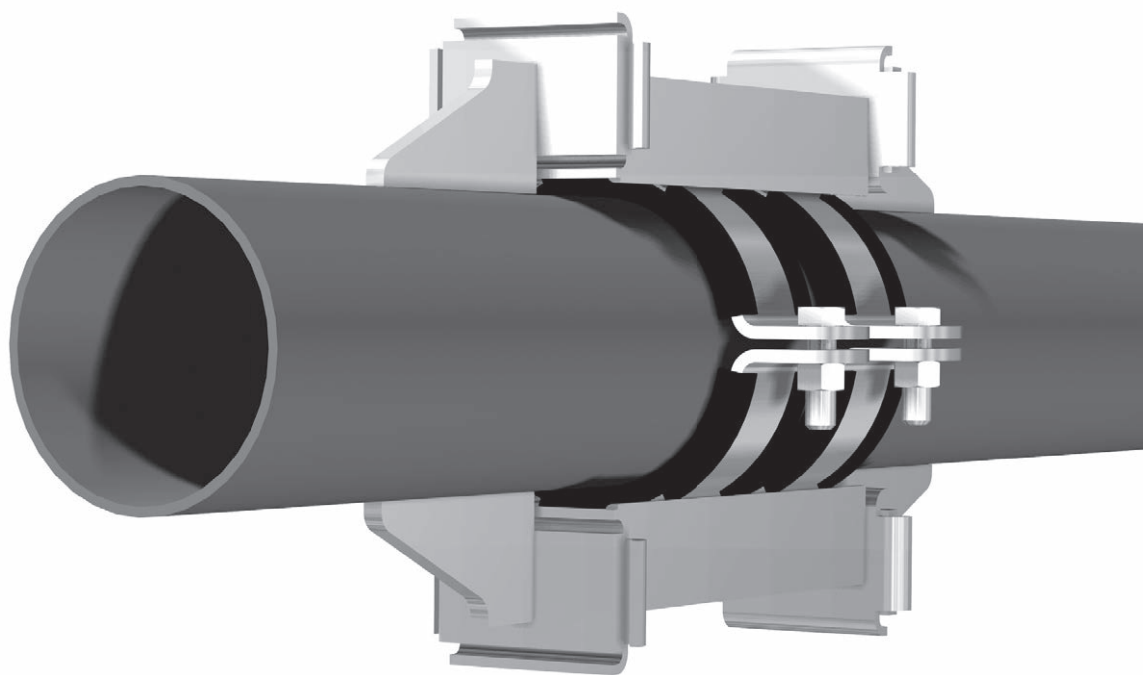
CE in accordance with EN 1090	yes
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02d

FIX POINTS

*fix points, insulated fixpoints,
clamping fixpoints and accessories*

03a



» MEFA-Fixpoints and accessories

Pipelines will expand under temperature influence. To balance these length elongations, compensators or expansion bends will be integrated in the piping

The compensating pipeline alignments have to be limited in their lengths, as their thrusts may cause damages on the building or on the compensator. The fixpoint limits these enlargements.

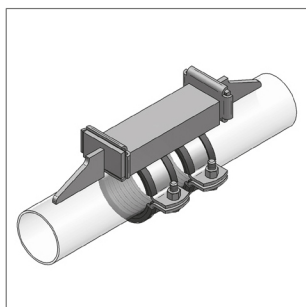
The total load of a fixpoint in connection with a compensator is independent of pressure, temperature differences and pipe lengths between the compensator and fixpoints, as well as the bellows cross-section and axial value resistance. Pipelines fixed on building constructions have to be mounted with sound insulations according to DIN 4109.

Specification:

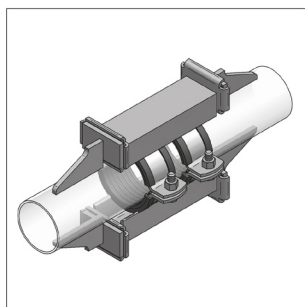
The body material of the fixpoint is galvanized. Raw parts e.g. the welding lug for fixpoints should also be coated after welding. We recommend to protect all raw parts and weldings by zinc-rich primer or zinc-spray.

Operation/Installation advice:

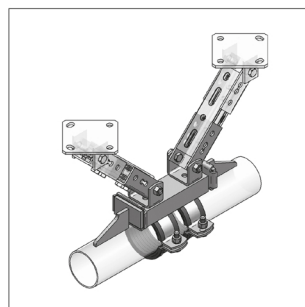
- suitable for straight, unramified pipeline alignment with axial compensator or U-expansion bend
- forced guide bearing in close proximity to the compensator is mandatory



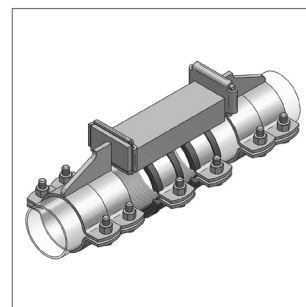
Fixpoint type A



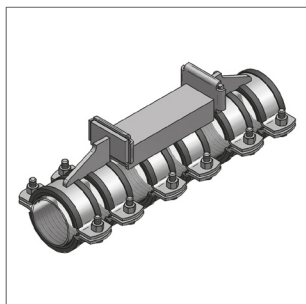
Fixpoint type B



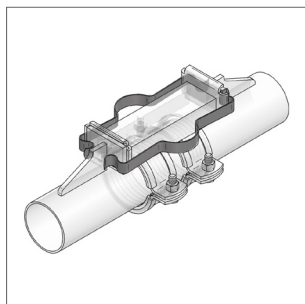
Fixpoint type A with joint holder



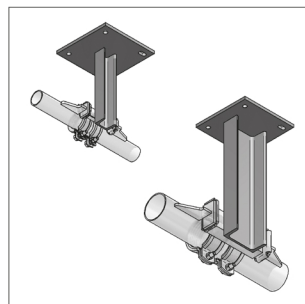
Fixpoint type A/K



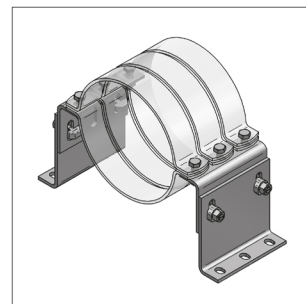
Fixpoint type A/K-MD



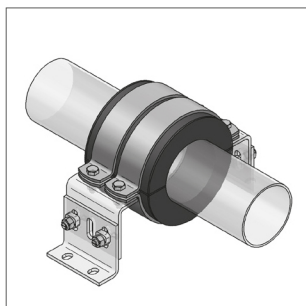
Mounting clamps for fixpoints



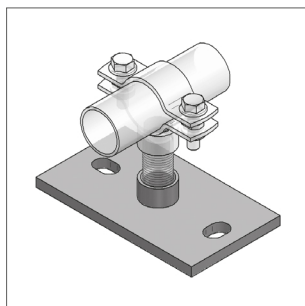
Fixpoint consoles



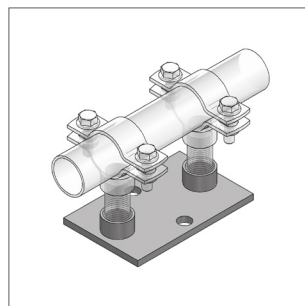
Fixpoint bracket HV
Sound-decoupling set FPH



Insulated fixpoint



Clamping fixpoint



Fixpoint type FGL

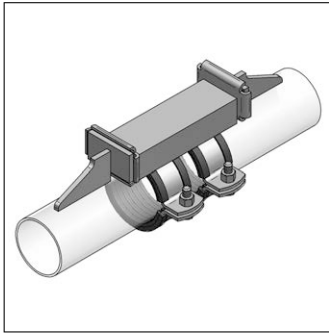
i Fixpoints (welded) for stainless steel pipes see chapter 13

Remarks to fixpoints see chapter 15

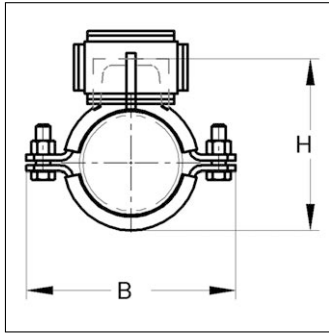
03a

» Fixpoint type A (for welding)

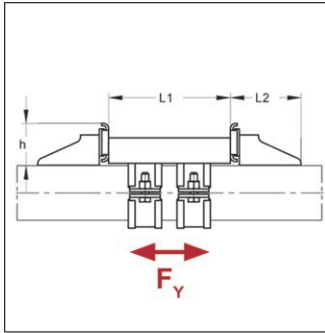
TPE



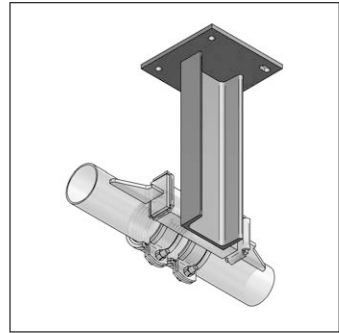
Fixpoint type A (mounted)



Fixpoint type A



Fixpoint type A



Fixpoint Type A with fixpoint console



Specification

- Application area: Sound-decoupled fixpoint for welding to ferritic steel pipes.
- Number of pressure piece: 2 pcs
- Recommended accessories: for mounting clamps for fixing the pressure pieces see chapter 3.
- Installation advise: The quality of weld seam has to be proofed.

Technical data

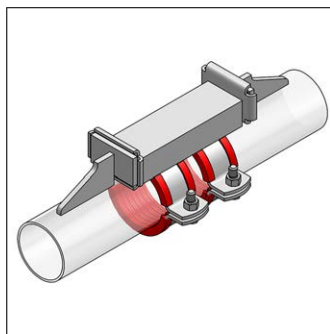
- Material carrier and clamps: Steel
- Surface carrier and clamps: galvanized
- Material pressure pieces: Steel
- Surface pressure pieces: raw
- Sound insulation lining: TPE
- Temperature resistance: -35 up to 100 °C

Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

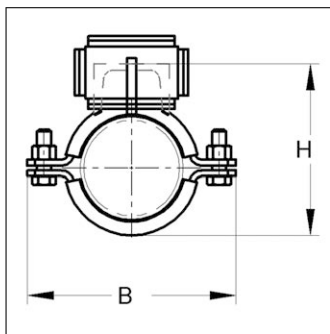
Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F_Y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	15-19	25x3	T	100	81	1a	47	60-64	80	8,5	0,918	1	0020171
Size 1	20-25	25x3	T	100	81	1a	47	66-71	87	8,5	0,943	1	0020221
Size 1	26-30	25x3	T	100	81	1a	47	72-76	92	8,5	0,973	1	0020271
Size 1	31-36	25x3	T	100	81	1a	47	77-82	98	8,5	0,997	1	0020341
Size 1	38-45	25x3	T	100	81	1a	47	84-91	107	8,5	1,03	1	0020421
Size 1	47-51	25x3	T	100	81	1a	47	93-97	114	8,5	1,08	1	0020481
Size 1	53-57	25x3	T	100	81	1a	47	99-103	120	8,5	1,11	1	0020571
Size 2	60,3	50x5	U	200	116	2	69	112,5	148	20,0	4,51	1	0020601
Size 2	76,1	50x5	U	200	116	2	69	131,0	166	20,0	4,75	1	0020761
Size 2	88,9	50x5	U	200	116	2	69	146,0	179	20,0	4,94	1	0020891
Size 2	108,0	50x5	U	200	116	2	69	165,0	199	20,0	5,23	1	0021081
Size 2	114,3	50x5	U	200	116	2	69	171,5	205	20,0	5,32	1	0021141
Size 2	133,0	50x5	U	200	116	2	69	191,0	224	20,0	5,97	1	0021331
Size 2	139,7	50x5	U	200	116	2	69	198,5	231	20,0	6,08	1	0021401
Size 2	159,0	50x5	U	200	116	2	69	218,0	251	20,0	6,36	1	0021591

» Fixpoint type A (for welding)

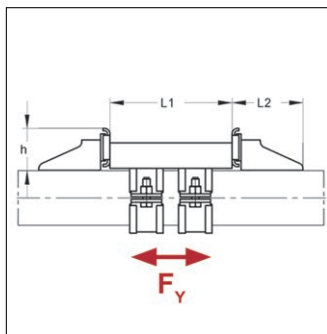
Silicone



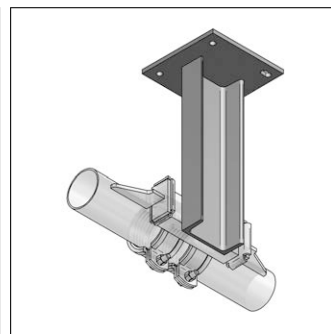
Fixpoint type A (mounted)



Fixpoint type A



Fixpoint type A



Fixpoint Type A with fixpoint console



Specification

Application area: Sound-decoupled fixpoint for welding to ferritic steel pipes.

Number of pressure piece: 2 pcs

Recommended accessories: for mounting clamps for fixing the pressure pieces see chapter 3.

Installation advise: The quality of weld seam has to be proofed.

Technical data

Material carrier and clamps: Steel

Surface carrier and clamps: galvanized

Material pressure pieces: Steel

Surface pressure pieces: raw

Sound insulation lining: Silicone

Temperature resistance: -50 up to 250 °C

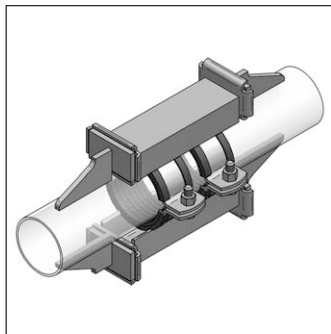
03a

Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

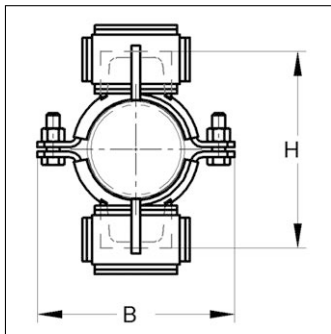
Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F_Y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	15-19	25x3	T	100	81	1a	47	60-64	80	8,5	0,918	1	0030171
Size 1	20-25	25x3	T	100	81	1a	47	66-71	87	8,5	0,943	1	0030221
Size 1	26-30	25x3	T	100	81	1a	47	72-76	92	8,5	0,973	1	0030271
Size 1	31-36	25x3	T	100	81	1a	47	77-82	98	8,5	0,997	1	0030341
Size 1	38-45	25x3	T	100	81	1a	47	84-91	107	8,5	1,03	1	0030421
Size 1	47-51	25x3	T	100	81	1a	47	93-97	114	8,5	1,08	1	0030481
Size 1	53-57	25x3	T	100	81	1a	47	99-103	120	8,5	1,11	1	0030571
Size 2	60,3	50x5	U	200	116	2	69	112,5	148	20,0	4,51	1	0030601
Size 2	76,1	50x5	U	200	116	2	69	131,0	166	20,0	4,75	1	0030761
Size 2	88,9	50x5	U	200	116	2	69	146,0	179	20,0	4,94	1	0030891
Size 2	108,0	50x5	U	200	116	2	69	165,0	199	20,0	5,23	1	0031081
Size 2	114,3	50x5	U	200	116	2	69	171,5	205	20,0	5,32	1	0031141
Size 2	133,0	50x5	U	200	116	2	69	191,0	224	20,0	5,97	1	0031331
Size 2	139,7	50x5	U	200	116	2	69	198,5	231	20,0	6,78	1	0031401
Size 2	159,0	50x5	U	200	116	2	69	218,0	251	20,0	6,36	1	0031591

» Fixpoint type B (for welding)

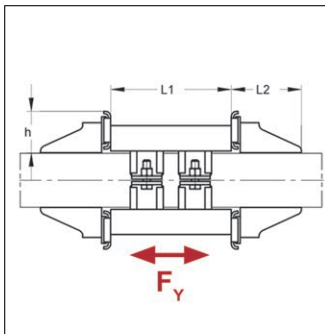
TPE



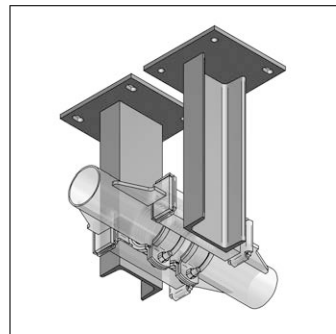
Fixpoint type B (mounted)



Fixpoint type B



Fixpoint type B



Fixpoint Type B with fixpoint console



Specification

Application area: Sound-decoupled fixpoint for welding to ferritic steel pipes.

Number of pressure piece: 4 pcs

Recommended accessories: for mounting clamps for fixing the pressure pieces see chapter 3.

Installation advise: the quality of weld seam has to be proofed.

Technical data

Material carrier and clamps: Steel

Surface carrier and clamps: galvanized

Material pressure pieces: Steel

Surface pressure pieces: raw

Sound insulation lining: TPE

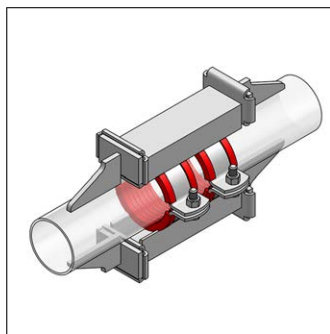
Temperature resistance: -35 up to 100 °C

Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

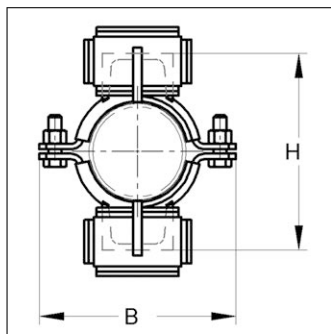
Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F_Y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	20-25	25x3	T	100	81	1a	47	96-101	87	17	1,53	1	0020222
Size 1	26-30	25x3	T	100	81	1a	47	102-106	92	17	1,56	1	0020272
Size 1	31-36	25x3	T	100	81	1a	47	107-112	98	17	1,59	1	0020342
Size 1	38-45	25x3	T	100	81	1a	47	114-121	107	17	1,62	1	0020422
Size 1	47-51	25x3	T	100	81	1a	47	123-127	114	17	1,66	1	0020482
Size 1	53-57	25x3	T	100	81	1a	47	129-133	120	17	1,69	1	0020572
Size 2	60,3	50x5	U	200	116	2	69	143	148	40	7,29	1	0020602
Size 2	76,1	50x5	U	200	116	2	69	164	166	40	7,53	1	0020762
Size 2	88,9	50x5	U	200	116	2	69	180	179	40	7,73	1	0020892
Size 2	108,0	50x5	U	200	116	2	69	200	199	40	8,91	1	0021082
Size 2	114,3	50x5	U	200	116	2	69	207	205	40	8,10	1	0021142
Size 2	133,0	50x5	U	200	116	2	69	227	224	40	9,12	1	0021332
Size 2	139,7	50x5	U	200	116	2	69	235	231	40	9,23	1	0021402
Size 2	159,0	50x5	U	200	116	2	69	256	251	40	9,51	1	0021592
Size 3	168,3	50x5	U	330	116	3	79	263	258	60	16,94	1	0021682
Size 3	193,7	50x5	U	330	116	3	79	294	284	60	17,33	1	0021942
Size 3	219,1	50x5	U	330	116	3	79	322	309	60	17,70	1	0022192
Size 3	273,0	50x5	U	330	116	3	79	382	363	60	18,51	1	0022732
Size 3	323,9	50x5	U	330	116	3	79	437	414	60	19,28	1	0023242
Size 3	355,6	50x5	U	330	116	3	79	470	446	60	19,76	1	0023562

» Fixpoint type B (for welding)

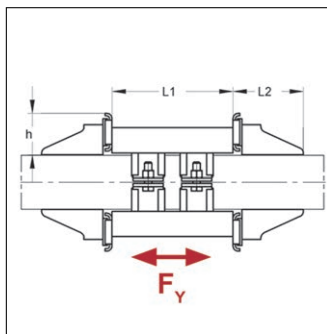
Silicone



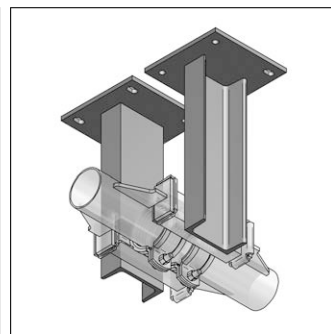
Fixpoint type B (mounted)



Fixpoint type B



Fixpoint type B



Fixpoint Type B with fixpoint console



Specification

Application area: Sound-decoupled fixpoint for welding to ferritic steel pipes.

Number of pressure piece: 4 pcs

Recommended accessories: for mounting clamps for fixing the pressure pieces see chapter 3.

Installation advise: the quality of weld seam has to be proofed.

Technical data

Material carrier and clamps: Steel

Surface carrier and clamps: galvanized

Material pressure pieces: Steel

Surface pressure pieces: raw

Sound insulation lining: Silicone

Temperature resistance: -50 up to 250 °C

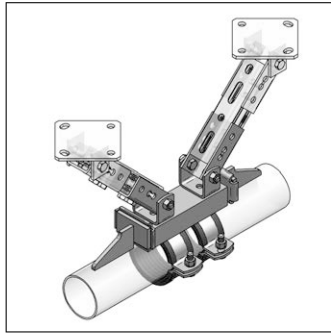
03a

Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

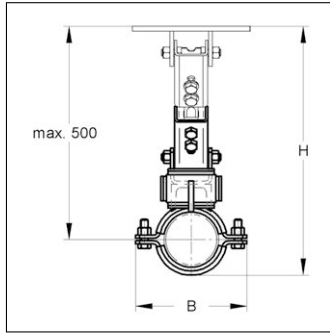
Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F_Y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	20-25	25x3	T	100	81	1a	47	96-101	87	17	1,53	1	0030222
Size 1	26-30	25x3	T	100	81	1a	47	102-106	92	17	1,56	1	0030272
Size 1	31-36	25x3	T	100	81	1a	47	107-112	98	17	1,59	1	0030342
Size 1	38-45	25x3	T	100	81	1a	47	114-121	107	17	1,62	1	0030422
Size 1	47-51	25x3	T	100	81	1a	47	123-127	114	17	1,66	1	0030482
Size 1	53-57	25x3	T	100	81	1a	47	129-133	120	17	1,69	1	0030572
Size 2	60,3	50x5	U	200	116	2	69	143	148	40	7,29	1	0030602
Size 2	76,1	50x5	U	200	116	2	69	164	166	40	7,53	1	0030762
Size 2	88,9	50x5	U	200	116	2	69	180	179	40	7,73	1	0030892
Size 2	108,0	50x5	U	200	116	2	69	200	199	40	8,01	1	0031082
Size 2	114,3	50x5	U	200	116	2	69	207	205	40	8,10	1	0031142
Size 2	133,0	50x5	U	200	116	2	69	227	224	40	9,12	1	0031332
Size 2	139,7	50x5	U	200	116	2	69	235	231	40	9,23	1	0031402
Size 2	159,0	50x5	U	200	116	2	69	256	251	40	9,51	1	0031592
Size 3	168,3	50x5	U	330	116	3	79	263	258	60	16,94	1	0031682
Size 3	193,7	50x5	U	330	116	3	79	294	284	60	17,33	1	0031942
Size 3	219,1	50x5	U	330	116	3	79	322	309	60	17,70	1	0032192
Size 3	273,0	50x5	U	330	116	3	79	382	363	60	18,51	1	0032732
Size 3	323,9	50x5	U	330	116	3	79	437	414	60	19,28	1	0033242
Size 3	355,6	50x5	U	330	116	3	79	470	446	60	19,76	1	0033562

» Fixpoint type A with joint holder (for welding)

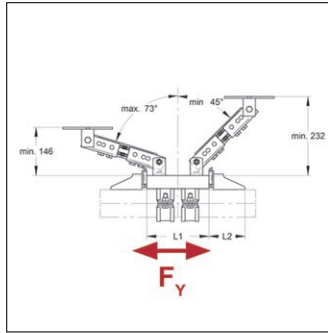
TPE



Fixpoint type A with joint holder (mounted)



Fixpoint type A with joint holder



Fixpoint type A with joint holder



Specification

- Application area:** Sound-decoupled fixpoint for welding to ferritic steel pipes. With joint adapter for profile rail 45.
- Number of pressure piece:** 2 pcs
- Recommended accessories:** 2x joint holder with plate, 2x C-profile 45/45/2,5, 8x hexagon head screw M12x25, 8x washer, 4x toothed plate 2-hole M12, 2x mounting clamps
- Installation advise:** the quality of weld seam has to be proofed.

Technical data

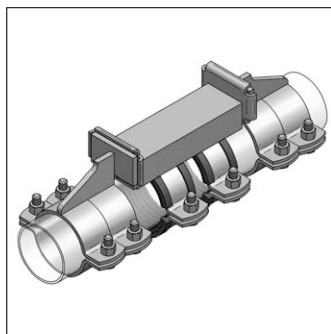
- Material carrier and clamps:** Steel
- Surface carrier and clamps:** galvanized
- Material pressure pieces:** Steel
- Surface pressure pieces:** raw
- Sound insulation lining:** TPE
- Temperature resistance:** -35 up to 100 °C

Delivery time: 5 working days, ex works

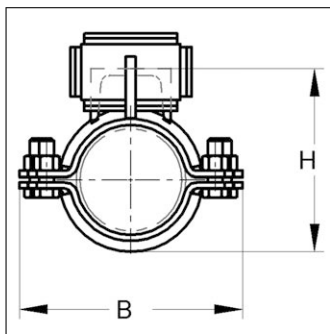
Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left), also on the angle, the length and type of selected profile rail.

Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Height H [mm]	Width B [mm]	Load F_y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	20-25	25x3	T	140	81	1b	186,0-521	87	8,5	2,65	1	9999671
Size 1	26-30	25x3	T	140	81	1b	192,0-523	92	8,5	2,68	1	9999932
Size 1	31-36	25x3	T	140	81	1b	197,0-526	98	8,5	2,71	1	9999835
Size 1	38-45	25x3	T	140	81	1b	204,0-531	107	8,5	2,74	1	9999868
Size 1	47-51	25x3	T	140	81	1b	213,0-534	114	8,5	2,79	1	9999869
Size 1	53-57	25x3	T	140	81	1b	219,0-537	120	8,5	2,82	1	9999864
Size 2	60,3	50x5	U	200	116	2	232,5-541	149	15,0	6,15	1	9999672
Size 2	76,1	50x5	U	200	116	2	251,5-549	166	15,0	6,39	1	9999933
Size 2	88,9	50x5	U	200	116	2	266,0-556	179	15,0	6,58	1	9999865
Size 2	108,0	50x5	U	200	116	2	285,0-565	199	15,0	6,87	1	9999866
Size 2	114,3	50x5	U	200	116	2	291,5-568	205	15,0	6,96	1	9999773
Size 2	133,0	50x5	U	200	116	2	311,0-578	224	15,0	7,61	1	9999772
Size 2	139,7	50x5	U	200	116	2	318,5-581	231	15,0	7,72	1	9999673
Size 2	159,0	50x5	U	200	116	2	339,0-591	251	15,0	8,00	1	9999674

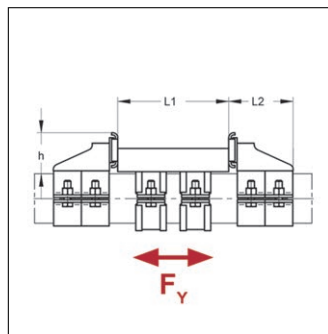
» Fixpoint type A/K (for clamping)



Fixpoint type A/K (mounted)



Fixpoint type A/K



Fixpoint type A/K



Specification

Application area: Sound-decoupled fixed point for clamping to galvanized steel pipes or ferritic steel pipes.

Installation advise: Change of pipe diameter due to thermal loads. In this case, sleeves has to be fixed in front of and behind the fixpoint.

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: TPE

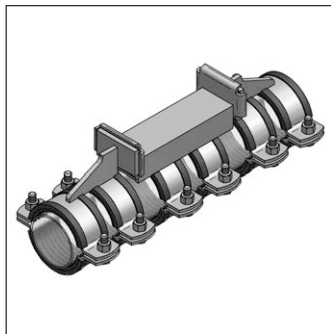
Temperature resistance: -35 up to 100 °C

Delivery time: 5 working days, ex works

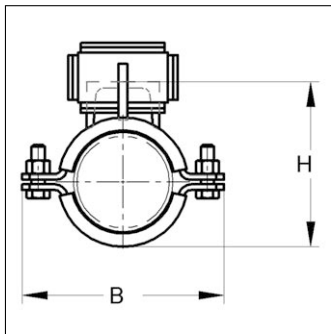
Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Measure construction h [mm]	Height H [mm]	Width B [mm]	Tightening torque [Nm]	Load F _Y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	15,0	25x3	T	100	81	50	61,0	80	6	4,5	1,43	1	0020153
Size 1	17,2	25x3	T	100	81	50	63,2	80	6	4,5	1,48	1	0020173
Size 1	20,0	25x3	T	100	81	50	66,0	87	6	4,5	1,52	1	0020203
Size 1	21,3	25x3	T	100	81	50	67,3	87	6	4,5	1,52	1	0020223
Size 1	22-23	25x3	T	100	81	50	68-69	87	6	4,5	1,52	1	0020233
Size 1	26-28	25x3	T	100	81	50	72-74	92	6	4,5	1,58	1	0020273
Size 1	30,0	25x3	T	100	81	50	76,0	92	6	4,5	1,62	1	0020303
Size 1	32-35	25x3	T	100	81	50	78-81	98	6	4,5	1,65	1	0020343
Size 1	38-40	25x3	T	100	81	50	84-86	107	6	4,5	1,72	1	0020403
Size 1	41-45	25x3	T	100	81	50	87-91	107	6	4,5	1,76	1	0020423
Size 1	48-51	25x3	T	100	81	50	94-97	114	6	4,5	1,86	1	0020483
Size 1	53-55	25x3	T	100	81	50	99-101	120	6	4,5	1,89	1	0020543
Size 1	58-60	25x3	T	100	81	50	106-108	129	6	4,5	1,97	1	0020583
Size 2	60,3	50x5	U	200	116	74	112,5	149	60	20,0	7,37	1	0020603
Size 2	63,0	50x5	U	200	116	74	116,0	152	60	20,0	7,49	1	0020630
Size 2	64,0	50x5	U	200	116	74	117,0	153	60	20,0	7,53	1	0020633
Size 2	70,0	50x5	U	200	116	74	124,0	160	60	20,0	7,77	1	0020703
Size 2	75,0	50x5	U	200	116	74	129,5	165	60	20,0	7,98	1	0020753
Size 2	76,1	50x5	U	200	116	74	131,5	166	60	20,0	8,02	1	0020763
Size 2	88,9	50x5	U	200	116	74	146,0	179	60	20,0	8,54	1	0020893
Size 2	108,0	50x5	U	200	116	74	165,0	199	60	20,0	9,31	1	0021083
Size 2	110,0	50x5	U	200	116	74	167,0	201	60	20,0	9,39	1	0021103
Size 2	114,3	50x5	U	200	116	74	171,5	205	60	20,0	9,55	1	0021143
Size 2	125,0	50x5	U	200	116	74	182,5	216	60	20,0	10,37	1	0021253
Size 2	133,0	50x5	U	200	116	74	191,0	224	60	20,0	10,69	1	0021333
Size 2	135,0	50x5	U	200	116	74	193,0	226	60	20,0	10,77	1	0021353
Size 2	139,7	50x5	U	200	116	74	198,5	231	60	20,0	10,97	1	0021403
Size 2	159,0	50x5	U	200	116	74	219,0	251	60	20,0	11,75	1	0021603

» Fixpoint type A/K-MD (for clamping)

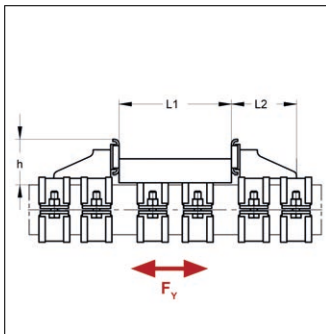
TPE



Fixpoint type A/K-MD (mounted)



Fixpoint type AK/MD



Fixpoint type AK/MD



Specification

Application area: Sound-decoupled fixed point for clamping to plastic pipes, copper pipes or stainless steel pipes (material separated).

Installation advise: Change of pipe diameter due to thermal loads. In this case, sleeves has to be fixed in front of and behind the fixpoint.

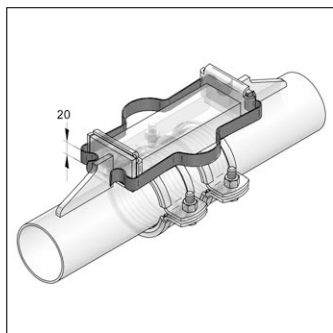
Technical data

Material: Steel
Surface: galvanized
Sound insulation lining: TPE
Temperature resistance: -35 up to 100 °C

Delivery time: 5 working days, ex works

Model	Clamping range [mm]	Material pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Measure construction h [mm]	Height H [mm]	Width B [mm]	Tightening torque [Nm]	Load F_y [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	15-19	25x3	T	100	81	56	61-65	80	6	2,0	1,58	1	0020155
Size 1	20-25	25x3	T	100	81	56	66-71	87	6	2,0	1,65	1	0020215
Size 1	26-30	25x3	T	100	81	56	72-76	92	6	2,0	1,74	1	0020265
Size 1	31-36	25x3	T	100	81	56	77-82	98	6	2,0	1,81	1	0020315
Size 1	38-45	25x3	T	100	81	56	84-91	107	6	2,5	1,92	1	0020385
Size 1	47-51	25x3	T	100	81	56	93-97	114	6	2,5	2,05	1	0020475
Size 1	53-57	25x3	T	100	81	56	99-103	120	6	2,5	2,14	1	0020535
Size 2	60,3	50x5	U	200	116	80	112,5	149	60	8,5	7,96	1	0020605
Size 2	63,0	50x5	U	200	116	80	116,0	152	60	8,5	8,09	1	0020635
Size 2	64,0	50x5	U	200	116	80	117,0	153	60	8,5	8,14	1	0020645
Size 2	70,0	50x5	U	200	116	80	124,0	160	60	8,5	8,41	1	0020705
Size 2	75,0	50x5	U	200	116	80	129,5	165	60	8,5	8,63	1	0020755
Size 2	76,1	50x5	U	200	116	80	131,5	166	60	8,5	8,68	1	0020765
Size 2	88,9	50x5	U	200	116	80	146,0	179	60	8,5	9,26	1	0020895
Size 2	108,0	50x5	U	200	116	80	165,0	199	60	8,5	10,12	1	0021085
Size 2	110,0	50x5	U	200	116	80	167,0	201	60	8,5	10,21	1	0021105
Size 2	114,3	50x5	U	200	116	80	171,5	205	60	8,5	10,39	1	0021155
Size 2	125,0	50x5	U	200	116	80	182,5	212	60	8,5	11,25	1	0021255
Size 2	133,0	50x5	U	200	116	80	191,0	224	60	8,5	11,61	1	0021335
Size 2	135,0	50x5	U	200	116	80	193,0	226	60	8,5	11,70	1	0021355
Size 2	139,7	50x5	U	200	116	80	198,5	231	60	8,5	11,93	1	0021405
Size 2	160,0	50x5	U	200	116	80	219,5	251	60	8,5	12,81	1	0021605

» Mounting clamps for fixpoints



Mounting clamps for fixpoints

Specification

Application area: Fixpoint type A and type B.

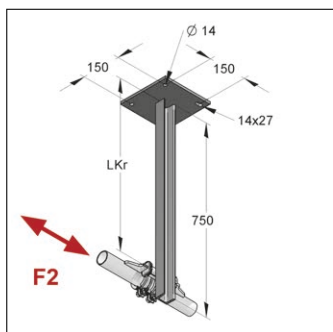
Technical data

Material: Steel
Surface: galvanized

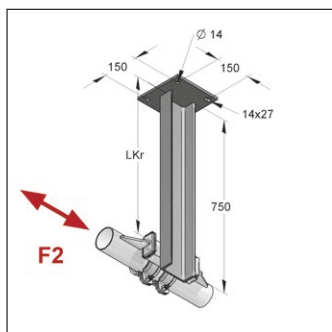
Remark: Clamps can be reused.

Type	Clamping range [mm]	for Fixpoint	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1a	21,3-57	Type A, Type B	0,0600	2	9000310
1b	21,3-57	Type A with joint holder	0,0700	2	9000311
2	60,3-159	Type A, Type B, Type A with joint holder	0,0860	2	9000312

» Fixpoint consoles



Fixpoint console 50/38/750



Fixpoint console 120/55/750

Specification

Application area: Fixpoint console for welding to fixpoints. For type A and B. Must be cut to length on site.

Technical data

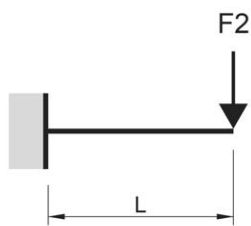
Material: Steel
Surface: raw

Delivery time: 5 working days, ex works

Remark: Fixpoint consoles in galvanized on request.

U-steel [mm]	Length console LKr [mm]	Plate [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
50x38	750	200x200x10	7,26	1	9997799
120x55	750	200x200x10	13,60	1	9996491

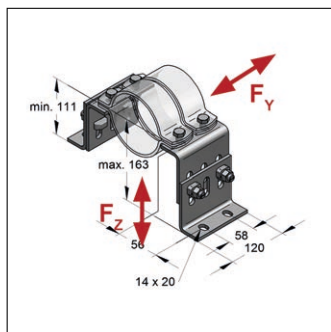
Fixpoint consoles - Loads



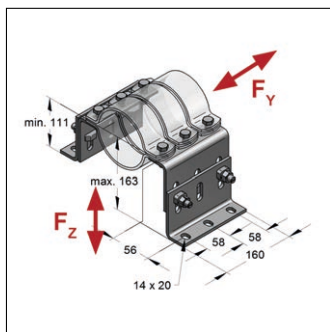
	Fixpoint console 50x38	Fixpoint console 120x55
Length L	Load F2	Load F2
100	16,18	35,04
200	8,09	17,50
300	5,39	11,68
400	4,04	8,76
500	3,24	7,00
600	2,70	5,84
700	2,27	5,00
global safety coefficient γ	1,35	1,35
limited torque M_G	1,62 kNm	3,51 kNm
reaction force F_{AX}	10,78 kN	23,36 kN
reaction force F_{BX}	10,78 kN	23,36 kN
M_G , F_{AX} , F_{BX} valid for LF2	up to L= 600 mm	up to L= 1000 mm

03a

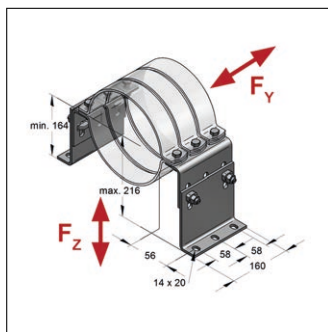
» Fixpoint bracket HV, TSP®



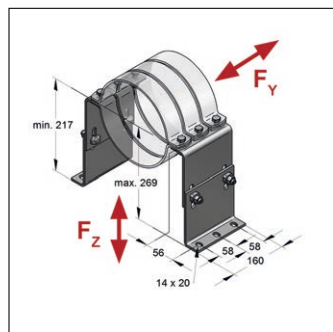
Fixpoint bracket HV1



Fixpoint bracket HV2



Fixpoint bracket HV3



Fixpoint bracket HV4



Specification

- Application area:** Height-adjustable bracket for fixing piping without sound insulation. To be used as a fixed point in conjunction with pipe clamp Titan HD.
- Scope of delivery:** 2x angle (foot part), 2x angle (side part), 4x CENTUM® T-lock M12x40, 4 / 6x hexagon bolts and nuts
- Recommended accessories:** Titanium HD pipe clamp see chapter 1.

Technical data

- Material:** Steel
- Surface:** hot-dip galvanized
- Surface screw:** Zinc-Nickel
- Tightening torque pipe clamp:** 60 Nm
- Tightening torque T-lock:** 120 Nm

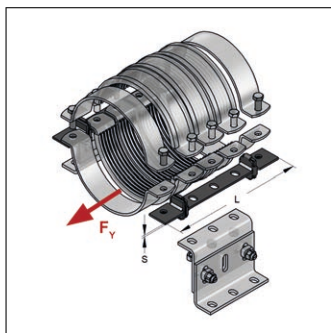
Remark: Assembly instructions see chapter 15. When using 3 Titan HD; 168 mm permissible load = 40 kN. Tightening torque of pipe clamp and axial forces only apply to steel pipes with standard wall thickness.

Description	Axis height [mm]	Number of pipe clamps	OD [mm]	Dimension angle stilt [mm]	Dimension side part [mm]	Load F_Y [kN]	Load F_Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
HV1	111-163	2	64-273	120x100x6	120x100x6	20	12	3,58	1	00200405/fvz
HV2	111-163	3	64-273	160x100x6	160x100x6	30	18	4,74	1	00200406/fvz
HV3	164-216	3	64-406	160x153x6	160x100x6	30	18	5,68	1	00200407/fvz
HV4	217-269	3	64-508	160x153x6	160x153x6	30	18	6,52	1	00200408/fvz

» Sound decoupling set FPH



Sound decoupling set FPH short



Sound decoupling set FPH long

Specification

Application area: For sound decoupling of fixpoint bracket.

Scope of delivery: 4x thrust piece, 2x stop, 4x hex. bolt, 4x M12 nut

Recommended accessories: For suitable Titan HD pipe clamps without connection thread, see chapter 1. The outer pipe clamps without insulation and the inner pipe clamps with insulation. (Pipe clamps also available in hot-dip galvanized version)

Technical data

Material: Steel

Surface: hot-dip galvanized

Temperature resistance: -35 up to 100 °C

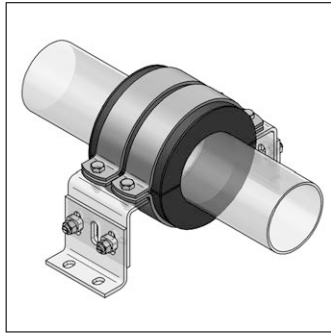
Remark: Permissible load F_z depends on the fixed point support.

Model	Dimension LxS [mm]	Suitable for	Load F_y [kN]	Weight [kg/set]	Packing unit [set]	Part-No.
short	266x4	HV1	10	1,39	1	0020007
long	312x4	HV2, HV3, HV4	10	1,49	1	0020008

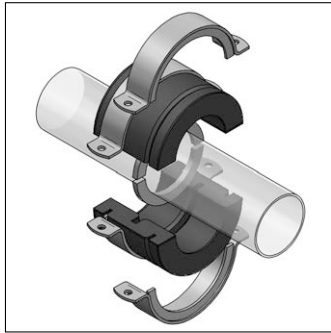
03a

» Insulated fixpoint

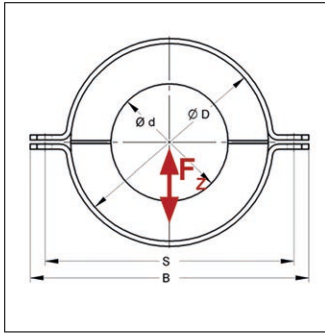
Synthetic rubber / PU



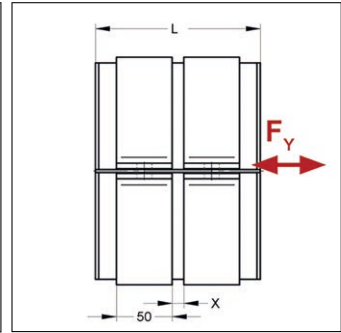
Insulated fixpoint



Insulated fixpoint



Insulated fixpoint



Insulated fixpoint

Specification

- Application area:** Insulated fixpoint mounting of chilled water pipes of steel.
- Scope of delivery:** 2 x half shell with slot for inner and outer split ring, 2 x inner split ring for welding to steel pipe, 4 x outer split ring for fixation on substructure
- Recommended accessories:** Fixpoint bracket HV see chapter 3a.
- Specification:** With natural rubber on front ends, high water vapor diffusion resistance and low thermal conductivity and acc. AGI requirements.
- Type of attachment :** Can be mounted to any substructures (C-profile rails, CENTUM®, steel beams).

Technical data

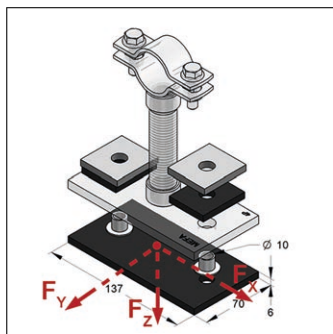
- Material:** PU
- Density:** 200 kg/m³
- Thermal conductivity:** 0,037 W/mK
- Material clamp strap:** Steel
- Surface clamp strap:** galvanized
- Material inner ring:** Steel
- Surface inner ring:** raw
- Temperature resistance:** -50 up to 105 °C

Remark: Assembly instructions see chapter 15.

* delivery time on demand

OD [mm]	Recommended base	Insulation thickness [mm]	Length shell L [mm]	Width outer split ring B [mm]	Hole distance S [mm]	Load F_Y [kN]	Load F_Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
76,1	HV1	40	148	235	206	2,7	5,4	3,75	1	698400076
88,9	HV1	40	148	246	217	2,8	6,3	4,02	1	698400089
114,3	HV1	40	148	272	243	3,3	8,0	4,66	1	698400114
139,7	HV1	40	148	300	271	4,5	9,2	5,58	1	698400140
168,3	HV1	40	148	328	299	5,6	10,4	6,30	1	698400168
219,1	HV3	40	204	378	349	8,0	12,4	8,27	1	698400219
273,0	HV3	40	204	433	404	8,9	13,6	9,85	1	698400273
323,9	HV4	40	204	484	455	11,1	16,8	11,30	1	698400324
355,6	HV4	40	204	516	487	12,1	18,2	12,22	1	698400356 *
406,4	HV4	40	204	567	538	13,6	20,3	13,67	1	698400406 *

» Sound-decoupling set K



Sound-decoupling set for the clamped fixpoint



03a

Specification

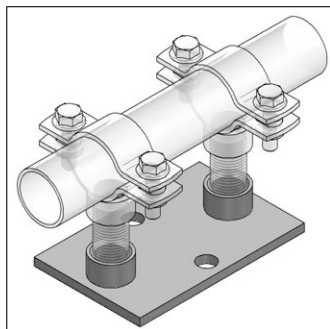
Application area: Sound-decoupling set K suitable for base plate type III or holder 45.

Technical data

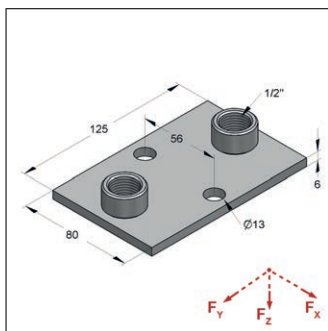
Material: Rubber
Material type: EPDM
Temperature resistance: -35 up to 100 °C

Dimension [mm]	Load F_X [kN]	Load F_Y [kN]	Load F_Z [kN]	for thread	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
137x70x6	8	8	16	M10	15	0,257	1	077034002

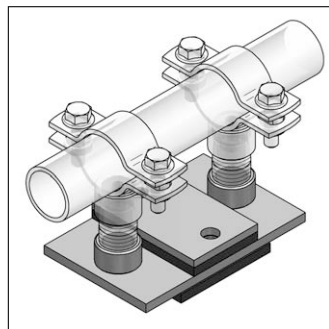
» Fixpoint type FGL (for clamping)



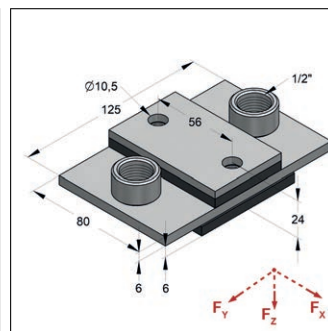
Without soundinsulation



Without soundinsulation



Soundinsulated



Soundinsulated

Specification

Application area: Light fixpoint for pipes up to Ø 46 mm.
Recommended accessories: Pipe clamp Maxima PSM 3G see chapter 1

Technical data

Material: Steel
Surface: galvanized
Temperature resistance: -35 °C up to 100 °C

* Sound insulation according to DIN 4109

Sound insulation lining	Connection	Tightening torque [Nm]	Load F_X [kN]	Load F_Y [kN]	Load F_Z standing [kN]	Load F_Z hanging [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
unlined	1/2"	15	8	1,4	4	10	0,531	1	0770335
Rubber EPDM	1/2"	15	8	1,4	4	10	0,735	1	999770001 *

CONNECTORS SML

*connectors, grip connectors,
downstream supports and accessories*

03b



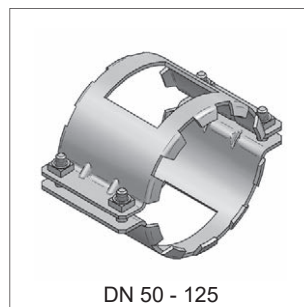
» **MEFA connectors for downstream piping**



DN 125
SIMA >G< two screws



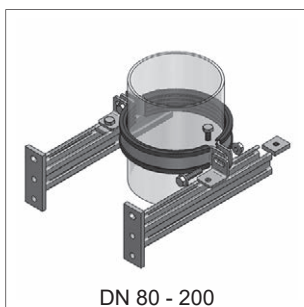
DN 50 - 150
SIMA RAPID



DN 50 - 125
SIMA-Cramp grip connector



DN 150 - 250
SIMA-Cramp grip connector



DN 80 - 200
Downstream support



DN 50 - 125
SIMA-CON

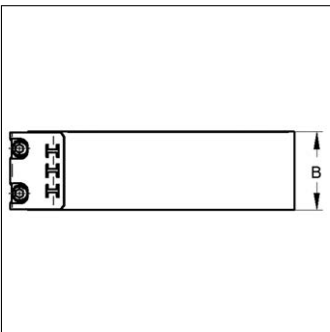
03b

» SIMA >G< connector

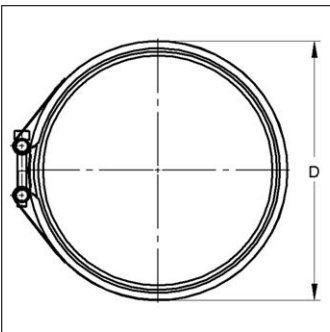
EPDM



SIMA >G< two screws



SIMA >G< two screws



SIMA >G< two screws



Specification

Application area: Plug connector for cast iron pipe and fittings.
max. pressure load: 0,5 bar
Tightening torque: 6 Nm
Screw type DIN 912: hexagon socket, M6 (SW 5)

Technical data

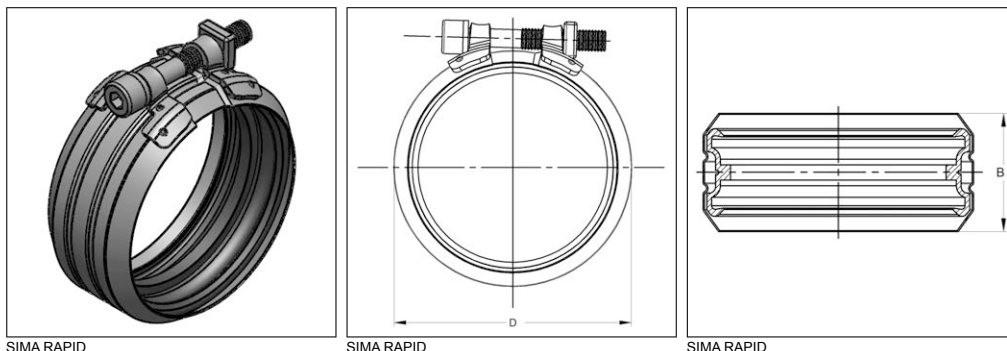
Material: Steel
Surface: Zinc-Aluminium
Material turnbuckle: Steel
Surface turnbuckle: Zinc-Aluminium
Material cuff: Rubber EPDM
Temperature resistance: -35 up to 80 °C

Remark: For pressure loads above 0,5 bar the SIMA-Cramp grip connector should be used.

Model	Nominal width DN [mm]	Number of closure screws	Outer pipe diameter [mm]	Width pipe clamp strap B [mm]	Width D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
G	125	2	135	51	150	0,313	25	4470125

» SIMA RAPID connector

EPDM



SIMA RAPID

SIMA RAPID

SIMA RAPID

Specification

Application area: Plug connector for cast iron pipe and fittings.
 max. pressure load: 0,5 bar
 Screw type DIN 4762: hexagon socket

Technical data

Material: Ferritic chromium steel
 Material turnbuckle: Stainless steel
 Material cuff: Rubber EPDM
 Temperature resistance: -35 up to 100 °C

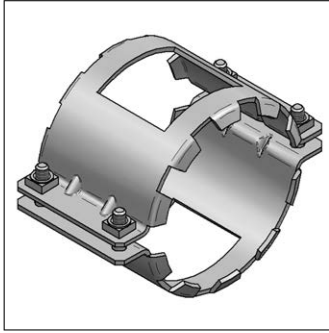
Entspricht
DIN EN 877

03b

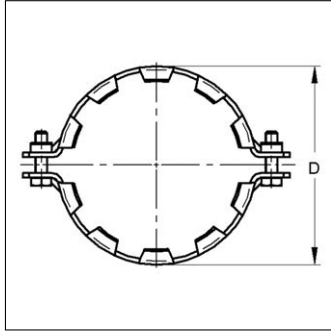
Remark: For pressure loads above 0,5 bar the SIMA-Cramp grip connector should be used.

Model	Nominal width DN [mm]	Outer pipe diameter [mm]	Width pipe clamp strap B [mm]	Width D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
RAPID	50	58	38,6	71,6	0,110	50	447710050
RAPID	70	78	38,6	91,6	0,120	50	447710070
RAPID	80	83	38,6	96,6	0,130	50	447710080
RAPID	100	110	45,5	124,8	0,190	100	447710100
RAPID	125	135	55,0	151,6	0,310	20	447710125
RAPID	150	160	55,0	176,6	0,360	15	447710150

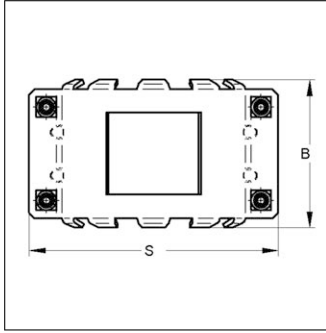
» SIMA-Cramp grip connector



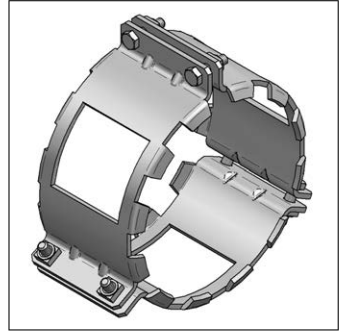
SIMA-Cramp grip connector DN 50 up to 125



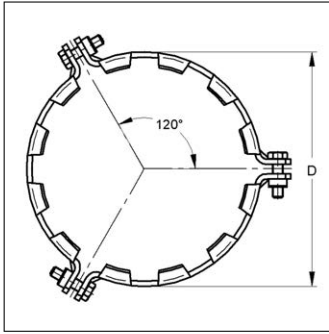
Grip connector SIMA-Cramp



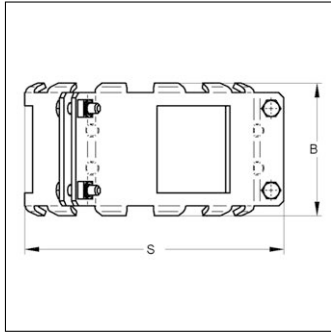
Grip connector SIMA-Cramp



SIMA-Cramp grip connector DN 150 up to 250



Grip connector SIMA-Cramp



Grip connector SIMA-Cramp

22 1130 3 94
MPA NRW

Specification

Application area: Grip connector for drain pipes without sleeves in connection with connector SIMA RAPID.

max. pressure load: 5 bar

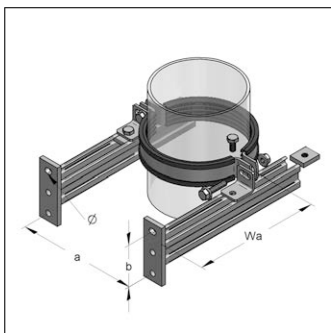
Technical data

Material: Steel
Surface: galvanized

* Test certificate no. P 11 0003361 applies to DN 80

Nominal width DN [mm]	Outer pipe diameter [mm]	Specification	Tightening torque [Nm]	Height D [mm]	Width pipe clamp strap B [mm]	Length S [mm]	max. pressure load [bar]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
50	58	two-part	50	75	79	113	5	0,447	20	4472500
70	78	two-part	15	99	92	134	5	0,576	20	4472705
80	83	two-part	20	102	74	138	5	0,800	10	4472805 *
100	110	two-part	15	130	103	174	5	0,992	10	4473000
125	135	two-part	20	154	103	202	5	1,11	10	44732561
200	210	three-part	20	236	120	244	5	2,57	5	4474000
250	274	three-part	30	300	133	308	5	3,90	4	4474508

» Fixpoint support for downstream piping



Fixpoint support for downstream piping (mounted)



Specification

Application area: Brackets for the manufacture of a support for sewage downpipes.

Technical data

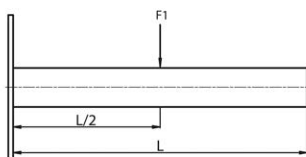
Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Temperature resistance: -35 up to 100 °C
 Thickness material sound insulation lining: 6 mm

03b

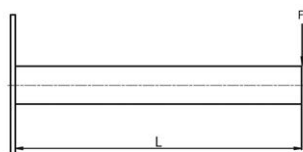
Remark: To prevent the pipe from slipping a flange or similar should be placed above the pipe clamp.

Nominal width DN [mm]	Outer pipe diameter [mm]	Distance measure a [mm]	Hole distance b [mm]	Wall distance Wa [mm]	Elongated hole [mm]	Load F1 [kN]	Load F2 [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
80	83	140	55	75-260	15x11	1,44	0,72	1,63	1	4500800
100	110	165	55	75-260	15x11	1,44	0,72	1,61	1	4501000
150	160	230	80	100-300	15x11	4,16	2,08	2,79	1	4501500
200	210	280	85	125-315	20x14	6,64	3,32	4,08	1	45020045

Loading condition 1



Loading condition 2



Fixpoint support for downstream piping - Set-content

Nominal width	Pipe clamp		Consoles		Distance angle	Hexagon screw	Threaded square plates
	Identification	Clamping range	Identification	Length			
	[1 pc.]	[mm]	[2 pcs.]	[mm]	[2 pcs.]	[2 pcs.]	[2 pcs.]
DN 80	Maxima PSM	84 - 90	C-profile 35/21/2,0	263	E25	M10 x 20	35 x 30, M10
DN 100	Maxima PSM	108 - 112	C-profile 35/21/2,0	263	E25	M10 x 20	35 x 30, M10
DN 125	Maxima PSM	133 - 136	Stex 35/42/1,5	300	E25	M10 x 20	35 x 30, M10
DN 150	Maxima PSM	158 - 163	Stex 35/42/1,5	300	E25	M10 x 20	35 x 30, M10
DN 200	Maxima PSM	207 - 213	C-profile 45/45/2,0	315	2-hole angle 40/5 elongated hole horizontal	M12 x 30	Tooth plate S 36 x 20, M12

» SIMA-CON reducing connector

EPDM



SIMA-CON

Z-42.5-299

Specification

Application area: For connecting pipes of PE and HT.
Connector type: Reducing connector
max. pressure load: 0,5 bar

Technical data

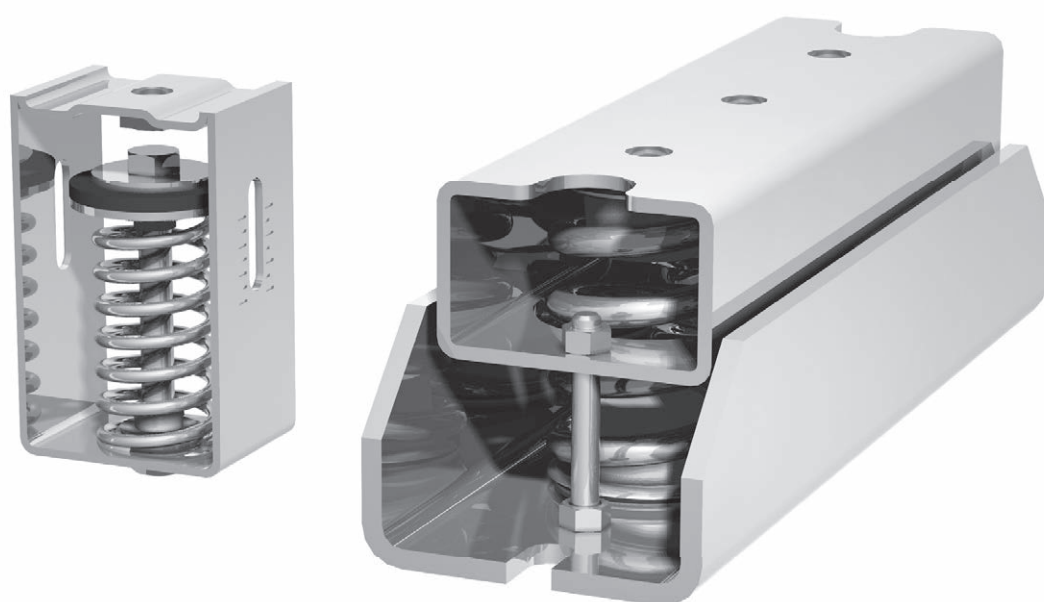
Material: Rubber
Material type: EPDM
Temperature resistance: -35 °C up to 100 °C
Material clamp strap: Stainless steel
Closure screw: Phillips, SW 7
Tightening torque: 2 Nm
Brand: MEFA

Remark: Assembly instructions see chapter 15.

Nominal width DN [mm]	OD [mm]	Plug-in depth [mm]	Height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
50	40-56	42	63	0,138	50	4475050
70	56-75	55	77	0,180	50	4475070
100	104-110	65	95	0,350	20	4475100
125	125	75	103	0,430	10	4475125

SPRING INSULATORS

spring insulators and spring hangers



03c

03c

» MEFA Spring hanger

MEFA Spring hanger are suited to be also used as flexible pipe bearing or for the elastic storage of assemblies.

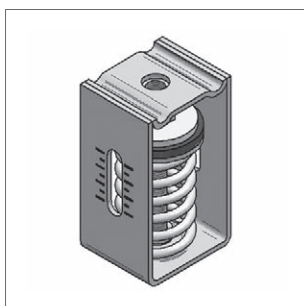
Application:

- a) Applicable as a compensating element for thermal pipeline expansions
- b) Suitable for sound- and vibration insulation
- c) Applicable as shock-absorbing element

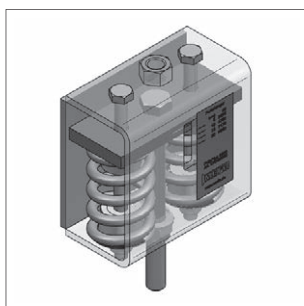
Spring bearings or -insulator can be used for installations where no rigid storage of plant systems (e.g. pipelines, assemblies) are allowed. For example a pipeline exposed to a certain temperature which requires due to its temperature bending an elastic storage.

An important advantage of the MEFA spring hanger and bearings is, that there is no metallic contact between the construction and the pipeline. In combination with a sound absorbing decoupling element, the transfer of the structureborne-sound via the steel spring can be avoided.

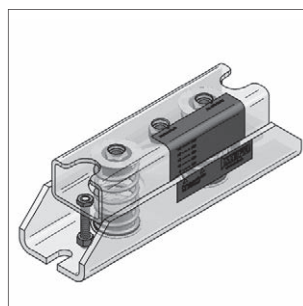
MEFA spring hanger meet the requirements of vibration insulation and disconnection of structure-borne-sound. For an optimum dimensioning of the spring bearings/ -hanger please contact our technical department.



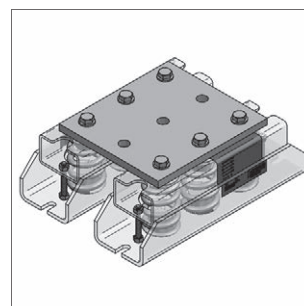
Spring insulator FH1



Spring insulator FH2



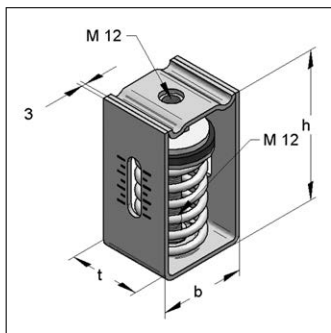
Spring bearing FL



Spring bearing FLD

03c

» Spring insulator FH 1 with one spring



Spring insulator FH1 Load range: up to 3000 N

Specification

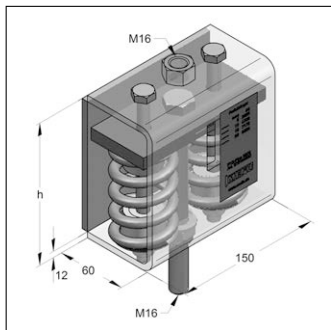
Application area: Spring isolators as flexible pipe hangers or for elastic mounting of aggregates.

Technical data

Material: Steel
Surface: galvanized

Series	Model	Load range [N]	Number of springs	Spring deflection [mm]	Connection	Height h [mm]	Width b [mm]	Length t [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
FH 1	400	0-386	1	0-30	M12	105	60	50	0,591	1	0794040
FH 1	600	0-619	1	0-30	M12	105	60	50	0,551	1	0794060
FH 1	1000	0-1006	1	0-32	M12	105	60	50	0,575	1	0794100
FH 1	1300	0-1289	1	0-31	M12	130	80	60	0,950	1	0794130
FH 1	2100	0-2113	1	0-28	M12	130	80	60	1,15	1	0794210
FH 1	3000	0-3084	1	0-23	M12	130	80	60	1,19	1	0794300

» Spring insulator FH 2 with two springs



Spring insulator FH2 Load range: up to 9300 N

Specification

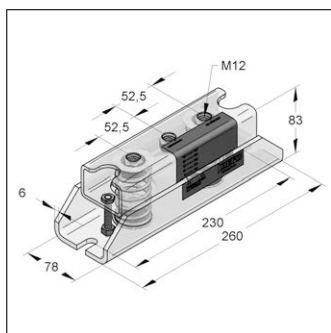
Application area: Spring isolators as flexible pipe hangers or for elastic mounting of aggregates.

Technical data

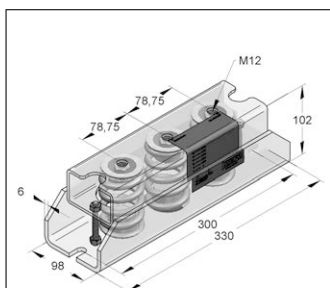
Material: Steel
Surface: galvanized

Series	Model	Load range [N]	Number of springs	Spring deflection [mm]	Connection	Height h [mm]	Width [mm]	Length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
FH 2	4300	0-4301	2	0-29	M16	140	80	140	5,09	1	079170430
FH 2	6000	0-6044	2	0-23	M16	140	80	140	5,11	1	079170600
FH 2	9300	2386-9545	2	0-15	M16	140	80	140	5,13	1	079180930

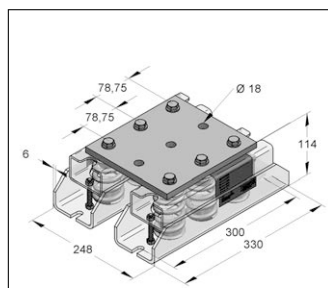
» Spring hanger FL



Spring bearing FL type 1



Spring bearing FL type 2



Spring bearing FLD two spring bearings connected with interface

Specification

Application area: Spring isolators for the elevation of piping or aggregates.

Recommended accessories: Bolt anchor BZ plus M12

Technical data

Material: Steel
Surface: galvanized

Series	Model	Load range [N]	Number of springs	Spring deflection [mm]	Connection	Height [mm]	Width [mm]	Length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
FL Type 1	700	0-682	2	0-26,5	M12	83	78	260	3,05	1	07919007
FL Type 1	1000	0-1023	3	0-26,5	M12	83	78	260	3,12	1	07919010
FL Type 2	2300	0-2204	2	0-26,5	M12	102	98	330	5,72	1	07919023
FL Type 2	3800	0-3999	2	0-26,5	M12	102	98	330	5,72	1	07919038
FL Type 2	5700	0-5999	3	0-26,5	M12	102	98	330	6,10	1	07919057
FL Type 2	7200	0-7118	2	0-26,5	M12	102	98	330	5,72	1	07919072
FL Type 2	10500	0-10677	3	0-26,5	M12	102	98	330	6,10	1	07919105
FLD	21000	0-21354	2 x 3	0-26,5		114	248	330	16,60	1	07929210

03c

» Design of the spring bearings

In this short documentation the procedure for the correct construction of the spring hanger with critical bending will be explained. The base should be in any case a calculation of the pipeline for the mentioned sector:

Please notice the following production steps:

1. The „free“ forming of the tested pipeline should be detected
2. In case of vertical forming Δs ($\Delta s \geq 10\text{mm}$) mounting the spring hanger is necessary
3. The static load should be detected on the point of support ($\rightarrow$ operation load F_V , operation)
4. Spring hanger should be chosen with help of the detected point of support and the suited selection chart (page 3c/5).
Please notice that the point of support is situated in the middle of the grid of the selected insulator. The choice of the rigidity is very important as due to the forming the operation load $\Delta F_V = R \times \Delta s$ cannot cause any incorrect additional load to the mounted pipeline
5. Spring hanger carry the load basically via pressure. A vertical mounted spring insulator with a negative forming increases the point of support ΔF

The effective bearing strength is

$$F_{V, \text{compl.}} = F_{V, \text{operation}} + (R \times (\pm \Delta s))$$

(in case of positive, on top formings the bearing strength will be reduced $\rightarrow$ spring insulator will be unload.)

03c

Example: Expansion compensation

Expansion movement of a heating installation pipe of a defined fixpoint line

Known data: - detected expansion movement $\Delta s = 16 \text{ mm}$
 - load on the mounting bracket $F_V = 1.300 \text{ N}$

Solution method (see shedule):

- a) Outlet spring deflection $\Delta s = 16 \text{ mm}$
 b) Load allocation $F_V = 1.300 \text{ N}$

Result: c) Choice spring hanger FH 1 - 2100

Combination of spring bearings:

Series connection

e.g. for the enlargement of spring deflections

F_V = vertical operation load

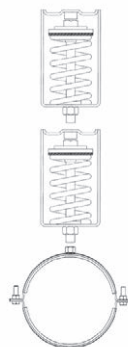
Δs = spring deflection / vertical forming

R = spring rate

Series connection with 2 equal spring hanger:

$$R_{\text{ges}} = (R_1 + R_2)/2$$

$$\Delta s_{\text{ges}} = \Delta s_1 + \Delta s_2$$



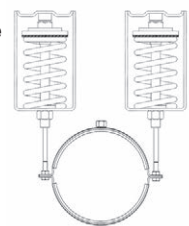
Parallel connection

e.g for the increasing of bearing pressure

F_V = vertical operation load

Δs = spring deflection / vertical forming

R = spring rate



$$R_{\text{ges}} = R_1 + R_2$$

$$\Delta s_{\text{ges}} = \Delta s/2$$

Series connection with 2 different spring hanger:

$$R_{\text{ges}} = (R_1 \times R_2)/(R_1 + R_2)$$

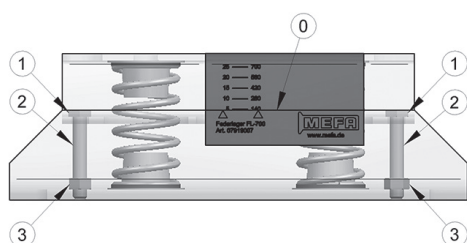
$$\Delta s_{\text{ges}} = \Delta s_1 + \Delta s_2$$

» Spring insulator selection table

Spring-insulator	Spring-rate	Max. working load	Spring deflection at max. working load	Load dependent on spring deflection s									
				0	5	Working range / Permissible deflection range							
						10	15	17,5	20	22,5	25	26,5	30
[Type]	[N/mm]	[N]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
FH1-400	12,87	386	30,0	0	64	129	193	225	257	290	322	341	386
FH1-600	20,62	619	30,0	0	103	206	309	361	412	464	516	546	619
FH1-1000	31,43	1.006	32,0	0	157	314	471	550	629	707	786	833	943
FH1-1300	41,58	1.289	31,0	0	208	416	624	728	832	936	1.040	1.102	1.247
FH1-2100	75,46	2.113	28,0	0	377	755	1.132	1.321	1.509	1.698	1.887	2.000	-
FH1-3000	134,1	3.084	23,0	0	671	1.341	2.012	2.347	2.682	3.017	-	-	-
FH2-4300 p	150,92	4.301	28,5	0	755	1.509	2.264	2.641	3.018	3.396	3.773	3.999	-
FH2-6000 p	268,60	6.044	22,5	0	1.343	2.686	4.029	4.701	5.372	6.044	-	-	-
FH2-9300 p	477,28	9545	15,0	2.386	4.772	7.159	9.545	-	-	-	-	-	-
FL-700	25,74	682	26,5	0	129	257	386	450	515	579	644	682	-
FL-1000	38,61	1.023	26,5	0	193	386	579	676	772	869	965	1.023	-
FL-2300	83,16	2.204	26,5	0	416	832	1.247	1.455	1.663	1.871	2.079	2.204	-
FL-3800	150,92	3.999	26,5	0	755	1.509	2.264	2.641	3.018	3.396	3.773	3.999	-
FL-5700	226,38	5.999	26,5	0	1.132	2.264	3.396	3.962	4.528	5.094	5.660	5.999	-
FL-7200	268,60	7.118	26,5	0	1.343	2.686	4.029	4.701	5.372	6.044	6.715	7.118	-
FL-10500	402,90	10.677	26,5	0	2.015	4.029	6.044	7.051	8.058	9.065	10.073	10.677	-
FL-21000	805,80	21.354	26,5	0	4.029	8.058	12.087	14.102	16.116	18.131	20.145	21.354	-

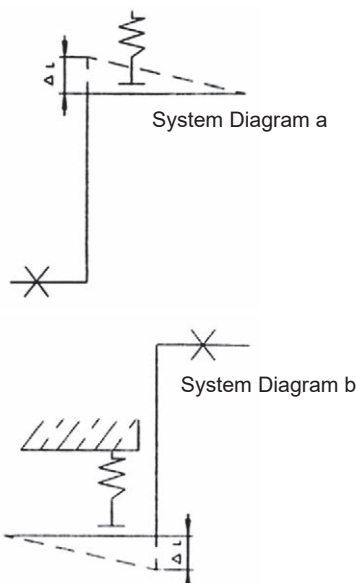
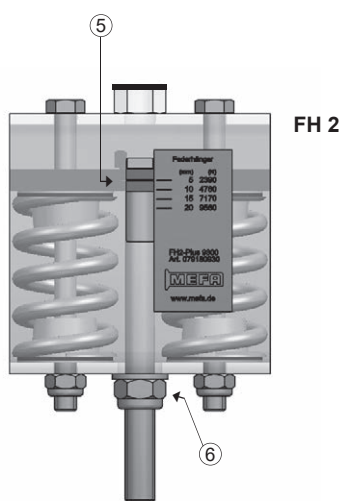
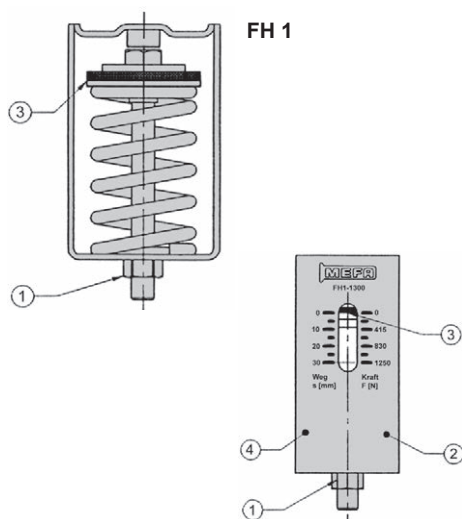
Tolerance range of the spring rate -5 / +10 %

» Assembly instruction for Spring bearing FL



1. The spring bearing can be clamped via 2 hex. screws with suitable load for stationary handling with help of prestressed hex. screws M8 (SW13 mm) [1]. (values for direct reading, significant value for direct reading on upper edge of casing base part [0])
2. Spring bearing should be mounted on substructure
3. Spring bearing can be mounted with pipeline or a compressor via: 3.1 pipe clamp and suitable threaded rod or 3.2 supporting elements or compressor
4. After achieving operation load at stationary handling the prestressed nut M8 has to be screwed out (SW 13 mm) [1]. Equalisation of springload, bearing sets automatically
5. After balancing spring pot, threaded pins [2] can be removed. Remove counter nuts [3] and screw out threaded pins [2]

» Assembly instruction for spring insulator FH 1 and FH 2



Target: Vibration isolation

1. The spring insulator is prestressed to absorb the load, for stationary handling, via the suitable hex. nut M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] (for direct reading FH 1: scale on the outside [2] or notch [5] on label, FH 2: bottom edge of red indicator washer [3])
2. The spring insulator has to be mounted on the structure
3. Spring insulator with the pipe clamp can be mounted via pipe clamp, compressor or a traverse, with the help of the suitable connecting elements (threaded rod, treaded coupling and counter nut)

After achieving the operation load at the stationary handling, the hexagon screw [1/6] of the spring insulator should be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut

5. The equalisation of load of the spring pot sets automatically

Target: Compensation of expansion movement

1. In a defined, vertical fixpoint pipeline (see drawing a and b) the spring pot can be...

- prestressed according to drawing a, via the hex. screw M12 (SW 19 mm) [1] or M16 (SW 24 mm) [6] (for direct reading FH1: scale on the outside [4] or notch [5] on label, FH 2: bottom edge red washer [3])

The pipeline is prestressed during installation !

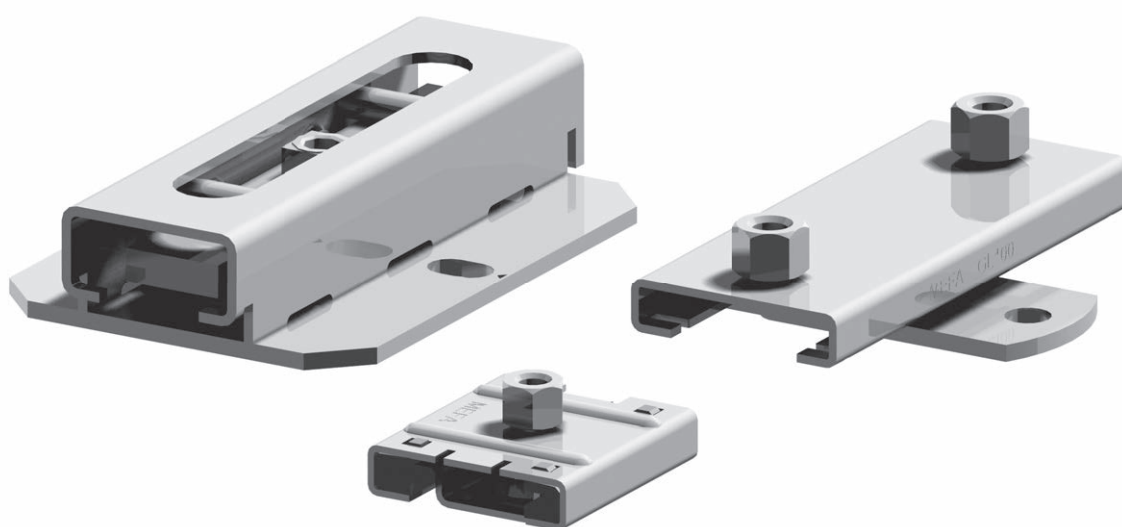
- according to drawing b, not prestressed

The pipeline load of this bracket has to be noticed when choosing the spring bearing. The load and the spring deflection have to be regarded. The load of the pipeline increases, in the stationary section, about the amount of the equivalent spring rate to the spring deflection

2. The spring insulator has to be mounted on the structure
3. Spring insulator with the pipe clamp can be mounted via pipe clamp, compressor or a traverse, with the help of the suitable connecting elements (threaded rod, treaded coupling and counter nut or adapted traverse mountings)
4. Releasing the springs:
 - 4.1 After successful mounting of the pipeline according to the drawing a, should the hex. screw M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut, before using the pipeline
 - 4.2 After succesful mounting of the pipeline according to the drawing b, should the hex. screw M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut, before using the pipeline
5. The equalisation of load of the spring pot sets automatically

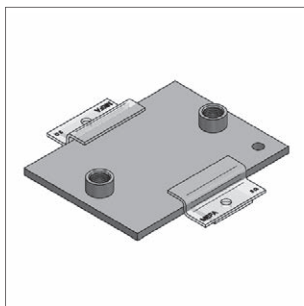
SLIDING ELEMENTS

*sliders, sliding plates, roller bearings
and accessories*

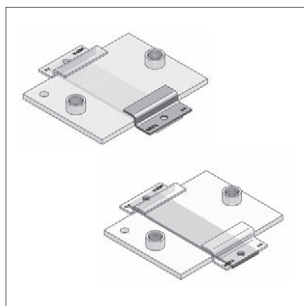


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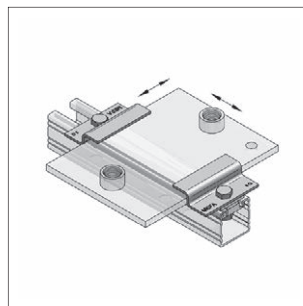
» MEFA sliding elements



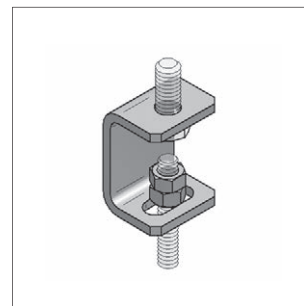
Sliding plates



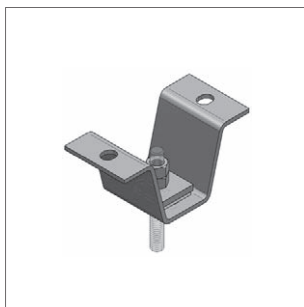
Z-pressure pads, sliding stripes



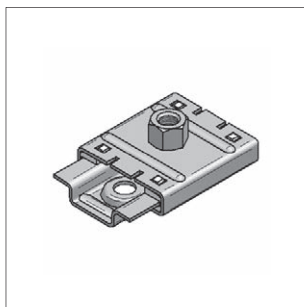
Sliding element radial-axial



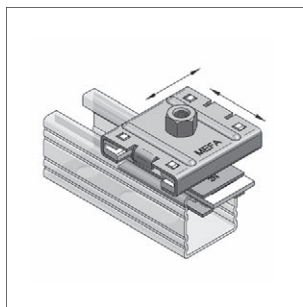
Suspended bracket



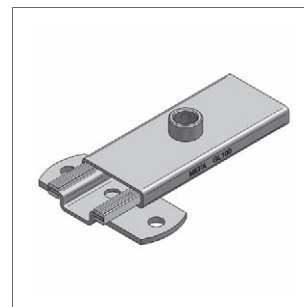
Ceiling hanger TF



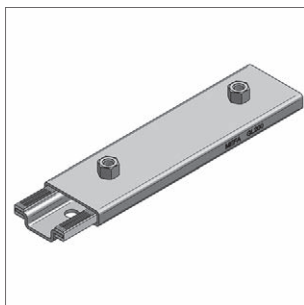
Slider GL 37



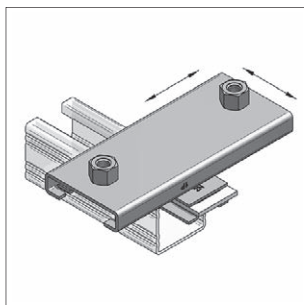
Sliding element radial-axial 37



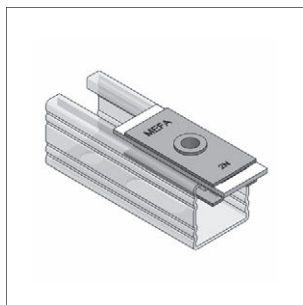
Slider GL 100



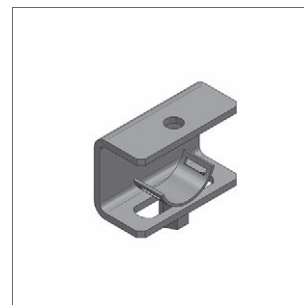
Slider GL 200



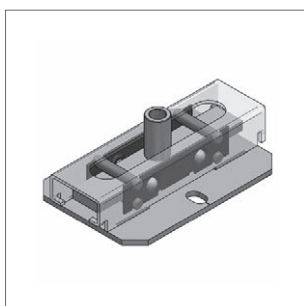
Sliding element radial-axial



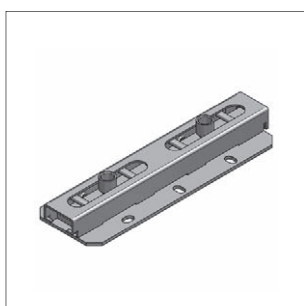
Profile rail slider 45



Suspended bracket 35 mm



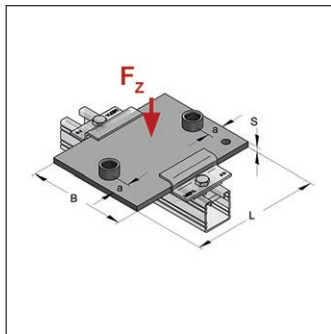
Roller bearing



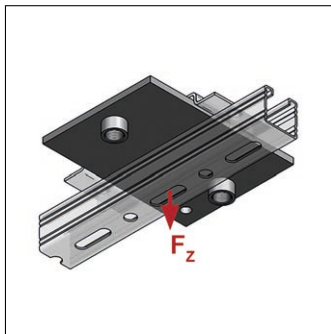
Roller bearing Duo

i sliding elements of stainless steel see chapter 13

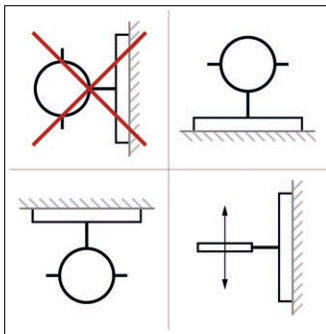
» Sliding plate



Sliding plate standing installation



Sliding plate hanging installation



Assembly instruction

Specification

Application area: Absorption of axial length expansion for standing, hanging or vertical mounted pipes.

Recommended accessories: sliding stripe, Z-guides (80 mm, 1-hole)

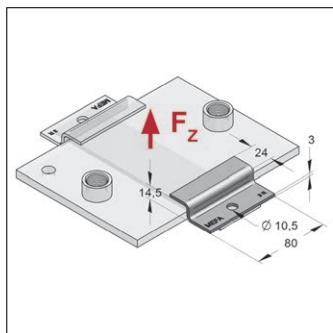
Technical data

Material: Steel
Surface: galvanized

* delivery time on demand

Connection	Dimension LxBxS [mm]	Axial dimension a [mm]	max. sliding distance axial standing [mm]	max. sliding distance axial hanging [mm]	Load F_z [kN]	for max. OD [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1xM16	150x100x8		100		1,5		1,00	1	0771162
1x1/2"	150x100x8		100		1,5		0,993	1	0771200
1x3/4"	150x100x8		100		1,5		1,01	1	0771227 *
2xM16	150x100x8	25	100	20	4,8	193,0	1,04	1	0771164
2x1/2"	150x100x8	25	100	20	4,8	193,0	1,02	1	0771202
2x3/4"	150x100x8	25	100	20	4,8	193,0	1,05	1	0771229 *
2xM16	200x100x8	25	150	70	3,0	299,5	1,36	1	0771163
2x1/2"	200x100x8	25	150	70	3,0	299,5	1,35	1	0771201
2x3/4"	200x100x8	25	150	70	3,0	299,5	1,37	1	0771228 *
2x1"	200x100x8	25	150	70	3,0	299,5	1,44	1	0771236
2x1/2"	200x150x8	25	150	70	4,4	299,5	1,98	1	0771331 *
2xM16	250x100x8	25	200	120	2,2	419,0	1,67	1	0771465
2x1/2"	250x100x8	25	200	120	2,2	419,0	1,66	1	0771503
2x3/4"	250x100x8	25	200	120	2,2	419,0	1,68	1	0771511 *
2x1"	250x100x8	25	200	120	2,2	419,0	1,75	1	0771538
2x1/2"	250x200x8	25	200	120	4,2	419,0	3,26	1	0771707 *
2x1/2"	250x200x10	25	200	120	6,4	419,0	4,06	1	0771710 *
2x1"	300x200x10	25	250	160	5,6		4,95	1	0771811 *
2x1"	300x200x12	25	250	160	8,1		5,91	1	0771814 *
2x1"	300x250x12	25	250	160	10,2		7,35	1	0771817 *
2x1 1/4"	350x200x12	35	300	200	6,0		6,93	1	0771902 *
2x1"	350x250x12	25	300	200	7,4		8,55	1	0771911 *
2x1 1/4"	400x250x12	35	350	250	5,4		9,81	1	0771973 *

» Z-guide



Z-guide with basis

Specification

Application area: For guiding of MEFA sliding plates.
 Recommended accessories: hexagon screw M10 x 25, threaded plate (consistent to profile rail)

Technical data

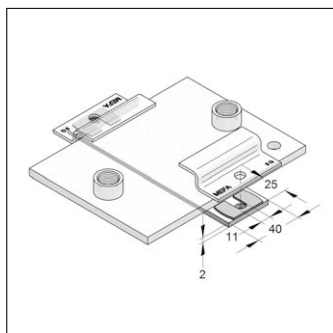
Material: Steel
 Surface: galvanized

Remark: The load specification refers to two Z-guides.

Length [mm]	Hole-Ø [mm]	Load F_z [kN]	Number of fixing holes [pcs]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
80	10,5	4,5	1	0,114	1	077951201

04

» Basis for Z-guide



Basis for Z-guide

Specification

Application area: Increasing of Z-guides.

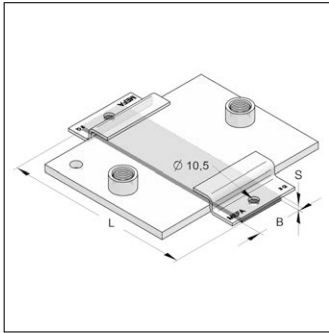
Technical data

Material: Steel
 Surface: pre-galvanized

Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
40x25x2	0,0122	1	0779508

» Sliding stripe PA 6

PA



Sliding stripe

Specification

Application area: Improvement of sliding characteristic.

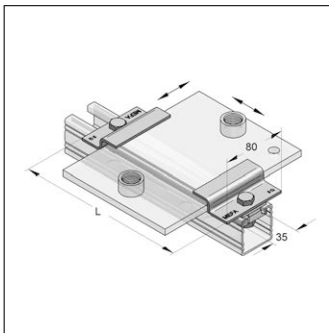
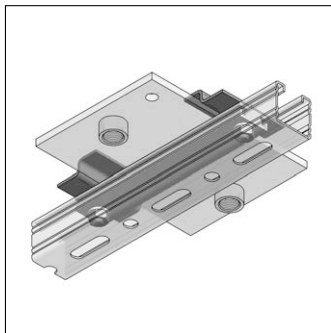
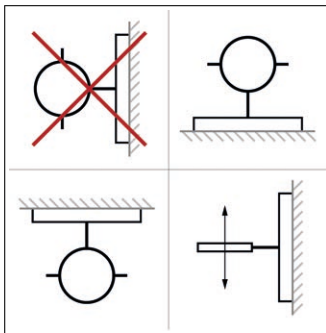
Technical data

Material type: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 up to 110 °C

Dimension LxBxS [mm]	for sliding plate width [mm]	Number of fixing holes [pcs]	Hole distance [mm]	Hole-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1000x50x5		0			0,288	1	0779550
163x50x5	100	2	138	10,5	0,0459	1	077955501
213x50x5	150	2	188	10,5	0,0602	1	077956701
263x50x5	200	2	238	10,5	0,0746	1	077956001
313x50x5	250	2	288	10,5	0,0890	1	077957001

» Sliding element radial-axial

45

Sliding element radial-axial with sliding plate
(standing installation)Sliding element radial-axial with sliding plate
(hanging installation)

Assembly instruction

Specification

Application area: For the production of a radial-axial sliding element in conjunction with sliding plates for standing, suspended or vertically passed pipes.

Profile type: 45

Technical data

Material: Steel
 Surface: galvanized
 Material name sliding stripe: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 °C up to 110 °C

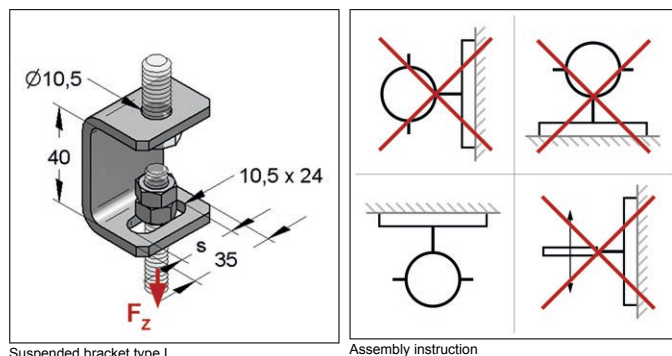
Remark: Sliding plates with material thickness greater than 12 mm only on request.

Model	for sliding plate width [mm]	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size I	100	163	0,294	1	077997101
Size II	150	213	0,312	1	077997201

» Sliding element radial-axial

Model	for sliding plate width [mm]	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size III	200	263	0,331	1	077997301

» Suspended bracket type L



Suspended bracket type L

Assembly instruction

Specification

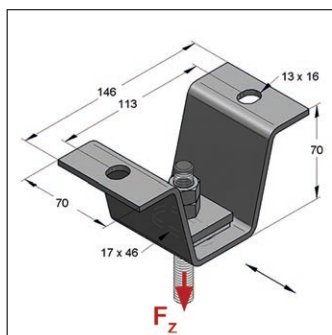
Application area: For single fixation with threaded rod under ceiling.
 Scope of delivery: Suspended bracket, cone- and counter nut
 Installation advise: Secure the suspended pipe clamps with a lock nut.

Technical data

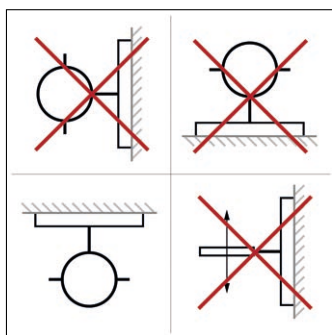
Material: Steel
 Surface: galvanized

for thread	Height adjustable [mm]	Sliding distance s [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	30	16	1,6	0,104	100	0781010
M10	30	14	1,6	0,119	100	0781029

» Ceiling hanger TF



Ceiling hanger TF



Assembly instruction

Specification

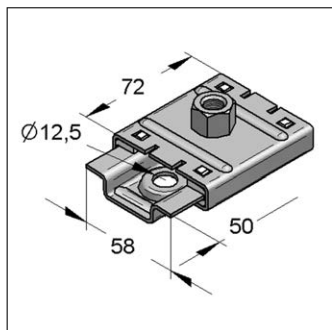
Application area: Solid suspension fastener with sliding path 36 mm.
 Scope of delivery: Sliding plate, perforated plate and two nuts

Technical data

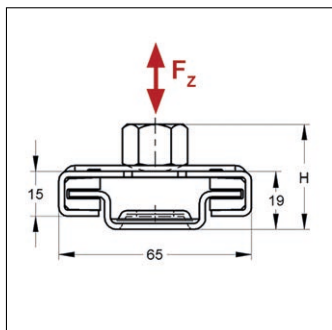
Material: Steel
 Surface: galvanized
 Material name sliding stripe: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 up to 110 °C

for thread	Sliding distance [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	36	12	0,619	1	0816604
M12	34	12	0,630	1	0816612
M16	30	12	0,670	1	0816639

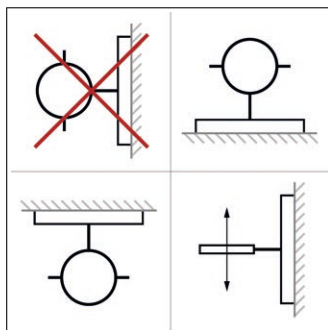
» Slider GL 37



Slider GL 37



Slider GL 37



Assembly instruction

Specification

Application area: Absorption of axial length expansion of max. 37 mm for standing, hanging, horizontal or vertical passed pipes.
 Installation advise: After mounting protection lugs should be turned up, thereby slipping can be avoided.
 max. sliding distance axial: 37 mm

Technical data

Material sliding element: Steel
 Surface: galvanized
 Material name sliding stripe: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 up to 110 °C

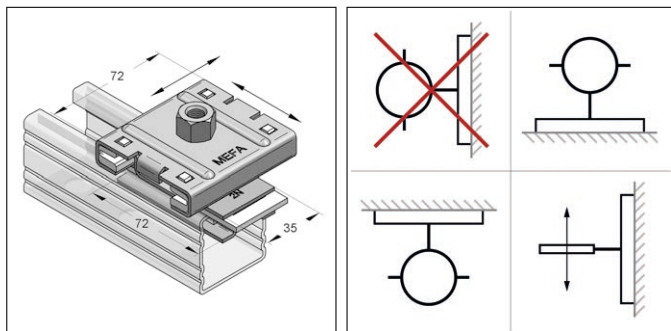
Connection	Construction height H [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1xM8	32	1,3	0,204	25	0770515
1xM10	34	1,3	0,214	25	0770523
1xM12	36	1,3	0,223	25	0770531
1xM16	34	1,3	0,232	25	0770558

» Slider GL 37

Connection	Construction height H [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1x1/2"	35	1,3	0,225	25	0770604

» Sliding element radial-axial GL 37

45



Sliding element radial-axial GL 37

Assembly instruction

Specification

Application area:	Absorption of radial and axial length expansion for standing, hanging or vertical passed pipes.
Scope of delivery:	slider GL 37 and profile rail slider; pre-assembled (without C-profile)
Installation advise:	After mounting protection lugs should be turned up, thereby slipping can be avoided. The sliding strip must lie on the rail slot when mounted standing and on the toothing when mounted hanging.
Profile type:	45
max. sliding distance axial:	37 mm

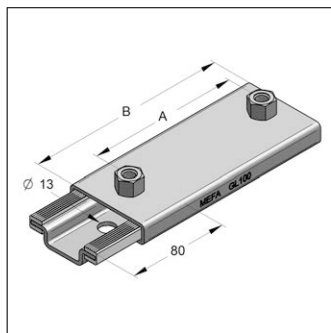
Technical data

Material sliding element:	Steel
Surface:	galvanized
Material name sliding stripe:	Polyamide 6
Static friction factor:	0,2 - 0,3
Temperature resistance:	-30 up to 110 °C

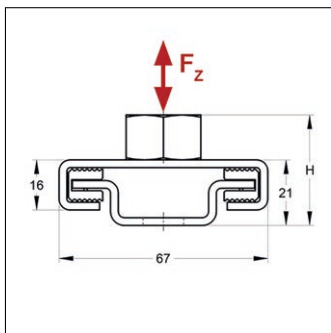
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Connection	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1xM8	1,3	0,357	1	077046801
1xM10	1,3	0,367	1	077046001
1xM12	1,3	0,376	1	077046201
1xM16	1,3	0,385	1	077046601
1x1/2"	1,3	0,378	1	077046401

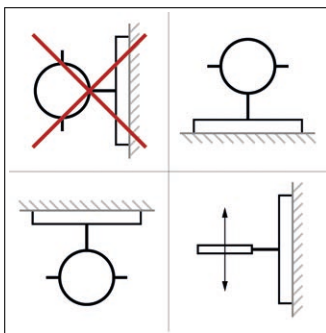
» Slider GL 100 and GL 200



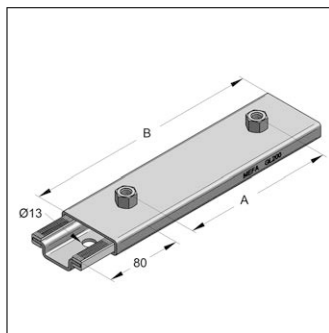
Slider GL 100



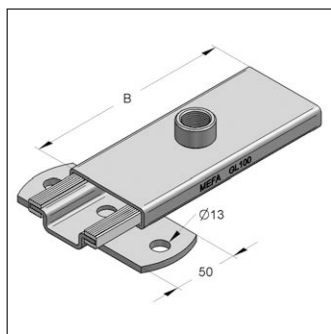
Sliding element GL without lug



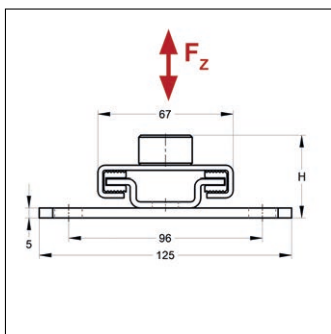
Assembly instruction



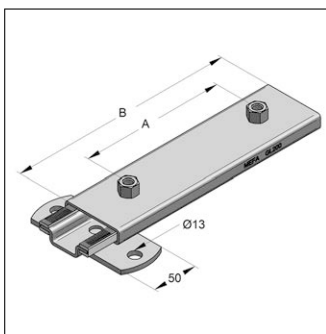
Slider GL 200



Slider GL 100 (Illustration with lug)



Slider GL with lug



Slider GL 200 (Illustration with lug)

Specification

- Application area:** Absorption of axial length expansion for standing, hanging, horizontal or vertical passed pipes.
- Installation advise:** After mounting protection lugs should be turned up, thereby slipping can be avoided.
- Profile type:** 45

Technical data

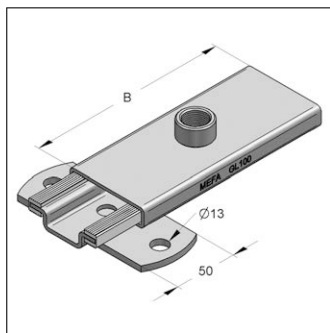
- Material sliding element:** Steel
- Surface:** galvanized
- Material name sliding stripe:** Polyamide 6
- Static friction factor:** 0,2 - 0,3
- Temperature resistance:** -30 up to 110 °C

Specification	Connection	Center distance A [mm]	Construction height H [mm]	Length B [mm]	max. width pipe clamp [mm]	max. sliding distance axial [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
GL 100 without lug	1xM10		35	160		68	3	0,517	20	0770524
GL 100 without lug	1xM12		37	160		68	3	0,526	20	0770532
GL 100 without lug	1xM16		36	160		68	3	0,535	1	0770559
GL 100 without lug	1x1/2"		36	160		68	3	0,528	1	0770605
GL 100 without lug	2xM10	120	35	160	180	68	3	0,538	20	0770526
GL 100 without lug	2xM12	120	37	160	180	68	3	0,562	1	0770534
GL 100 without lug	2xM16	120	36	160	180	68	3	0,581	1	0770561
GL 100 without lug	2x1/2"	120	36	160	180	68	3	0,559	1	0770607
GL 200 without lug	2xM10	160	35	250	260	158	3	0,746	1	0770527
GL 200 without lug	2xM12	160	37	250	260	158	3	0,763	1	0770535
GL 200 without lug	2xM16	160	36	250	260	158	3	0,781	1	0770562
GL 200 without lug	2x1/2"	160	36	250	260	158	3	0,767	1	0770608
GL 100 with lug	1xM10		40	160		68	3	0,748	20	0770528
GL 100 with lug	1xM12		42	160		68	3	0,757	20	0770536
GL 100 with lug	1xM16		41	160		68	3	0,766	20	0770563
GL 100 with lug	1x1/2"		41	160		68	3	0,759	1	0770609
GL 100 with lug	2xM10	120	40	160	180	68	3	0,769	20	0770530
GL 100 with lug	2xM12	120	42	160	180	68	3	0,793	20	0770538
GL 100 with lug	2xM16	120	41	160	180	68	3	0,812	1	0770565
GL 100 with lug	2x1/2"	120	41	160	180	68	3	0,790	1	0770611
GL 200 with lug	2xM10	160	40	250	260	158	3	0,977	1	0770638

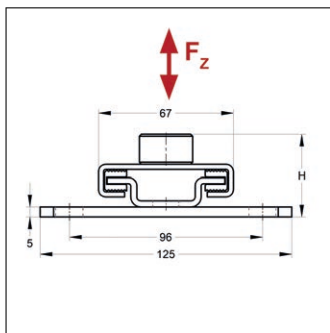
» Slider GL 100 and GL 200

Specification	Connection	Center distance A [mm]	Construction height H [mm]	Length B [mm]	max. width pipe clamp [mm]	max. sliding distance axial [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
GL 200 with lug	2xM12	160	42	250	260	158	3	0,994	1	0770539
GL 200 with lug	2xM16	160	41	250	260	158	3	1,01	1	0770566
GL 200 with lug	2x1/2"	160	41	250	260	158	3	0,998	10	0770615

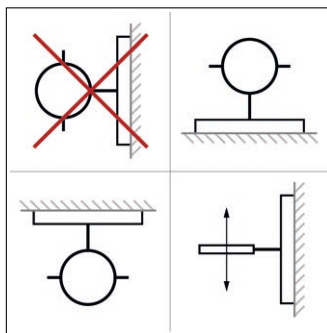
» Slider GL 100 and GL 200, TSP®



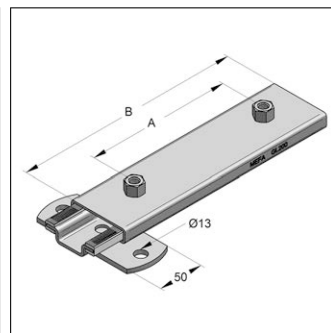
Slider GL 100 (Illustration with lug)



Slider GL with lug



Assembly instruction



Slider GL 200 (Illustration with lug)



04

Specification

Application area:	Absorption of axial length expansion of standing, hanging, horizontal or vertical passed pipes.
Installation advise:	After mounting protection lugs should be turned up, thereby slipping can be avoided.
Profile type:	45

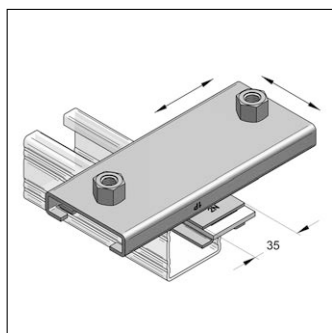
Technical data

Material sliding element:	Steel
Surface:	Zinc-Nickel
Material name sliding stripe:	Polyamide 6
Static friction factor:	0,2 - 0,3
Temperature resistance:	-30 up to 110 °C

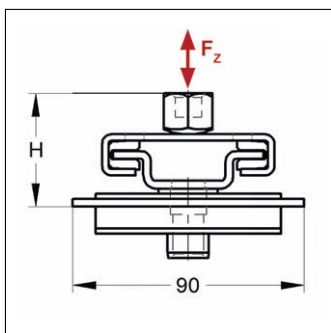
Specification	Connection	Center distance A [mm]	Construction height H [mm]	Length B [mm]	max. width pipe clamp [mm]	max. sliding distance axial [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
GL 100 with lug	1xM10		40	160		68	3	0,748	1	0770528/zn
GL 100 with lug	2xM12	120	42	160	180	68	3	0,793	1	0770538/zn
GL 200 with lug	2xM12	160	42	250	260	158	3	0,994	1	0770539/zn
GL 200 with lug	2x1/2"	160	41	250	260	158	3	0,998	1	0770615/zn

» Sliding element radial-axial GL 100 and GL 200

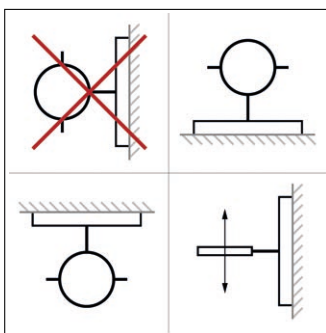
45



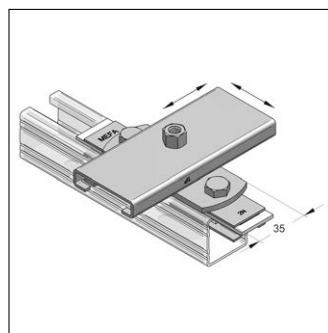
Sliding element radial-axial without lug



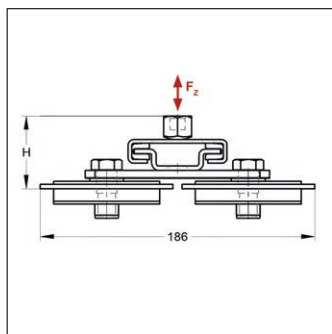
Sliding element radial-axial without lug



Assembly instruction



Sliding element radial-axial with lug



Sliding element radial-axial with lug

Specification

- Application area:** Absorption of radial and axial length expansion for standing, hanging or vertical passed pipes.
- Scope of delivery:** slider GL 100 or GL 200 and radial-axial sliding element, pre-assembled (without C-profile)
- Installation advise:** After mounting protection lugs should be turned up, thereby slipping can be avoided.
- Profile type:** 45

Technical data

- Material sliding element:** Steel
- Surface:** galvanized
- Material name sliding stripe:** Polyamide 6
- Static friction factor:** 0,2 - 0,3
- Temperature resistance:** -30 up to 110 °C

Specification	Connection	Construction height H [mm]	max. width pipe clamp [mm]	max. sliding distance axial [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
GL 100 without lug	1xM10	42		68	2	0,670	1	077048401
GL 100 without lug	1xM12	44		68	2	0,679	1	077048301
GL 100 without lug	1xM16	43		68	2	0,688	1	077048501
GL 100 without lug	1x1/2"	43		68	2	0,681	1	077048601
GL 100 without lug	2xM10	42	180	68	2	0,691	1	077048001
GL 100 without lug	2xM12	44	180	68	2	0,715	1	077048101
GL 100 without lug	2xM16	43	180	68	2	0,734	1	077048701
GL 100 without lug	2x1/2"	43	180	68	2	0,712	1	077048201
GL 200 without lug	2xM10	42	260	158	2	0,899	1	077047101
GL 200 without lug	2xM12	44	260	158	2	0,916	1	077047001
GL 200 without lug	2xM16	43	260	158	2	0,949	1	077047201
GL 200 without lug	2x1/2"	43	260	158	2	0,930	1	077047301
GL 100 with lug	1xM10	47		68	3	1,07	1	077048402
GL 100 with lug	1xM12	49		68	3	1,08	1	077048302
GL 100 with lug	1xM16	48		68	3	1,09	1	077048502
GL 100 with lug	1x1/2"	48		68	3	1,09	1	077048602
GL 100 with lug	2xM10	47	180	68	3	1,10	1	077048002
GL 100 with lug	2xM12	49	180	68	3	1,12	1	077048102
GL 100 with lug	2xM16	48	180	68	3	1,14	1	077048702
GL 100 with lug	2x1/2"	48	180	68	3	1,12	1	077048202

» Sliding element radial-axial GL 100 and GL 200

Specification	Connection	Construction height H [mm]	max. width pipe clamp [mm]	max. sliding distance axial [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
GL 200 with lug	2xM10	47	260	158	3	1,30	1	077047102
GL 200 with lug	2xM12	49	260	158	3	1,32	1	077047002
GL 200 with lug	2xM16	48	260	158	3	1,32	1	077047202
GL 200 with lug	2x1/2"	48	260	158	3	1,32	1	077047302

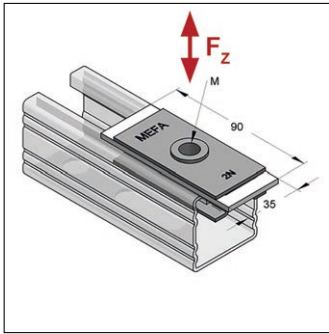
Slider GL - recommended values

The quoted data is valid for standing and hanging mounting and point out limit values for the system function of the mounting combination.

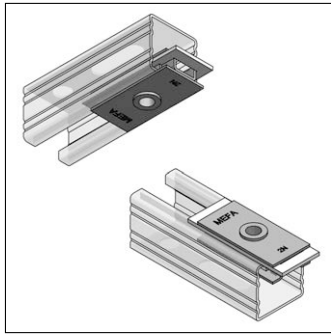
Slider	Pipe clamps	max. recommended length threaded pipe / pipe nipple [mm]
GL 37 M8	Omnia MB	50
GL 37 M10	Omnia MB	70
GL 37 M12	Omnia MB	90
GL 37 M16	Omnia MB	110
GL 37 1/2"	Maxima PSM	150
GL 100 1 x M10	Omnia MB	90
GL 100 1 x M12	Omnia MB	110
GL 100 2 x M10	Omnia MB	90
GL 100 2 x M12	Omnia MB	110
GL 100 2 x M12	Maxima PSM	110
GL 100 2 x M16	Maxima PSM	160
GL 100 2 x 1/2"	Maxima PSM	200
GL 200 2 x M10	Omnia MB	90
GL 200 2 x M12	Omnia MB	110
GL 200 2 x M12	Maxima PSM	110
GL 200 2 x M16	Maxima PSM	160
GL 200 2 x 1/2"	Maxima PSM	200

» Profile rail slider 45

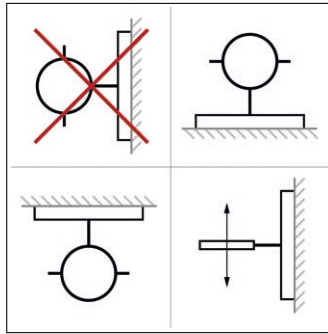
45



Profile rail slider 45



Assembly instruction



Assembly instruction

Specification

Application area: Absorption of axial length expansion for standing, hanging or vertical passed pipes in the longitudinal direction of the rail.

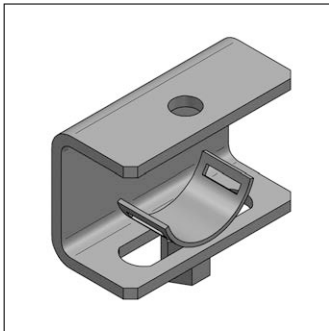
Profile type: 45

Technical data

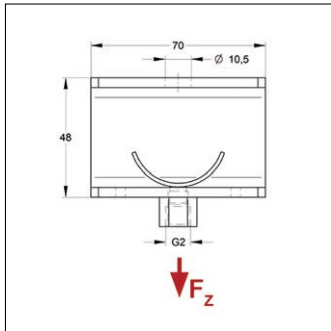
Material sliding element: Steel
 Surface: galvanized
 Material name sliding stripe: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 up to 110 °C

Connection M	Recommended length threaded pin [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1xM8	45	2	0,115	1	077002801
1xM10	55	2	0,120	1	077003001
1xM12	55	2	0,126	1	077003201

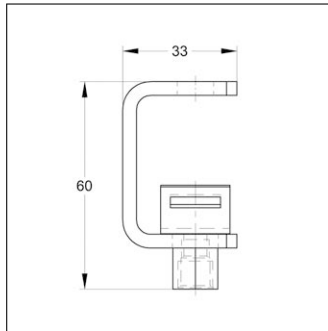
» Suspended bracket 35 mm, hanging



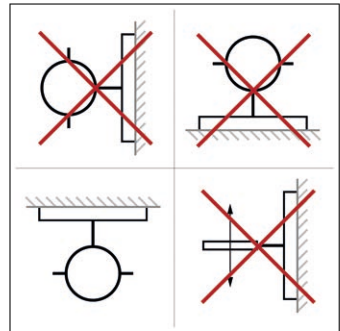
Suspended bracket



Suspended bracket



Suspended bracket



Assembly instruction

Specification

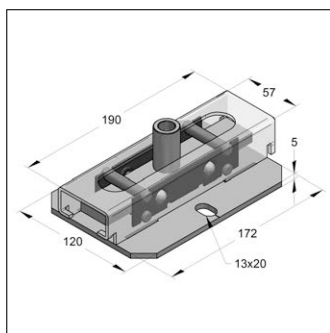
Application area: Absorption of axial expansion for hanging assembly.

Technical data

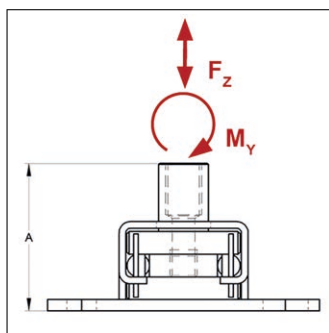
Material: Steel
 Surface: galvanized

Thread G2	Terminal hole [mm]	max. sliding distance axial [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8/10	10,5	35	2,5	0,234	50	07709903

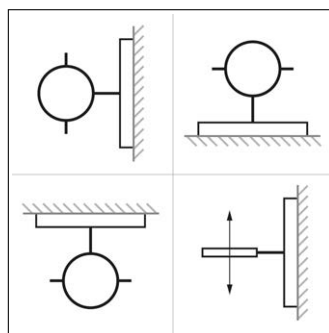
» Roller bearing



Roller bearing



Roller bearing



installation recommendation

Specification

Application area: Absorption of axial length expansion for standing, hanging, horizontal or vertical passed pipes.

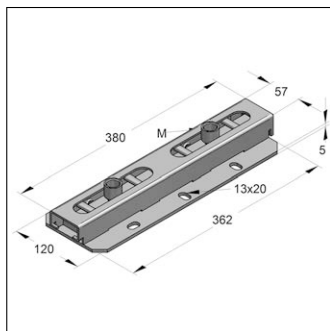
Technical data

Material: Steel
 Surface: galvanized
 Rolling resistance: 0,004 - 0,02
 max. sliding distance axial: 120 mm
 max. temperature resistance: 300 °C

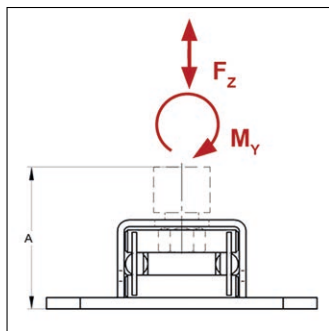
Connection M	Construction height A [mm]	Load F_z [kN]	Limited torque M_y [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	65	4	150	1,93	1	175811811
M12	65	4	150	1,91	1	175811813
M16	65	4	150	1,97	1	175811816
1/2"	45	4	150	1,92	1	175811839
3/4"	86	4	150	2,09	1	175811840

04

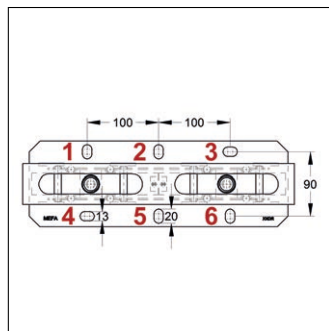
» Roller bearing Duo



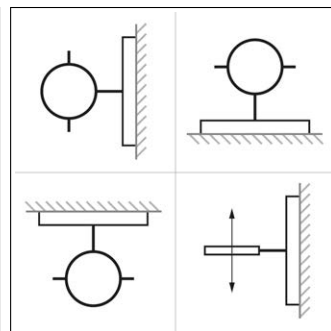
Roller bearing Duo



Roller bearing Duo



Roller bearing mounting points



installation recommendation

Specification

Application area: Absorption of axial length expansion for standing, hanging, horizontal or vertical passed pipes.

Installation advise: for pipe clamp size up to DN 500 may get of coupling plate, so that slide can be pushed apart. After fixing pipe clamp mount coupling plate again on both slides.

Technical data

Material: Steel
 Surface: galvanized
 Rolling resistance: 0,004 - 0,02
 max. sliding distance axial: 120 mm
 max. temperature resistance: 300 °C

Remark: 4 kN with two screw connections at positions 2 and 5. 8 kN with tree connections at positions 1, 3 and 5 or positions 2, 4 and 6. 8 kN with four screw connections at positions 1, 3, 4 and 6.

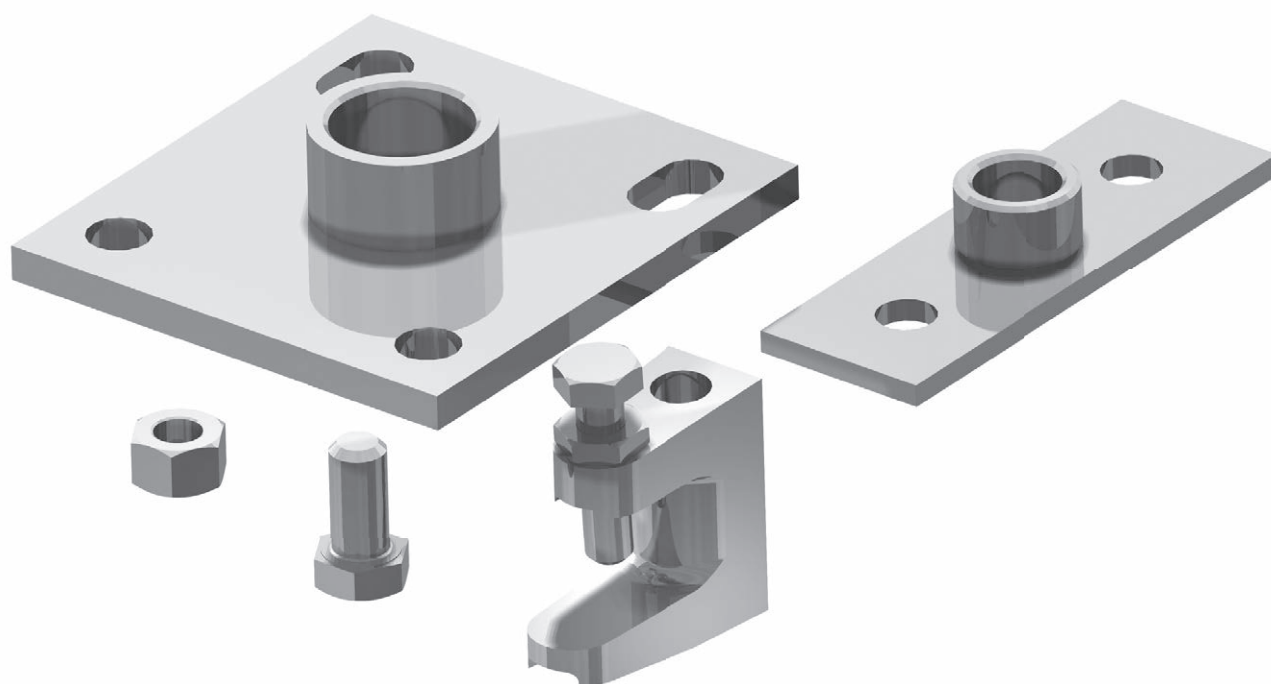
Connection M	Construction height A [mm]	Load F_z [kN]	Limited torque M_y [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2xM10	65	8	300	4,05	1	175911811

» Roller bearing Duo

Connection M	Construction height A [mm]	Load F_z [kN]	Limited torque M_y [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2xM12	65	8	300	4,02	1	175911813
2xM16	65	8	300	4,13	1	175911816
2x1/2"	45	8	300	4,03	1	175911839
2x3/4"	86	8	300	4,38	1	175911840

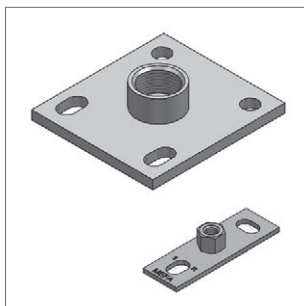
MOUNTING ACCESSORIES

*DIN- and standard parts, girder clamps,
threaded rods and couplings*

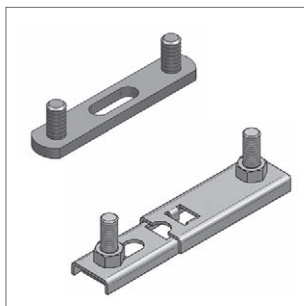


05

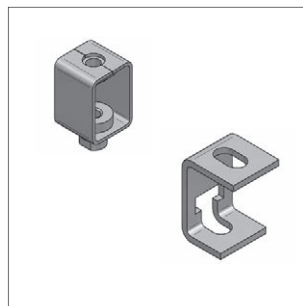
» MEFA mounting accessories



Base plates



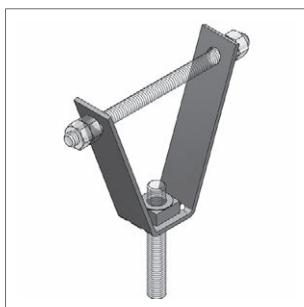
Double holder



Height-adjustable suspensions



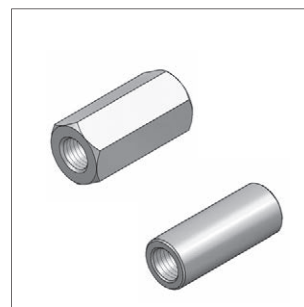
Pendular bolt joints



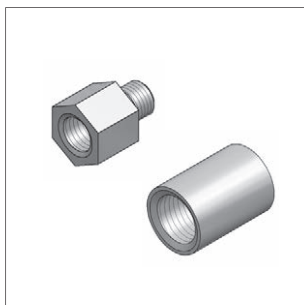
Trapeze hanger



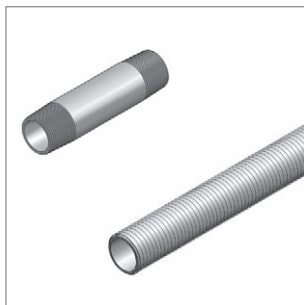
Threaded hooks, distance angles

Threaded rods and bolts,
protecting caps

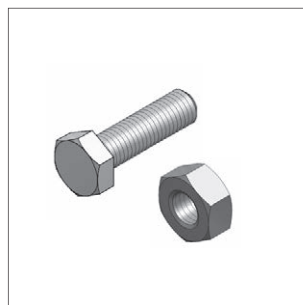
Threaded couplings, reducer



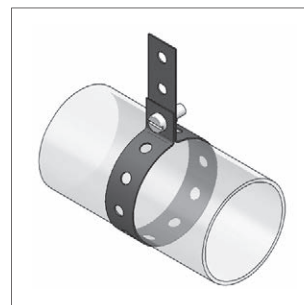
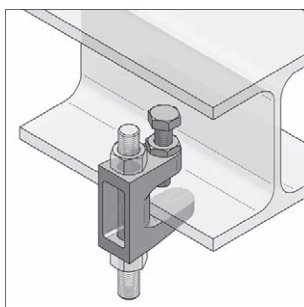
Reducer hexagon, reducing



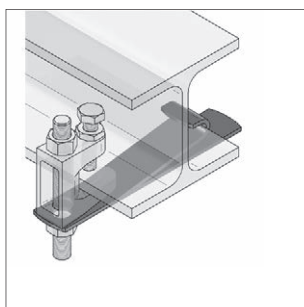
Double nipples, threaded pipes



Screws, nuts and washers

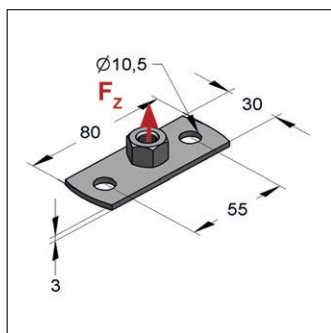
MEFA Plastahl
Perforated steel strap

Beam clamps

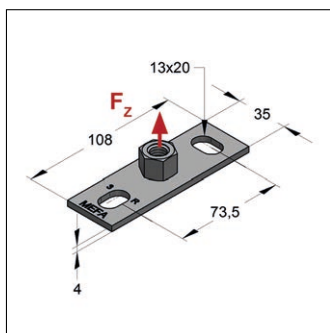


Safety lug

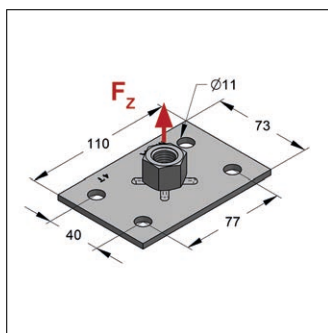
» Base plate



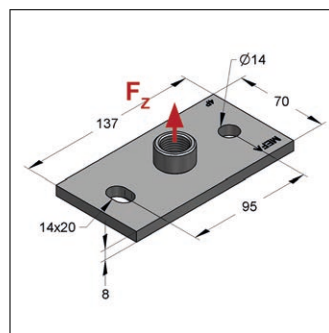
Base plate type 0



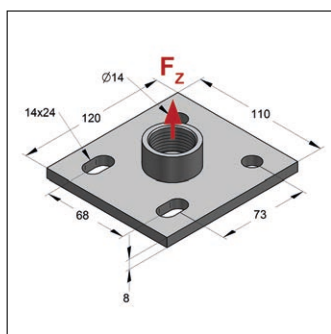
Base plate type I



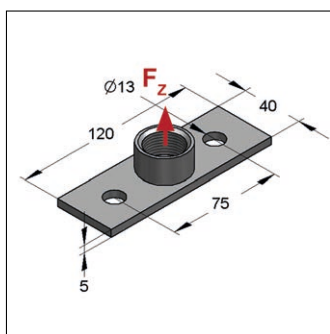
Base plate type II



Base plate type III



Base plate type IV



Base plate type V

Specification

Application area: Plates with threaded connection suitable for mounting on building structure, on mounting rails or other objects.

Installation advise: Please pay attention to specified distance of axis-center and edge in combination with approved anchors

Technical data

Material: Steel
Surface: galvanized

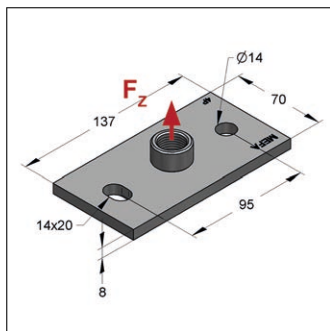
* suitable sound-decoupling see chapter 3a

Series	Dimension [mm]	Connection	Hole-Ø [mm]	Dimension elongated hole [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Type 0	80x30x3	M8	10,5		1,05	0,0630	50	05900008
Type 0	80x30x3	M10	10,5		1,05	0,0740	50	05900010
Type I	108x35x4	M8/M10		13x20	1,50	0,137	50	0590044302
Type I	108x35x4	M12		13x20	1,50	0,137	50	059006102
Type I	108x35x4	M16		13x20	1,50	0,163	50	059008802
Type I	108x35x4	1/2"		13x20	1,50	0,137	50	059004502
Type II	110x73x4	M8	11,0		3,40	0,255	50	059050701
Type II	110x73x4	M10	11,0		3,40	0,266	50	059054101
Type II	110x73x4	M12	11,0		3,40	0,274	50	059052501
Type II	110x73x4	M16	11,0		3,40	0,301	50	059053301
Type II	110x73x4	1/2"	11,0		3,40	0,277	50	059050901
Type II	110x73x4	3/4"	11,0		3,40	0,290	50	059051701
Type II	110x73x4	1"	11,0		3,40	0,324	50	059056801
Type III	137x70x8	M10	14,0	14x20	10,00	0,602	1	059060801 *
Type III	137x70x8	M12	14,0	14x20	10,00	0,606	1	059060601 *
Type III	137x70x8	M16	14,0	14x20	10,00	0,628	1	059060101 *
Type III	137x70x8	1/2"	14,0	14x20	10,00	0,621	1	059060201 *
Type III	137x70x8	3/4"	14,0	14x20	10,00	0,634	1	059059901 *
Type III	137x70x8	1"	14,0	14x20	10,00	0,668	1	059060001 *
Type III	137x70x8	1 1/4"	14,0	14x20	10,00	0,699	1	059060301 *
Type III	137x70x8	1 1/2"	14,0	14x20	10,00	0,737	1	059060501 *

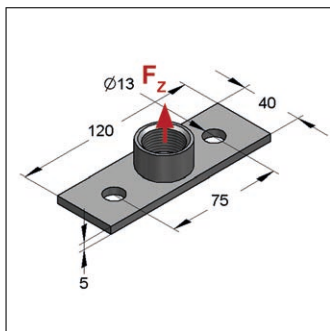
» Base plate

Series	Dimension [mm]	Connection	Hole-Ø [mm]	Dimension elongated hole [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Type IV	120x110x8	M16	14,0	14x24	14,00	0,827	1	059055501
Type IV	120x110x8	1/2"	14,0	14x24	14,00	0,820	1	059055601
Type IV	120x110x8	3/4"	14,0	14x24	14,00	0,833	1	059055701
Type IV	120x110x8	1"	14,0	14x24	14,00	0,867	1	059055801
Type IV	120x110x8	1 1/4"	14,0	14x24	14,00	0,898	1	059055901
Type V	120x40x5	1/2"	13,0		2,70	0,213	50	0590586
Type V	120x40x5	3/4"	13,0		2,70	0,226	50	0590587
Type V	120x40x5	1"	13,0		2,70	0,260	50	0590588

» Base plate, TSP®



Base plate type III



Base plate type V



05

Specification

Application area: Plates with threaded connection suitable for mounting on building structure, on mounting rails or other objects.

Installation advise: Please pay attention to specified distance of axis-center and edge in combination with approved anchors

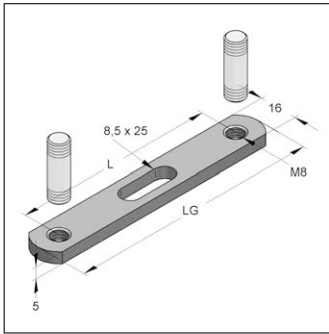
Technical data

Material: Steel
Surface: Zinc-Nickel

* suitable sound-decoupling see chapter 3a

Series	Dimension [mm]	Connection	Hole-Ø [mm]	Dimension elongated hole [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Type III	137x70x8	1/2"	14	14x20	10,0	0,621	1	059060201/zn *
Type III	137x70x8	1"	14	14x20	10,0	0,668	1	059060001/zn *
Type V	120x40x5	1/2"	13		2,7	0,213	50	0590586/zn

» Double holder



Double holder with female thread

Specification

Application area: Holder with female thread for fastening two parallel pipelines in combination with pipe clamps.

Recommended accessories: Threaded bolt

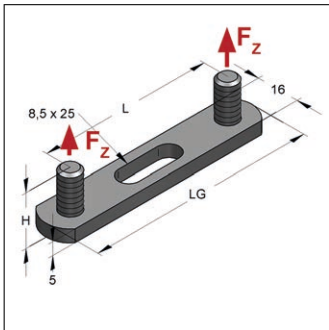
Technical data

Material: Steel
Surface: galvanized

Center distance L [mm]	Connection	Length LG [mm]	Height [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
65	M8	87,0	5	0,2	0,0410	100	0763071
85	M8	105,5	5	0,2	0,0541	100	0763098
105	M8	125,5	5	0,2	0,0666	100	0763128
160	M8	181,0	5	0,2	0,102	100	0763160

05

» Double holder MD



Double holder MD

Specification

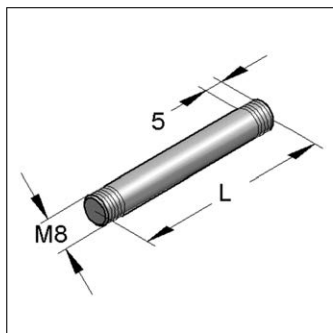
Application area: Holder with fixed threaded pins for fastening two parallel pipelines in combination with pipe clamps.

Technical data

Material: Steel
Surface: galvanized

Center distance L [mm]	Threaded pin type	Length LG [mm]	Height H [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
65	M8x20	85	20	0,2	0,0690	50	0760048
105	M8x20	125	20	0,2	0,0940	50	0760056

» Threaded bolt



Threaded bolt

Specification

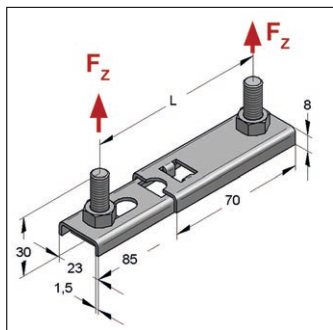
Application area: For double holder with female thread.

Technical data

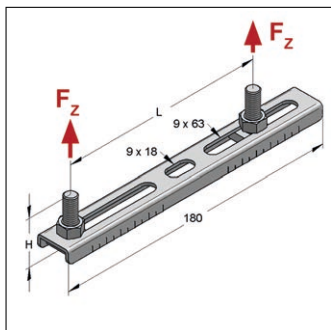
Material: Steel
Surface: galvanized

Thread	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	13	0,0048	100	0766151
M8	25	0,0085	100	0766259
M8	35	0,0116	100	0766356
M8	45	0,0147	100	0766453
M8	55	0,0179	100	0766550
M8	65	0,0210	100	0766658

» Double holder, movable



Double holder VS



Double holder VSG

Specification

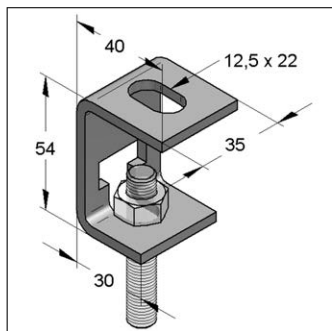
Application area: Double holder with continuously adjustable threaded bolts.

Technical data

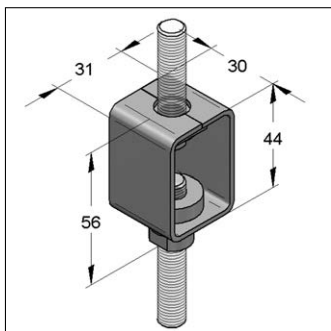
Material: Steel
Surface: galvanized

Series	Center distance L	Threaded pin type	Length [mm]	Height H [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VS	65-110	M8x30	155	30	0,15	0,103	100	0590199
VSG	46-154	M8x20	180	20	0,35	0,122	50	0590118
VSG	46-154	M8x30	180	30	0,35	0,128	50	0590126
VSG	46-154	M8x40	180	40	0,35	0,135	50	0590134
VSG	46-154	M8x50	180	50	0,35	0,141	50	0590142

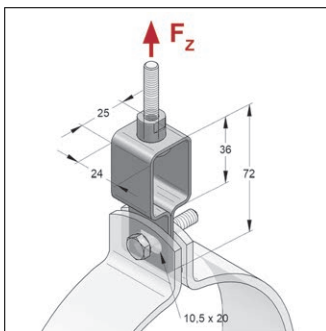
» Height-adjustable suspension



Suspended bracket type T



Height adjuster



Height regulator

Specification

Application area: For single mounting with a threaded rod. Hanging, stepless height-adjustment.

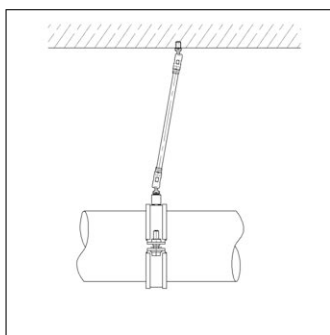
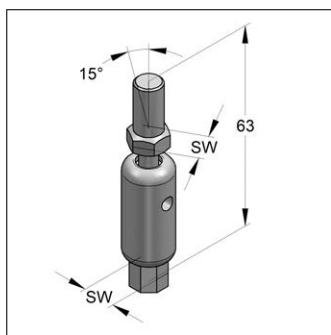
Installation advise: Secure the suspended pipe clamps with a lock nut.

Technical data

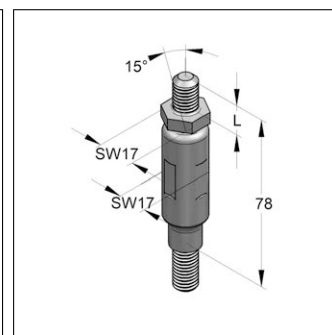
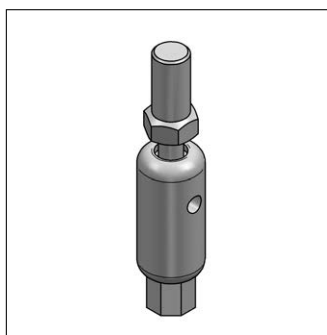
Material: Steel
Surface: galvanized

Description	for thread	Height adjustable [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Suspended bracket	M8, M10, M12	36	1,5	0,0995	100	0781100
Height adjuster	M8	30	3,0	0,101	50	0783021
Height adjuster	M10	30	3,0	0,103	50	0783110
Height regulator	M8	30	3,0	0,125	50	0780014

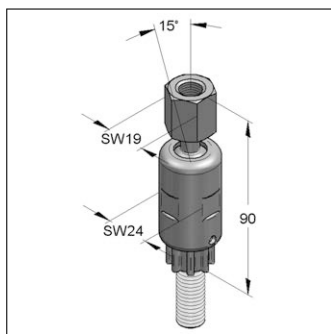
» Pendular bolt joints



Assembly example pendular bolt joint



Pendular bolt joint M10/M10



Pendular bolt joint M12/M12

Specification

Application area: Pendulum suspension for individual fastening with threaded rods.

Installation advise: For stainless pipe mounting always two pendular bolt joints are required.

Technical data

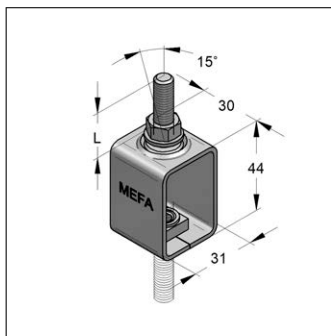
Material: Steel

Surface: galvanized

Remark: See chapter 15 for the maximum pipe expansion that can be absorbed by the pendulum joint.

Description	Thread	Thread type	Length thread L [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Pendular bolt joints	M8-M8	AG-IG	15	2,5	0,0410	50	0788088
Pendular bolt joints	M10-M10	AG-IG	13	2,5	0,0690	50	0788108
Pendular bolt joints	M12-M12	IG-IG		5,0	0,127	50	0788128

» Pendulum hanger



Pendulum hanger

Specification

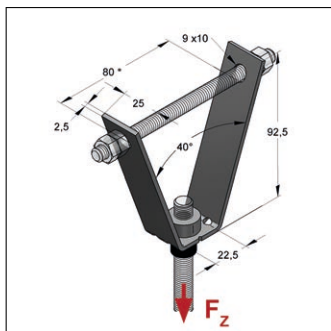
Application area: Height-adjustable suspension for individual mounting with threaded rods. Stepless height adjustment.

Technical data

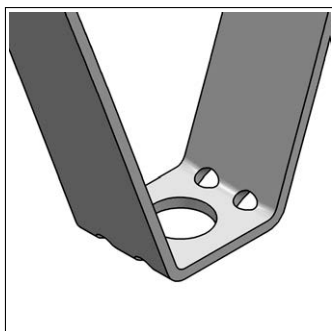
Material: Steel
Surface: galvanized

Description	Thread	Thread type	Length thread L [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Pendulum hanger	M8-M8	IG-AG	22	2,5	0,106	50	0784031
Pendulum hanger	M10-M10	IG-AG	22	3,0	0,119	50	0784136
Pendulum hanger	M12-M12	IG-AG	20	3,6	0,137	50	0784250

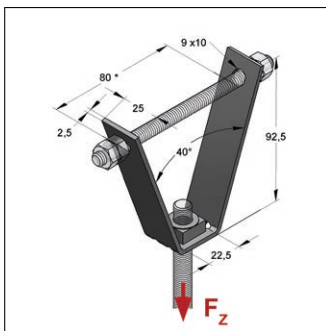
» Trapeze hanger



Trapeze hanger with height regulator



can bend open (up to approx. 120 mm)



Trapeze hanger with welded nut



Specification

Application area: For mounting the pipelines, ventilation ducts and profile rails directly under a trapeze sheeting.

Technical data

Material: Steel
Surface: galvanized

Recommended accessories: threaded bolt M8 / 110, hexagon nut M8, DIN 934

Remark: For trapeze hangers with sound insulation see chapter 8. For punching pliers for trapezoidal sheets see chapter 10.

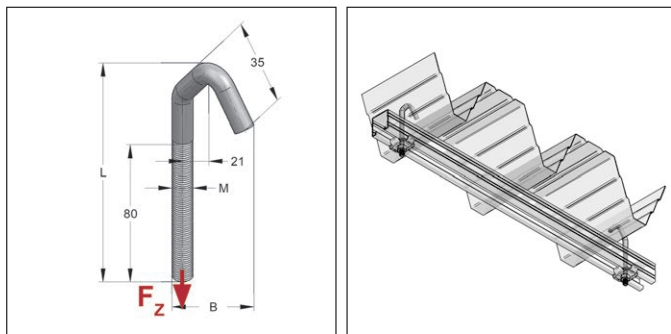
* not VdS approved

Series	Specification	Threaded connection	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
MU-B	Height regulator	M8	25	2,5	2	0,116	100	0783803
MU-B	Height regulator	M10	25	2,5	2	0,121	100	0783838
MU-S	welded nut	M8	25	2,5	2	0,111	100	0783900

» Trapeze hanger

Series	Specification	Threaded connection	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
MU-S	welded nut	M10	25	2,5	2	0,117	100	0783935
MU-S	welded nut	M12	25	2,5	2	0,121	100	0783950 *

» Threaded hook



Threaded hook

Mounting example

Specification

Application area: For attaching profile rails and ventilation ducts directly under the trapezoidal sheet metal.

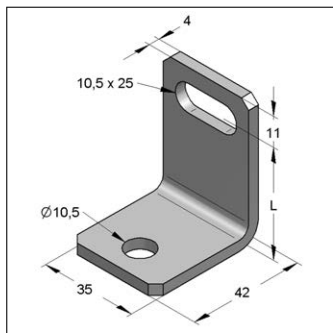
Technical data

Material: Steel
Surface: galvanized

Remark: Load specifications refer only to the component.

Thread M	Length L [mm]	Width B [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	130	48	0,7	0,0600	50	0592131
M10	130	50	1,3	0,0920	50	0592132

» Distance angle



Distance angle E

Specification

Application area: Bracket for fixing pipe clamps with lug.

Technical data

Material: Steel
Surface: galvanized

Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
25	0,0690	50	0630268
30	0,0750	50	0630306
35	0,0800	50	0630357

» Distance angle

Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
40	0,0860	25	0630403
50	0,0970	25	0630500
60	0,108	25	0630608
70	0,120	25	0630705
90	0,142	25	0630918
100	0,153	25	0631000

» Protection cap, round

PE



Protection cap, round

Specification

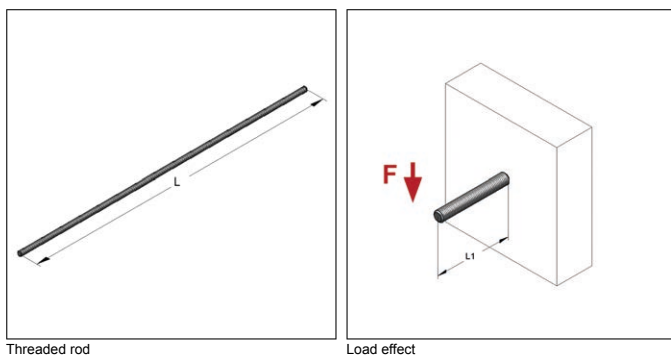
Application area: Protective cap for threaded pins and rods.

Technical data

Material: Plastic
 Colour: black

for thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	0,0008	100	0730008
M10	0,0010	100	0730010
M12	0,0013	100	0730012

» Threaded rods



Threaded rod

Load effect

Specification

Application area: Complementary accessories for pipe mounting.
 Norm: DIN 976-1

Technical data

Material: Steel
 Surface: galvanized
 Strength class: 4.6

Thread	Length L [mm]	Tension load [kN]	Load at fire resistance period 30 min. [kN]	Load at fire resistance period 60 min. [kN]	Load at fire resistance period 90 min. [kN]	Weight [kg/pc]	Bundle [pcs]	Packing unit [pcs.]	Part-No.
M8	1000	8,96	0,80	0,46	0,35	0,326	50	50	0730084
M8	2000	8,96	0,80	0,46	0,35	0,653	25	25	0730289
M8	3000	8,96	0,80	0,46	0,35	0,980	50	50	0730483
M10	1000	14,20	1,27	0,72	0,55	0,510	25	25	0730106
M10	2000	14,20	1,27	0,72	0,55	1,02	20	20	0730300
M10	3000	14,20	1,27	0,72	0,55	1,53	25	25	0730505
M12	1000	20,64	1,84	1,05	0,80	0,735	25	25	0730122
M12	2000	20,64	1,84	1,05	0,80	1,47	20	20	0730327
M12	3000	20,64	1,84	1,05	0,80	2,21	25	25	0730521
M16	1000	38,43	3,42	1,96	1,49	1,31	10	10	0730165
M16	2000	38,43	3,42	1,96	1,49	2,61	10	10	0730378
M16	3000	38,43	3,42	1,96	1,49	3,92	20	20	0730564

05

Threaded rods / bolts - admissible load* on bending

Distance L1	M8	M10	M12	M16
[mm]	F [kN]	F [kN]	F [kN]	F [kN]
50	0,12	0,23	0,40	1,00
100	0,06	0,12	0,20	0,50
150	0,02	0,06	0,13	0,33
200	0,01	0,03	0,07	0,24
250		0,02	0,05	0,15
300		0,02	0,03	0,11
350		0,01	0,02	0,08
400		0,01	0,02	0,06

* $f_y=240 \text{ N/mm}^2$, safety factor=1,5, E-module= 210.000 N/mm^2 max. deflection $f = L/150$ related to tensile stress area

» Threaded rods, TSP®



Threaded rod



Specification

Application area: Complementary accessories for pipe mounting.

Norm: DIN 976-1

Technical data

Material: Steel

Surface: hot-dip galvanized

Strength class: 8.8

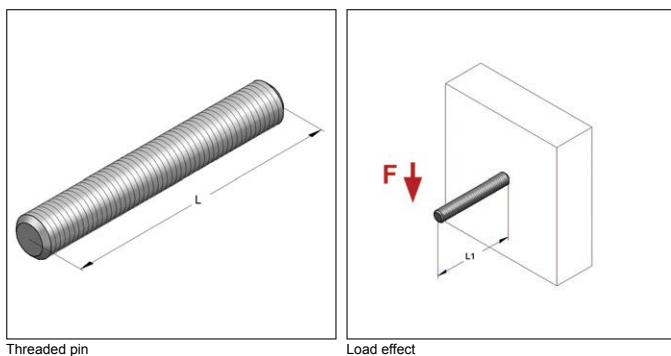
Thread	Length L [mm]	Tension load [kN]	Load at fire resistance period 30 min. [kN]	Load at fire resistance period 60 min. [kN]	Load at fire resistance period 90 min. [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	1000	28,40	2,53	1,44	1,10	0,510	25	0739103/fvz
M12	1000	41,27	3,67	2,10	1,60	0,735	25	0739137/fvz
M16	1000	76,87	6,68	3,91	2,98	1,31	10	0739162/fvz

Threaded rods TSP - admissible load* on bending

Distance L1 [mm]	M10 F [kN]	M12 F [kN]	M16 F [kN]
50	0,55	1,07	2,66
100	0,14	0,29	0,96
150	0,06	0,13	0,43
200	0,03	0,07	0,24
250	0,02	0,05	0,15
300	0,02	0,03	0,11
350	0,01	0,02	0,08
400	0,01	0,02	0,06

* $f_y=640 \text{ N/mm}^2$, safety factor=1,5, E-module= 210.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

» Threaded pins



Threaded pin

Load effect

Specification

Application area: Complementary accessories for pipe mountings.

Norm: DIN 976-1

Recommended accessories: four-way key see chapter 10.

Technical data

Material: Steel

Surface: galvanized

Strength class: 4.6

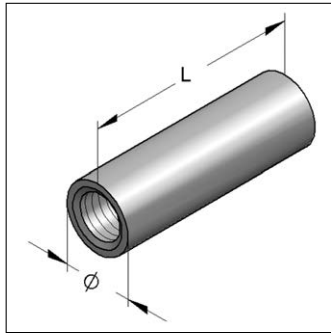
Thread	Length L [mm]	Tension load [kN]	Load at fire resistance period 30 min. [kN]	Load at fire resistance period 60 min. [kN]	Load at fire resistance period 90 min. [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	20	8,96	0,80	0,46	0,35	0,0064	100	0730815
M8	30	8,96	0,80	0,46	0,35	0,0097	100	0730823
M8	35	8,96	0,80	0,46	0,35	0,0113	100	0731358
M8	40	8,96	0,80	0,46	0,35	0,0129	100	0730831
M8	50	8,96	0,80	0,46	0,35	0,0162	100	0730858
M8	70	8,96	0,80	0,46	0,35	0,0227	100	0730874
M8	90	8,96	0,80	0,46	0,35	0,0293	100	0730890
M8	110	8,96	0,80	0,46	0,35	0,0358	100	0730912
M8	140	8,96	0,80	0,46	0,35	0,0456	100	0730940
M8	160	8,96	0,80	0,46	0,35	0,0521	100	0730963
M10	20	14,20	1,27	0,72	0,55	0,0100	100	0731021
M10	25	14,20	1,27	0,72	0,55	0,0126	100	0731032
M10	30	14,20	1,27	0,72	0,55	0,0151	100	0731048
M10	35	14,20	1,27	0,72	0,55	0,0177	100	0733350
M10	40	14,20	1,27	0,72	0,55	0,0202	100	0731056
M10	50	14,20	1,27	0,72	0,55	0,0253	100	0731064
M10	70	14,20	1,27	0,72	0,55	0,0355	100	0731072
M10	90	14,20	1,27	0,72	0,55	0,0458	100	0731099
M10	110	14,20	1,27	0,72	0,55	0,0560	50	0731110
M12	35	20,64	1,84	1,05	0,80	0,0255	50	0731234
M12	50	20,64	1,84	1,05	0,80	0,0365	50	0731250
M12	70	20,64	1,84	1,05	0,80	0,0512	50	0731269
M12	90	20,64	1,84	1,05	0,80	0,0659	50	0731293
M12	110	20,64	1,84	1,05	0,80	0,0806	50	0731315
M16	70	38,43	3,42	1,96	1,49	0,0912	25	0731672
M16	110	38,43	3,42	1,96	1,49	0,143	25	0731715
M16	160	38,43	3,42	1,96	1,49	0,208	25	0731763

Threaded rods / bolts - admissible load* on bending

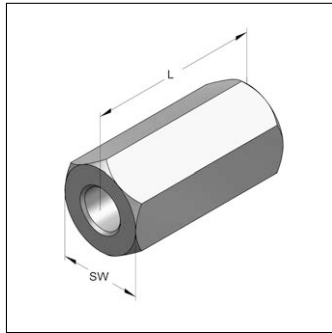
Distance L1	M8	M10	M12	M16
[mm]	F [kN]	F [kN]	F [kN]	F [kN]
50	0,12	0,23	0,40	1,00
100	0,06	0,12	0,20	0,50
150	0,02	0,06	0,13	0,33
200	0,01	0,03	0,07	0,24
250		0,02	0,05	0,15
300		0,02	0,03	0,11
350		0,01	0,02	0,08
400		0,01	0,02	0,06

* $f_y=240 \text{ N/mm}^2$, safety factor=1,5, E-module= 210.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

» Threaded coupling



Threaded coupling, round



Threaded coupling, hexagon

Specification

Application area: For extending threaded rods.

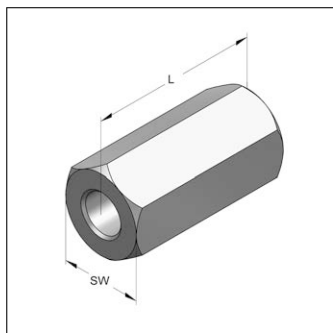
Technical data

Material: Steel
Surface: galvanized

Remark: Load capacities in cold and hot areas (loads in case of fire) available on request.

Series	Female thread M	Length L [mm]	Outer diameter [mm]	Wrench Size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
round	M6	25	10		0,0116	100	0700010
round	M8	30	11		0,0142	100	0700029
round	M10	40	13		0,0239	100	0700037
round	M12	40	15		0,0298	100	0700045
hexagon	M8	30		11	0,0135	100	0700085
hexagon	M10	40		13	0,0285	50	0700105
hexagon	M12	40		17	0,0533	50	0700123
hexagon	M16	50		24	0,136	25	0700167

» Threaded coupling, TSP®



Threaded coupling, hexagon



Specification

Application area: For extending threaded rods.

Technical data

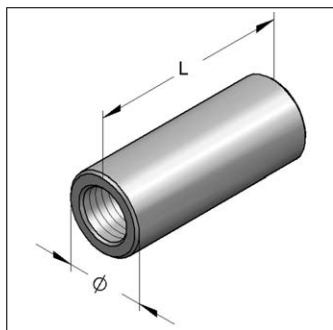
Material: Steel

Surface: Zinc-Nickel

Remark: Load capacities in cold and hot areas (loads in case of fire) are available on request.

Series	Female thread M	Length L [mm]	Wrench Size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
hexagon	M10	40	13	0,0285	50	0700105/zn
hexagon	M12	40	17	0,0533	50	0700123/zn

» Reducing socket



Reducing socket, round

Specification

Application area: For connecting two threaded pins/rods of different thread sizes.

Technical data

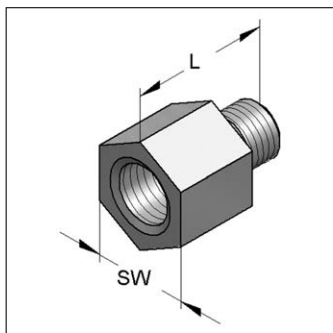
Material: Steel

Surface: galvanized

Remark: Load capacities in cold and hot areas (loads in case of fire) available on request.

Female thread 1	Female thread 2	Length L [mm]	Outer diameter [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	M10	40	16	0,0482	100	0710016
M8	M12	40	16	0,0432	100	0710024
M10	M12	40	16	0,0408	100	0710032
M12	M16	40	22	0,0807	25	0710105

» Reducer hexagon



Reducer hexagon

Specification

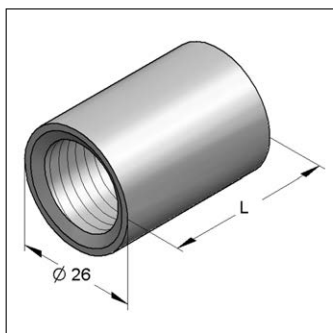
Application area: Adapter for pipe clamps for connecting threaded rods / pins with different thread diameters.

Technical data

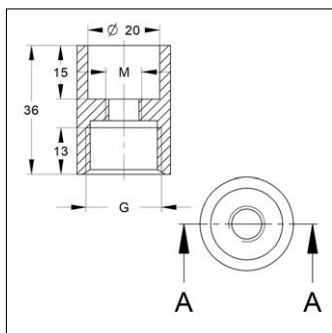
Material: Steel
Surface: galvanized

Female thread	Male thread	Wrench size SW	Length L [mm]	Length female thread [mm]	Length male thread [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	M10	13	21	8,0	8	0,0170	100	0725528
M10	M8	13	23	8,0	10	0,0138	100	0720518
M10	M12	13	23	10,0	10	0,0184	100	0720496
M12	M10	17	25	10,0	10	0,0280	100	0720011
M16	M12	24	32	10,0	15	0,0713	50	0726508
1/2"	M12	24	29	11,0	8	0,0488	50	0726509
1/2"	M16	30	35	13,5	11	0,116	25	0726510

» Reducing adaptor



Reducing adaptor



Reducing adaptor

Specification

Application area: Adapter for pipe clamps with M8 or M10 connection thread to create a 1/2" connection option.

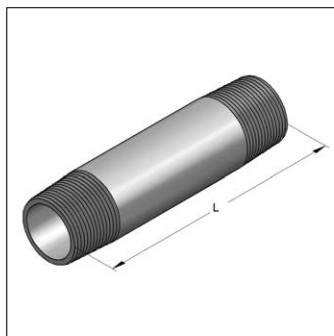
Recommended accessories: Matching threaded pin length 20 mm

Technical data

Material: Steel
Surface: galvanized

Female thread 1 M	Female thread 2 G	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	1/2"	36	0,0786	50	0590304
M10	1/2"	36	0,0776	50	0590401

» Double nipple



Double nipple

Specification

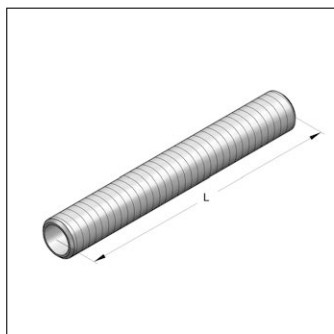
Application area: Complementary accessories for pipe mountings.
 Norm: DIN 2982

Technical data

Material: Steel
 Surface: galvanized

Thread	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1/2"	40	0,0450	10	0700403
1/2"	60	0,0710	10	0700603
1/2"	80	0,0960	10	0700803
1/2"	120	0,148	25	0701203

» Threaded distance piece - section



Threaded pipe - section

Specification

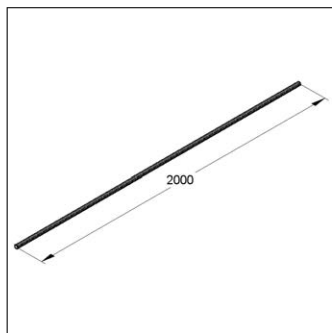
Application area: Threaded distance piece - section with continuous external thread.
 Norm: DIN EN ISO 228 G 1/2 B

Technical data

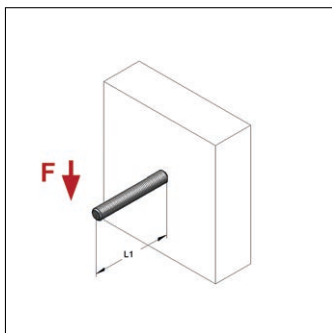
Material: Steel
 Surface: galvanized

Thread	Length L [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1/2"	100	0,112	10	07070100
1/2"	150	0,168	25	07070150

» Threaded distance piece



Threaded pipe



Load effect

Specification

Application area: Complementary accessories for pipe mounting.

Norm: DIN EN ISO 228 G 1/2 - 1 1/4 B

Technical data

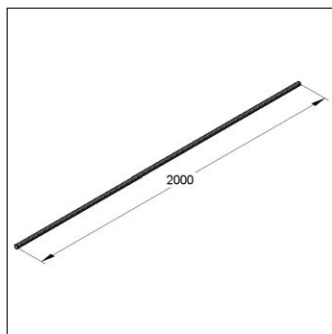
Material: Steel

Surface: galvanized

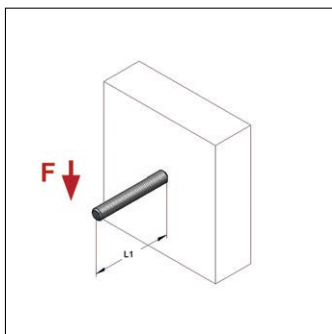
Thread	Length [mm]	Outer diameter [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
1/2"	2000	21,0	1,13	20	0737002
3/4"	2000	26,4	1,43	10	0737003
1"	2000	33,2	2,25	10	0737004
1 1/4"	2000	41,9	2,88	6	0737005

05

» Threaded pipe, TSP®



Threaded pipe



Load effect

**Specification**

Application area: Complementary accessories for pipe mounting.

Norm: DIN EN ISO 228 G 1/2 - 1 1/4 B

Technical data

Material: Steel

Surface: Zinc-Nickel

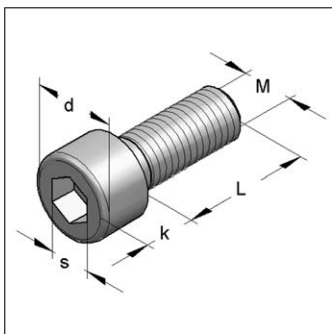
Thread	Length [mm]	Outer diameter [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
1/2"	2000	21,0	1,13	20	0737002/zn
1"	2000	33,2	2,25	10	0737004/zn

Threaded pipe - Admissible load* on bending

Distance L1	1/2"	3/4"	1"	1 1/4"
[mm]	F [kN]	F [kN]	F [kN]	F [kN]
50	1,482	2,940	5,350	10,362
100	0,741	1,470	2,675	5,181
150	0,494	0,980	1,783	3,454
200	0,371	0,735	1,337	2,591
250	0,290	0,588	1,070	2,072
300	0,201	0,490	0,892	1,727
350	0,148	0,380	0,764	1,480
400	0,113	0,291	0,665	1,295
450	0,089	0,230	0,525	1,151
500	0,072	0,186	0,425	1,036

* at $\sigma_{\max.} = 160 \text{ N/mm}^2$, max. bending $f = L/150$

» Allen screw



Allen screw

Specification

Recommended accessories: washer according to DIN 125

Norm: DIN EN ISO 4762

Technical data

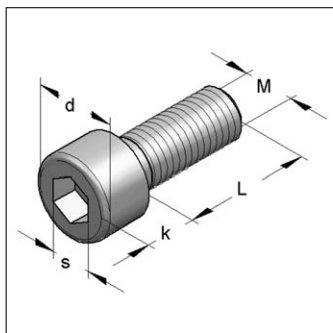
Material: Steel

Surface: galvanized

Drive: Allen key

Thread M	Length L [mm]	Drive size s	Diameter head d [mm]	Height head k [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	16	6	13	8	0,0121	200	3443167
M8	20	6	13	8	0,0134	200	3443205
M10	20	8	16	10	0,0229	100	3444200
M10	25	8	16	10	0,0259	100	3444252
M12	25	10	18	12	0,0356	100	3445259

» Allen screw, TSP®



Allen screw



Specification

Recommended accessories: washer according to DIN 125

Norm: DIN EN ISO 4762

Technical data

Material: Steel

Surface: Zinc-Nickel

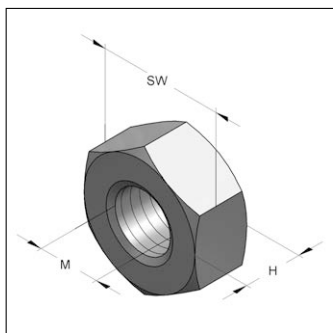
Drive: Allen key

Version: DIN EN ISO 4762

Thread M	Length L [mm]	Drive size s	Diameter head d [mm]	Height head k [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	25	10	18	12	0,0356	100	3445259/zn

05

» Hexagon nut



Hexagon nut

Specification

Norm: DIN 934

Technical data

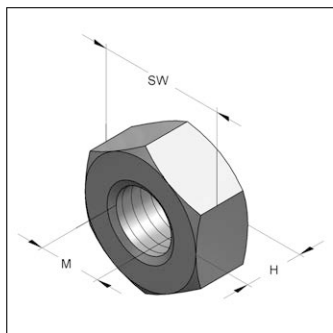
Material: Steel

Surface: galvanized

Strength class: 8

Thread M	Height H [mm]	Wrench size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	5,0	10	0,0023	100	4120442
M8	6,5	13	0,0049	200	4120450
M10	8,0	17	0,0120	100	4120477
M12	10,0	19	0,0165	100	4120485
M16	13,0	24	0,0387	100	4120523

» Hexagon nut, TSP®



Hexagon nut



Specification

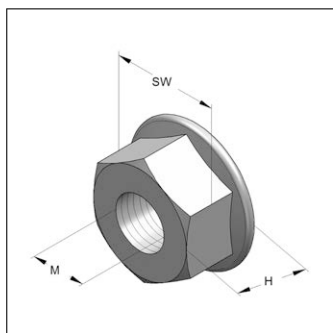
Norm: DIN 934

Technical data

Material: Steel
 Surface: hot-dip galvanized
 Strength class: 8

Thread M	Height H [mm]	Wrench size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	8	17	0,0120	100	4120477/fvz
M12	10	19	0,0165	100	4120485/fvz
M16	13	24	0,0387	100	4120523/fvz

» Flange nut



Flange nut

Specification

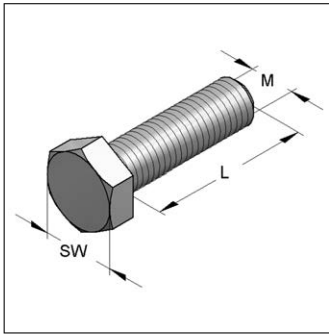
Norm: DIN 6923

Technical data

Material: Steel
 Surface: galvanized
 Strength class: 8

Thread M	Height H [mm]	Wrench size SW	Diameter flange [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	8	13	17,9	0,0076	50	0470008
M10	10	15	21,8	0,0140	25	0470020
M12	12	18	26,0	0,0236	25	0470022
M16	16	24	34,5	0,0521	25	0470016

» Hexagon screw



Hexagon screw

Specification

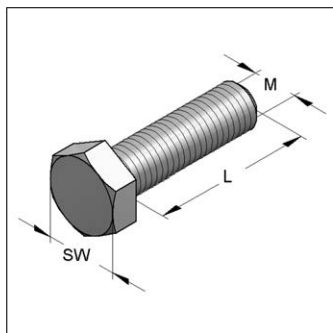
Norm: DIN EN ISO 4017

Technical data

Material: Steel
 Surface: galvanized
 Strength class: 8.8

Thread M	Length L [mm]	Wrench size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	16	13	0,0121	100	3204165
M8	20	13	0,0137	100	3204205
M8	25	13	0,0157	100	3204255
M8	30	13	0,0177	100	3204305
M8	35	13	0,0196	100	3204355
M8	40	13	0,0216	100	3204405
M8	45	13	0,0236	100	3204455
M8	50	13	0,0256	100	3204503
M10	16	17	0,0207	100	3205162
M10	20	17	0,0230	100	3205201
M10	25	17	0,0261	100	3205251
M10	30	17	0,0292	100	3205301
M10	35	17	0,0322	100	3205302
M10	40	17	0,0354	100	3205401
M10	45	17	0,0384	100	3206508
M10	50	17	0,0415	100	3205501
M10	60	17	0,0477	100	3206602
M12	20	19	0,0336	100	3206205
M12	25	19	0,0381	100	3206591
M12	30	19	0,0425	100	3206305
M12	35	19	0,0470	100	3206306
M12	40	19	0,0514	100	3206606
M12	45	19	0,0558	100	32066064
M12	50	19	0,0602	100	32066065
M12	55	19	0,0647	100	320660655
M12	60	19	0,0692	100	32066066

» Hexagon screw, TSP®



Hexagon screw



Specification

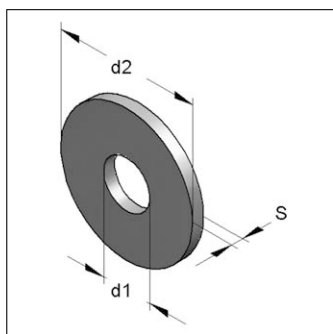
Norm: DIN EN ISO 4017

Technical data

Material: Steel
 Surface: hot-dip galvanized
 Strength class: 8.8

Thread M	Length L [mm]	Wrench size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	60	13	0,0250	50	3204601/fvz
M10	25	17	0,0261	200	3205251/fvz
M12	25	19	0,0381	100	3206591/fvz
M12	40	19	0,0514	100	3206606/fvz
M12	55	19	0,0647	100	320660655/fvz
M16	60	24	0,133	50	3207660/fvz

» Washer



Washer

Technical data

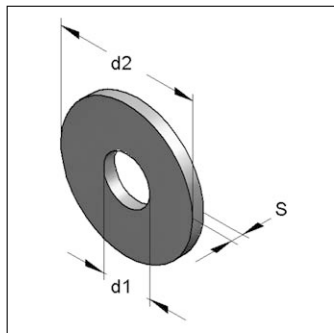
Material: Steel
 Surface: galvanized

Dimension d1xd2xs [mm]	Norm	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
6,4x12x1,6	DIN 125	0,0010	100	4320247
8,4x16x1,6	DIN 125	0,0018	100	4320255
10,5x20x2,0	DIN 125	0,0036	100	4320263

» Washer

Dimension d1xd2xs [mm]	Norm	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
13,0x24x2,5	DIN 125	0,0064	100	4320271
5,3x15x1,6	DIN 9021	0,0015	100	4330226
6,4x18x1,6	DIN 9021	0,0028	100	4330242
8,4x24x2,0	DIN 9021	0,0064	100	4330250
10,5x30x2,5	DIN 9021	0,0124	100	4330269
13,0x37x3,0	DIN 9021	0,0226	100	4330277
17,0x50x3,0	DIN 9021	0,0417	100	4330285
8,4x35x3,0		0,0218	100	4350847
10,5x35x3,0		0,0210	100	4351053
13,0x30x2,5		0,0115	100	4351282
8,4x44x3,5		0,0411	100	4350850
10,5x44x3,5		0,0402	100	4351059
13,5x44x3,5		0,0386	100	4351344
17,0x44x3,5		0,0363	100	4351744

» Washer, TSP®



Washer



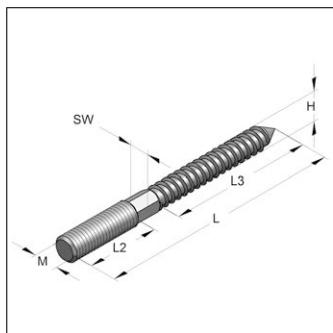
Technical data

Material: Steel

Surface: Zinc-Nickel

Dimension d1xd2xs [mm]	Norm	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
10,5x35x3		0,0210	100	4351053/zn
13,0x37x3	DIN 9021	0,0243	100	4330277/fvz
17,0x50x3	DIN 9021	0,0447	100	4330285/fvz

» Hanger bolt



Hanger bolt

Specification

Recommended accessories: Four-way key see chapter 10

Specification: multi-tooth TX 25

Technical data

Material: Steel

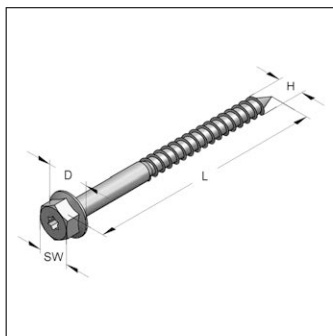
Surface: galvanized

Version: multi-tooth TX 25

* Version without TX 25

Thread M	Length L [mm]	Wood thread H	Length thread L2 [mm]	Length wood thread L3 [mm]	Wrench size SW	Type dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	60	H6	25	35		8x44	0,0085	100	3600025 *
M8	50	H6,7	13	35		10x44	0,0107	100	3600032
M8	60	H6,7	20	35		10x44	0,0137	100	3600033
M8	80	H6,7	32	35	6	10x60	0,0188	100	3600041
M8	100	H6,7	40	45	6	10x60	0,0237	100	3600068
M8	120	H6,7	50	45	6	10x60	0,0294	100	3608123
M8	140	H6,7	40	57	6	10x60	0,0357	100	3608131
M8	160	H6,7	40	57	6	10x60	0,0419	100	3608166
M10	60	H8,8	20	27		12x60	0,0224	100	3609063
M10	80	H8,8	20	45	8	12x60	0,0288	100	3609081
M10	100	H8,8	30	57	8	12x60	0,0368	50	3609103
M10	120	H8,8	40	57	8	12x60	0,0466	50	3609138
M10	140	H8,8	40	57	8	12x60	0,0564	50	3609146
M10	180	H8,8	40	57	8	12x60	0,0756	50	3609189
M12	100	H10,3	22	57	10	14x80	0,0570	50	3609510 *

» Wood screw with washer



Wood screw with washer

Specification

Specification: with contact pressed washer

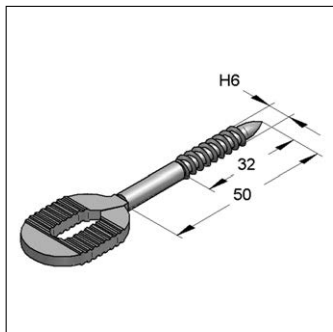
Technical data

Material: Steel
Surface: galvanized

Thread H	Length L [mm]	Wrench size SW	TX drive	Diameter washer D [mm]	Thickness washer [mm]	Type dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
H8	50	13	TX 30	18	2	10x44	0,0197	100	350001218
H8	60	13	TX 30	18	2	10x44	0,0236	100	350002018
H8	70	13	TX 30	18	2	10x60	0,0276	100	350003918
H8	80	13	TX 30	18	2	10x60	0,0294	100	350004718
H8	90	13	TX 30	18	2	10x60	0,0320	100	350005518
H8	100	13	TX 30	18	2	10x60	0,0357	100	350006318

05

» Elongated hole screw



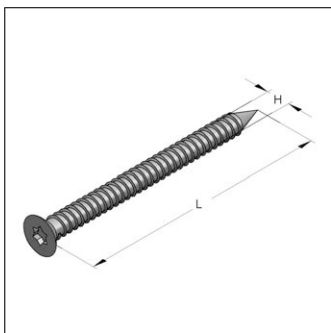
Elongated hole screw

Technical data

Material: Steel
Surface: galvanized

Thread	Length thread [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
H6	32	0,0176	100	1140019

» Countersunk woodscrew



Countersunk woodscrew

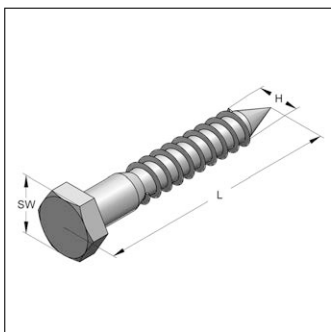
Technical data

Material: Steel

Surface: galvanized

Thread H	Length L [mm]	TX drive	Type dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
H4	40	TX 20	UD 6x36	0,0022	1000	372040040
H4,5	45	TX 20	UD 6x36, UD 8x51	0,0032	500	372045045
H5	50	TX 25	UD 8x51	0,0044	500	372050050
H6	60	TX 30	UD 8x51	0,0075	200	372060060

» Hexagon-woodscrew



Hexagon-woodscrew

Specification

Norm: similar to DIN 571

Technical data

Material: Steel

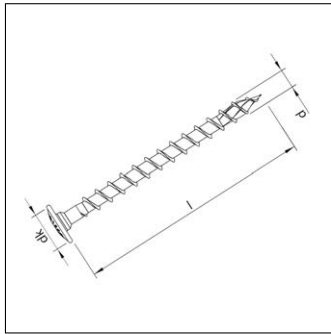
Surface: galvanized

Thread H	Length L [mm]	Type dowel	Wrench size SW	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
H6	60	UD 8x51	10	0,0112	200	3100104
H8	50	UD 10x61	13	0,0182	200	3100228
H8	70	UD 10x61	13	0,0236	200	3100279

» Pan-head wood screw



Woodscrew TOPIX-Plus



Woodscrew TOPIX-Plus

Product description

- Increased load transfer due to the enlarged contact surface of the head
- No pre-drilling required thanks to the innovative drill tip
- Small edge and center distances possible
- ETA-approved (ETA-19/0553)
- Our application engineering team provides design specifications for fire safety applications.

Specification

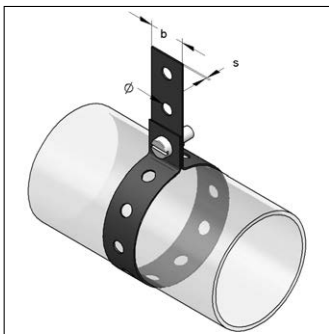
Application area: Mounting consoles, base plates and other products to wooden substrates.

Technical data

Material: Steel
Surface: galvanized

Thread H	Length L [mm]	TX drive	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
H8	80	40	0,0200	50	3730001
H10	120	40	0,0430	50	3730002

» MEFA Plastahl



Mounting steel belt - PLASTAHL

Specification

Application area: For floor fixing or suspension of cables.

Technical data

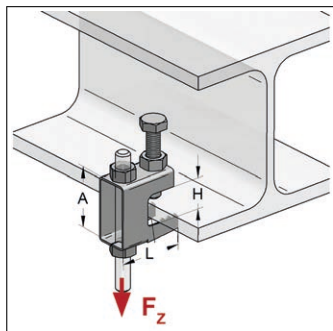
Material: Steel
Safety factor: 3

Specification	Width b [mm]	Thickness steel band s [mm]	Hole-Ø [mm]	Tension load [kN]	Length [m]	Weight [kg/m]	Packing unit [m]	Part-No.
plastic coated	19	0,8	6,4	0,8	10	0,110	10	1100017
plastic coated	27	1,0	8,4	1,4	10	0,160	10	1100025
pre-galvanized	17	0,8	6,4	0,8	10	0,0890	10	1110012

» MEFA Plastahl

Specification	Width b [mm]	Thickness steel band s [mm]	Hole-Ø [mm]	Tension load [kN]	Length [m]	Weight [kg/m]	Packing unit [m]	Part-No.
pre-galvanized	25	1,0	8,4	1,4	10	0,164	10	1110020

» Beam clamp PK/PKB



Beam clamp PK / PKB



Specification

Application area: Fast and simple mounting at steel structures and profiles.

Scope of delivery: Beam clamp, hexagon head screw with lock

Brand: Jiangmen Eurofix

Technical data

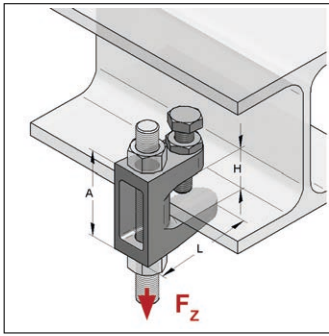
Material: Steel

Surface: galvanized

Remark: Assembly instructions see chapter 15.

Model	Type of attachment	Thread	Hole-Ø [mm]	Length L [mm]	Height A [mm]	Clamping thickness H [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
PKB	with pass hole	for M8	9	38	37	2-20	1,2	0,0491	50	0576801
PKB	with pass hole	for M10	11	44	44	0-22	2,5	0,134	50	0576805
PK	with pass hole	for M12	13	58	61	8-26	3,5	0,236	50	0576807
PKB	with thread	M8		38	37	2-20	1,2	0,0502	50	0576802
PKB	with thread	M10		44	44	0-22	2,5	0,134	50	0576806
PK	with thread	M12		58	61	8-26	3,5	0,236	50	0576808

» Beam clamp, cast iron



Beam clamp, cast iron



Specification

Application area: Fast and simple mounting at steel structures and profiles.

Scope of delivery: Beam clamp, hexagon bolt, nut

Brand: VS Guss

Technical data

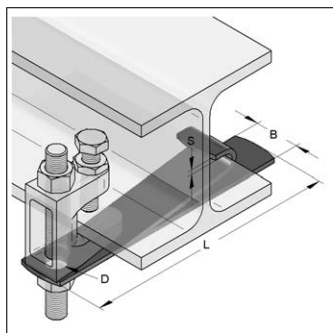
Material: Malleable cast iron

Surface: galvanized

Remark: Mounting recommendation see chapter 15.

Model	Type of attachment	Thread	Hole-Ø [mm]	Length L [mm]	Height A [mm]	Clamping thickness H [mm]	VdS-No.	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
TKN	with pass hole	for M8	9	38	35	1-18	G4030026	1,2	0,0890	50	0579458
TKN	with pass hole	for M10	11	44	42	1-20	G4030026	2,5	0,155	50	0579460
TK	with pass hole	for M12	13	58	54	1-26	G4910044	3,5	0,235	50	0579462
TK	with pass hole	for M16	17	58	58	1-28	G4030026	5,5	0,395	50	0579448
TKN	with thread	M8		32	37	1-18	G4030026	1,2	0,0920	50	0579558
TKN	with thread	M10		44	42	1-20	G4030026	2,5	0,162	50	0579560
TK	with thread	M12		58	54	1-26	G4910044	3,5	0,240	50	0579562
TK	with thread	M16		58	58	1-26	G4030026	5,5	0,399	50	0579548

» Safety lug



Safety lug

Specification

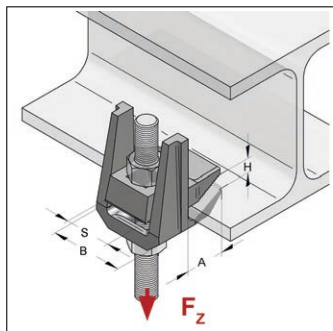
Installation advise: For stationary sprinkler systems according to VdS guidelines, a safety lug must be installed from pipe size > DN 65 to the support clamp.

Technical data

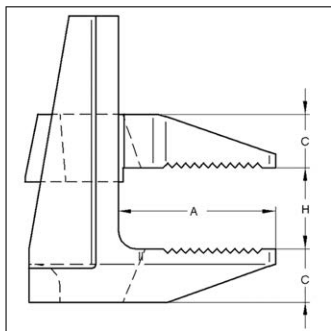
Material: Steel
Surface: galvanized

Description	OD [inch]	Hole diameter D [mm]	Dimension LxBxS [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
S 3	3-4	10,5	300x25x3	0,177	50	0579303
S 5	5-6	13,5	300x30x3	0,213	50	0579305
S 8	8	17,0	300x45x3	0,319	50	0579308

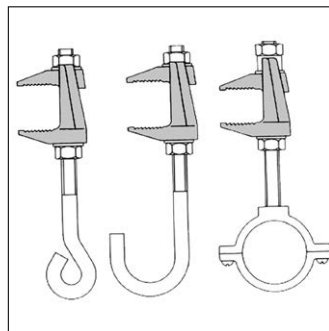
» Beam clamp F3, two-part, TSP®



Beam clamp F3 two-part



Beam clamp F3



Assembly example



Specification

Application area: For mounting of suspensions on steel girders.
Installation advise: mounting in combination with hexagon screws, threaded rods or carriage bolt (not included)
Brand: Lindapter

Technical data

Material: Malleable cast iron
Surface: hot-dip galvanized

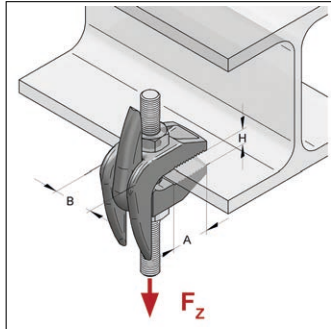
Remark: Not suitable for disposed flanges. A safety factor of 4 : 1 against breaking is taken into account in the load specifications.

Model	Type of attachment	Thread	Load F _z [kN]	Tightening torque [Nm]	Clamping thickness H [mm]	Thickness C [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
F3	with pass hole	for M8	0,9	6	1-25	8	0,0970	1	0579613
F3	with pass hole	for M10	1,2	20	1-30	10	0,190	1	0579625
F3	with pass hole	for M12	2,0	39	1-40	12	0,350	1	0579637

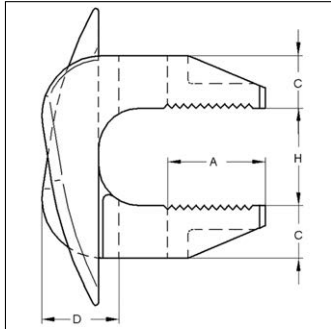
» Beam clamp F3, two-part, TSP®

Model	Type of attachment	Thread	Load F_z [kN]	Tightening torque [Nm]	Clamping thickness H [mm]	Thickness C [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
F3	with pass hole	for M16	4,0	93	1-55	16	0,810	1	0579649

» Beam clamp F9



Beam clamp F9



Beam clamp F9

Specification

Application area: For mounting suspensions to steel girders. Not suitable for inclined flanges.

Technical data

Material: Malleable cast iron
Surface: galvanized

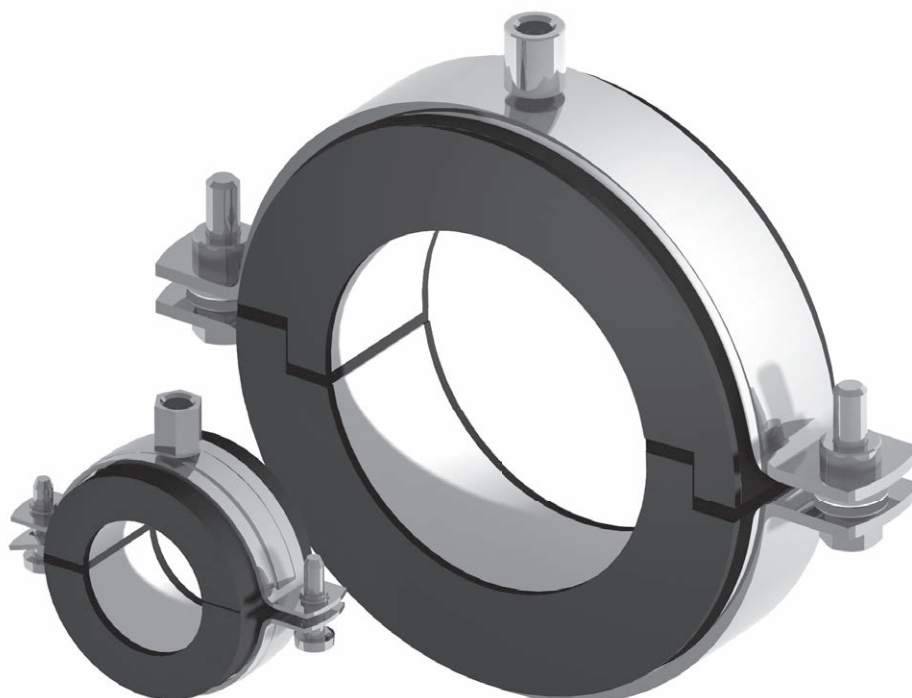
Remark: A safety factor of 5 : 1 against breakage is taken into account in the load specifications.

05

Model	Type of attachment	Thread	Load F_z [kN]	Tightening torque [Nm]	Clamping thickness H [mm]	Thickness C [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
F9	with pass hole	for M10	1,96	20	19-42	13	0,260	1	0579702
F9	with pass hole	for M12	2,80	39	26-60	17	0,520	1	0579703
F9	with pass hole	for M16	5,60	93	29-69	21	0,680	1	0579704
F9	with pass hole	for M20	8,40	177	32-82	25	1,28	1	0579705

INSULATED CLAMPS

*pu-insulated pipe clamps, foamglas,
sliding sledges and accessories*



06

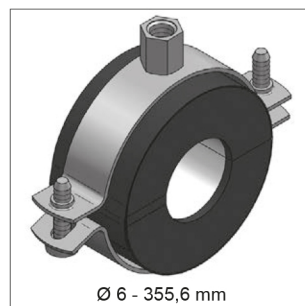
» MEFA insulated pipe clamps



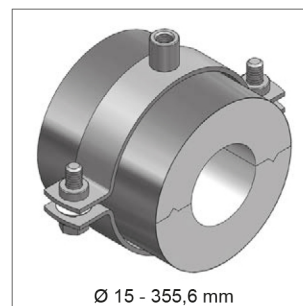
Polar plus
insulated pipe clamp



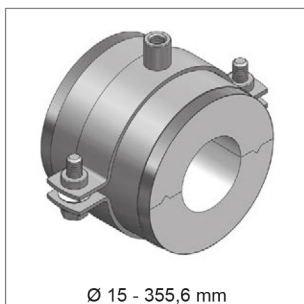
Polar plus sliding sledge
U120 / U140



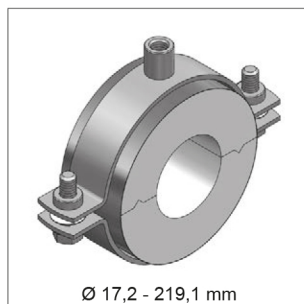
Husky
insulated pipe clamp



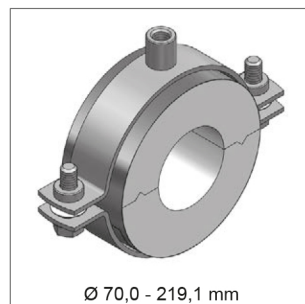
ALU/PU >80<
insulated pipe clamp



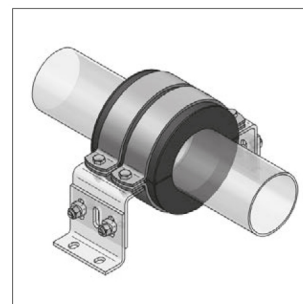
ALU/PU >80< insulated
pipe clamp with sheet jacket



ALU/PU >80< s
insulated pipe clamp



ALU/PU >80< s insulated pipe
clamp with half jacket

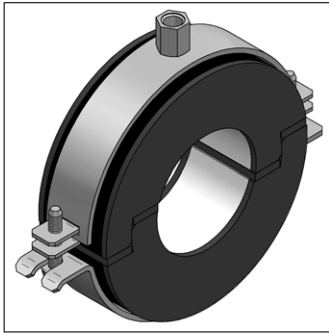


Insulated fixpoint

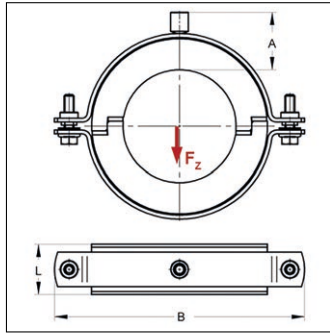
i Tightening torque of locking screws on pipe clamps see chapter 15.

» POLAR plus insulated pipe clamp

Synthetic rubber / PU



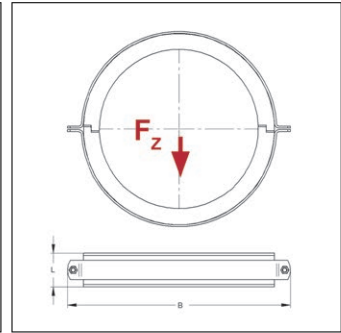
Polar plus insulated pipe clamp (with Omnia MB)



Polar plus insulated pipe clamp



Polar plus insulated pipe clamp (with Titan HD)



Polar plus insulated pipe clamp



Product description

- Pipe clamp body situated outside of insulation
- Joining surfaces of half shells are sealed with synthetic rubber cushion at joints
- No gluing on site
- Assembly unit can be opened again after closing
- High water vapor diffusion resistance and low thermal conductivity
- Pipe clamps and insulation glued together and form an assembly unit
- Rubber completion on face side
- Halogen free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-50 up to 105 °C
Density shell:	145 kg/m³
Statical load shell:	0,38 N/mm²
Average nominal compressive strength shell:	1,9 N/mm²
Water vapour diffusion resistance:	36000 µ
Thermal conductivity:	0,031 W/mK

Remark: Assembly instructions see chapter 15. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1. Custom-made products on request.

* Delivery time on request. Excluded from exchange and return.

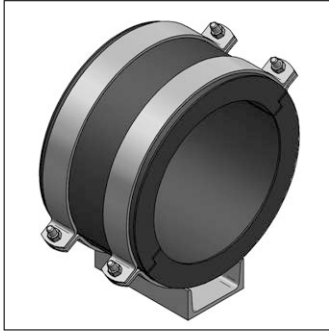
OD steel [mm]	OD cu [mm]	OD plastic [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
	10		20x36	Omnia MB	M8/M10	37	89	0,10	0,111	20	74620100
	12		20x36	Omnia MB	M8/M10	37	89	0,11	0,111	20	74620120
	15		20x36	Omnia MB	M8/M10	37	89	0,14	0,110	20	74620150
17,2			20x36	Omnia MB	M8/M10	38	92	0,16	0,118	20	74620170
	18		20x36	Omnia MB	M8/M10	38	92	0,17	0,118	20	74620180
21,3			20x36	Omnia MB	M8/M10	37	92	0,20	0,118	20	74620210
	22		20x36	Omnia MB	M8/M10	37	92	0,21	0,118	20	74620220
26,9			20x36	Omnia MB	M8/M10	37	101	0,26	0,126	20	74620270
	28		20x36	Omnia MB	M8/M10	37	101	0,27	0,125	20	74620280
		32	20x36	Omnia MB	M8/M10	40	113	0,31	0,142	20	74620320 *
33,7			20x36	Omnia MB	M8/M10	38	113	0,32	0,141	20	74620340
	35		20x36	Omnia MB	M8/M10	38	113	0,33	0,141	20	74620350
		40	20x36	Omnia MB	M8/M10	40	117	0,38	0,153	20	74620400 *
42,4	42		20x36	Omnia MB	M8/M10	38	117	0,40	0,152	20	74620430

» POLAR plus insulated pipe clamp

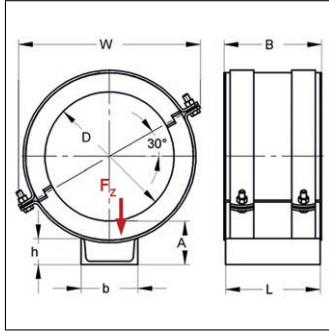
OD steel [mm]	OD cu [mm]	OD plastic [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
48,3			20x36	Omnia MB	M8/M10	39	124	0,46	0,164	20	74620480
		50	20x36	Omnia MB	M8/M10	39	124	0,48	0,163	20	74620500 *
	54		20x36	Omnia MB	M8/M10	37	124	0,52	0,162	20	74620540
57,0			20x41	Omnia MB	M8/M10	40	136	0,66	0,241	20	74620570
60,3			20x41	Omnia MB	M8/M10	38	136	0,70	0,239	15	74620600
63,5	64		20x41	Omnia MB	M8/M10	39	143	0,74	0,250	15	74620640
		75	20x41	Omnia MB	M8/M10	39	152	0,87	0,281	15	74620750 *
76,1			20x41	Omnia MB	M8/M10	38	152	0,88	0,284	15	74620760
88,9			20x41	Omnia MB	M8/M10	39	165	1,03	0,295	15	74620890
108,0			20x51	Maxima PSM	M10/M12	45	226	1,68	0,837	10	74621080
114,3			20x51	Maxima PSM	M10/M12	45	226	1,77	0,832	10	74621140
42,4			30x41	Omnia MB	M8/M10	48	136	0,49	0,249	20	74630430 *
48,3			30x41	Omnia MB	M8/M10	48	143	0,56	0,262	20	74630480
		50	30x41	Omnia MB	M8/M10	51	152	0,58	0,281	20	74630500 *
	54		30x41	Omnia MB	M8/M10	49	152	0,62	0,280	20	74630540 *
57,0			30x41	Omnia MB	M8/M10	47	152	0,66	0,280	20	74630570 *
60,3			30x41	Omnia MB	M8/M10	49	158	0,70	0,298	15	74630600
63,5	64		30x41	Omnia MB	M8/M10	48	158	0,74	0,296	15	74630640 *
		75	30x41	Omnia MB	M8/M10	49	175	0,87	0,326	15	74630750 *
76,1			30x41	Omnia MB	M8/M10	48	175	0,88	0,326	15	74630760
88,9			30x41	Omnia MB	M10/M12	59	206	1,03	0,459	15	74630890
108,0			30x51	Maxima PSM	M10/M12	55	240	1,68	0,921	10	74631080 *
		110	30x51	Maxima PSM	M10/M12	54	240	1,71	0,918	10	74631100 *
114,3			30x51	Maxima PSM	M10/M12	57	252	1,77	0,977	10	74631140
		125	30x51	Maxima PSM	M10/M12	55	258	1,94	0,992	1	74631250 *
133,0			30x51	Maxima PSM	M10/M12	55	265	2,06	1,03	1	74631330 *
139,7			30x51	Maxima PSM	M10/M12	55	272	2,17	1,06	1	74631400
159,0			30x51	Maxima PSM	M10/M12	57	297	2,47	1,16	1	74631590 *
		160	30x51	Maxima PSM	M10/M12	57	297	2,48	1,16	1	74631600 *
168,3			30x66	Maxima PSM	M10/M12	45	307	3,22	1,26	1	746316802
219,1			30x66	Titan HD	M16	45	358	4,71	2,38	1	746321902
108,0			40x51	Maxima PSM	M10/M12	67	265	1,68	1,06	10	74641080 *
		110	40x51	Maxima PSM	M10/M12	66	265	1,71	1,06	10	74641100 *
114,3			40x51	Maxima PSM	M10/M12	64	265	1,77	1,06	1	74641140
		125	40x51	Maxima PSM	M10/M12	66	278	1,94	1,12	1	74641250 *
133,0			40x51	Maxima PSM	M10/M12	66	287	2,06	1,15	1	74641330 *
139,7			40x51	Maxima PSM	M10/M12	67	297	2,17	1,20	1	74641400
159,0			40x51	Maxima PSM	M10/M12	67	315	2,47	1,28	1	74641590 *
		160	40x51	Maxima PSM	M10/M12	66	315	2,48	1,28	1	74641600 *
168,3			40x66	Titan HD	M16	56	330	3,62	2,23	1	746416802
219,1			40x66	Titan HD	M16	55	380	4,71	2,60	1	746421903
273,0			40x66	Titan HD	M16	56	428	5,87	2,98	1	746427302
323,9			40x66	Titan HD	M16	56	486	6,96	3,41	1	746432404
355,6			40x86	Titan HD	without connection		560	10,46	3,63	1	746435601 *
406,4			40x86	Titan HD	without connection		610	11,65	4,04	1	746440601 *
457,0			40x86	Titan HD	without connection		660	12,85	4,43	1	746445701 *

» POLAR plus sliding sledge U120 / U140

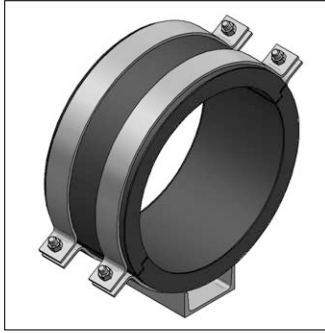
Synthetic rubber / PU



Polar plus sliding support U 120



Polar plus sliding support U



Polar plus sliding support U 140

Specification

Application area: Load-bearing insulation sliding sledge with welded U-profiles for direct sliding on substructure.

Technical data

Material: Steel
 Surface: galvanized
 Material shell: Polyurethane rigid foam

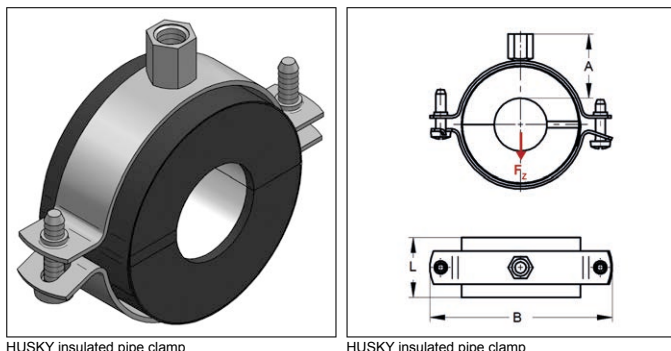
Delivery time: On demand. Exchange and return are excluded

Remark: Sliding strips see chapter 14. Custom-made products on request.

OD steel D [mm]	Dimension insulation shell [mm]	Material dimension pipe clamp [mm]	Dimension substructure bxxhL [mm]	Height base A [mm]	Width W [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
219,1	40x181	50x5	120x55x175	90	336	8,9	7,79	1	74742219
273,0	40x206	50x5	120x55x200	93	384	10,5	9,18	1	74742273
323,9	40x226	50x5	140x60x220	96	427	12,0	11,05	1	74742324
355,6	40x226	50x5	140x60x220	98	498	15,6	12,29	1	74742356
406,4	40x226	50x5	140x60x220	99	538	17,4	13,20	1	74742406
457,0	40x226	50x5	140x60x220	99	585	19,2	14,11	1	74742457

» HUSKY insulated pipe clamp

Synthetic rubber / PU



HUSKY insulated pipe clamp

HUSKY insulated pipe clamp



Product description

- Consists of pipe clamp, PU pipe shells with synthetic rubber interface and duffusion-thight jacket
- The Jacket is overlapping, self-adhesive and closable
- Joining surface of half shells sealed with synthetic rubber cushion at joints
- High water vapor diffusion resistance and low thermal conductivity
- Pipe clamp body situated outside of insulation
- Halogen free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-45 up to 105 °C
Density shell:	120 kg/m ³
Statical load shell:	0,27 N/mm ²
Average nominal compressive strength shell:	1,35 N/mm ²
Water vapour diffusion resistance:	20000 μ
Thermal conductivity:	0,029 W/mK

Remark: Assembly instructions see chapter 15. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1. Custom-made products on request.

* Delivery time on request. Excluded from exchange and return.

Type	OD steel [mm]	OD cu [mm]	OD plastic [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
II 13		6		12,0x36	Sigma	M8	22	56	0,04	0,0344	24	6830060
II 13		10		12,0x36	Trabant	M8/M10	30	69	0,07	0,0588	24	6830100
II 13		12	12	13,0x36	Trabant	M8/M10	31	77	0,08	0,0663	24	6830120
II 13		15	15	12,5x36	Trabant	M8/M10	31	77	0,10	0,0667	24	6830150
II 13	17,2	18	18	12,9x36	Trabant	M8/M10	31	77	0,12	0,0675	24	6830180
II 13			20	13,5x36	Trabant	M8/M10	33	88	0,14	0,0913	24	6830200 *
II 13	21,3	22		12,9x36	Trabant	M8/M10	32	88	0,15	0,0910	24	6830220
II 13			25	12,5x36	Trabant	M8/M10	32	88	0,17	0,0918	12	6830250 *
II 13	26,9			12,6x36	Trabant	M8/M10	32	88	0,18	0,0923	12	6830270
II 13		28		12,0x36	Trabant	M8/M10	32	88	0,19	0,0921	12	6830280
II 13	31,8		32	12,5x36	Trabant	M8/M10	32	94	0,22	0,0981	12	6830320
II 13	33,7			13,7x36	Trabant	M8/M10	33	102	0,23	0,105	12	6830340
II 13		35		13,0x36	Trabant	M8/M10	32	102	0,24	0,104	12	6830350
II 13			40	13,5x36	Trabant	M8/M10	33	109	0,27	0,111	12	6830400 *
II 13	42,4	42		13,3x36	Trabant	M8/M10	32	109	0,29	0,111	12	6830420
II 13	48,3			14,4x42	Trabant	M8/M10	33	121	0,41	0,143	10	6830480

» HUSKY insulated pipe clamp

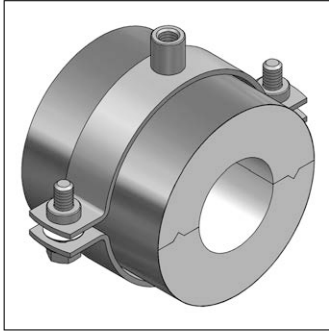
Type	OD steel [mm]	OD cu [mm]	OD plastic [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
II 13			50	14,0x42	Trabant	M8/M10	33	121	0,42	0,143	10	6830500
II 13		54		14,0x42	Trabant	M8/M10	33	124	0,46	0,148	10	6830540
II 13	57,0			14,0x42	Trabant	M8/M10	33	124	0,48	0,149	10	6830570 *
II 13	60,3			16,4x42	Trabant	M8/M10	35	134	0,51	0,200	10	6830600
II 13	63,5	64		14,5x42	Trabant	M8/M10	34	134	0,54	0,198	10	6830640
II 13	70,0			13,0x42	Trabant	M8/M10	32	134	0,59	0,197	8	6830700 *
II 13	76,1			15,5x42	Trabant	M8/M10	34	153	0,65	0,265	8	6830761
II 13	88,9			15,6x42	Trabant	M8/M10	35	165	0,75	0,281	8	6830891
II 13	108,0			17,0x42	Trabant	M10/M12	42	187	0,92	0,350	8	6831081
II 13		110		17,0x42	Trabant	M10/M12	42	187	0,93	0,351	4	6831101 *
II 13	114,3			15,9x42	Trabant	M10/M12	40	192	0,97	0,358	4	6831141
II 13		125		21,0x42	Trabant	M10/M12	45	215	1,06	0,410	4	6831251 *
II 13	133,0			17,0x42	Trabant	M10/M12	42	215	1,13	0,401	4	6831331 *
II 13	139,7			17,2x42	Trabant	M10/M12	42	220	1,18	0,413	4	6831401
II 13		160		16,0x51	Maxima PSM	M10/M12	42	265	1,76	0,993	4	6831600
II 13	168,3			15,4x51	Maxima PSM	M10/M12	41	272	1,86	1,02	2	6831680
IV 19		10	10	20,0x36	Trabant	M8/M10	39	88	0,07	0,0939	24	6840100
IV 19		12	12	19,0x36	Trabant	M8/M10	38	88	0,08	0,0937	24	6840120
IV 19		15	15	17,5x36	Trabant	M8/M10	37	88	0,10	0,0934	24	6840150
IV 19	17,2	18	18	18,9x36	Trabant	M8/M10	38	94	0,12	0,0999	12	6840180
IV 19	21,3	22		19,9x36	Trabant	M8/M10	39	102	0,15	0,107	12	6840220
IV 19	26,9			20,0x36	Trabant	M8/M10	39	109	0,18	0,114	12	6840270
IV 19		28		19,5x36	Trabant	M8/M10	39	109	0,19	0,114	12	6840280
IV 19	31,8		32	19,0x36	Trabant	M8/M10	38	109	0,22	0,115	12	6840320 *
IV 19	33,7			19,2x36	Trabant	M8/M10	38	109	0,23	0,116	12	6840340
IV 19		35		20,5x42	Trabant	M8/M10	40	121	0,30	0,148	12	6840350
IV 19		40		20,5x42	Trabant	M8/M10	40	124	0,34	0,153	12	6840400 *
IV 19	42,4	42		21,3x42	Trabant	M8/M10	40	124	0,36	0,156	12	6840420
IV 19	48,3			22,9x42	Trabant	M8/M10	42	134	0,41	0,207	10	6840480
IV 19		50		22,0x42	Trabant	M8/M10	41	134	0,42	0,206	10	6840500 *
IV 19		54		21,5x42	Trabant	M8/M10	40	134	0,46	0,206	10	6840540
IV 19	57,0			26,0x42	Trabant	M8/M10	42	153	0,48	0,278	8	6840571 *
IV 19	60,3			23,4x42	Trabant	M8/M10	42	153	0,51	0,275	8	6840601
IV 19	63,5	64		22,5x42	Trabant	M8/M10	44	153	0,54	0,275	8	6840641
IV 19	70,0			23,0x42	Trabant	M8/M10	43	165	0,59	0,290	8	6840701 *
IV 19	76,1			23,0x42	Trabant	M8/M10	42	165	0,65	0,293	8	6840761
IV 19	88,9			26,1x42	Trabant	M10/M12	43	187	0,75	0,365	8	6840891
IV 19	108,0			28,5x42	Trabant	M10/M12	53	215	0,92	0,424	4	6841081
IV 19		110		27,5x42	Trabant	M10/M12	52	215	0,93	0,423	4	6841101 *
IV 19	114,3			25,4x42	Trabant	M10/M12	50	215	0,97	0,418	4	6841141
IV 19	133,0			28,5x51	Maxima PSM	M10/M12	54	265	1,47	1,03	4	6841330 *
IV 19	139,7			25,2x51	Maxima PSM	M10/M12	51	265	1,54	1,02	4	6841400
IV 19		160		25,5x51	Maxima PSM	M10/M12	51	287	1,76	1,11	2	6841600
IV 19	168,3			25,9x51	Maxima PSM	M10/M12	51	297	1,86	1,15	2	6841680
IV 19	219,1			25,5x51	Maxima PSM	M10/M12	51	346	2,42	1,36	1	6842190
IV 19	273,0			25,0x66	Titan HD	M16	42	402	4,17	2,68	1	68427304
IV 19	323,9			26,0x66	Titan HD	M16	43	457	4,95	3,07	1	68432404 *
IV 19	355,6			24,5x66	Titan HD	M16	41	486	5,44	3,26	1	68435604 *
VI 32	17,2	18	18	29,5x42	Trabant	M8/M10	49	121	0,15	0,152	12	6850180 *
VI 32	21,3	22		29,5x42	Trabant	M8/M10	49	121	0,19	0,155	12	6850220
VI 32	26,9			29,1x42	Trabant	M8/M10	48	124	0,23	0,158	12	6850270
VI 32	33,7			31,7x42	Trabant	M8/M10	50	134	0,29	0,215	12	6850340
VI 32	42,4			35,8x42	Trabant	M8/M10	56	165	0,36	0,301	12	6850420
VI 32	48,3			35,9x42	Trabant	M8/M10	56	165	0,41	0,306	10	6850480
VI 32	60,3			34,4x42	Trabant	M10/M12	57	176	0,51	0,352	8	6850601
VI 32	76,1			36,0x42	Trabant	M10/M12	62	192	0,65	0,391	8	6850761
VI 32	88,9			39,6x42	Trabant	M10/M12	64	215	0,75	0,444	8	6850891

» HUSKY insulated pipe clamp

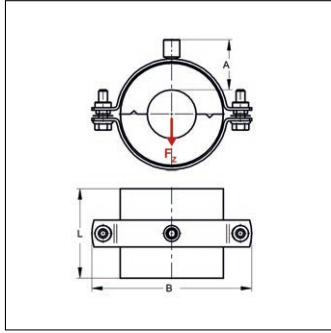
Type	OD steel [mm]	OD cu [mm]	OD plastic [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VI 32	114,3			40,9x51	Maxima PSM	M10/M12	67	272	1,26	1,09	4	6851140
VI 32	139,7			41,7x51	Maxima PSM	M10/M12	67	297	1,54	1,20	4	6851400
VI 32	168,3			44,4x51	Maxima PSM	M10/M12	70	331	1,86	1,36	2	6851680
VI 32	219,1			52,0x66	Titan HD	M16	68	402	3,35	2,86	1	68521904 *
VI 32	273,0			53,0x66	Titan HD	M16	70	460	4,17	3,30	1	68527304 *
VI 32	323,9			50,0x66	Titan HD	M16	67	505	4,95	3,64	1	68532404 *
VI 32	355,6			50,0x66	Titan HD	M16	67	537	5,44	3,89	1	68535604 *

» ALU/PU >80< insulated pipe clamp

PU



ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp



Product description

- Consists of a pipe clamp and pipe support half-shells with an ALU foil cover
- The ALU foil of the pipe support is overlapping, self-adhesive and resealable
- The connecting surfaces of the pipe support half-shells have a tongue and groove profile
- High resistance to water vapor diffusion and low thermal conductivity
- The pipe clamp body is located outside the insulating shell
- The use of a sheet metal cylinder is optionally possible
- Other dimensions for pipe diameters or insulation thicknesses on request
- Halogen-free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-80 up to 120 °C
Density shell:	80 kg/m³
Statical load shell:	0,1 N/mm²
Average nominal compressive strength shell:	0,5 N/mm²
Density coat:	2700 kg/m³
Water vapour diffusion resistance:	18750 µ
Thermal conductivity:	0,025 W/mK

Delivery time: 5 working days, ex works

Remark: Assembly instructions see chapter 15. With a shell length of 100 mm, the sheet metal cylinder has a width of 80 mm. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1.

OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
	15	20x100	Maxima PSM	M8/M10	46	114	0,2	0,261	1	75601545
17,2	18	20x100	Maxima PSM	M8/M10	45	114	0,2	0,261	1	7560172
21,3	22	20x100	Maxima PSM	M8/M10	46	120	0,2	0,275	1	75602145
26,9	28	20x100	Maxima PSM	M8/M10	46	129	0,3	0,292	1	7560275
33,7	35	20x100	Maxima PSM	M8/M10	44	129	0,3	0,292	1	75603445
42,4	42	20x100	Maxima PSM	M10/M12	46	151	0,4	0,424	1	7560426
48,3		20x100	Maxima PSM	M10/M12	44	151	0,4	0,423	1	7560486
	54	20x100	Maxima PSM	M10/M12	46	162	0,4	0,458	1	75605432
57,0		20x100	Maxima PSM	M10/M12	45	162	0,4	0,456	1	75605742
60,3		20x100	Maxima PSM	M10/M12	44	162	0,4	0,456	1	7560606
63,5		20x100	Maxima PSM	M10/M12	46	172	0,5	0,486	1	75606442
70,0		20x100	Maxima PSM	M10/M12	44	172	0,5	0,484	1	75607042
76,1		20x100	Maxima PSM	M10/M12	47	184	0,5	0,527	1	7560766

» ALU/PU >80< insulated pipe clamp

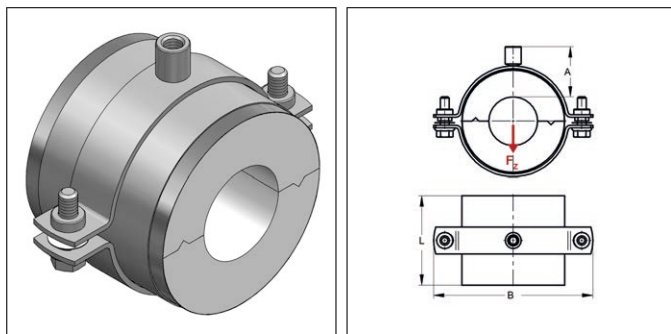
OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
88,9		20x100	Maxima PSM	M10/M12	47	209	0,7	0,770	1	7560896
108,0		20x100	Maxima PSM	M10/M12	46	226	0,8	0,837	1	75610844
114,3		20x100	Maxima PSM	M10/M12	47	234	0,8	0,871	1	75611444
133,0		20x100	Maxima PSM	M10/M12	47	252	0,9	0,950	1	75613344
139,7		20x100	Maxima PSM	M10/M12	45	252	0,9	0,940	1	75614044
159,0		20x100	Maxima PSM	M10/M12	47	278	1,0	1,06	1	75615944
168,3		20x100	Maxima PSM	M10/M12	46	287	1,1	1,09	1	75616844
219,1		20x100	Titan HD	M16	46	342	1,9	2,18	1	7562197
273,0		20x100	Titan HD	M16	45	396	2,3	2,55	1	7562733
17,2	18	30x100	Maxima PSM	M10/M12	55	141	0,3	0,410	1	7590182
21,3	22	30x100	Maxima PSM	M10/M12	56	151	0,3	0,432	1	75902142
26,9	28	30x100	Maxima PSM	M10/M12	55	151	0,4	0,433	1	75902742
33,7	35	30x100	Maxima PSM	M10/M12	56	162	0,4	0,469	1	75903442
42,4	42	30x100	Maxima PSM	M10/M12	57	172	0,5	0,500	1	75904242
48,3		30x100	Maxima PSM	M10/M12	55	172	0,5	0,499	1	75904842
	54	30x100	Maxima PSM	M10/M12	55	178	0,5	0,0522	1	75905442
57,0		30x100	Maxima PSM	M10/M12	54	178	0,5	0,521	1	75905742
60,3		30x100	Maxima PSM	M10/M12	55	184	0,5	0,541	1	75906042
63,5		30x100	Maxima PSM	M10/M12	56	189	0,6	0,557	1	75906442
70,0		30x100	Maxima PSM	M10/M12	57	209	0,7	0,789	1	75907042
76,1		30x100	Maxima PSM	M10/M12	57	216	0,7	0,818	1	75907644
88,9		30x100	Maxima PSM	M10/M12	56	226	0,8	0,861	1	75908944
108,0		30x100	Maxima PSM	M10/M12	57	247	0,9	0,954	1	75910844
114,3		30x100	Maxima PSM	M10/M12	57	252	0,9	0,979	1	75911444
133,0		30x100	Maxima PSM	M10/M12	57	272	1,0	1,06	1	75913344
139,7		30x100	Maxima PSM	M10/M12	57	278	1,0	1,09	1	75914044
159,0		30x100	Maxima PSM	M10/M12	56	297	1,1	1,16	1	75915912
168,3		30x100	Maxima PSM	M10/M12	57	308	1,2	1,22	1	75916844
219,1		30x100	Titan HD	M16	55	364	2,1	2,38	1	7592193
273,0		30x100	Titan HD	M16	55	416	2,5	2,74	1	7592733
323,9		30x100	Titan HD	M16	55	467	2,8	3,11	1	7593243
355,6		30x100	Titan HD	M16	55	495	3,1	3,33	1	7593563
17,2	18	40x100	Maxima PSM	M10/M12	65	162	0,3	0,475	1	76201742
21,3	22	40x100	Maxima PSM	M10/M12	67	172	0,3	0,509	1	76202142
26,9	28	40x100	Maxima PSM	M10/M12	65	172	0,4	0,508	1	76202742
33,7	35	40x100	Maxima PSM	M10/M12	65	178	0,5	0,534	1	7620348
42,4	42	40x100	Maxima PSM	M10/M12	64	184	0,5	0,553	1	7620428
48,3		40x100	Maxima PSM	M10/M12	66	209	0,7	0,805	1	7620488
	54	40x100	Maxima PSM	M10/M12	66	209	0,7	0,804	1	7620548
57,0		40x100	Maxima PSM	M10/M12	67	216	0,7	0,836	1	76205744
60,3		40x100	Maxima PSM	M10/M12	66	216	0,7	0,835	1	76206044
63,5		40x100	Maxima PSM	M10/M12	67	220	0,7	0,863	1	76206444
70,0		40x100	Maxima PSM	M10/M12	66	226	0,8	0,881	1	7620708
76,1		40x100	Maxima PSM	M10/M12	66	234	0,8	0,918	1	76207644
88,9		40x100	Maxima PSM	M10/M12	66	247	0,9	0,978	1	7620898
108,0		40x100	Maxima PSM	M10/M12	67	265	1,0	1,06	1	76210844
114,3		40x100	Maxima PSM	M10/M12	66	272	1,0	1,09	1	7621148
133,0		40x100	Maxima PSM	M10/M12	65	287	1,1	1,16	1	76213344
139,7		40x100	Maxima PSM	M10/M12	66	297	1,1	1,20	1	7621408
159,0		40x100	Maxima PSM	M10/M12	65	315	1,2	1,28	1	76215944
168,3		40x100	Maxima PSM	M10/M12	68	331	1,3	1,37	1	7621688
219,1		40x100	Titan HD	M16	65	382	2,2	2,57	1	7622196
273,0		40x100	Titan HD	M16	65	436	2,6	2,98	1	7622736
323,9		40x100	Titan HD	M16	65	486	3,0	3,34	1	7623247
355,6		40x100	Titan HD	M16	65	519	3,2	3,56	1	7623565
17,2	18	50x100	Maxima PSM	M10/M12	76	184	0,3	0,519	1	76501742

» ALU/PU >80< insulated pipe clamp

OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21,3	22	50x100	Maxima PSM	M10/M12	75	184	0,3	0,519	1	76502142
26,9	28	50x100	Maxima PSM	M10/M12	74	189	0,4	0,535	1	76502742
33,7	35	50x100	Maxima PSM	M10/M12	76	209	0,5	0,815	1	76503444
42,4	42	50x100	Maxima PSM	M10/M12	75	216	0,6	0,848	1	76504244
48,3		50x100	Maxima PSM	M10/M12	76	226	0,7	0,896	1	76504844
	54	50x100	Maxima PSM	M10/M12	75	234	0,7	0,936	1	76505444
57,0		50x100	Maxima PSM	M10/M12	76	234	0,8	0,934	1	76505744
60,3		50x100	Maxima PSM	M10/M12	75	234	0,8	0,935	1	76506044
63,5		50x100	Maxima PSM	M10/M12	76	240	0,8	0,968	1	76506444
70,0		50x100	Maxima PSM	M10/M12	76	247	0,9	0,997	1	76507044
76,1		50x100	Maxima PSM	M10/M12	76	252	0,9	1,03	1	76507644
88,9		50x100	Maxima PSM	M10/M12	76	265	1,0	1,09	1	76508944
108,0		50x100	Maxima PSM	M10/M12	77	297	1,1	1,19	1	76510844
114,3		50x100	Maxima PSM	M10/M12	78	297	1,1	1,24	1	7651146
133,0		50x100	Maxima PSM	M10/M12	75	308	1,2	1,29	1	76513344
139,7		50x100	Maxima PSM	M10/M12	75	315	1,2	1,32	1	76514044
159,0		50x100	Maxima PSM	M10/M12	77	340	1,3	1,45	1	76515944
168,3		50x100	Maxima PSM	M10/M12	76	346	1,4	1,48	1	76516844
219,1		50x100	Titan HD	M16	75	404	2,4	2,79	1	7652195
273,0		50x100	Titan HD	M16	75	456	2,8	3,20	1	7652734
323,9		50x100	Titan HD	M16	75	507	3,1	3,57	1	7653245
355,6		50x100	Titan HD	M16	75	539	3,4	3,80	1	7653567

» ALU/PU >80< insulated pipe clamp with sheet jacket

PU



ALU/PU >80< insulated pipe clamp with sheet jacket

ALU/PU >80< insulated pipe clamp



Product description

- Consists of a pipe clamp and pipe support half-shells with an ALU foil cover
- The ALU foil of the pipe support is overlapping, self-adhesive and resealable
- The connecting surfaces of the pipe support half-shells have a tongue and groove profile
- High resistance to water vapor diffusion and low thermal conductivity
- The pipe clamp body is located outside the insulating shell
- The use of a sheet metal cylinder is optionally possible
- Other dimensions for pipe diameters or insulation thicknesses on request
- Halogen-free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-80 up to 120 °C
Density shell:	80 kg/m ³
Statical load shell:	0,1 N/mm ²
Average nominal compressive strength shell:	0,5 N/mm ²
Density coat:	2700 kg/m ³
Water vapour diffusion resistance:	18750 μ
Thermal conductivity:	0,025 W/mK

Delivery time: 5 working days, ex works

Remark: Assembly instructions see chapter 15. With a shell length of 100 mm, the sheet metal cylinder has a width of 80 mm. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1.

OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
	15	20x100	Maxima PSM	M8/M10	46	114	0,3	0,357	1	75601545/B
17,2	18	20x100	Maxima PSM	M8/M10	45	114	0,3	0,362	1	75601745/B
21,3	22	20x100	Maxima PSM	M8/M10	46	120	0,3	0,381	1	75602145/B
26,9	28	20x100	Maxima PSM	M8/M10	46	129	0,4	0,408	1	75602745/B
33,7	35	20x100	Maxima PSM	M8/M10	44	129	0,5	0,417	1	75603445/B
42,4	42	20x100	Maxima PSM	M10/M12	46	151	0,6	0,559	1	7560426/B
48,3		20x100	Maxima PSM	M10/M12	44	151	0,7	0,567	1	7560486/B
	54	20x100	Maxima PSM	M10/M12	46	162	0,7	0,612	1	7560543/B
57,0		20x100	Maxima PSM	M10/M12	45	162	0,8	0,615	1	75605742/B
60,3		20x100	Maxima PSM	M10/M12	44	162	0,9	0,619	1	7560606/B
63,5		20x100	Maxima PSM	M10/M12	46	172	0,9	0,659	1	75606442/B
70,0		20x100	Maxima PSM	M10/M12	44	172	1,0	0,662	1	75607042/B
76,1		20x100	Maxima PSM	M10/M12	47	184	1,1	0,714	1	75607642/B

» ALU/PU >80< insulated pipe clamp with sheet jacket

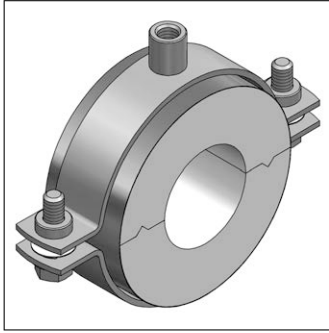
OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
88,9		20x100	Maxima PSM	M10/M12	47	209	1,3	0,977	1	7560896/B
108,0		20x100	Maxima PSM	M10/M12	46	226	1,6	1,07	1	75610844/B
114,3		20x100	Maxima PSM	M10/M12	47	234	1,7	1,12	1	75611444/B
133,0		20x100	Maxima PSM	M10/M12	47	252	1,9	1,22	1	75613344/B
139,7		20x100	Maxima PSM	M10/M12	45	252	2,0	1,22	1	75614044/B
159,0		20x100	Maxima PSM	M10/M12	47	278	2,3	1,37	1	75615944/B
168,3		20x100	Maxima PSM	M10/M12	46	287	2,5	1,41	1	75616844/B
219,1		20x100	Titan HD	M16	46	342	3,1	2,59	1	7562197/B
273,0		20x100	Titan HD	M16	45	396	3,7	3,04	1	7562733/B
17,2	18	30x100	Maxima PSM	M10/M12	55	141	0,3	0,540	1	7590182/B
21,3	22	30x100	Maxima PSM	M10/M12	56	151	0,3	0,571	1	75902142/B
26,9	28	30x100	Maxima PSM	M10/M12	55	151	0,4	0,577	1	75902742/B
33,7	35	30x100	Maxima PSM	M10/M12	56	162	0,5	0,623	1	75903442/B
42,4	42	30x100	Maxima PSM	M10/M12	57	172	0,6	0,673	1	75904242/B
48,3		30x100	Maxima PSM	M10/M12	55	172	0,7	0,672	1	75904842/B
	54	30x100	Maxima PSM	M10/M12	55	178	0,7	0,705	1	75905442/B
57,0		30x100	Maxima PSM	M10/M12	54	178	0,8	0,708	1	75905742/B
60,3		30x100	Maxima PSM	M10/M12	55	184	0,9	0,733	1	75906042/B
63,5		30x100	Maxima PSM	M10/M12	56	189	0,9	0,759	1	75906442/B
70,0		30x100	Maxima PSM	M10/M12	57	209	1,0	1,00	1	75907042/B
76,1		30x100	Maxima PSM	M10/M12	57	216	1,1	1,03	1	75907644/B
88,9		30x100	Maxima PSM	M10/M12	56	226	1,3	1,12	1	75908944/B
108,0		30x100	Maxima PSM	M10/M12	57	247	1,6	1,22	1	75910844/B
114,3		30x100	Maxima PSM	M10/M12	57	252	1,7	1,25	1	75911444/B
133,0		30x100	Maxima PSM	M10/M12	57	272	1,9	1,37	1	75913344/B
139,7		30x100	Maxima PSM	M10/M12	57	278	2,0	1,41	1	75914044/B
159,0		30x100	Maxima PSM	M10/M12	56	297	2,3	1,51	1	75915944/B
168,3		30x100	Maxima PSM	M10/M12	57	308	2,5	1,58	1	75916844/B
219,1		30x100	Titan HD	M16	55	364	3,2	2,82	1	7592193/B
273,0		30x100	Titan HD	M16	55	416	3,9	3,27	1	7592733/B
323,9		30x100	Titan HD	M16	55	467	4,5	3,72	1	7593243/B
355,6		30x100	Titan HD	M16	55	495	4,9	3,42	1	7593563/B
17,2	18	40x100	Maxima PSM	M10/M12	65	162	0,3	0,619	1	76201742/B
21,3	22	40x100	Maxima PSM	M10/M12	67	172	0,3	0,682	1	76202142/B
26,9	28	40x100	Maxima PSM	M10/M12	65	172	0,4	0,681	1	76202742/B
33,7	35	40x100	Maxima PSM	M10/M12	65	178	0,5	0,717	1	76203442/B
42,4	42	40x100	Maxima PSM	M10/M12	64	184	0,6	0,750	1	7620428/B
48,3		40x100	Maxima PSM	M10/M12	66	209	0,7	1,02	1	76204842/B
	54	40x100	Maxima PSM	M10/M12	66	209	0,7	1,02	1	76205444/B
57,0		40x100	Maxima PSM	M10/M12	67	216	0,8	1,06	1	76205744/B
60,3		40x100	Maxima PSM	M10/M12	66	216	0,9	1,06	1	7620608/B
63,5		40x100	Maxima PSM	M10/M12	67	220	0,9	1,09	1	76206444/B
70,0		40x100	Maxima PSM	M10/M12	66	226	1,0	1,12	1	76207044/B
76,1		40x100	Maxima PSM	M10/M12	66	234	1,1	1,16	1	7620768/B
88,9		40x100	Maxima PSM	M10/M12	66	247	1,3	1,24	1	76208944/B
108,0		40x100	Maxima PSM	M10/M12	67	265	1,6	1,36	1	76210844/B
114,3		40x100	Maxima PSM	M10/M12	66	272	1,7	1,39	1	76211444/B
133,0		40x100	Maxima PSM	M10/M12	65	287	1,9	1,49	1	76213344/B
139,7		40x100	Maxima PSM	M10/M12	66	297	2,0	1,54	1	7621408/B
159,0		40x100	Maxima PSM	M10/M12	65	315	2,3	1,65	1	76215944/B
168,3		40x100	Maxima PSM	M10/M12	68	331	2,5	1,75	1	7621688/B
219,1		40x100	Titan HD	M16	65	382	3,2	3,03	1	7622196/B
273,0		40x100	Titan HD	M16	65	436	4,0	3,52	1	7622736/B
323,9		40x100	Titan HD	M16	65	486	4,7	3,96	1	7623247/B
355,6		40x100	Titan HD	M16	65	519	5,1	4,23	1	7623565/B
17,2	18	50x100	Maxima PSM	M10/M12	76	184	0,3	0,711	1	76501742/B

» ALU/PU >80< insulated pipe clamp with sheet jacket

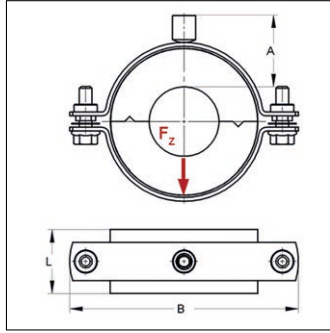
OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21,3	22	50x100	Maxima PSM	M10/M12	75	184	0,3	0,716	1	76502142/B
26,9	28	50x100	Maxima PSM	M10/M12	74	189	0,4	0,738	1	76502742/B
33,7	35	50x100	Maxima PSM	M10/M12	76	209	0,5	1,03	1	76503444/B
42,4	42	50x100	Maxima PSM	M10/M12	75	216	0,6	1,07	1	76504244/B
48,3		50x100	Maxima PSM	M10/M12	76	226	0,7	1,13	1	76504844/B
	54	50x100	Maxima PSM	M10/M12	75	234	0,7	1,19	1	76505444/B
57,0		50x100	Maxima PSM	M10/M12	76	234	0,8	1,18	1	76505744/B
60,3		50x100	Maxima PSM	M10/M12	75	234	0,9	1,19	1	76506044/B
63,5		50x100	Maxima PSM	M10/M12	76	240	0,9	1,23	1	76506444/B
70,0		50x100	Maxima PSM	M10/M12	76	247	1,0	1,27	1	76507044/B
76,1		50x100	Maxima PSM	M10/M12	76	252	1,1	1,31	1	76507644/B
88,9		50x100	Maxima PSM	M10/M12	76	265	1,3	1,39	1	76508944/B
108,0		50x100	Maxima PSM	M10/M12	77	297	1,6	1,52	1	76510844/B
114,3		50x100	Maxima PSM	M10/M12	78	297	1,7	1,58	1	76511444/B
133,0		50x100	Maxima PSM	M10/M12	75	308	1,9	1,65	1	76513344/B
139,7		50x100	Maxima PSM	M10/M12	75	315	2,0	1,69	1	76514044/B
159,0		50x100	Maxima PSM	M10/M12	77	340	2,3	1,85	1	76515944/B
168,3		50x100	Maxima PSM	M10/M12	76	346	2,5	1,89	1	76516844/B
219,1		50x100	Titan HD	M16	75	404	3,2	3,29	1	7652195/B
273,0		50x100	Titan HD	M16	75	456	4,0	3,77	1	7652734/B
323,9		50x100	Titan HD	M16	75	507	4,7	4,22	1	7653245/B
355,6		50x100	Titan HD	M16	75	539	5,2	4,50	1	7653567/B

» ALU/PU >80< S insulated pipe clamp

PU



ALU/PU >80< s insulated pipe clamp



ALU/PU >80< s insulated pipe clamp



Product description

- Consisting of a pipe clamp and pipe support half-shells with an ALU foil cover
- The ALU foil of the pipe support is overlapping, self-adhesive and resealable
- The connecting surfaces of the pipe support half-shells have a tongue and groove profile
- High water vapor diffusion resistance and low thermal conductivity
- The pipe clamp body is located outside the insulating shell
- The use of a support shell is optionally possible
- Other dimensions for pipe diameters or insulation thicknesses on request
- Halogen-free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-50 up to 120 °C
Density shell:	80 kg/m³
Statical load shell:	0,1 N/mm²
Average nominal compressive strength shell:	0,5 N/mm²
Density coat:	2700 kg/m³
Water vapour diffusion resistance:	18750 µ
Thermal conductivity:	0,025 W/mK

Delivery time: 5 working days, ex works

Remark: Assembly instructions see chapter 15. With a shell length of 100 mm, the sheet metal cylinder has a width of 80 mm. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1.

OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
17,2	18	20x40	Trabant	M8/M10	38	104	0,1	0,0930	1	70401848
21,3	22	20x40	Trabant	M8/M10	40	111	0,1	0,0970	1	70402248
26,9	28	20x40	Trabant	M8/M10	40	119	0,2	0,105	1	70402848
33,7	35	20x40	Trabant	M8/M10	39	113	0,2	0,133	1	70403449
42,4	42	20x40	Trabant	M8/M10	39	128	0,2	0,137	1	70404248
48,3		20x50	Trabant	M8/M10	39	124	0,3	0,154	1	70504849
54,0		20x50	Trabant	M8/M10	43	141	0,3	0,190	1	70505448
57,0		20x50	Trabant	M8/M10	38	141	0,4	0,189	1	70505748
60,3		20x50	Trabant	M8/M10	39	136	0,4	0,237	1	70506049
63,5		20x50	Omnia MB	M8/M10	41	143	0,4	0,248	1	70506449
70,0		20x66	Omnia MB	M8/M10	39	152	0,4	0,254	1	70607049
76,1		20x66	Omnia MB	M8/M10	42	158	0,4	0,278	1	70607649

» ALU/PU >80< S insulated pipe clamp

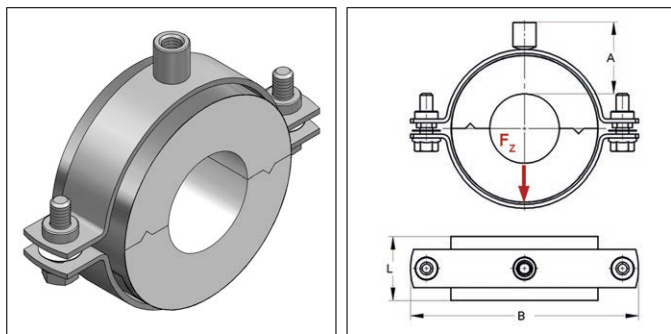
OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
88,9		20x83	Omnia MB	M8/M10	42	175	0,5	0,315	1	75208949
108,0		20x83	Omnia MB	M10/M12	45	197	0,5	0,450	1	75210850
114,3		20x83	Maxima PSM	M10/M12	46	234	0,7	0,617	1	75211442
133,0		20x100	Omnia MB	M10/M12	46	225	0,7	0,525	1	75613350
139,7		20x100	Maxima PSM	M10/M12	45	252	0,8	0,673	1	75614042
159,0		20x100	Maxima PSM	M10/M12	46	278	0,9	0,755	1	75615942
168,3		20x100	Maxima PSM	M10/M12	45	288	1,1	0,774	1	75616842
219,1		20x100	Maxima PSM	M16	45	340	1,9	1,32	1	75621927
17,2	18	30x40	Trabant	M8/M10	48	123	0,1	0,135	1	71101848
21,3	22	30x40	Trabant	M8/M10	49	128	0,1	0,141	1	71102248
26,9	28	30x40	Omnia MB	M8/M10	49	124	0,2	0,155	1	71102849
33,7	35	30x40	Omnia MB	M8/M10	50	141	0,2	0,190	1	71103448
42,4	42	30x40	Trabant	M8/M10	52	143	0,2	0,241	1	71104249
48,3		30x50	Omnia MB	M8/M10	50	152	0,4	0,254	1	71204849
54,0		30x50	Omnia MB	M8/M10	49	152	0,4	0,264	1	71205449
57,0		30x50	Omnia MB	M8/M10	49	152	0,4	0,269	1	71205749
60,3		30x50	Omnia MB	M8/M10	50	158	0,4	0,281	1	71206049
63,5		30x50	Omnia MB	M8/M10	51	158	0,5	0,289	1	71206449
70,0		30x66	Omnia MB	M8/M10	51	165	0,5	0,303	1	71307049
76,1		30x66	Omnia MB	M8/M10	51	175	0,5	0,316	1	71307649
88,9		30x83	Omnia MB	M10/M12	55	197	0,5	0,462	1	75308950
108,0		30x83	Omnia MB	M10/M12	56	219	0,6	0,525	1	75310850
114,3		30x83	Omnia MB	M10/M12	56	225	0,7	0,535	1	75311450
133,0		30x100	Maxima PSM	M10/M12	56	272	0,9	0,770	1	75913342
139,7		30x100	Maxima PSM	M10/M12	56	278	0,9	0,792	1	75914042
159,0		30x100	Maxima PSM	M10/M12	55	297	1,0	0,840	1	75915942
219,1		30x100	Maxima PSM	M16	55	360	2,1	1,46	1	75921927
17,2	18	40x40	Trabant	M8/M10	58	141	0,1	0,193	1	71401848
21,3	22	40x40	Omnia MB	M8/M10	62	143	0,1	0,252	1	71402249
26,9	28	40x40	Omnia MB	M8/M10	60	152	0,2	0,252	1	71402849
33,7	35	40x40	Omnia MB	M8/M10	60	152	0,2	0,262	1	71403449
42,4	42	40x40	Omnia MB	M8/M10	59	158	0,2	0,275	1	71404249
48,3		40x50	Omnia MB	M8/M10	62	165	0,4	0,308	1	71504849
54,0		40x50	Omnia MB	M8/M10	61	175	0,4	0,308	1	71505449
57,0		40x50	Omnia MB	M8/M10	61	175	0,4	0,311	1	71505749
60,3		40x50	Maxima PSM	M10/M12	65	203	0,4	0,573	1	71506042
63,5		40x50	Omnia MB	M10/M12	66	192	0,5	0,423	1	71506450
70,0		40x66	Omnia MB	M10/M12	65	197	0,5	0,456	1	71607050
76,1		40x66	Maxima PSM	M10/M12	65	219	0,6	0,592	1	71607642
88,9		40x83	Omnia MB	M10/M12	65	219	0,6	0,544	1	75408950
108,0		40x83	Maxima PSM	M10/M12	65	265	0,8	0,754	1	75410842
114,3		40x83	Maxima PSM	M10/M12	65	271	0,9	0,773	1	75411442
133,0		40x100	Maxima PSM	M10/M12	64	288	1,1	0,847	1	76213342
139,7		40x100	Maxima PSM	M10/M12	65	297	1,1	0,878	1	76214042
219,1		40x100	Maxima PSM	M16	65	380	2,2	1,60	1	7622195
17,2	18	50x40	Omnia MB	M8/M10	71	158	0,1	0,279	1	71701849
21,3	22	50x40	Omnia MB	M8/M10	70	158	0,1	0,278	1	71702249
26,9	28	50x40	Omnia MB	M8/M10	69	165	0,2	0,288	1	71702849
33,7	35	50x40	Omnia MB	M8/M10	70	175	0,2	0,302	1	71703449
42,4	42	50x40	Omnia MB	M10/M12	74	192	0,2	0,418	1	71704250

» ALU/PU >80< S insulated pipe clamp

OD steel [mm]	OD cu [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
48,3		50x50	Omnia MB	M10/M12	75	197	0,4	0,429	1	71804850
54,0		50x50	Maxima PSM	M10/M12	75	234	0,4	0,582	1	71805442
57,0		50x50	Maxima PSM	M10/M12	75	220	0,4	0,581	1	71805742
60,3		50x50	Maxima PSM	M10/M12	74	223	0,4	0,581	1	71806042
63,5		50x50	Maxima PSM	M10/M12	75	226	0,5	0,602	1	71806442
70,0		50x66	Omnia MB	M10/M12	75	219	0,6	0,528	1	71907050
76,1		50x66	Omnia MB	M10/M12	75	225	0,6	0,542	1	71907650
88,9		50x83	Maxima PSM	M10/M12	75	252	0,8	0,774	1	75508942
108,0		50x83	Maxima PSM	M10/M12	76	272	0,9	0,846	1	75510842
114,3		50x83	Maxima PSM	M10/M12	77	290	1,0	0,879	1	75511442
219,1		50x100	Maxima PSM	M16	77	400	2,4	1,76	1	76521927

» ALU/PU >80< insulated pipe clamp with half jacket

PU



ALU/PU >80< s insulated pipe clamp with half jacket

ALU/PU >80< s insulated pipe clamp



Product description

- Consisting of a pipe clamp and pipe support half-shells with an ALU foil cover
- The ALU foil of the pipe support is overlapping, self-adhesive and resealable
- The connecting surfaces of the pipe support half-shells have a tongue and groove profile
- High water vapor diffusion resistance and low thermal conductivity
- The pipe clamp body is located outside the insulating shell
- The use of a support shell is optionally possible
- Other dimensions for pipe diameters or insulation thicknesses on request
- Halogen-free

Specification

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

Technical data

Material:	Steel
Surface:	galvanized
Material shell:	Polyurethane rigid foam
Temperature resistance:	-50 up to 120 °C
Density shell:	80 kg/m³
Statical load shell:	0,1 N/mm²
Average nominal compressive strength shell:	0,5 N/mm²
Density coat:	2700 kg/m³
Water vapour diffusion resistance:	18750 µ
Thermal conductivity:	0,025 W/mK

Delivery time: 5 working days, ex works

Remark: Assembly instructions see chapter 15. With a shell length of 100 mm, the sheet metal cylinder has a width of 80 mm. Load specification according to AGI requirements, reduce to 1/5, taking in account the compressive strength of the shell. For fire loads, use the load specification for the respective clamp without insulation, see chapter 1.

OD steel [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
70,0	20x66	Omnia MB	M8/M10	39	152	0,7	0,295	1	70607049/T
76,1	20x66	Omnia MB	M8/M10	42	158	0,7	0,323	1	70607649/T
88,9	20x83	Omnia MB	M8/M10	42	175	1,1	0,380	1	75208949/T
108,0	20x83	Omnia MB	M10/M12	45	197	1,3	0,516	1	75210850/T
114,3	20x83	Maxima PSM	M10/M12	46	234	1,4	0,695	1	75211442/T
133,0	20x100	Omnia MB	M10/M12	46	225	1,9	0,612	1	75613350/T
139,7	20x100	Maxima PSM	M10/M12	45	252	2,0	0,763	1	75614042/T
159,0	20x100	Maxima PSM	M10/M12	46	278	2,3	0,855	1	75615942/T
168,3	20x100	Maxima PSM	M10/M12	45	288	2,5	0,879	1	75616842/T
219,1	20x100	Maxima PSM	M16	45	340	3,1	1,45	1	75621927/T
70,0	30x66	Omnia MB	M8/M10	51	165	0,7	0,352	1	71307049/T

» ALU/PU >80< insulated pipe clamp with half jacket

OD steel [mm]	Dimension insulation shell [mm]	Pipe clamp type	Connection	Connection height A [mm]	Width B [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
76,1	30x66	Omnia MB	M8/M10	51	175	0,7	0,367	1	71307649/T
88,9	30x83	Omnia MB	M10/M12	55	197	1,1	0,537	1	75308950/T
108,0	30x83	Omnia MB	M10/M12	56	219	1,3	0,609	1	75310850/T
114,3	30x83	Omnia MB	M10/M12	56	225	1,4	0,623	1	75311450/T
133,0	30x100	Maxima PSM	M10/M12	56	272	1,9	0,867	1	75913342/T
139,7	30x100	Maxima PSM	M10/M12	56	278	2,0	0,893	1	75914042/T
159,0	30x100	Maxima PSM	M10/M12	55	297	2,3	0,950	1	75915942/T
168,3	30x100	Maxima PSM	M10/M12	57	308	2,5	1,34	1	75916844/T
219,1	30x100	Maxima PSM	M16	55	360	3,2	1,60	1	75921927/T
70,0	40x66	Omnia MB	M10/M12	65	197	0,7	0,512	1	71607050/T
76,1	40x66	Maxima PSM	M10/M12	65	219	0,7	0,689	1	71607642/T
88,9	40x83	Omnia MB	M10/M12	65	219	1,1	0,629	1	75408950/T
108,0	40x83	Maxima PSM	M10/M12	65	265	1,3	0,849	1	75410842/T
114,3	40x83	Maxima PSM	M10/M12	65	271	1,4	0,871	1	75411442/T
133,0	40x100	Maxima PSM	M10/M12	64	288	1,9	0,954	1	76213342/T
139,7	40x100	Maxima PSM	M10/M12	65	297	2,0	0,989	1	76214042/T
159,0	40x100	Maxima PSM	M10/M12	65	315	2,3	1,40	1	76215944/T
168,3	40x100	Maxima PSM	M10/M12	68	323	2,5	1,50	1	7621688/T
219,1	40x100	Maxima PSM	M16	65	380	3,2	1,75	1	7622195/T
70,0	50x66	Omnia MB	M10/M12	75	219	0,7	0,592	1	71907050/T
76,1	50x66	Omnia MB	M10/M12	75	225	0,7	0,608	1	71907650/T
88,9	50x83	Maxima PSM	M10/M12	75	252	1,1	0,869	1	75508942/T
108,0	50x83	Maxima PSM	M10/M12	76	272	1,3	0,951	1	75510842/T
114,3	50x83	Maxima PSM	M10/M12	77	290	1,4	0,987	1	75511442/T
133,0	50x100	Maxima PSM	M10/M12	75	308	1,9	1,41	1	76513344/T
139,7	50x100	Maxima PSM	M10/M12	75	323	2,0	1,44	1	76514044/T
159,0	50x100	Maxima PSM	M10/M12	77	332	2,3	1,58	1	76515944/T
168,3	50x100	Maxima PSM	M10/M12	76	342	2,5	1,61	1	76516844/T
219,1	50x100	Maxima PSM	M16	77	400	3,2	1,92	1	76521927/T

ANCHORS

*heavy-duty anchors, concrete screws,
hollow core anchors and accessories*



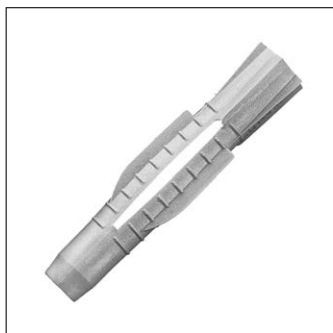
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» Anchor selection

	Mechanical heavy duty anchors												Chemical anchors			Light duty anchors		
	Bolt anchor BZ plus	Bolt anchor BZ plus A4	Bolt anchor BZ-IG	Bolt anchor BZ-IG A4/HCR	Nail anchor N	Nail anchor N-M	Drop-in anchor E, ES	Drop-in anchor E A4 / E HCR	Zykon hammer-set anchor ZEA	Hollow core anchor Easy	TSM concrete screws	TSM Multiground	Injection sytem VMZ	Injection sytem VMU plus	Chemical anchor V	Porous concrete anchor PBD	Brass expansion anchor	Universal dowel UD
Cracked concrete	•	•	•	•					•		• ¹⁾	•	•	•	•			•
Non-cracked concrete	•	•	•	•			•	•	•		• ¹⁾	•	•	•	•		•	•
Multiple use					•	•	•	•			•	•						
Pre-stressed concrete hollow slabs							•			•	•							
Hollow brick														•				•
Solid brick											•	•		•			•	•
Autoclaved aerated concrete														•		•		•
Drywall																		•
Wood												•						
ETA approval	•	•	•	•	•	•	•	•	•		•	•	•	•	•			
DIBt approval										•						•		
Fire resistant	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Fire resistant in tunnels		•			•								•					
ICC approval														•				
Approved for seismic action	•	•									•		•	•				
VdS	•	•	•	•		•	•	•	•	•	•	•				•		
FM	•	•					•	•	•									
Shock approval	•	•	•	•									•					
Steel, zinc plated	•		•		•	•	•			•	•	•	•	•	•	•		
Steel, hot dip galvanized	•												•	•	•			
Stainless steel A4/316		•		•	•			•		•			•	•	•			
Stainless steel HCR, 1.4529				•	•			•					•	•	•			

¹⁾ from Ø 8mm

» Universal dowel UD



Universal dowel UD

Product description

- Universal use for fastenings in a wide variety of substrates
- Secure hold even in cavities thanks to knotting
- Indoor and outdoor applications
- Plastic dowel without collar

Specification

Application area: For concrete, sand-lime-brick, lightweight concrete (aerated concrete, porous concrete, pumice), perforated brick, plasterboard, chipboard, solid brick, plaster, and natural stone.

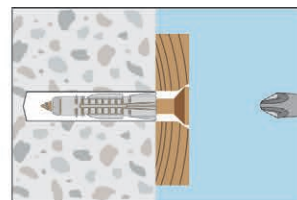
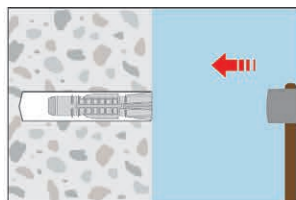
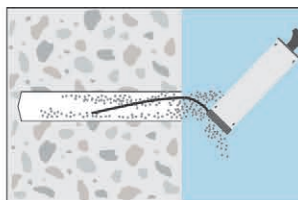
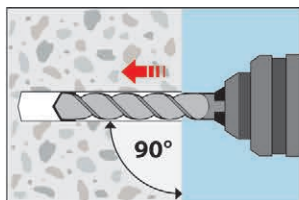
Recommended accessories: Wood or chipboard screws and SDS-plus hammer drill

Technical data

Material: Plastic
 Material type: PE
 Colour: white
 Temperature resistance: -40 up to 100 °C

Ø dowel [mm]	Length [mm]	Drill Ø [mm]	min. drill hole depth [mm]	Screw diameter [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
6	36	6	45	4-5	0,0005	100	20430636
8	51	8	60	5-6	0,0022	50	20430851
10	61	10	75	7-8	0,0033	25	20431061
12	71	12	85	8-10	0,0038	25	20431271
14	75	14	90	10-12	0,0065	20	20431475

Installation advise universal dowel UD



Universal dowel UD loads performance data

Type of dowel / length of dowel	[mm]	6x36	8x51	10x61	12x71	14x75
recommended loads, concrete C20/25	[kN]	0,30	0,68	0,75	0,94	1,14
recommended loads, aircrete P4	[kN]	0,18	0,32	0,42	0,42	-
recommended loads, hollow brick HLz12	[kN]	0,17	0,24	0,26	0,27	-
recommended loads, gypsum plasterboard 12,5 mm	[kN]	0,14	0,20	0,20	0,22	0,44 ¹⁾
effective anchorage depth	[mm]	36	51	61	71	75

¹⁾ 2x gypsum plasterboard 12,5 mm

» MU-Dowel

PE



MU-dowel

Product description

- Universal use for fixings in a wide variety of substrates
- Secure hold even in cavities thanks to knotting
- The automatically folding collar during push-through installation makes the anchor multifunctional
- Anti-drip protection prevents premature expansion of the anchor during installation
- Pre- or through-hole installation
- Indoor and outdoor applications

Specification

Application area: For concrete- and masonry material, sand-lime brick, perforated brick, porous concrete, gas concrete, plasterboard, chipboard, solid brick, gypsum and natural stone.

Recommended accessories: Wood or chipboard screws and SDS-plus hammer drill bit

Technical data

Material: Plastic

Material type: PE

Colour: orange

Temperature resistance: -40 up to 100 °C

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Ø dowel [mm]	Length [mm]	Drill Ø [mm]	min. drill hole depth [mm]	Screw diameter [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
6	35	6	45	3,0-4	0,0010	100	20410635
8	50	8	60	4,5-6	0,0020	100	20410850

» Brass expansion anchor



Brass expansion anchor

Product description

- Brass expansion anchor for light and medium-heavy loads in many different substrates
- M8, M10 or M12 female thread is suitable for holding metric screws, threaded bolts or threaded rods
- No twisting in the drill hole thanks to the special outer surface of the anchor
- The surface finish enables very high corrosion resistance

Specification

Application area: For concrete, solid brick, natural stone and lime sand brick.

Installation advise: Length of screw should correspond exactly with length of anchor plus material thickness of attaching part. If the screw encounters too much resistance, drill the hole slightly larger.

Recommended accessories: Machine screws, threaded bolts and SDS-plus hammer drill bits

Technical data

Material: Brass

Thread	Length [mm]	Drill Ø [mm]	Drilling hole depth [mm]	Depth of anchoring [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	27,5	11	34	30	0,0069	100	2060043
M10	32,0	13	38	34	0,0108	100	2060051
M12	40,0	18	44	40	0,0236	50	2060078

» Porous concrete anchor PBD



PBD

VdS

Product description

- For anchoring in porous concrete
- With general building authority approval (DIBt, Z-21.1-1525)
- Approved for use under fire conditions
- Suitable for installing sprinkler systems in accordance with VdS requirements
- Quick and easy installation using a machine or manual setting tool

Specification

Application area: Porous concrete anchors for driving into porous concrete.

Installation advise: Drive into the porous concrete using the appropriate setting tool. Do not pre-drill!

Technical data

Material: Steel

Surface: galvanized

Remark: Load values see end of chapter 7.

Male thread	Length male thread [mm]	Wrench size	Usable length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	30	13	30	0,0840	25	221300001
M10	30	17	30	0,125	25	221300002

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» Porous concrete anchor PBD IG



PBD IG

VdS

Product description

- For anchoring in porous concrete
- With general building authority approval (DIBt, Z-21.1-1525)
- Approved for use under fire conditions
- Suitable for installing sprinkler systems in accordance with VdS requirements
- Quick and easy installation using a machine or manual setting tool

Specification

Application area: Porous concrete anchors for driving into porous concrete.

Installation advise: Drive into the porous concrete using the appropriate setting tool. Do not pre-drill!

Technical data

Material: Steel

Surface: galvanized

Remark: Load values see end of chapter 7.

Female thread	Embedment depth [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	8 - 13	0,0640	25	221300003
M10	10 - 18	0,0960	25	221300004
M12	12 - 18	0,0880	25	221300005

» Mechanical setting tool for porous concrete anchor



Machine setting tool

Product description

- Power setting tool
- With SDS-plus chuck

Specification

Application area: only use for PBD Dowel with outer thread

Installation advise: When processing mechanically with an SDS setting tool, only use the hammer action of the hammer drill (min. 3 kg).

Model	for dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
mechanically	PBD M8	0,251	1	221300006
mechanically	PBD M10	0,254	1	221300007

» Manual setting tool for porous concrete anchor



Manual setting tool

Product description

- Manual setting tool

Model	for dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
manual	PBD IG M8	0,371	1	221300008
manual	PBD IG M10/M12	0,431	1	221300009

» TSM Multiground



TSM Multiground



Product description

- High-quality screw anchor with female thread for various substrates and a wide range of applications
- With ETA approval for multiple fastening in cracked and non-cracked concrete of grade C20/25 to C50/60
- also suitable for masonry and wood
- Flush mounting using tangential impact screwdriver, which also enables simple overhead installation
- Complies with the specifications for sprinkler installation
- Secure hold and high loads thanks to special thread geometry
- Small centre and edge distances of 40 mm enable fastening close to the edge and with minimal spacing
- Can be dismantled if required

Specification

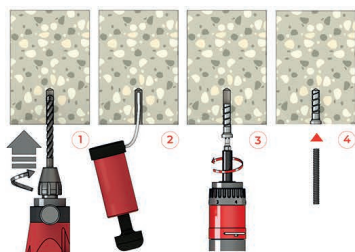
Technical data

Application area:	For fastening and mounting metal structures and pipes in the sanitary, heating and air conditioning sector.	Material:	Steel
		Surface:	galvanized
Installation advise:	Tightening torque max. 180 Nm		
Recommended accessories:	Impact-resistant socket with TX drive		

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Series	Dimension [mm]	Female thread	Length female thread [mm]	Drill Ø [mm]	TX drive	min. drill hole depth [mm]	Embedment depth [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
TSM	10x40	M8	10	10	TX 55	50	40	0,0200	100	2235650
TSM	12x40	M10	10	12	TX 60	50	40	0,0270	100	2235651

Installation advise TSM Multiground



» Concrete screw TSM



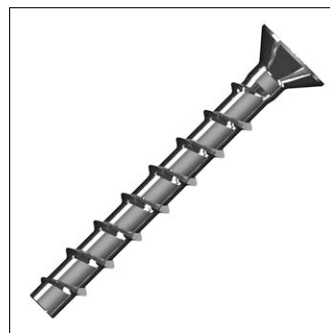
Sleeve



Hexagon head SW13



Pan-head TX 30



Countersunk head



Shoulder screw



Product description

- High-quality concrete screw for high loads
- Suitable for a wide range of applications
- With various head shapes
- Approved in non-cracked and cracked concrete and masonry
- The right screw for every requirement

Specification

Application area: Self-tapping metal anchor for virtually expansion pressure-free installation in cracked and non-cracked concrete.

Installation advise: Drilling dust has to be removed from drilling hole and has to be fixed by an impact screwdriver with a torque control. You will find further information on the packaging.

Technical data

Material: Steel

Surface: galvanized

Remark: Load values see end of chapter 7.

* must not be screwed in with an impact wrench or tangential impact wrench

Series	Shape head	Dimension [mm]	Male thread	Female thread	Drill Ø [mm]	SW	TX drive	min. drill hole depth [mm]	min. depth of anchoring [mm]	max. clamping thickness [mm]	Seismic	Head-Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
TSM	Sleeve	6x35		M8/M10	6	13		40					0,0340	50	2230000
TSM	Sleeve	6x55		M8/M10	6	13		60			C1		0,0380	50	2230001
TSM	Hexagon head	6x60			6	13		60	55	5	C1	15,0	0,0160	100	2230663
TSM	Hexagon head	8x60			8	13		65	55	5		16,0	0,0345	50	2230866
TSM	Hexagon head	8x100			8	13		75	65	35	C1/C2	16,0	0,0500	50	2230901
TSM	Hexagon head	10x90			10	15		95	85	5	C1/C2	20,0	0,0669	50	22310090
TSM-L	Pan-head	6x28			6		TX 30	28	25	3		15,0	0,0076	100	2230628 *
TSM	Pan-head	6x40			6		TX 30	40	35	5		14,4	0,0117	100	2230640

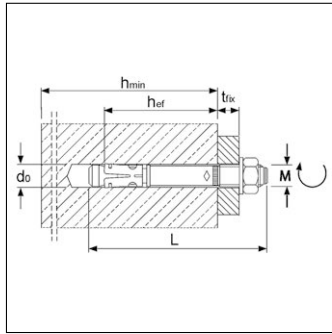
» Concrete screw TSM

Series	Shape head	Dimension [mm]	Male thread	Female thread	Drill Ø [mm]	SW	TX drive	min. drill hole depth [mm]	min. depth of anchoring [mm]	max. clamping thickness [mm]	Seismic	Head- Ø [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
TSM	Countersunk head	6x80			6		TX 30	60	55	25	C1	13,0	0,0180	100	2230681
TSM	Shoulder screw	6x55	M8x16		6	10		60			C1		0,0185	100	2230002

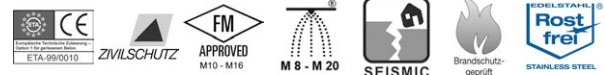
» Bolt anchor BZ plus



Bolt anchor BZ plus



Bolt anchor BZ plus



Product description

- High-performance anchor in concrete
- Anchoring of medium to heavy loads
- With European Technical Assessment
- Quick and easy installation
- For a wide range of applications
- Approved for use under fire exposure
- Approved for use under seismic exposure
- Two anchoring depths for greater flexibility
- Suitable for front, through and spaced installation
- Suitable for the installation of sprinkler systems in accordance with VdS requirements
- FM approval for the installation of sprinkler systems (M10 to M16)

Specification

Application area: Anchoring of medium to heavy loads in cracked and uncracked concrete: supports, steel beams, railing fixings, cable trays, wooden structures and brackets.

Delivery time: V4A - 3 working days, ex works

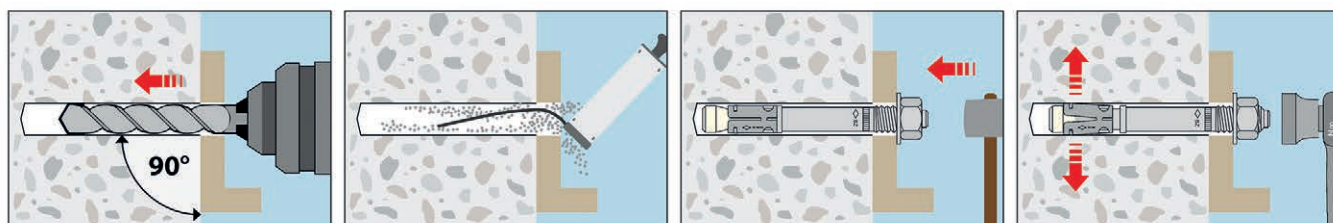
Remark: Load values see end of chapter 7. The seismic classification only applies to the standard anchorage depth.

Description	Thread	Clamping thickness [mm]	Length dowel [mm]	Drilling hole [mm]	Setting depth [mm]	Depth of anchoring [mm]	Length thread [mm]	Material	Seismic	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
BZ-8-10-21/75	M8	10	75	8x60	52	46	32	Steel, galv.	C1/C2	0,0299	100	221108010
BZ-8-30-41/95	M8	30	95	8x60	52	46	52	Steel, galv.	C1/C2	0,0360	100	221108030
BZ-10-10-30/90	M10	10	90	10x75	68	60	42	Steel, galv.	C1/C2	0,0588	50	221110010
BZ-10-30-50/110	M10	30	110	10x75	68	60	62	Steel, galv.	C1/C2	0,0688	50	221110030
BZ-10-50-70/130	M10	50	130	10x75	68	60	82	Steel, galv.	C1/C2	0,0790	50	221110050
BZ-12-15-35/110	M12	15	110	12x90	80	70	51	Steel, galv.	C1/C2	0,102	25	221112015
BZ-12-30-50/125	M12	30	125	12x90	80	70	66	Steel, galv.	C1/C2	0,114	25	22111203001
BZ-12-50-70/145	M12	50	145	12x90	80	70	86	Steel, galv.	C1/C2	0,129	25	221112050
BZ-12-105-125/200	M12	105	200	12x90	80	70	141	Steel, galv.	C1/C2	0,168	25	221112105

» Bolt anchor BZ plus

Description	Thread	Clamping thickness [mm]	Length dowel [mm]	Drilling hole [mm]	Setting depth [mm]	Depth of anchoring [mm]	Length thread [mm]	Material	Seismic	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
BZ-16-15-35/135	M16	15	135	16x110	97	85	56	Steel, galv.	C1/C2	0,216	20	221116015
BZ-16-25-45/145	M16	25	145	16x110	97	85	66	Steel, galv.	C1/C2	0,230	20	221116025
BZ-16-80-100/200	M16	80	200	16x110	97	85	121	Steel, galv.	C1/C2	0,320	10	221116080
BZ-8-10-21/75	M8	10	75	8x60	52	46	32	Stainless steel, V4A	C1/C2	0,0302	100	222108010
BZ-8-30-41/95	M8	30	95	8x60	52	46	52	Stainless steel, V4A	C1/C2	0,0368	100	222108030
BZ-10-10-30/90	M10	10	90	10x75	68	60	42	Stainless steel, V4A	C1/C2	0,0594	50	222110010
BZ-10-30-50/110	M10	30	110	10x75	68	60	62	Stainless steel, V4A	C1/C2	0,0696	50	222110030
BZ-10-50-70/130	M10	50	130	10x75	68	60	82	Stainless steel, V4A	C1/C2	0,0804	50	222110050
BZ-12-15-35/110	M12	15	110	12x90	80	70	51	Stainless steel, V4A	C1/C2	0,102	25	222112015
BZ-12-30-50/125	M12	30	125	12x90	80	70	66	Stainless steel, V4A	C1/C2	0,114	25	222112030
BZ-12-50-70/145	M12	50	145	12x90	80	70	86	Stainless steel, V4A	C1/C2	0,129	25	222112050
BZ-12-105-125/200	M12	105	200	12x90	80	70	141	Stainless steel, V4A	C1/C2	0,168	25	222112105
BZ-16-25-45/145	M16	25	145	16x110	97	85	66	Stainless steel, V4A	C1/C2	0,234	20	222116025

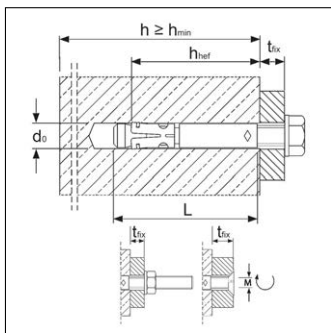
Installation advise bolt anchor BZ plus



» Wedge Anchor BZ-IG



Wedge anchor BZ-IG



Wedge anchor BZ IG



Product description

- Wedge anchor with M8, M10 or M12 female thread
- Fastening of medium to heavy loads
- Approved for concrete (for non-undercut drill holes)
- For fastening using hexagon screws, countersunk head screws, nuts, washers and threaded rods
- Suitable for installing sprinkler systems
- Fire protection tested

Specification

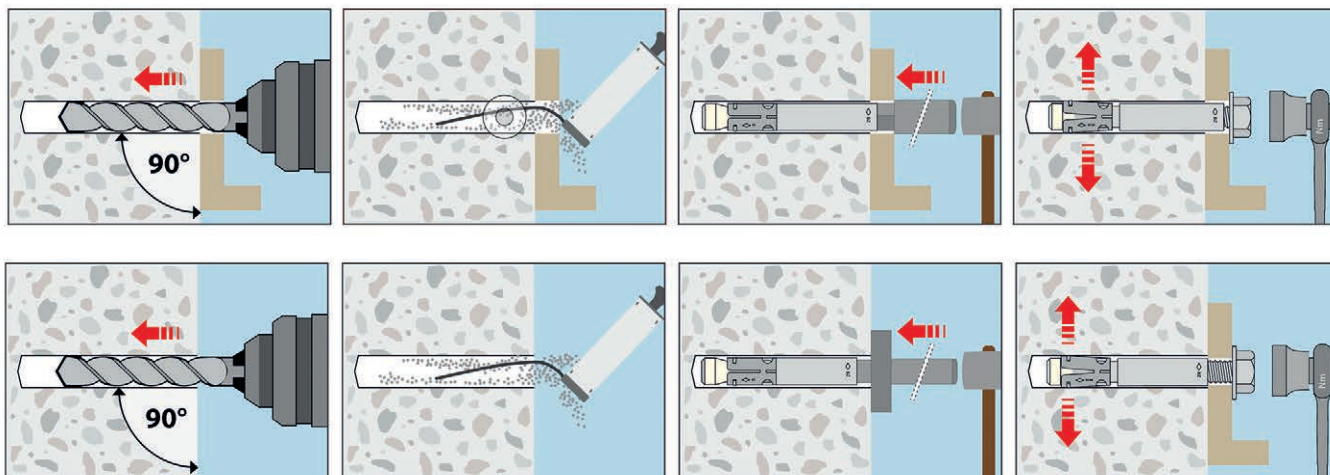
Application area: Wedge anchor for push-in installation for cracked and non-cracked concrete C20/25 to C50/60.

Delivery time: V4A - 3 working days, ex works

Remark: Load values see end of chapter 7.

Description	Material	Thread	Length thread [mm]	Drill Ø [mm]	Drill hole depth [mm]	Length dowel [mm]	Depth of anchoring [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
BZ IG	Steel, galv.	M8	22	10	75	62	58	0,0262	50	2218036101
BZ IG	Steel, galv.	M10	23	12	90	70	65	0,0432	25	2218036201
BZ IG	Steel, galv.	M12	27	16	105	86	80	0,102	20	2218036301
BZ IG	Stainless steel, V4A	M8	22	10	75	62	58	0,0262	50	2228036105
BZ IG	Stainless steel, V4A	M10	23	12	90	70	65	0,0432	25	2228036205
BZ IG	Stainless steel, V4A	M12	27	16	105	86	80	0,102	20	2228036305

Installation advise bolt anchor BZ-IG



» Setting tool for bolt anchor BZ-IG



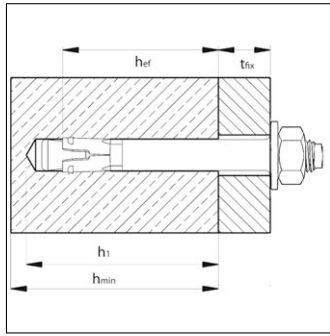
Setting tool BZ-IGS

Description	for dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
BZ-IGS M10V	BZ-IG M10	0,460	1	5308432001
BZ-IGS M12V	BZ-IG M12	0,560	1	5308433001

» Nail anchor N



Nail anchor N



Nail anchor N



Nail anchor N-M



Product description

- Metal anchor for high loads
- Combines the advantages of a bolt anchor with even simpler installation
- Quick, easy installation: simply hammer in
- European Technical Assessment in concrete
- Approved for use under the influence of fire
- Reduced anchoring depth of just 25 mm for low drilling effort
- Very small edge and center distances
- Just one product for two applications: M8/M10 stepped thread (N-M)

Specification

Application area: For multiple fixings in cracked concrete C12/15 - C50/60, e.g. ceiling suspensions, piping, cladding, cable trays and rail fastening.

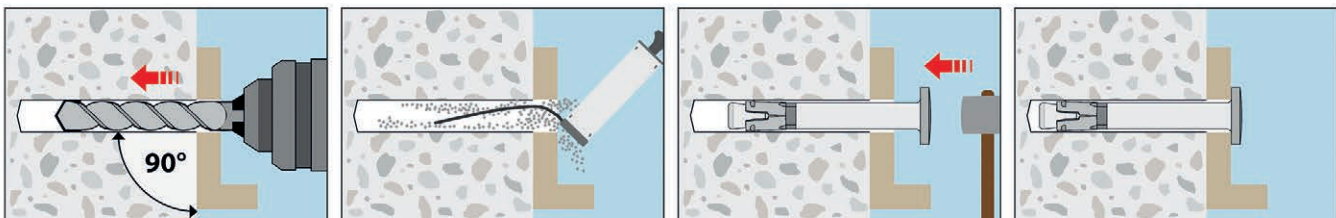
Delivery time: V4A - 3 working days, ex works

Remark: For load values see end of chapter 7. The reduced loads must be taken into account for reduced anchoring depths.

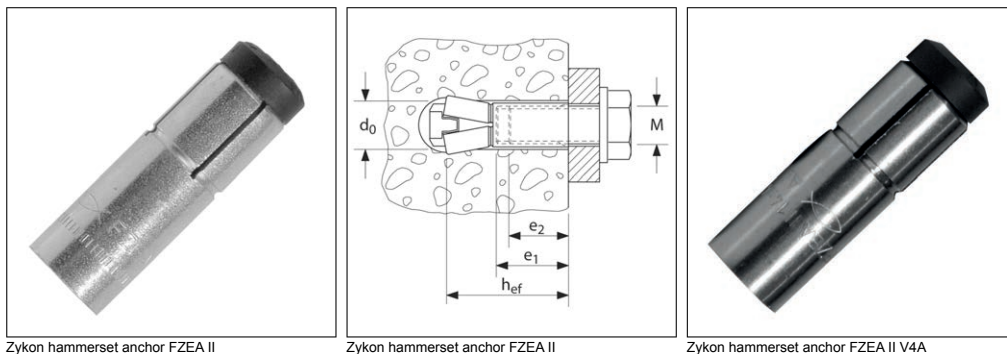
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Series	Dimension [mm]	Material	Clamping thickness [mm]	Drilling hole [mm]	Depth of anchoring [mm]	Length dowel [mm]	SW	Female thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
N	6-5-10/49	Steel, galv.	5	6x40	30	49			0,0140	200	221861010701
N	6-5/49	Stainless steel, V4A	5	6x40	30	49			0,0140	200	222861010541
N-M	6-25	Steel, galv.		6x35	25	58	13	M8/M10	0,0275	100	221860310101
N-M	6-30	Steel, galv.		6x40	30	63	13	M8/M10	0,0285	100	221860315101

Installation advise nail anchor N and N-M



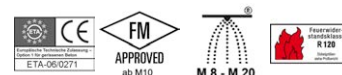
» Zykon-hammerset anchor FZEA II and FZEA II A4



Zykon hammerset anchor FZEA II

Zykon hammerset anchor FZEA II

Zykon hammerset anchor FZEA II V4A



Product description

- ZYKON Drop-in anchor FZEA II is an female threaded anchor with M8, M10 or M12
- Quick impact assembly
- Maximum safety thanks to form-fit connection
- High flexibility thanks to the use of commercially available metric screws and threaded rods
- Undercut bore without tool change. This saves time and costs
- ETA approval for cracked concrete and fire resistance class R 120
- For individual fastening of pipes, suspended ceilings and sprinkler systems

Specification

Application area: For cracked and non-cracked concrete C20/25 up to C50/60.

Installation advise: Correct installation is ensured when the anchor sleeve is driven flush with the surface of the concrete and the control mark on the dowel is visible. Therefore assembly defects can be avoided.

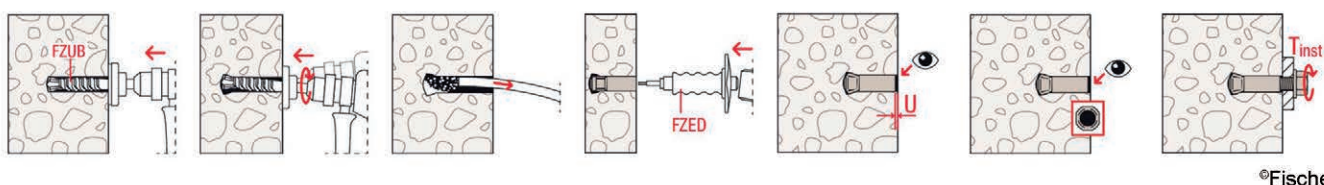
Specification: Undercut anchor with female thread pre-positioned installation

Remark: Load values see end of chapter 7.

Delivery time: V4A - 3 working days, ex works

Series	Dimension [mm]	Material	Drill Ø [mm]	Depth of anchoring [mm]	min. embedment depth [mm]	max. embedment depth [mm]	Thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
FZEA	10x40	Steel, galv.	10	40	11	17	M8	0,0153	100	21721040
FZEA	12x40	Steel, galv.	12	40	13	19	M10	0,0206	100	21721240
FZEA	14x40	Steel, galv.	14	40	15	21	M12	0,0278	50	21721440
FZEA	10x40	Stainless steel, V4A	10	40	11	17	M8	0,0150	100	2176042
FZEA	12x40	Stainless steel, V4A	12	40	13	19	M10	0,0206	100	2176242
FZEA	14x40	Stainless steel, V4A	14	40	15	21	M12	0,0278	50	2176442

Installation advise Zykon hammerset anchor FZEA II



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» Drilling and setting tool for FZEA II



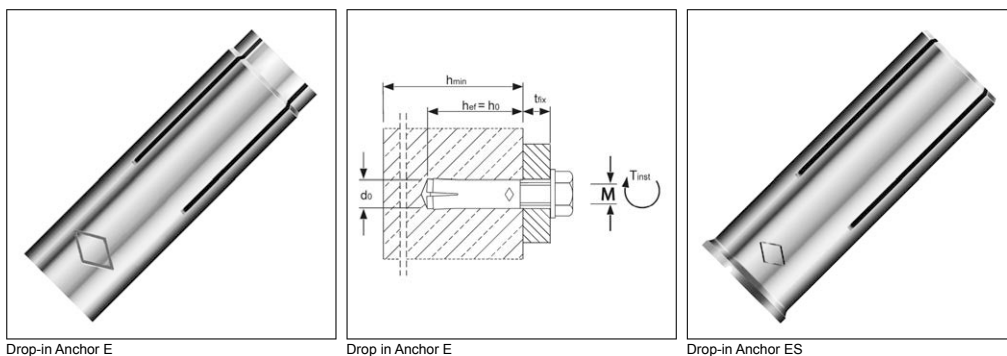
Setting tool



Drill

Description	Dimension [mm]	for dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Setting tool FZED plus	10x40	Zykon FZEA II M8	0,474	1	530044642
Setting tool FZED plus	12x40	Zykon FZEA II M10	0,476	1	530044643
Setting tool FZED plus	14x40	Zykon FZEA II M12	0,479	1	530044644
Drill FZUB	10x40	Zykon FZEA II M8	0,199	1	5301040
Drill FZUB	12x40	Zykon FZEA II M10	0,205	1	5301045
Drill FZUB	14x40	Zykon FZEA II M12	0,232	1	5301050

» Drop-in Anchor E / ES and E / ES A4



Drop-in Anchor E

Drop in Anchor E

Drop-in Anchor ES



Product description

- For fixing non-structural systems
- Drive-in anchor with collar for flush setting (ES) and without collar (E)
- Simple visual installation check using marking setting tool
- Approved for use as multiple fixings in concrete
- Approved as multiple fixings in prestressed concrete hollow core slabs
- Approved as single anchor for anchoring in non-cracked concrete (anchoring depth $\geq 30\text{mm}$)
- Low drilling depth, therefore low risk of hitting reinforcement (anchoring depth 25mm)
- Many possible applications thanks to the use of standard metric screws and threaded rods
- Suitable for the installation of sprinkler systems in solid concrete in accordance with VdS requirements (M8-M16)
- Fire protection tested

Specification

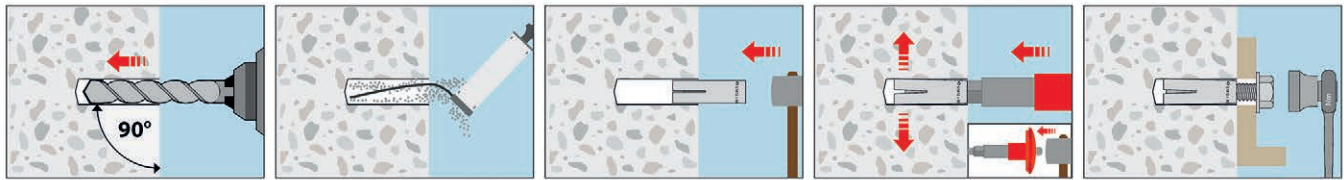
Application area: For cracked concrete (multiple fixings) and non-cracked concrete from C20/25 to C50/60 for e.g. suspensions in the heating, sanitary and ventilation sector or anchoring with threaded rods and screws in conjunction with flat steel or sectional steel.

Delivery time: V4A - 2 working days, ex works

Remark: Load values see end of chapter 7. Approval for sprinklers only from a length of 30 mm.

Description	Material	Drill Ø [mm]	Drill hole depth [mm]	Thread	Length thread [mm]	min. embedment depth [mm]	max. embedment depth [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
E M6x30	Steel, galv.	8	30	M6	13	7	13	0,0084	100	210805005101
E M16x65	Steel, galv.	20	65	M16	23	18	23	0,102	25	210805500101
ES M8x25	Steel, galv.	10	25	M8	12	8	12	0,0105	100	210805125101
ES M8x30	Steel, galv.	10	30	M8	13	9	13	0,0115	100	210805130101
ES M8x40	Steel, galv.	10	40	M8	20	9	20	0,0153	100	210805155101
ES M10x25	Steel, galv.	12	25	M10	12	10	12	0,0160	50	210805225101
ES M10x40	Steel, galv.	12	40	M10	15	11	15	0,0220	50	210805240101
ES M12x50	Steel, galv.	15	50	M12	18	13	18	0,0430	50	210805330101
ES M8x30	Stainless steel, V4A	10	30	M8	13	9	13	0,0115	100	211805150501
ES M10x40	Stainless steel, V4A	12	40	M10	15	11	15	0,0220	50	211805250501
ES M12x50	Stainless steel, V4A	15	50	M12	18	13	18	0,0430	50	211805350501
E M16x65	Stainless steel, V4A	20	65	M16	23	18	23	0,103	25	211805500501

Installation advise drop-in anchor E / ES



» Dowelbox Drop-in anchor



Dowelbox Drop-in anchor



Drop-in Anchor ES



Plug-on setting tool with stop drill bit

Specification

Scope of delivery: Drop-in anchor ES, 1x Plug-on setting tool incl. stop drill bit, 1x Euro container with hinged lid, grey

Type dowel	Amount of dowels [pcs]	Dimension of box	Weight [kg/pkg]	Packing unit [pkg]	Part-No.
ES M 8x25	500	400x300x135	7,79	1	8019978
ES M10x25	350	400x300x135	7,78	1	8019979

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» Setting tool for Drop-in Anchor E / ES



Setting tool

Description	for dowel	Specification	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
E SW	E M6x30	without hand guard	0,131	1	531809005150
E MSH	ES M8x25		0,420	1	531809125801
E MSH	ES M8x30		0,432	1	531809100180
E MSH	ES M8x40		0,435	1	531809105180
E MSH	ES M10x25		0,500	1	531809225180
E MSH	ES M10x40		0,445	1	531809200180
E MSH	ES M12x50		0,472	1	531809300180

» Setting tool for Drop-in Anchor E / ES

Description	for dowel	Specification	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
E MSH	E M16x65		0,507	1	531809500180

» Plug-on setting tool for Drop-in Anchor E / ES



Plug-on setting tool with stop drill bit

Product description

- Mechanical plug-on setting tool
- Quick, efficient and energy-saving installation thanks to stop drill bit and push-on tool
- For drop-in anchors E and ES
- With SDS plus mount
- Including collar drill bit

Description	for dowel	Type stop drill bit	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
E ASW	ES M8x25	BD 10x25	0,200	1	531809197101
E ASW	ES M8x30	BB 10x30	0,200	1	531809198101
E ASW	ES M8x40	BB 10x40	0,230	1	531809199101
E ASW	ES M10x25	BB 12x25	0,210	1	531809297101
E ASW	ES M10x40	BB 12x40	0,240	1	531809299101

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» Stop drill bit for Drop-in Anchor E / ES



Stop drill bit

Delivery time: on demand

Description	for dowel	for plug-on setting tool	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
10x25	ES M8x25	E ASW 8x25	0,110	1	531850041001
10x30	ES M8x30	E ASW 8x30	0,110	1	531850041501
10x40	ES M8x40	E ASW 8x40	0,120	1	531850042001
12x25	ES M10x25	E ASW 10x25	0,120	1	531850051001

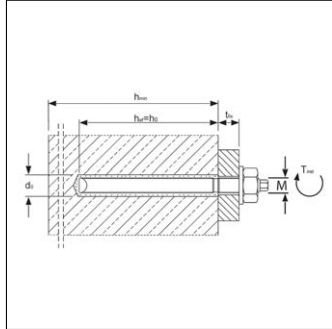
» Stop drill bit for Drop-in Anchor E / ES

Description	for dowel	for plug-on setting tool	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12x40	ES M10x40	E ASW 10x40	0,120	1	531850052001
15x50	ES M12x50		0,170	1	531850072501

» Anchor rod V-A



Anchor rod V-A



Anchor rod V-A



Product description

- Anchor rods with external hexagon for quick and easy installation
- Outstanding suitability for series installation
- Each pack comes with an adapter for clamping into the drill
- Is expansion pressure-free and therefore enables heavy loads to be fastened, even with small edge and center distances in non-cracked concrete
- Approved for non-cracked concrete
- Fire protection tested
- Use in combination with mortar cartridge V-P

Specification

Application area: For non-cracked concrete C12/15 to C50/60.

Installation advise: The components contained in the cartridge are mixed to form a fast-curing synthetic resin mortar when the anchor rod is driven in.

Recommended accessories: Mortar cartridge VZ-P, cleaning brushes, blow-out pump and SDS-plus hammer drill bit

Technical data

Surface: galvanized

Material: Steel

Delivery time: 3 working days, ex works

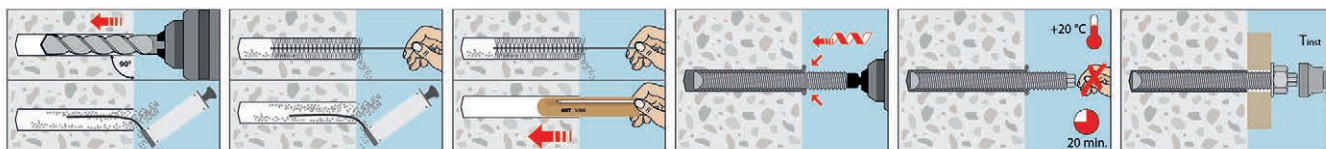
Remark: Load values see end of chapter 7.

Dimension	Material	Drill Ø [mm]	Drill hole depth [mm]	max. clamping thickness [mm]	Depth of anchoring [mm]	Wrench size nut	Wrench size anchor rod	Chemical capsule	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8-20/110	Steel, galv.	10	80	20	80	13	5	VZ-P 8	0,0430	10	221821101101
M10-30/130	Steel, galv.	12	90	30	90	17	6	VZ-P 10	0,0810	10	221821203101
M10-65/165	Steel, galv.	12	90	65	90	17	6	VZ-P 10	0,0980	10	221821207101
M12-35/160	Steel, galv.	14	110	35	110	19	8	VZ-P 12	0,137	10	221821306101
M16-20/165	Steel, galv.	18	125	20	125	24	12	VZ-P 16	0,277	10	221821507101
M8-20/110	Stainless steel, V4A	10	80	20	80	13	5	VZ-P 8	0,0430	10	222821101501
M10-30/130	Stainless steel, V4A	12	90	30	90	17	6	VZ-P 10	0,0810	10	222821203501

» Anchor rod V-A

Dimension	Material	Drill Ø [mm]	Drill hole depth [mm]	max. clamping thickness [mm]	Depth of anchoring [mm]	Wrench size nut	Wrench size anchor rod	Chemical capsule	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12-35/160	Stainless steel, V4A	14	110	35	110	19	8	VZ-P 12	0,137	10	222821306501

Installation advise chemical rod V-A



» Setting tool V-M



Setting tool V-M

Product description

- Machine setting tool
- Only for anchor rods without hexagon socket

Delivery time: 3 working days, ex works

Remark: Generally only required for anchor rods without hexagon socket.

Description	for dowel	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
V-M 8	V-A M8	0,0180	1	530827105160
V-M 10	V-A M10	0,0320	1	530827205160
V-M 12	V-A M12	0,0490	1	530827305160
V-M 16	V-A M16	0,109	1	530827505160

» Injection mortar VMZ



Cartridge 280 with two static mixers



Cartridge 345 with one static mixer



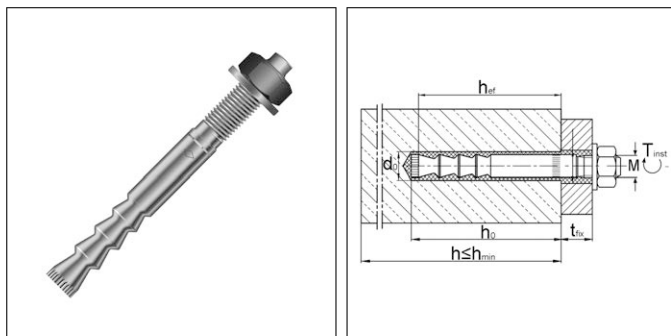
Product description

- Styrene-free 2-component injection mortar with ETA approval in cracked and non-cracked concrete
- Approved in conjunction with anchor rod VMZ-A for concrete grades C20/25 to C50/60
- Very high loads with low anchorage depth and component thickness
- Approved for use under seismic effects of performance categories C1 and C2
- Unreduced load-bearing capacity in wet and, from a drill hole diameter of 14 mm, in water-filled drill holes
- Can be used from -15 °C to +40 °C substrate temperature, the curing times must be observed
- Fire-tested system
- Use in combination with anchor rod VMZ-A

Remark: Accessories see chapter 7.

Description	Cartridge pistol	Content [ml]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VMZ 280 ml	Silicone gun	280	0,560	1	530828252601
VMZ 345 ml	VM-P 345 Standard	345	0,690	1	530828255310

» Anchor rod VMZ-A



Anchor rod VMZ-A

Anchor rod VMZ-A



Product description

- Very high loads with low anchoring depth and component thickness
- Approved for use under seismic loads in performance categories C1 and C2
- Unreduced load-bearing capacity in wet drill holes and in water-filled drill holes from a drill hole diameter of 14 mm
- Suitable for push-in and push-through installation (M10 - M24)
- Fire protection tested
- Use in combination with VMZ injection mortar
- Application examples: steel constructions, brackets, railings, facade constructions and cable trays

Specification

Application area: For cracked and non-cracked concrete C20/25 to C50/60.

Recommended accessories: Two-component mortar cartridge VMZ, cleaning brushes, blow-out pump and SDS-plus hammer drill bit.

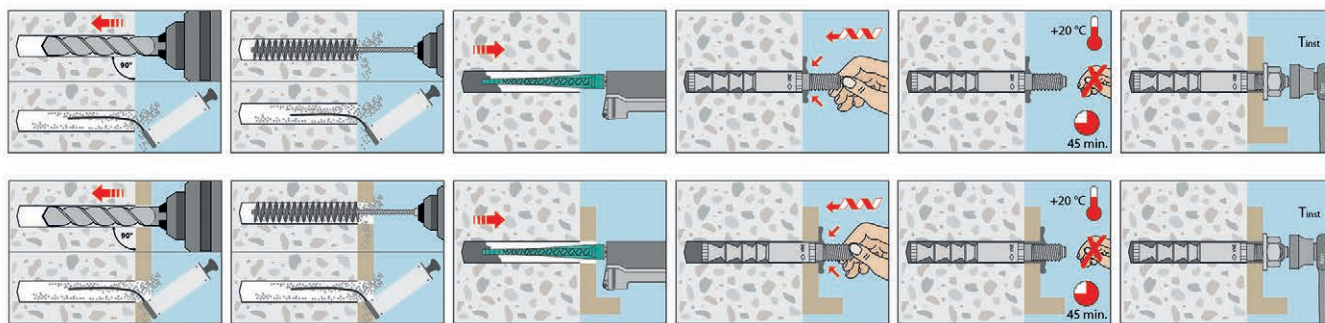
Installation advise: Composite expansion anchor for push-in and push-through installation in conjunction with VMZ injection mortar.

Delivery time: 3 working days, ex works

Remark: Load values see end of chapter 7.

Description	Material	Drill Ø [mm]	Drill hole depth [mm]	Setting depth [mm]	max. clamping thickness [mm]	Length dowel [mm]	SW	Thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VMZ-A 60 M10-10/85	Steel, galv.	12	65	63	10	85	17	M10	0,0610	10	221832205101
VMZ-A 60 M10-60/135	Steel, galv.	12	65	63	60	135	17	M10	0,0870	10	221832235101
VMZ-A 80 M12-10/110	Steel, galv.	14	85	84	10	110	19	M12	0,117	10	221832305101
VMZ-A 80 M12-25/125	Steel, galv.	14	85	84	25	125	19	M12	0,128	10	221832325101
VMZ-A 100 M12-60/180	Steel, galv.	14	105	104	60	180	19	M12	0,175	10	221832385101
VMZ-A 105 M16-30/160	Steel, galv.	18	113	109	30	160	24	M16	0,245	10	221832550101
VMZ-A 125 M16-60/210	Steel, galv.	18	133	130	60	210	24	M16	0,360	10	221832520101
VMZ-A 60 M10-10/85	Stainless steel, V4A	12	65	63	10	85	17	M10	0,0610	10	222832205501
VMZ-A 60 M10-60/135	Stainless steel, V4A	12	65	63	60	135	17	M10	0,0870	10	222832235501
VMZ-A 80 M12-25/125	Stainless steel, V4A	14	85	84	25	125	19	M12	0,128	10	222832325501
VMZ-A 100 M12-60/180	Stainless steel, V4A	14	105	104	60	180	19	M12	0,175	10	222832385501
VMZ-A 105 M16-30/160	Stainless steel, V4A	18	113	109	30	160	24	M16	0,245	10	222832550501
VMZ-A 125 M16-60/210	Stainless steel, V4A	18	133	130	60	210	24	M16	0,360	10	222832520501

Installation advise anchor rod VMZ-A



» Accessories Injection mortar VMZ / VMU plus



Dispenser VM-P 345 standard



Blow-out pump



Static mixer



Extension VM-XE



Cleaning brush

Remark: The cleaning of the drill hole is part of the anchor approval.

Description	Connection	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Dispenser VM P 345		1,00	1	530828350505
Blow-out pump VM AP 360		0,270	1	530833200101
Static mixer VM X		0,0120	1	530828305111
Mixer extension VM XE		0,0044	12	530828306011
Cleaning brush RB 14	M6	0,0350	1	530833514101
Cleaning brush RB 18	M6	0,0590	1	530833518101

» Injection mortar VMU plus



Cartridge 300 with one static mixer



Cartridge 345 with one static mixer



Product description

- Styrene-free 2-component injection mortar with ETA approval in cracked and non-cracked concrete, solid and perforated brickwork, and aerated concrete
- Approved in conjunction with anchor rod VMU-A for concrete grades C20/25 to C50/60
- Also approved by the building authorities for subsequent reinforcement connection (Ø8-Ø32)
- Very high loads with low anchoring depth and component thickness
- Approved for use under seismic effects of performance category C1
- Suitable in damp concrete and water-filled concrete
- Processing is possible from -10 °C to +40 °C substrate temperature, the curing times must be observed
- Fire-tested system
- Use in combination with anchor rod VMU-A

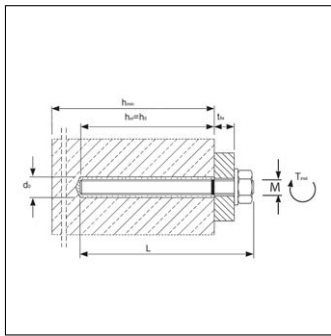
Remark: Accessories see chapter 7.

Description	Cartridge pistol	Content [ml]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VMU plus 300 ml	Silicone gun	300	0,530	1	530828255126
VMU plus 345 ml	VM-P 345 Standard	345	0,650	1	530828254001

» Anchor rod VMU-A



Anchor rod VMU-A



Anchor rod VMU-A



Product description

- Use in different substrates
- Very high loads with low anchoring depth and component thickness
- Approved for use under seismic loads of performance category C1
- Suitable in damp concrete and water-filled concrete
- Fire protection tested
- Use in combination with injection mortar VMU plus
- Steel: strength class 5.8

Specification

Application area: For non-cracked concrete C20/25 to C50/60, perforated brick and solid brick.

Recommended accessories: Two-component mortar cartridge VMU plus, cleaning brush, blow-out pump, sieve sleeve (for perforated brick) and SDS-plus hammer drill bit.

Installation advise: Adhesive system for anchor rods in conjunction with VMU plus injection mortar.

Delivery time: 3 working days, ex works

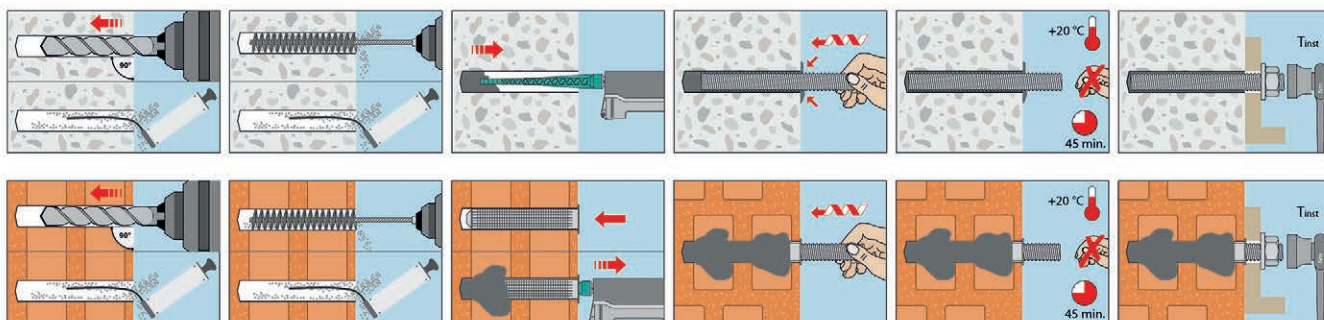
Remark: For load values see end of chapter 7. Internally threaded sleeves in galvanized and stainless steel available on request.

Description	Material	Drilling hole concrete [mm]	max. clamping thickness concrete [mm]	Drilling hole solid brick [mm]	max. clamping thickness solid brick [mm]	max. clamping thickness with perfo sleeve 16x85 [mm]	max. clamping thickness with perfo sleeve 16x130 [mm]	max. clamping thickness with perfo sleeve 20x85 [mm]	max. clamping thickness with perfo sleeve 20x130 [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8/110	Steel, galv.	10x80	20	10x80	20	15				0,0460	10	221831515101
M8/130	Steel, galv.	10x80	40	10x80	40	35				0,0520	10	221831525101
M10/130	Steel, galv.	12x90	30	12x90	30	35				0,0850	10	221831625101
M10/150	Steel, galv.	12x90	50	12x90	50	55	10			0,0950	10	221831630101
M10/165	Steel, galv.	12x90	65	12x90	65	70	25			0,102	10	221831635101
M10/190	Steel, galv.	12x90	90	12x90	90	95	50			0,115	10	221831645101
M12/135	Steel, galv.	14x110	10	14x90	20			35		0,125	10	221831710101
M12/155	Steel, galv.	14x110	30	14x90	40			55	10	0,142	10	221831720101
M12/175	Steel, galv.	14x110	50	14x90	60			75	30	0,154	10	221831730101
M12/210	Steel, galv.	14x110	85	14x90	95			110	65	0,182	10	221831740101
M16/160	Steel, galv.	18x125	15	18x100	40			55	10	0,265	10	221831810101
M16/175	Steel, galv.	18x125	30	18x100	55			70	25	0,285	10	221831815101
M8/130	Stainless steel, V4A	10x80	40	10x80	40	35				0,0520	10	222831525501
M10/130	Stainless steel, V4A	12x90	30	12x90	30	35				0,0850	10	222831625501
M10/165	Stainless steel, V4A	12x90	65	12x90	65	70	25			0,102	10	222831635501
M12/155	Stainless steel, V4A	14x110	30	14x90	40			55	10	0,142	10	222831720501
M12/210	Stainless steel, V4A	14x110	85	14x90	95			110	65	0,182	10	222831740501

» Anchor rod VMU-A

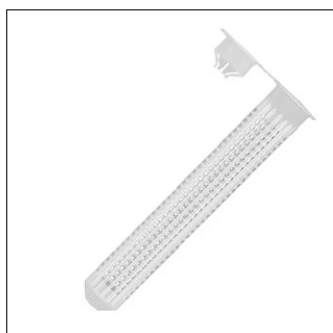
Description	Material	Drilling hole concrete [mm]	max. clamping thickness concrete [mm]	Drilling hole solid brick [mm]	max. clamping thickness solid brick [mm]	max. clamping thickness with perfo sleeve 16x85 [mm]	max. clamping thickness with perfo sleeve 16x130 [mm]	max. clamping thickness with perfo sleeve 20x85 [mm]	max. clamping thickness with perfo sleeve 20x130 [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16/160	Stainless steel, V4A	18x125	15	18x100	40			55	10	0,265	10	222831810501

Installation advise anchor rod VMU-A



» Sieve sleeve VMU plus

PP



Sieve sleeve VM-SH

Specification

Application area: Use for perforated bricks.

Remark:

* not approved for use in fire areas

Technical data

Material: Polypropylene



Description	Drill Ø [mm]	Length dowel [mm]	Suitable for	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
VM-SH 16x85	16	85	VMU plus M8-M10	0,0030	10	221828152001 *
VM-SH 16x130	16	130	VMU plus M8-M10	0,0040	10	221828153001
VM-SH 20x85	20	85	VMU plus M12-M16	0,0040	10	221828154001 *
VM-SH 20x130	20	130	VMU plus M12-M16	0,0070	10	221828154301

» Hollow core anchor Easy



Hollow core anchor Easy



Product description

- For use in prestressed concrete hollow core slabs and reinforced concrete hollow core slabs
- Installation on floor and ceiling side possible
- General building authority approval for anchoring individual dowels in prestressed concrete hollow core slabs, both from the floor and the ceiling side
- Generally approved by building authorities as a multiple fastening for anchoring lightweight suspended ceilings and comparable anchorages
- Approved for use in dry indoor areas
- Fire protection tested
- No drill hole cleaning required for processing and installation
- Approved for the installation of sprinkler systems

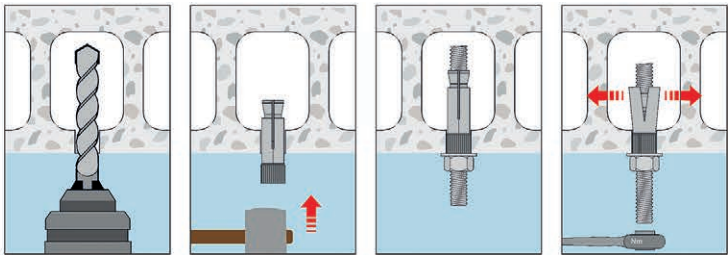
Specification

Application area: Pre-stressed hollow concrete slabs concrete C45/55. Material: Steel
Surface: galvanized

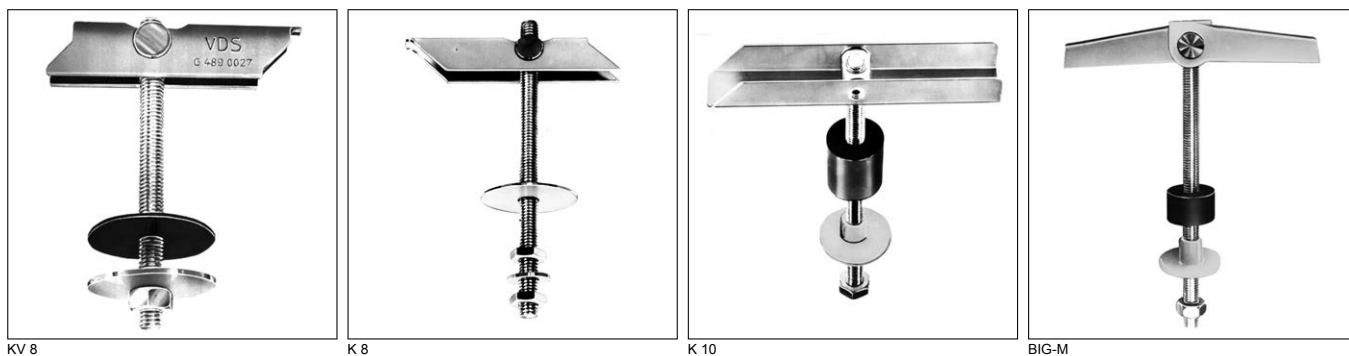
Remark: Load values see end of chapter 7.

Description	Drill Ø [mm]	Thread	Drill hole depth [mm]	Length sleeve [mm]	Setting depth [mm]	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Easy M8	12	M8	55	35	47	20	0,0144	50	221851100101
Easy M10	12	M10	60	40	55	30	0,0332	50	221851200101

Installation advise hollow core anchor Easy



» Toggle bolts



Product description

- For use with cavity walls, hollow ceilings, suspended ceilings and various sandwich elements
- Wide-area pressure distribution is guaranteed
- Safe and quick installation
- High loads
- Immediately loadable
- For stationary fire protection systems, the provisions of VdS or FM apply (for pipes up to max. DN 2") (KV 8 and KV 10)
- VDS (KV 8 and KV 10) and FM approval (KV 10)
- For all cavity fastenings where maximum strength is required (BIG M)

Specification

Application area: For cavity walls, suspended ceilings and cavity walls.

Technical data

Material: Steel
Surface: gavanized, chromated

Description	Threaded rod type	Drill Ø [mm]	min. width of hollow [mm]	Breaking loads [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
KV	M8x100	22	90	20	0,113	50	2120081
KV	M8x200	22	90	20	0,146	25	2120082
KV	M8x300	22	90	20	0,177	25	2120083
KV	M8x500	22	90	20	0,240	25	2120085
KV	M10x100	25	90	20	0,137	25	212010100
K	M8x100	20	75	13	0,0821	100	2128306
K	M10x180	30	140	12	0,210	25	2120518
BIG-M	M10x180	30	90	11	0,217	25	2123517

» MEFA-Wood screw with washer -set



MEFA-Wood screw

Product description

- Complete fixing set with dowel and lug screw
- Universal dowel K2 for easy fixing in almost all substrates

Specification

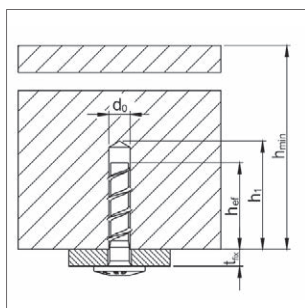
Application area: Washbasins, electric storage, consoles, etc.

Scope of delivery: Lug screws galvanized, dowels

Brand: MEFA

Description	Screw type	Ø washer [mm]	SW	Type dowel	Number of components	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
L1	8x50	25	13	K2 10x44	2 each	0,0510	100	8110018
L2	8x60	25	13	K2 10x44	2 each	0,0590	100	8110026
L3	8x70	18	13	K2 10x60	2 each	0,0640	100	8110034
L6	10x70	30	13	K2 12x60	2 each	0,110	100	8110069
L7	10x80	30	13	K2 14x80	2 each	0,124	100	8110077

» Load values TSM L 6 concrete screws



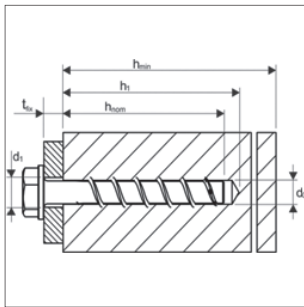
Technical characteristics without fire request			
Drill diameter	d_0	[mm]	6
Drilling hole depth	h_1	[mm]	28
Depth of anchoring	h_{ef}	[mm]	25
Min. thickness of the component	h_{min}	[mm]	80
Edge distance	c	[mm]	150
Center distance	s	[mm]	200
Allowable load in cracked and uncracked concrete C 20/25 to C 50/80 °	N_{zul}	[kN]	0,43

1) The partial safety factor for material resistance from the approval YM = 1.5 as well a partial safety factor for load actions YF = 1.4 were considered for determining the load.

Technical characteristics resistant to fire			
			TSM L 6
Fire resistance class			
R 30	permissible load $F_{fi,zul,30}^{1)}$	[kN]	0,23
R 60	permissible load $F_{fi,zul,60}^{1)}$	[kN]	0,23
R 90	permissible load $F_{fi,zul,90}^{1)}$	[kN]	0,22
R 120	permissible load $F_{fi,zul,120}^{1)}$	[kN]	0,17
R 30 to R 120	Spacing S_{fi}	[mm]	200
	Edge distance C_{fi}		150

1) The partial safety factor for material resistance from the approval YM = 1.0 as well a partial safety factor for load actions YF = 1.0 were considered for determining the load.

» Load values TSM concrete screws for single fixation



Technical characteristics without fire request for single fixation TSM / TSM A4 / TSM HCR									
Screw size TSM high performance		TSM 6		TSM 8			TSM 10		
Nominal screw-in depth	h _{nom} [mm]	h _{nom,1}	h _{nom,2}	h _{nom,1}	h _{nom,2}	h _{nom,3}	h _{nom,1}	h _{nom,2}	h _{nom,3}
		40	55	45	55	65	55	75	85
Nominal borehole diameter	d ₀ [mm]	6		8			10		
Borehole depth	h _t ≥ [mm]	45	60	55	65	75	65	85	95
Effective anchorage depth	h _{ef} [mm]	31	44	35	43	52	43	60	68
Round hole in the mounting part	d _{f max} ≤ [mm]	8		12			14		
Admissible tensile loading in cracked concrete 1);2)	N _{zul} [kN]	0,95	1,9	2,4	4,3	5,7	4,3	7,6	9,2
Admissible shear load in cracked concrete 1);2)	V _{zul} [kN]	2,8	4	3,4	4,6	6,2	4,6	15,2	18,4
Minimum edge distance	C _{min} [mm]	40		40	50		50		
Minimum edge distance / for spacing s	S _{min} [mm]	40		40	50		50		
Minimum center distance	h _{min} [mm]	100		100		120	100	130	
installation torque	T _{inst} [Nm]	10		20			40		
Max. torque	impact driver [Nm]	160		300			400		
ETA seismic C1 + C2 3)	C1/C2	C1		-		C1/C2	C1	-	C1/C2

1) The partial safety factor for material resistance from the approval YM = 1.5 as well a partial safety factor for load actions YF = 1.4 were considered for determining the load.

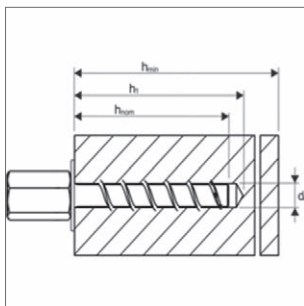
2) These values apply without influence of center distance and edge distances.

3) C2 only for the galvanised steel version..

Technical characteristics under fire request for single fixation TSM (steel, A4 and HCR)											
Screw size TSM high performance				TSM 6		TSM 8			TSM 10		
Nominal screw-in depth	h _{nom}	[mm]	h _{nom} ,1	h _{nom} ,2	h _{nom} ,1	h _{nom} ,2	h _{nom} ,3	h _{nom} ,1	h _{nom} ,2	h _{nom} ,3	
			40	55	45	55	65	55	75	85	
Admissible tensile and shear load (F _{zul} ,f _i = N _{zul} ,f _i = V _{zul} ,f _i)											
R 30	approved load	F _{f_i,zul,30} ¹⁾	[kN]	0,5	1,2	2,3	2,4	2,1	4,0	4,4	
R 60		F _{f_i,zul,60} ¹⁾	[kN]	0,5	1,3	1,7	1,7	2,1	3,3	3,3	
R 90		F _{f_i,zul,90} ¹⁾	[kN]	0,5	1,1	2,1	2,3	2,3			
R 120		F _{f_i,zul,120} ¹⁾	[kN]	0,4	0,7	1,7					
R 30		M _{zul,fi 30} ³⁾	[Nm]	0,7	2,4	5,9					
R 60		M _{zul,fi 60} ³⁾	[Nm]	0,6	1,8	4,5					
R 90		M _{zul,fi 90} ³⁾	[Nm]	0,5	1,2	3					
R 120		M _{zul,fi 120} ³⁾	[Nm]	0,3	0,9	2,3					
Edge distance											
R 30 bis R 120	C _{cr,fi}	[mm]	2 x h _{ef}								
Edge distance must be ≥ 300 mm under fire exposure from more than one side.											
Center distance											
R 30 bis R 120	S _{cr,fi}	[mm]	4 x h _{ef}								
For wet concrete the depth of anchoring must be increased by at least 30 mm.											

1) The partial safety factor for material resistance from the approval YM = 1.0 as well a partial safety factor for load actions YF = 1.0 were considered for determining the load.

» Load values TSM concrete screws for multiple fastening



Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR				
Screw size TSM high performance		TSM 6		
Nominal screw-in depth	h_{nom}	[mm]	35	55
Nominal borehole diameter	d_0	[mm]	6	
Borehole depth	h_1	≥ [mm]	40	60
Effective anchorage depth	h_{ef}	[mm]	27	44
Round hole in the mounting part	d_{fmax}	≤ [mm]	8	
Admissible tensile loading in cracked concrete 1)	N_{zul}	[kN]	1,4	3,6
Admissible tensile loading in uncracked concrete 1)	V_{zul}	[kN]	2,4	4,0
Minimum edge distance	C_{min}	[mm]	35	40
Minimum center distance	S_{min}	[mm]	35	40
Minimum component thickness	h_{min}	[mm]	80	100
Installation torque	T_{inst}	[Nm]	10	
Max. torque	impact driver	[Nm]	160	

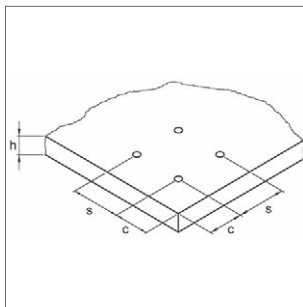
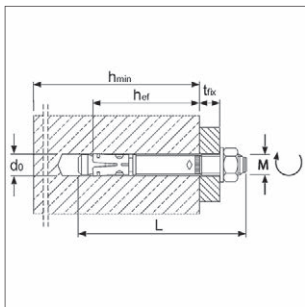
1) The partial safety factor for material resistance from the approval YM = 1.5 as well a partial safety factor for load actions YF = 1.4 were considered for determining the load.

Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR							
Screw size TSM high performance			TSM 6		TSM 6 A4 / HCR		
Nominal screw-in depth		h_{nom}	[mm]	35	55	35	55
Admissible tensile and shear load ($F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$)							
R 30	approved load	$F_{fi,zul,30}^{1)}$	[kN]	0,75	0,9	0,75	1,2
R 60		$F_{fi,zul,60}^{1)}$	[kN]	0,75	0,8	0,75	1,2
R 90		$F_{fi,zul,90}^{1)}$	[kN]	0,6		0,75	1,2
R 120		$F_{fi,zul,120}^{1)}$	[kN]	0,4		0,6	0,8
R 30		$M_{zul,fi,30}^0$	[Nm]	0,7		0,9	
R 60		$M_{zul,fi,60}^0$	[Nm]	0,6		0,9	
R 90		$M_{zul,fi,90}^0$	[Nm]	0,5		0,9	
R 120		$M_{zul,fi,120}^0$	[Nm]	0,3		0,6	
Edge distance							
R 30 bis R 120		$C_{cr,fi}$	[mm]	$2 \times h_{ef}$			
Edge distance must be ≥ 300 mm under fire exposure from more than one side.							
Center distance							
R 30 bis R 120		$S_{cr,fi}$	[mm]	$4 \times h_{ef}$			
In wet concrete, the anchoring depth must be increased by at least 30 mm.							

1) The partial safety factor for material resistance from the approval YM = 1.0 as well a partial safety factor for load actions YF = 1.0 were considered for determining the load..

Values do not apply for use in prestressed cavity ceiling tiles.

» Load values Bolt anchor BZ plus

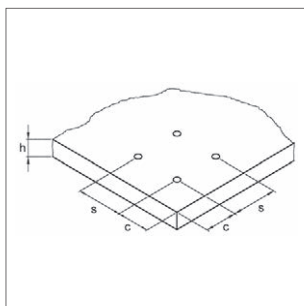
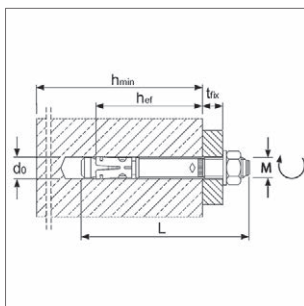
**Extract from Permissible Service Conditions of ETA-99/0010**

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data			Bolt anchor BZ plus		M 8	M 10	M 12	M 16			
Standard anchorage depth	h_{ef}	[mm]	46	-	60	-	70	-	85	-	
Reduced anchorage depth	$h_{ef, red}$	[mm]	-	35	-	40	-	50	-	65	
cracked concrete											
Mean ultimate loads, tension	C20/25	zul. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9	9,0
	C25/30	zul. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0	9,8
	C30/37	zul. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5	10,9
	C40/50	zul. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8	12,7
	C50/60	zul. N	[kN]	3,7	3,7	6,6	5,5	11,8	9,4	18,4	13,9
non-cracked concrete											
Approved loads, tension	C20/25	zul. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7	12,6
	C25/30	zul. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3	13,8
	C30/37	zul. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3	15,3
	C40/50	zul. N	[kN]	7,5	5,1	10,8	6,1	16,8	12,0	23,6	17,8
	C50/60	zul. N	[kN]	7,5	5,5	11,8	6,6	18,4	13,2	25,8	19,5
cracked / non-cracked concrete											
Approved loads, shear	C20/25	zul. V	[kN]	7,0	7,0	11,5	10,4/11,5	17,1	14,5/17,1	31,4	21,6/30,2
	≥ C25/30	zul. V	[kN]	7,0	7,0	11,5	11,4/11,5	17,1	15,9/17,1	31,4	23,6/31,4
Approved bending moments		zul. M	[Nm]	13,1	13,1	26,9	26,9	46,9	46,9	123,4	123,4
Spacing and edge distance											
Effective anchorage depth	h_{ef}	[mm]	46	35	60	40	70	50	85	65	
Characteristic spacing	$s_{cr, N}$	[mm]	138	105	180	120	210	150	255	195	
Characteristic edge distance	$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5	97,5	
Respective minimum spacing and edge distance for standard thickness of concrete member											
cracked concrete											
Standard thickness of concrete slab	$h_{min, 1}$	[mm]	100	-	120	-	140	-	170	-	
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	-	45 / 70	-	60 / 100	-	60 / 100	-	
Minimale Randabstand / für Achsabstand s	c_{min} / s	[mm]	40 / 80	-	45 / 90	-	60 / 140	-	60 / 180	-	
non-cracked concrete											
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 80	-	45 / 70	-	60 / 120	-	65 / 120	-	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	-	50 / 100	-	75 / 150	-	80 / 150	-	
Respective minimum spacing and edge distance for minimum thickness of concrete member											
cracked concrete											
Minimum component thickness	h_{min2} / h_{min3}	[mm]	80	80	100	80	120	100	140	140	
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	50/60	45 / 90	50/100	60 / 100	50/160	70 / 160	65/170	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40 / 80	40/185	50 / 115	65/180	60 / 140	65/250	80 / 180	100/250	
non-cracked concrete											
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 80	50/60	60 / 140	50/100	60 / 120	50/160	80 / 180	65/170	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	40/185	90 / 140	65/180	75 / 150	100/185	90 / 200	170/65	
Installation parameters											
Drill hole diameter	d_o	[mm]	8	8	10	10	12	12	16	16	
Diameter of clearance hole in the fixture	d_i	[mm]	9	9	12	12	14	14	18	18	
Depth of drill hole	h_1	[mm]	60	49	75	55	90	70	110	90	
Installation torque	T_{inst}	[Nm]	20	20	25	25	45	45	90	90	
Width across nut	SW	[mm]	13	13	17	17	19	19	24	24	

» Load values Bolt anchor BZ plus A4



Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data				Bolt anchor BZ plus A4		M 8		M 10		M 12		M 16	
Standard anchorage depth		h_{ef}	[mm]	46	-	60	-	70	-	85	-		
Reduced anchorage depth		$h_{ef, red}$	[mm]	-	35	-	40	-	50	-	65		
cracked concrete													
Mean ultimate loads, tension	C20/25	zul. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9	9,0		
	C25/30	zul. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0	9,8		
	C30/37	zul. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5	10,9		
	C40/50	zul. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8	12,7		
	C50/60	zul. N	[kN]	3,7	3,7	6,6	5,5	11,8	9,4	18,4	13,9		
non-cracked concrete													
Approved loads, tension	C20/25	zul. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7	12,6		
	C25/30	zul. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3	13,8		
	C30/37	zul. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3	15,3		
	C40/50	zul. N	[kN]	7,5	5,1	10,8	6,1	16,8	12,0	23,6	17,8		
	C50/60	zul. N	[kN]	7,5	5,5	11,8	6,6	18,4	13,2	25,8	19,5		
cracked / non-cracked concrete													
Approved loads, shear	C20/25	zul. V	[kN]	7,0	7,0	11,5	10,4/11,5	17,1	14,5/17,1	31,4	21,6/30,2		
	≥ C25/30	zul. V	[kN]	7,0	7,0	11,5	11,4/11,5	17,1	15,9/17,1	31,4	23,6/31,4		
Approved bending moments		zul. M	[Nm]	13,1	13,1	26,9	26,9	46,9	46,9	123,4	123,4		
Spacing and edge distance													
Effective anchorage depth		h_{ef}	[mm]	46	35	60	40	70	50	85	65		
Characteristic spacing		$s_{cr, N}$	[mm]	138	105	180	120	210	150	255	195		
Characteristic edge distance		$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5	97,5		
Respective minimum spacing and edge distance for standard thickness of concrete member													
cracked concrete													
Standard thickness of concrete slab		$h_{min, 1}$	[mm]	100	-	120	-	140	-	170	-		
Minimum spacing / for edge distance c		s_{min} / c	[mm]	40 / 70	-	45/70	-	60 / 100	-	60 / 100	-		
Minimum edge distance / for spacing s		c_{min} / s	[mm]	40 / 80	-	45/90	-	60 / 140	-	60 / 180	-		
non-cracked concrete													
Minimum spacing / for edge distance c		s_{min} / c	[mm]	40 / 80	-	45 / 70	-	60 / 120	-	65 / 120	-		
Minimum edge distance / for spacing s		c_{min} / s	[mm]	50 / 100	-	50 / 100	-	75 / 150	-	80 / 150	-		
Respective minimum spacing and edge distance for minimum thickness of concrete member													
cracked concrete													
Minimum component thickness		h_{min}	[mm]	80	80	100	80	120	100	140	140		
Minimum spacing / for edge distance c		s_{min} / c	[mm]	40 / 70	50/60	45 / 90	50/100	60 / 100	50/160	70 / 160	65/170		
Minimum edge distance / for spacing s		c_{min} / s	[mm]	40 / 80	40/185	50 / 115	65/180	60 / 140	65/250	80 / 180	100/250		
non-cracked concrete													
Minimum spacing / for edge distance c		s_{min} / c	[mm]	40 / 80	50/60	60 / 140	50/100	60 / 120	50/160	80 / 180	65/170		
Minimum edge distance / for spacing s		c_{min} / s	[mm]	50 / 100	40/185	90 / 140	65/180	75 / 150	100/185	90 / 200	170/65		
Installation parameters													
Drill hole diameter		d_o	[mm]	8	8	10	10	12	12	16	16		
Diameter of clearance hole in the fixture		d_i	[mm]	9	9	12	12	14	14	18	18		
Depth of drill hole		h_1	[mm]	60	49	75	55	90	70	110	90		
Installation torque		T_{inst}	[Nm]	20	20	25	25	45	45	110	90		
Width across nut / Wrench size		SW	[mm]	13	13	17	17	19	19	24	24		

» Load values Nail anchor N

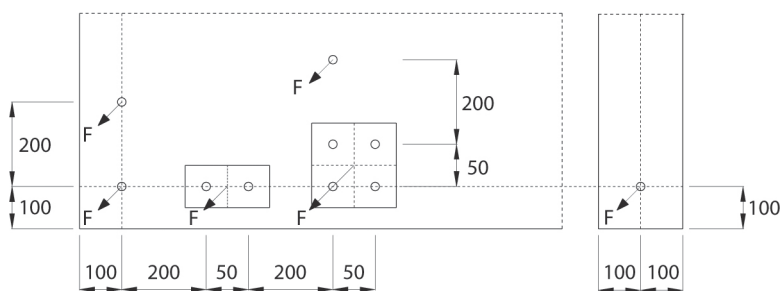
**Extract from Permissible Service Conditions of ETA-11/0240**

Multiple use for non-structural systems.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data	Nail Anchor steel galvanized stainless steel A4	N		N-M	
Effective anchorage depth	h_{ef} [mm]	25	30	25	30
Approved loads (picture 1)	C12/15 zul. F [kN]	1,43	1,90	1,43 ¹⁾	1,90 ¹⁾
	C20/25 - C50/60 zul. F [kN]	2,14	2,81	2,14 ¹⁾	2,81 ¹⁾
Approved loads (picture 2)	C12/15 zul. F [kN]	0,71	0,95	0,71 ¹⁾	0,95 ¹⁾
	C20/25 - C50/60 zul. F [kN]	0,95	1,19	0,95 ¹⁾	1,19 ¹⁾
Approved bending moments	zul. M [Nm]	5,3	5,3	7,3	7,3
Minimum thickness of concrete slab	h_{min} [mm]	80	80	80	80
Installation parameters					
Drill hole diameter	d_o [mm]	6	6	6	6
Diameter of clearance hole in the fixture	d_i [mm]	7	7	7	7
Diameter nailhead	[mm]	-	-	-	-
Depth of drill hole	h_i [mm]	35	40	35	40
Installation torque	$\geq T_{inst}$ [Nm]	4	4	-	-

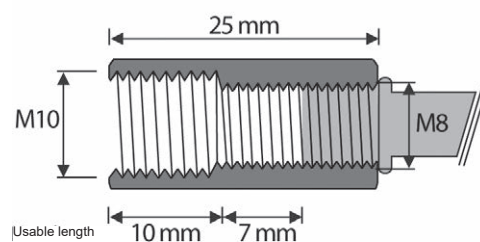
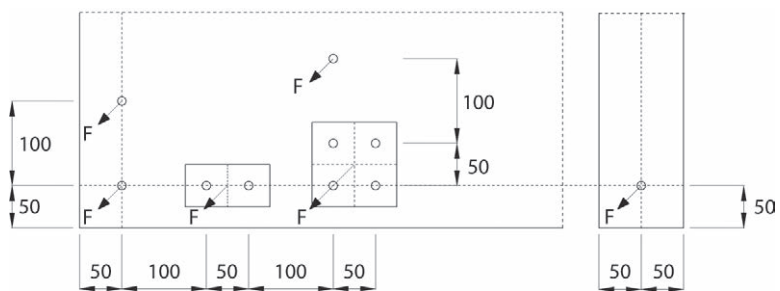
1) When applying a shear load to anchor version N-M, shear load with lever arm must be proven.



The approved load F is for one fixing point.
One fixing point can be:

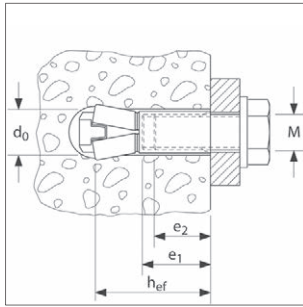
- Single anchor,
- Pair of anchors with spacing $s \geq 50$ mm or
- Group of four anchors with $s \geq 50$ mm

If spacing in fixing point is above or equal to respective spacing between fixing points, characteristic resistances apply to every single anchor.



Assembly instruction see chapter 15

» Load values Zykon hammerset anchor FZEA II and FZEA II A4



Mean ultimate loads, design resistant and recommended loads for single anchors of Zykon hammerset anchor FZEA with large axial spacing and edge distance.

Anchor type			FZEA 10 x 40 M8			FZEA 12 x 40 M10			FZEA 14 x 40 M12		
			gvz	A4	C	gvz	A4	C	gvz	A4	C
Effective anchorage depth	h_{ef}	[mm]	40			40			40		
Approved centric tensile load of a single anchor without edge effects N_{zul} , d. h. edge distance $c \geq 1,5 \times h_{ef}$ and axle distance $s \geq 3 \times h_{ef}$											
in cracked concrete C20/25 ²⁾	N_{zul}	[kN]	1,6			3,0			3,6		
in non-cracked concrete C20/25 ²⁾	N_{zul}	[kN]	3,6 (3,1) ³⁾			3,6			3,6		
Approved shear force of a single anchor without edge effects V_{zul} , d. h. edge distance $c \geq 10 \times h_{ef}$ and axle distance $s \geq 3 \times h_{ef}$											
in cracked concrete C20/25 ²⁾	V_{zul}	[kN]	4,7 (3,7) ³⁾			5,6			5,6 (4,1) ⁴⁾		
in non-cracked concrete C20/25 ²⁾	V_{zu}	[kN]	4,7 (3,7) ³⁾			7,8 (6,1) ³⁾			7,9 (4,1) ⁴⁾		
Permissible bending moment	M_{zu}	[Nm]	8,6 (7,7) ³⁾			13,1 (11,7) ³⁾			17,7 (15,8) ³⁾		
Component dimensions, minimum axial spacings and edge distances											
Characteristic axial spacing	$s_{cr, N}$	[mm]	$= 3 \times h_{ef}$								
Characteristic edge distance	$c_{cr, N}$	[mm]	$= 1,5 \times h_{ef}$								
Min. axial spacing 3)	s_{min}	[mm]	40			45			50		
Min. edge distance 3)	c_{min}	[mm]	40			45			50		
Min. structural component thickness	h_{min}	[mm]	80			80			80		
Min. screw penetration depth	$\min l_s$	[mm]	11			13			15		
Max. screw penetration depth	$\max l_s$	[mm]	17			19			21		
Clearance-hole in fixture to be attached	d_f	[mm]	9			12			14		
Installation torque	T_{inst}	[Nm]	< 10	< 15	< 15	< 15	< 20	< 20	< 20	< 40	< 40
Universal drill bit FZUB 4)		[-]	FZUB 10 x 40			FZUB 12 x 40			FZUB 14 x 40		
Setting mandrel FZED 5)		[-]	FZED 10 x 40			FZED 12 x 40			FZED 14 x 40		
Machine setting tool FZEM 5)		[-]	FZEM 10 x 40			FZEM 12 x 40			FZEM 14 x 40		

- 1) The partial safety factors for resistances specified in the approval, as well as a partial safety factor of $\gamma_F = 1.4$, have been taken into account. For combinations of tensile and shear loads, edge effects, and anchor groups, please refer to Design Method A (ETAG Annex C).
- 2) The concrete is assumed to be normally reinforced or unreinforced; for higher concrete strengths, values up to 55% higher are possible.
- 3) The values in parentheses apply when using a fastening screw or threaded rod with a minimum strength class of 5.6.
- 4) The values in parentheses apply when using a fastening screw or threaded rod of the minimum strength class A50.
- 5) Essential for drilling.
- 6) FZED or, alternatively, FZEM is required to set the anchor.

Source: Fischer Installation Systems Main Catalog 2009

» Load values Hammerset Anchor E / ES and E / ES A4 / HCR

**Extract from Permissible Service Conditions of ETA-05/0116**

Multiple use for non-structural applications. Total safety factor as per ETAG 001 included (YM and YF). The maximum load per fixing point for multiple use for non-structural applications may, depending on national regulations, be below the approved load of the anchor. The approved loads per fixing point are regulated for their respective countries in the ETAG 001, Part 6.

Loads and performance data			Hammer set Anchor E	M6x25	M6x30	M8x25	M8x30	M8x40	M10x25	M10x30	M10x40	M12x25	M12x50	M16x65
cracked and non-cracked concrete														
Approved loads (C12/15 up to C16/20)	zul. F	[kN]	1,2	-	1,2	-	-	1,7	-	-	1,7	-	-	
Approved loads (C20/25 up to C50/60)	zul. F	[kN]	1,7	1,2	1,9	1,7	2,0	2,1	2,0	2,0	2,1	2,4	6,3	
Approved bending moments (Screw 4.6)	zul. M	[Nm]	2,6	2,6	6,4	6,4	6,4	12,8	12,8	12,8	22,2	22,2	56,9	
Approved bending moments (Screw 5.6)	zul. M	[Nm]	3,3	3,3	8,1	8,1	8,1	15,8	15,8	15,8	27,8	27,8	71,0	
Approved bending moments (Screw 5.8)	zul. M	[Nm]	4,3	4,3	10,9	10,9	10,9	21,1	21,1	21,1	37,1	37,1	94,9	
Approved bending moments (Screw 8.8)	zul. M	[Nm]	6,9	6,9	17,1	17,1	17,1	34,3	33,7	34,3	60,0	60,0	152,0	
Spacing and edge distance														
Effective anchorage depth	hef	[mm]	25	30	25	30	40	25	30	40	25	50	65	
Characteristic spacing	scr	[mm]	75	130	75	180	210	75	230	170	75	170	400	
Characteristic edge distance	ccr	[mm]	38	65	38	90	105	38	115	85	38	85	200	
Minimum spacing1)	smin	[mm]	30	55	50	60	80	60	100	100	100	120	150	
Minimum edge distance1)	cmin	[mm]	60	95	100	95	95	100	115	135	110	165	200	
Minimum thickness of concrete slab	hmin _{2/1}	[mm]	100/80	100	100/80	100	100	100/80	120	120	100/80	130	160	
Installation parameters														
Drill hole diameter	do	[mm]	8	8	10	10	10	12	12	12	15	15	20	
Diameter of clearance hole in the fixture	df	[mm]	7	7	9	9	9	12	12	12	14	14	18	
Depth of drill hole	h0	[mm]	25	30	25	30	40	25	30	40	25	50	65	
Installation torque	≤ Tinst	[Nm]	4	4	8	8	8	15	15	15	35	35	60	
Minimum screwing depth1)	Lsd	[mm]	6	7	8	9	9	10	10	11	12	13	18	
Maximum screwing depth1)	Lth	[mm]	12	13	12	13	20	12	12	15	12	18	23	
Loads under fire exposure (C20/25 to C50/60)														
(for screw ≥ 4.8)	Approved loads R30	zul. F	[kN]	0,4	0,4	0,6	0,9	1,1	0,6	0,9	1,5	0,6	1,5	4,0
	Approved loads R60	zul. F	[kN]	0,35	0,3	0,6	0,9	0,9	0,6	0,9	1,5	0,6	1,5	4,0
	Approved loads R90	zul. F	[kN]	0,3	0,3	0,6	0,6	0,6	0,6	0,9	1,1	0,6	1,5	3,0
	Approved loads R120	zul. F	[kN]	0,25	0,3	0,5	0,5	0,5	0,5	0,7	0,9	0,5	1,2	2,4
(for screw ≥ 5.6)	Approved loads R30	zul. F	[kN]	0,4	0,8	0,6	0,9	1,5	0,6	0,9	1,5	0,6	1,5	4,0
	Approved loads R60	zul. F	[kN]	0,35	0,8	0,6	0,9	1,5	0,6	0,9	1,5	0,6	1,5	4,0
	Approved loads R90	zul. F	[kN]	0,3	0,4	0,6	0,9	0,9	0,6	0,9	1,5	0,6	1,5	3,7
	Approved loads R120	zul. F	[kN]	0,25	0,3	0,5	0,5	0,5	0,5	0,7	1,0	0,5	1,2	2,4
Characteristic spacing	scr,fi	[mm]	100	130	100	180	210	100	170	170	100	200	400	
Characteristic edge distance	ccr,fi	[mm]	50	65	50	90	105	50	85	85	50	100	200	

1) Data for minimum thickness of concrete see ETA-05/0116

Loads and performance data		Hammerset Anchor ES A4 / HCR	M 6x30	M 8x30	M 8x40	M 10x40	M 12x50	M 16x65
cracked and non-cracked concrete								
Approved loads (C20/25 to C50/60)	zul. F	[kN]	1,2	1,7	2,0	2,0	2,4	6,3
Approved bending moments (A4-70)	zul. M	[Nm]	5,0	11,9	11,9	23,8	42,1	106,7
Spacing and edge distance								
Effective anchorage depth	hef	[mm]	30	30	40	40	50	65
Characteristic spacing	scr	[mm]	130	180	210	170	170	400
Characteristic edge distance	ccr	[mm]	65	90	105	85	85	200
Minimum spacing	smin	[mm]	50	60	80	100	120	150
Minimum edge distance	cmin	[mm]	80	95	95	135	165	200
Minimum thickness of concrete slab	hmin	[mm]	100	100	100	130	140	160
Installation parameters								
Drill hole diameter	do	[mm]	8	10	10	12	15	20
Diameter of clearance hole in the fixture	df	[mm]	7	9	9	12	14	18
Depth of drill hole	h0	[mm]	30	30	40	40	50	65
Installation torque	Tinst	[Nm]	4	8	8	15	35	60
Minimum screwing depth	Lsd	[mm]	7	9	9	11	13	18
Maximum screwing depth	Lth	[mm]	13	13	20	15	18	23
Loads under fire exposure								
Approved loads R30	zul. F	[kN]	0,8	0,9	1,5	1,5	1,5	4,0
Approved loads R60	zul. F	[kN]	0,8	0,9	1,5	1,5	1,5	4,0
Approved loads R90	zul. F	[kN]	0,4	0,9	0,9	1,5	1,5	3,7
Approved loads R120	zul. F	[kN]	0,3	0,5	0,5	1,0	1,2	2,4
Characteristic spacing	scr,fi	[mm]	130	180	210	170	200	400
Characteristic edge distance	ccr,fi	[mm]	65	90	105	85	100	200
Minimum spacing	smin	[mm]	50	60	80	100	120	150
Minimum edge distance	cmin	[mm]	80	95	95	135	165	200

» Hammerset Anchor for non-cracked concrete and multiple use in cracked and non-cracked concrete



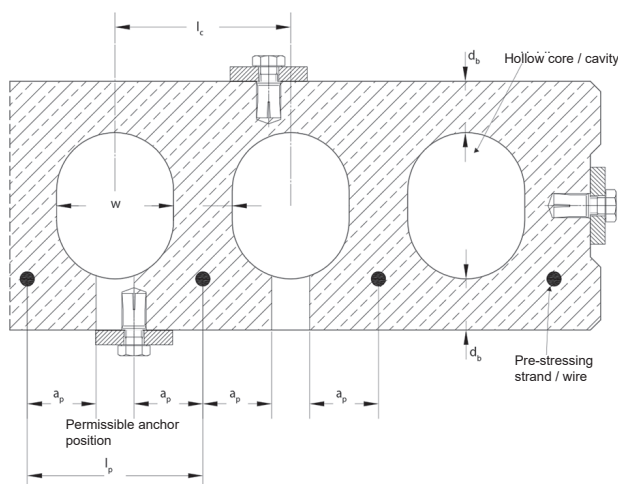
Extract from Permissible Service Conditions of ETA-05/0116

Multiple use for non-structural applications. Total safety factor as per ETAG 001 included (YM and YF). The maximum load per fixing point for multiple use for non-structural applications may, depending on national regulations, be below the approved load of the anchor. The approved loads per fixing point are regulated for their respective countries in the ETAG 001, Part 6.

Loads and performance data		Drop-in Anchor ES		M6x25	M8x25	M10x25	M12x25
		Pre-stressed hollow concrete slabs C30/37 to C50/60					
Web thickness		db ≥	[mm]	35 (30) ¹			
Approved loads		Fzul.	[kN]	1,7	1,9	2,1	2,1
Approved bending moments (Steel 4.6)		zul. M	[Nm]	2,6	6,4	12,8	22,2
Approved bending moments (Steel 4.8)		zul. M	[Nm]	3,5	8,6	17,1	29,7
Approved bending moments (Steel 5.6)		zul. M	[Nm]	3,3	8,1	15,8	28,8
Approved bending moments (Steel 5.8)		zul. M	[Nm]	4,3	10,9	21,1	37,1
Approved bending moments (Steel 8.8)		zul. M	[Nm]	6,9	17,1	34,3	60,0
Spacing and edge distance							
Spacing distance	scr = smin		[mm]	200			
Edge distance	ccr = cmin		[mm]	150			
Installation parameters							
Drill hole diameter	do		[mm]	8	10	12	15
Diameter of clearance hole in the xture	df		[mm]	7	9	12	14
Depth of drill hole	ho ≥		[mm]	25	25	25	25
Installation torque	Tinst ≤		[Nm]	4	8	15	35

1) Drill hole must not cut hollow core.

Admissible anchor positions in precast pre-stressed hollow core slabs

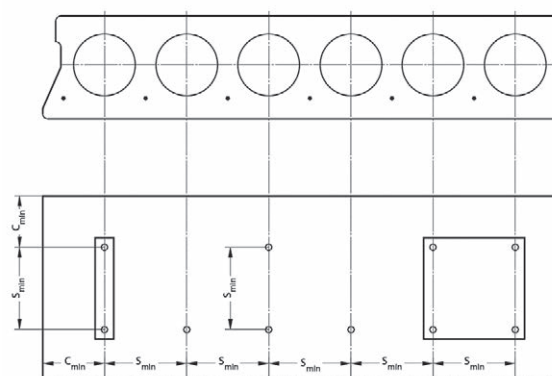


$$w / e \leq 4,2$$

w = hollow core width
 e = web thickness

Core distance $l_c \geq 100 \text{ mm}$
 Pre-stressing steel distance $l_p \geq 100 \text{ mm}$
 Distance between anchor position and pre-stressing steel $a_p \geq 50 \text{ mm}$

Minimum spacing and edge distance in precast pre-stressed hollow core slabs

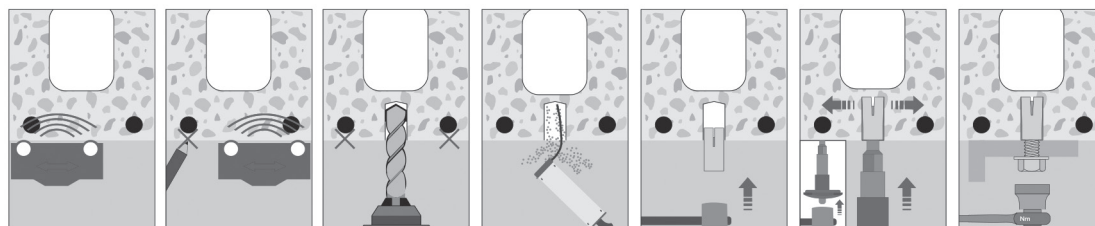


Minimum edge distance
 Minimum axle distance

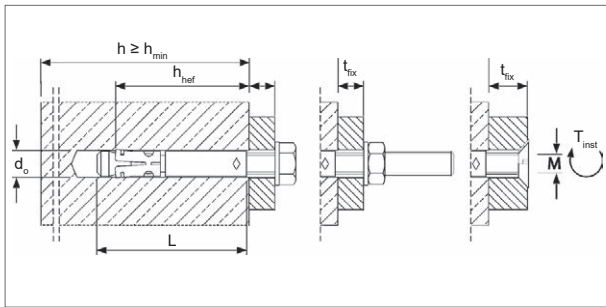
$$c_{min} \geq 150 \text{ mm}$$

$$s_{min} \geq 200 \text{ mm}$$

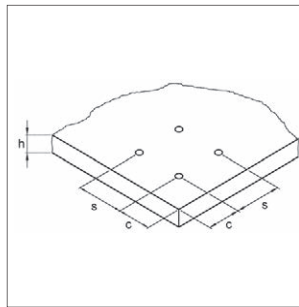
Mounting



» Load values Bolt anchor BZ-IG



Example: Pre-assembly

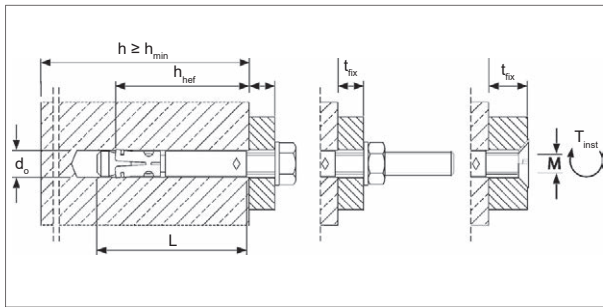
**Extract from Permissible Service Conditions of ETA-99/0010**

Approved loads for single anchor without influence of spacing and edge distance. Total safety factor as per ETAG 001 included (γ_M and γ_F).

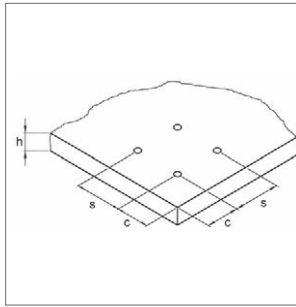
Loads and performance data		Bolt anchor BZ-IG	M 6	M 8	M 10	M 12
cracked concrete						
Approved loads	C20/25 appr. N	[kN]	2,0	3,6	4,8	7,9
	C25/30 appr. N	[kN]	2,2	3,9	5,2	8,7
	C30/37 appr. N	[kN]	2,4	4,4	5,8	9,7
	C40/50 appr. N	[kN]	2,8	5,0	6,7	11,2
	C50/60 appr. N	[kN]	3,1	5,5	7,4	12,3
non-cracked concrete						
Approved loads	C20/25 appr. N	[kN]	4,8	6,3	7,9	11,9
	C25/30 appr. N	[kN]	5,2	7,0	8,7	13,1
	C30/37 appr. N	[kN]	5,8	7,7	9,7	14,5
	C40/50 appr. N	[kN]	6,7	9,0	11,2	16,8
	C50/60 appr. N	[kN]	7,4	9,8	12,3	18,5
cracked / non-cracked concrete						
Approved cross load (lead-in mounting)	≥ C20/25 appr. V	[kN]	3,3	3,9	5,9	14,7
Approved cross load (threaded mounting)	≥ C20/25 appr. V	[kN]	2,9	4,3	6,2	13,9
Approved bending moments (lead-in mounting)	appr. M	[Nm]	7,0	17,1	34,2	59,8
Approved bending moments (threaded mounting)	appr. M	[Nm]	20,6	30,4	43,4	118,3
Spacing and edge distance						
Anchorage depth	hef	[mm]	45	58	65	80
Characteristic spacing	scr, N	[mm]	135	174	195	240
Characteristic edge distance	ccr, N	[mm]	67,5	87	97,5	120
cracked concrete						
Minimum spacing / for edge distance c	smin / c	[mm]	50 / 60	60 / 80	70 / 100	80 / 120
Minimum edge distance / for spacing s	cmin / s	[mm]	50 / 75	60 / 100	70 / 100	80 / 120
non-cracked concrete						
Minimum spacing / for edge distance c	smin / c	[mm]	50 / 80	60 / 100	65 / 120	80 / 160
Minimum edge distance / for spacing s	cmin / s	[mm]	50 / 115	60 / 155	70 / 170	100 / 210
Minimum component thickness	hmin	[mm]	100	120	130	160
Installation parameters						
Drill hole diameter	d _o	[mm]	8	10	12	16
Drill hole diameter	d _f	[mm]	7	9	12	14
Diameter of clearance hole in the fixture	d _f	[mm]	9	12	14	18
Depth of drill hole	h ₁	[mm]	60	75	90	105
Installation torque	Screw DIN 933 T _{inst}	[Nm]	10	30	30	55
	Countersunk T _{inst}	[Nm]	10	25	40	50
	Threaded bolt T _{inst}	[Nm]	8	25	30	45
Width across nut	Screw DIN 933 SW	[mm]	10	13	17	19
Width across nut female thread	Countersunk SW	[mm]	-	-	6	8
Tool size TX	Countersunk		T30	T45	-	-
Minimum component thickness screw DIN 933 or threaded bolt	t _{fix} ≥	[mm]	1 / 5 ¹⁾	1 / 7 ¹⁾	1 / 8 ¹⁾	1 / 9 ¹⁾
Minimum component thickness	Countersunk t _{fix} ≥	[mm]	5 / 9 ¹⁾	7 / 12 ¹⁾	8 / 14 ¹⁾	9 / 16 ¹⁾

¹⁾ pre-positioned installation

» Load values Bolt anchor BZ-IG A4



Example: Through-hole assembly



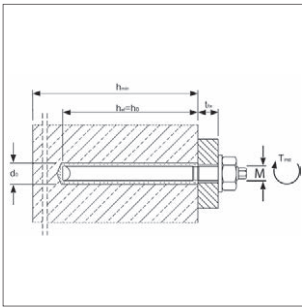
Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance. Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data			Bolt anchor BZ-IG A4	M 6	M 8	M 10	M 12
cracked concrete							
Approved loads	C20/25 appr. N	[kN]		2,0	3,6	4,8	7,9
	C25/30 appr. N	[kN]		2,2	3,9	5,2	8,7
	C30/37 appr. N	[kN]		2,4	4,4	5,8	9,7
	C40/50 appr. N	[kN]		2,8	5,0	6,7	11,2
	C50/60 appr. N	[kN]		3,1	5,5	7,4	12,3
non-cracked concrete							
Approved loads	C20/25 appr. N	[kN]		4,8	6,3	7,9	11,9
	C25/30 appr. N	[kN]		5,2	7,0	8,7	13,1
	C30/37 appr. N	[kN]		5,4	7,7	9,7	14,5
	C40/50 appr. N	[kN]		5,4	9,0	11,2	16,8
	C50/60 appr. N	[kN]		5,4	9,8	12,3	18,5
cracked / non-cracked concrete							
Approved cross load (lead-in mounting)	≥ C20/25 appr. V	[kN]		3,3	5,3	6,1	13,5
Approved cross load (threaded mounting)	≥ C20/25 appr. V	[kN]		4,2	4,3	5,5	16,9
Approved bending moments (lead-in mounting)	appr. M	[Nm]		4,9	12,0	23,9	41,9
Approved bending moments (threaded mounting)	appr. M	[Nm]		16,1	25,3	39,9	109,3
Spacing and edge distance							
Anchorage depth	hef	[mm]		45	58	65	80
Characteristic spacing	scr, N	[mm]		135	174	195	240
Characteristic edge distance	crr, N	[mm]		67,5	87	97,5	120
cracked concrete							
Minimum spacing / for edge distance c	smin / c	[mm]		50 / 60	60 / 80	70 / 100	80 / 120
Minimum edge distance / for spacing s	cmin / s	[mm]		50 / 75	60 / 100	70 / 100	80 / 120
non-cracked concrete							
Minimum spacing / for edge distance c	smin / c	[mm]		50 / 80	60 / 100	65 / 120	80 / 160
Minimum edge distance / for spacing s	cmin / s	[mm]		50 / 115	60 / 155	70 / 170	100 / 210
Minimum component thickness	hmin	[mm]		100	120	130	160
Installation parameters							
Drill hole diameter	do	[mm]		8	10	12	16
Drill hole diameter	df	[mm]		7	9	12	14
Diameter of clearance hole in the fixture	df	[mm]		9	12	14	18
Drill hole diameter	h1	[mm]		60	75	90	105
Installation torque	Screw DIN 933 Tinst	[Nm]		15	40	50	100
	Countersunk Tinst	[Nm]		12	25	45	60
	Threaded bolt Tinst	[Nm]		8	25	40	80
Width across nut	Screw DIN 933 SW	[mm]		10	13	17	19
Width across nut female thread	Countersunk SW	[mm]		-	-	6	8
Tool size TX	Countersunk			T30	T40	-	-
Minimum component thickness screw DIN 933 or threaded bolt	tfix ≥	[mm]		1 / 5 ¹⁾	1 / 7 ¹⁾	1 / 8 ¹⁾	1 / 9 ¹⁾
Minimum component thickness	Countersunk tfix ≥	[mm]		5 / 9 ¹⁾	7 / 12 ¹⁾	8 / 14 ¹⁾	9 / 16 ¹⁾

¹⁾ pre-positioned installation

» Load values Bolt composite Anchor V and V A4

**Extract from Permissible Service Conditions of ETA-05/0231**

Approved loads for single anchor without influence of spacing and edge distance.

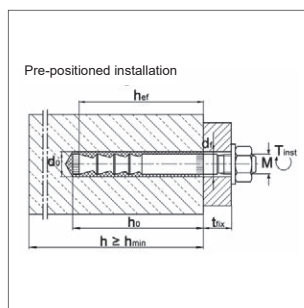
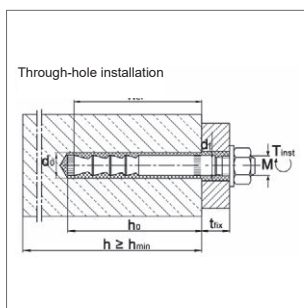
Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data		Composite Anchor V	M 8	M 10	M 12	M 14 ¹⁾	M 16	M 20	M 24	M 30 ¹⁾
cracked concrete										
Approved loads	C12/15 ¹⁾ appr. N	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
	≥ C20/25 appr. N	[kN]	7,9	11,9	15,9	12,0	19,8	29,8	35,7	60,0
Approved cross load: (Steel, Grade 5.8)	C12/15 ¹⁾ appr. V	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
	≥ C20/25 appr. V	[kN]	5,1	8,0	12,0	12,0	22,3	34,9	50,3	60,0
Approved cross load: (Steel, Grade 8.8)	≥ C20/25 appr. V	[kN]	8,6	13,1	18,9	-	36,0	56,0	80,6	-
Approved bending moments (Steel, grade 5.8)	appr. M	[Nm]	10,9	21,1	37,1	59,4	94,9	185,7	320,6	642,0
Approved bending moments (Steel, grade 8.8)	appr. M	[Nm]	17,1	34,3	60,0	-	152,0	296,6	513,1	-
Spacing and edge distance										
Anchorage depth	h_{ef}	[mm]	80	90	110	120	125	170	210	280
Characteristic spacing	$s_{cr,N}$	[mm]	240	180	220	300	250	340	420	700
Edge distance	$c_{cr,N}$	[mm]	120	90	110	150	125	170	210	350
Minimum center distance	s_{min}	[mm]	40	45	55	120	65	85	105	280
Minimum edge distance	c_{min}	[mm]	40	45	55	60	65	85	105	140
Minimum component thickness	h_{min}	[mm]	110	120	140	170	160	220	260	330
Installation parameters										
Anchorage depth	d_o	[mm]	10	12	14	16	18	25	28	35
Through-hole in the attachment	d_f	[mm]	9	12	14	16	18	22	26	33
Drill hole depth	h_o	[mm]	80	90	110	120	125	170	210	280
Tightening torque	T_{inst}	[Nm]	10	20	40	60	80	120	180	400
Thread size (nut)	SW	[mm]	13	17	19	22	24	30	36	46
Width across flats (stud drive)	SW	[mm]	5	6	8	10	12	14	17	-

Loads and performance data		Composite Anchor V A4	M 8	M 10	M 12	M 14 ¹⁾	M 16	M 20	M 24	M 30 ¹⁾
non-cracked concrete										
Approved loads	C12/15 ¹⁾ appr. N	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
	≥ C20/25 appr. N	[kN]	7,9	11,9	15,9	12,0	19,8	29,8	35,7	60,0
Approved cross load	C12/15 ¹⁾ appr. V	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
	≥ C20/25 appr. V	[kN]	6,0	9,2	13,3	12,0	25,2	39,4	56,8	60,0
Approved bending moments	appr. M	[Nm]	11,9	23,8	42,1	66,9	106,7	207,9	359,4	402,0
Spacing and edge distance										
Anchorage depth	h_{ef}	[mm]	80	90	110	120	125	170	210	280
Characteristic spacing	$s_{cr,N}$	[mm]	240	180	220	300	250	340	420	700
Edge distance	$c_{cr,N}$	[mm]	120	90	110	150	125	170	210	350
Minimum center distance	s_{min}	[mm]	40	45	55	120	65	85	105	280
Minimum edge distance	c_{min}	[mm]	40	45	55	60	65	85	105	140
Minimum component thickness	h_{min}	[mm]	110	120	140	170	160	220	260	330
Installation parameters										
Anchorage depth	d_o	[mm]	10	12	14	16	18	25	28	35
Through-hole in the attachment	d_f	[mm]	9	12	14	16	18	22	26	33
Drill hole depth	h_o	[mm]	80	90	110	120	125	170	210	280
Tightening torque	T_{inst}	[Nm]	10	20	40	60	80	120	180	400
Thread size (nut)	SW	[mm]	13	17	19	22	24	30	36	46
Thread size (conical stud)	SW	[mm]	5	6	8	10	12	14	17	-

¹⁾ Not included in the approval. Recommended loads for sizes M 14 and M 30 and in C12/15 concrete.²⁾ Max. continuous temperature: +50°C / Max. short-term temperature: +80°C

» Load values conical stud VMZ-A



Extract from Permissible Service Conditions of ETA-04/0092

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Load values for different setting depths and dimensions are available upon request.

Loads and performance data				Conical stud VMZ-A	60 M10	80 M12	100 M12	105 M16	125 M16
cracked concrete									
Approved Tensile Load	C20/25	appr. N	[kN]		7,6	11,7	16,4	17,6	22,9
	C25/30	appr. N	[kN]		8,5	13,1	18,3	19,7	25,6
	C30/37	appr. N	[kN]		9,3	14,3	20,1	21,6	28,1
	C40/50	appr. N	[kN]		10,8	16,6	23,2	25,0	32,4
	C50/60	appr. N	[kN]		11,9	18,5	25,9	27,9	36,2
non-cracked concrete									
Approved Tensile Load	C20/25	appr. N	[kN]		10,9	16,8	23,4	25,2	32,7
	C25/30	appr. N	[kN]		11,9	18,7	26,2	28,2	36,6
	C30/37	appr. N	[kN]		11,9	20,5	27,1	30,9	40,1
	C40/50	appr. N	[kN]		11,9	23,7	27,1	35,6	46,3
	C50/60	appr. N	[kN]		11,9	25,7	27,1	39,8	51,8
cracked / non-cracked concrete									
Approved lateral load	$\geq$ C20/25	appr. V	[kN]		12,0	19,4	19,4	35,3 / 36,0	36,0
Approved lateral load, LG Version	$\geq$ C20/25	appr. V	[kN]		12,0	19,4	19,4	35,3 / 36,0	36,0
Approved bending moment		appr. M	[Nm]		34,3	60,0	60,0	152,0	152,0
Spacing and edge distance									
Depth of anchoring	$h_{ef} \geq$		[mm]		60	80	100	105	125
Characteristic center distance	$s_{cr,N}$		[mm]		180	240	300	315	375
Characteristic Edge Distance	$c_{cr,N}$		[mm]		90	120	150	157,5	187,5
cracked concrete									
Minimum component thickness	h_{min}		[mm]		100	110	130	150	170
Minimale Achsabstand	s_{min}		[mm]		40	40	50	50	60
Minimale Randabstand	c_{min}		[mm]		40	50	50	50	60
non-cracked concrete									
Minimum component thickness	h_{min}		[mm]		100	110	130	150	170
Minimum center distance	s_{min}		[mm]		50	55	80 ¹⁾	60	60
Minimum margin distance	c_{min}		[mm]		50	55	55 ¹⁾	60	60
Installation parameters									
Borehole diameter	d_o		[mm]		12	14	14	18	18
Through-hole in the attachment Surface-mount installation	$d_i \leq$		[mm]		12	14	14	18	18
Through-hole in the attachment Through-hole mounting ²⁾	$d_i \leq$		[mm]		14	16	16	20	20
Drilling hole depth	$h_o \geq$		[mm]		65	85	105	113	133
Tightening torque	$T_{inst} \leq$		[Nm]		15	25	30	50	50
Wrench size	SW		[mm]		17	19	19	24	24
Borehole fill volume, scaled to Cartridge 345			[mm]		4	5	6	8	9
Mortar requirement per borehole ³⁾			[ml]		6,1	8,6	9,2	12,6	14,5
Additional mortar required per drilling hole for Through-mounting for each 10 mm of attachment part thickness			[ml/10mm]		1,0	1,2	1,2	1,6	1,6
Number of drilling holes per cartridge ³⁾ VMZ 150			[Piece]		18 / 39	12 / 27	11 / 26	8 / 19	7 / 16
Number of drilling holes per cartridge ³⁾ VMZ 345			[Piece]		49	34	32	23	20
Number of drilling holes per cartridge ³⁾ VMZ 420			[Piece]		62	44	41	30	26

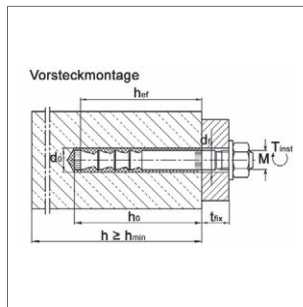
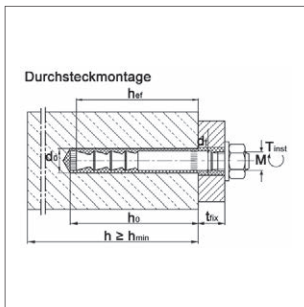
¹⁾ For edge clearance $c \geq 80$ mm, minimum Center distance $s_{min} = 55$ mm

²⁾ The annular gap in the attachment piece must be completely filled with mortar after installation

³⁾ Through-hole mounting only. For through-hole mounting, additional mortar is required to fill the through-hole.

Max. continuous temperature: +50°C / Max. short-term temperature: +80°C

» Load values conical stud VMZ-A A4

**Extract from Permissible Service Conditions of ETA-04/0092**

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Load values for different setting depths and dimensions are available upon request.

Loads and performance data				Conical stud VMZ-A4	60 M10	80 M12	100 M12	105 M16	125 M16
cracked concrete									
Approved Tensile Load	C20/25	appr. N	[kN]		7,6	11,7	16,4	17,6	22,9
	C25/30	appr. N	[kN]		8,5	13,1	18,3	19,7	25,6
	C30/37	appr. N	[kN]		9,3	14,3	20,1	21,6	28,1
	C40/50	appr. N	[kN]		10,8	16,6	23,2	25,0	32,4
	C50/60	appr. N	[kN]		11,9	18,5	25,9	27,9	36,2
non-cracked concrete									
Approved Tensile Load	C20/25	appr. N	[kN]		10,9	16,8	23,4	25,2	32,7
	C25/30	appr. N	[kN]		11,9	18,7	26,2	28,2	36,6
	C30/37	appr. N	[kN]		11,9	20,5	27,1	30,9	40,1
	C40/50	appr. N	[kN]		11,9	23,7	27,1	35,6	46,3
	C50/60	appr. N	[kN]		11,9	25,7	27,1	39,8	51,8
cracked / non-cracked concrete									
Approved lateral load	≥ C20/25	appr. V	[kN]		13,1	19,4	19,4	35,3 / 36,0	36,0
Certification for Lateral Load, LG Version	≥ C20/25	appr. V	[kN]		13,1	19,4	19,4	35,3 / 36,0	36,0
Permissible Bending Moment		appr. M	[Nm]		34,3	60,0	60,0	152,0	152,0
Spacing and edge distance									
Depth of anchoring		$h_{ef} \geq$	[mm]		60	80	100	105	125
Characteristic center distance		$s_{cr,N}$	[mm]		180	240	300	315	375
Characteristic edge distance		$c_{cr,N}$	[mm]		90	120	150	157,5	187,5
cracked concrete									
Minimum component thickness		h_{min}	[mm]		100	110	130	150	170
Minimum center distance		s_{min}	[mm]		40	40	50	50	60
Minimum margin distance		c_{min}	[mm]		40	50	50	50	60
non-cracked concrete									
Minimum component thickness		h_{min}	[mm]		100	110	130	150	170
Minimum center distance		s_{min}	[mm]		50	55	80 ¹⁾	60	60
Minimum margin distance		c_{min}	[mm]		50	55	55 ¹⁾	60	60
Installation parameters									
Borehole diameter		d_o	[mm]		12	14	14	18	18
Through-hole in the attachment Surface-mount installation		$d_i \leq$	[mm]		12	14	14	18	18
Through-hole in the attachment Through-hole mounting ²⁾		$d_i \leq$	[mm]		14	16	16	20	20
Drilling hole depth		$h_o \geq$	[mm]		65	85	105	113	133
Tightening torque		$T_{inst} \leq$	[Nm]		15	25	30	50	50
Wrench size		SW	[mm]		17	19	19	24	24
Borehole fill volume, scaled to Cartridge 345			[mm]		4	5	6	8	9
Mortar requirement per borehole ³⁾			[ml]		6,1	8,6	9,2	12,6	14,5
Additional mortar required per drilling hole for Through-mounting for each 10 mm of attachment part thickness			[ml/10 mm]		1,0	1,2	1,2	1,6	1,6
Number of drilling holes per cartridge ³⁾ VMZ 150			[Piece]		18 / 39	12 / 27	11 / 26	8 / 19	7 / 16
Number of drilling holes per cartridge ³⁾ VMZ 345			[Piece]		49	34	32	23	20
Number of drilling holes per cartridge ³⁾ VMZ 420			[Piece]		62	44	41	30	26

¹⁾ For edge clearance $c \geq 80$ mm, minimum Center distance $s_{min} = 55$ mm

²⁾ The annular gap in the attachment piece must be completely filled with mortar after installation

³⁾ Through-hole mounting only. For through-hole mounting, additional mortar is required to fill the through-hole.

Max. continuous temperature: +50°C / Max. short-term temperature: +80°C

» Load values VMU plus in concrete

**Extract from Permissible Service Conditions of the European Technical Assessment ETA-11/0415 for use in cracked and non-cracked concrete (option 1)**

Approved loads according to EN 1992-4 without the influence of center-to-center and edge distances in dry or wet concrete for the temperature range I -40°C bis +24°C (short-term up to +40°C) and for the temperature range II -40°C bis +50°C (short-term up to +80°C). Total safety factor as per $\Psi_{sus} = 1,0$ and the total safety factor (γ_M and γ_F) were taken into account. For further details and temperature ranges, see ETA.

Loads and performance data**Conical stud steel 5.8**

				M8	M10	M12	M16	M20	M24	M27	M30
Anchorage depth range	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 160	60 - 200	70 - 240	80 - 320	90 - 400	96 - 480	108 - 540	120 - 600
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	2,9-7,7	3,7-12,5	5,8-19,7	8,8-35,1	11,7-54,9	12,9-79,0	15,3-109,5	18,0-133,3
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	1,8-4,8	2,6-8,7	4,2-14,4	6,4-25,5	9,0-39,9	11,5-57,4	15,3-81,8	18,0-101,0
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	7,2-8,6	9,0-13,8	11,4-20,0	14,0-37,1	16,7-58,1	18,4-83,8	21,9-109,5	25,7-133,3
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	5,4-8,6	6,7-13,8	9,4-20,0	14,0-37,1	16,7-58,1	18,4-83,8	21,9-109,5	25,7-133,3
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	5,7-6,3	9,0-9,7	13,8-14,3	21,1-26,9	28,0-42,3	30,8-60,6	36,8-78,9	43,1-96,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	3,6-6,3	6,3-9,7	10,1-14,3	15,3-26,9	21,5-42,3	27,6-60,6	36,8-78,9	43,1-96,0
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	6,3	9,7	14,3	26,9	40,0-42,3	44,1-60,6	52,6-78,9	61,6-96,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	6,3	9,7	14,3	26,9	40,0-42,3	44,1-60,6	52,6-78,9	61,6-96,0

Conical stud steel 8.8

				M8	M10	M12	M16	M20	M24	M27	M30
Anchorage depth Range	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 160	60 - 200	70 - 240	80 - 320	90 - 400	96 - 480	108 - 540	120 - 600
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	2,9-7,7	3,7-12,5	5,8-19,7	8,8-35,1	11,7-54,9	12,9-79,0	15,3-118,1	18,0-145,9
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	1,8-4,8	2,6-8,7	4,2-14,4	6,4-25,5	9,0-39,9	11,5-57,4	15,3-81,8	18,0-101,0
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	7,2-13,8	9,0-21,9	11,4-31,9	14,0-59,5	16,7-93,3	18,4-134,3	21,9-175,2	25,7-202,0
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	5,4-13,8	6,7-21,9	9,4-31,9	14,0-57,4	16,7-89,8	18,4-122,1	21,9-136,3	25,7-145,9
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	5,7-8,6	9,0-13,1	13,8-19,4	21,1-36,0	28,0-56,0	30,8-80,6	36,8-105,1	43,1-128,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	3,6-8,6	6,3-13,1	10,1-19,4	15,3-36,0	21,5-56,0	27,6-80,6	36,8-105,1	43,1-128,0
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	8,6	13,1	19,4	33,5-36,0	40,0-56,0	44,1-80,6	52,6-105,1	61,6-128,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	8,6	13,1	19,4	33,5-36,0	40,0-56,0	44,1-80,6	52,6-105,1	61,6-128,0

Conical stud, Stainless steel A4-70, HCR-70

				M8	M10	M12	M16	M20	M24	M27	M30
Anchorage Depth Range	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 160	60 - 200	70 - 240	80 - 320	90 - 400	96 - 480	108 - 540	120 - 600
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	2,9-7,7	3,7-12,5	5,8-19,7	8,8-35,1	11,7-54,9	12,9-79,0	15,3-57,4	18,0-70,2
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	1,8-4,8	2,6-8,7	4,2-14,4	6,4-25,5	9,0-39,9	11,5-57,4	15,3-57,4	18,0-70,2
Certification of the permissible tensile load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. N [kN]	7,2-9,9	9,0-15,7	11,4-22,5	14,0-42,0	16,7-65,3	18,4-94,3	21,9-57,4	25,7-70,2
	50°C/80°C ¹⁾	C20/25	appr. N [kN]	5,4-9,9	6,7-15,7	9,4-22,5	14,0-42,0	16,7-65,3	18,4-94,3	21,9-57,4	25,7-70,2
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	5,7-6,0	9,0-9,2	13,7	21,1-25,2	28,0 39,4	30,8-56,8	34,5	42,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	3,6-6,0	6,3-9,2	10,1-13,7	15,3-25,2	21,5-39,4	27,6-56,8	34,5	42,0
Certification of the permissible transverse load for $h_{ef,min} - h_{ef,max}$ non-cracked concrete											
Temperature range	24°C/40°C ¹⁾	C20/25	appr. V [kN]	6,0	9,2	13,7	25,2	39,4	44,1-56,8	34,5	42,0
	50°C/80°C ¹⁾	C20/25	appr. V [kN]	6,0	9,2	13,7	25,2	39,4	44,1-56,8	34,5	42,0

Axle and Edge Clearances

Minimum component thickness for $h_{ef,min} - h_{ef,max}$	h_{min}	[mm]	100-190	100-230	100-270	116-356	138-448	152-536	172-604	190-670
Minimum center distance	s_{min}	[mm]	40	50	60	80	100	120	135	150
Minimum margin distance	c_{min}	[mm]	40	50	60	80	100	120	135	150

Installation Data

Borehole diameter	d_o	[mm]	10	12	14	18	24	28	32	35
Through-hole in the attachment part for pre-insertion assembly	$d_{\leq}$	[mm]	9	12	14	18	22	26	30	33
Through-hole in the attachment part for through-hole mounting	$d_{\leq}$	[mm]	12	14	16	20	25	30	33	38
Borehole depth range for $h_{ef,min} - h_{ef,max}$	h_o	[mm]	60-160	60-200	70-240	80-320	90-400	96-480	108-540	120-600
Torque during anchoring	$T_{inst} \leq$	[Nm]	10	20	40	80	120	160	180	200
Mortar requirement per 100 mm of drilling depth		[m]	6,53	8,16	9,82	13,61	26,71	32,25	42,03	48,70

¹⁾ Maximum long-term temperature / Maximum short-term temperature

Higher concrete strengths can result in higher allowable loads. For technical data on water-filled drilling holes, see the European Technical Assessment.

» Load values VMU plus in stonework


Extract from Permissible Service Conditions of the European Technical Assessment ETA-13/0909 for use in stonework

Approved loads without being affected by axial and edge distances to component edges. Butt joints and expansion joints were grouted. Temperature range: -40°C to +24°C (up to +40°C for short periods) — service category: dry/dry. The overall safety factor according to ETAG 029 (γ_M and γ_F) was taken into account. For further details and temperature ranges, see ETA.

Solid brick without a screen sleeve¹⁾

Mz-DF masonry bricks according to EN 771-1, bulk density ρ : 1.6 kg/dm ³ , minimum brick dimensions: 240 x 115 x 55 mm (e.g., Unipor)				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70										
Depth of anchoring	hef	[mm]		80	90	100	100	90	100	100
Center distance	scr	[mm]		240	270	300	300	270	300	300
Minimum center distance	smin	[mm]		120	120	120	120	120	120	120
Margin distance	ccr	[mm]		120	135	150	150	135	150	150
Minimum margin distance	cmin	[mm]		60	60	60	60	60	60	60
Appr. tension load for rock compressive strength	fb $\geq$ 10 N/mm ²	appr. N	[kN]	1,00	1,00	1,14	1,14	1,00	1,14	1,14
	fb $\geq$ 20 N/mm ²	appr. N	[kN]	1,29	1,57	1,71	1,71	1,57	1,71	1,71
	fb $\geq$ 28 N/mm ²	appr. N	[kN]	1,57	1,71	1,94	1,94	1,71	1,94	1,94
Appr. transverse load for rock pressure resistance	fb $\geq$ 10 N/mm ²	appr. V	[kN]	1,00	1,00	1,00	1,57	1,00	1,00	1,57
	fb $\geq$ 20 N/mm ²	appr. V	[kN]	1,43	1,43	1,43	2,29	1,43	1,43	2,29
	fb $\geq$ 28 N/mm ²	appr. V	[kN]	1,57	1,57	1,57	2,57	1,57	1,57	2,57
Drilling Methods				Hammer Drilling						

Calcium silicate brick KS-NF according to EN 771-2, bulk density ρ : 2.0 kg/dm³, minimum brick dimensions: 240 x 115 x 71 mm (e.g., Wemding)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Depth of anchoring		hef	[mm]	80	90	100	100	90	100	100
Center distance		scr	[mm]	240	270	300	300	270	300	300
Minimum center distance		smin	[mm]	120	120	120	120	120	120	120
Margin distance		ccr	[mm]	120	135	150	150	135	150	150
Minimum margin distance		cmin	[mm]	60	60	60	60	60	60	60
Appr. tension load for rock compressive strength	fb $\geq$ 10 N/mm ²	appr. N	[kN]	1,29	1,29	1,29	1,00	1,29	1,29	1,00
	fb $\geq$ 20 N/mm ²	appr. N	[kN]	1,71	1,71	1,71	1,43	1,71	1,71	1,43
	fb $\geq$ 27 N/mm ²	appr. N	[kN]	2,00	2,00	2,00	1,71	2,00	2,00	1,71
Appr. transverse load for rock pres- sure resistance	fb $\geq$ 10 N/mm ²	appr. V	[kN]	0,71	0,86	0,71	0,71	0,86	0,71	0,71
	fb $\geq$ 20 N/mm ²	appr. V	[kN]	1,14	1,29	1,14	1,14	1,29	1,14	1,14
	fb $\geq$ 27 N/mm ²	appr. V	[kN]	1,29	1,57	1,29	1,29	1,57	1,29	1,29
Drilling Methods				Hammer Drilling						

Solid block made of lightweight concrete LAC in accordance with EN 771-3, block bulk density ρ : 0.6 kg/dm³, minimum block dimensions: 300 x 123 x 248 mm (e.g., Bisotherm)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Depth of anchoring		hef	[mm]	80	90	100	100	90	100	100
Center distance		scr	[mm]	240	270	300	300	270	300	300
Minimum center distance		smin	[mm]	120	120	120	120	120	120	120
Margin distance		ccr	[mm]	120	135	150	150	135	150	150
Minimum margin distance		cmin	[mm]	60	60	60	60	60	60	60
Appr. tension load for rock compressive strength	fb $\geq$ 2 N/mm ²	appr. N	[kN]	0,86	0,86	1,0	0,86	0,86	1,0	0,86
	fb $\geq$ 2 N/mm ²	appr. V	[kN]	0,86	0,86	0,86	0,86	0,86	0,86	0,86
Drilling Methods				Turning and Drilling						

AAC6 aerated concrete according to EN 771-4, block density ρ : 0.6 kg/dm³, minimum block dimensions: 499 x 240 x 249 mm (e.g., Porit)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70			M8	M10	M12	M16	IG-M6	IG-M8	IG-M10	
Depth of anchoring	hef	[mm]	80	90	100	100	90	100	100	
Center distance	scr	[mm]	240	270	300	300	270	300	300	
Minimum center distance	smin	[mm]	100	100	100	100	100	100	100	
Margin distance	ccr	[mm]	120	135	150	150	135	150	150	
Minimum margin distance	cmin,N	[mm]	75	75	75	75	75	75	75	
	cmin,v,II ⁽²⁾	[mm]	75	75	75	75	75	75	75	
	cmin,v,I ⁻³⁾	[mm]	120	135	150	150	135	150	150	
Appr. tension load for rock compressive strength	fb $\geq$ 6 N/mm ²	appr. N	[kN]	0,89	1,43	1,79	2,32	1,43	1,79	2,32
Appr. transverse load for rock pressure resistance	fb $\geq$ 6 N/mm ²	appr. V	[kN]	2,14	3,57	3,57	3,57	2,86	3,57	3,57
Drilling Methods	Turning and Drilling									

Installation Dimensions for Solid Bricks (without Sieve Sleeve)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70			M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Borehole diameter	do	[mm]	10	12	14	18	12	14	18
Drilling hole depth	ho	[mm]	80	90	100	100	90	100	100
Minimum wall thickness	t _{min}	[mm]	110	120	130	130	120	130	130
Through-hole in the component to be connected	df $\leq$	[mm]	9	12	14	18	7	9	12
Tightening torque	T _{inst,max}	[Nm]	2 (14 for Mz-DF masonry bricks)						
Mortar required per drilling hole		[ml]	5,2	7,3	9,8	13,6	7,3	9,8	13,6
Drilling holes per VMU plus Cartridge: 280 / 300		[Piece]	46 / 50	33 / 36	24 / 26	18 / 19	33 / 36	24 / 26	18 / 19
Drilling holes per VMU plus Cartridge 345 / 410		[Piece]	59 / 71	42 / 51	31 / 38	22 / 27	42 / 51	31 / 38	22 / 27

¹⁾ Installation with a Sieve Sleeve is also certified; for technical specifications, see ETA-13/0909

²⁾ Minimum edge distance Cmin,v,II for transverse loads parallel to the free edge

³⁾ Minimum edge distance Cmin,v,II for transverse loads parallel to the free edge

» Load values VMU plus in stonework


Extract from Permissible Service Conditions of the European Technical Assessment ETA-13/0909 for use in stonework

Approved loads without being affected by axial and edge distances to component edges. Butt joints and expansion joints were grouted. Temperature range: -40°C to +24°C (up to +40°C for short periods) — service category: dry/dry. The overall safety factor according to ETAG 029 (γ_M and γ_F) was taken into account. For further details and temperature ranges, see ETA.

Perforated blocks with a sieve sleeve

Porotherm homebric perforated bricks according to EN 771-1, bulk density ρ : 0.7 kg/dm³, minimum brick dimensions: 500 x 200 x 299 mm (e.g., Wienerberger)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	16x85	20x85
Depth of anchoring	hef	[mm]	80	85	130	85	130	85	85
Center distance parallel to the bearing joint	scr,II	[mm]	500	500	500	500	500	500	500
Center distance perpendicular to the bearing joint	scr, I	[mm]	299	299	299	299	299	299	299
Minimum center distance	smin	[mm]	100	100	100	100	100	100	100
Margin distance	ccr	[mm]	100	100	100	120	120	100	120
Minimum margin distance	cmin ¹⁾	[mm]	100	100	100	120	120	100	120
Appr. tension load	fb $\geq$ 4 N/mm ²	appr. N [kN]	0,26	0,26	0,34	0,26	0,34	0,26	0,26
for compressive strength	fb $\geq$ 6 N/mm ²	appr. N [kN]	0,26	0,26	0,34	0,26	0,34	0,26	0,26
	fb $\geq$ 10 N/mm ²	appr. N [kN]	0,34	0,34	0,43	0,34	0,43	0,34	0,34
Appr. transverse load for compressive strength	fb $\geq$ 4 N/mm ²	appr. V [kN]	0,57	0,57	0,57	0,71	0,71	0,57	0,71
	fb $\geq$ 6 N/mm ²	appr. V [kN]	0,71	0,71	0,71	0,86	0,86	0,71	0,86
	fb $\geq$ 10 N/mm ²	appr. V [kN]	0,86	0,86	1,00	1,14	1,14	0,86	1,14

HLz-16-DF perforated brick according to EN 771-1, bulk density ρ : 0.8 kg/dm³, minimum brick dimensions: 497 x 240 x 238 mm (e.g., Unipor)

Conical stud: Steel: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10	
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	20x200	16x85	20x85
Depth of anchoring	hef	[mm]	80	85	130	85	130	200	85	85
Center distance parallel to the bearing joint	scr,II	[mm]	497	497	497	497	497	497	497	497
Center distance perpendicular to the bearing joint	scr, I_	[mm]	238	238	238	238	238	238	238	238
Minimum center distance	smin	[mm]	100	100	100	100	100	100	100	100
Margin distance	ccr	[mm]	100	100	100	120	120	120	100	120
Minimum margin distance	cmin ¹⁾	[mm]	100	100	100	120	120	120	100	120
Appr. tension load for rock compressive strength	fb $\geq$ 6 N/mm ²	appr. N	[kN]	0,71	0,71	1,00	0,71	1,00	0,71	0,71
	fb $\geq$ 8 N/mm ²	appr. N	[kN]	0,86	0,86	1,29	0,86	1,29	1,29	0,86
	fb $\geq$ 12 N/mm ²	appr. N	[kN]	1,00	1,00	1,43	1,00	1,43	1,43	1,00
	fb $\geq$ 14 N/mm ²	appr. N	[kN]	1,14	1,14	1,57	1,14	1,57	1,57	1,14
Appr. transverse load for com- pressive strength	fb $\geq$ 6 N/mm ²	appr. V	[kN]	0,71	1,29	1,29	1,43	1,71	1,71	1,29
	fb $\geq$ 8 N/mm ²	appr. V	[kN]	0,86	1,57	1,57	1,71	2,00	2,00	1,57
	fb $\geq$ 12 N/mm ²	appr. V	[kN]	1,14	1,86	1,86	2,00	2,57	2,57	1,86
	fb $\geq$ 14 N/mm ²	appr. V	[kN]	1,14	1,86	1,86	2,00	2,57	2,57	1,86

Doppio Uni perforated bricks according to EN 771-1, bulk density ρ : 0.9 kg/dm³, minimum brick dimensions: 250x120x120 mm (e.g., Wienerberger)

Conical stud: Steel: ≥ FKL 5.8, A4, HCR: ≥ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10	
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	20x200	16x85	20x85
Depth of anchoring	hef	[mm]	80	85	130	85	130	200	85	85
Center distance parallel to the bearing joint	scr,II	[mm]	250	250	250	250	250	250	250	250
Center distance perpendicular to the bearing joint	scr, I	[mm]	120	120	120	120	120	120	120	120
Minimum center distance parallel to the bearing joint	smin,II	[mm]	100	100	100	100	100	100	100	100
Minimum center distance perpendicular to the bearing joint	smin, I	[mm]	120	120	120	120	120	120	120	120
Margin distance	ccr	[mm]	100	100	100	120	120	120	100	120
Minimum margin distance	cmin1 ¹⁾	[mm]	60	60	60	60	60	60	60	60
Appr. tension load for compressive strength	fb ≥ 10 N/mm²	appr. N [kN]	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17
	fb ≥ 16 N/mm²	appr. N [kN]	0,21	0,21	0,21	0,21	0,21	0,21	0,21	0,21
	fb ≥ 20 N/mm²	appr. N [kN]	0,26	0,26	0,26	0,26	0,26	0,26	0,26	0,26
	fb ≥ 28 N/mm²	appr. N [kN]	0,34	0,34	0,34	0,34	0,34	0,34	0,34	0,34
Appr. transverse load for com- pressive strength	fb ≥ 10 N/mm²	appr. V [kN]	0,43	0,43	0,43	0,43	0,43	0,43	0,43	0,43
	fb ≥ 16 N/mm²	appr. V [kN]	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57
	fb ≥ 20 N/mm²	appr. V [kN]	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57
	fb ≥ 28 N/mm²	appr. V [kN]	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71

KSL-3DF sand-lime perforated block according to EN 771-2, block bulk density ρ : 1.4 kg/dm³, minimum block dimensions: 240 x 175 x 113 mm (e.g., Wemding)

Conical stud: $\geq$ FKL 5.8, A4, HCR: $\geq$ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10		
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	20x200	16x85	20x85	
Depth of anchoring	hef	[mm]	80	85	130	85	130	200	85	85	
Center distance parallel to the bearing joint	scr,II	[mm]	240	240	240	240	240	240	240	240	
Center distance perpendicular to the bearing joint	scr, I	[mm]	120	120	120	120	120	120	120	120	
Minimum center distance	smin	[mm]	120	120	120	120	120	120	120	120	
Margin distance	ccr	[mm]	100	100	100	120	120	120	100	120	
Minimum margin distance	cmin	[mm]	60	60	60	60	60	60	60	60	
Appr. tension load	fb $\geq$ 8 N/mm ²	appr. N	[kN]	0,43	0,43	0,43	1,29	1,29	1,29	0,43	1,29
for compressive	fb $\geq$ 12 N/mm ²	appr. N	[kN]	0,57	0,57	0,71	1,71	1,71	1,71	0,57	1,71
Strength	fb $\geq$ 14 N/mm ²	appr. N	[kN]	0,71	0,71	0,71	1,86	1,86	1,86	0,71	1,86
Appr. transverse	fb $\geq$ 8 N/mm ²	appr. V	[kN]	0,71	1,14	1,14	1,14	1,14	1,14	1,14	1,14
load for com-	fb $\geq$ 12 N/mm ²	appr. V	[kN]	0,86	1,29	1,29	1,29	1,29	1,29	1,29	1,29
pressive strength	fb $\geq$ 14 N/mm ²	appr. V	[kN]	1,00	1,71	1,71	1,71	1,71	1,71	1,71	1,71

¹⁾ For VRK, cmin in accordance with ETAG 029, appendix C

» Load values VMU plus in stonework


Extract from Permissible Service Conditions of the European Technical Assessment ETA-13/0909 for use in stonework

Approved loads without being affected by axial and edge distances to component edges. Butt joints and expansion joints were grouted. Temperature range: -40°C to +24°C (up to +40°C for short periods) — service category: dry/dry. The overall safety factor according to ETAG 029 (γ_M and γ_F) was taken into account. For further details and temperature ranges, see ETA.

Perforated blocks with a sieve sleeve

KSL-12DF sand-lime perforated block according to EN 771-2, block bulk density: 1.4 kg/dm³, minimum block dimensions: 498 x 175 x 238 mm (e.g., Wemding)

Conical stud: Steel: FKL 5.8, A4, HCR: FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	16x85	20x85
Depth of anchoring	hef	[mm]	80	85	130	85	130	85	85
Center distance parallel to the bearing joint	scr,II	[mm]	498	498	498	498	498	498	498
Center distance perpendicular to the bearing joint	scr, I_	[mm]	238	238	238	238	238	238	238
Minimum center distance	smin	[mm]	120	120	120	120	120	120	120
Margin distance	ccr	[mm]	100	100	100	120	120	100	120
Minimum margin distance	cmin ¹⁾	[mm]	100	100	100	120	120	100	120
Appr. tension load for	fb ≥ 10 N/mm²	appr. N	0,17	0,17	0,71	0,43	0,71	0,17	0,43
compressive	fb ≥ 12 N/mm²	appr. N	0,21	0,21	0,86	0,43	0,86	0,21	0,43
strength	fb ≥ 16 N/mm²	appr. N	0,26	0,26	1,14	0,57	1,14	0,26	0,57
Appr. transverse	fb ≥ 10 N/mm²	appr. V	0,71	1,57	1,57	1,57	1,57	1,57	1,57
load for compressive	fb ≥ 12 N/mm²	appr. V	0,86	1,86	1,86	1,86	1,86	1,86	1,86
strength of stone	fb ≥ 16 N/mm²	appr. V	1,00	2,29	2,29	2,29	2,29	2,29	2,29

Hollow block made of lightweight concrete, Bloc creux B40, according to EN 771-3; block density: 0.8 kg/dm³; minimum block dimensions: 494 x 200 x 190 mm (e.g., Sepa)

Conical stud: Steel: ≥ FKL 5.8, A4, HCR: ≥ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	16x85	20x85
Depth of anchoring	hef	[mm]	80	85	130	85	130	85	85
Center distance parallel to the bearing joint	scr,II	[mm]	494	494	494	494	494	494	494
Center distance perpendicular to the bearing joint	scr, I_	[mm]	190	190	190	190	190	190	190
Minimum center distance	smin	[mm]	100	100	100	100	100	100	100
Margin distance	ccr	[mm]	100	100	100	120	120	100	120
Minimum margin distance	cmin ¹⁾	[mm]	100	100	100	120	120	100	120
Appr. tension load									
for rock compressive	fb ≥ 4 N/mm²	appr. N	0,34	0,34	0,34	0,34	0,34	0,34	0,34
strength									
Appr. transverse									
load for compressive	fb ≥ 4 N/mm²	appr. V	0,86	0,86	0,86	0,86	0,86	0,86	0,86
strength									

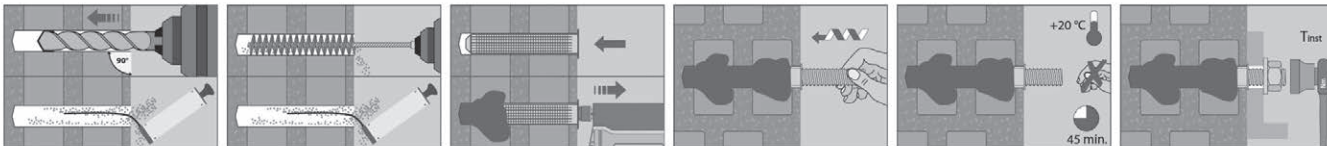
Installation data for perforated blocks with Sieve Sleeves

Conical stud: Steel: ≥ FKL 5.8, A4, HCR: ≥ FKL 70			M8	M8 / M10		M12 / M16		IG-M6	IG-M8 / IG-M10	
VM-SH sieve sleeves			12x80	16x85	16x130	20x85	20x130	20x200	16x85	20x85
Borehole diameter	do	[mm]	12	16	16	20	20	20	16	20
Drilling hole depth	ho	[mm]	85	90	135	90	135	205	90	90
Minimum wall thickness	hmin	[mm]	115	115	145	115	175	240	115	115
Through-hole in the component to be connected	df ≤	[mm]	9	9 / 12	9 / 12	14 / 18	14 / 18	14 / 18	7	9 / 12
Tightening torque	T _{inst,max}	[Nm]	2							
Mortar required per drilling hole		[ml]	11,2	24,9	38,0	41,1	62,9	96,7	24,9	41,1
Number of drilling holes per VMU plus 280 / 300 cartridge	h _{min}	[Piece]	21 / 23	9 / 10	6 / 6	5 / 6	3 / 4	2 / 2	9 / 10	5 / 6
Number of drilling holes per VMU plus 345 / 410 cartridge		[Piece]	27 / 33	12 / 14	8 / 9	7 / 9	4 / 5	3 / 3	12 / 14	7 / 9

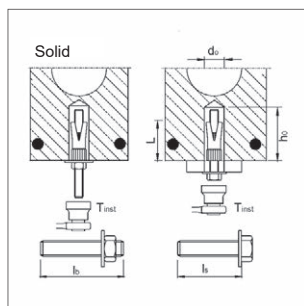
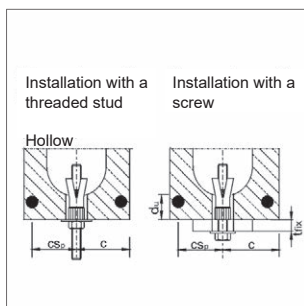
Drilling Methods

Turning and Drilling

¹⁾ For VRk,c: cmin in accordance with ETAG 029, appendix C

Installation in a perforated brick


» Load values Hollow core anchor Easy



Extract from Permissible Service Conditions of Z-21.1-1785

Anchor load-bearing capacities, shear forces independent of axis and edge distances. Overall safety factor according to ETAG 001 taken into account (γ_M and γ_F).

t_{fx} = Fixture thickness
 c_{sp} = Spacing to tension wire

b_{si} = Width of web
 b_h = Width of hollow
 d_u = Web thickness
 c = Edge distance

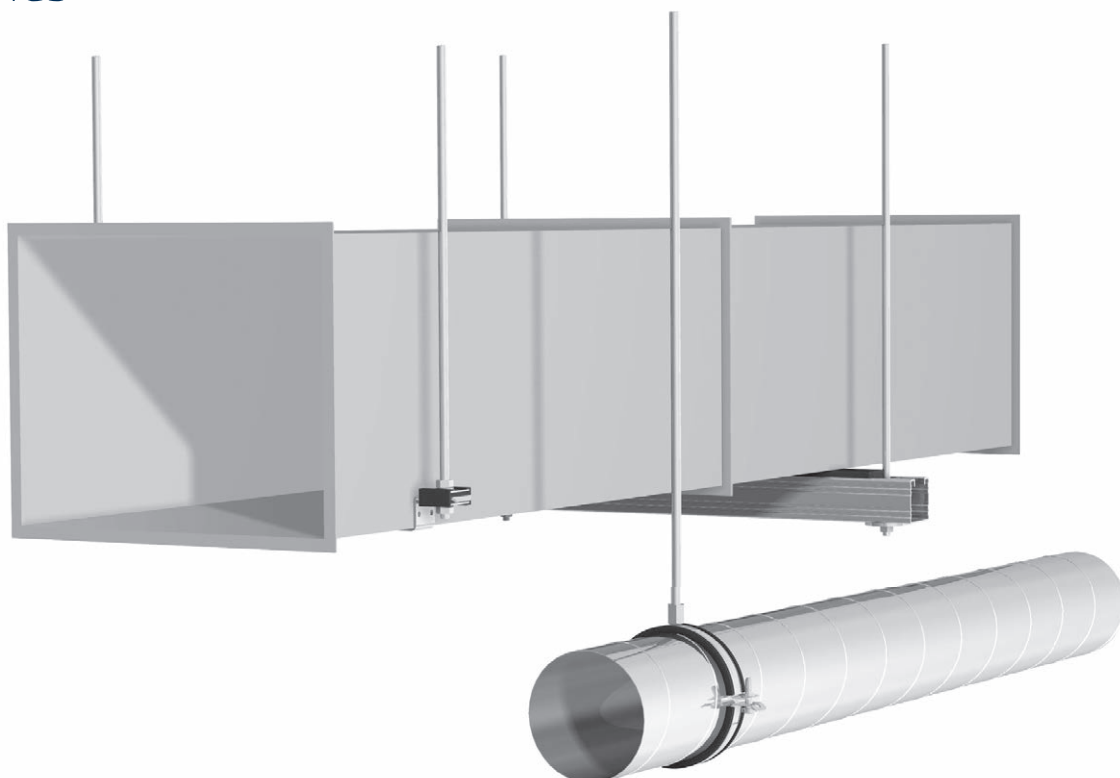
Hollow core anchor Easy				M 6				M 8				M 10				M 12					
Pre-stressed hollow concrete slabs $\geq$ C45/55																					
Web thickness	d _u	[mm]	$\geq$ 25	30	40	50		25	30	40	50		25	30	40	50		25	30	40	50
Single anchor																					
approved loads ¹⁾ (for $c \geq c_{cr}$)	F ¹⁾	[kN]	0,7	0,9	2,0	2,9		0,7	0,9	2,0	3,6		0,9	1,2	3,0	3,6		1,0	1,2	3,0	4,3
edge distance	c _{cr}	[mm]			150					150					150					150	
approved loads ¹⁾ (for c _{min})	F ¹⁾	[kN]	0,35	0,8	1,8	2,4		0,35	0,8	1,8	3,0		0,8	1,0	2,7	3,0		0,8	1,0	2,7	3,6
minimum edge distance	c _{min}	[mm]			100					100					100					100	
spacing	scr	[mm]			300					300					300					300	
Pair of anchors ²⁾																					
approved loads ¹⁾ (for $c \geq c_{cr}$)	F ¹⁾	[kN]	0,7	1,4	2,6	3,9		0,7	1,4	2,6	4,8		1,1	2,0	4,8	4,8		1,2	2,0	4,8	5,7
minimum spacing	s _{min}	[mm]	70	80	100	100		70	80	100	100		70	80	100	100		70	80	100	100
edge distance	c _{cr}	[mm]			150					150					150					150	
approved loads ¹⁾ (for c _{min})	F ¹⁾	[kN]	0,35	1,25	2,35	3,2		0,35	1,25	2,35	4,0		0,9	1,8	4,3	4,3		1,0	1,8	4,3	4,8
minimum spacing	s _{min}	[mm]	70	80	100	100		70	80	100	100		70	80	100	100		70	80	100	100
minimum edge distance	c _{min}	[mm]			100					100					100					100	
Approved bending moments																					
stud / screw, steel 5.8		[Nm]			-					10,7					21,4					37,4	
stud / screw, steel 8.8		[Nm]			4,4					17,1					34,2					59,8	
Installation parameters																					
length of sleeve (without cone)	L	[mm]			30					35					40					45	
minimum length of screw	min l _s	[mm]			42 + tfix					47 + tfix					55 + tfix					61 + tfix	
minimum length of stud	min l _b	[mm]			47 + tfix					53 + tfix					63 + tfix					71 + tfix	
minimum strength of stud / screw					8.8					5.8					5.8					5.8	
drill hole diameter	d _o	[mm]			10					12					16					18	
clearance hole in the fixture	d _f	[mm]			7					9					12					14	
depth of drill hole	h _o	[mm]			50					55					60					70	
installation torque	T _{inst}	[Nm]			10					20					30					40	

¹⁾ For edge distance $c_{min} < c \leq c_{cr}$ can be determined by linear interpolation.

²⁾ Approved loads valid for double anchorage. Recommended load of the most stressed anchor may not exceed the recommended load of a single anchor. On double anchorages with spacing $s_{min} < s \leq s_{cr}$ the recommended load may be determined by linear interpolation, assuming the limiting value $s = s_{cr}$ for the double anchorage exposed to tension is twice the recommended load of a single anchor.

VENTILATION

ventilation pipe clamps, sound absorption elements, duct holders, console sets and accessories



08

MEFA mounting systems for ventilation



Ventilation pipe clamp VENTUS



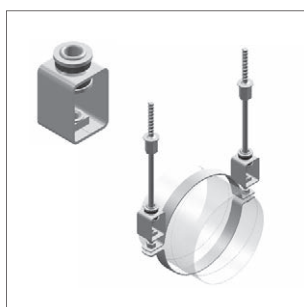
Ventilation pipe clamp lined



Ventilation pipe clamp



Ventilation rail and accessories



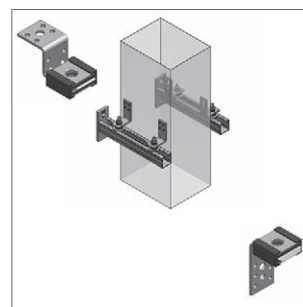
Sound absorption element DHL



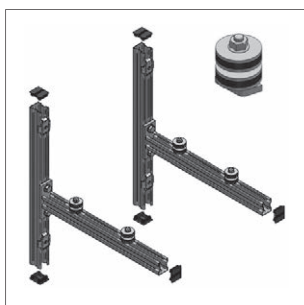
Ducting strap



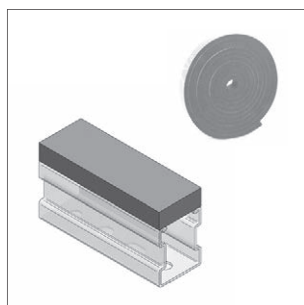
Wire rope LFP



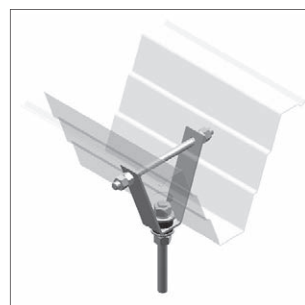
Duct holder



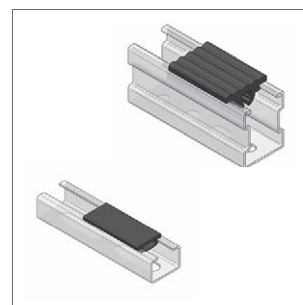
Console-set, Sound absorption element



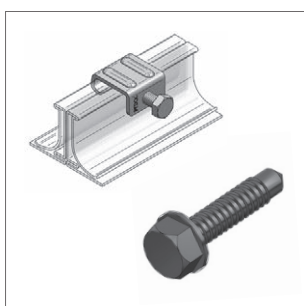
Duct linings



Trapeze hanger



C-profile linings



Duct clamp, Self-drilling screw



Duct sealing tape, Cold shrink tape



Duct sealing compound

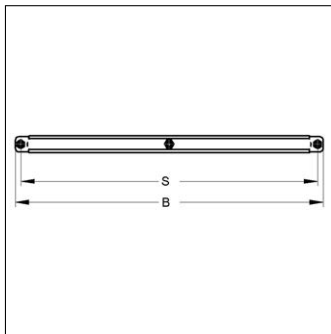
i Tightening torque of locking screws on pipe clamps see chapter 15.

» Ventus ventilation pipe clamp, lined

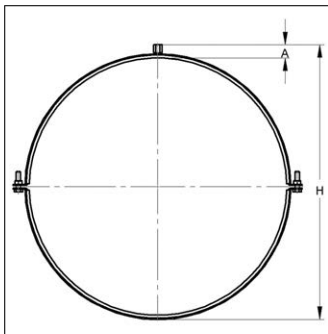
EPDM



Ventus ventilation pipe clamp



Ventus ventilation pipe clamp



Ventus ventilation pipe clamp



Specification

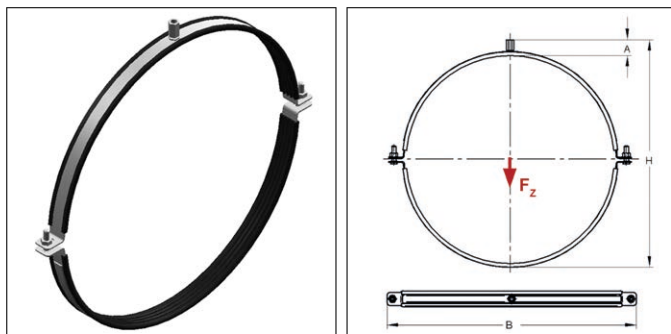
Application area: Pipe clamp for fastening ventilation pipes.
 Closure: Snap-in closure

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 3 mm

Nominal width DN	OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
80	81	M8	M6	20x1,5	0,75	102	15	127	109	0,119	50	0449931080
100	101	M8	M6	20x1,5	0,75	122	15	147	130	0,141	50	0449931100
125	126	M8	M6	20x1,5	0,75	147	15	173	155	0,166	50	0449931125
140	141	M8	M6	20x1,5	0,75	162	15	188	170	0,179	25	0449931140
150	151	M8	M6	20x1,5	0,75	172	15	198	180	0,195	25	0449931150
160	161	M8	M6	20x1,5	0,75	182	15	208	190	0,198	25	0449931160
180	181	M8	M6	20x1,5	0,75	202	15	228	210	0,220	25	0449931180
200	201	M8	M6	25x1,5	1,00	222	16	248	230	0,236	25	0449931200
224	225	M8	M8	25x1,5	1,00	248	16	281	263	0,356	10	0449931224
250	251	M8	M8	25x1,5	1,00	274	16	307	289	0,424	10	0449931250
280	281	M8	M8	25x1,5	1,00	304	16	337	319	0,426	10	0449931280
300	302	M8	M8	25x1,5	1,00	325	16	358	340	0,452	10	0449931300
315	317	M8	M8	25x1,5	1,00	340	16	373	355	0,465	10	0449931315
355	357	M8	M8	25x1,5	1,00	380	16	413	395	0,521	10	0449931355

» Doppio ventilation pipe clamp, lined



Doppio Ventilation pipe clamp >= DN 224

Doppio Ventilation pipe clamp



Specification

Application area: Pipe clamp for fastening ventilation pipes.

Technical data

Material:	Steel
Surface:	galvanized
Sound insulation lining:	Rubber EPDM
Colour sound insulation lining:	black
Temperature resistance:	-35 up to 100 °C
Insulation thickness:	4,5 mm

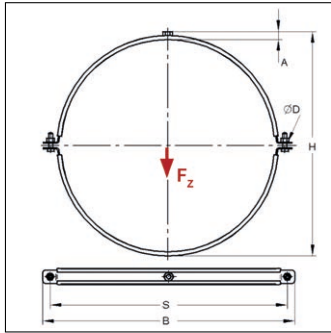
Nominal width DN	OD [mm]	Closure	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
400	407	Screw coupling	M8/M10	M8	25x1,5	1,32	434	17	458	0,631	10	0449400
450	457	Screw coupling	M8/M10	M8	25x1,5	1,32	484	17	508	0,698	10	0449450
500	507	Screw coupling	M8/M10	M8	25x2,5	1,97	536	17	560	1,10	10	0449500
560	567	Screw coupling	M8/M10	M8	25x2,5	1,97	596	17	620	1,22	10	0449560
600	607	Screw coupling	M8/M10	M8	25x2,5	1,97	636	17	660	1,30	10	0449600
630	638	Screw coupling	M8/M10	M8	25x2,5	1,97	666	17	690	1,36	10	0449630

» Ventilation pipe clamp, lined

TPE



Ventilation pipe clamp, lined



Ventilation pipe clamp, sound-insulated



Specification

Application area: Pipe clamp for fastening ventilation pipes.
 Closure: Nut / closure screw

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 6 mm

Nominal width DN	OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Hole-Ø D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
71	73	M8	M8	20x2,0	0,8	103	22	145	120	8,5	0,205	1	0430711
80	82	M8	M8	20x2,0	0,8	112	22	154	129	8,5	0,215	1	0430801
90	92	M8	M8	20x2,0	0,8	122	22	164	139	8,5	0,231	1	0430901
100	103	M8	M8	20x2,0	0,8	133	22	175	150	8,5	0,245	1	0431001
112	115	M8	M8	20x2,0	0,8	145	22	187	162	8,5	0,262	1	0431121
125	128	M8	M8	20x2,0	0,8	158	22	200	175	8,5	0,282	1	0431251
140	143	M8	M8	20x2,0	0,8	173	22	215	190	8,5	0,304	1	0431401
150	153	M8	M8	20x2,0	0,8	183	22	225	200	8,5	0,318	1	0431501
160	163	M8	M8	20x2,0	0,8	193	22	235	210	8,5	0,334	1	0431601
180	183	M8	M8	20x2,5	1,5	214	23	255	230	8,5	0,417	1	0431801
200	203	M8	M8	20x2,5	1,5	233	23	275	250	8,5	0,452	1	0432001
224	227	M8	M8	20x2,5	1,5	258	23	299	274	8,5	0,493	1	0432241
250	253	M8	M8	20x2,5	1,5	283	23	325	300	8,5	0,539	1	0432501
280	283	M8	M8	25x2,5	2,0	315	23	357	332	8,5	0,708	1	0432801
300	304	M8	M8	25x2,5	2,0	337	23	378	353	8,5	0,751	1	0433001
315	319	M8	M8	25x2,5	2,0	352	23	393	368	8,5	0,780	1	0433151
355	359	M8	M8	25x2,5	2,0	392	23	433	408	8,5	0,865	1	0433551
400	404	M8	M8	25x2,5	2,0	437	23	478	453	8,5	0,959	1	0434001
450	454	M8	M8	25x2,5	2,0	487	23	528	503	8,5	1,07	1	0434501
500	504	M8	M8	25x2,5	2,0	537	23	578	553	8,5	1,17	1	0435001
560	564	M8	M8	25x2,5	2,0	597	23	638	613	8,5	1,29	1	0435601
71	73	M10	M8	20x2,0	0,8	105	24	145	120	8,5	0,215	1	0430712
80	82	M10	M8	20x2,0	0,8	114	24	154	129	8,5	0,226	1	0430802
90	92	M10	M8	20x2,0	0,8	124	24	164	139	8,5	0,242	1	0430902
100	103	M10	M8	20x2,0	0,8	135	24	175	150	8,5	0,255	1	0431002
112	115	M10	M8	20x2,0	0,8	147	24	187	162	8,5	0,273	1	0431122
125	128	M10	M8	20x2,0	0,8	160	24	200	175	8,5	0,292	1	0431252
140	143	M10	M8	20x2,0	0,8	175	24	215	190	8,5	0,315	1	0431402
150	153	M10	M8	20x2,0	0,8	185	24	225	200	8,5	0,329	1	0431502
160	163	M10	M8	20x2,0	0,8	195	24	235	210	8,5	0,346	1	0431602

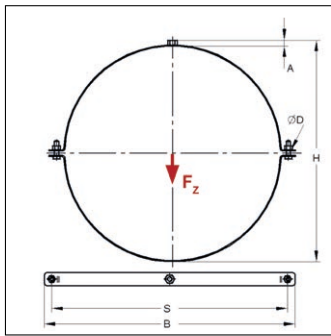
» Ventilation pipe clamp, lined

Nominal width DN	OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F _Z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Hole-Ø D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
180	183	M10	M8	20x2,5	1,5	215	25	255	230	8,5	0,428	1	0431802
200	203	M10	M8	20x2,5	1,5	235	25	275	250	8,5	0,463	1	0432002
224	227	M10	M8	20x2,5	1,5	259	25	299	274	8,5	0,504	1	0432242
250	253	M10	M8	20x2,5	1,5	285	25	325	300	8,5	0,550	1	0432502
280	283	M10	M8	25x2,5	2,0	317	25	357	332	8,5	0,719	1	0432802
300	304	M10	M8	25x2,5	2,0	337	25	378	353	8,5	0,761	1	0433002
315	319	M10	M8	25x2,5	2,0	354	25	393	368	8,5	0,791	1	0433152
355	359	M10	M8	25x2,5	2,0	394	25	433	408	8,5	0,876	1	0433552
400	404	M10	M8	25x2,5	2,0	439	25	478	453	8,5	0,970	1	0434002
450	454	M10	M8	25x2,5	2,0	489	25	528	503	8,5	1,08	1	0434502
500	504	M10	M8	25x2,5	2,0	539	25	578	553	8,5	1,18	1	0435002
560	564	M10	M8	25x2,5	2,0	599	25	638	613	8,5	1,31	1	0435602
224	227	without		20x2,5	1,5	245		299	274	8,5	0,437	1	0432240
250	253	without		20x2,5	1,5	271		325	300	8,5	0,484	1	0432500
280	283	without		25x2,5	2,0	303		356	331	8,5	0,652	1	0432800
300	304	without		25x2,5	2,0	325		378	353	8,5	0,696	1	0433000
315	319	without		25x2,5	2,0	340		393	368	8,5	0,725	1	0433150
355	359	without		25x2,5	2,0	380		433	408	8,5	0,810	1	0433550
400	404	without		25x2,5	2,0	425		478	453	8,5	0,903	1	0434000
450	454	without		25x2,5	2,0	475		528	503	8,5	1,01	1	0434500
500	504	without		25x2,5	2,0	525		578	553	8,5	1,11	1	0435000
560	564	without		25x2,5	2,0	585		638	613	8,5	1,24	1	0435600
600	605	without		25x2,5	2,0	625		678	653	8,5	1,32	1	0436000
630	635	without		25x3,0	2,0	657		711	686	10,5	1,60	1	0436300
710	715	without		25x3,0	2,0	737		791	766	10,5	1,79	1	0437100
800	805	without		25x3,0	2,0	828		882	857	10,5	2,01	1	0438000
900	905	without		30x3,0	2,0	928		982	957	10,5	2,75	1	0439000
1000	1006	without		30x3,0	2,0	1030		1084	1059	10,5	3,04	1	0440000
1120	1126	without		30x3,0	2,0	1150		1204	1179	10,5	3,39	1	0441200
1250	1256	without		30x3,0	2,0	1280		1334	1309	10,5	3,77	1	0442500

» Ventilation pipe clamp, unlined



Ventilation pipe clamp



Ventilation pipe clamp

Specification

Application area: Pipe clamp for fastening ventilation pipes.

Closure: Nut / closure screw

Technical data

Material: Steel

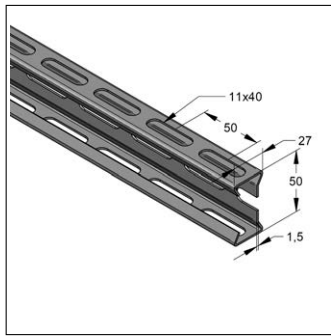
Surface: galvanized

Sound insulation lining: unlined

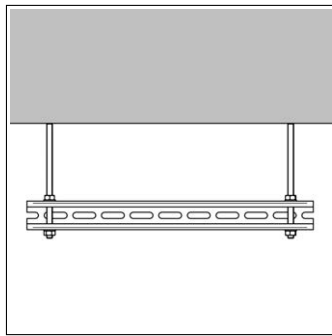
Nominal width DN	OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Hole-Ø D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
71	73	M8	M8	20x2,0	1,5	91	16	133	108	8,5	0,155	1	0430721
80	82	M8	M8	20x2,0	1,5	100	16	142	117	8,5	0,164	1	0430811
90	92	M8	M8	20x2,0	1,5	110	16	152	127	8,5	0,174	1	0430911
100	103	M8	M8	20x2,0	1,5	121	16	163	138	8,5	0,185	1	0431011
112	115	M8	M8	20x2,0	1,5	133	16	175	150	8,5	0,197	1	0431131
125	128	M8	M8	20x2,0	1,5	146	16	188	163	8,5	0,210	1	0431261
140	143	M8	M8	20x2,0	1,5	161	16	203	178	8,5	0,225	1	0431411
150	153	M8	M8	20x2,0	1,5	171	16	213	188	8,5	0,235	1	0431511
160	163	M8	M8	20x2,0	1,5	181	16	223	198	8,5	0,245	1	0431611
180	183	M8	M8	20x2,5	2,0	202	17	243	218	8,5	0,318	1	0431811
200	203	M8	M8	20x2,5	2,0	222	17	263	238	8,5	0,344	1	0432011
224	227	M8	M8	20x2,5	2,0	246	17	287	262	8,5	0,374	1	0432251
250	253	M8	M8	20x2,5	2,0	272	17	313	288	8,5	0,406	1	0432511
280	283	M8	M8	25x2,5	2,0	302	17	343	318	8,5	0,542	1	0432811
300	304	M8	M8	25x2,5	2,0	342	17	367	323	8,5	0,572	1	0433011
315	319	M8	M8	25x2,5	2,0	338	17	382	357	8,5	0,596	1	0433161
355	359	M8	M8	25x2,5	2,0	378	17	422	397	8,5	0,658	1	0433561
400	404	M8	M8	25x2,5	2,0	423	17	467	442	8,5	0,730	1	0434011
450	454	M8	M8	25x2,5	2,0	473	17	517	492	8,5	0,811	1	0434511
500	504	M8	M8	25x2,5	2,0	523	17	567	542	8,5	0,888	1	0435011
560	564	M8	M8	25x2,5	2,0	583	17	627	602	8,5	0,982	1	0435611
71	73	M10	M8	20x2,0	1,5	93	18	133	108	8,5	0,166	1	0430722
80	82	M10	M8	20x2,0	1,5	102	18	142	117	8,5	0,175	1	0430812
90	92	M10	M8	20x2,0	1,5	112	18	152	127	8,5	0,185	1	0430912
100	103	M10	M8	20x2,0	1,5	123	18	163	138	8,5	0,195	1	0431012
112	115	M10	M8	20x2,0	1,5	135	18	175	150	8,5	0,207	1	0431132
125	128	M10	M8	20x2,0	1,5	148	18	188	163	8,5	0,220	1	0431262
140	143	M10	M8	20x2,0	1,5	163	18	203	178	8,5	0,236	1	0431412
150	153	M10	M8	20x2,0	1,5	173	18	213	188	8,5	0,245	1	0431512
160	163	M10	M8	20x2,0	1,5	183	18	223	198	8,5	0,255	1	0431612
180	183	M10	M8	20x2,5	2,0	204	19	243	218	8,5	0,328	1	0431812
200	203	M10	M8	20x2,5	2,0	224	19	263	238	8,5	0,354	1	0432012
224	227	M10	M8	20x2,5	2,0	248	19	287	262	8,5	0,384	1	0432252
250	253	M10	M8	20x2,5	2,0	274	19	313	288	8,5	0,416	1	0432512
280	283	M10	M8	25x2,5	2,0	306	19	343	318	8,5	0,552	1	0432812
300	304	M10	M8	25x2,5	2,0	327	19	367	342	8,5	0,582	1	0433012
315	319	M10	M8	25x2,5	2,0	342	19	382	357	8,5	0,606	1	0433162

» Ventilation pipe clamp, unlined

Nominal width DN	OD [mm]	Connection	Closure screw	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Hole-Ø D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
355	359	M10	M8	25x2,5	2,0	382	19	422	397	8,5	0,668	1	0433562
400	404	M10	M8	25x2,5	2,0	427	19	467	442	8,5	0,740	1	0434012
450	454	M10	M8	25x2,5	2,0	477	19	517	492	8,5	0,820	1	0434512
500	504	M10	M8	25x2,5	2,0	527	19	567	542	8,5	0,898	1	0435012
560	564	M10	M8	25x2,5	2,0	587	19	627	602	8,5	0,992	1	0435612
71	73	without		20x2,0	1,5	79		133	108	8,5	0,0990	1	0430720
80	82	without		20x2,0	1,5	88		142	117	8,5	0,108	1	0430810
90	92	without		20x2,0	1,5	98		152	127	8,5	0,119	1	0430910
100	103	without		20x2,0	1,5	109		163	138	8,5	0,129	1	0431010
112	115	without		20x2,0	1,5	121		175	150	8,5	0,141	1	0431130
125	128	without		20x2,0	1,5	134		188	163	8,5	0,154	1	0431260
140	143	without		20x2,0	1,5	149		203	178	8,5	0,169	1	0431410
150	153	without		20x2,0	1,5	159		213	188	8,5	0,179	1	0431510
160	163	without		20x2,0	1,5	169		223	198	8,5	0,189	1	0431610
180	183	without		20x2,5	2,0	189		243	218	8,5	0,262	1	0431810
200	203	without		20x2,5	2,0	209		263	238	8,5	0,288	1	0432010
224	227	without		20x2,5	2,0	233		287	262	8,5	0,318	1	0432250
250	253	without		20x2,5	2,0	259		313	288	8,5	0,350	1	0432510
280	283	without		25x2,5	2,0	291		345	320	8,5	0,486	1	0432810
300	304	without		25x2,5	2,0	313		367	342	8,5	0,524	1	0433010
315	319	without		25x2,5	2,0	328		382	357	8,5	0,540	1	0433160
355	359	without		25x2,5	2,0	368		422	397	8,5	0,602	1	0433560
400	404	without		25x2,5	2,0	413		467	442	8,5	0,674	1	0434010
450	454	without		25x2,5	2,0	463		517	492	8,5	0,754	1	0434510
500	504	without		25x2,5	2,0	513		567	542	8,5	0,832	1	0435010
560	564	without		25x2,5	2,0	573		627	602	8,5	0,926	1	0435610
600	605	without		25x2,5	2,0	610		665	640	8,5	0,988	1	0436010
630	635	without		25x3,0	2,0	645		699	674	10,5	1,24	1	0436310
710	715	without		25x3,0	2,0	725		779	754	10,5	1,40	1	0437110
800	805	without		25x3,0	2,0	816		870	845	10,5	1,56	1	0438010
900	905	without		30x3,0	2,0	916		970	945	10,5	2,10	1	0439010
1000	1006	without		30x3,0	2,0	1018		1072	1047	10,5	2,34	1	0440010
1120	1126	without		30x3,0	2,0	1138		1192	1167	10,5	2,62	1	0441210
1250	1256	without		30x3,0	2,0	1268		1322	1297	10,5	2,91	1	0442510

» **SIGNUM LP50**

SIGNUM LP50



Assembly example

**Specification**

Installation advise: Installation does not take place in the rail slot (see application image). The contact surface for ventilation ducts is the narrow surface.

Technical data

Material: Steel

Remark: For a technical overview of mounting rails see the end of chapter 2d. Our application engineering department will design the rails in accordance with DIN EN 1993-1-2 (EC3) for use in the event of fire. A design in accordance with FM is carried out by our application technology department.

Dimension [mm]	Length [m]	Surface	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
27/50/1,5	2	pre-galvanized	1,11	216	36	0800201
27/50/1,5	6	pre-galvanized	1,11	576	72	0800202

Profile SIGNUM LP50 - Load values: admissible loads

L	1 x load F	2 x load F	3 x load F	q0
[mm]	[kN]	[kN]	[kN]	[kN/m]
250	5,22	3,85	2,57	41,76
500	2,61	1,96	1,31	10,44
750	1,74	1,31	0,87	4,64
1000	1,30	0,98	0,65	2,60
1250	1,04	0,78	0,52	1,67
1500	0,87	0,65	0,44	1,15
1750	0,74	0,48	0,35	0,75
2000	0,62	0,37	0,27	0,50
2250	0,49	0,29	0,21	0,35
2500	0,39	0,23	0,17	0,25
2750	0,32	0,19	0,14	0,19
3000	0,27	0,16	0,11	0,14
3250	0,22	0,13	0,10	0,11
3500	0,19	0,11		
3750	0,16	0,10		
4000	0,14			
4250	0,12			
4500	0,10			

Calculation according to RAL-GZ 655-C

Safety factor = 1,54

max. bending $\delta_{zul} = L/200$

module of elasticity = 210000 N/mm²

» Protecting cap SIGNUM LP50



ABS



Protecting cap SIGNUM LP50

Technical data

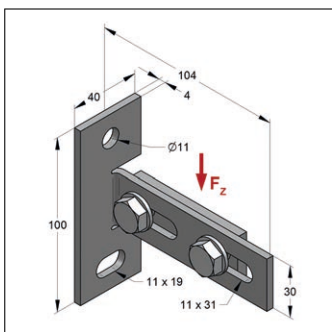
Material: Plastic

Material type: ABS

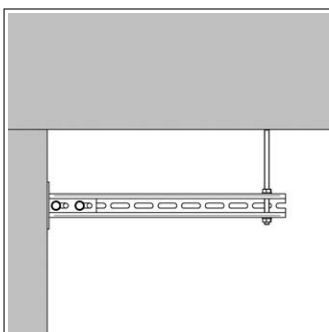
Colour: black

Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LP50	0,0040	50	0809055-01

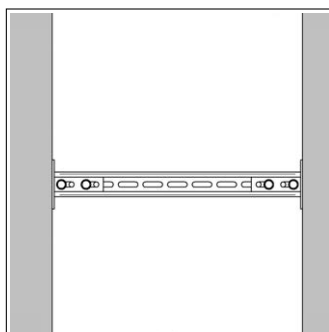
» SIGNUM holder LP50



SIGNUM holder LP50



installation example



installation example

Specification

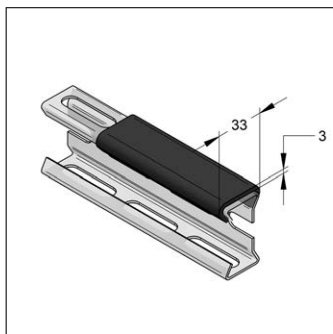
Scope of delivery: Completely pre-assembled with 2-hole threaded plate M10, hexagon head screw M10 and washer

Technical data

Material: Steel

Surface: galvanized

Profile type	Dimension [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LP50	100x40x4	20	3	0,312	25	0812037

» **SIGNUM Profile lining LP50**Σ **TPE**

SIGNUM profile lining LP50

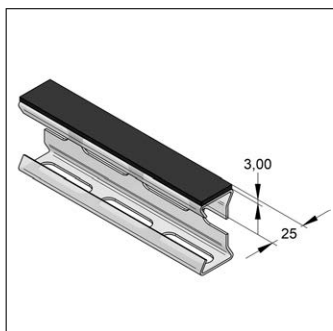
**Specification**

Application area: Sound, dirt and insulation protection between the profile and the supporting part (e.g. ventilation ducts).

Technical data

Material type: TPE
 Material colour: black
 Temperature resistance: -35 °C up to 100 °C

Profile type	Length [m]	Width [mm]	Thickness [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
LP50	10	33	3	0,221	10	7100036

» **SIGNUM insulation rubber LP50, self-adhesive**Σ **EPDM**

SIGNUM Insulation rubber LP50

**Specification**

Application area: Sound, dirt and insulation protection between the profile and the supporting part (e.g. ventilation ducts).

Installation advise: The surface to be glued must be cleaned.

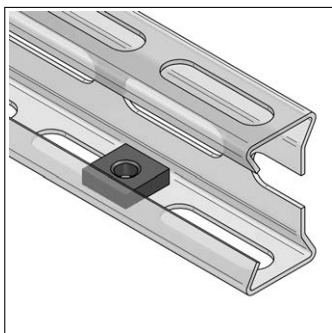
Technical data

Material type: EPDM
 Material colour: black
 Temperature resistance: -35 °C up to 100 °C

Profile type	Length [m]	Width [mm]	Thickness [mm]	Weight [kg/m]	Packing unit [m]	Part-No.
LP50	10	25	3	0,119	10	72102032



» Threaded square plate



Threaded plate 17x17 in SIGNUM LP50

Specification

Application area:	For fastening between profile rail and connecting component.
Recommended accessories:	Hexagon screw or threaded bolt/rod, washer and hexagon nut
Type of attachment :	For a non-slip connection with MEFA profile rails in combination with hexagon screws, threaded pins or rods (FK 4.6), washers and hexagon nuts. The 17x17 threaded plate can also be used for SIGNUM LP50 as a pipe clamp suspension with threaded pin or rod.
Profile type:	LP50

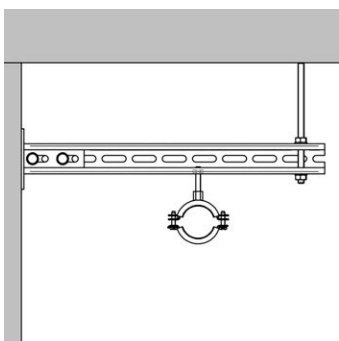
Technical data

Material:	Steel
Surface:	galvanized

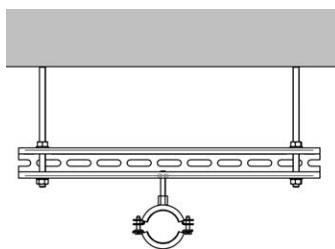
Remark: For load specifications see end of chapter 2b.

Thread G	Dimension LxBxS [mm]	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	17x17x5	LP50	0,0105	100	0740012
M8	17x17x5	LP50	0,0099	100	0740020
M10	17x17x5	LP50	0,0090	100	0740039

Application examples with SIGNUM LP50



One-sided wall connection with SIGNUM LP50



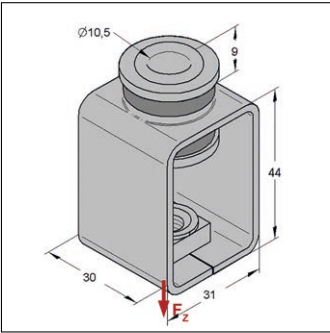
Threaded bar suspension with SIGNUM LP50

» Sound absorption element DHL

natural rubber



Ventilation pipe clamp with DHL insulation element



Ventilation pipe clamp with DHL insulation element



Specification

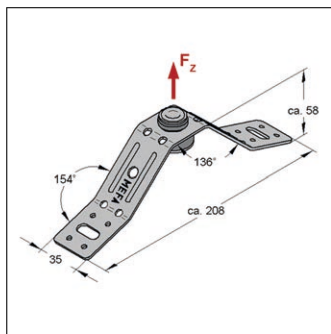
Application area: Sound decoupling element for threaded rods.
Installation advise: The locking screw of the pipe clamp is screwed directly to the bottom of the DHL insulation element. The threaded rod is inserted through the sleeve from above and fixed in place with a washer and nut.

Technical data

Material: Steel
Surface: galvanized
Sound insulation lining: natural rubber
Temperature resistance: -35 °C up to 100 °C

Thread	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	1	0,0893	50	0783301
M10	1	0,0951	50	0783302

» Spiral pipe suspension, sound insulated



Spiral pipe suspension



Spiral pipe suspension

**Specification**

Application area: For direct fastening of spiral ducts.
 Connection: M8, M10

Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: natural rubber
 Temperature resistance: -35 up to 100 °C

Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35	2	0,9	0,145	50	9998349

» Wire rope LFP connector axial



Wire rope system LFP connector axial

Product description

- for secure, vertical mounting of rope systems
- suitable for ropes up to 3 mm in diameter
- in the tangential version, the rope outlet is located on the side
- the connector allows for stepless height adjustment

Specification

Recommended accessories: LFP spool, LFP lock

Specification: with connection thread M8

Technical data

Material: Steel

Surface: galvanized

Remark: For static loads only. Do not use for lifting devices.

Diameter wire [mm] [mm]	Thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3	M8	0,0250	10	05985802

» Wire rope LFP connector tangential



Product description

- for secure, vertical mounting of rope systems
- suitable for ropes up to 3 mm in diameter
- in the tangential version, the rope outlet is located on the side
- the connector allows for stepless height adjustment

Specification

Recommended accessories: LFP spool, LFP lock

Specification: with connection thread M8

Technical data

Material: Steel

Surface: galvanized

Remark: For static loads only. Do not use for lifting devices.

Diameter wire [mm] [mm]	Thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3	M8	0,0370	10	05985803

» Wire rope LFP lock



Wire rope system LFP lock

Specification

Application area: fast, tool-free, flexible, stepless height adjustment

Technical data

Material: Aluminum

Diameter wire [mm]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,5	0,30	0,0090	10	05985800
3,0	1,13	0,0360	10	05985801

» Wire rope LFP spool



Wire rope system LFP spool

Specification

Application area: to create individual rope lengths

Recommended accessories: Wire rope LFP cutter

Technical data

Material: Steel

Surface: galvanized

Diameter wire [mm]	Length [m]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,5	200	0,30	4,00	1	05985808
3,0	100	1,13	4,10	1	05985809

» Wire rope LFP cutter



Wire rope L-Fix cutter

Specification

Application area: for easy separation of wire ropes

Specification: minimal effort due to large leverage, ergonomic handle and opening spring for easy work, lock hook for safe transport.

Installation advise: no splitting of wire ends when cutting

Technical data

Material: Steel

Surface: Rubberized handle

Diameter wire [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3	0,275	1	05985767

» Wire rope system LFP thread connect M8



Wire rope system LFP threaded connection

Specification

Application area: for direct mounting in drop-in anchors, threaded sleeves or threaded plates

Diameter wire [mm]	Thread	Length [m]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,5	M8	3	0,30	0,0500	5	05985806
3,0	M8	3	1,13	0,150	3	05985807

» Wire rope system LFP toggle



Wire rope system LFP toggle

Specification

Application area: for mounting to trapezoidal sheet metal

Diameter wire [mm]	Length [m]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,5	3	0,3	0,0300	5	05985811
1,5	5	0,3	0,0500	5	05985812

» Wire rope system LFP Loop



Wire rope system LFP loop

Diameter wire [mm]	Length [m]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,5	3	0,30	0,0200	5	05985804
3,0	3	1,13	0,0900	3	05985805

» Wire rope system LFP trapeze hook



Wire rope system LFP Trapeze hook

Specification

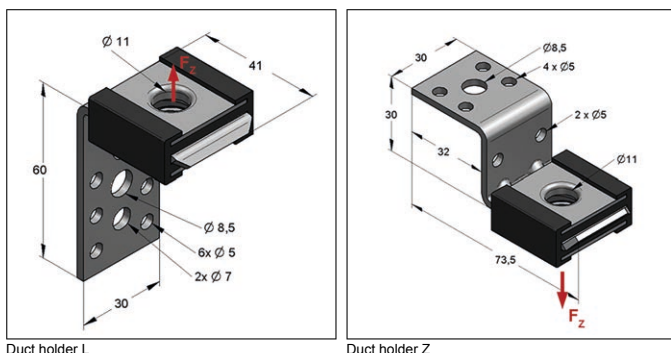
Application area: for side mounting on trapezoidal sheet metal

Specification: the double-curved hook prevents it from slipping out of the trapezoidal sheet metal

Diameter wire [mm]	Length [m]	Tension load [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3	3	0,8	0,139	3	05985810

» Duct holder, soundproofed

EPDM



Duct holder L

Duct holder Z



Specification

Application area: For sound decoupling of air ducts.

Connection: M8/M10

Technical data

Material: Steel

Surface: galvanized

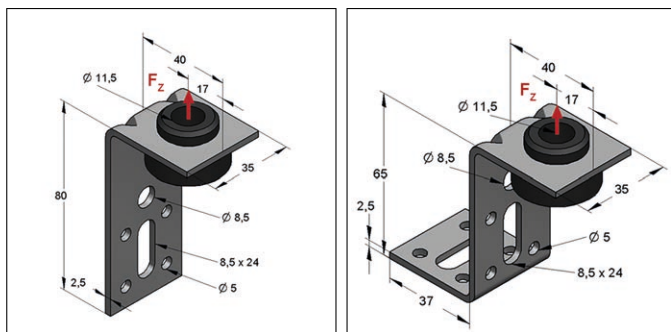
Sound insulation lining: Rubber EPDM

Temperature resistance: -35 °C up to 100 °C

Series	Length [mm]	Height [mm]	Sound absorption element	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
L	41,0	60	plugged	30	2,5	0,7	0,0792	50	05900200
Z	73,5	30	plugged	30	2,5	0,7	0,0811	50	05900280

» Duct holder connected, soundproofed

natural rubber



Duct holder SD-LL 80

Duct holder SD-ZL



Specification

Application area: For sound decoupling of air ducts.

Connection: M8/M10

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: natural rubber

Temperature resistance: -35 °C up to 100 °C

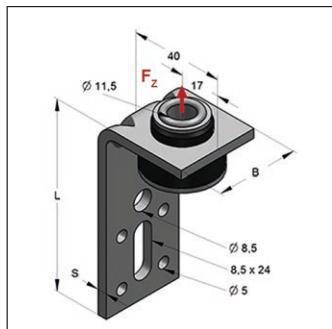
Series	Length [mm]	Height [mm]	Sound absorption element	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LL	40	80	plugged	35	2,5	0,3	0,0842	50	0590022

» Duct holder connected, soundproofed

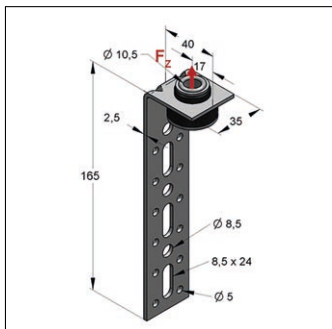
Series	Length [mm]	Height [mm]	Sound absorption element	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
ZL	77	65	plugged	35	2,5	0,3	0,0931	50	0590027

» Duct holder riveted, soundproofed

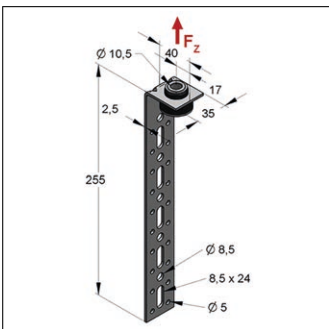
natural rubber



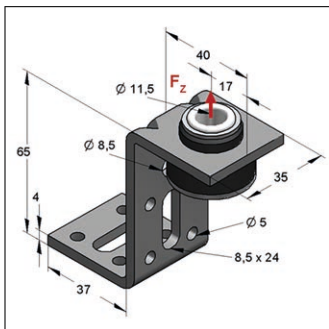
Duct holder SD-LSN 80



Duct holder SD-LLN 165



Duct holder SD-LLN 255



Duct holder SD-ZSN 65



Specification

Application area: For sound decoupling of air ducts.

Connection: M8/M10

Technical data

Material: Steel

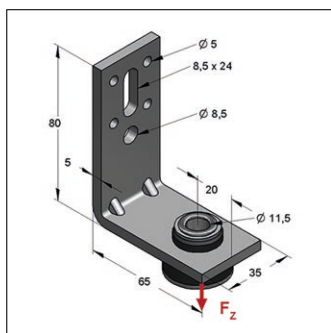
Surface: galvanized

Sound insulation lining: natural rubber

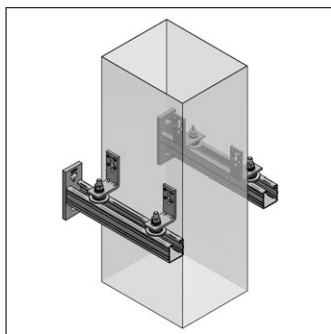
Temperature resistance: -35 °C up to 100 °C

Series	Length [mm]	Height [mm]	Sound absorption element	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LSN	40	80	riveted	35	4,0	1,8	0,135	50	0590011
LLN	40	165	riveted	35	2,5	0,9	0,140	50	9998373
LLN	40	255	riveted	35	2,5	0,9	0,190	50	9998372
ZSN	77	65	riveted	35	4,0	1,8	0,150	50	9998370

» Duct holder for risers, soundproofed



Duct holder L for risers



Installation example



Specification

Application area: For sound decoupling of air ducts.
 Connection: M8/M10

Technical data

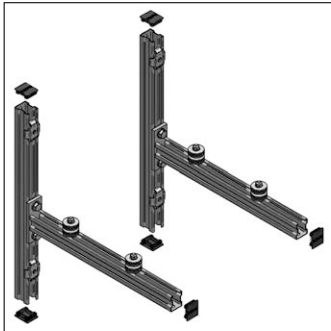
Material: Steel
 Surface: galvanized
 Sound insulation lining: natural rubber
 Temperature resistance: -35 °C up to 100 °C

Remark: The channel bracket type SD-LSK is especially suitable for riser channels. A maximum load of 3,2 kN can be transferred when using four brackets per fixing level.

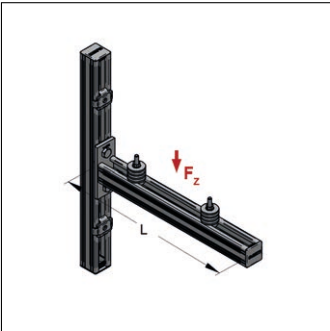
Series	Length [mm]	Height [mm]	Sound absorption element	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LSK	65	80	riveted	35	5	0,8	0,191	50	9998376

» Console-set, soundproofed

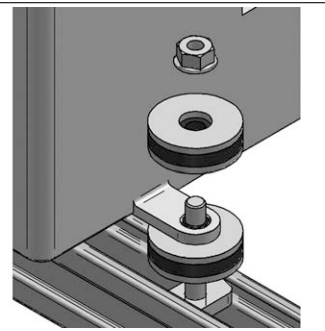
EPDM



Console-set, soundproofed



Console-set, soundproofed



Insulation element installed



Specification

Application area: For mounting of air conditioning units.
Scope of delivery: 2x Stex consoles 35/42, 4x sound absorption elements, 2x profile sections each 525 mm profile 35/42, 4x profile holders, 6x protecting caps 35/42, 4x threaded plates, 4x washers DIN 125, 4x hexagon screws DIN EN ISO 4017

Recommended accessories: Stex 35/42

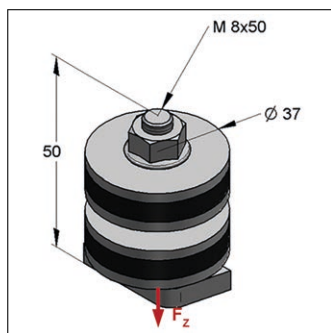
Remark: The load specifications are to be applied per cantilever.

Technical data

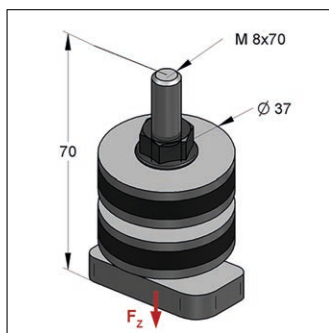
Material: Steel
Surface: galvanized
Sound insulation lining: Rubber EPDM
Temperature resistance: -35 °C up to 100 °C

Length [mm]	Load F_z [kN]	Total load [kN]	Weight [kg/set]	Packing unit [set]	Part-No.
600	1,04	2,08	5,25	1	0813500600

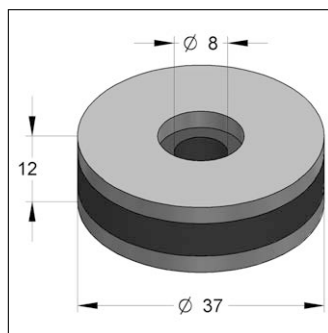
» Sound absorption element



Sound absorption element 35



Sound absorption element 45



Sound absorption element single

**Specification**

Application area: Insulation element for direct mounting on brackets and profile rails for sound-isolated mounting.

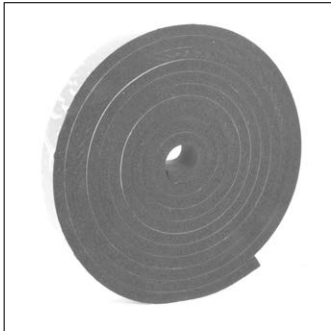
Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: Rubber EPDM
 Shore hardness: 60 ± 5 Shore
 Temperature resistance: -35 °C up to 100 °C

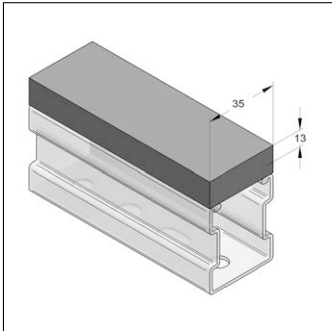
Model	Suitable for	Connection	Hammer head type	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35	C-profile 35/21, Stex 35	M8x50	38x17	1,3	0,152	1	0783395
45	C-profile 45/26, 45/45, 45/60, 45/75	M8x70	40x22	1,3	0,169	1	0783396
single				1,3	0,0520	1	07833908

» Insulating coat LK, self-adhesive

Synthetic rubber



insulating coat LK



lateral insulation



Specification

Application area: For lateral insulation of insulation synthetic rubber.

Technical data

Material type: closed-cell, synthetic rubber
Material colour: grey
Temperature resistance: -40 °C up to 105 °C
Insulation thickness: 13 mm
Thermal conductivity: 0,04 W/mK

Length [m]	Width [mm]	Thickness [mm]	Weight [kg/bag]	Packing unit [bag]	Part-No.
7	25	13	0,130	1	7250025
7	35	13	0,203	1	7250035
7	45	13	0,240	1	7250045

» Profile rail lining KG

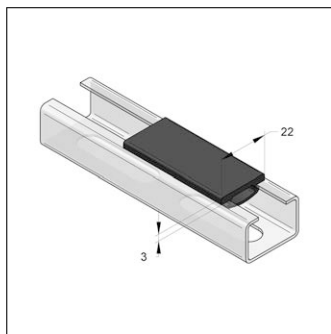
27

35

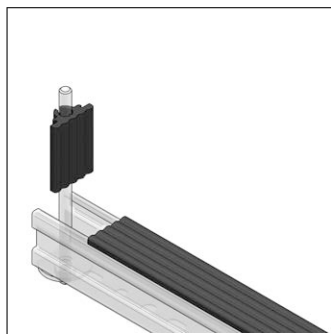
35

45

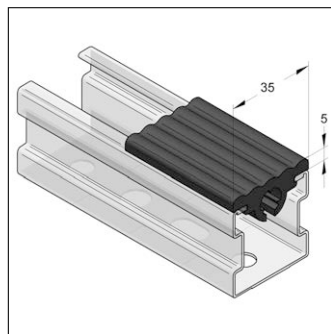
EPDM / TPE



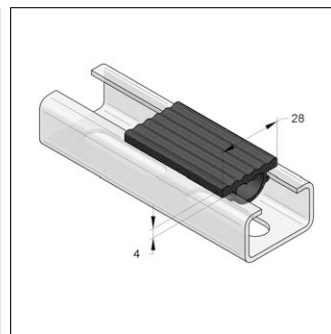
C-profile lining 27/18



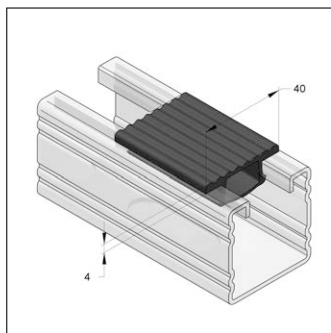
Connection for threaded rods



Stex rail rubber 35



C-profile lining 35



C-profile lining 45

**Specification**

Application area: Lining between profile rail and part to be supported (e.g. ventilation ducts).

Technical data

Material type: TPE
 Material colour: black
 Temperature resistance: -35 °C up to 100 °C

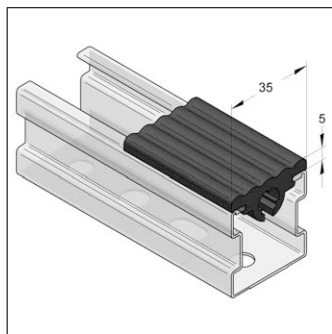
Profile type	Length [m]	Width [mm]	Insulation thickness [mm]	Connection	Weight [kg/m]	Packing unit [m]	Part-No.
27/18	20	26	6	M8	0,0990	20	710001901
Stex 35	20	35	5	M8	0,328	20	1272019
35	20	35	6	M8	0,165	20	710003502
45	10	40	4	M10	0,224	10	710004502

» C-profile lining - section

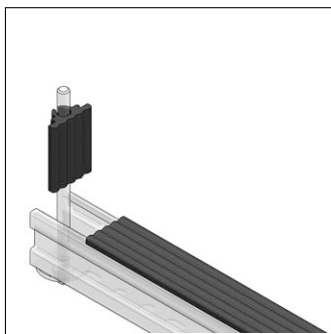
35

45

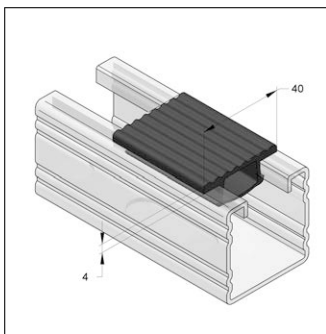
TPE



Stex rail rubber 35



Connection for threaded rods



C-profile lining 45

**Specification**

Application area: Lining between profile rail and part to be supported (e.g. ventilation ducts).

Type of attachment : clamping

Class: B2

Technical data

Material type: TPE

Material colour: black

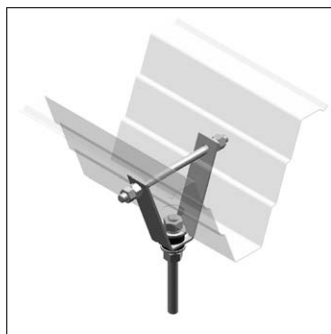
Temperature resistance: -35 °C up to 100 °C

Insulation thickness: 5 mm

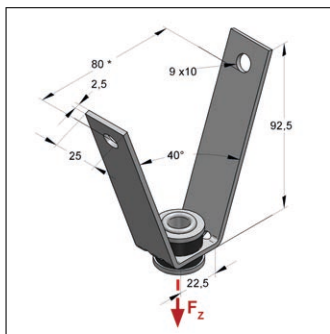
Profile type	Length [mm]	Width [mm]	Connection	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Stex 35	50	35	M8	0,0160	50	1272020
45	100	40	M10	0,0224	50	710004502/0100

» Trapeze hanger, soundproofed

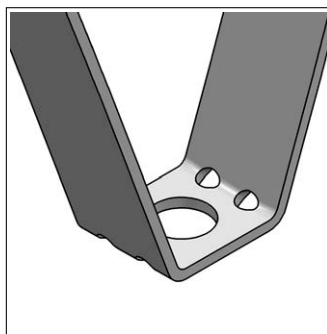
natural rubber



Trapeze hanger (assembly example)



Trapeze hanger, sound-insulated



can bend open (up to approx. 120 mm)

**Specification**

Application area: For mounting the pipelines, ventilation ducts and profile rails directly under a trapeze sheeting.

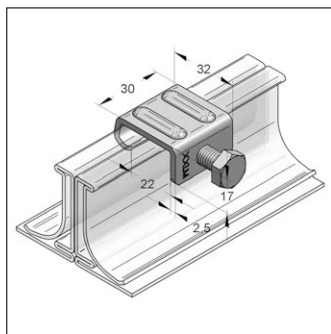
Technical data

Material: Steel
 Surface: galvanized
 Sound insulation lining: natural rubber
 Temperature resistance: -35 °C up to 100 °C
 Insulation thickness: 6 mm

Remark: For trapeze hangers with sound insulation see chapter 8. For punching pliers for trapezoidal sheets see chapter 10.

Series	Specification	Threaded connection	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LL A	with sound insulation element	M8, M10	25	2,5	0,8	0,123	100	0783840

» Duct clamp



Duct clamp

Specification

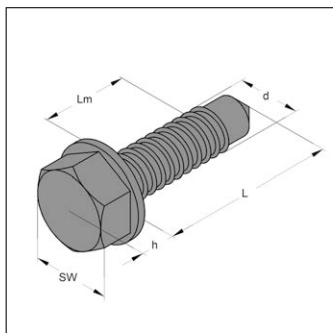
Application area: Clamping range 22 mm

Technical data

Material: Steel
 Surface: galvanized

Width material [mm]	Material thickness [mm]	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
30	2,5	4	0,0475	50	0593001

» Drilling screw DIN 7504 K



Drilling screw

Specification

Application area: For direct attachment of duct holder to ventilation ducts.

Norm: DIN 7504 K

Technical data

Material: Steel
Surface: galvanized

Thread d	Length L [mm]	Wrench size SW	Height head h [mm]	Clamping length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
4,2	13	7	4	4,3	0,0018	500	3700413
4,2	16	7	4	7,3	0,0019	500	3700416
4,2	19	7	4	10,3	0,0020	500	3700419

» Duct sealing tape

PE



Duct sealing tape

Specification

Application area: For sealing ventilation ducts.

Specification: Self-adhesive on one side, without peel-off film
high chemical and weather resistance

Technical data

Material: Cell-closed polyethylene
max. shelf life: 1 year (at +18 °C)
Temperature resistance: -30 °C up to 80 °C
Working temperature: 5 °C

Width [mm]	Insulation thickness [mm]	Length [m]	Weight [kg/roll]	Packing unit [roll]	Part-No.
9	4	20	0,0570	5	725110904
12	4	20	0,0747	5	725111204
15	4	20	0,0932	5	725111504



» Duct sealing tape

Width [mm]	Insulation thickness [mm]	Length [m]	Weight [kg/roll]	Packing unit [roll]	Part-No.
12	6	10	0,0440	5	725111206

» Duct sealing compound



Duct sealing compound

Specification

Application area:	For sealing ventilation ducts.
Specification:	special dispersion-based sealant, fungicidal and antibacterial, suitable for extractor hoods in commercial kitchens

Technical data

Colour:	silver gray
max. shelf life:	18 months (at 5 up to 25°C)
Temperature resistance:	-20 °C up to 80 °C
Working temperature:	5 °C up to 50 °C

Content [ml]	Bundle	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
310	Cartridge	0,555	20	725100310

» Cold shrink tape

PE



Cold shrink tape

Specification

Application area: For sealing of ventilation ducts and folded spiral-seam pipe.

Specification: Cold self-adhesive butyl rubber adhesive, coated with stretchable polyethylene film.

Technical data

Colour:	grey
Adhesive power of steel during detach 90°:	9 N/cm³
Adhesive power of concrete during detach 90°:	9 N/cm³
Temperature resistance:	-30 °C up to 80 °C
Working temperature:	5 °C up to 40 °C

Width [mm]	Length [m]	Weight [kg/roll]	Packing unit [roll]	Part-No.
50	15	0,763	1	725120050
75	15	1,14	1	725120070

» Weights for Ventilation ducts

Weight of the duct (kg/m) of galvanized metal ducts, without insulation
(Dimension of the duct Width x Height mm)

Sheet metal 0,75 mm			Sheet metal 0,88 mm							Sheet metal 1,0 mm							Sheet metal 1,13 mm							Sheet metal 1,25 mm					s
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	B H				
4,9	5,2	5,6	7,0	7,5	8,1	8,7	9,4	10,2	12,5	13,7	15,0	16,5	18,1	19,8	24,6	27,0	29,8	33,5	37,3	41,0	50,3	55,6	61,8	69,0	200				
	5,5	5,9	7,3	7,8	8,4	9,1	9,8	10,5	12,9	14,1	15,4	16,9	18,5	20,2	25,0	27,5	30,3	34,0	37,7	41,4	50,8	56,1	62,3	69,5	224				
		6,2	7,7	8,2	8,8	9,4	10,2	10,9	13,4	14,5	15,8	17,3	19,0	20,6	25,5	27,9	30,7	34,5	38,2	41,9	51,3	56,7	62,8	70,1	250				
			8,1	8,6	9,2	9,9	10,6	11,3	13,8	15,0	16,3	17,8	19,5	21,1	26,1	28,5	31,3	35,0	38,7	42,5	51,9	57,3	63,5	70,7	280				
				9,1	9,7	10,4	11,1	11,8	14,4	15,6	16,9	18,4	20,0	21,7	26,7	29,2	31,9	35,7	39,4	43,1	52,6	58,0	64,2	71,4	315				
					10,3	11,0	11,7	12,4	15,1	16,2	17,6	19,0	20,7	22,3	27,5	29,9	32,7	36,4	40,1	43,9	53,5	58,8	65,0	72,2	355				
						11,6	12,3	13,1	15,8	17,0	18,3	19,8	21,4	23,1	28,3	30,7	33,5	37,3	41,0	44,7	54,4	59,8	65,9	73,2	400				
							13,1	13,8	16,6	17,8	19,1	20,6	22,3	23,9	29,2	31,7	34,5	38,2	41,9	45,6	55,4	60,8	67,0	74,2	450				
								14,5	17,5	18,6	19,9	21,4	23,1	24,7	30,2	32,6	35,4	39,1	42,8	46,6	56,5	61,8	68,0	75,2	500				
									18,5	19,6	20,9	22,4	24,1	25,7	31,3	33,7	36,5	40,2	44,0	47,7	57,7	63,1	69,2	76,4	560				
										20,8	22,1	23,6	25,2	26,9	32,6	35,0	37,8	41,5	45,3	49,0	59,1	64,5	70,7	77,9	630				
											23,4	24,9	26,5	28,2	34,1	36,5	39,3	43,0	46,8	50,5	60,8	66,1	72,3	79,5	710				
												26,4	28,0	29,7	35,8	38,2	41,0	44,7	48,4	52,2	62,6	68,0	74,2	81,4	800				
													29,7	31,3	37,6	40,1	42,8	46,6	50,3	54,0	64,7	70,1	76,2	83,5	900				
														33,0	39,5	41,9	44,7	48,4	52,2	55,9	66,8	72,1	78,3	85,5	1000				
															41,7	44,1	46,9	50,7	54,4	58,1	69,2	74,6	80,8	88,0	1120				
																46,6	49,4	53,1	56,8	60,5	71,9	77,3	83,5	90,7	1250				
																	52,2	55,9	59,6	63,3	75,0	80,4	86,5	93,8	1400				
																		59,6	63,3	67,1	79,1	84,5	90,7	97,9	1600				
																			67,1	70,8	83,2	88,6	94,8	102,0	1800				
																				74,5	87,4	92,7	98,9	106,1	2000				
																					92,3	97,7	103,9	111,1	2240				
																						103,0	109,2	116,4	2500				
																							115,4	122,6	2800				
																								129,8	3150				

TOOLS, ACCESSORIES

sealing compound, zinc spray, cutoff wheels, drill, hole punch and accessories



10

» MEFA-Accessories, tools



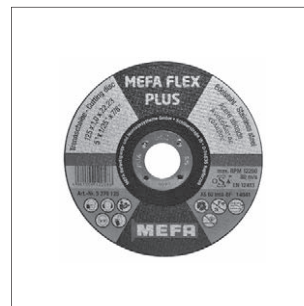
Locher Paste 2000



Zinc spray



Zinc coating spray



Cutting wheel MEFA FLEX PLUS



Drill



Trapezoid-sheet pliers



Multi tool 4-fold



Socket



Socket, impact-resistant



Storage Cabinet GLADIATOR

» Locher paste 2000



Locher paste 2000

**Specification**

Application area: For gases according to DVGW worksheet G 260 (except liquid gas in the liquid phase), drinking water cold, heated and heating water.

Specification: Non-curing thread sealant, to be used with hemp as sealant carrier. Silicone and chloride free.

Installation advise: Class ARp sealants where limited back-turning of conical/cylindrical threaded connections up to 45 °C is possible.

Norm: DIN-DVGW-NV5142BL0134

Remark: Safety data sheet available on request.

Bundle	Content [g]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Cartridge	250	0,289	10	5890010

Locher paste - Maximum permissible pressures and temperatures. Tested according to DIN EN 751-2 Class A Rp DIN30660

Application area	Over pressure up to [bar]	Temperature [°C]
Gas	≤ 5	-20 up to +70
Drinking water	≤ 16	+95
Hot water	≤ 6	+130
Compressed air lines	≤ 15	

» Zinc spray primer, zinc grey



Zinc spray primer, zinc grey

Product description

- For indoor and outdoor use
- High coverage
- Can be painted over well with commercially available paints (test paint compatibility)
- Resistant to many aggressive media
- Quick-drying

Specification

Application area: For priming steel parts exposed to water and weather and repairing welds, defects, etc. on hot-dip galvanized structures.

Specification: Over 95% zinc in the dry film, zinc purity 99%, heat resistant up to approx. +500°C.

Bundle	Content [ml]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Can	400	0,468	1	5920001

» Zinc repair spray, silver light



Zinc repair spray

Product description

- For indoor use
- For painting over
- Highly durable
- Bright zinc-like sheen
- Active corrosion protection - zinc and aluminum pigments protect the electrochemical-cathodic path
- Resistant to many aggressive media
- Quick-drying

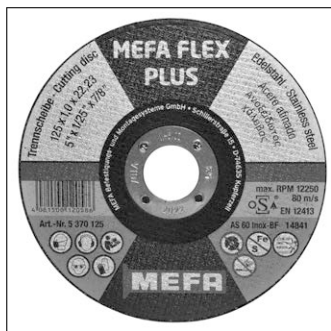
Specification

Application area: For repairing welds, defects, etc. on hot-dip galvanized constructions.

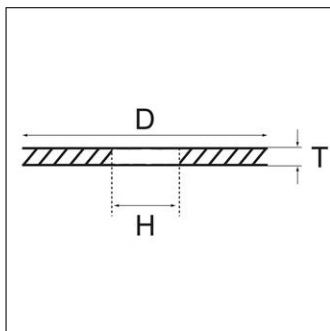
Specification: Zinc purity 99%, heat resistant up to approx. +300°C.

Bundle	Content [ml]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Can	400	0,400	1	5920002

» Cutoff wheel MEFA FLEX PLUS



Cutoff wheel MEFA FLEX PLUS



Cutoff wheel MEFA FLEX PLUS

Specification

- Application area:** Suitable for steel and stainless steel.
- Specification:** Produces clean and burr-free cut edges, low material loss due to thin-walled cut-off wheel, maximum breakage resistance due to fabric insert on both sides, low processing temperatures at the cut edges.
- Installation advise:** Safety goggles and hearing protection must be worn. The maximum speed corresponds to 12,200 rpm.
- Norm:** DIN EN 12413

Technical data

Material: Steel

Diameter D [mm]	Thickness T [mm]	Hole-Ø H [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
125	1	22,23	0,0250	10	5370126

» Drill bit SDS-plus Hi-Performance



Drill bit SDS-plus Hi-Performance

Specification

Specification: Suitable for all hammer drills with SDS-plus locking.



Drill Ø [mm]	Length [mm]	Working length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
5	110	50	0,0340	5	51305110
6	110	50	0,0350	5	51306110
6	210	150	0,0475	5	51306210
6	260	200	0,0610	5	51306260
8	160	100	0,0490	5	51308160

» Drill bit SDS-plus Hi-Performance

Drill Ø [mm]	Length [mm]	Working length [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
8	210	150	0,0620	5	51308210
8	260	200	0,0740	5	51308260
10	160	100	0,0690	1	51310160
10	210	150	0,0530	1	51310210
10	260	200	0,0920	1	51310260
11	160	100	0,0000	1	51311160
12	160	100	0,0850	1	51312160
12	210	150	0,106	1	51312200
12	260	200	0,128	1	51312266
13	160	100	0,100	1	51313160
14	210	150	0,118	1	51314200
15	160	100	0,114	1	51315160
16	210	150	0,157	1	51316200
16	310	250	0,206	1	51316300
18	250	200	0,200	1	51318250
20	260	200	0,252	1	51320260

» Hole punch for profiled sheeting



Hole punch



Punching blade

Specification

Application area: For sheets up to 1,2 mm.

Recommended accessories: Hole punch Ø 10 mm

Technical data

Material: Steel

Surface: Rubberized handle

Description	Suitable for	Length [mm]	max. opening dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Hole punch 900	Metal sheets 1,2 mm	900	110	5,00	1	5020000
Punching blade	Trapezoid-sheet pliers 900			0,0695	1	5020010

» Multi tool 4-fold



Multi tool 4-fold

Specification

Application area: Special wrench for screwing in all commercially available hanger bolts or threaded pins.

Technical data

Material: Steel
Surface: galvanized

Suitable for	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6, M8, M10, M12	0,247	1	5200016

» Channel socket for 45 rails



Channel socket



Channel socket



Channel socket

Specification

Application area: Quick and easy screwing of hexagon screws, fits into the rail slot of the 45 rail system (except 45/26 rails).

Installation advise: Suitable for impact wrenches.

Technical data

Material: Steel
Surface: galvanized

Wrench size	Suitable for	Length [mm]	Size of socket	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
17	C-profile 45	108	1/2 inch	0,158	1	5041025
19	C-profile 45	108	1/2 inch	0,184	1	5041024

» Socket, impact-resistant



impact-resistant socket

Product description

- Impact-resistant socket with 1/2" receptacle, e.g. for use with the TSM Multiground.

Tool holder	TX drive	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1/2"	TX 55	0,0970	1	5041026
1/2"	TX 60	0,0990	1	5041027

» Gladiator



Gladiator closed



Gladiator opened

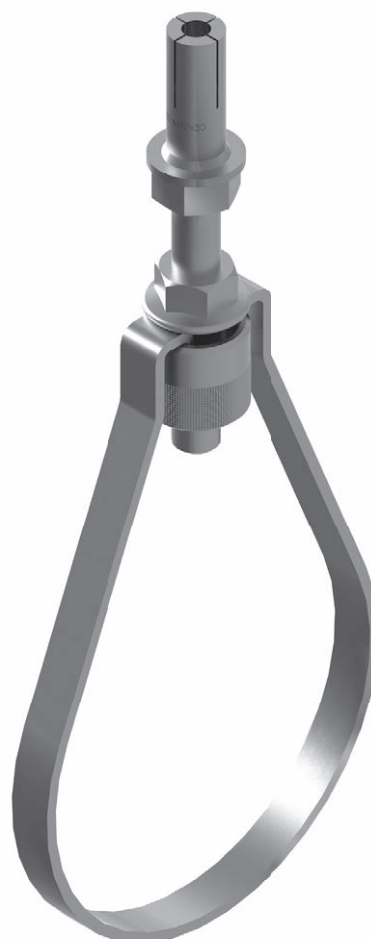
Specification

Application area:	Solid, heavy-duty storage cabinet made of 2 mm thick sheet metal as a safe storage place for tools, machines, small parts, documents, and everything else that is important to you.
Scope of delivery:	Gladiator, two keys and a MEFA construction site surprise box.
Specification:	Robust, lockable, hard rubber swivel casters, three height-adjustable shelves, a sturdy shelf made of Stex 45 mounting rails for storing long items, two forklift pockets for safe transport by forklift, and a side document box. Custom company logo printing is available upon request.

Dimension HxBxT [cm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
160x120x60	193,00	1	552025-01

SPRINKLER

*sprinkler pipe loops and
sprinkler clamps*



» MEFA mounting systems for Sprinkler

Approved products for water extinguishing systems



Ø 33,7 - 219,1 mm

Sprinkler pipe loop SLH



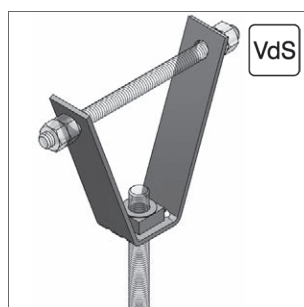
Ø 20 - 173 mm

Sprinkler pipe clamp HDC

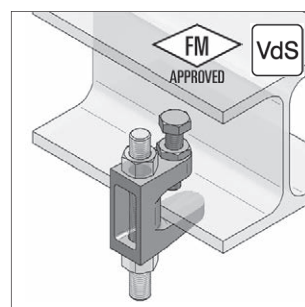


Ø 219,1 mm

U-bolt
See chapter 1



Trapeze hanger
See chapter 5



Beam clamps
See chapter 5

Pipe supports and components acc. to VdS CEA-guidelines for sprinkler systems VdS CEA 4001 „planning and installation“



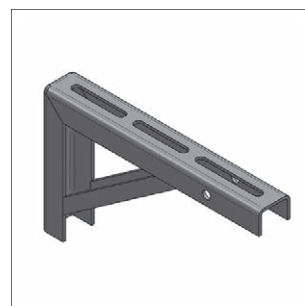
Ø 219 - 273 mm

Sprinkler pipe clamp "SP"

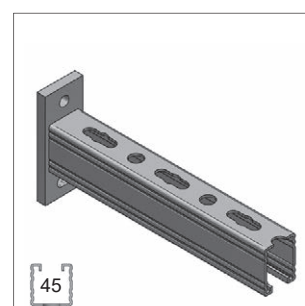


Ø 21 - 324 mm

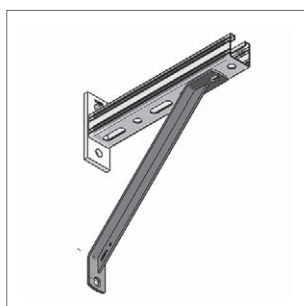
U-bolt
See chapter 1



Consoles with brace
See chapter 2



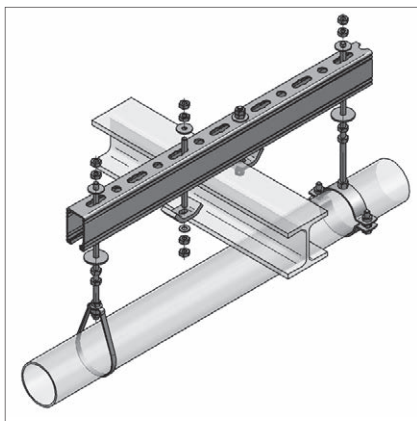
Consoles



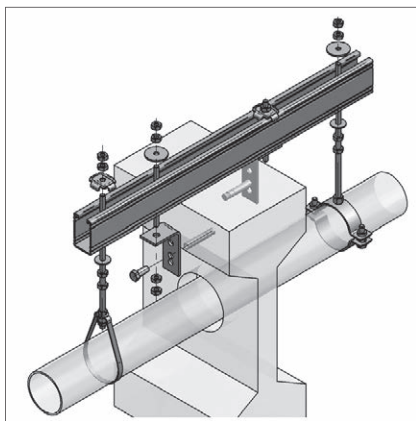
Brace 45° T-profile
See chapter 2

i Tightening torque of locking screws on pipe clamps see chapter 15.

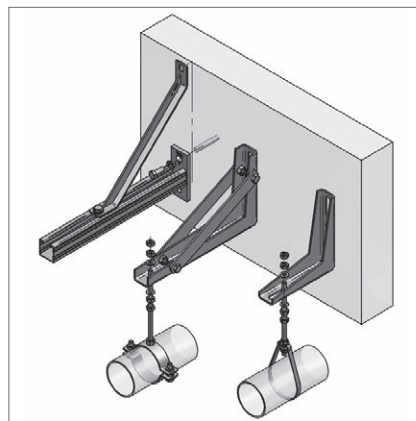
» Assembly examples



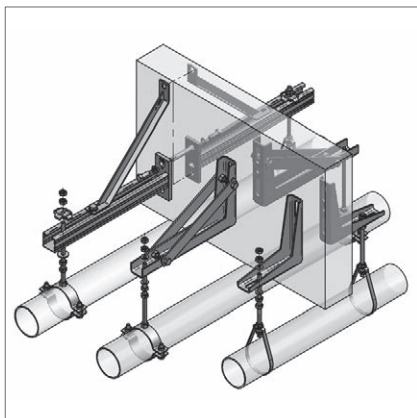
With steel beam



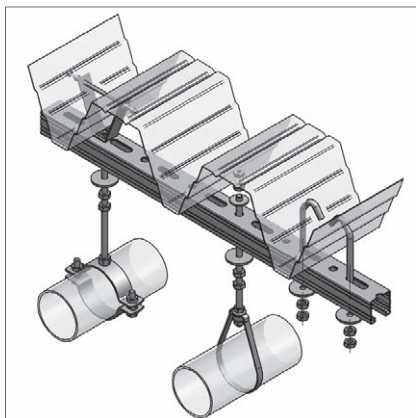
With reinforced concrete beam



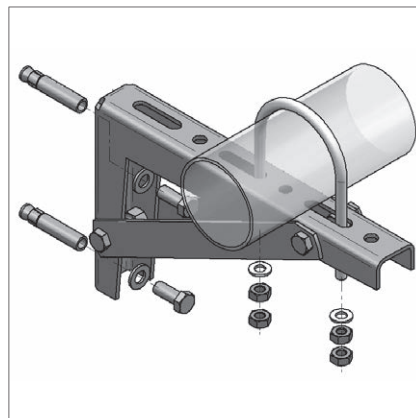
One-way projecting



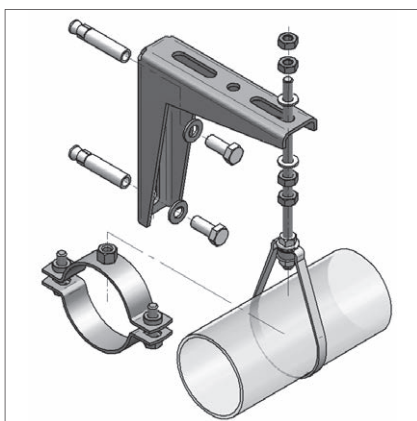
Two-way projecting



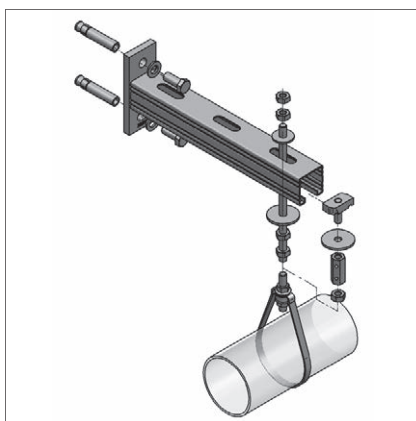
On trapeze sheet



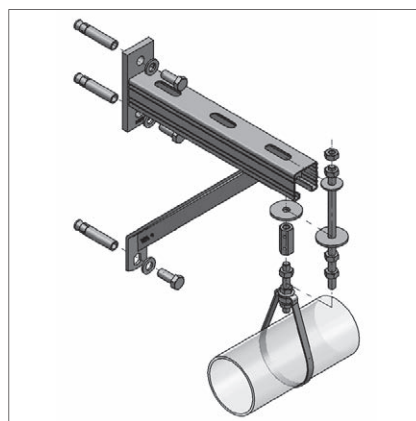
U-bolt on console



Universal console

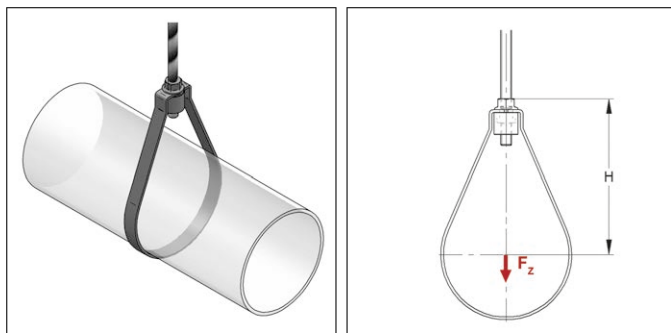


Console C-Profile



Console C-Profile with brace

» Sprinkler pipe loop SLH



Sprinkler pipe loop SLH

Sprinkler pipe loop SLH



Specification

Application area: Sprinkler pipe loop for mounting sprinkler systems.
 Scope of delivery: not mounted, flange nuts and pot enclosed
 Brand: Jiangmen Eurofix

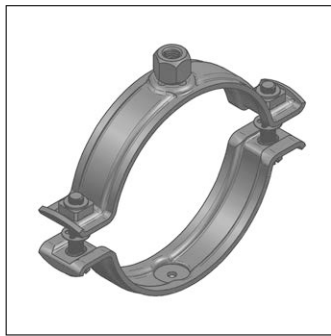
Technical data

Material: Steel
 Surface: pre-galvanized

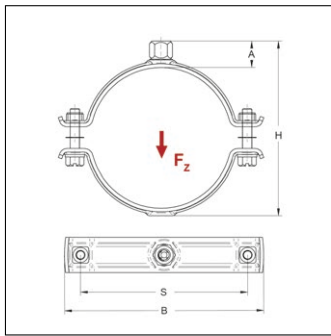
Remark: For individual flange nuts see chapter 5.

OD [inch]	OD [mm]	Certification	Load F_z [kN]	Connection	Height H [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1	33,7	VdS	2,0	M8	61	0,0636	100	47072033
1 1/4	42,4	VdS	2,0	M8	66	0,0656	100	47072041
1 1/2	48,3	VdS	2,0	M8	71	0,0686	50	47072047
2	60,3	VdS	2,0	M8	80	0,0736	50	47072059
1	33,7	FM/VdS	2,0	M10	63	0,0770	100	47072034
1 1/4	42,4	FM/VdS	2,0	M10	68	0,0790	100	47072042
1 1/2	48,3	FM/VdS	2,0	M10	73	0,0820	50	47072048
2	60,3	FM/VdS	2,0	M10	82	0,0870	50	47072060
2 1/2	76,1	FM/VdS	3,5	M10	99	0,147	50	47072076
3	88,9	FM/VdS	3,5	M10	114	0,162	25	47072089
4	114,3	FM/VdS	3,5	M10	144	0,191	25	47072114
5	139,7	FM/VdS	5,0	M12	161	0,247	20	47073140
6	168,3	FM/VdS	5,0	M12	189	0,278	20	47073168
8	219,0	FM/VdS	8,5	M16	241	0,608	10	47073219

» Sprinkler pipe clamp HDC



Sprinkler pipe clamp HDC



Sprinkler pipe clamp HDC



Specification

Application area: Pipe clamp with connection thread according to sprinkler guidelines for Sprinkler systems.

Installation advise: Locking screws are secured by a plastic washer.

Specification: two-part

Brand: Jiangmen Eurofix

Technical data

Material: Steel

Surface: galvanized

Sound insulation lining: unlined

Tightening torque: 3 Nm

Remark: Tightening torque for closing screw, see chapter 15

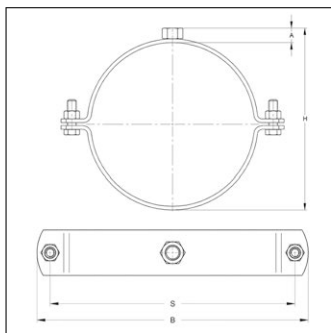
* Complies with the requirements of the "VdS CEA 4001 - Planning and installation" guideline

Clamping range [mm]	OD [inch]	Certification	Connection	Material dimension [mm]	Closure screw	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
20 - 24	1/2	VdS	M8	30x2,5	M8	2,5	42	15	66	0,141	50	47300020
25 - 30	3/4	VdS	M8	30x2,5	M8	2,5	50	17	71	0,148	50	47300025
31 - 35	1	VdS	M8	30x2,5	M8	2,5	55	16	77	0,155	50	47300031
40 - 45	1 1/4	VdS	M8	30x2,5	M8	1,5	65	16	88	0,174	50	47300040
48 - 53	1 1/2	VdS	M8	30x2,5	M8	2,5	73	16	96	0,192	50	47300048
60 - 65	2	VdS	M8	30x2,5	M8	2,5	85	16	108	0,217	25	47300061
20 - 24	1/2	VdS	M10	30x2,5	M8	2,5	44	17	66	0,141	50	47300022
25 - 30	3/4	FM/VdS	M10	30x2,5	M8	2,5	52	19	71	0,148	50	47300027
31 - 35	1	FM/VdS	M10	30x2,5	M8	2,5	57	18	77	0,155	50	47300034
40 - 45	1 1/4	FM/VdS	M10	30x2,5	M8	2,5	67	18	88	0,174	50	47300043
48 - 53	1 1/2	FM/VdS	M10	30x2,5	M8	2,5	75	18	96	0,192	50	47300050
60 - 65	2	FM/VdS	M10	30x2,5	M8	2,5	87	18	108	0,217	25	47300060
76 - 81	2 1/2	FM/VdS	M10	30x3,0	M8	3,5	105	20	135	0,292	25	47300076
88 - 93	3	FM/VdS	M10	30x3,0	M8	3,5	117	20	147	0,319	25	47300088
110 - 116	4	FM	M10	30x3,0	M8	3,5	140	20	171	0,365	25	47300110 *
140 - 148	5	FM/VdS	M12	40x4,0	M12	5,0	168	19	216	0,806	10	47300140
167 - 173	6	FM	M12	40x4,0	M12	5,0	193	19	242	0,903	10	47300167 *
219 - 225	8	FM	M16	40x4,0	M12	10,0	248	20	294	1,12	10	47300219

» Sprinkler pipe clamp "SP"



Sprinkler pipe clamp "SP"



Sprinkler pipe clamp "SP"



Specification

Application area: Pipe clamp for fastening sprinkler pipes.

Closure screw: M12

Technical data

Material: Steel

Surface: galvanized

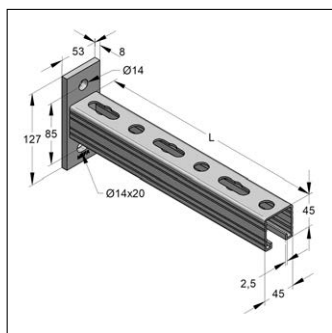
OD [mm]	OD [inch]	Connection	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
219	8	M16	50x5	8,5	249	25	297	268	1,75	1	0477219
273	10	M20	50x5	10,0	300	22	351	322	2,25	1	0478273
324	12	M20	50x5	12,5	351	22	404	375	2,46	1	0478324

Pipe clamp "SP" - Cross section and loads of pipe brackets according to VdS CEA 4001

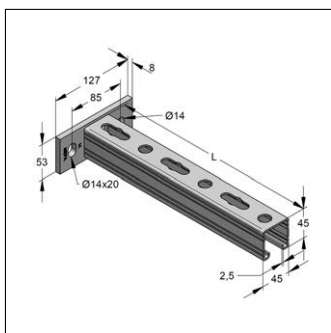
Nominal width of pipe	cross section	load (at 20°C)
≤ DN 50	30 mm ² (M8)	2,0 kN
> DN 50 ≤ DN 100	50 mm ² (M10)	3,5 kN
> DN 100 ≤ DN 150	70 mm ² (M12)	5,0 kN
> DN 150 ≤ DN 200	125 mm ² (M16)	8,5 kN
> DN 200 ≤ DN 250	150 mm ² (M20)	10,0 kN
> DN 250 ≤ DN 300	180 mm ² (M20)	12,5 kN

» Console C-profile 45/45/2,5 mm SP

45



Console C-profile 45/45/2,5 vertical



Console C-profile 45/45/2,5 horizontal

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads for sprinkler piping.

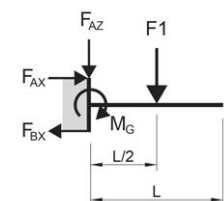
Technical data

Material: Steel
Surface: galvanized
Global safety coefficient: 1,54

Remark: All load specifications refer exclusively to static loads.

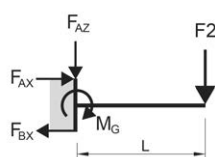
Length console L [mm]	Alignment of plate	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
315	vertical	3,32	1,66	10,53	1,30	15	9992306
420	vertical	2,49	1,24	5,92	1,61	10	9992307
525	vertical	1,99	1,00	3,79	1,92	10	9992308
630	vertical	1,66	0,83	2,63	2,23	5	9992309
735	vertical	1,42	0,68	1,93	2,54	5	9992310
315	horizontal	2,45	1,23	7,78	1,30	15	9992219
420	horizontal	1,84	0,92	4,38	1,61	10	9992220

Loading condition F1



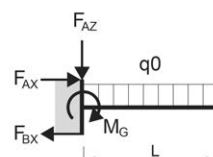
$$F_{AZ} = F1 \quad M_G = F1 \cdot L / 2$$

Loading condition F2



$$F_{AZ} = F2 \quad M_G = F2 \cdot L$$

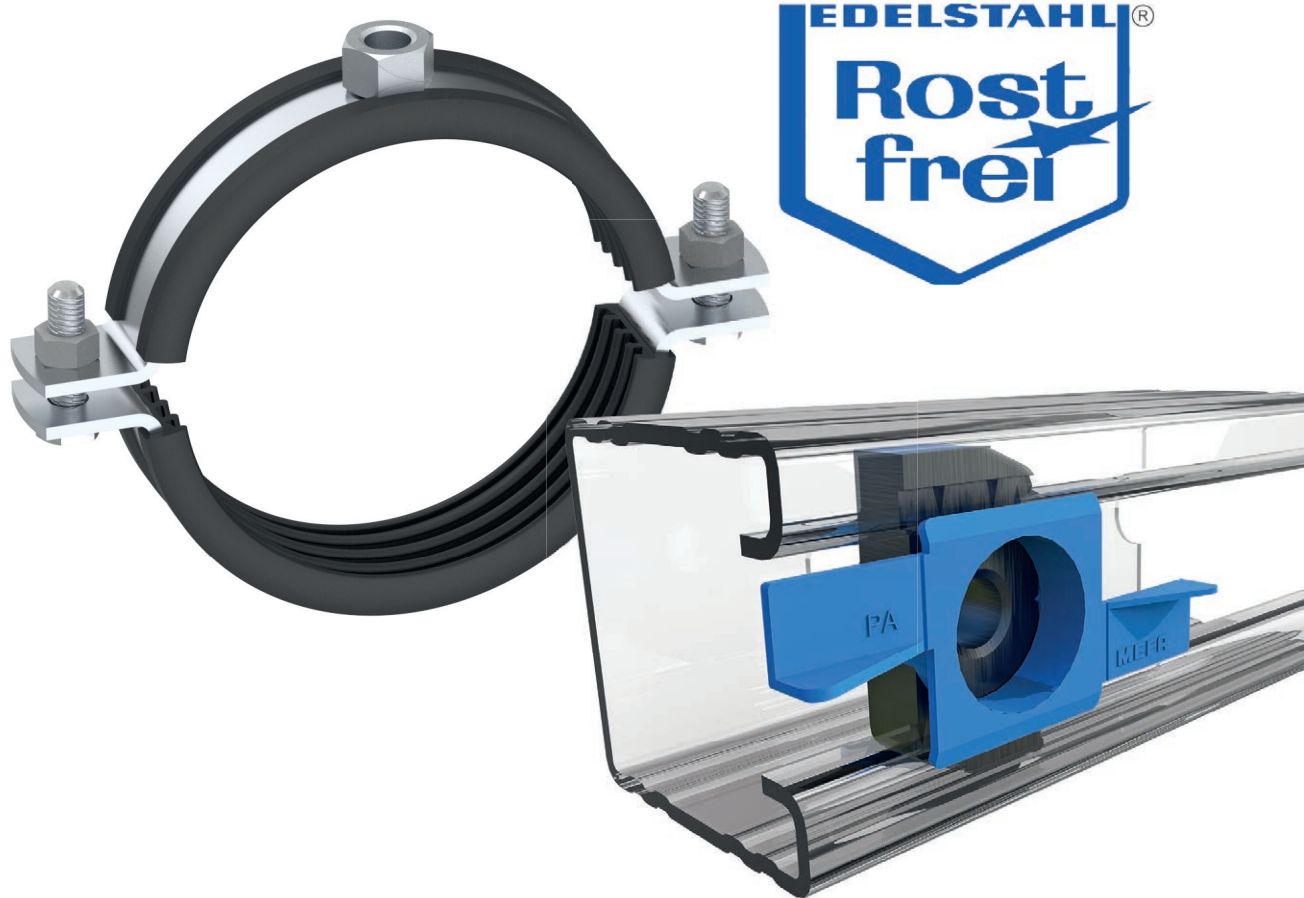
Loading condition q0



$$F_{AZ} = q0 \cdot L \quad M_G = q0 \cdot L^2 / 2$$

STAINLESS STEEL

pipe clamps, profile rails and accessories in stainless steel



» Stainless steel



Pipe clamp Trabant Inox



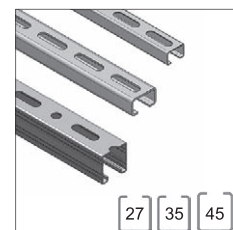
Pipe clamp stainless steel



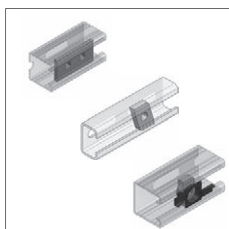
Ventilation pipe clamp



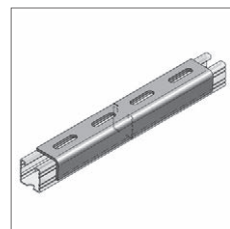
U-bolt



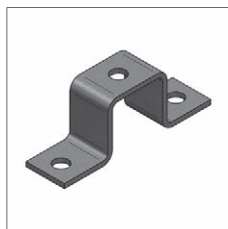
Profile rails



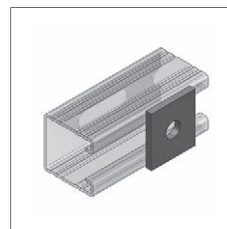
Threaded plate



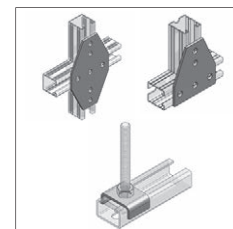
Connector 45/45



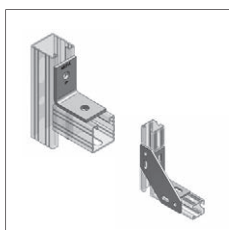
Head profile



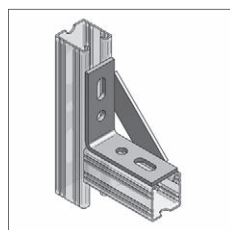
Perforated plate



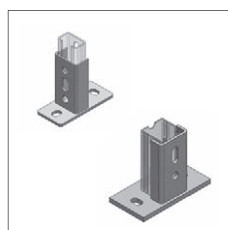
Profile holder, Lugs



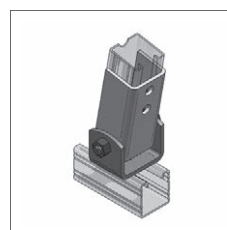
Angle 40/5



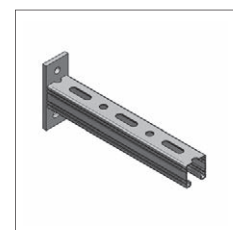
Knot triangle



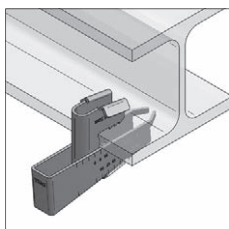
Holder



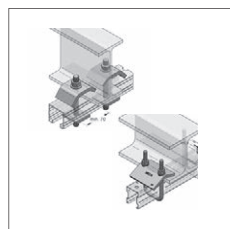
Joint holder



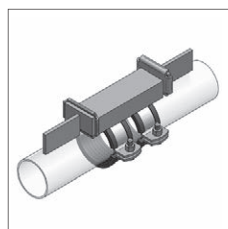
Consoles and braces



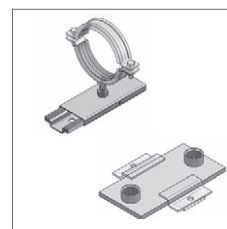
Beam clamp



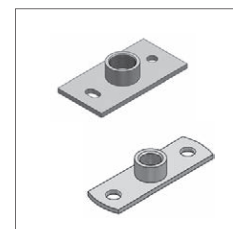
Clamping claws



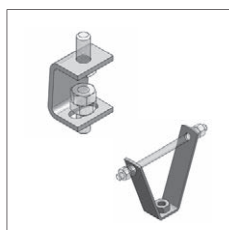
Fixpoint



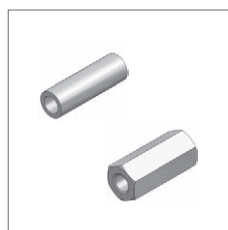
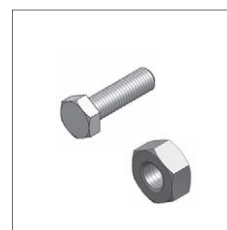
Sliding element



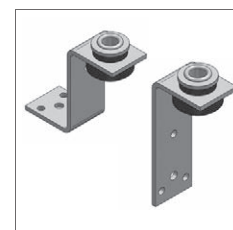
Base plates

Suspended bracket
Trapeze hanger

Threaded rods and pins

Threaded couplings,
reducers

Screws, nuts and washers



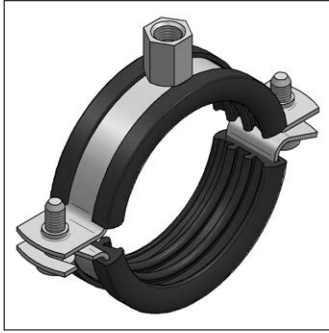
Duct holder

i Stainless steel anchors see chapter 07

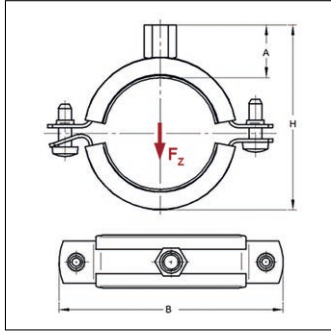
i Tightening torque of locking screws on pipe clamps see chapter 15.

» Pipe clamp Trabant Inox, lined

TPE



Pipe clamp Trabant Inox



Pipe clamp Trabant Inox



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Snap-in closure
 Closure screw: M6

Technical data

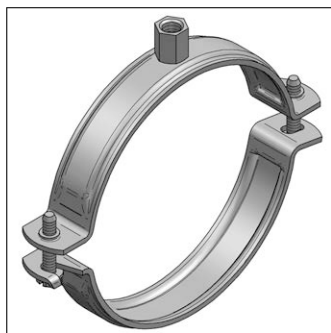
Material: Stainless steel
 Material type: V4A
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 4,5 mm

Delivery time: 2 working days, ex works

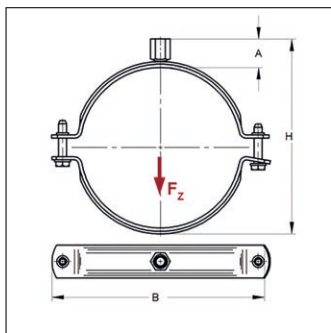
Remark: The permissible load was determined using statistical methods from the breaking loads and in compliance with a maximum permissible deformation of 1,5 mm or 2 % of the maximum clampable pipe diameter.

Clamping range [mm]	OD [inch]	Connection	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
12-15		M8/M10	20x1,0	0,4	40-43	22,0	59	0,0512	100	051003015
16-20	3/8	M8/M10	20x1,0	0,4	43-48	22,0	64	0,0543	100	051003020
21-25	1/2	M8/M10	20x1,0	0,4	48-53	22,0	69	0,0585	100	051003025
26-30	3/4	M8/M10	20x1,0	0,4	53-58	22,0	74	0,0628	100	051003030
32-37	1	M8/M10	20x1,0	0,4	60-65	22,0	81	0,0675	100	051003037
42-46	1 1/4	M8/M10	20x1,5	0,6	71-75	22,5	92	0,0956	50	051003046
48-52	1 1/2	M8/M10	20x1,5	0,6	76-81	22,5	98	0,103	50	051003052
54-58		M8/M10	20x1,5	0,6	82-87	22,5	104	0,110	50	051003058
60-65	2	M8/M10	20x1,5	0,6	88-94	22,5	111	0,117	50	051003065
70-76		M8/M10	25x1,5	0,7	99-105	22,5	121	0,151	50	051003076
85-90	3	M8/M10	25x2,0	1,0	116-121	23,5	138	0,206	50	051003090
98-102		M10/M12	25x2,5	2,5	132-136	27,0	154	0,264	50	051003102
108-114	4	M10/M12	25x2,5	2,5	142-148	27,0	166	0,289	50	051003114
132-136		M10/M12	25x2,5	2,5	168-172	27,0	188	0,347	25	051003136
137-141	5	M10/M12	25x2,5	2,5	173-177	27,0	193	0,356	25	051003141
159-163		M10/M12	25x2,5	2,5	195-199	27,0	215	0,401	25	051003163
164-168	6	M10/M12	25x2,5	2,5	200-204	27,0	220	0,416	25	051003168

» Pipe clamp Trabant Inox, unlined



Pipe clamp Trabant Inox



Pipe clamp Trabant Inox

**Specification**

Application area: Pipe clamp for fastening pipes.

Closure: Snap-in closure

Closure screw: M6

Technical data

Material: Stainless steel

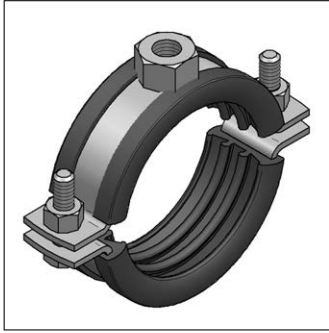
Material type: V4A

Delivery time: 2 working days, ex works

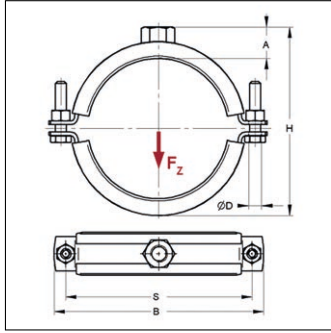
Clamping range [mm]	OD [inch]	Connection	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21-24	1/2	M8/M10	20x1,0	0,4	40-43	17,5	59	0,0454	100	051005024
25-29	3/4	M8/M10	20x1,0	0,4	44-48	17,5	64	0,0473	100	051005029
30-34	1	M8/M10	20x1,0	0,4	49-53	17,5	69	0,0499	100	051005034
35-39		M8/M10	20x1,0	0,4	54-58	17,5	74	0,0525	100	051005039
41-48	1 1/4	M8/M10	20x1,0	0,4	60-67	17,5	81	0,0553	100	051005048
51-55	1 1/2	M8/M10	20x1,5	0,6	71-75	18,0	92	0,0804	50	051005055
57-61	2	M8/M10	20x1,5	0,6	77-81	18,0	98	0,0856	50	051005061
63-67		M8/M10	20x1,5	0,6	83-87	18,0	104	0,0902	50	051005067
69-74		M8/M10	20x1,5	0,6	89-94	18,0	111	0,0952	50	051005074
76-85	2 1/2	M8/M10	25x1,5	0,7	99-105	18,0	121	0,122	50	051005085
84-90	3	M8/M10	25x1,5	0,7	104-110	18,0	126	0,126	50	051005090
106-110		M10/M12	25x2,5	2,5	132-136	22,5	154	0,225	50	051005110
114-122	4	M10/M12	25x2,5	2,5	140-148	22,5	166	0,246	50	051005122
129-133		M10/M12	25x2,5	2,5	156-160	22,5	177	0,276	25	051005133
139-144	5	M10/M12	25x2,5	2,5	166-171	22,5	188	0,294	25	051005144
167-171		M10/M12	25x2,5	2,5	194-198	22,5	215	0,337	25	051005171

» Pipe clamp stainless steel, lined

TPE



Pipe clamp stainless steel, lined



Pipe clamp stainless steel



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Screwed closure

Technical data

Material: Stainless steel
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C

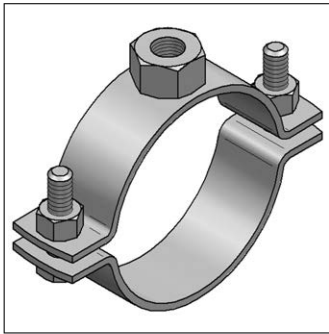
Delivery time: 2 working days, ex works

Clamping range [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Insulation thickness [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-20	3/8	M8	M6	20x1,5	3,5	0,75	31-35	11	56	V4A	0,0570	50	0498174
21-25	1/2	M8	M6	20x1,5	3,5	0,75	36-40	11	61	V4A	0,0630	50	0498175
26-30	3/4	M8	M6	20x1,5	3,5	0,75	41-45	11	66	V4A	0,0690	50	0498176
31-34	1	M8	M6	20x1,5	3,5	0,75	46-50	11	72	V4A	0,0730	50	0498177
35-40		M8	M6	20x1,5	3,5	0,75	51-56	11	78	V4A	0,0770	50	0498178
41-45	1 1/4	M8	M6	20x1,5	3,5	0,75	58-65	11	86	V4A	0,0840	50	0498179
15-20	3/8	M8	M6	20x1,5	3,5	0,75	31-35	11	56	V2A	0,0560	50	0468174
21-25	1/2	M8	M6	20x1,5	3,5	0,75	36-40	11	61	V2A	0,0630	50	0468175
26-30	3/4	M8	M6	20x1,5	3,5	0,75	41-45	11	66	V2A	0,0680	50	0468176
31-34	1	M8	M6	20x1,5	3,5	0,75	46-50	11	72	V2A	0,0730	50	0468177
35-40		M8	M6	20x1,5	3,5	0,75	51-56	11	78	V2A	0,0760	50	0468178
41-45	1 1/4	M8	M6	20x1,5	3,5	0,75	58-65	11	86	V2A	0,0830	50	0468179
47-52	1 1/2	M10	M6	20x2,0	6,0	0,95	69-74	16	96	V4A	0,133	50	0498210
53-57		M10	M6	20x2,0	6,0	0,95	75-79	16	101	V4A	0,141	50	0498211
58-64	2	M10	M6	20x2,0	6,0	0,95	80-86	16	108	V4A	0,149	50	0498212
65-70		M10	M6	20x2,0	6,0	0,95	87-92	16	114	V4A	0,160	50	0498213
72-80	2 1/2	M10	M6	20x2,0	6,0	0,95	94-102	16	123	V4A	0,171	50	0498214
82-90	3	M10	M6	20x2,0	6,0	0,95	104-112	16	134	V4A	0,186	50	0498215
93-100		M10	M6	20x2,0	6,0	0,95	115-122	16	144	V4A	0,203	50	0498216
102-107		M10	M6	20x2,0	6,0	0,95	124-129	16	152	V4A	0,216	50	0498217
108-116	4	M10	M6	20x2,0	6,0	0,95	130-138	16	160	V4A	0,225	50	0498218
47-52	1 1/2	M10	M6	20x2,0	6,0	0,95	69-74	16	96	V2A	0,132	50	0468210
53-57		M10	M6	20x2,0	6,0	0,95	75-79	16	101	V2A	0,140	50	0468211
58-64	2	M10	M6	20x2,0	6,0	0,95	80-86	16	108	V2A	0,148	50	0468212
65-70		M10	M6	20x2,0	6,0	0,95	87-92	16	114	V2A	0,159	50	0468213
72-80	2 1/2	M10	M6	20x2,0	6,0	0,95	94-102	16	123	V2A	0,169	50	0468214
82-90	3	M10	M6	20x2,0	6,0	0,95	104-112	16	134	V2A	0,185	50	0468215
93-100		M10	M6	20x2,0	6,0	0,95	115-122	16	144	V2A	0,210	50	0468216
102-107		M10	M6	20x2,0	6,0	0,95	124-129	16	152	V2A	0,214	50	0468217
108-116	4	M10	M6	20x2,0	6,0	0,95	130-138	16	160	V2A	0,224	50	0468218

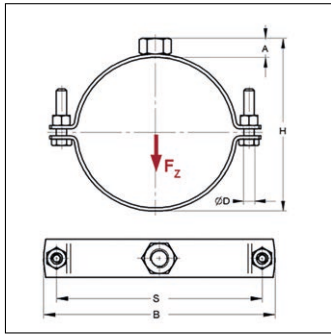
» Pipe clamp stainless steel, lined

Clamping range [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Insulation thickness [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
102-107		M12	M8	25x3,0	6,0	1,75	129-134	20	171	V4A	0,387	50	0490317
108-116	4	M12	M8	25x3,0	6,0	1,75	135-143	20	179	V4A	0,402	50	0490318
119-127		M12	M8	25x3,0	6,0	1,75	146-154	20	190	V4A	0,430	50	0496319
128-132		M12	M8	25x3,0	6,0	1,75	155-159	20	197	V4A	0,452	50	0496320
133-141	5	M12	M8	25x3,0	6,0	1,75	160-168	20	205	V4A	0,464	50	0496321
142-149		M12	M8	25x3,0	6,0	1,75	169-176	20	213	V4A	0,487	50	0496322
150-158		M12	M8	25x3,0	6,0	1,75	177-185	20	222	V4A	0,506	50	0496323
159-163		M12	M8	25x3,0	6,0	1,75	186-190	20	228	V4A	0,529	50	0496324
164-168	6	M12	M8	25x3,0	6,0	1,75	191-195	20	233	V4A	0,542	50	0496325
102-107		M12	M8	25x3,0	6,0	1,75	129-134	20	171	V2A	0,383	50	0460317
108-116	4	M12	M8	25x3,0	6,0	1,75	135-143	20	179	V2A	0,398	50	0460318
119-127		M12	M8	25x3,0	6,0	1,75	146-154	20	190	V2A	0,427	50	0466319
128-132		M12	M8	25x3,0	6,0	1,75	155-159	20	197	V2A	0,449	50	0466320
133-141	5	M12	M8	25x3,0	6,0	1,75	160-168	20	205	V2A	0,460	50	0466321
142-149		M12	M8	25x3,0	6,0	1,75	169-176	20	213	V2A	0,483	50	0466322
150-158		M12	M8	25x3,0	6,0	1,75	177-185	20	222	V2A	0,501	50	0466323
159-163		M12	M8	25x3,0	6,0	1,75	186-190	20	228	V2A	0,524	50	0466324
164-168	6	M12	M8	25x3,0	6,0	1,75	191-195	20	233	V2A	0,537	50	04663242
174-182		M16	M10	35x4,0	6,0	4,00	204-212	24	265	V4A	1,06	1	0490426
192-200		M16	M10	35x4,0	6,0	4,00	222-230	24	285	V4A	1,15	1	0490428
201-205		M16	M10	35x4,0	6,0	4,00	231-235	24	290	V4A	1,19	1	0490429
206-214		M16	M10	35x4,0	6,0	4,00	236-244	24	298	V4A	1,21	1	0490430
215-225	8	M16	M10	35x4,0	6,0	4,00	255-265	24	309	V4A	1,25	1	0490431
241-248		M16	M10	35x4,0	6,0	4,00	281-288	24	332	V4A	1,37	1	0492434
250-257		M16	M10	35x4,0	6,0	4,00	280-287	24	341	V4A	1,40	1	0492435
272-277	10	M16	M10	35x4,0	6,0	4,00	302-307	24	362	V4A	1,50	1	0492438
174-182		M16	M10	35x4,0	6,0	4,00	204-212	24	265	V2A	1,05	1	0462426
192-200		M16	M10	35x4,0	6,0	4,00	222-230	24	285	V2A	1,13	1	0462428
201-205		M16	M10	35x4,0	6,0	4,00	231-235	24	290	V2A	1,18	1	0462429
206-214		M16	M10	35x4,0	6,0	4,00	236-244	24	298	V2A	1,20	1	0462430
215-225	8	M16	M10	35x4,0	6,0	4,00	255-265	24	309	V2A	1,24	1	0462431
241-248		M16	M10	35x4,0	6,0	4,00	281-288	24	332	V2A	1,36	1	0462434
250-257		M16	M10	35x4,0	6,0	4,00	280-287	24	341	V2A	1,39	1	0462435
272-277	10	M16	M10	35x4,0	6,0	4,00	302-307	24	362	V2A	1,49	1	0462438
321-325		without		50x5,0	6,0	9,00	341-345		414	V4A	2,70	1	0494046
321-325	12	without		50x5,0	6,0	9,00	341-345		414	V2A	2,67	1	0464046
401-410	16	without		50x5,0	6,0	9,00	421-430		498	V2A	3,30	1	0464056

» Pipe clamp stainless steel, unlined



Pipe clamp stainless steel



Pipe clamp Stainless steel



Specification

Application area: Pipe clamp for fastening pipes.
 Closure: Screwed closure

Delivery time: 2 working days, ex works

Technical data

Material: Stainless steel

Clamping range [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15-20	3/8	M8	M6	20x1,5	0,8	25-30	8	49	V4A	0,0480	50	0499175
21-25	1/2	M8	M6	20x1,5	0,8	31-35	8	56	V4A	0,0530	50	0499176
26-30	3/4	M8	M6	20x1,5	0,8	36-40	8	61	V4A	0,0570	50	0499177
31-35	1	M8	M6	20x1,5	0,8	41-45	8	66	V4A	0,0610	50	0499178
36-40		M8	M6	20x1,5	0,8	46-50	8	72	V4A	0,0640	50	0499171
41-46	1 1/4	M8	M6	20x1,5	0,8	51-56	8	78	V4A	0,0680	50	0499179
15-20	3/8	M8	M6	20x1,5	0,8	25-30	8	49	V2A	0,0480	50	0469175
21-25	1/2	M8	M6	20x1,5	0,8	31-35	8	56	V2A	0,0520	50	0469176
26-30	3/4	M8	M6	20x1,5	0,8	36-40	8	61	V2A	0,0560	50	0469177
31-35	1	M8	M6	20x1,5	0,8	41-45	8	66	V2A	0,0600	50	0469178
36-40		M8	M6	20x1,5	0,8	46-50	8	72	V2A	0,0640	50	0469171
41-46	1 1/4	M8	M6	20x1,5	0,8	51-56	8	78	V2A	0,0680	50	0469170
48-55	1 1/2	M10	M6	20x2,0	1,5	60-67	10	87	V4A	0,0970	50	0499210
57-62	2	M10	M6	20x2,0	1,5	69-74	10	96	V4A	0,107	50	0499212
63-67		M10	M6	20x2,0	1,5	75-79	10	101	V4A	0,113	50	0499211
68-74		M10	M6	20x2,0	1,5	80-86	10	108	V4A	0,118	50	0499213
75-80	2 1/2	M10	M6	20x2,0	1,5	87-92	10	114	V4A	0,125	50	0499214
82-90	3	M10	M6	20x2,0	1,5	94-102	10	113	V4A	0,133	50	0499215
92-100		M10	M6	20x2,0	1,5	104-112	10	134	V4A	0,143	50	0499216
103-110		M10	M6	20x2,0	1,5	115-122	10	144	V4A	0,154	50	0499217
112-117	4	M10	M6	20x2,0	1,5	124-129	10	152	V4A	0,164	50	0499218
48-55	1 1/2	M10	M6	20x2,0	1,5	60-67	10	87	V2A	0,0970	50	0469210
57-62	2	M10	M6	20x2,0	1,5	69-74	10	96	V2A	0,106	50	0469212
63-67		M10	M6	20x2,0	1,5	75-79	10	101	V2A	0,112	50	0469211
68-74		M10	M6	20x2,0	1,5	80-86	10	108	V2A	0,117	50	0469213
75-80	2 1/2	M10	M6	20x2,0	1,5	87-92	10	114	V2A	0,124	50	0469214
82-90	3	M10	M6	20x2,0	1,5	94-102	10	113	V2A	0,131	50	0469215
92-100		M10	M6	20x2,0	1,5	104-112	10	134	V2A	0,142	50	0469216
103-110		M10	M6	20x2,0	1,5	115-122	10	144	V2A	0,153	50	0469217
112-117	4	M10	M6	20x2,0	1,5	124-129	10	152	V2A	0,162	50	0469218
103-110		M12	M8	25x3,0	3,2	120-127	14	163	V4A	0,310	50	0491317
112-117	4	M12	M8	25x3,0	3,2	129-134	14	171	V4A	0,327	50	0491318
118-126		M12	M8	25x3,0	3,2	135-143	14	179	V4A	0,339	50	0497319

» Pipe clamp stainless steel, unlined

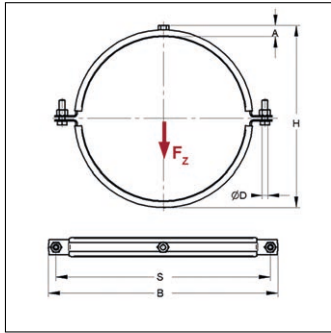
Clamping range [mm]	OD [inch]	Connection	Closure screw D	Material dimension [mm]	Load F _z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
129-137		M12	M8	25x3,0	3,2	146-154	14	190	V4A	0,360	50	0497320
138-142	5	M12	M8	25x3,0	3,2	155-159	14	197	V4A	0,378	50	0497321
143-151		M12	M8	25x3,0	3,2	160-168	14	205	V4A	0,388	50	0497322
152-159		M12	M8	25x3,0	3,2	169-176	14	213	V4A	0,405	50	0497323
160-168	6	M12	M8	25x3,0	3,2	177-185	14	222	V4A	0,421	50	0497324
103-110		M12	M8	25x3,0	3,2	120-127	14	163	V2A	0,307	50	0461317
112-117	4	M12	M8	25x3,0	3,2	129-134	14	171	V2A	0,324	50	0461318
118-126		M12	M8	25x3,0	3,2	135-143	14	179	V2A	0,336	50	0467319
129-137		M12	M8	25x3,0	3,2	146-154	14	190	V2A	0,357	50	0467320
138-142	5	M12	M8	25x3,0	3,2	155-159	14	197	V2A	0,374	50	0467321
143-151		M12	M8	25x3,0	3,2	160-168	14	205	V2A	0,384	50	0467322
152-159		M12	M8	25x3,0	3,2	169-176	14	213	V2A	0,401	50	0467323
160-168	6	M12	M8	25x3,0	3,2	177-185	14	222	V2A	0,416	50	0467324
169-173		M16	M10	35x4,0	7,2	192-196	19	247	V4A	0,858	1	04934251
174-178		M16	M10	35x4,0	7,2	197-201	19	252	V4A	0,876	1	04934252
193-200		M16	M10	35x4,0	7,2	216-223	19	274	V4A	0,945	1	0493428
202-210		M16	M10	35x4,0	7,2	225-233	19	284	V4A	0,978	1	0493429
211-215		M16	M10	35x4,0	7,2	234-238	19	290	V4A	1,01	1	0493430
216-224	8	M16	M10	35x4,0	7,2	239-247	19	298	V4A	1,03	1	0493431
244-250		M16	M10	35x4,0	7,2	267-273	19	324	V4A	1,13	1	0493434
251-258		M16	M10	35x4,0	7,2	274-281	19	332	V4A	1,16	1	0493435
272-280	10	M16	M10	35x4,0	7,2	295-303	19	354	V4A	1,23	1	0493438
169-173		M16	M10	35x4,0	7,2	192-196	19	247	V2A	0,849	1	04634251
174-178		M16	M10	35x4,0	7,2	197-201	19	252	V2A	0,867	1	04634252
193-200		M16	M10	35x4,0	7,2	216-223	19	274	V2A	0,935	1	0463428
202-210		M16	M10	35x4,0	7,2	225-233	19	284	V2A	0,967	1	0463429
211-215		M16	M10	35x4,0	7,2	234-238	19	290	V2A	1,00	1	0463430
216-224	8	M16	M10	35x4,0	7,2	239-247	19	298	V2A	1,02	1	0463431
244-250		M16	M10	35x4,0	7,2	267-273	19	324	V2A	1,12	1	0463434
251-258		M16	M10	35x4,0	7,2	274-281	19	332	V2A	1,14	1	0463435
272-280	10	M16	M10	35x4,0	7,2	295-303	19	354	V2A	1,22	1	0463438
321-325	12	without		50x5,0	13,0	331-335		404	V4A	2,27	1	0495046
356-360	14	without		50x5,0	13,0	336-370		439	V4A	2,50	1	0495051
321-325		without		50x5,0	13,0	331-335		404	V2A	2,24	1	0465046
356-360		without		50x5,0	13,0	336-370		439	V2A	2,47	1	0465051
401-410		without		50x5,0	13,0	411-420		488	V2A	2,75	1	0465056

» Ventilation pipe clamp stainless steel, lined

TPE



Ventilation pipe clamp stainless steel



Ventilation pipe clamp stainless steel



Specification

Application area: Pipe clamp for fastening ventilation pipes.
 Closure: Screwed closure

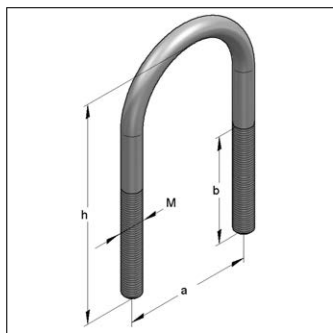
Technical data

Material: Stainless steel
 Material type: V2A
 Sound insulation lining: TPE
 Colour sound insulation lining: black
 Temperature resistance: -35 up to 100 °C
 Insulation thickness: 6 mm

Delivery time: 2 working days, ex works

Nominal width DN [mm]	OD [mm]	Connection	Closure screw D	Material dimension [mm]	Load F_z [kN]	Height H [mm]	Connection height A [mm]	Width B [mm]	Center distance S [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
63	66	M8	M6	20x2	1	91	16	118	105	0,145	50	0468113
71	74	M8	M6	20x2	1	99	16	126	113	0,155	50	0468114
80	83	M8	M6	20x2	1	108	16	135	122	0,168	50	0468115
90	93	M8	M6	20x2	1	118	16	147	134	0,185	50	0468116
100	104	M8	M6	20x2	1	129	16	156	143	0,192	50	0468117
112	116	M8	M6	20x2	1	141	16	168	155	0,200	50	0468118
125	129	M8	M6	20x2	1	154	16	201	181	0,226	50	0468120
140	144	M8	M8	20x2	1	169	16	216	196	0,265	50	0468122
150	154	M8	M8	20x2	1	179	16	226	206	0,305	50	0468123
160	164	M8	M8	20x2	1	189	16	236	216	0,316	50	0468124
180	184	M8	M8	20x2	1	209	16	256	236	0,359	1	0468127
200	204	M8	M8	20x2	1	229	16	278	258	0,387	1	0468129
224	228	M8	M8	20x2	1	253	16	302	282	0,423	1	0468132
250	254	M8	M8	20x2	1	279	16	328	308	0,458	1	0468135
280	284	M8	M8	20x2	1	309	16	358	338	0,498	1	0468140
300	305	M8	M8	20x2	1	331	16	380	360	0,513	1	0468143
315	320	M8	M8	20x2	1	346	16	395	375	0,556	1	0468146
355	360	M8	M8	20x2	1	386	16	435	415	0,613	1	0468152
400	405	M8	M8	20x2	1	431	16	482	462	0,680	1	0468156

» U-bolt



U-bolt

**Specification**

Application area: For direct installation of piping onto steel structures and suitable for push-through-assembling into profile rails. Suitable for sprinkler and VdS.

Recommended accessories: nuts, washer

Type of attachment : When used as bearing 2 nuts and 2 washer are recommended, when used as 4 nuts and 4 washers are recommended.

Technical data

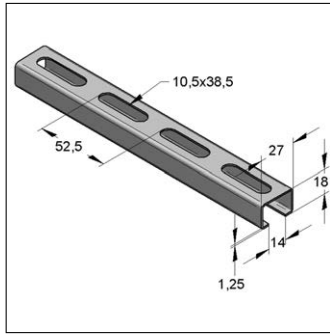
Material: Stainless steel

Material type: V4A

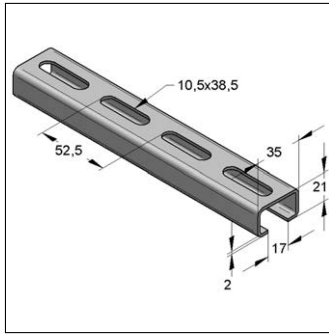
Nominal width DN [mm]	Thread M	OD [mm]	OD [inch]	Center distance a [mm]	Height h [mm]	Length thread b [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
15	M8	21,3	1/2	30	85	65	0,0643	1	050602201
20	M8	26,9	3/4	35	85	65	0,0641	1	050602701
25	M8	33,7	1	42	95	65	0,0711	1	050603401
32	M8	42,4	1 1/4	51	105	75	0,0791	1	050604201
40	M8	48,3	1 1/2	57	110	75	0,0841	1	050604801
50	M10	60,3	2	71	125	75	0,152	1	050606001
65	M10	76,1	2 1/2	87	140	75	0,172	1	050607601
80	M10	88,9	3	100	155	75	0,193	1	050608901
100	M12	108,0		121	190	95	0,337	1	0506108
100	M12	114,3	4	126	195	95	0,347	1	0506114
125	M12	133,0		146	215	95	0,385	1	0506133
125	M12	139,7	5	152	220	95	0,394	1	0506140
150	M12	159,0		172	240	95	0,432	1	0506159
150	M12	168,3	6	180	250	95	0,450	1	0506168
200	M12	219,1	8	233	300	95	0,546	1	0506219

» Profile rail untoothed, perforated

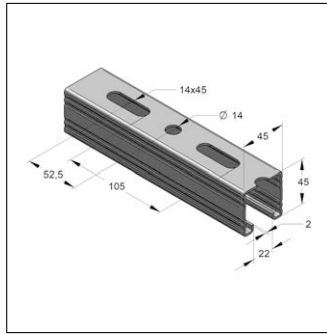
27 35 45



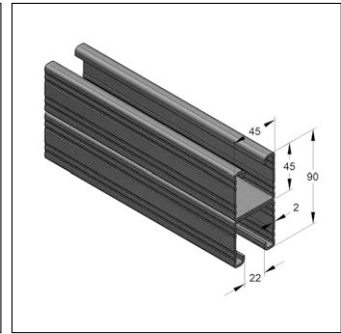
Profile rail C-profile 27/18



Profile rail C-profile 35/21



Profile rail C-profile 45/45



Profile rail C-profile double 45/90



Specification

Specification: untoothed, perforated

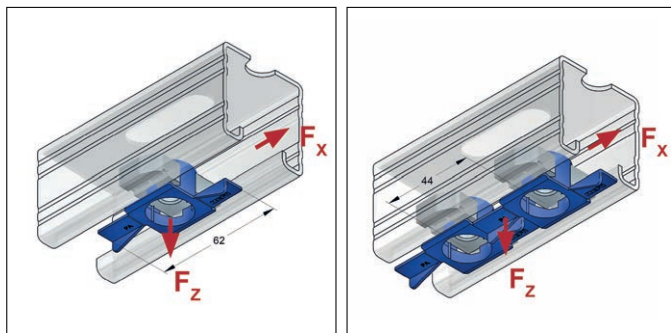
Technical data

Material: Stainless steel

Remark: Protecting caps see Chapter 2a and 2c. For a technical overview of the stainless steel mounting rails, see the end of chapter 13. Our application engineering department will provide a design in accordance with DIN EN 1993-1-2 (EC) for applications in the event of fire. A design in accordance with FM is carried out by our application technology department.

Dimension [mm]	Length [m]	Material type	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
27/18/1,25	2	V4A	0,610	800	20	0800150
35/21/2,00	3	V4A	1,21	1080	18	0800151
45/45/2,00	6	V4A	2,50	240	30	080015501
27/18/1,25	2	V2A	0,610	800	20	0800050
35/21/2,00	3	V2A	1,21	1080	18	0800051
45/45/2,00	6	V2A	2,50	240	30	080005501
45/90/2,00	6	V4A	4,99	120	24	080017001
45/90/2,00	6	V2A	4,99	120	24	080007001

» Stex 45 mounting plate MP-X



Stex 45 mounting plate MP-X

Two Stex MP-X pushed together results in a hole size of 44 mm

**Specification**

Application area: Quick fixing system with plastic cage for fastening connecting parts and profile rails.

Recommended accessories: hexagon screw FK 8.8

Type of attachment : form-locking connection

Profile type: 45

Technical data

Material: Stainless steel

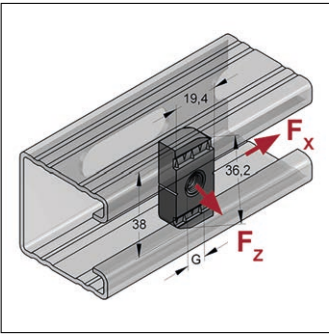
Material type: V4A

Remark: For load specifications see end of chapter 13.

Thread	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	38x62	0,0487	30	0481600
M10	38x62	0,0471	30	0481601
M12	38x62	0,0452	30	0481602

» Tooth plate S

45



Tooth plate S



Specification

- Application area: For connecting two profile rails or fastening connecting parts.
- Recommended accessories: Hexagon screw, threaded bolt/rod, washers, hexagon nut
- Type of attachment : press connections
- Profile type: 45

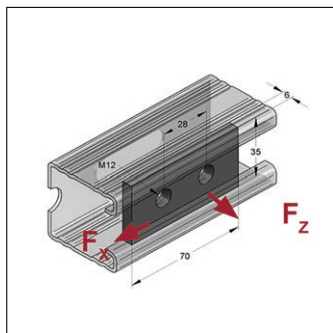
Technical data

- Material: Stainless steel
- Material type: V4A

Remark: For load specifications see end of chapter 13.

Thread G	Dimension [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	36x20x8	0,0467	50	0481615
M10	36x20x8	0,0451	50	0481616
M12	36x20x8	0,0432	50	0481617

» Threaded plate 2-hole



Threaded plate 2-hole



Specification

Application area: Connecting components, fastening in the profile base.

Recommended accessories: Hexagon screw, washer, hexagon nut

Type of attachment : glide fast connection

Remark: For load specifications see end of chapter 13.

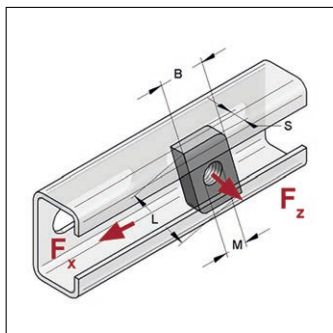
Technical data

Material: Stainless steel

Profile type	Thread	Dimension [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	M12	70x35x6	V4A	0,110	1	0481610
45	M12	70x35x6	V2A	0,112	1	0480610

» Threaded plate

27 35



Threaded plate

**Specification**

Application area: For direct mounting of pipe clamps or components.

Recommended accessories: Hexagon screw, threaded bolt/rod, washers, hexagon nut

Type of attachment : force-fit connection

Technical data

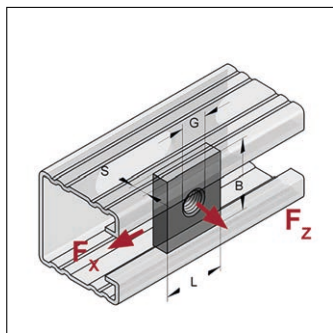
Material: Stainless steel

Material type: V4A

Remark: For load specifications see end of chapter 13.

Profile type	Plate type	Thread M	Dimension LxBxS [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
27	28x15	M8	24x13x4	0,0072	50	07507508
35	38x17	M8	35x18x6	0,0240	50	07507708
35	38x17	M10	35x18x6	0,0229	50	07507710
35	38x17	M12	35x18x6	0,0217	50	07507712

» Threaded square plate



Threaded square plate



Specification

Application area: Connecting components, fastening in the profile base.

Recommended accessories: Hexagon screw or threaded bolt/rod, washer and hexagon nut

Type of attachment : glide fast connection

Technical data

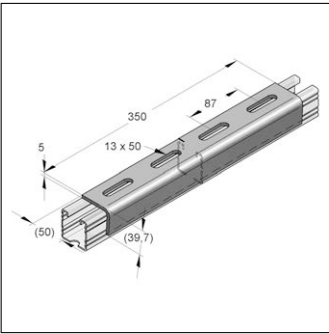
Material: Stainless steel

Remark: For load specifications see end of chapter 13.

Profile type	Dimension LxBxS [mm]	Thread G	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
27, 35	30x22x5	M8	V4A	0,0250	100	0750838
27, 35	30x22x5	M10	V4A	0,0242	100	0750840
27, 35	30x22x5	M12	V4A	0,0231	100	0750842
27, 35	30x22x5	M8	V2A	0,0250	100	0750818
27, 35	30x22x5	M10	V2A	0,0242	100	0750820
27, 35	30x22x5	M12	V2A	0,0231	100	0750822
35, 45	35x30x5	M8	V4A	0,0405	50	0481611
35, 45	35x30x6	M10	V4A	0,0476	50	0481612
35, 45	35x30x6	M12	V4A	0,0463	50	0481613
35, 45	35x30x6	M16	V4A	0,0427	50	0481614
35, 45	35x30x5	M8	V2A	0,0413	50	0480611
35, 45	35x30x6	M10	V2A	0,0486	50	0480612
35, 45	35x30x6	M12	V2A	0,0472	50	0480613
35, 45	35x30x6	M16	V2A	0,0436	50	0480614

» Connector 45

45



Connector for stainless steel rails



Specification

Application area: For the statically loadable connection or extension of C-profile rails of the profile system 45.

Recommended accessories: 4x threaded plate M12, 4x hexagon screw M12x25, 4x washer 13x24x2,5

Remark: For assembly instructions see chapter 15.

Technical data

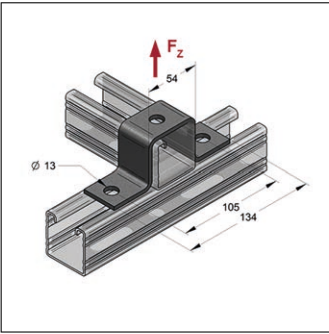
Material: Stainless steel

Material type: V4A

Length [mm]	Width [mm]	Height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
350	50	39,7	1,04	1	048162001

» Head profile

45



Head profile



Specification

Application area: Connecting component for fixing two crossing profile rails.

Profile type: 45/45

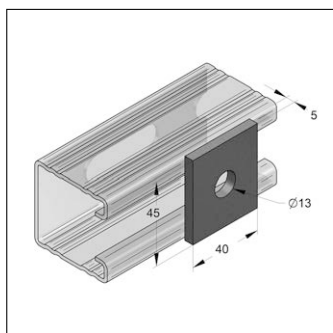
Technical data

Material: Stainless steel

Material type: V4A

Profile type	Material thickness [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45/45	4	3,5	0,229	1	0481626

» Perforated plate



Perforated plate



Specification

Technical data

Application area: Perforated plate without thread for connecting profile rails. Material: Stainless steel

Profile type: 45

Dimension [mm]	Hole-Ø [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45x40x5	13	V4A	0,0680	1	0481401
45x40x5	13	V2A	0,0680	1	0480401

» Admissible loading

in combination with 2-hole tooth plate V2A/V4A, threaded bolt V4A, tooth plate 4-Kt. V2A/V4A
global safety coefficient $\gamma = 2$

Profile rail V2A/V4A	Stex MP-X V4A			
			M10	M12
	F_z [kN]	F_x [kN]	Tightening torque [Nm]	Tightening torque [Nm]
45/45/2,0	8,00	2,00	50	60
45/90/2,0 D				

Profile rail V2A/V4A	Tooth plate, S V4A			
			M10	M12
	F_z [kN]	F_x [kN]	Tightening torque [Nm]	Tightening torque [Nm]
45/45/2,0	8,00	2,63	50	60
45/90/2,0 D				

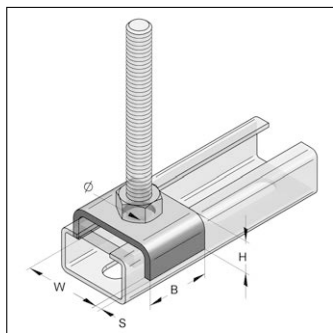
Profile rail V2A/V4A	2-hole threaded plate V2A/V4A		
			M12
	F_z [kN]	F_x [kN]	Tightening torque [Nm]
45/45/2,0	8,00	1,90	60
45/90/2,0 D			

Profile rail V2A/V4A	4-Kt. threaded bolt 35x30x6 V2A/V4A			
			M10	M12
	F_z [kN]	F_x [kN]	Tightening torque [Nm]	Tightening torque [Nm]
45/45/2,0	5,00	1,20	50	60
45/90/2,0 D				

Note: Load ratings and tightening torques for M8 and M6 screw connections are not technically feasible due to insufficient preload.

» Profile holder

45 27 35



Profile holder



Specification

Application area: Connecting component for fixing two profile rails lying on top of each other or for rail mounting on the building structure. Prevents the profile rail from bending up.

Profile type: 45

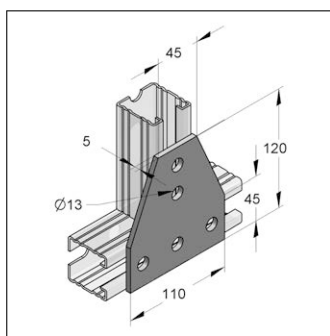
Technical data

Material: Stainless steel

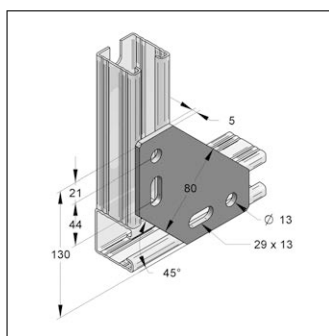
Profile type	Length W [mm]	Dimension BxHxS [mm]	Hole-Ø [mm]	for thread	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	46	35x15x4	13,0	M12	V4A	0,0857	1	0481629
27	28	20x8x2	10,5	M10	V2A	0,0134	1	0809513
35	36	30x12x3	13,0	M12	V2A	0,0424	1	0809511
45	46	35x15x4	13,0	M12	V2A	0,0857	1	0480629

» Plate

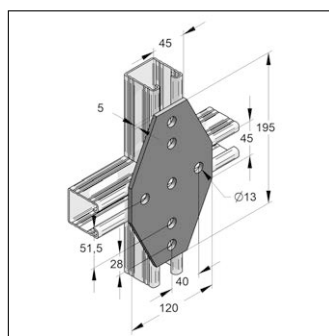
45



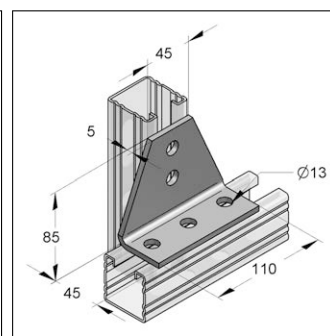
T-plate



Corner plate



Cross plate



T-plate 90°

13



Specification

Application area: For butt joints of profiles.

Profile type: 45

Technical data

Material: Stainless steel

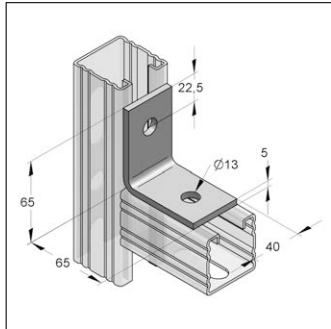
Remark: Load specifications depend on the connection technology see end of chapter 13.

Description	Hole-Ø [mm]	Dimension [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-plate	13	120x110x5	V4A	0,412	1	0481657

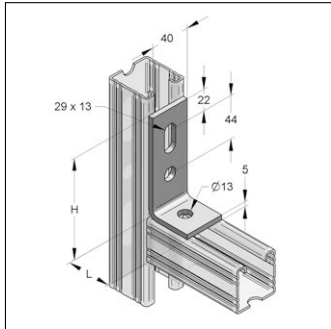
» Plate

Description	Hole-Ø [mm]	Dimension [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-plate	13	120x110x5	V2A	0,412	1	0480657
Corner plate	13	155x120x5	V4A	0,419	1	048165901
Cross plate	13	195x120x5	V2A	0,687	1	0480658
T-plate angled	13	85x110x5	V4A	0,418	1	0481687
T-plate angled	13	85x110x5	V2A	0,418	1	0480687

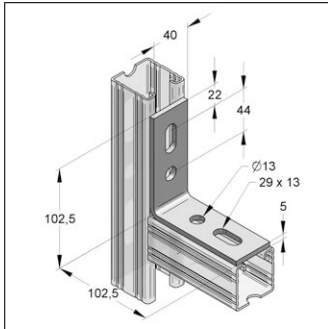
» Angle 40/5



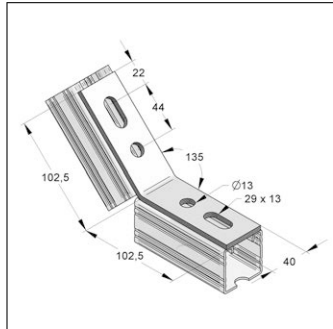
Angle 40/5 2-hole



Angle 40/5 3-hole



Angle 45/5 4-hole 90°



Angle 40/5 4-hole 135°



Specification

Application area: Angle components for connecting profile rails.
 Profile type: 45

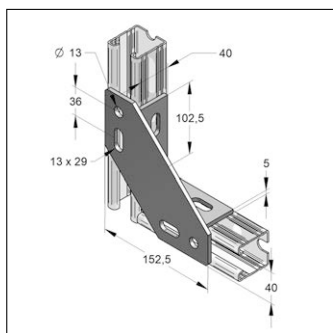
Technical data

Material: Stainless steel

Remark: Load specifications depend on the connection technology see end of chapter 13.

Description	Angle [°]	Bracket length HxL [mm]	Hole-Ø [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	90	65,0x65,0	13	V4A	0,188	1	0481402
3-hole L	90	102,5x65,0	13	V4A	0,235	1	048140301
3-hole K	90	102,5x45,0	13	V4A	0,202	1	048140401
4-hole	90	102,5x102,5	13	V4A	0,286	1	048140501
4-hole	135	102,5x102,5	13	V4A	0,292	1	048140601
2-hole	90	65,0x65,0	13	V2A	0,188	1	0480402
3-hole L	90	102,5x65,0	13	V2A	0,235	1	048040301
3-hole K	90	102,5x45,0	13	V2A	0,202	1	048040401
4-hole	90	102,5x102,5	13	V2A	0,283	1	048040501
4-hole	135	102,5x102,5	13	V2A	0,292	1	048040601

» Universal knot



Universal knot

**Specification**

Application area: Corner joint of C-profile channels. Even with changing rail slot position.

Profile type: 45

Technical data

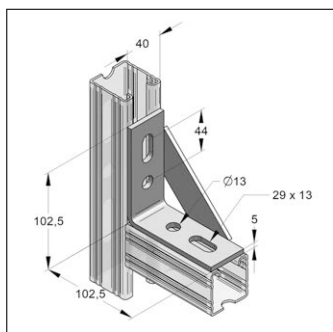
Material: Stainless steel

Material type: V4A

Remark: Load specifications depend on the connection technology see end of chapter 13.

Dimension [mm]	Specification	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
152,5x152,5x5	4-hole	0,840	1	0481409

» Knot triangle



Knot triangle 40/5

**Specification**

Application area: Corner connection of stainless steel C-profile rails 45.

Profile type: 45

Technical data

Material: Stainless steel

Remark: Load specifications depend on the connection technology see end of chapter 13.

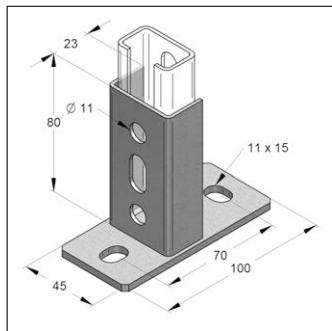
Dimension [mm]	Specification	Hole-Ø [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
102,5x102,5	4-Loch	13	V4A	0,375	1	048140701

» Knot triangle

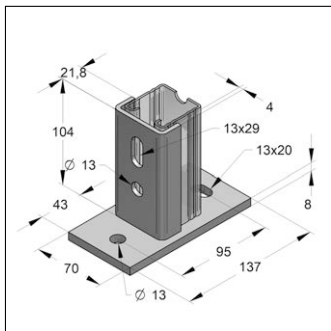
Dimension [mm]	Specification	Hole-Ø [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
102,5x102,5	4-Loch	13	V2A	0,375	1	048040701

» Holder for profile rails

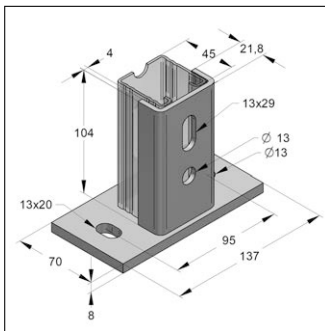
35 45



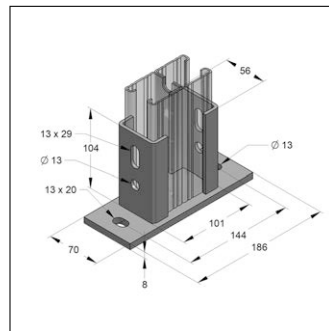
Holder 35 with base plate vertical



Holder 45 with base plate vertical



Holder 45 with base plate horizontal



Holder Double C-profile 45/90



Specification

Application area: Profile holder for fastening profile rails directly to the building structure.

Recommended accessories: Threaded plates, hexagonal screw

Remark: Load specifications depend on the connection technology see end of chapter 13.

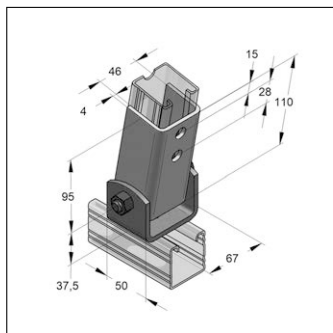
Technical data

Material: Stainless steel

Profile type	Alignment of plate	Dimension base plate [mm]	Hole distance [mm]	max. profile height [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35	vertical	100x45x4	70	21	V4A	0,238	1	9993300
45/45	vertical	137x70x8	95	45	V4A	0,826	1	048120101
45/45	horizontal	137x70x8	95	45	V4A	0,826	1	048120401
45/90	vertical	186x70x8	144	90	V4A	1,27	1	048120901
45/45	vertical	137x70x8	95	45	V2A	0,826	1	048020101
45/45	horizontal	137x70x8	95	45	V2A	0,826	1	048020401
45/90	vertical	186x70x8	144	90	V2A	1,27	1	048020901

» Joint holder for profile rails

45



Joint holder



Specification

Technical data

Application area: Holder for making braces up to 90° with profile rails. Material: Stainless steel

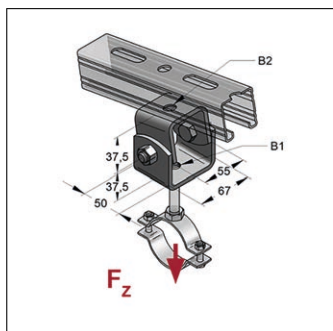
Profile type: 45

Remark: Load specifications refer to the component not to the connection.

Alignment	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical	V4A	0,856	1	0481206
vertical	V2A	0,856	1	0480206

» Joint holder with terminal hole

45



Joint holder terminal hole



13

Specification

Technical data

Application area: Bracket for bracing threaded rods or on sloping roof and floor structures. Material: Stainless steel

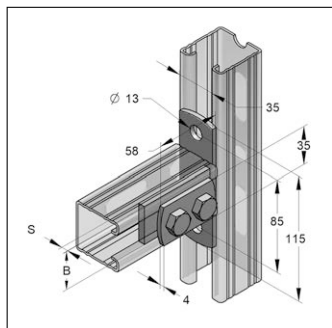
Remark: Load specifications refer to the component, not to the connection.

for threaded rod	Terminal hole B1 [mm]	Terminal hole B2 [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8-M12/M8-M12	13	13	10	V4A	0,671	1	0481207
M16/M16	17	17	10	V4A	0,663	1	0481208
M8-M12/M8-M12	13	13	10	V2A	0,671	1	0480207

» Joint holder with terminal hole

for threaded rod	Terminal hole B1 [mm]	Terminal hole B2 [mm]	Load F _Z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16/M16	17	17	10	V2A	0,663	1	0480208

» Connector



Connector



Specification

Application area: Profile holder to connect two profile rails.
 Scope of delivery: 2-hole threaded plate and hexagon screw
 Type of attachment : not applicable as ceiling support or vertical use (hanging), no use as console connection

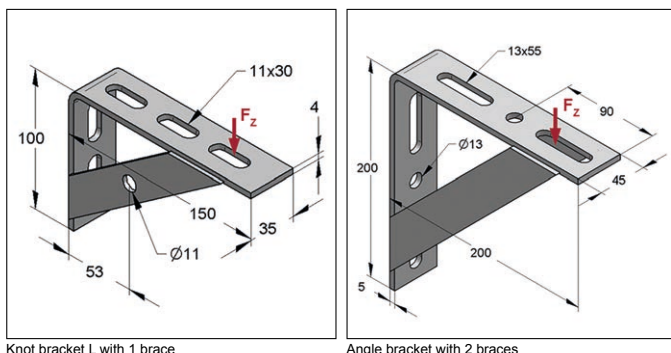
Technical data

Material: Stainless steel

Profile type	Alignment of plate	Dimension [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
35	vertical	115x35x4	V2A	0,301	1	0480660
45	vertical	115x35x4	V4A	0,363	1	0481656
45	vertical	115x35x4	V2A	0,363	1	0480656

» Angle bracket with braces

45



Knot bracket L with 1 brace

Angle bracket with 2 braces



Specification

Application area: Angle bracket with one struts, suitable for mounting rails or for wall mounting.

Profile type: 45

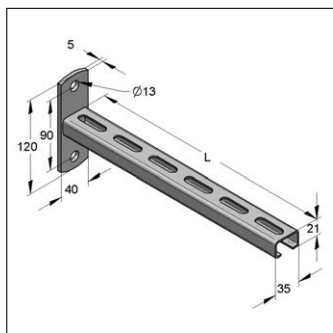
Technical data

Material: Stainless steel

Description	Dimension [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Knot bracket L with 1 brace	150x100x4	2,5	V4A	0,303	1	0803102
Knot bracket L with 1 brace	150x100x4	2,5	V2A	0,304	1	0803101
Angle bracket with 2 braces	200x200x5	5,0	V4A	1,37	1	0481408
Angle bracket with 2 braces	200x200x5	5,0	V2A	1,37	1	0480408

» Console C-profile 35/21/2,0 mm

35



Console 35/21/2,0



13

Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

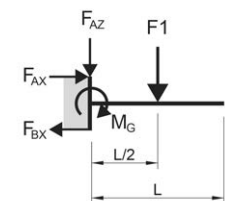
Material: Stainless steel

Length console L [mm]	Alignment of plate	Dimension [mm]	Hole-Ø [mm]	Load F_1 [kN]	Load F_2 [kN]	Load q_0 [kN/m]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
262,5	vertical	120x40x5	13	0,59	0,29	2,24	V4A	0,508	1	0582021
315,0	vertical	120x40x5	13	0,49	0,25	1,56	V4A	0,562	1	0583021
420,0	vertical	120x40x5	13	0,37	0,18	0,88	V4A	0,689	1	0584021

» Console C-profile 35/21/2,0 mm

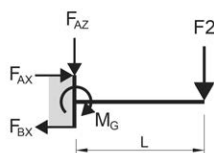
Length console L [mm]	Alignment of plate	Dimension [mm]	Hole-Ø [mm]	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
262,5	vertical	120x40x5	13	0,49	0,25	1,87	V2A	0,508	1	0582020
315,0	vertical	120x40x5	13	0,41	0,20	1,30	V2A	0,566	1	0583020
420,0	vertical	120x40x5	13	0,31	0,15	0,73	V2A	0,689	1	0584020

Loading condition F1



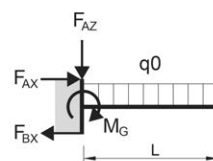
$$F_{AZ} = F1 \quad M_G = F1 \cdot L / 2$$

Loading condition F2



$$F_{AZ} = F2 \quad M_G = F2 \cdot L$$

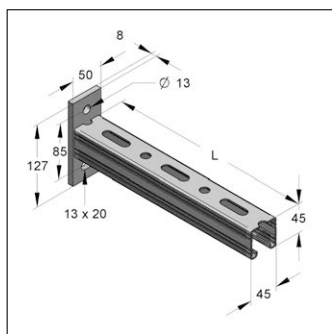
Loading condition q0



$$F_{AZ} = q0 \cdot L \quad M_G = q0 \cdot L^2 / 2$$

» Console C-profile 45/45/2,0 mm

45



Console 45/45/2,0



Specification

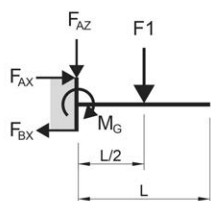
Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

Material: Stainless steel

Length console L [mm]	Alignment of plate	Dimension [mm]	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
210	vertical	127x53x8	3,36	1,68	16,02	V4A	0,916	1	0481661
315	vertical	127x53x8	2,24	1,12	7,12	V4A	1,18	1	0481662
420	vertical	127x53x8	1,68	0,84	4,01	V4A	1,44	1	0481663
525	vertical	127x53x8	1,35	0,67	2,56	V4A	1,70	1	0481664
210	vertical	127x53x8	2,80	1,40	13,35	V2A	0,916	1	0480661
315	vertical	127x53x8	1,87	0,93	5,93	V2A	1,18	1	0480662
420	vertical	127x53x8	1,40	0,70	3,34	V2A	1,44	1	0480663
525	vertical	127x53x8	1,12	0,56	2,14	V2A	1,70	1	0480664

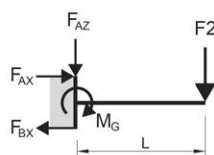
Loading condition F1



$$F_{AZ} = F1$$

$$M_G = F1 \cdot L / 2$$

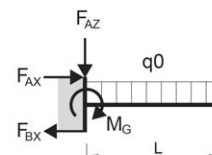
Loading condition F2



$$F_{AZ} = F2$$

$$M_G = F2 \cdot L$$

Loading condition q0

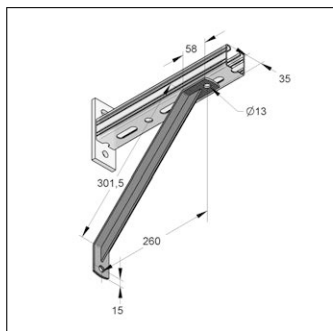


$$F_{AZ} = q0 \cdot L$$

$$M_G = q0 \cdot L^2 / 2$$

» Brace 45°

45



Brace 45° T-profile



Specification

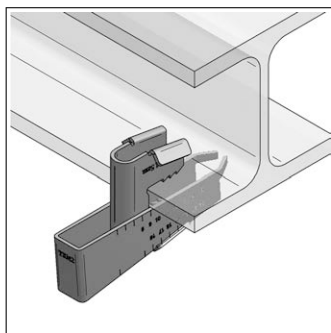
Application area: To increase the loading capacity of consoles and wall brackets.

Technical data

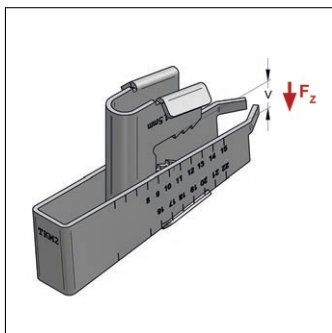
Material: Stainless steel

Length [mm]	Hole-Ø [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
301,5	13	V4A	0,679	1	0481510
301,5	13	V2A	0,679	1	0480510

» Beam clamp TKM 2



Beam clamp TKM 2



Beam clamp TKM 2



Specification

Application area: Fast and simple mounting at steel structures and profiles.

Installation advise: Beam clamp for stroking by hammer (3 graduation marks).

Technical data

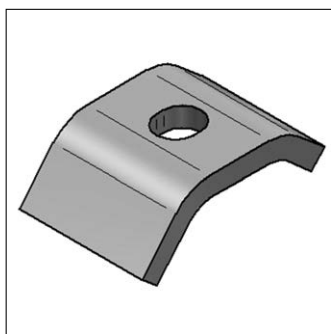
Material: Stainless steel

Material type: V4A

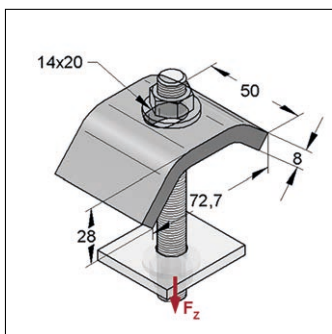
Remark: Assembly instructions on request.

Model	Type of attachment	Thread	Clamping thickness V [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
TKM 2	with pass hole	for M10	8-20	3,5	0,161	25	0481711

» Clamping claw



Clamping claw



Clamping claw with accessories



Specification

Application area: Half part for clamping claws assembly kit.

Technical data

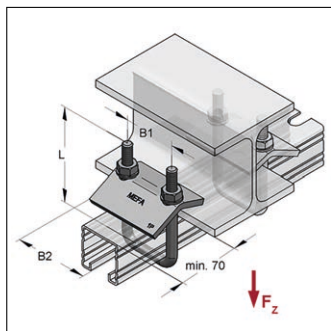
Material: Stainless steel

Material type: V2A

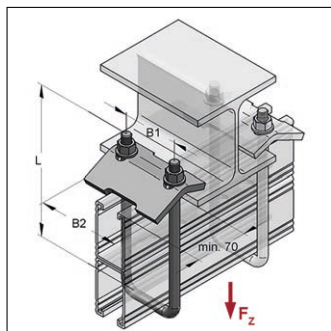
Remark: Load specifications refer to the component, not to the connection.

Profile type	for thread	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	M12	5	8,2	0,247	1	0480651

» Clamping bow



Clamping bow 45/45



Clamping bow 45/90



Specification

- Application area:** For mounting of C-profile rail on steel girder.
- Scope of delivery:** 1x U-bolt pipe hanger, 1x tensioning bracket, 2x nuts, 2x serrated lock washer
- Installation advise:** In case of horizontal mounting of pipes, the maximum loads of the clamping bow can differ to quoted loads due to torque of lever arm. Per anchorage point two clamping bows should be plugged in. Application loads refer to one set of clamping bows. Application loads of C-profile rail should be noticed.

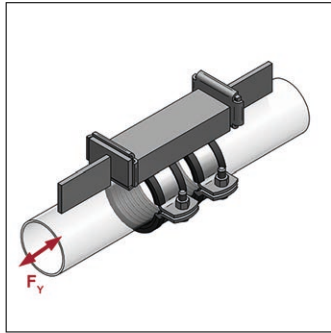
Technical data

- Material:** Stainless steel
- Material type:** V4A

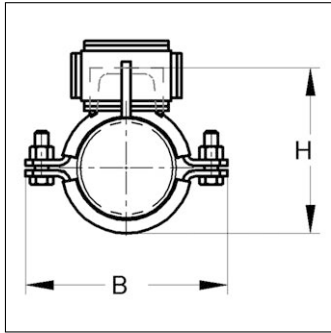
Thread	Profile type	Profile height [mm]	Length U-bolt L [mm]	Center distance U-bolt B1 [mm]	Width tensioning bracket B2 [mm]	max. clamping thickness [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	45	26-45	90	56	80	26	15	4	0,401	1	0481690
M10	45	90	135	56	80	26	15	4	0,447	1	0481692

» Fixpoint type A (for welding)

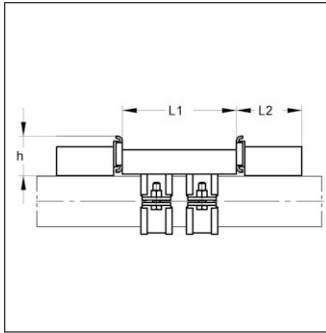
TPE



Fixpoint type A



Fixpoint type A



Fixpoint type A



Specification

- Application area:** Sound-decoupled fixpoint for welding to stainless steel pipes.
- Number of pressure piece:** 2 pcs
- Recommended accessories:** Mounting clamps to fix the pressure pieces, see Chapter 3.
- Installation advise:** The quality of the weld must always be checked on site by the installer. For reasons of reliable pressure absorption on the pipe surface, we recommend our fixed point type B (available on request) for pipes DN 80 and larger.

Technical data

- Material carrier and clamps:** Steel
- Surface carrier and clamps:** galvanized
- Material pressure pieces:** Stainless steel
- Sound insulation lining:** TPE
- Temperature resistance:** -35 up to 100 °C

Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

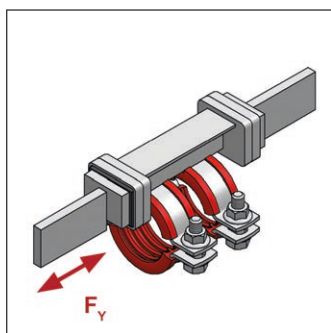
Model	Clamping range [mm]	Material dimension pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F _y [kN]	Material type pressure pads	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	20-25	25x3	T	100	81	1a	43	66-71	87	8,5	V4A	1,06	1	9999370
Size 1	26-30	25x3	T	100	81	1a	43	72-76	92	8,5	V4A	1,09	1	9999371
Size 1	31-36	25x3	T	100	81	1a	43	77-82	98	8,5	V4A	1,12	1	9999372
Size 1	38-45	25x3	T	100	81	1a	43	84-91	107	8,5	V4A	1,15	1	9999373
Size 1	47-51	25x3	T	100	81	1a	43	93-97	114	8,5	V4A	1,20	1	9999374
Size 1	53-57	25x3	T	100	81	1a	43	99-102	120	8,5	V4A	1,23	1	9999375
Size 1	20-25	25x3	T	100	81	1a	43	66-71	87	8,5	V2A	1,06	1	9999530
Size 1	26-30	25x3	T	100	81	1a	43	72-76	92	8,5	V2A	1,09	1	9999350
Size 1	31-36	25x3	T	100	81	1a	43	77-82	98	8,5	V2A	1,12	1	9999351
Size 1	38-45	25x3	T	100	81	1a	43	84-91	107	8,5	V2A	1,15	1	9999352
Size 1	47-51	25x3	T	100	81	1a	43	93-97	114	8,5	V2A	1,20	1	9999353
Size 1	53-57	25x3	T	100	81	1a	43	99-103	120	8,5	V2A	1,23	1	9999354
Size 2	60,3	50x5	U	200	115	2	43	112,5	148	20,0	V4A	4,75	1	9999376
Size 2	76,1	50x5	U	200	115	2	63	131,5	166	20,0	V4A	4,99	1	9999377
Size 2	88,9	50x5	U	200	115	2	63	146,0	179	20,0	V4A	5,20	1	9999378
Size 2	108,0	50x5	U	200	115	2	63	165,0	198	20,0	V4A	5,47	1	9999379
Size 2	114,3	50x5	U	200	115	2	63	171,5	204	20,0	V4A	5,56	1	9999380
Size 2	133,0	50x5	U	200	115	2	63	191,0	223	20,0	V4A	6,21	1	9999381
Size 2	139,7	50x5	U	200	115	2	63	198,5	230	20,0	V4A	6,32	1	9999382
Size 2	159,0	50x5	U	200	115	2	63	218,0	250	20,0	V4A	6,60	1	9999383
Size 2	60,3	50x5	U	200	115	2	43	112,5	148	20,0	V2A	4,75	1	9999419
Size 2	76,1	50x5	U	200	115	2	63	131,5	166	20,0	V2A	4,99	1	9999355
Size 2	88,9	50x5	U	200	115	2	63	146,0	179	20,0	V2A	5,20	1	9999356

» Fixpoint type A (for welding)

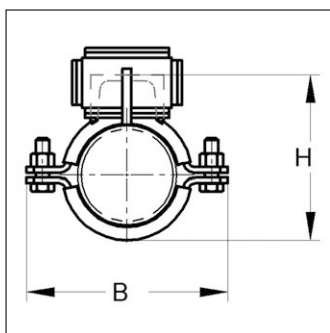
Model	Clamping range [mm]	Material dimension pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F _Y [kN]	Material type pressure pads	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 2	108,0	50x5	U	200	115	2	63	165,0	198	20,0	V2A	5,47	1	9999357
Size 2	114,3	50x5	U	200	115	2	63	171,5	204	20,0	V2A	5,56	1	9999358
Size 2	133,0	50x5	U	200	115	2	63	191,0	223	20,0	V2A	6,21	1	9999359
Size 2	139,7	50x5	U	200	115	2	63	198,5	230	20,0	V2A	6,32	1	9999429
Size 2	159,0	50x5	U	200	115	2	63	218,0	250	20,0	V2A	6,60	1	9999360

» Fixpoint type A (for welding)

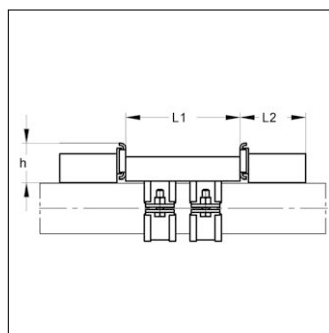
Silicone



Fixpoint type A



Fixpoint type A



Fixpoint type A



Specification

- Application area:** Sound-decoupled fixpoint for welding to stainless steel pipes.
- Number of pressure piece:** 2 pcs
- Recommended accessories:** Mounting clamps to fix the pressure pieces, see Chapter 3.
- Installation advise:** The quality of the weld must always be checked on site by the installer. For reasons of reliable pressure absorption on the pipe surface, we recommend our fixed point type B (available on request) for pipes DN 80 and larger.

Technical data

- Material carrier and clamps:** Steel
- Surface carrier and clamps:** galvanized
- Material pressure pieces:** Stainless steel
- Sound insulation lining:** Silicone
- Temperature resistance:** -50 up to 250 °C

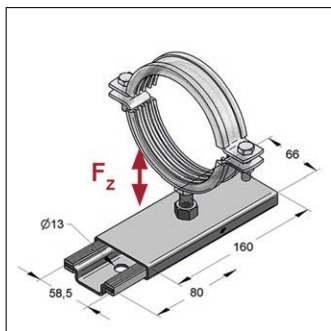
Remark: Assembly instructions see chapter 15. Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

Model	Clamping range [mm]	Material dimension pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F _Y [kN]	Material type pressure pads	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	20-25	25x3	T	100	81	1a	43	66-71	87	8,5	V4A	1,06	1	9999384
Size 1	26-30	25x3	T	100	81	1a	43	72-76	92	8,5	V4A	1,09	1	9999385
Size 1	31-36	25x3	T	100	81	1a	43	77-82	98	8,5	V4A	1,12	1	9999386
Size 1	38-45	25x3	T	100	81	1a	43	84-91	107	8,5	V4A	1,15	1	9999387
Size 1	47-51	25x3	T	100	81	1a	43	93-97	114	8,5	V4A	1,20	1	9999388
Size 1	53-57	25x3	T	100	81	1a	43	99-102	120	8,5	V4A	1,23	1	9999389
Size 1	20-25	25x3	T	100	81	1a	43	66-71	87	8,5	V2A	1,06	1	9999746
Size 1	26-30	25x3	T	100	81	1a	43	72-76	92	8,5	V2A	1,09	1	9999745
Size 1	31-36	25x3	T	100	81	1a	43	77-82	98	8,5	V2A	1,12	1	9999524
Size 1	38-45	25x3	T	100	81	1a	43	84-91	107	8,5	V2A	1,15	1	9999361

» Fixpoint type A (for welding)

Model	Clamping range [mm]	Material dimension pipe clamp [mm]	Profile steel type	Length of profile steel L1 [mm]	Length of pressure piece L2 [mm]	Clip size	Measure construction h [mm]	Height H [mm]	Width B [mm]	Load F _y [kN]	Material type pressure pads	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Size 1	47-51	25x3	T	100	81	1a	43	93-97	114	8,5	V2A	1,20	1	9999744
Size 1	53-57	25x3	T	100	81	1a	43	99-103	120	8,5	V2A	1,23	1	9999362
Size 2	60,3	50x5	U	200	115	2	43	112,5	148	20,0	V4A	4,75	1	9999390
Size 2	76,1	50x5	U	200	115	2	63	131,5	166	20,0	V4A	4,99	1	9999391
Size 2	88,9	50x5	U	200	115	2	63	146,0	179	20,0	V4A	5,20	1	9999392
Size 2	108,0	50x5	U	200	115	2	63	165,0	198	20,0	V4A	5,47	1	9999393
Size 2	114,3	50x5	U	200	115	2	63	171,5	204	20,0	V4A	5,56	1	9999394
Size 2	133,0	50x5	U	200	115	2	63	191,0	223	20,0	V4A	6,21	1	9999395
Size 2	139,7	50x5	U	200	115	2	63	198,5	230	20,0	V4A	6,32	1	9999396
Size 2	159,0	50x5	U	200	115	2	63	218,0	250	20,0	V4A	6,60	1	9999397
Size 2	60,3	50x5	U	200	115	2	43	112,5	148	20,0	V2A	4,75	1	9999525
Size 2	76,1	50x5	U	200	115	2	63	131,5	166	20,0	V2A	4,99	1	9999363
Size 2	88,9	50x5	U	200	115	2	63	146,0	179	20,0	V2A	5,20	1	9999364
Size 2	108,0	50x5	U	200	115	2	63	165,0	198	20,0	V2A	5,47	1	9999365
Size 2	114,3	50x5	U	200	115	2	63	171,5	204	20,0	V2A	5,56	1	9999366
Size 2	133,0	50x5	U	200	115	2	63	191,0	223	20,0	V2A	6,21	1	9999367
Size 2	139,7	50x5	U	200	115	2	63	198,5	230	20,0	V2A	6,32	1	9999368
Size 2	159,0	50x5	U	200	115	2	63	218,0	250	20,0	V2A	6,60	1	9999369

» Slider GL 100



Slider GL 100



Specification

Application area: Absorption of axial length expansion of standing, hanging, horizontal or vertical passed pipes.

max. sliding distance axial: 68 mm

Technical data

Material sliding element: Stainless steel
 Material type sliding element: V4A
 Material name sliding stripe: Polyamide 6
 Static friction factor: 0,2 - 0,3
 Temperature resistance: -30 up to 100 °C

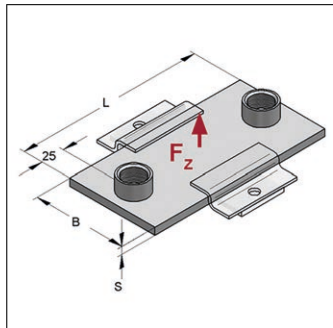
Delivery time: 5 working days, ex works

Connection	Load F _z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1xM10	2,5	0,431	1	0770550
1xM12	2,5	0,436	1	0770552
2xM12	2,5	0,453	1	0770553

» Slider GL 100

Connection	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2x1/2"	2,5	0,487	1	0770554

» Sliding plate



Sliding plate



Specification

Application area: Absorption of axial length expansion for standing, hanging or vertical passed pipes.

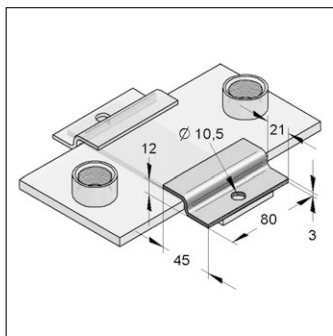
Recommended accessories: sliding stripe, Z-guide

Technical data

Material: Stainless steel

Dimension LxBxS [mm]	Connection	max. sliding distance axial hanging [mm]	max. sliding distance axial standing [mm]	Load F_z [kN]	for max. OD [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
150x100x8	2xM16	20	100	6,8	193,0	V4A	1,06	1	0772831
200x100x8	2xM16	70	150	4,5	299,5	V4A	1,39	1	0772832
200x150x8	2x1/2"	70	150	6,8	299,5	V4A	2,03	1	0772824
150x100x8	2xM16	20	100	6,8	193,0	V2A	1,06	1	0772808
200x100x8	2xM16	70	150	4,5	299,5	V2A	1,39	1	0772805
200x150x8	2x1/2"	70	150	6,8	299,5	V2A	2,03	1	0772804
250x100x8	2x1/2"	120	200	3,4	419,0	V2A	1,70	1	0772803

» Z-guide



Z-guides



Specification

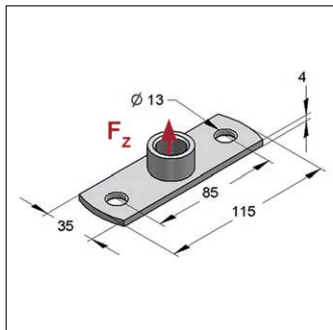
Application area: For guiding of MEFA sliding plates.
 Recommended accessories: hexagon screw M10x25, threaded plate, profile rail

Technical data

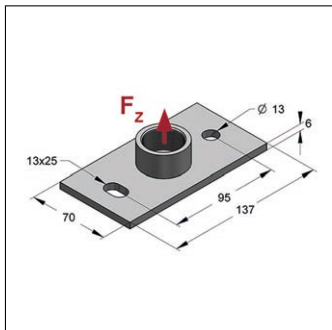
Material: Stainless steel

Length [mm]	Number of fixing holes [pcs]	max. plate thickness [mm]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
80	1	12	V4A	0,102	1	0779516
80	1	12	V2A	0,102	1	0779511

» Base plate



Base plate type I



Base plate type III



Specification

Application area: Plates with threaded connection suitable for mounting on building structure, on mounting rails or other objects.

Technical data

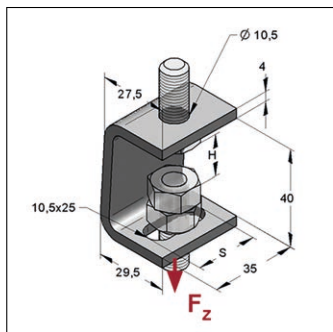
Material: Stainless steel

Series	Connection	Dimension [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Type I	M8	115x35x4	1,35	V4A	0,125	1	0598479
Type I	M10	115x35x4	1,35	V4A	0,132	1	0598495
Type I	M12	115x35x4	1,35	V4A	0,137	1	0598061
Type I	M16	115x35x4	1,35	V4A	0,159	1	0598088
Type I	1/2"	115x35x4	1,35	V4A	0,154	1	0598045

» Base plate

Series	Connection	Dimension [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Type III	1/2"	137x70x6	5,90	V4A	0,485	1	0598702
Type III	3/4"	137x70x6	5,90	V4A	0,498	1	0598703
Type III	1"	137x70x6	5,90	V4A	0,532	1	0598700
Type I	M8	115x35x4	1,35	V2A	0,125	1	0599479
Type I	M10	115x35x4	1,35	V2A	0,132	1	0599495
Type I	M12	115x35x4	1,35	V2A	0,137	1	0599061
Type I	M16	115x35x4	1,35	V2A	0,159	1	0599088
Type I	1/2"	115x35x4	1,35	V2A	0,154	1	0599045
Type III	1/2"	137x70x6	5,90	V2A	0,485	1	0599702
Type III	3/4"	137x70x6	5,90	V2A	0,498	1	0599703
Type III	1"	137x70x6	5,90	V2A	0,532	1	0599700

» Suspended bracket type L



Suspended bracket



Specification

Application area: For single fixation with threaded rods on the ceiling.

Recommended accessories: 1 threaded bolt M8/M10, 2 hexagon nuts M8/M10

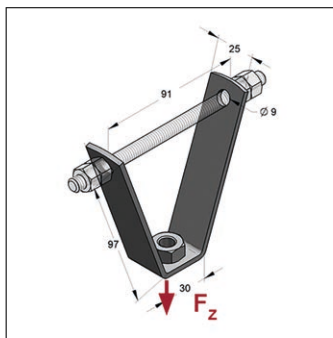
Installation advise: Secure the suspended pipe clamps with a lock nut.

Technical data

Material: Stainless steel

for thread	Hole-Ø [mm]	Elongated hole mm	Height adjustable H [mm]	Sliding distance s [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8, M10	10,5	10,5x24	30	14	2	V4A	0,0954	1	0781002
M8, M10	10,5	10,5x24	30	15-17	2	V2A	0,0954	1	0781001

» Trapeze hanger



Trapeze hanger



Specification

Application area: For mounting the pipelines, ventilation ducts and profile rails directly under a trapeze sheeting.

Recommended accessories: 1 x threaded bolt M8, 4 x hexagon nuts M8

Technical data

Material: Stainless steel

Remark: For trapeze hangers with sound insulation see chapter 8. For punching pliers for trapezoidal sheets see chapter 10.

Series	Specification	Threaded connection	Load F_Z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
MU-S	welded nut	M8	2	V4A	0,133	1	0783971
MU-S	welded nut	M10	2	V4A	0,139	1	0783972
MU-S	welded nut	M8	2	V2A	0,133	1	0783961
MU-S	welded nut	M10	2	V2A	0,139	1	0783962

» Threaded rods



Threaded rod



Specification

Application area: Complementary accessories for pipe mounting.

Norm: DIN 976-1

Technical data

Material: Stainless steel

Thread	Length L [mm]	Tension load [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	1000	15,68	V4A	0,333	50	0738508
M10	1000	24,85	V4A	0,520	25	0738510
M12	1000	36,11	V4A	0,749	25	0738512

» Threaded rods

Thread	Length L [mm]	Tension load [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16	1000	67,26	V4A	1,33	10	0738516
M8	1000	15,68	V2A	0,333	50	0738006
M10	1000	24,85	V2A	0,520	25	0738009
M12	1000	36,11	V2A	0,749	25	0738012
M16	1000	67,26	V2A	1,33	10	0738016

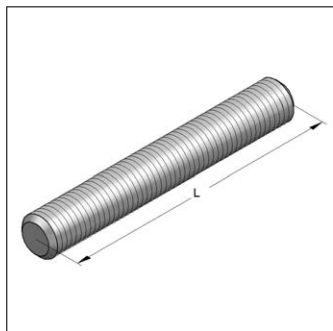
Stainless steel threaded rods / bolts - admissible load* on bending

Distance L	M8	M10	M12	M16
[mm]	F [kN]	F [kN]	F [kN]	F [kN]
50	0,10	0,20	0,35	0,87
100	0,05	0,10	0,18	0,44
150	0,02	0,06	0,12	0,29
200	0,01	0,03	0,07	0,22
250	0,01	0,02	0,04	0,15
300	0,01	0,01	0,03	0,10
350		0,01	0,02	0,07
400		0,01	0,02	0,06

*V2A $f_y=210$ N/mm², safety factor=1,5, E-module= 200.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

*V4A $f_y=210$ N/mm², safety factor=1,5, E-module= 200.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

» Threaded pins



Threaded pin



Specification

Application area: Complementary accessories for pipe mountings.

Norm: DIN 976-1

Recommended accessories: four-way key see chapter 10.

Technical data

Material: Stainless steel

Thread	Length L [mm]	Tension load [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	50	36,11	V4A	0,0372	100	0734550
M12	110	36,11	V4A	0,0822	50	0734610
M8	30	15,68	V2A	0,0098	100	0732130
M8	50	15,68	V2A	0,0165	100	0732150
M8	70	15,68	V2A	0,0232	100	0732170
M8	110	15,68	V2A	0,0365	100	0732210

» Threaded pins

Thread	Length L [mm]	Tension load [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	50	24,85	V2A	0,0258	100	0732350
M10	70	24,85	V2A	0,0362	100	0732370
M10	110	24,85	V2A	0,0570	50	0732410
M12	50	36,11	V2A	0,0372	50	0732550
M12	110	36,11	V2A	0,0822	50	0732610

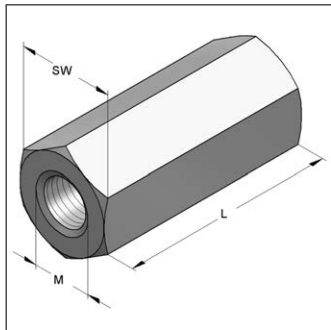
Stainless steel threaded rods / bolts - admissible load* on bending

Distance L [mm]	M8 F [kN]	M10 F [kN]	M12 F [kN]	M16 F [kN]
50	0,10	0,20	0,35	0,87
100	0,05	0,10	0,18	0,44
150	0,02	0,06	0,12	0,29
200	0,01	0,03	0,07	0,22
250	0,01	0,02	0,04	0,15
300	0,01	0,01	0,03	0,10
350		0,01	0,02	0,07
400		0,01	0,02	0,06

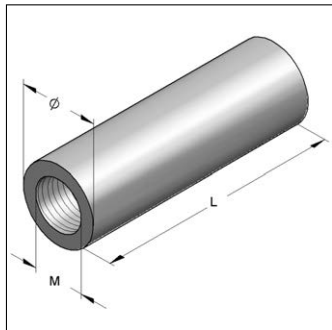
*V2A $f_y=210$ N/mm², safety factor=1,5, E-module= 200.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

*V4A $f_y=210$ N/mm², safety factor=1,5, E-module= 200.000 N/mm² max. deflection $f = L/150$ related to tensile stress area

» Threaded coupling



Threaded coupling hexagon



Threaded coupling round



Specification

Technical data

Application area: For extending threaded rods.

Material: Stainless steel

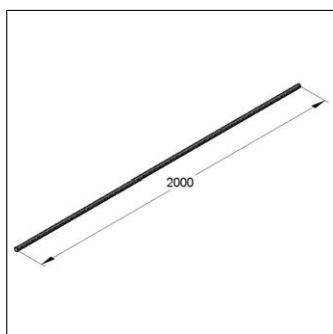
Remark: Load capacities in cold and hot areas (loads in case of fire) available on request.

Series	Female thread M	Length L [mm]	Outer diameter [mm]	Wrench Size SW	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
hexagon	M8	30		13	V4A	0,0263	100	0702880
hexagon	M10	30		17	V4A	0,0462	50	0702883
hexagon	M12	30		19	V4A	0,0550	50	0702888
hexagon	M16	40		24	V4A	0,110	25	0702894
hexagon	M8	30		13	V2A	0,0263	100	0702830
hexagon	M10	40		17	V2A	0,0617	50	0702835
hexagon	M12	40		19	V2A	0,0740	50	0702840
hexagon	M16	40		24	V2A	0,111	25	0702844

» Threaded coupling

Series	Female thread M	Length L [mm]	Outer diameter [mm]	Wrench Size SW	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
round	M8	30	11		V2A	0,0145	100	0700025
round	M10	40	13		V2A	0,0248	50	0700026
round	M12	40	15		V2A	0,0309	50	0700027
round	M16	50	25		V2A	0,0919	25	0700028

» Threaded distance piece



Threaded pipe



Specification

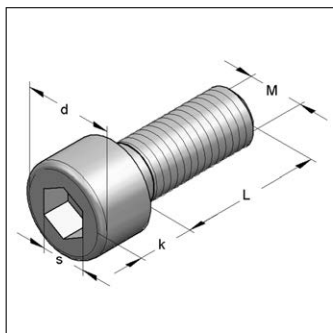
Application area: Complementary accessories for pipe mounting.

Technical data

Material: Stainless steel

Thread	Length [mm]	Material type	Weight [kg/m]	Packing unit [m]	Part-No.
1/2"	2000	V4A	1,15	20	0737002A4
1"	2000	V4A	2,30	10	0737004A4

» Allen screw



Allen screw



Specification

Recommended accessories: washer according to DIN 125

Norm: DIN EN ISO 4762

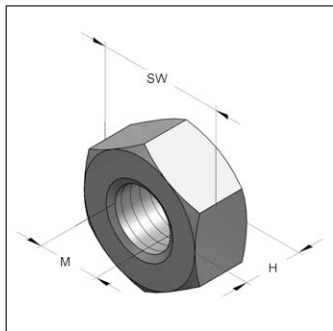
Technical data

Material: Stainless steel

Drive: Allen key

Thread M	Length L [mm]	Diameter head d [mm]	Height head k [mm]	Drive size s	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	20	13	8	6	V4A	0,0134	200	3445220
M10	30	16	10	8	V4A	0,0279	100	3445230
M12	25	18	12	10	V4A	0,0356	100	3445225
M8	20	13	8	6	V2A	0,0134	200	3445201
M10	30	16	10	8	V2A	0,0279	50	3445231
M12	25	18	12	10	V2A	0,0356	50	3445226

» Hexagon nut



Hexagon nut



Specification

Norm: DIN 934

Technical data

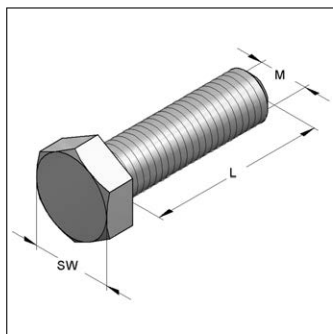
Material: Stainless steel

Thread M	Height H [mm]	Wrench size SW	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	5,0	10	V4A	0,0024	100	4128006
M8	6,5	13	V4A	0,0050	100	4128108
M10	8,0	17	V4A	0,0122	100	4128110
M12	10,0	19	V4A	0,0168	100	4128112
M16	13,0	24	V4A	0,0394	100	4128116

» Hexagon nut

Thread M	Height H [mm]	Wrench size SW	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M6	5,0	10	V2A	0,0024	100	4128106
M8	6,5	13	V2A	0,0050	100	4128008
M10	8,0	17	V2A	0,0122	100	4128010
M12	10,0	19	V2A	0,0168	100	4128012
M16	13,0	24	V2A	0,0394	100	4128016

» Hexagon screw



Hexagon screw



Specification

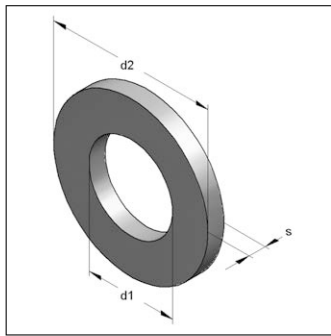
Norm: DIN EN ISO 4017

Technical data

Material: Stainless steel

Thread M	Length L [mm]	Wrench size SW	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	30	13	V4A	0,0180	100	3206631
M10	25	17	V4A	0,0266	100	3206702
M10	40	17	V4A	0,0360	50	3206741
M10	60	17	V4A	0,0486	50	3206761
M12	25	19	V4A	0,0388	50	3206802
M12	40	19	V4A	0,0524	50	3206826
M12	60	19	V4A	0,0705	50	3206836
M8	20	13	V2A	0,0140	100	3206620
M8	30	13	V2A	0,0180	100	3206630
M10	25	17	V2A	0,0266	100	3206701
M10	40	17	V2A	0,0360	50	3206740
M10	60	17	V2A	0,0486	50	3206760
M12	25	19	V2A	0,0388	50	3206801
M12	40	19	V2A	0,0524	50	3206825
M12	60	19	V2A	0,0705	50	3206835

» Washer



Washer

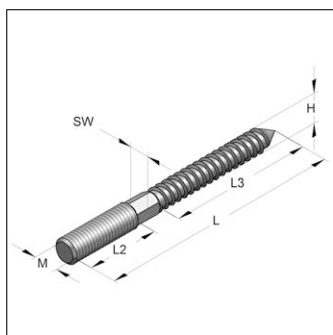


Technical data

Material: Stainless steel

Dimension d1xd2xs [mm]	Norm	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
8,4x16x1,6	DIN 125	V4A	0,0019	100	4338118
10,5x20x2,0	DIN 125	V4A	0,0037	100	4338120
13,0x24x2,5	DIN 125	V4A	0,0065	100	4338123
11,0x34x3,0	DIN 440	V4A	0,0162	50	4338411
8,4x25x2,0	DIN 9021	V4A	0,0071	100	4338208
10,5x30x2,5	DIN 9021	V4A	0,0127	100	4338210
13,0x37x3,0	DIN 9021	V4A	0,0231	100	4338213
17,0x50x3,0	DIN 9021	V4A	0,0425	100	4338217
8,4x40x3,0		V2A	0,0260	50	43381084
8,4x16x1,6	DIN 125	V2A	0,0019	100	4338108
10,5x20x2,0	DIN 125	V2A	0,0037	100	4338110
13,0x24x2,5	DIN 125	V2A	0,0065	100	4338113
8,4x25x2,0	DIN 9021	V2A	0,0071	100	4338008
10,5x30x2,5	DIN 9021	V2A	0,0127	100	4338010
13,0x37x3,0	DIN 9021	V2A	0,0231	100	4338013
17,0x50x3,0	DIN 9021	V2A	0,0425	50	4338017

» Hanger bolt



Hanger bolt



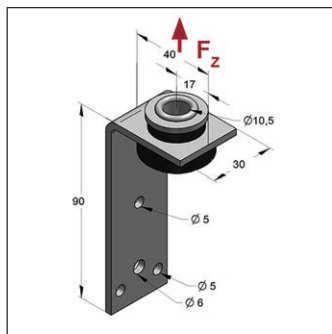
Technical data

Material: Stainless steel

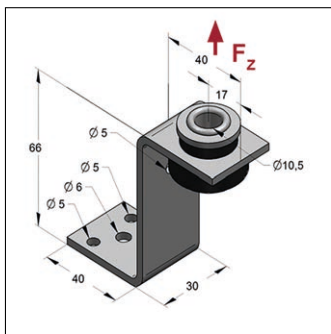
Thread M	Length L [mm]	Wood thread H	Length thread L2 [mm]	Length wood thread L3 [mm]	Wrench size SW	Type dowel	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M8	60	H7	20	30	6	10x44	V4A	0,0137	100	3600037
M8	80	H7	30	37	6	10x44	V4A	0,0188	100	3600045
M8	100	H7	40	47	6	10x44	V4A	0,0237	100	3600072
M8	60	H7	20	30	6	10x44	V2A	0,0137	100	3600035
M8	80	H7	30	37	6	10x44	V2A	0,0188	100	3600043
M8	100	H7	40	47	6	10x44	V2A	0,0237	100	3600070
M10	80	H8,9	20	47	8	12x60	V2A	0,0288	50	3609083
M10	100	H8,9	30	57	8	12x60	V2A	0,0369	50	3609105

» Duct holder, soundproofed

natural rubber



Duct holder LLN



Duct holder ZLN



Specification

Application area: For sound decoupling of air ducts.
 Connection: M8/M10

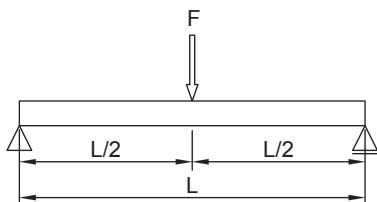
Technical data

Material: Stainless steel
 Sound insulation lining: natural rubber
 Temperature resistance: -35 °C up to 100 °C

Series	Sound absorption element	Specification	Height [mm]	Width material [mm]	Material thickness [mm]	Load F_z [kN]	Material type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LLN	riveted	light	90	30	3	0,9	V4A	0,109	1	0590004
ZLN	riveted	light	66	30	3	0,9	V4A	0,117	1	0590039
LLN	riveted	light	90	30	3	0,9	V2A	0,109	1	0590003
ZLN	riveted	light	66	30	3	0,9	V2A	0,117	1	0590038

» Loads profile rails, stainless steel

maximum loads for 1 x F



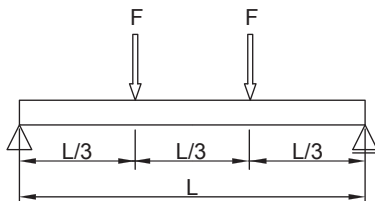
Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{F}{L}$	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,75	0,78	1,77	1,85	7,84	8,18	9,28	9,28
500	0,37	0,39	0,89	0,92	3,92	4,09	9,28	9,28
750	0,25	0,25	0,59	0,62	2,61	2,72	7,64	7,98
1000	0,15	0,14	0,40	0,40	1,95	2,04	5,72	5,97
1250			0,25	0,25	1,56	1,63	4,57	4,77
1500			0,17	0,17	1,29	1,35	3,80	3,96
1750			0,12	0,12	1,10	1,15	3,24	3,39
2000					0,87	0,87	2,83	2,95
2250					0,68	0,68	2,50	2,61
2500					0,54	0,54	2,24	2,34
2750					0,44	0,44	2,03	2,12
3000					0,36	0,36	1,85	1,93
3250					0,29	0,29	1,69	1,77
3500					0,24	0,24	1,56	1,59
3750					0,20	0,20	1,37	1,37
4000					0,17	0,17	1,18	1,18
4250					0,14	0,14	1,02	1,02
4500					0,11	0,11	0,89	0,89
4750							0,78	0,78
5000							0,68	0,68
5250							0,60	0,60
5500							0,52	0,52
5750							0,46	0,46
6000							0,40	0,40

Calculation according

Safety	$\chi = 1,54$
max. bending	$\delta_{zul} = L/200$
module of elasticity	$E = 200.000 \text{ N/mm}^2$

» Loads profile rails, stainless steel

maximum loads for 2xF



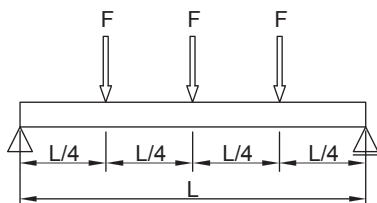
Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{F}{L}$	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,56	0,58	1,33	1,39	4,01	4,18	4,64	4,64
500	0,28	0,29	0,67	0,69	2,94	3,07	4,64	4,64
750	0,16	0,15	0,42	0,42	1,96	2,04	4,64	4,64
1000			0,24	0,24	1,47	1,53	4,29	4,48
1250			0,15	0,15	1,17	1,22	3,43	3,58
1500			0,10	0,10	0,93	0,93	2,85	2,97
1750					0,68	0,68	2,43	2,54
2000					0,51	0,51	2,12	2,22
2250					0,40	0,40	1,88	1,96
2500					0,32	0,32	1,68	1,76
2750					0,26	0,26	1,52	1,57
3000					0,21	0,21	1,31	1,31
3250					0,17	0,17	1,10	1,10
3500					0,15	0,15	0,94	0,94
3750					0,12	0,12	0,80	0,80
4000					0,10	0,10	0,69	0,69
4250							0,60	0,60
4500							0,53	0,53
4750							0,46	0,46
5000							0,40	0,40
5250							0,35	0,35
5500							0,31	0,31
5750							0,27	0,27
6000							0,24	0,24

Calculation according

Safety $\chi = 1,54$ max. bending $\delta_{zul} = L/200$ module of elasticity $E = 200.000 \text{ N/mm}^2$

» Loads profile rails, stainless steel

maximum loads for 3xF



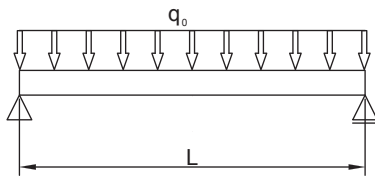
Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{F}{L}$	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,38	0,39	0,89	0,93	2,67	2,79	3,10	3,10
500	0,19	0,2	0,45	0,46	1,96	2,05	3,10	3,10
750	0,11	0,11	0,3	0,3	1,31	1,36	3,10	3,10
1000			0,17	0,17	0,98	1,02	2,86	2,99
1250			0,11	0,11	0,78	0,82	2,29	2,39
1500					0,65	0,67	1,90	1,98
1750					0,49	0,49	1,62	1,70
2000					0,37	0,37	1,42	1,48
2250					0,29	0,29	1,25	1,31
2500					0,23	0,23	1,12	1,17
2750					0,19	0,19	1,02	1,06
3000					0,15	0,15	0,93	0,94
3250					0,13	0,13	0,79	0,79
3500					0,11	0,11	0,67	0,67
3750							0,58	0,58
4000							0,50	0,50
4250							0,43	0,43
4500							0,38	0,38
4750							0,33	0,33
5000							0,29	0,29
5250							0,25	0,25
5500							0,22	0,22
5750							0,20	0,20
6000							0,17	0,17

Calculation according

Safety $\chi = 1,54$
 max. bending $\delta_{zul} = L/200$
 module of elasticity $E = 200.000 \text{ N/mm}^2$

» Loads profile rails, stainless steel

maximum loads for distributed load



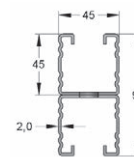
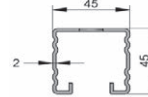
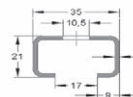
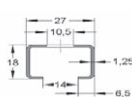
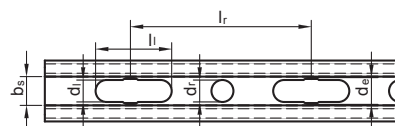
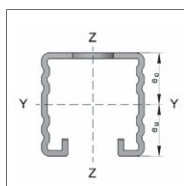
Profile rails stainless steel

	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
q_0 L	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
[mm]	load F							
250	5,93	6,18	14,14	14,75	49,33	51,47	57,14	57,14
500	1,48	1,54	3,53	3,68	15,66	16,34	28,57	28,57
750	0,55	0,53	1,52	1,52	6,95	7,25	19,05	19,05
1000	0,23	0,22	0,64	0,64	3,90	4,07	11,44	11,94
1250	0,12	0,11	0,32	0,32	2,49	2,60	7,31	7,63
1500			0,18	0,18	1,68	1,68	5,06	5,28
1750			0,11	0,11	1,05	1,05	3,71	3,87
2000					0,70	0,70	2,83	2,95
2250					0,48	0,48	2,22	2,32
2500					0,35	0,35	1,79	1,87
2750					0,26	0,26	1,47	1,54
3000					0,19	0,19	1,19	1,19
3250					0,15	0,15	0,92	0,92
3500					0,11	0,11	0,73	0,73
3750							0,59	0,59
4000							0,48	0,48
4250							0,39	0,39
4500							0,32	0,32
4750							0,27	0,27
5000							0,22	0,22
5250							0,19	0,19
5500							0,16	0,16
5750							0,13	0,13
6000							0,11	0,11

Calculation according

Safety $\chi = 1,54$ max. bending $\delta_{zul} = L/200$ module of elasticity $E = 200.000 \text{ N/mm}^2$

» Profile rail overview stainless steel



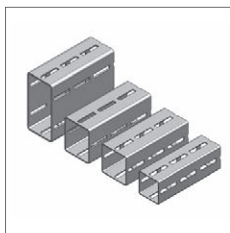
Profile rail			Stainless steel			
			27/18/1,25	35/21/2,0	45/45/2,0	45/90/2,0
V2A						
Material			1.4301	1.4301	1.4301	1.4301
Elastic limit	f_y	N/mm ²	230	230	230	230
Weight/ meter	G/m	kg/m	0,61	1,21	2,50	5,0
V4A						
Material			1.4571	1.4571	1.4571	1.4571
Elastic limit	f_y	N/mm ²	240	240	240	240
Weight/ meter	G/m	kg/m	0,61	1,21	2,50	5,0
Delivery length	l	m	2,00	3,00	6,00	6,00
Area (least cross section of the profile rail)	A_k	cm ²	0,67	1,44	2,86	5,7
Slot width	b_s	mm	14,0	17,0	22	22
Grid dimension	l_r	mm	52,5	52,5	105,0	105,0
Diameter round hole	d_r	mm	-	-	14	14
Diameter elongated hole x length	$d_l \times l_l$	mm x mm	10,5x38,5	10,5x38,5	14x45	14x45
Extension diameter elongated hole	d_e	mm	-	-	-	-
Characteristic values YY-axis						
Moment of inertia	I_y	cm ⁴	0,29	0,84	7,46	43,27
Section modulus	W_y	cm ³	0,31	0,74	3,28	9,61
Centroid distance	e_o	cm	0,85	0,97	2,27	4,50
Centroid distance	e_u	cm	0,95	1,13	2,22	4,50
Radius of inertia	i_y	cm	0,66	0,76	1,62	2,75
Characteristic values ZZ-axis						
Moment of inertia	I_z	cm ⁴	0,89	2,94	10,38	20,77
Section modulus z-axis	W_z	cm ³	0,66	1,68	4,61	9,23
Centroid distance	e_z	cm	1,35	1,75	2,25	2,25
Radius of inertia	i_z	cm	1,15	1,43	1,91	1,91

CENTUM®

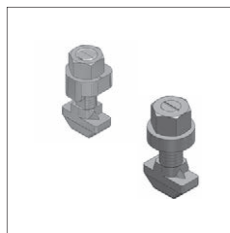
*modular system for heavy-duty
and industrial application*



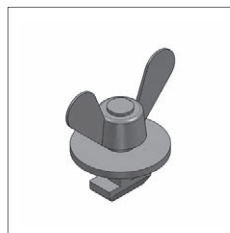
» **CENTUM® - components list**



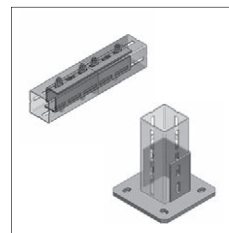
CENTUM® Square profile



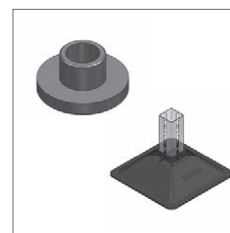
CENTUM® T-lock plus,
CENTUM® T-lock



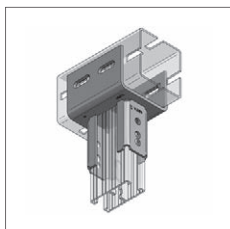
CENTUM® FixBob



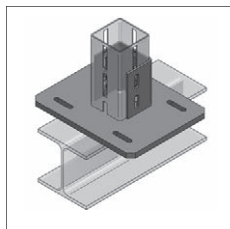
CENTUM® Connector-set,
CENTUM® Holder



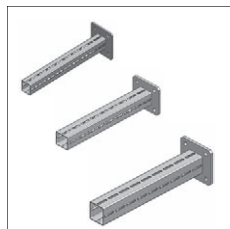
CENTUM® Adaptation
anchor Rooftop holder
XL 80



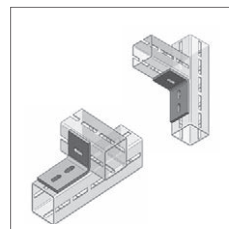
CENTUM® Adaptor



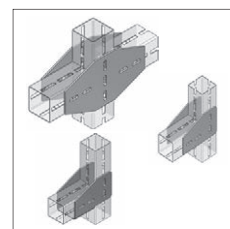
CENTUM® Girder fixation



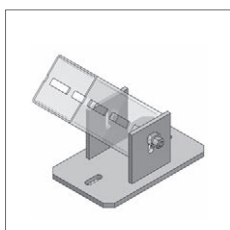
CENTUM® Consoles



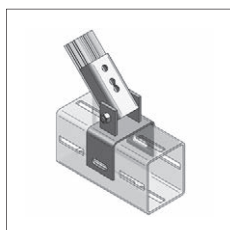
CENTUM® Angles



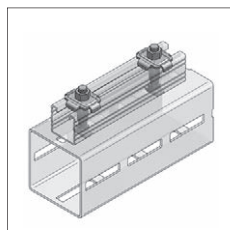
CENTUM® Angle-shoe
CENTUM® Plates



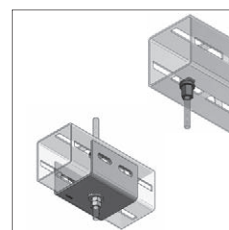
CENTUM® Joint holder



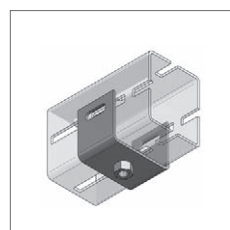
CENTUM® Joint
connection



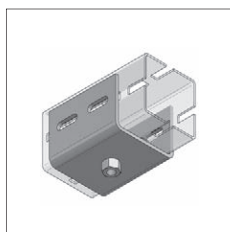
CENTUM® C-profile
connector



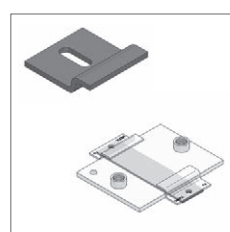
CENTUM®
Hanger massive
Direct connector



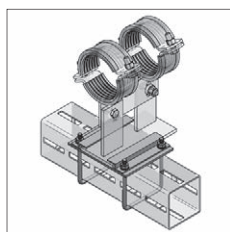
CENTUM® Thread
connector



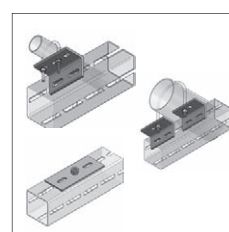
CENTUM® Massive
connector



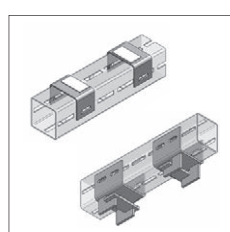
CENTUM® Z-guide,
CENTUM® Sliding stripe



CENTUM® Z-guides Set
with U-bolt



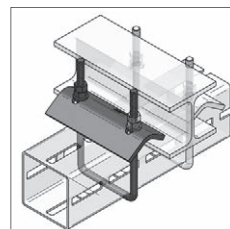
CENTUM® Pipe holder
CENTUM® Base plate



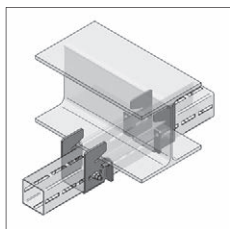
CENTUM® Sliding base



CENTUM® Protecting cap



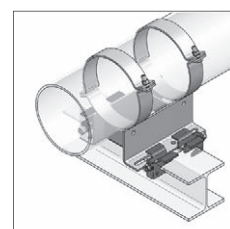
CENTUM® Clamping bow



CENTUM® Clamping shoe



CENTUM® Clamping
claws



Guiding clamp set

» **CENTUM® - components list**



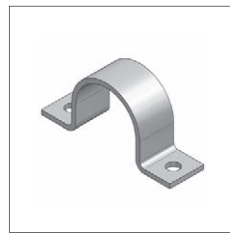
Pipe clamp Form A



Pipe clamp Form A
Maxima/Titan HD



Pipe clamp Form A
type TGA



Stirrup clamp



U-Bolt



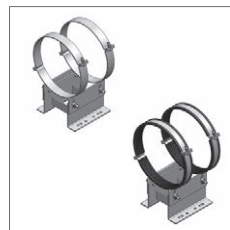
Sliding support T



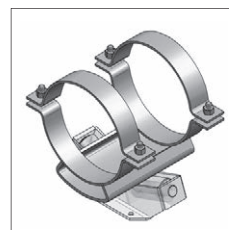
Sliding support T HV,
2 Pipe clamps



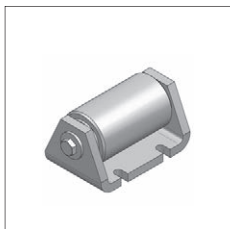
Sliding sledge



Sliding sledge HV



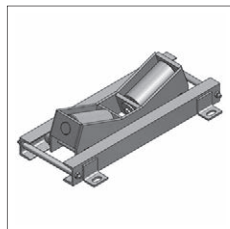
Isolation saddle for roller
bearings



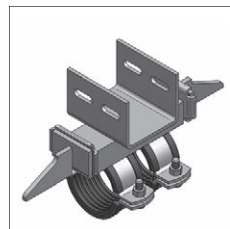
Single-roller-bearing



Double roller bearing, axial



Double roller bearing,
radial-axial



Fixpoint with CENTUM®
Massive connector

» CENTUM® - The answer for heavy-duty application!



CENTUM® is the perfect solution for heavy-duty piping and industrial application.

Especially designed to admit high loads, reliable and economically. Thanks to a minimum of system components, a clear and simple screw connection system, CENTUM® offers decisive advantages compared to common welded steel constructions.

» The major advantages of CENTUM®:

- Saving time and labour costs
- Stepless positioning of system components
- Unique, shape-fitting screw connection system with a load capacity up to 10 kN per connection
- Dismantlement at any time
- Compatible interface for MEFA-profile channels
- All parts are hot-dip galvanized or zincnickel coated
- Closed profile geometric for max. torsion stiffness
- A well thought-out range of system components offering a maximum of possible variants in construction

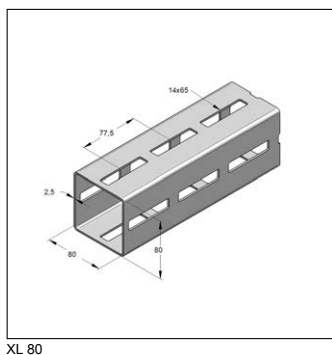


Approval/
calculation options:

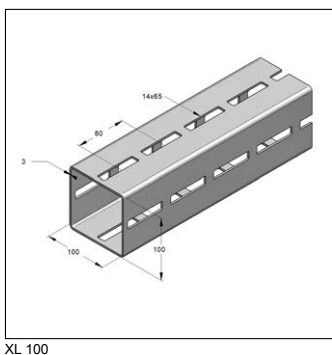
- • ETA-24/0262
- DIN EN 13480-3
- DIN 1090-2 CE
- DIN EN 1998-4 (Seismic)
- DIN EN ISO 9001
- DIN EN 1993

» CENTUM® Square profile

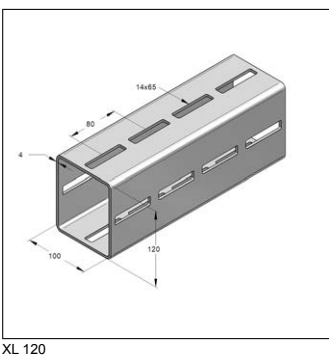
80 100 120 200



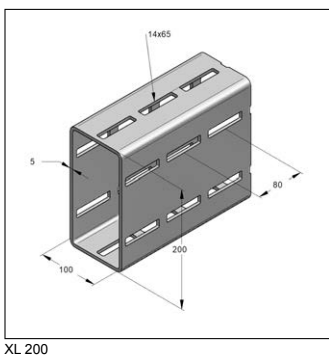
XL 80



XL 100



XL 120



XL 200

**Specification**

Application area: Heavy-duty square profile for modular industrial and plant construction.

Specification: modular system, 4-sided without raster in connection with mounting parts, torsion stiffness, high load capacity

Technical data

Material: Steel

Surface: hot-dip galvanized

Remark: Load values for CENTUM® mounting profiles can be found at the end of this chapter. A design in accordance with DIN EN 1993-1-2 (EC) for applications in the event of fire is carried out by our application technology department. A design in accordance with FM is carried out by our application technology department.

* for delivery length 8 m please attend to special delivery conditions

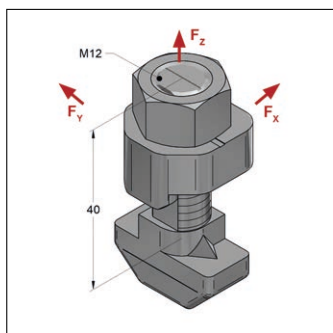
Model	Length [m]	Dimension [mm]	Weight [kg/m]	Bundle [m]	Packing unit [m]	Part-No.
XL 80	6	80x80x2,5	5,51	150	6	16008060
XL 100	6	100x100x3,0	8,46	96	6	16010060
XL 120	6	120x100x4,0	12,20	72	6	16012060
XL 120s	6	120x100x5,0	14,83	72	6	16012061
XL 200	6	200x100x5,0	20,46	24	6	16020060
XL 200 WST	8	200x100x5,0	20,46	32	8	16020080 *

CENTUM® Square profile - Overview technical values

Identification	Cross-section area	Section modulus of torsion	Geometrical moment of inertia		Section modulus		Gyration radius	
			I_y	I_z	W_y	W_z	i_y	i_z
	A_k cm ²	W_t cm ³	cm ⁴	cm ⁴	cm ³	cm ³	cm	cm
Profile XL 80	6,19	36,04	64,51	64,51	16,13	16,13	3,23	3,23
Profile XL 100	9,73	56,40	157,14	157,14	31,43	31,43	4,02	4,02
Profile XL 120	14,45	89,10	310,55	237,23	51,76	47,44	4,64	4,05
Profile XL 120s	17,55	109,25	372,76	284,42	62,12	56,88	4,61	4,03
Profile XL 200	24,15	185,25	1255,68	433,47	125,56	86,69	7,21	4,24

» CENTUM® T-lock plus

80 100 120 200



T-lock plus



Product description

- High-quality patented screw connection
- With anti-twist protection, the hammer head and the lock washer are secured against twisting
- Enormous time savings
- Visible position control via marking notch

Specification

Application area: For form-locking mounting with MEFA CENTUM® square profile.

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel

Surface: Zinc-Nickel

Remark: Assembly instructions see Chapter 15.

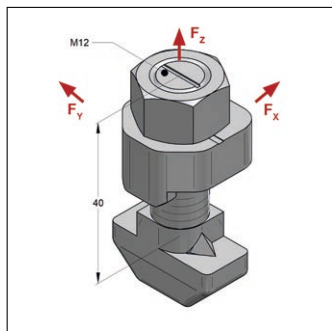
Description	Thread	Length thread [mm]	Strength class	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-lock plus	M12	40	10.9	0,120	50	1610011001

Loads and tightening torques CENTUM® T-lock plus

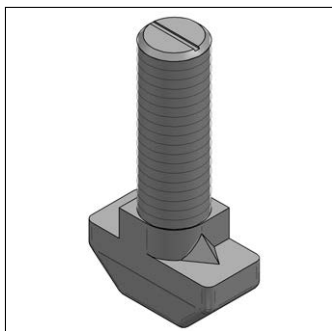
Profile	F_x [kN]	F_y [kN]	F_z [kN]	tightening torque [Nm]
XL 80	16,0	19,5	3,0	90
XL 100	16,0	19,5	3,0	120
XL 120	16,0	19,5	4,0	120
XL 120s	16,0	19,5	6,0	120
XL 200	16,0	19,5	6,0	120
XL 200 horizontal	16,0	19,5	4,0	120

» CENTUM® T-lock

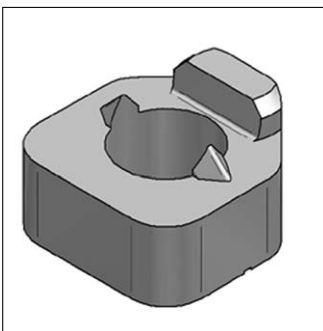
80 100 120 200



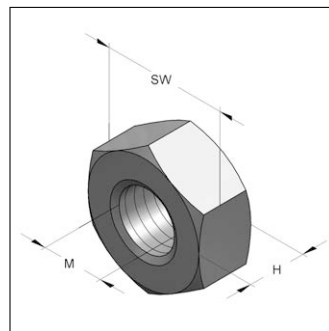
T-lock



CENTUM® T-lock bolt



CENTUM® Lock washer



Hexagon nut



Specification

Application area: For form-locking mounting with MEFA CENTUM® square profile.

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel

Surface: Zinc-Nickel

Remark: Assembly instructions see Chapter 15.

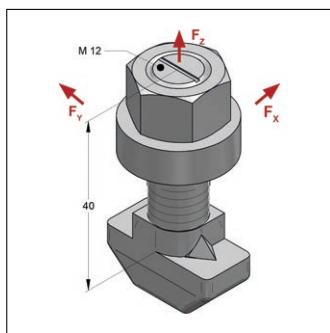
Description	Thread	Length thread [mm]	Strength class	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-lock	M12	40	10.9	0,120	50	1610011000
T-lock bolt	M12	40	10.9	0,0640	50	1610012100/zn
Lock washer			10	0,0310	100	1610019000/zn
Hexagon nut	M12		10	0,0165	100	8989995/zn

Loads and tightening torques CENTUM® T-lock

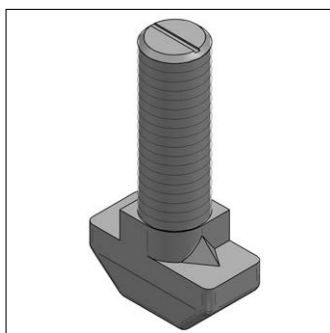
Profile	F_x [kN]	F_y [kN]	F_z [kN]	tightening torque [Nm]
XL 80	16,0	19,5	3,0	90
XL 100	16,0	19,5	3,0	120
XL 120	16,0	19,5	4,0	120
XL 120s	16,0	19,5	6,0	120
XL 200	16,0	19,5	6,0	120
XL 200 horizontal	16,0	19,5	4,0	120

» CENTUM® T-bolt, with steel disk

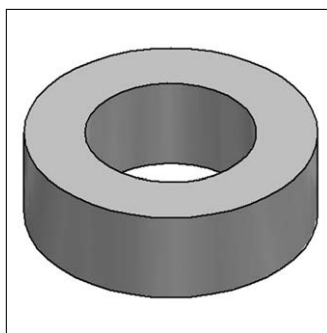
80 100 120 200



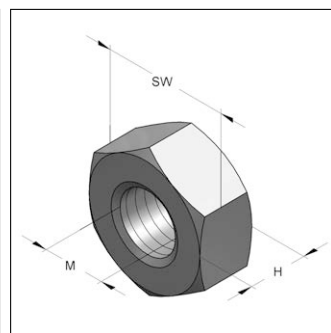
CENTUM® T-bolt



CENTUM® T-lock bolt



CENTUM® steel disk



Hexagon nut



Specification

Application area: For frictional mounting with MEFA CENTUM® square profile.
 Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel
 Surface: Zinc-Nickel

Remark: Assembly instructions see Chapter 15.

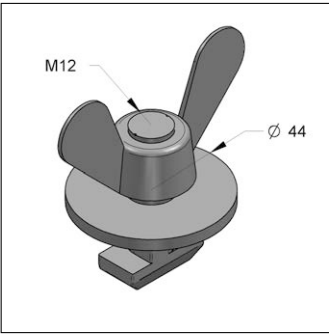
Description	Thread	Length thread [mm]	Strength class	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-bolt with steel disk	M12	40	10.9	0,100	50	1610012000
T-lock bolt	M12	40	10.9	0,0640	50	1610012100/zn
steel disk			4.6	0,0187	100	1610019100/zn
Hexagon nut	M12		10	0,0165	100	8989995/zn

Loads and tightening torque CENTUM® Hammer head with steel disk

Profile	F_x [kN]	F_y [kN]	F_z [kN]	tightening torque [Nm]
XL 80	3,0	19,5	3,0	90
XL 100	3,0	19,5	3,0	120
XL 120	3,0	19,5	4,0	120
XL 120s	3,0	19,5	6,0	120
XL 200	3,0	19,5	6,0	120
XL 200 horizontal	3,0	19,5	4,0	120

» CENTUM® FixBOB

80 100 120 200



CENTUM® FixBOB

Specification

Application area: Adjustment aid for temporary fixation of CENTUM® assembly parts.

Specification: Wing nut with hammer head

Installation advise: Only for fixing CENTUM® components

Technical data

Material: Steel

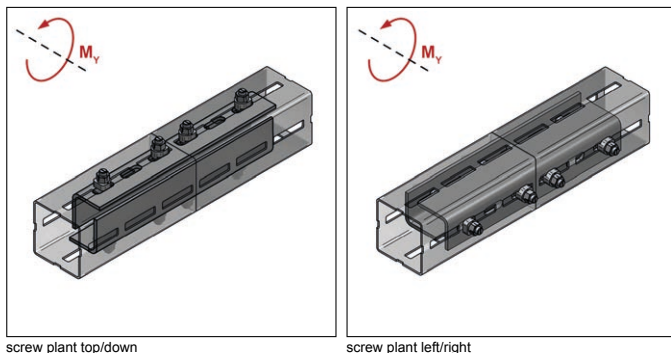
Surface: galvanized

Remark: Assembly instructions see Chapter 15.

Thread	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	0,139	10	1610013000

» CENTUM® Connector

80	100	120	200
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screw plant top/down

screw plant left/right

**Specification**

Application area: Component for connecting two identical CENTUM® square profiles.

Scope of delivery: 2 x u-steel, 8x CENTUM® T-lock M12x40

Installation advise: The profile connector cannot be aligned exactly in the middle.

Profile type: XL 80, XL 100, XL 120 and XL 200

Technical data

Material: Steel

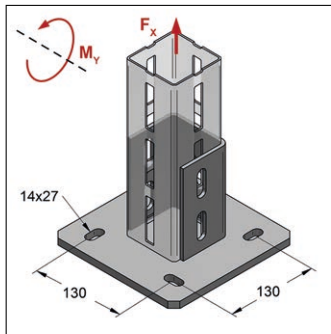
Surface: hot-dip galvanized

Surface screw: Zinc-Nickel

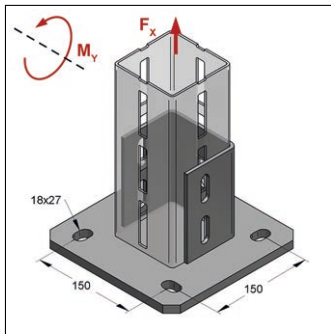
Limited torque M_y XL80 at screw position top/bottom [kNm]	Limited torque M_y XL80 at screw position left/right [kNm]	Limited torque M_y XL100 at screw position top/bottom [kNm]	Limited torque M_y XL100 at screw position left/right [kNm]	Length [mm]	Width [mm]	Height [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
1,25	0,85	2,5	1,35	380	67	59	5,28	1	1640005011

» **CENTUM® Holder**

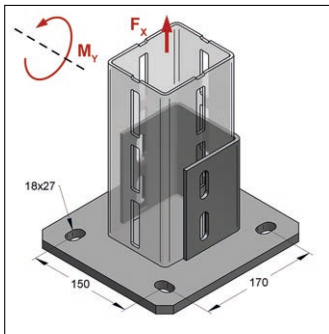
80 100 120 200



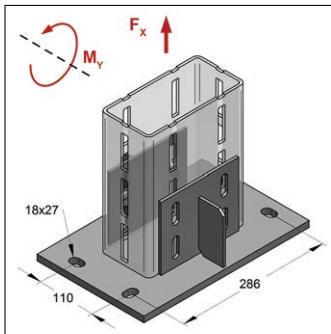
CENTUM® Holder XL 80



CENTUM® Holder XL 100



CENTUM® Holder XL 120



CENTUM® Holder XL 200



Specification

Application area: Profile holder for fastening the CENTUM® square profile directly to the building structure.

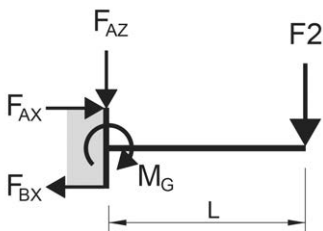
Recommended accessories: CENTUM® T-lock plus M12x40

Technical data

Material: Steel
Surface: hot-dip galvanized

Remark: The load specifications apply for at least one screw connection per profile side / for XL 200 two screw connections per profile side. The limit torques apply from at least 5 screw connections / for XL 200 from at least 4 screw connections.

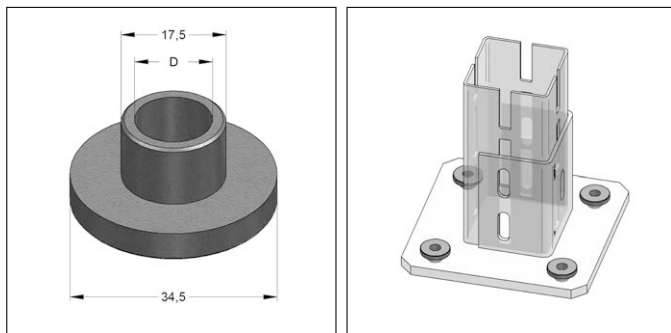
Profile type	Load F_x [kN]	Limited torque M_y [kNm]	Width plate [mm]	Length plate [mm]	Plate thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	48	4,2	200	200	10	4,48	1	1620801000
XL 100	48	5,2	220	220	12	6,15	1	1621001000
XL 120	48	5,2	220	240	12	6,71	1	1621201000
XL 200	64	5,2	220	340	12	9,57	1	1622001000



$$M_G = F_2 \cdot L$$

» CENTUM® Adaption anchor M16

80 100 120 200



CENTUM® Adaption

Installation example



Specification

Application area: Reduction of mounting holes.
 Profile type: XL 100, XL 120, XL 200

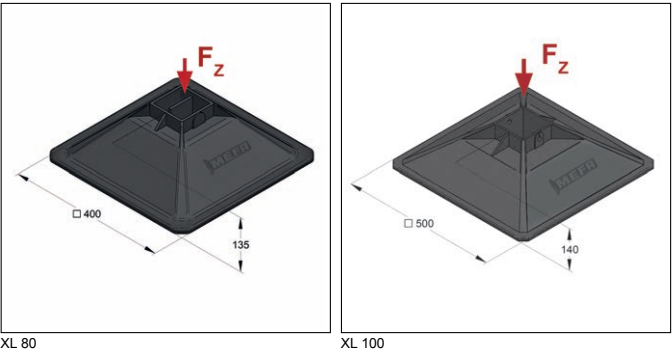
Technical data

Material: Steel
 Surface: Zinc-Nickel

Model	Inner diameter D [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M16 to M10	11	0,0470	50	1610019502/zn
M16 to M12	13	0,0438	50	1610019503/zn

» Rooftop holder for CENTUM®

80 100



Specification

- Application area: For profile channel constructions on rooftops.
- Installation advise: The pre-assembled floor pad is preventing from damage of roofing (membrane) through softening agents. The square profile is inserted into the rooftop holder for mounting. The use of roof brackets on gravel or extensive greening is not recommended.
- Recommended accessories: Universal wedge and separation fleece see Chapter 2c. For the XL 100 roof bracket, you will also need a hexagon screw M12 x 120, nut M12 and washer.

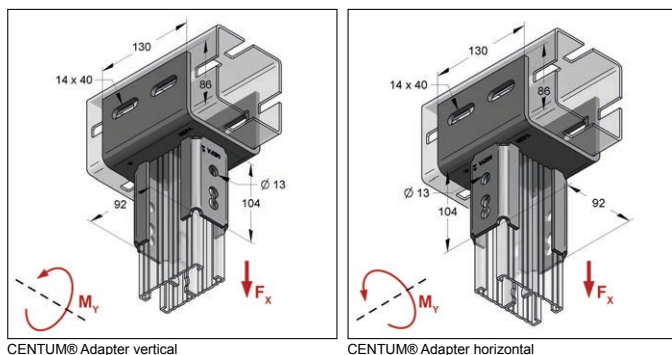
Technical data

- Material: Plastic
- Material type: HDPE
- Material pad: Synthetic rubber
- Temperature resistance: -40 up to 80 °C

Remark: Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Profile type	Dimension [mm]	Load F _Z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	400x400	10	3,01	2	166201001
XL 100	500x500	10	3,66	2	166201002

» CENTUM® Adapter



CENTUM® Adapter vertical

CENTUM® Adapter horizontal



Specification

Application area: Profile holder for fastening mounting C-profile 45/90 to a CENTUM® mounting profile.

Recommended accessories: 2-hole tooth plate, hexagon screw, CENTUM® T-lock plus M12x40

Profile type: XL 100, XL 200

Technical data

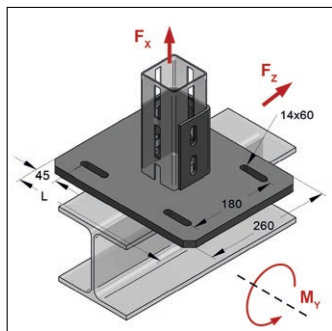
Material: Steel
Surface: hot-dip galvanized

Remark: Loads referring to component, not to connection. Limit torque applies when all screw holes are used.

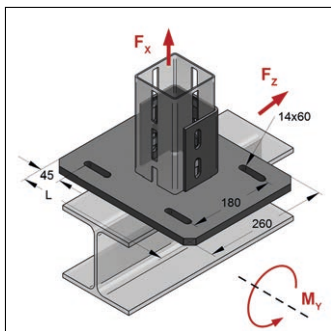
Alignment profile	Load F_x [kN]	Limited torque fbv [kNm]	Limited torque fsv [kNm]	Length [mm]	Thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
vertical	12	0,8	0,35	130	6	2,32	1	1621005011
horizontal	12	0,8	0,35	130	6	2,32	1	1621005021

» CENTUM® Girder fixation

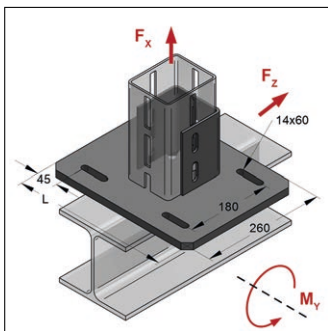
80 100 120 200



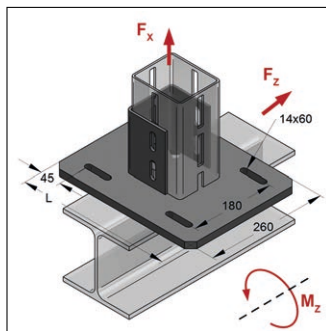
Girder fixation XL 80, vertical



Girder fixation XL 100, vertical



Girder fixation XL 120, vertical



Girder fixation XL 120, horizontal



Specification

Application area: Profile holder for fastening of CENTUM® profile to a steel T-beam.

Recommended accessories: CENTUM® T-lock plus M12x40, clamping claw AF/LR

Technical data

Material: Steel
Surface: hot-dip galvanized

* delivery time on demand

Profile type	Plate	Alignment of plate	Width plate [mm]	Length plate L [mm]	Plate thickness [mm]	for min. beam width [mm]	for max. beam width [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	Size 1	vertical	260	240	15	46	120	8,59	1	162080201
XL 80	Size 2	vertical	260	332	15	140	220	11,62	1	162080202
XL 80	Size 3	vertical	260	424	15	240	320	14,65	1	162080203
XL 100, XL 200	Size 1	vertical	260	240	15	46	120	8,82	1	162100201
XL 100, XL 200	Size 2	vertical	260	332	15	140	220	11,85	1	162100202
XL 100, XL 200	Size 3	vertical	260	424	15	240	320	14,88	1	162100203
XL 120	Size 1	vertical	260	240	15	46	120	8,93	1	162120201 *
XL 120	Size 2	vertical	260	332	15	140	220	11,96	1	162120202 *
XL 120	Size 3	vertical	260	424	15	240	320	14,99	1	162120203 *
XL 120	Size 1	horizontal	260	240	15	46	120	8,93	1	162120301 *
XL 120	Size 2	horizontal	260	332	15	140	220	11,96	1	162120302 *
XL 120	Size 3	horizontal	260	424	15	240	320	14,99	1	162120303 *

CENTUM® Girder fixation - Loads and torques

Loads are related to clamping claws for adaption to steel girder, galvanized incl. screws class 8.8 and washer.

In combination with 4x clamping claw type AF, M12 (see Catalog Chapter 14)

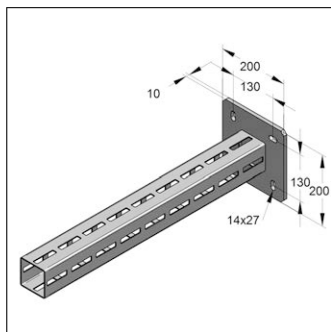
	Load F_x [kN]	Load F_z [kN]	$M_{y/z}$ [kNm]
CENTUM® Girder fixation XL 80	32	7,8	4,2
CENTUM® Girder fixation XL 100	34	7,8	4,2
CENTUM® Girder fixation XL 120	34	7,8	4,2

In combination with 4x clamping claw type LR, M12 (see Catalog Chapter 14)

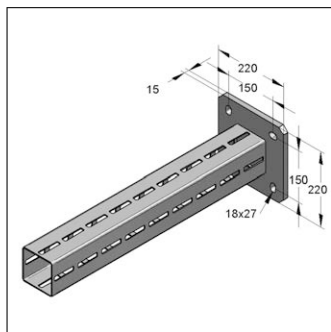
	Load F_x [kN]	Load F_z [kN]	$M_{Y/Z}$ [kNm]
CENTUM® Girder fixation XL 80	18	1,8	4,2
CENTUM® Girder fixation XL 100	18	1,8	4,2
CENTUM® Girder fixation XL 120	18	1,8	4,2

» CENTUM® Console

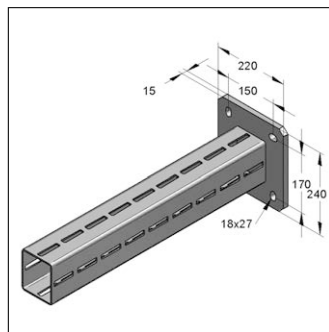
80 100 120



CENTUM® Console XL 80



CENTUM® Console XL 100



CENTUM® Console XL 120



Specification

Application area: Console for the production of cantilever structures for the support of suspended and standing pipe loads.

Technical data

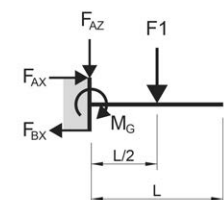
Material: Steel
Surface: hot-dip galvanized

Remark: All load capacities excessive refer to static loads. Custom-made products on request.

* delivery time on demand

Model	Length console [mm]	Load F_1 [kN]	Load F_2 [kN]	Load q_0 [kN/m]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	720	8,38	4,19	11,64	7,26	1	1630800720
XL 80	960	6,29	2,94	6,55	8,58	1	1630800960
XL 80	1440	4,19	1,31	2,42	11,23	1	1630801440
XL 100	720	16,17	8,08	22,45	11,92	1	1631000720
XL 100	960	12,13	6,06	12,63	13,62	1	1631000960
XL 100	1440	8,08	4,58	5,61	18,02	1	1631001440
XL 120	720	25,02	12,51	34,75	15,17	1	1631200720 *
XL 120	960	18,77	9,38	19,55	18,10	1	1631200960 *
XL 120	1440	12,51	6,26	8,69	23,96	1	1631201440 *

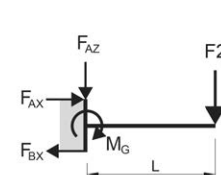
Loading condition F1



$$F_{AZ} = F_1$$

$$M_G = F_1 \cdot L / 2$$

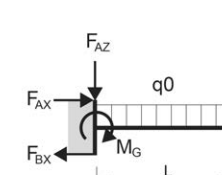
Loading condition F2



$$F_{AZ} = F_2$$

$$M_G = F_2 \cdot L$$

Loading condition q0



$$F_{AZ} = q_0 \cdot L$$

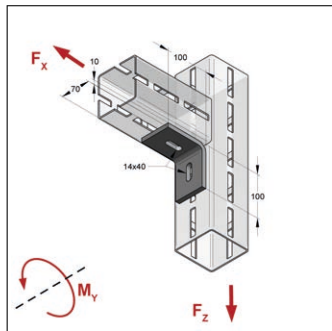
$$M_G = q_0 \cdot L^2 / 2$$

CENTUM® Consoles - Static values

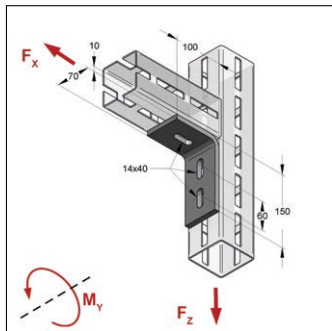
Limitation torque XL80	M_G :	3,02 kNm
Support reaction force XL80	F_{AX} :	23,21 kN
Support reaction force XL80	F_{BX} :	23,21 kN
Limitation torque XL100 and XL120	M_G :	9,01 kNm
Support reaction force XL100 und XL120	F_{AX} :	53,0 kN
Support reaction force XL100 und XL120	F_{BX} :	53,0 kN

» CENTUM® Angles - corner connector

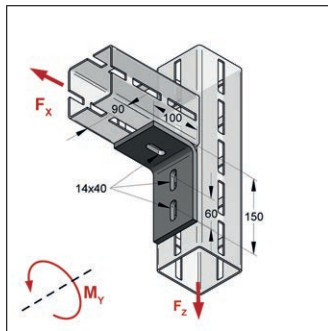
80 100 120 200



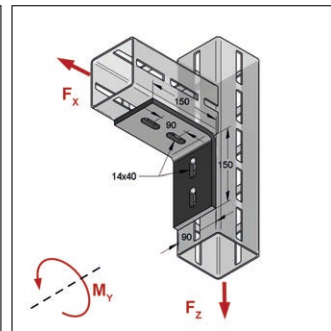
CENTUM® Angle 2-hole XL 80



CENTUM® Angle 3-hole XL 80



CENTUM® Angle 3-hole from XL 100



CENTUM® Angle 4-hole from XL 100

**Specification**

Application area: Angle components for connecting CENTUM® square profile.

Recommended accessories: CENTUM® T-lock plus M12x40, dowel

Technical data

Material: Steel

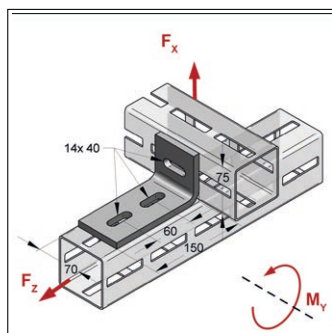
Surface: hot-dip galvanized

Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile. Limit torque applies when all screw holes are used.

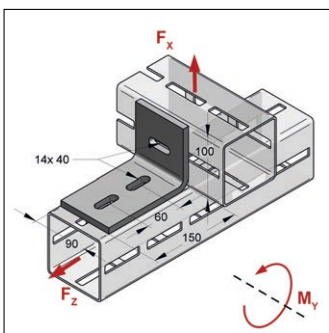
Series	Profile type	Load F_x [kN]	Load F_z [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
2-hole	XL 80	3,0	16	0,4	1,02	1	1640081005
3-hole	XL 80	5,2	32	0,4	1,28	1	1640081010
3-hole	XL 100, XL 120, XL 200	6,0	32	0,5	1,68	1	1640001010
4-hole	XL 100, XL 120, XL 200	6,0	32	0,5	2,02	1	1640001020

» CENTUM® Angles horizontal - cross connector

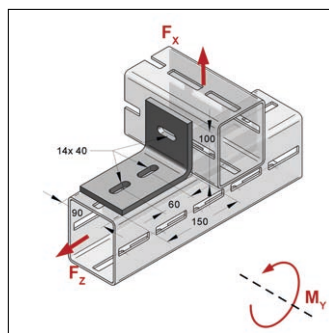
80 100 120 200



CENTUM® Angle 3-hole horizontal XL 80



CENTUM® Angle 3-hole horizontal XL 100



CENTUM® Angle 3-hole horizontal XL 120



Specification

Application area: Angle components for connecting CENTUM® square profile.

Recommended accessories: CENTUM® T-lock plus M12x40

Technical data

Material: Steel

Surface: hot-dip galvanized

Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

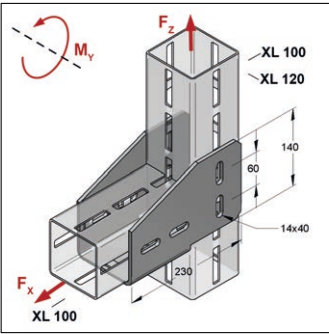
Series	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3-hole	XL 80	1,13	1	1640081012
3-hole	XL 100, XL 200	1,68	1	1640001012
3-hole	XL 120	1,68	1	1641201012

CENTUM® Anlge horizontal - loads and torques

Profile	Load F_x	Load F_z	limitation torque M_y
XL 80	6,0 kN	32 kN	0,4 kNm
XL 100	6,0 kN	32 kN	0,5 kNm
XL 120	6,0 kN	32 kN	0,5 kNm
XL 120s	12,0 kN	32 kN	0,5 kNm
XL 200	12,0 kN	32 kN	0,5 kNm

Limitation torque applies when all screw holes are used.

» CENTUM® Angle-shoe



CENTUM® Angle-shoe XL 100



Specification

Application area: For connecting CENTUM® square profiles.
Recommended accessories: CENTUM® T-lock plus M12x40

Technical data

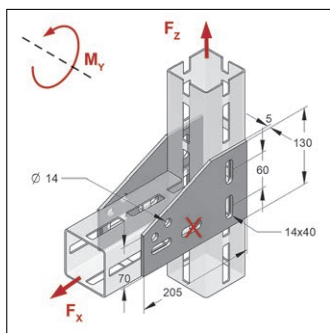
Material: Steel
Surface: hot-dip galvanized

Remark: Limit torque applies when all screw holes are used.

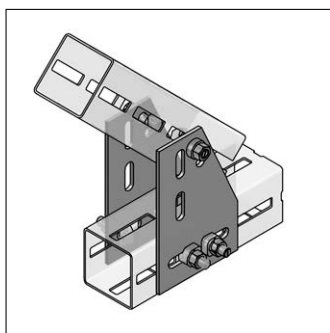
Profile type	Load F_x [kN]	Load F_z [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 100, XL 200	64	64	2,34	3,57	1	1641002010

» CENTUM® Corner plate

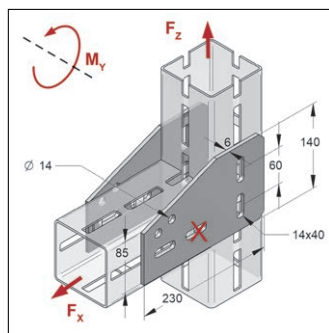
80 100 120 200



CENTUM® Corner plate XL 80



Assembly example hole



CENTUM® Corner plate L from XL 100



Product description

- Corner plate for forming 90° corner joints.
- The additional round holes are for creating struts.

Specification

Application area: For connecting CENTUM® mounting profiles.
Use in pairs.

Recommended accessories: CENTUM® T-lock M12x40 or CENTUM® T-lock plus M12x40

Installation advise: In the round hole, installation can only be carried out using the CENTUM® T-bolt, with steel disk.

Technical data

Material: Steel

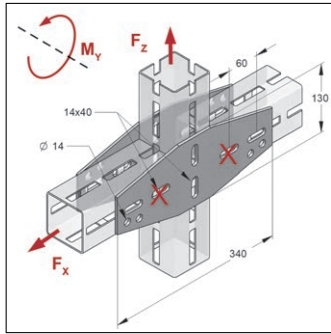
Surface: hot-dip galvanized

Remark: Limit torque applies when all screw holes are used. For $M_y = 0$, one screw per profile side at X.

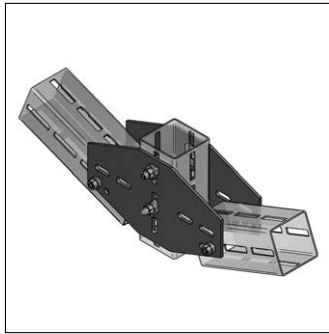
Description	Profile type	Dimension [mm]	Hole-Ø [mm]	Load F_x [kN]	Load F_z [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Corner plate	XL 80	205x130x5	14	64	64	2,34	0,900	1	1640083010
Corner plate	XL 100, XL 120, XL 200	230x140x6	14	64	64	2,34	1,37	1	1640003010

» CENTUM® Cross plate

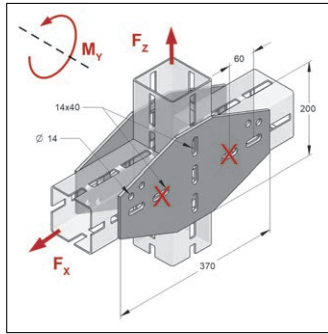
80 100 120 200



CENTUM® Cross plate XL 80



Assembly example



CENTUM® Cross plate from XL 100



Product description

- Cross plate for forming cross connections
- The additional round holes are used to create struts

Specification

Application area: For connecting CENTUM® mounting profiles.
Use in pairs.

Recommended accessories: CENTUM® T-lock M12x40 or CENTUM® T-lock plus M12x40

Installation advise: In the round hole, installation can only be carried out using the CENTUM® T-bolt, with steel disk.

Technical data

Material: Steel

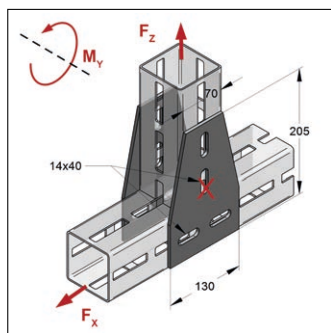
Surface: hot-dip galvanized

Remark: Limit torque applies when all screw holes are used. For $M_y = 0$, one screw per profile side at X.

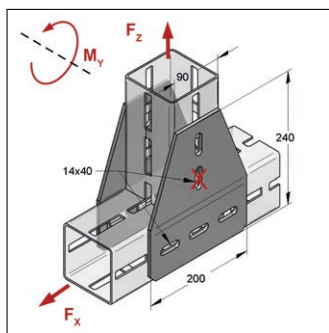
Description	Profile type	Dimension [mm]	Hole-Ø [mm]	Load F_x [kN]	Load F_z [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
Cross plate	XL 80	340x130x5	14	64	64	2,34	1,44	1	1640083020
Cross plate	XL 100, XL 120, XL 200	370x200x6	14	64	64	2,34	2,86	1	1640003020

» CENTUM® T-plate

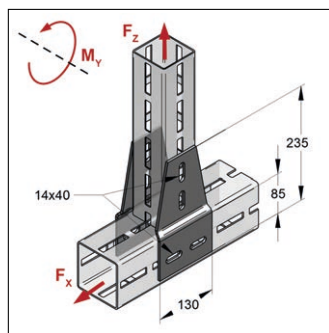
80 100 120 200



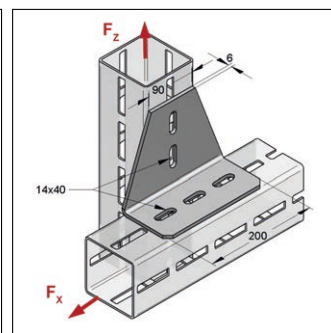
CENTUM® T-plate XL 80



CENTUM® T-plate from XL 100



CENTUM® T-plate cranked



CENTUM® T-plate angled



Specification

Application area: For connecting CENTUM® mounting profiles. Material: Steel
Use in pairs.

Recommended accessories: CENTUM® T-lock M12x40 or CENTUM® T-lock plus M12x40

Technical data

Surface: hot-dip galvanized

Remark: Limit torque applies when all screw holes are used. For $M_y = 0$, one screw per profile side at X.

* use in pairs

** Cross profile XL 100; any connecting profile

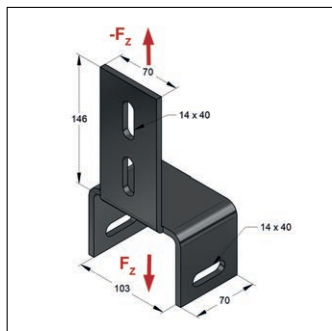
Description	Profile type	Angle [°]	Dimension [mm]	Load F_x [kN]	Load F_z [kN]	Limited torque M_y [kNm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
T-plate	XL 80		205,0x130x5	64	64	2,34	0,920	1	1640081030 *
T-plate	XL 100, XL 120, XL 200		200,0x240x6	64	64	2,34	1,97	1	1640001030 *
T-plate cranked	XL 80+100 / XL 100+120		235,0x130x5	64	64	2,34	1,08	1	1640003030 *
T-plate angled	XL 100, XL 120, XL 200	90	156,5x200x6				1,97	1	1640001040 **

CENTUM® T-plate angled - Loads

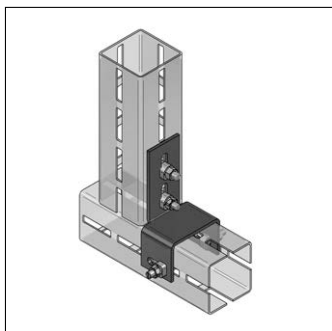
Profile	Load F_x	Load F_z
XL 100	39,0 kN	9 kN
XL 120	39,0 kN	12 kN
XL 120s	39,0 kN	18 kN
XL 200	39,0 kN	18 kN

» CENTUM® Connection knot

100 200



CENTUM® Connection knot



Assembly example



Specification

Application area: For connecting CENTUM® profiles.
 Recommended accessories: CENTUM® T-lock M12x40 or CENTUM® T-lock plus M12x40
 Profile type: XL 100, XL 200

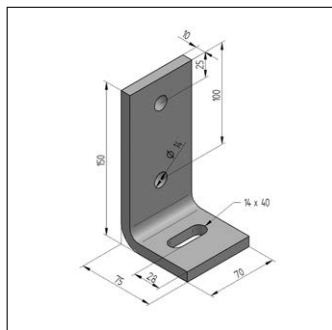
Technical data

Material: Steel
 Surface: hot-dip galvanized

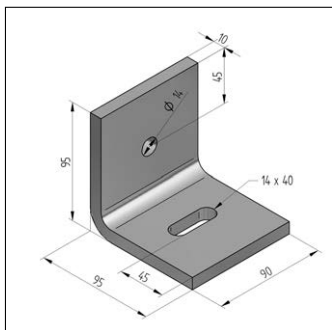
Angle [°]	Load -Fz [kN]	Load Fz [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
90	32	7,2	1,34	1	1640001060

» CENTUM® Wall angle

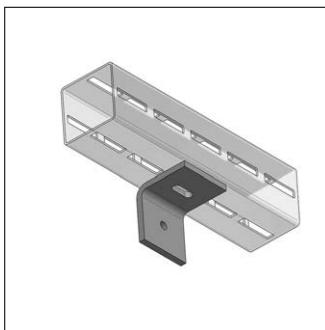
80 100 120



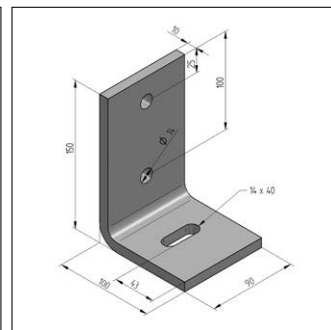
Wall angle 3-hole XL 80



Wall angle 2-hole XL 100



Assembly example



Wall angle 3-hole XL 100



Specification

Application area: With round hole for Wall connection.
 Recommended accessories: CENTUM® T-lock plus M12x40, dowel

Technical data

Material: Steel
 Surface: hot-dip galvanized

Remark: Always align the elongated holes of the components in the direction of the elongated holes of the CENTUM® profile.

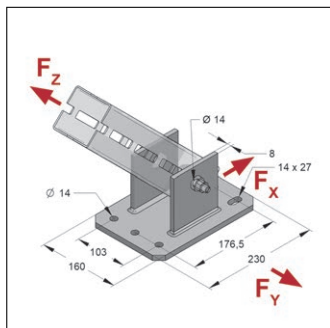
Series	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3-hole	XL 80	1,14	1	1640101006
2-hole	XL 100, XL 120 edgewise	1,29	1	1640101005

» CENTUM® Wall angle

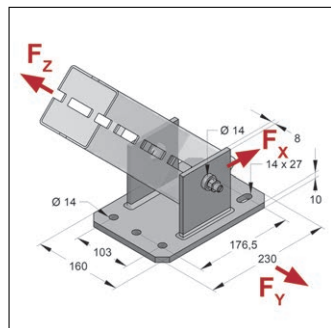
Series	Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
3-hole	XL 100, XL 120 edgewise	1,66	1	1640101007

» CENTUM® Joint holder

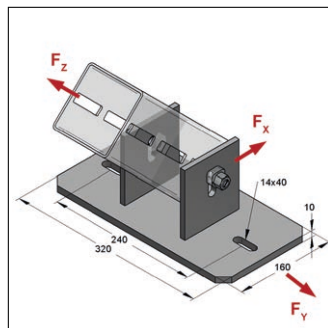
80 100 120



CENTUM® Joint holder XL 80 vertical



CENTUM® Joint holder XL 100 vertical



CENTUM® Joint holder XL 100 horizontal



Specification

Application area: Holder for making steplessly fixable connections in rail constructions or on the building structure.

Recommended accessories: CENTUM® Hammer head, with steel disk

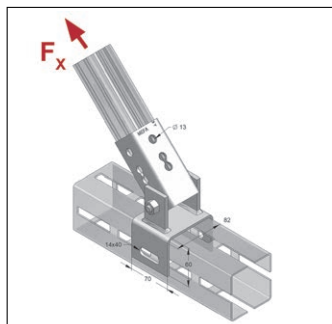
Technical data

Material: Steel
Surface: hot-dip galvanized

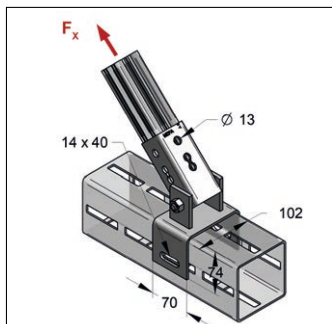
Profile type	Alignment of plate	Dimension plate [mm]	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	vertical	230x160x10	11	11	32	90	4,54	1	1640804013
XL 100, XL 120	vertical	230x160x10	11	11	32	120	4,54	1	1641004011
XL 100, XL 120	horizontal	320x160x10	11	11	32	120	5,72	1	1641004020

» CENTUM® Joint connection

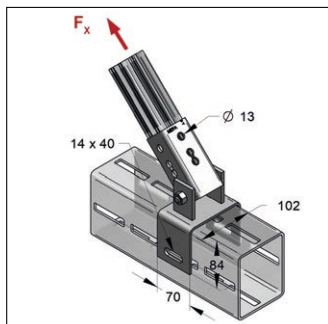
80 100 120 200



Joint connection XL 80



Joint connection XL 100



Joint connection XL 120



Specification

Application area: Joint component for connecting a CENTUM® mounting profile in a continuously adjustable angular position to a mounting rail 45.

Recommended accessories: 2x CENTUM® T-lock plus M12x40

Remark: Loads referring to component, not to connection.

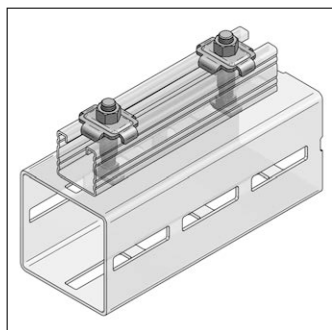
Technical data

Material: Steel
Surface: Zinc-Nickel

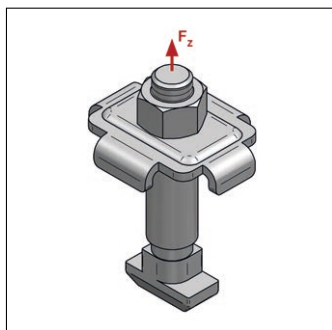
Profile type	Alignment	Hole-Ø [mm]	Load F_x [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	vertical	13	7	1,23	1	1640814110
XL 100, XL 200	vertical	13	7	1,28	1	1641014110
XL 120	vertical	13	7	1,32	1	1641214110

» CENTUM® C-profile connector

80 100 120 200



CENTUM® C-profile connector



CENTUM® C-profile connector

Specification

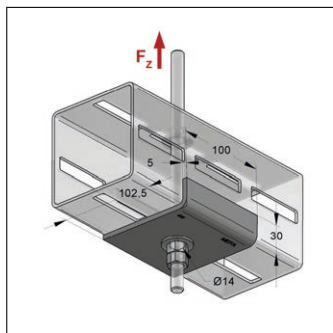
Application area: IB connection for axis-parallel mounting of profile rails 45 on a CENTUM® square profile.

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel
Surface: galvanized

for profile heights [mm]	Load F_z [kN]	Tightening torque [Nm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
45	2	10	0,170	1	1640017040
60	2	10	0,180	1	1640017060

» **CENTUM® Profile gusset**

CENTUM® Profile gusset

**Specification**

Application area: For reinforcing CENTUM® profiles when suspended with M12 threaded rods.

Recommended accessories: 3x nut M12, 2x Washer 13x30x2,5, threaded rod M12

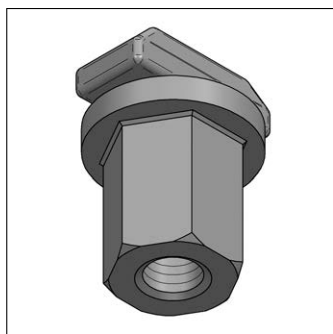
Profile type: XL 100, XL 120, XL 200

Technical data

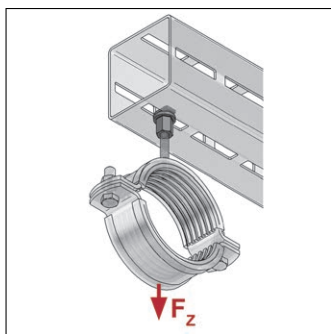
Material: Steel

Surface: hot-dip galvanized

for thread	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	10	0,490	1	1620005010

» **CENTUM® Direct connector**

CENTUM® Direct connector



CENTUM® Direct connector

**Specification**

Application area: A quick way to create threaded connections.

Profile type: C-profile 45 from material thickness 2,5 mm, XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel

Surface: Zinc-Nickel

14

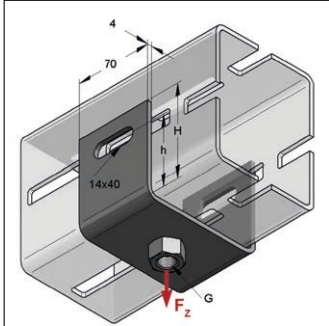
Thread	Wrench size	Height collar nut [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M10	17	25	25	3	0,0714	50	1640016010

» CENTUM® Direct connector

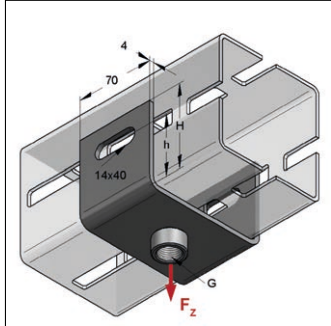
Thread	Wrench size	Height collar nut [mm]	Tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	17	25	25	3	0,0694	50	1640016012

» CENTUM® Thread connector

80 100 120 200



CENTUM® Thread connector XL 80 / XL 100 M16



CENTUM® Thread connector XL 120 1/2"



Specification

Application area: For mounting on CENTUM® mounting profile to make threaded connections.

Recommended accessories: 2x CENTUM® T-lock plus M12x40

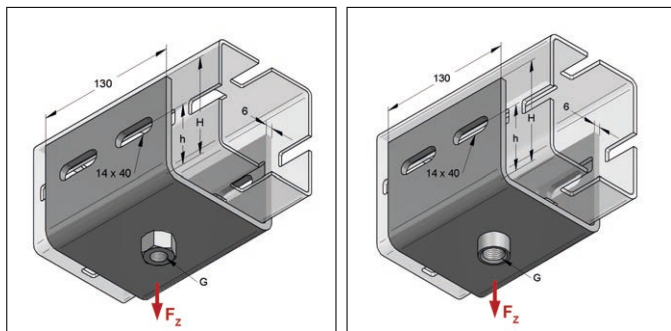
Technical data

Material: Steel
Surface: Zinc-Nickel

Profile type	Connection G	Load F_z [kN]	Height H [mm]	Height till hole h [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	M16	5	64	40	0,480	1	1640818007
XL 80	1/2"	5	64	40	0,470	1	1640818008
XL 80	1"	5	64	40	0,520	1	1640818010
XL 100, XL 200	M12	5	74	50	0,550	1	1641018006
XL 100, XL 200	M16	5	74	50	0,557	1	1641018007
XL 100, XL 200	1/2"	5	74	50	0,557	1	1641018008
XL 100, XL 200	1"	5	74	50	0,610	1	1641018010
XL 120	M16	5	84	60	0,620	1	1641218007
XL 120	1/2"	5	84	60	0,610	1	1641218008
XL 120	1"	5	84	60	0,660	1	1641218010

» CENTUM® Massive connector

100 120 200



CENTUM® Massive connector XL 100 M16

CENTUM® Massive connector XL 120 1/2"



Specification

Application area: For mounting on CENTUM® mounting profile to make threaded connections.

Recommended accessories: 4x CENTUM® T-lock plus M12x40

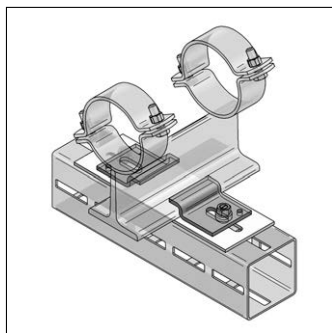
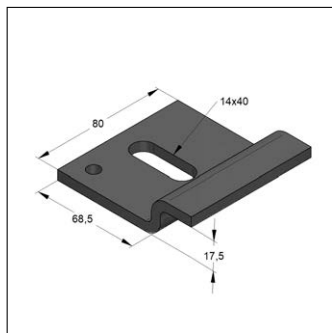
Technical data

Material: Steel
Surface: Zinc-Nickel

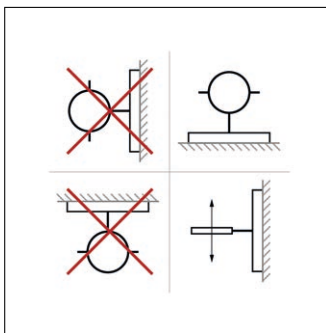
Profile type	Connection G	Load F_z [kN]	Height H [mm]	Height till hole h [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 100, XL 200	M16	10	86	50	1,65	1	1641019007
XL 100, XL 200	1/2"	10	86	50	1,64	1	1641019008
XL 100, XL 200	1"	10	86	50	1,69	1	1641019010
XL 120	M16	10	96	60	1,78	1	1641219007
XL 120	1/2"	10	96	60	1,77	1	1641219008
XL 120	1"	10	96	60	1,82	1	1641219010

» CENTUM® Z-guide

80 100 120 200



Z-Guide assembly example



Installation recommendation

**Specification**

Application area: For guiding of sliding sledges and sliding supports. Use in pairs.

Scope of delivery: 2x CENTUM® Z-Guides

Recommended accessories: Sliding stripe PA 6, CENTUM® T-bolt, with steel disk M12x40

Installation advise: Suitable for upright mounting only.

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

Material: Steel

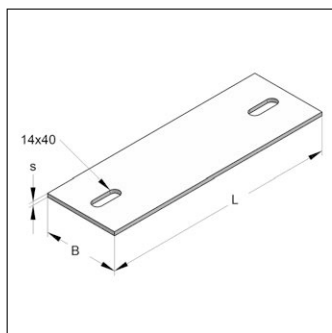
Surface: hot-dip galvanized

Remark: Delivered in pairs

max. plate thickness [mm]	Length [mm]	Width [mm]	Thickness [mm]	Elongated hole [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
17,5	68,5	80	6	14x40	0,800	1	1650015017

» Sliding stripe PA 6

PA



CENTUM® Sliding stripe

Specification

Application area: Improvement of sliding characteristic.

Technical data

Material type: Polyamide 6

Static friction factor: 0,2 - 0,3

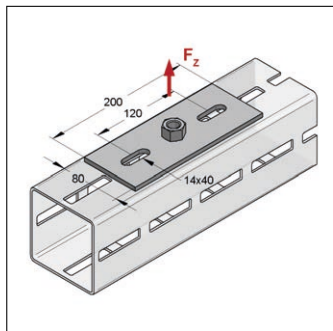
Temperature resistance: -30 up to 110 °C

Dimension LxBxS [mm]	for sliding element width up to [mm]	Number of fixing holes [pcs]	Elongated hole [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
250x100x5	100	2	14x40	0,138	1	9991508
300x100x5	150	2	14x40	0,167	1	9991507

» Sliding stripe PA 6

Dimension LxBxS [mm]	for sliding element width up to [mm]	Number of fixing holes [pcs]	Elongated hole [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
350x100x5	200	2	14x40	0,195	1	9991506

» CENTUM® Base plates



CENTUM® Base plate M12



Specification

Application area: Plates with threaded connection for mounting on CENTUM® mounting profiles.

Recommended accessories: CENTUM® T-lock plus M12x40 or T-bolt with steel disk, M12/40

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

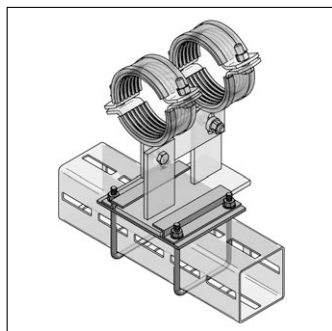
Material: Steel

Surface: Zinc-Nickel

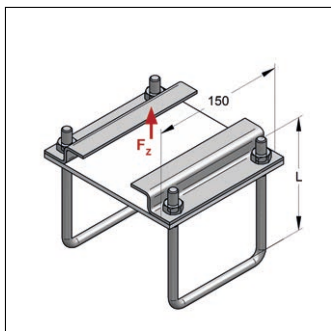
Connection	Dimension [mm]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
M12	200x80x6	5,5	0,760	1	1640018106
M16	200x80x6	5,5	0,790	1	1640018107
1/2"	200x80x6	5,5	0,780	1	1640018108
1"	200x80x6	5,5	0,830	1	1640018110

» CENTUM® Z-guide Set with U-bolt

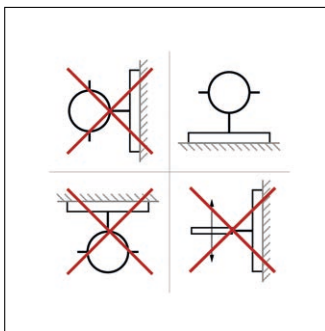
100 120



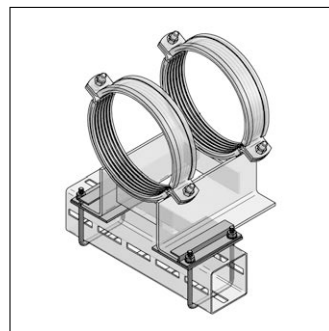
CENTUM® Z-guide Set for sliding support and sliding plates with 100 mm width



CENTUM® Z-guide Set



Installation recommendation



CENTUM® Z-guide Set for sliding support and sliding plates from 140 mm width



Specification

Application area: Guiding of sliding elements on CENTUM® XL 100, square tube 100 or CENTUM® XL 120 upright.

Scope of delivery: 2x U-bolts, 2x Z-Guides, 1x sliding stripe, 4x Nuts

Technical data

Material: Steel

Surface: Zinc-Nickel

Material name sliding stripe: Polyamide 6

Static friction factor: 0,2 - 0,3

Temperature resistance: -30 up to 110 °C

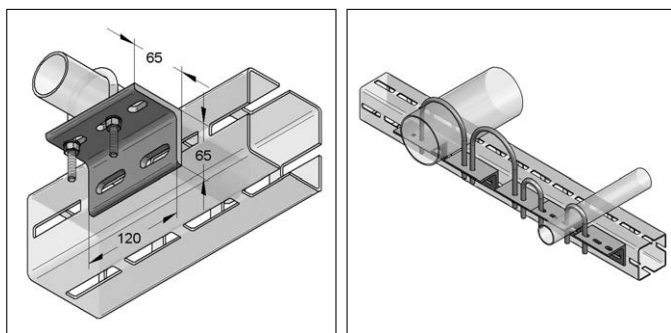
for sliding element width [mm]	for sliding element width from [mm]	Profile type	for max. plate thickness [mm]	Load F_z [kN]	Weight [kg/set]	Packing unit [set]	Part-No.
100		XL 100	16	4,5	1,06	1	14799100
100		XL 120	16	4,5	1,08	1	14799101
	140	XL 100	16	4,5	1,09	1	14799140
	140	XL 120	16	4,5	1,11	1	14799141

» CENTUM® Pipe holder 21,3 - 76,1

100

120

200



CENTUM® Pipe holder pipe-Ø 21,3 - 76,1 mm

Example

**Specification**

Application area: For mounting U-bolts directly on a CENTUM® square profile.

Installation advise: Pipe must lie on the profile.

Profile type: XL 80, XL 100, XL 120, XL 200

Technical data

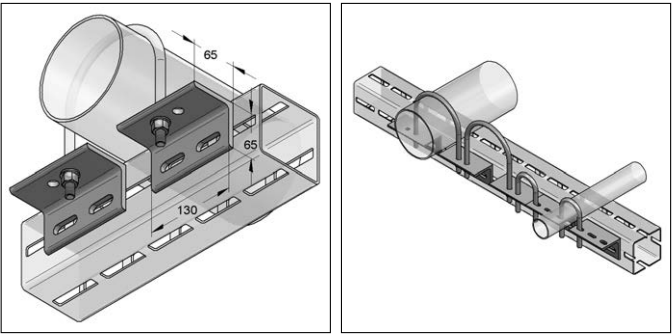
Material: Steel

Surface: hot-dip galvanized

OD [mm]	Width material [mm]	Bracket length [mm]	Material thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
21,3-76,1	120	65x65	7	0,810	1	1640008200

» CENTUM® Pipe holder 88,9 - 219,1

100 120 200



CENTUM® Pipe holder pipe-Ø 88,9 - 219,1

Example



Specification

Application area: For mounting U-bolts directly on a CENTUM® square profile.
Scope of delivery: Set includes 2x pipe holders
Installation advise: Pipe must lie on the profile.
Profile type: XL 80, XL 100, XL 120, XL 200

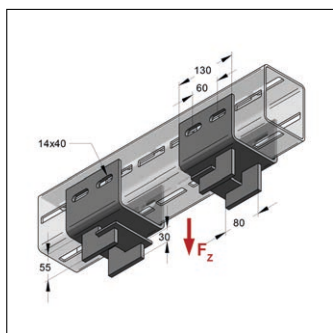
Technical data

Material: Steel
Surface: hot-dip galvanized

OD [mm]	Width material [mm]	Bracket length [mm]	Material thickness [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
88,9-219,1	130	65x65	6	1,32	1	1640008211

» **CENTUM® Sliding base, hanging**

100 120 200



CENTUM® Sliding base, hanging

**Specification**

Application area: Hanging sliding base to support guiding slides and sledges on CENTUM® mounting profile. Always used in pairs

Scope of delivery: Set includes 2x sliding base, hanging

Recommended accessories: CENTUM® T-lock plus M12x40

Technical data

Material: Steel

Surface: hot-dip galvanized

Material sliding stripe: PA 6

max. thickness sliding plate: 16 mm

Static friction factor: 0,2

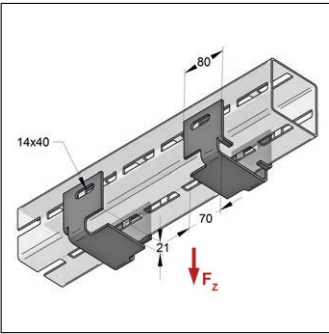
Temperature resistance: -200 up to 80 °C

Remark: Delivered in pairs. Loads refer to pair

Profile type	Alignment	Load F_z [kN]	Height [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
XL 100, XL 200	hanging	15	141	4,78	1	1651002001
XL 120	hanging	15	151	5,05	1	1651202011

» CENTUM® Sliding base, hanging light

80 100



CENTUM® Sliding base, hanging light



Specification

Application area: Hanging sliding base to support guiding slides and sledges on CENTUM® mounting profile. Always used in pairs.

Scope of delivery: Set includes 2x sliding base, hanging light

Recommended accessories: CENTUM® T-lock plus M12x40

Technical data

Material: Steel

Surface: hot-dip galvanized

Material sliding stripe: PA 6

max. thickness sliding plate: 16 mm

Static friction factor: 0,2

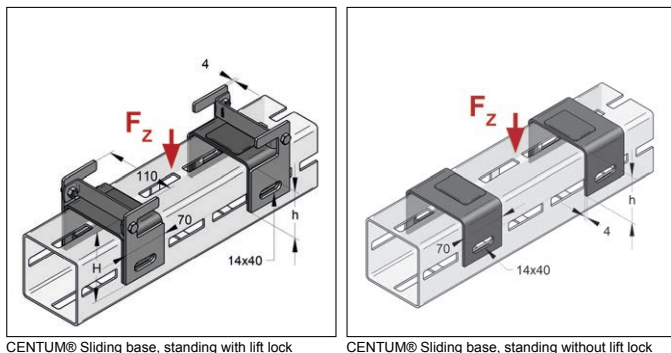
Temperature resistance: -200 up to 80 °C

Remark: Delivered in pairs. Loads refer to pair.

Profile type	Alignment	Load F _Z [kN]	Height [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
XL 80	hanging light	5	85	1,13	1	1650804000
XL 100	hanging light	5	95	1,36	1	1651004000

» CENTUM® Sliding base, standing

80 100 120 200



CENTUM® Sliding base, standing with lift lock

CENTUM® Sliding base, standing without lift lock



Specification

Application area: Standing sliding base to support sliding sledges or supports on CENTUM® mounting profile. Always used in pairs.

Scope of delivery: Set includes 2x Sliding base, standing

Recommended accessories: CENTUM® T-lock plus M12x40 or T-bolt with steel disk, M12/40

Technical data

Material: Steel
Surface: hot-dip galvanized
Material sliding stripe: PA 6
max. thickness sliding plate: 16 mm
Static friction factor: 0,2
Temperature resistance: -200 up to 80 °C

Remark: Delivered in pairs. Loads refer to pair.

Profile type	Lift lock	Alignment	Load F_z [kN]	Height H [mm]	Height sliding base h [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
XL 80	with lift lock	standing	32	100	64	1,81	1	1650801020
XL 100, XL 200	with lift lock	standing	40	110	74	2,13	1	1651001020
XL 120	with lift lock	standing	40	120	84	2,23	1	1651201050
XL 100, XL 200	without lift lock	standing	40		74	1,07	1	1651001010
XL 120	without lift lock	standing	40		84	1,28	1	1651201030

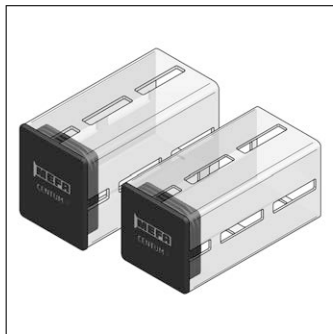
» CENTUM® Protecting cap

80

100

120

PE



CENTUM® Protecting cap

Specification

Application area: Protecting caps for profile rails. To protect the edges and as an optical cover.

Technical data

Material: Plastic
Material type: PE
Colour: black

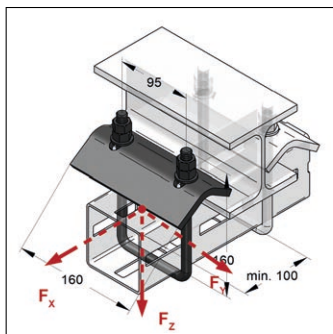
Profile type	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	0,0590	20	1670081
XL 100	0,0790	20	1670101
XL 120	0,0920	20	1670121

» CENTUM® Clamping bow

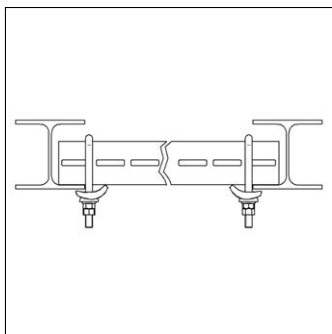
80

100

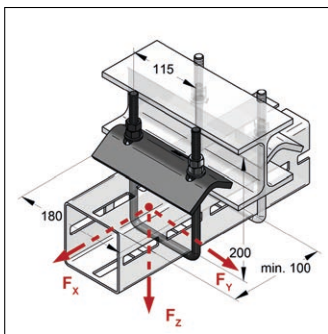
120



CENTUM® Clamping bow XL 80



CENTUM® Clamping bow



CENTUM® Clamping bow XL 100 / XL 120

**Specification**

Application area: For fastening CENTUM® profiles on steel girder.
Scope of delivery: 1x U-bolt, 1x CENTUM® tensioning bracket, 4x Nuts M12, 2x washer
Installation advise: Use in pairs. Suitable for horizontal use only. The tightening torque must be observed.

Technical data

Material: Steel
Surface: hot-dip galvanized
Surface u-bolt: Zinc-Nickel

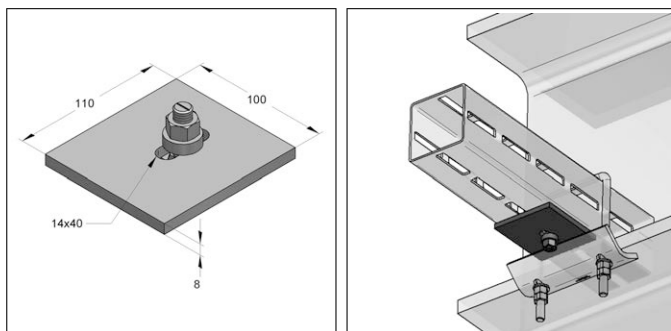
Remark: The loads of CENTUM® Square profile must be observed.

Profile type	Thread	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Tightening torque [Nm]	Clamping thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 80	M12	3	3	10	25	6-25	1,30	1	1660801011

» CENTUM® Clamping bow

Profile type	Thread	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Tightening torque [Nm]	Clamping thickness [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
XL 100, XL 120	M12	3	3	10	25	6-25	1,49	1	1661001011

» CENTUM® Spacer plate for clamping bow



CENTUM® Spacer plate incl. T-bolt with steel disk

CENTUM® Spacer plate in combination with
CENTUM® Clamping bow

Specification

Application area: To raise clamping thickness of CENTUM® clamping bow.

Recommended accessories: CENTUM® T-bolt, with steel disk, M12/40

Installation advise: with space plate clamping thickness can be increased by 8 mm

Technical data

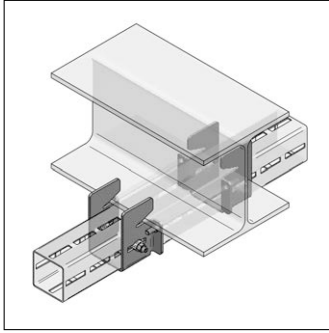
Material: Steel

Surface: hot-dip galvanized

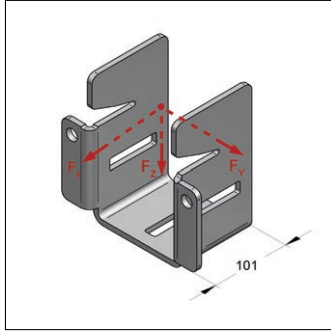
Dimension [mm]	Elongated hole [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
110x100x8	14x40	0,830	1	1660011030

» CENTUM® Clamping shoe

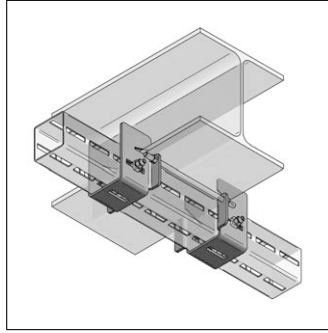
100 120 200



CENTUM® Clamping shoe mounted



CENTUM® Clamping shoe single



CENTUM® Clamping shoe mounted



Specification

Application area: Attaching CENTUM® profiles to steel girder. Use in pairs.

Scope of delivery: Set includes 2x Clamping shoe

Installation advise: Permitted only for horizontally laid steel beams.
Evenly tightening of threaded rods with 15 Nm,
torque for CENTUM® T-lock plus M12x40 120 Nm

Technical data

Material: Steel

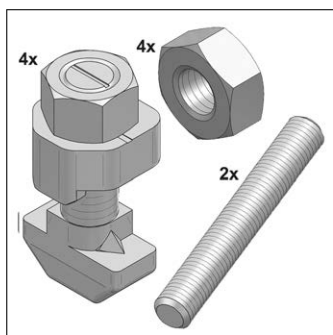
Surface: hot-dip galvanized

Remark: Delivered in pairs. Loads refer to one pair.

* Type S: The minimum clamping width of the flange is 82 mm only for IPE beams, 91 mm only for IPEa beams, for other beam types the minimum clamping width is 100 mm.

Model	Profile type	Clamping thickness [mm]	min. clamping width [mm]	max. web thickness beam [mm]	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Weight [kg/set]	Packing unit [set]	Part-No.
S	XL 100	5-10	82	10	20	4,2	22,5	4,24	1	1661002010 *
M	XL 100	8-15	100	10	20	4,2	22,5	4,39	1	1661003010
L	XL 100	13-20	140	20	20	4,2	22,5	4,56	1	1661004010
XL	XL 100	19-30	180	40	20	4,2	22,5	5,20	1	1661005010
S	XL 120	5-10	82	10	20	4,2	22,5	4,77	1	1661202010 *
M	XL 120	8-15	100	10	20	4,2	22,5	4,93	1	1661203010
L	XL 120	13-20	140	20	20	4,2	22,5	5,08	1	1661204010
XL	XL 120	19-30	180	40	20	4,2	22,5	5,80	1	1661205010
L	XL 200	13-20	140	20	20	4,2	22,5	7,22	1	1662004010
XL	XL 200	19-30	180	40	20	4,2	22,5	8,21	1	1662005010

» CENTUM® Clamping shoe accessory-set



CENTUM® Clamping shoe accessory-set

Specification

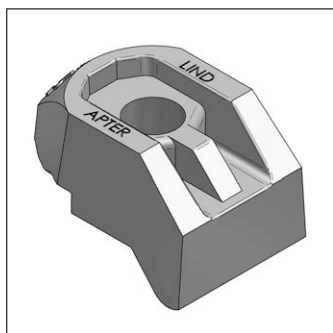
Application area: Fixing accessories for Centum® clamping shoe.
 Scope of delivery: 4x CENTUM® T-lock M12x40, 2x threaded rod M12, 4x nut M12

Technical data

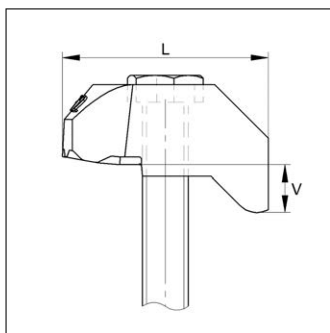
Material: Steel
 Surface: Zinc-Nickel
 Surface threaded rod + nut: galvanized

Length threaded pin [mm]	Clamping width [mm]	Weight [kg/set]	Packing unit [set]	Part-No.
160	82-160	0,780	1	1660019160
300	160-300	0,852	1	1660019300

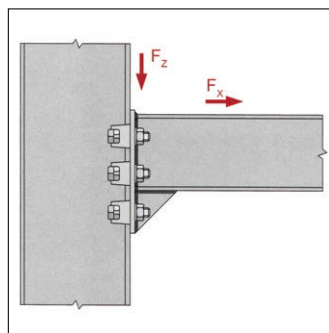
» CENTUM® Clamping claw - type AF



Clamping claw AF



Clamping claw AF



Clamping claw AF



Specification

Application area: For clamping CENTUM® adapter to steel T-beams.
 Recommended accessories: hexagon bolt / threaded rod h.-d. galv. FK 8.8, washers DIN 125 h.-d. galv., hexagon nuts h.-d. galv., washer component AF

Technical data

Material: Spherulitic cast iron
 Surface: hot-dip galvanized
 Safety factor: 5 (tension) / 2 (shear)

Delivery time: on demand

Remark: For the selection table for clamping jaw AF, see Chapter 14. Load specifications only apply in conjunction with attachments of strength class 8.8. For Fz, the value applies to two screw connections.

Model	Clamping thickness V [mm]	Length L [mm]	Width [mm]	Requested screw	Strength class	Tightening torque [Nm]	Load Fx [kN]	Load Fz painted [kN]	Load Fz galvanized [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
AF	12,5	56	39,0	M12	8.8	90	8,5	3,4	3,9	0,244	1	1660004012
AF	15,0	72	48,5	M16	8.8	240	16,0	8,0	10,0	0,460	1	1660004016
AF	5,0	56	39,0	M12	8.8	90	8,5	3,4	3,9	0,191	1	1660004012/k

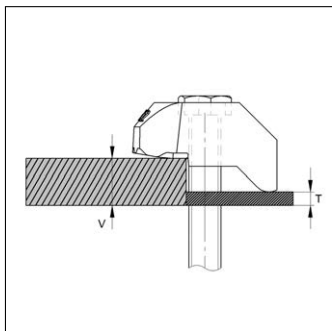
» CENTUM® Clamping claw - type AF

Model	Clamping thickness V [mm]	Length L [mm]	Width [mm]	Requested screw	Strength class	Tightening torque [Nm]	Load F _x [kN]	Load F _z painted [kN]	Load F _z galvanized [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
AF	8,0	72	48,5	M16	8.8	240	16,0	8,0	10,0	0,434	1	1660004016/k

» CENTUM® Washer component AF



Washer component AF



Washer component AF



Specification

Application area: For raising clamping thickness of CENTUM® clamping claw type AF.

Installation advise: Extends clamping thickness, allows assembly at different flange thickness

Technical data

Material: Spherulitic cast iron

Surface: hot-dip galvanized

Delivery time: on demand

Remark: For the selection table for clamping jaw AF, see Chapter 14.

Description	for thread	Thickness T [mm]	Width [mm]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
AF 12 CW	M12	2	40	0,0300	1	0576012
AF 12 P1	M12	5	40	0,0700	1	0576082
AF 12 P2	M12	10	40	0,120	1	0576112
AF 16 CW	M16	2	50	0,0400	1	0576016
AF 16 P1	M16	5	52	0,100	1	0576114
AF 16 P2	M16	10	52	0,200	1	0576116

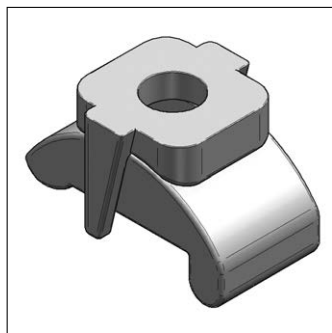
» Selection chart for clamping claw Type AF with different flange thicknesses in parallel flange Straps:

Flange thickness	M12				M16			
	Clamping claw Type AF	Washer AF CW	Washer AF P1	Washer AF P2	Clamping claw Type AF	Washer AF CW	Washer AF P1	Washer AF P2
[mm]	[cam height V]	[pc.]	[pc.]	[pc.]	[cam height V]	[pc.]	[pc.]	[pc.]
5	short*	-	-	-	-	-	-	-
6	short*	-	-	-	-	-	-	-
7	short*	1	-	-	short*	-	-	-
8	short*	1	-	-	short*	-	-	-
9	short*	2	-	-	short*	-	-	-
10	short*	-	1	-	short*	1	-	-
11	short*	3	-	-	short*	1	-	-
12	short*	1	1	-	short*	2	-	-
13	medium	-	-	-	short*	-	1	-
14	medium	1	-	-	short*	3	-	-
15	short*	-	-	1	medium	-	-	-
16	medium	2	-	-	medium	-	-	-
17	medium	-	1	-	medium	1	-	-
18	medium	-	1	-	short*	-	-	1
19	medium	1	1	-	medium	-	1	-
20	short*	-	1	1	medium	-	1	-
21	medium	2	1	-	medium	-	1	-
22	medium	2	1	-	medium	1	1	-
23	medium	-	-	1	medium	1	1	-
24	medium	1	-	1	medium	-	-	1
25	short*	-	-	2	medium	-	-	1
26	medium	2	-	1	medium	-	-	1
27	medium	-	1	1	medium	1	-	1
28	medium	-	1	1	short*	-	-	2
29	medium	1	1	1	medium	-	1	1
30	short*	-	1	2	medium	-	1	1
31	medium	2	1	1	medium	-	1	1
32	medium	-	-	2	medium	1	1	1
33	medium	-	-	2	medium	1	1	1
34	medium	1	-	2	medium	-	-	2
35	short*	-	-	3	medium	-	-	2

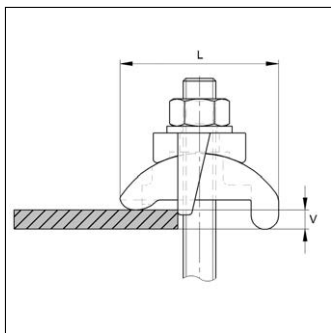
*Clamping claw AF with short nose/cam height available on request.

» CENTUM® Clamping claw - type LR

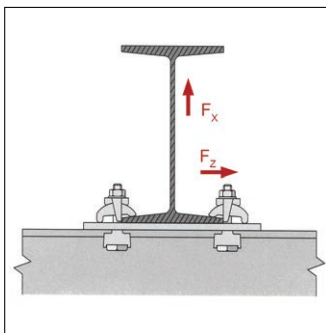
80 100 120 200



Clamping claw LR



Clamping claw LR



Clamping claw LR

Specification

Application area: For clamping CENTUM® adapter plates to steel beams.

Recommended accessories: hexagon bolt / threaded rod h.-d. galv. FK 8.8, washers DIN 125 h.-d. galv., hexagon nuts h.-d. galv.

Delivery time: on demand

Remark: Load specifications only apply in conjunction with attachments of strength class 8.8. For F_z , the value applies to two bolted connections. Larger flange thicknesses can be clamped with washer components (P1 and P2 on request).

* tested for dynamic loads

Technical data

Material: Spherulitic cast iron

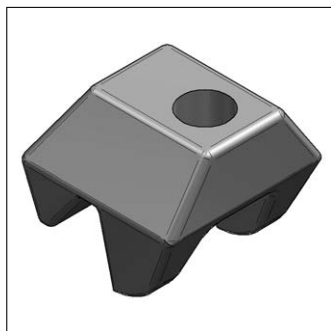
Surface: hot-dip galvanized

Safety factor: 5:1

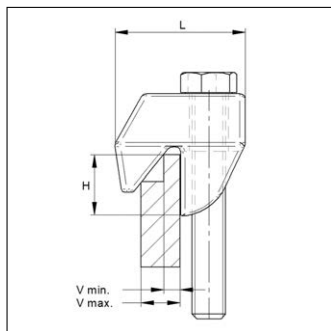
Model	Length L [mm]	Clamping thickness V [mm]	Width [mm]	Requested screw	Strength class	Tightening torque [Nm]	Load F_x [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
LR	56	3-12	39	M12	8.8	69	4,5	0,9	0,180	1	1660003012/fvz
LR	67	3-16	46	M16	8.8	147	8,5	1,7	0,324	1	1660003016/fvz *

» CENTUM® Clamping claw - type CF

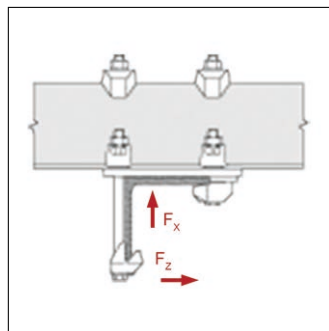
80 100 120 200



Clamping claw CF



Clamping claw CF



Clamping claw CF



Specification

Application area: For vertical clamping to flanges of steel beams, U-profiles and angle-profiles.

Recommended accessories: hexagon bolt / threaded rod h.-d. galv. FK 8.8, washers DIN 125 h.-d. galv., hexagon nuts h.-d. galv.

Technical data

Material: Spherulitic cast iron

Surface: hot-dip galvanized

Safety factor: 5:1 (tension) / 2:1 (shear)

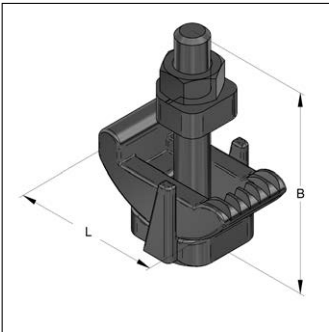
Delivery time: on demand

Remark: Load specifications only apply in conjunction with attachments of strength class 8.8. For F_z , the value applies to two bolted connections.

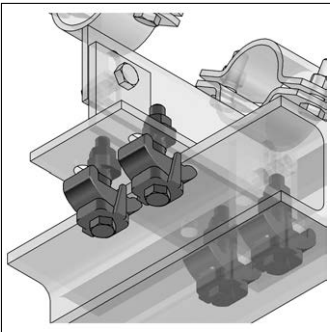
Model	Clamping thickness V [mm]	Length L [mm]	Requested screw	Strength class	Tightening torque [Nm]	Load F_x [kN]	Load F_z [kN]	Weight [kg/pc]	Packing unit [pcs.]	Part-No.
CF	6-13	46	M12	8.8	90	8,5	3,9	0,222	1	1660002012
CF	8-16	62	M16	8.8	240	16,0	10,0	0,428	1	1660002016

» **Fixpoint set LR**

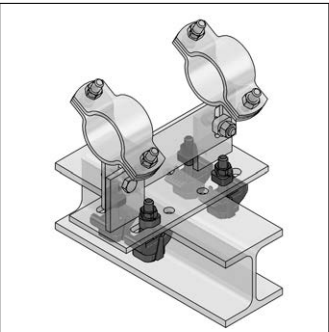
80 100 120 200



Fixpoint set LR



Fixpoint set LR



Fixpoint set LR

Specification

Application area: For connection to steel beams as a fixpoint set for sliding support T and sliding sledge.

Scope of delivery: 4x Clamping claw LR, 4x screw M12, 4x nut M12, 4x lock washer M12

Recommended accessories: hexagon bolt / threaded rod h.-d. galv. FK 8.8, washers DIN 125 h.-d. galv., hexagon nuts h.-d. galv., spacer plate AF

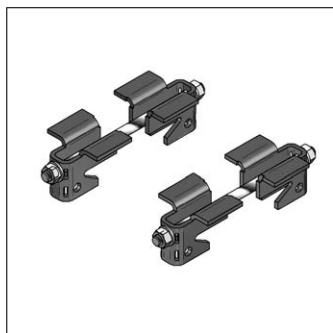
Technical data

Material: Spherulitic cast iron

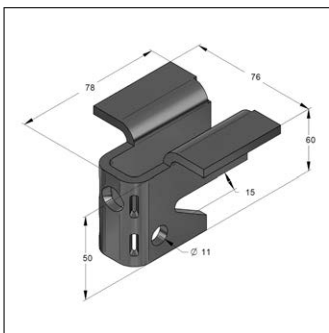
Surface: hot-dip galvanized

Model	Length L [mm]	Clamping thickness [mm]	Width B [mm]	Strength class	Weight [kg/set]	Packing unit [set]	Part-No.
LR	56	3-12	87,5	8.8	1,26	1	1660007112

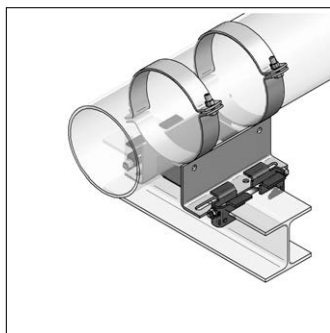
» Guiding clamp-Set



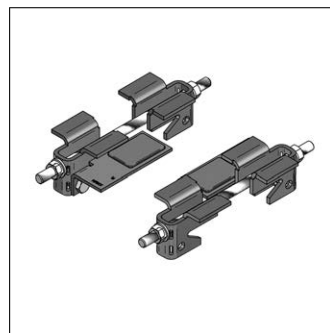
Guiding clamp-Set with lift lock



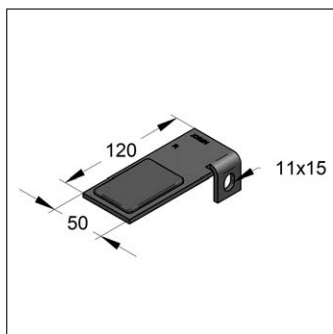
Guiding clamp r/l with lift lock



Guiding clamp-Set with lift lock mounted



Guiding clamp-Set with lift lock and sliding plate



Guiding clamp r/l sliding plate



Product description

- For guiding slide bearings, slide sledge or slide plates on steel beams
- The sets are available with or without a sliding pad
- Guide clamps without anti-lift device available on request

Specification

Application area: For guiding of sliding sledges and sliding supports on steel girders.

Scope of delivery: 4 x guide clamp; 2 x threaded rod; 4 x nut; 4 x washer depending on the item selected + 2 x sliding pad

Technical data

Material: Steel

Surface: Zinc-Nickel

Remark: Note: overview of steel beams, see Chapter 15

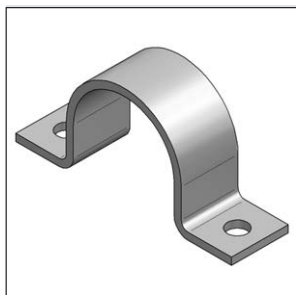
Series	for beam HEA	for beam HEB	for beam IPE	Number of PE sliding stripes	Load F_x [kN]	Load F_z [kN]	Weight [kg/set]	Packing unit [set]	Part-No.
	100-140	100-120	200-240		4	3,5	1,93	1	1473000
	160-180	140-160	270-330		4	3,5	1,99	1	1473001
	200	180-200	360-400		4	3,5	2,05	1	1473002
with sliding pad	100-140	100-120	200-240	2	4	3,5	2,46	1	1473100
with sliding pad	160-180	140-160	270-330	2	4	3,5	2,53	1	1473101
with sliding pad	200	180-200	360-400	2	4	3,5	2,59	1	1473102

» Pipe clamp Form A

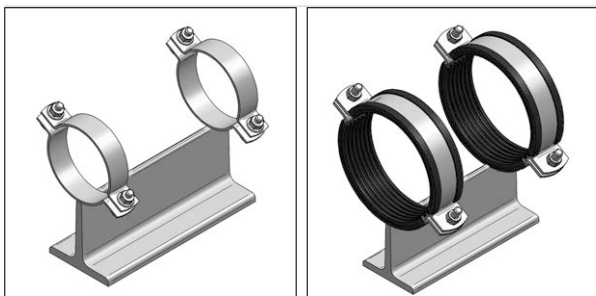


Version, price and delivery time: on demand.

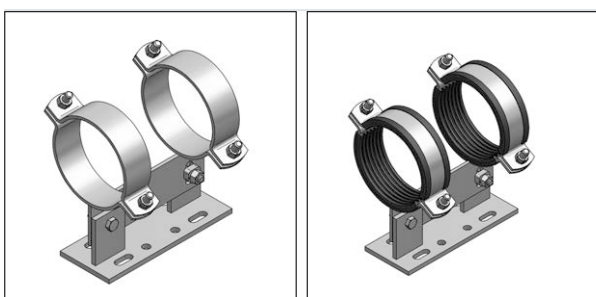
» Stirrup clamp according DIN 1593



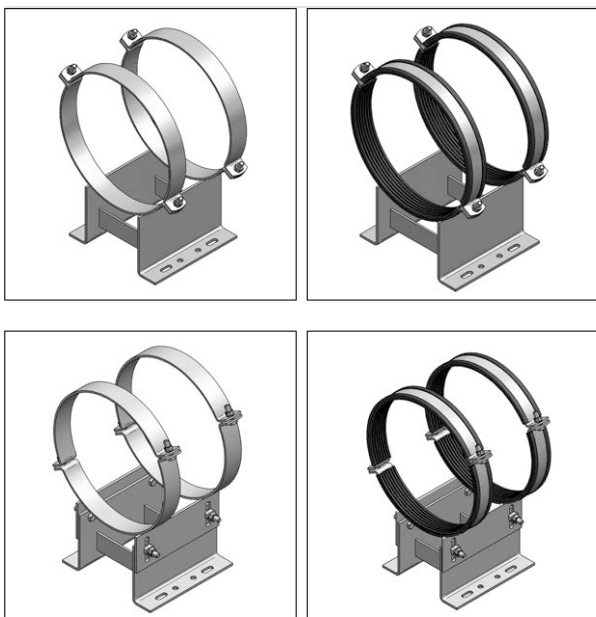
Version, price and delivery time: on demand.

» Sliding support T

Version, price and delivery time: on demand.

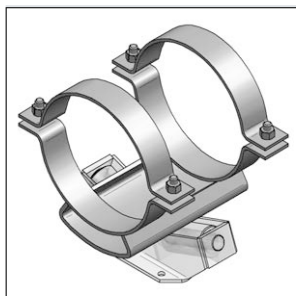
» Sliding sledge, height adjustable

Version, price and delivery time: on demand.

» Sliding sledge

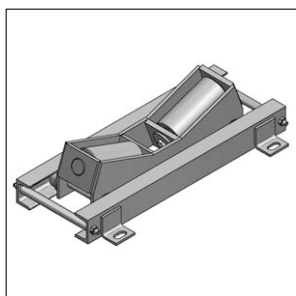
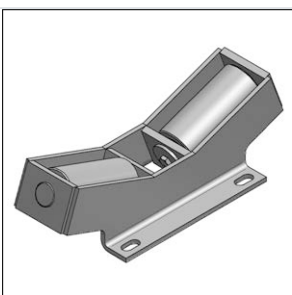
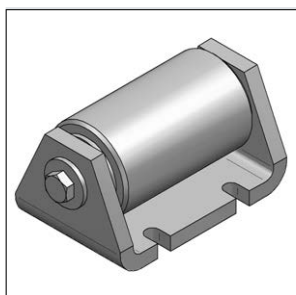
Version, price and delivery time: on demand.

» Insulation-saddle for roller-bearing

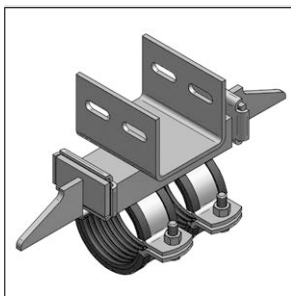


Version, price and delivery time: on demand.

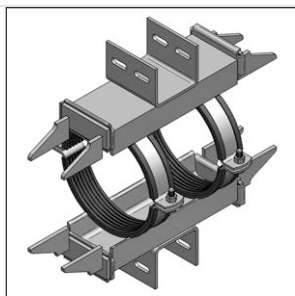
» Roller bearing (heavy-duty and industrial application)



Version, price and delivery time: on demand.

» Fixpoint with CENTUM® Massive connector

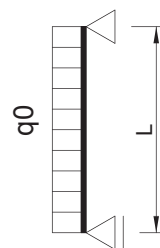
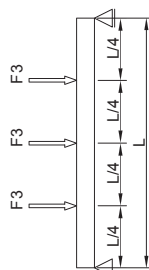
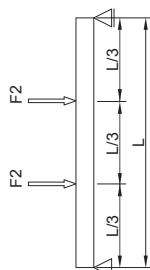
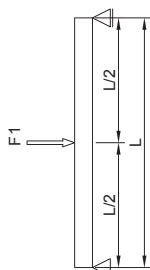
type A



type B

Version, price and delivery time: on demand.

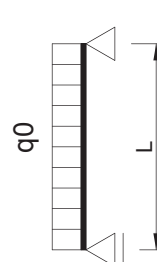
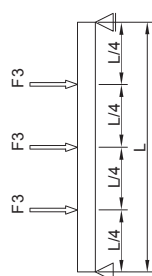
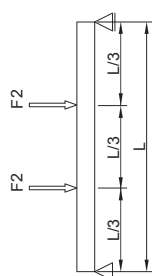
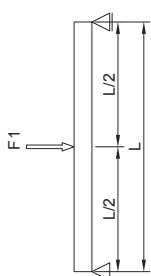
bearing spacing	XL 80				XL 100				XL 120			
	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q
[mm]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]
500	23,03	17,28	11,52	92,12	44,88	33,66	22,44	162,54	73,92	55,44	36,96	254,41
750	15,35	11,51	7,68	40,91	29,91	22,43	14,96	79,74	49,26	36,94	24,63	131,34
1000	11,50	8,63	5,75	22,99	22,41	16,81	11,21	44,82	36,92	27,69	18,46	73,83
1250	9,19	6,89	4,60	14,70	17,91	13,44	8,96	28,66	29,51	22,13	14,76	47,21
1500	7,64	5,73	3,82	10,19	14,91	11,18	7,46	19,88	24,56	18,42	12,28	32,75
1750	6,54	4,91	3,27	7,47	12,76	9,57	6,38	14,58	21,03	15,77	10,52	24,03
2000	5,71	4,28	2,86	5,71	11,15	8,36	5,58	11,15	18,37	13,78	9,19	18,37
2250	5,06	3,73	2,53	4,50	9,89	7,42	4,95	8,79	16,30	12,23	8,15	14,49
2500	4,55	3,01	2,16	3,28	8,88	6,66	4,44	7,11	14,64	10,98	7,32	11,72
2750	4,12	2,47	1,78	2,45	8,05	6,04	4,03	5,86	13,28	9,96	6,64	9,66
3000	3,52	2,07	1,48	1,88	7,36	5,08	3,64	4,62	12,15	9,11	6,08	8,10
3250	2,97	1,75	1,25	1,47	6,78	4,31	3,09	3,61	11,19	8,39	5,60	6,89
3500	2,54	1,49	1,07	1,16	6,27	3,69	2,65	2,88	10,36	7,35	5,18	5,73
3750	2,19	1,29	0,93	0,94	5,44	3,20	2,29	2,32	9,64	6,37	4,57	4,63
4000	1,90	1,12	0,80	0,76	4,75	2,79	2,00	1,90	9,01	5,57	4,00	3,80
4250	1,66	0,98	0,70	0,63	4,17	2,45	1,76	1,57	8,35	4,90	3,52	3,15
4500	1,46	0,86	0,62	0,52	3,68	2,16	1,55	1,31	7,40	4,34	3,12	2,63
4750	1,29	0,76	0,54	0,44	3,27	1,92	1,38	1,10	6,59	3,87	2,78	2,22
5000	1,14	0,67	0,48	0,37	2,91	1,71	1,23	0,94	5,89	3,46	2,48	1,89
5250	1,01	0,59	0,43	0,31	2,61	1,53	1,10	0,80	5,29	3,11	2,23	1,62
5500	0,89	0,53	0,38	0,26	2,34	1,37	0,99	0,68	4,77	2,80	2,01	1,39
5750	0,79	0,47	0,34	0,22	2,10	1,24	0,89	0,59	4,31	2,53	1,82	1,20
6000	0,71	0,42	0,30	0,19	1,89	1,11	0,80	0,51	3,90	2,29	1,65	1,04
6250	-	-	-	-	-	-	-	-	-	-	-	-
6500	-	-	-	-	-	-	-	-	-	-	-	-
6750	-	-	-	-	-	-	-	-	-	-	-	-
7000	-	-	-	-	-	-	-	-	-	-	-	-
7250	-	-	-	-	-	-	-	-	-	-	-	-
7500	-	-	-	-	-	-	-	-	-	-	-	-
7750	-	-	-	-	-	-	-	-	-	-	-	-
8000	-	-	-	-	-	-	-	-	-	-	-	-



max. bending $f_{zul} = L/200$; Safety Elastic limit $\gamma = 1,54$; Yield strength $f_y = 275 \text{ N/mm}^2$; XL 200 Yield strength $f_y = 235 \text{ N/mm}^2$; E-Modul 210.000 N/mm^2

» Load values CENTUM® profile rails XL 120s / XL 200

bearing spacing	XL 120s				XL 200			
	single load 1xF1	double loads 3xF3	three Lasten 3xF3	Distributed load q	Single load 1xF1	Double load 2xF2	Three loads 3xF3	Distributed load q
[mm]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]
500	88,71	66,53	44,36	268,32	93,47	46,74	31,16	287,87
750	59,11	44,34	29,56	157,62	93,47	46,74	31,16	191,92
1000	44,30	33,23	22,15	88,60	76,55	46,74	31,16	143,94
1250	35,41	26,56	17,71	56,65	61,19	45,90	30,60	97,90
1500	29,48	22,11	14,74	39,30	50,95	38,21	25,48	67,93
1750	25,23	18,93	12,62	28,84	43,62	32,72	21,81	49,86
2000	22,05	16,54	11,03	22,05	38,12	28,59	19,06	38,12
2250	19,56	14,67	9,78	17,39	33,84	25,38	16,92	30,08
2500	17,57	13,18	8,79	14,06	30,41	22,81	15,21	24,33
2750	15,94	11,96	7,97	11,59	27,60	20,70	13,80	20,07
3000	14,58	10,93	7,29	9,72	25,25	18,94	12,63	16,84
3250	13,42	10,07	6,71	8,26	23,26	17,45	11,63	14,32
3500	12,43	8,82	6,22	6,87	21,55	16,16	10,78	12,32
3750	11,56	7,65	5,49	5,56	20,07	15,05	10,04	10,70
4000	10,81	6,68	4,80	4,56	18,76	14,07	9,38	9,38
4250	10,02	5,88	4,22	3,78	17,61	13,21	8,81	8,29
4500	8,87	5,21	3,74	3,16	16,58	12,44	8,29	7,37
4750	7,90	4,64	3,33	2,66	15,66	11,75	7,83	6,60
5000	7,07	4,15	2,98	2,26	14,83	11,12	7,42	5,94
5250	6,34	3,73	2,67	1,94	14,08	10,56	7,04	5,37
5500	5,72	3,36	2,41	1,67	13,39	10,04	6,70	4,87
5750	5,16	3,03	2,18	1,44	12,76	9,57	6,38	4,44
6000	4,68	2,75	1,97	1,25	12,18	9,13	6,09	4,06
6250	-	-	-	-	11,64	8,73	5,82	3,73
6500	-	-	-	-	11,14	8,32	5,57	3,43
6750	-	-	-	-	10,68	7,66	5,34	3,10
7000	-	-	-	-	10,25	7,07	5,07	2,76
7250	-	-	-	-	9,85	6,54	4,69	2,46
7500	-	-	-	-	9,47	6,06	4,35	2,20
7750	-	-	-	-	9,12	5,62	4,03	1,98
8000	-	-	-	-	8,78	5,22	3,75	1,78



max. bending $f_{zul} = L/200$; Safety $\gamma = 1,54$; Yield strength $f_y = 275 \text{ N/mm}^2$; XL 200 Yield strength $f_y = 235 \text{ N/mm}^2$; E-Modul 210.000 N/mm^2

» Technical data for planning and calculation



The following data inform you about practical planning, construction and static calculation.

Our application engineering dept. will be at your command with the latest calculations programs and the, only for our customers created software, MEFA static.

Our scope of service includes creating of detailed technical certificates as well as a competent service on site.

Please contact our application engineering dept.:

Phone +49 7944 64-8871

Fax +49 7944 64-38

technik@mefa.de

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» Certification marks and their meaning

**RAL quality mark 655-B + 655-C + 655-D**

Pipe fixing systems for mounting of media-carrying pipelines on building constructions. Part B applies to pipe clamps and part C to profile rails of the quality and test specifications.

Part D of RAL-GZ 655 contains the relevant procedures for the assessment of profile rails connecting parts.

Products tested according to the RAL procedure are awarded the quality mark „pipe support“ and are subject to external monitoring. The technical determination is carried out by an approved and independent testing institute. To ensure a constant product quality, they are regularly monitored.

**RAL quality mark RAL-GZ 656**

Determination of the deformation behavior of pipe clamps under fire load with statically resting, centric tensile load.

The quality mark „fire-tested pipe supports“ is only awarded to products that have already been awarded the quality mark „pipe support“. Both quality marks are based on a comprehensive technical evaluation and monitoring regulation. This always includes a neutral, independent evaluation of the mechanical product properties according to RAL-GZ 655 as well as the execution and evaluation of fire tests according to RAL-GZ 656.

**Fire tested**

Fire tested according to standard temperature curve considering DIN EN 1363-1.



Fire resistance classes F30, F 60, F 90



R = fire resistance

**MPA approved**

The calculation method developed and optimised by us is based on MPA fire tests with expert reports on load and deformation. Compared to the conventional method, more than 10 % higher loads can be achieved. Variable load distributions from 210 to 1155 mm are possible. The toothed plate S M10 / M12 and the combination profile holder M10 / M12 are tested connections for this purpose. Both installation positions are approved.

**Eurocode 3**

Design of steel structures - Part 1-2: general rules - structural fire design. Design according to DIN EN 1993-1-2 (EC3). Eurocode 3 (often abbreviated to EC 3) is the name of the European standard EN 1993 entitled „Design and construction of steel structures“ and is part of the Eurocode series.

**Building materials B2**

B2 = normally flammable building material, non-burning droplets - flammable building material

Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102. Fire behavior of building materials and components or on a European level according to DIN EN 13501 classification of building products and types of construction regarding their fire behavior. According to DIN 4102, these building material classes are divided into non-flammable (A) and flammable building materials (B); the EU classification DIN EN 13501 provides for seven Euro classes (A1, A2, B, C, D, E, F) as well as further classes for smoke development (s = smoke): classes s1, s2 and s3, burning droplets/fall off (d = droplets). Building materials with this logo are normally flammable according to DIN 4102-1.

**Association of German Property Insurers (VdS)**

G 4940029 = Recognition/certificate number. VdS is one of the world's most renowned institutions for corporate security with a focus on fire protection, security, natural hazard prevention and cyber security. VdS Loss Prevention GmbH Independent testing institution with focus on fire protection. MEFA products with this logo are tested and listed.

Guideline VdS-2344 „Requirements and test methods for components“. Procedures for the testing, recognition and certification of products and systems of fire protection and safety engineering. Guideline VdS CEA 4001 „Planning and installation“.

Contains all essential specifications for the design, subsequent installation and operation of sprinkler systems.

» Certification marks and their meaning



FM Approved

Factory Mutual (FM), U.S. approval for the installation of sprinkler systems. Industrial property insurer with its own accredited testing and certification body. MEFA products with this logo are tested and listed.



Corresponds to VdS-CEA

Suitable for the installation of sprinkler systems in concrete according to the requirements of VdS CEA 4001.



European Technical Approval

The European Technical Approval (ETA) is issued for construction products and systems based on the EU Construction Products Directive - implemented in Germany by the German Building Products Act (BauPG) - also by DIBt, if harmonized European standards are not yet available. Thus, the European Technical Approval is regarded as proof of fitness for use for these non-regulated construction products and kits and as the basis for their CE marking. The European Technical Approvals are valid in all EU member states.

ETA-17/0783 = Approval number European Technical Assessment (ETA) with CE mark.



German association of the gas and water industry e. V

The association deals with technical and scientific tasks of fuel gas and water supply in self-administration. The DVGW rules and regulations form the basis of the high technical, safety and quality standards for gas and water. The DVGW tests and certifies products and thus proves the state of the art. According to test marks: Application for general installation purposes in drinking water, hot water, compressed air and gas.



Civil defense (Switzerland)

Shock approval of the Federal Office for Civil Protection, Bern.



Seismic

Design of anchors under seismic action identifies the anchors suitable for use under seismic conditions.

Z-21.1-1785

German Institute for Structural Engineering

The German Institute for Building Technology (DIBt) has a central function in the building industry: With its approvals, permits and assessments, it guarantees the safety of buildings and at the same time supports the development of new building products and types of construction. Every passed test certificate is provided with an approval number. Z-21.1-1785 = approval number



German Institute for Structural Engineering

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Edelstahl rostfrei

Label of the trademark Association Stainless Steel e.V. Material symbol for stainless steel (A2, A4 or HCR grade 1.4529)



Test mark of the Testing Association Masonry Drill e.V.

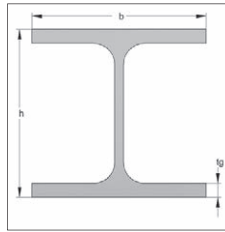
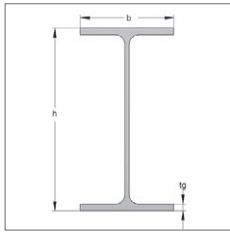
» Material science

1.4520, 1.4301, 1.4510	Material numbers. Steel grades are distinguished by short names or material numbers.
ALU/PU	Polyurethane tray with aluminum foil wrapping. ALU = Aluminum. PU = Polyurethanes
Concrete C20/25	C = concrete. Compressive strength (cylinder) $f_{ck} = 20 \text{ N/mm}^2$ / compressive strength (cube) $f_{ck} = 25 \text{ N/mm}^2$
Concrete B25 to B55	Old designation: B25 and B55. New designation: C20/25 and C50/55
DC01-A	Steel standardization. First letter: D = flat products of mild steels for cold forming. Second letter: C = cold rolled 01 = Code number steel grade 01 (1.0330). A = Surface type A, may have slight scratches, pores and discoloration, must not impair the formability and adhesion of surface coatings. Unalloyed quality steel and is attributed to the general structural steels
DD11	Steel standardization. First letter: D = flat products of mild steels for cold forming. Second letter: D = hot rolled - suitable for direct cold forming. 11 = Code number steel grade 01 (1.0332) Unalloyed quality steel and is attributed to the general structural steels
Ferritic chrome steel	Ferritic steel is known as direct chromium stainless steel because its chromium content is between 10,5 % and 30 %. In this case the carbon content decreases. Ferritic steels have a ferritic structure at any temperature because they do not show any transformation of ferrite to austenite during heating, nor any martensite transformation during cooling. For this reason, phase changes are not possible and cannot be hardened by heat treatment.
FK 4.6	Strength class 4.6. First number: 4. Tensile strength R_m . $R_m = 4 * 100 \text{ N/mm}^2$. $R_m = 400 \text{ N/mm}^2$. Second number: 6. Yield strength R_e . $R_e = 4 * 6 * 10 \text{ N/mm}^2$. $R_e = 240 \text{ N/mm}^2$.
Glass fiber tape	A glass fiber is a long thin fiber made of glass. During production, thin threads are drawn from a glass melt and processed into a variety of end products, including textile fabrics for heat and sound insulation.
GTW	White malleable iron. Old short name is GTW and the new one is GJMW. GJ = cast iron. M = malleable cast iron. W = white (white).
Malleable cast iron	Malleable cast iron is an iron-carbon-silicone casting alloy with a steel structure of ledeburite. In malleable cast iron, a distinction is made between white and black malleable cast iron, which is due to the appearance of the fracture surface.
PE - UHMW	Ultra-high molecular polyethylene. Sliding plastic.
Plastic PE	Thermoplastic plastic. PE = polyethylene
Polyamid 6 (PA 6)	Thermoplastic with good abrasion and sliding properties
Rubber EPDM	Plastics: Elastomer (rubber) Ethylene Propylene Diene Rubber
Rubber flame-resistant (B1)	Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102 Fire behavior of building materials and components or on a European level according to DIN EN 13501 Classification of building products and types of construction regarding their fire behavior. Up to building material class B1, building materials are regarded as self-extinguishing. B1 = hardly inflammable
Rubber SBR	Plastics: Styrene butadiene rubber
TPE	Plastics: Elastomer TPE (Thermo Plastic Elastomer)
TPE, flocked	Plastics: Thermo-plastic elastomers with polyamide fleece flocking
S235JRG2	Unalloyed structural steel. S = structural steel. 235 = Minimum yield strength (in MPa) for steel thickness $\leq 16\text{mm}$ JR = Impact energy 27Joule at room temperature. G2 = Quality level
S250GD-Z150-N-A	Hot-dip galvanized structural steel (HDG). S = mild steel. 250 = Minimum yield strength (in MPa) for steel thickness $\leq 16\text{mm}$. G = other characteristics, if necessary, with 1 or 2 digits. D = for hot dip coatings, galvanized (dipped). Z = normal galvanized. NA = usual zinc bloom different size with usual surface. 150 = coating weight on both sides 150 g/m^2 .

» Material science

Shore hardness	The SHORE hardness is a key figure which is mainly used for elastomers and rubber-elastic polymers. It is directly related to the penetration depth and is therefore a measure of the hardness of the material. A distinction is made between the SHORE A, C and D methods. A spring-loaded pin made of hardened steel is used as the indenter. In these methods, the respective indenter is pressed into the test specimen by a spring force and the depth of penetration is thus a measure of the SHORE hardness.
Silicone	Silicones chemically precise poly(organo)siloxanes, is a name for a group of synthetic polymers with good temperature and weather resistance.
Spherulitic cast iron	Cast iron with nodular graphite
V2A	Stainless steel. V2A = „Test melt 2 austenite“. Chrome-nickel steels with at least 13% chrome content. Area of application: food industry, city and industrial atmosphere
V4A	Corrosion resistant steel, stainless steel. V4A = „Trial melt 4 austenite“. Chrome-nickel-molybdenum steels with at least 13% chrome content. Field of application: chemical industry, salty atmospheres
Z410	Gravity die casting zinc alloy ZnAl4Cu1. Alloy components in weight %. Al: 3.7-4.1 Cu: 0.5-1.0 Mg: 0,03-0,06 Zn: remaining

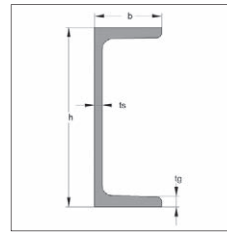
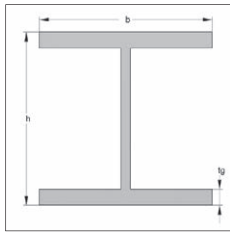
» Steel Beam Overview



IPE beam			
type	height (h)	width (b)	flange thickness (tg)
	[mm]	[mm]	[mm]
80	80	46	5,2
100	100	55	5,7
120	120	64	6,3
140	140	73	6,9
160	160	82	7,4
180	180	91	8,0
200	200	100	8,5
220	220	110	9,2
240	240	120	9,8
270	270	135	10,2
300	300	150	10,7
330	330	160	11,5
360	360	170	12,7
400	400	180	13,5
450	450	190	14,6
500	500	200	16,0
550	550	210	17,2
600	600	220	19,0

HE A beam			
type	height (h)	width (b)	flange thickness (tg)
	[mm]	[mm]	[mm]
100	96	100	8,0
120	114	120	8,0
140	133	140	8,5
160	152	160	9,0
180	171	180	9,5
200	190	200	10,0
220	210	220	11,0
240	230	240	12,0
260	250	260	12,5
280	270	280	13,0
300	290	300	14,0
320	310	300	15,5
340	330	300	16,5
360	350	300	17,5
400	390	300	19,0
450	440	300	21,0
500	490	300	23,0
550	540	300	24,0
600	590	300	25,0
650	640	300	26,0
700	690	300	27,0
800	790	300	28,0
900	890	300	30,0
1000	990	300	31,0

» Steel Beam Overview



HE B beam			
type	height (h)	width (b)	flange thickness (tg)
	[mm]	[mm]	[mm]
100	100	100	10,0
120	120	120	11,0
140	140	140	12,0
160	160	160	13,0
180	180	180	14,0
200	200	200	15,0
220	220	220	16,0
240	240	240	17,0
260	260	260	17,5
280	280	280	18,0
300	300	300	19,0
320	320	300	20,5
340	340	300	21,5
360	360	300	22,5
400	400	300	24,0
450	450	300	26,0
500	500	300	28,0
550	550	300	29,0
600	600	300	30,0
650	650	300	31,0
700	700	300	32,0
800	800	300	33,0
900	900	300	35,0
1000	1000	300	36,0

U-shaped steel beam			
type	height (h)	width (b)	flange thickness (tg)
	[mm]	[mm]	[mm]
80	80	45	8,0
100	100	50	8,5
120	120	55	9,0
140	140	60	10,0
160	160	65	10,5
180	180	70	11,0
200	200	75	11,5
220	220	80	12,5
240	240	85	13,0
260	260	90	14,0
280	280	95	15,0
300	300	100	16,0
320	320	100	17,5
350	350	100	16,0
380	381	102	16,0
400	400	110	18,0

» SURFACE PROTECTION AT MEFA

TSP® - TOP SURFACE PROTECTION

Why protect these components?

In the field of pipe fastening technology for building services and the process industry, steel mounting structures are primarily used to secure piping. This applies in particular to pipe clamps, profile rails, heavy-duty profiles, and all mounting and connecting parts. Various coating systems are used to provide long-term protection against corrosion for these components. This ensures the long-term durability and safe operation of the entire fastening system.

What factors are relevant?

The following environmental factors influence the selection of the appropriate corrosion protection for the system:

- indoor or outdoor installation
- humidity
- temperature
- atmospheric environment and its level of air pollution - mechanical stress (e.g., from abrasion)

What factors should be considered when selecting the appropriate surface protection?

Based on just two key criteria, we can identify the perfect protection system for your construction project. Our team is, of course, always here to support you in choosing the right product.

1) The corrosion category

According to DIN EN ISO 12944-2, this is classified on a scale from C1 (very low, almost negligible exposure) up to CX (extreme exposure, e.g., offshore) and must be determined as a first step.

Category	Corrosivity
C1	very low
C2	low
C3	medium
C4	high
C5	very strong
CX	extreme

2) The durability period

What service life, as defined by DIN EN ISO 12944-1, is required for your construction project? This also serves as a benchmark for the next maintenance interval and is divided into the following four categories:

up to 7 years	low	L
7 to 15 years	medium	M
15 to 25 years	high	H
over 25 years	very high	VH

» Our options for surface protection

If the corrosion category and the expected service life are known, the following coating systems are available:

Corrosion categories C1 and C2

For these categories, across all service life ranges - from low to very high - electrogalvanized or pre-galvanized coatings are sufficient to protect your components adequately and cost-effectively. These coatings are primarily intended for indoor use. The coating thicknesses are approximately 8 µm for electrogalvanized zinc and up to 27 µm for pre-galvanized steel.

Corrosion category min. C4:

TSP® - TOP SURFACE PROTECTION

All TSP®-coated parts are designed to withstand higher stress levels while providing a long service life. Depending on the coating selected and the required service life, corrosion category C5 can even be covered with a service life of up to 15 years. Please refer to the overview in the matrix. Maintenance and servicing work should be performed within the specified service life (recommended practice).

Our TSP® products may be treated with the following three types of coatings:

Hot-dip galvanizing

- » Zinc coating according to DIN EN ISO 1461, resulting in a coating thickness of at least 50 µm on the components.
- » Any material modifications, such as cutting the profile rail, must be re-galvanized (cold-galvanized) afterward (e.g., using zinc spray).

Zinc-Nickel coating

- » Zinc alloy according to DIN EN ISO 19598, with a coating thickness of 12 µm.
- » Particularly suitable for components with tight radii and threaded parts, ensuring they remain fully functional.
- » Tested quality with up to 720 hours of salt spray testing in accordance with DIN EN ISO 9227.

Zinc-Magnesium coating

- » High-quality zinc alloy composition consisting of zinc, magnesium and aluminum in accordance with DIN EN 10346, with a coating thickness of up to 31 µm.
- » There are no compatibility issues when used in combination with other coating systems.
- » Up to 31 years of protection in corrosion category C4.
- » On raw, uncoated areas - which may result from subsequent material processing (drilling, welding, cutting) - a protective zinc-magnesium layer naturally forms over time due to rain and condensation. Red rust may appear for a short time, but it will eventually turn into white rust.
- » To prevent these visual defects, cold galvanizing can be performed as an optional step after processing / modification.

Corrosion category C5 (high)

TSP® - TOP SURFACE PROTECTION ULTRA

Our premium solution for corrosion protection. The TSP®-ULTRA coating is designed for extreme conditions and meets the highest standards required for industrial and coastal applications. Its multi-layer structure is suitable for a service life of up to 25 years, thereby meeting the requirements of corrosion category C5 (high).

- » Multi-layered structure:
 - immersion zinc phosphate coating (as a pretreatment)
 - cathodic dip coating (e-coating) (as corrosion protection)
 - two-component powder coating (as a topcoat)
- » Significantly exceeds the standard requirement of 1,440 hours in a salt spray test according to DIN EN ISO 9227 for category C5 (high).
- » Visually appealing, smooth surface in RAL 7035 (light gray).

Note: The delivery time is approximately 30 business days.



COMPREHENSIVE SURFACE PROTECTION



» Additional coating options and special cases

Cathodic dip coating (e-coating) is used for material separation and corrosion protection. Since the coating is not UV-resistant, it should only be used for indoor applications. This coating technology is widely used in the automotive industry.



Corrosion category C5 (very high) and CX

In these extreme cases, which are covered by DIN EN ISO 12944-9 and other standards, separate planning coordination is required. Our team is available at any time to assist you with your specific project requirements.



CORROSION PROTECTION MATRIX

								
Corrosion category according to ISO 9223	Corrosion load in accordance with DIN EN ISO 12944-1	Durability period until first maintenance (years)	galv.	pre-galv.	TSP®			TSP® ULTRA
					HDG	ZN	ZM	
C1			✓	✓	✓	✓	✓	✓
C2	low	up to 7	✓	✓	✓	✓	✓	✓
	medium	7 to 15	✓	✓	✓	✓	✓	✓
	high	15 to 25	✓	✓	✓	✓	✓	✓
	very high	> 25	✓	✓	✓	✓	✓	✓
C3	low	up to 7	-	-	✓	✓	✓	✓
	medium	7 to 15	-	-	✓	✓	✓	✓
	high	15 to 25	-	-	✓	✓	✓	✓
	very high	> 25	-	-	✓	✓	✓	✓
C4	low	up to 7	-	-	✓	✓	✓	✓
	medium	7 to 15	-	-	✓	✓	✓	✓
	high	15 to 25	-	-	✓	✓	✓	✓
	very high	> 25	-	-	-	-	✓	✓
C5	low	up to 7	-	-	✓	✓	✓	✓
	medium	7 to 15	-	-	✓	✓	✓	✓
	high	15 to 25	-	-	-	-	-	✓

galv. = galvanized
pre-galv. = pre-galvanized

HDG = hot-dip galvanized
ZN = zinc-nickel coated

ZM = zinc-magnesium coated

» Weight- and pipe schedule for medium-weight tubes

Medium-weight tubes according to DIN EN 10255 (DIN 2440)

Heat insulation: density 120 kg/m³

DN	Connecting width of the fittings ["]	OD [mm]	Wall thickness [mm]	Weight in kg/m				Pipe dimension with insulation		
				empty	with water	with water and 50% insulation	with water and 100% insulation	Insulation thickness in mm at 100% insulation	OD in mm at an insulation of	
									50%	100%
8	1/4"	13,5	2,3	0,64	0,71	1,39	1,90	20	40	60
10	3/8"	17,2	2,3	0,84	0,98	1,74	2,26	20	40	60
15	1/2"	21,3	2,6	1,21	1,42	2,26	2,80	20	40	60
20	3/4"	26,9	2,6	1,56	1,95	2,91	3,47	20	50	70
25	1"	33,7	3,2	2,41	3,02	4,41	5,37	30	60	90
32	1 1/4"	42,4	3,2	3,10	4,15	5,74	6,75	30	70	100
40	1 1/2"	48,3	3,2	3,56	4,98	7,03	8,54	40	90	130
50	2"	60,3	3,6	5,03	7,31	10,03	12,16	50	110	160
65	2 1/2"	76,1	3,6	6,42	10,24	13,80	16,72	60	140	200
80	3"	88,9	4,0	8,36	13,60	18,47	23,01	80	170	250
100	4"	114,3	4,5	12,20	20,89	27,70	34,41	100	210	310
125	5"	139,7	5,0	16,60	29,40	37,13	44,32	100	240	340
150	6"	165,1	5,0	19,80	38,13	46,78	54,44	100	270	370

- Weights can differ

- Please note pipe manufacturer's specifications

» Tightening torque of locking screws for pipe clamps

All locking screws of pipe clamps must be tightened uniformly with a torque according to table 1 depending on the size of screw. Only when these tightening torques are observed, loads specified in the technical documentation being ensured.

Table 1: tightening torque

Screw size	Tightening torque
M4	1 Nm
M5	2 Nm
M6	2 Nm
M8	3 Nm
M10	5 Nm
M12	10 Nm
M16	20 Nm
M20	25 Nm
M24	25 Nm

Torque values applying to clamps with pure tensile load only, not applying to clamps with axial load.

» **Weight- and pipe schedule for welded steel pipes**

Welded steel pipes according to DIN EN 10220 (DIN 2458) - light version

Heat insulation: density 120 kg/m³

DN	OD [mm]	Wall thickness s [mm]	Weight in kg/m				Pipe dimension with insulation		
			empty	with water	with water and 50% insulation	with water and 100% insulation	Insulation thickness in mm at 100% insulation	OD in mm at an insulation of	
								50%	100%
8	13,5	1,80	0,52	0,60	1,28	1,78	20	30	50
	16,0	1,80	0,63	0,75	1,48	2,00	20	40	60
10	17,2	1,80	0,68	0,83	1,59	2,11	20	40	60
15	21,3	2,00	0,95	1,19	2,03	2,57	20	40	60
20	26,9	2,00	1,23	1,64	2,60	3,16	20	50	70
	31,8	2,00	1,47	2,08	3,42	4,37	30	60	90
25	33,7	2,00	1,56	2,26	3,64	4,61	30	60	90
32	42,4	2,30	2,27	3,40	4,98	6,00	30	70	100
	44,5	2,30	2,39	3,64	5,60	7,08	40	90	130
40	48,3	2,30	2,61	4,11	6,16	7,67	40	90	130
	51,0	2,30	2,76	4,45	6,57	8,10	40	90	130
50	57,0	2,30	3,10	5,26	7,89	10,00	50	110	160
	60,3	2,30	3,29	5,73	8,45	10,58	50	110	160
	63,5	2,30	3,47	6,20	9,00	11,17	50	110	160
	70,0	2,60	4,32	7,62	11,01	13,85	60	130	190
65	76,1	2,60	4,71	8,66	12,22	15,14	60	140	200
80	88,9	2,90	6,15	11,57	16,45	20,98	80	170	250
	101,6	2,90	7,06	14,27	20,62	27,09	100	200	300
	108,0	2,90	7,52	15,72	22,30	28,89	100	210	310
100	114,3	3,20	8,77	17,91	24,72	31,43	100	210	310
	127,0	3,20	9,77	21,19	28,46	35,41	100	230	330
	133,0	3,60	11,49	23,92	31,40	38,46	100	230	330
125	139,7	3,60	12,08	25,87	33,60	40,78	100	240	340
	152,4	4,00	14,64	31,02	39,20	46,63	100	260	360
	159,0	4,00	15,29	33,20	41,62	49,17	100	260	360
150	168,3	4,00	16,21	36,39	45,15	52,87	100	270	370
	177,8	4,50	19,23	41,61	50,71	58,62	100	280	380
	193,7	4,50	21,00	47,79	57,47	65,67	100	300	400
200	219,1	4,50	23,82	58,48	69,08	77,76	100	320	420
225	244,5	5,00	29,53	72,72	84,23	93,39	100	340	440
250	273,0	5,00	33,05	87,37	99,91	109,61	100	370	470
300	323,9	5,60	43,96	120,76	135,13	145,79	100	425	525
350	355,6	5,60	48,34	141,49	157,02	168,27	100	460	560
400	406,4	6,30	62,16	183,96	201,32	213,53	100	510	610
450	457,0	6,30	70,02	225,13	244,32	257,49	100	560	660
500	508,0	6,30	77,95	270,70	293,06	308,91	110	620	730
550	559,0	6,30	85,87	320,35	346,09	364,88	120	680	800
600	610,0	6,30	93,80	374,09	401,86	421,80	120	730	850
650	660,0	7,10	114,32	441,88	471,64	492,71	120	780	900

- Weights can differ

- Please note pipe manufacturer's specifications

» Weight- and pipe schedule for seamless steel pipes

Seamless steel pipes according to DIN EN 10220 (DIN 2448) - heavy version

Heat insulation: density 120 kg/m³

DN	OD [mm]	Wall thickness s [mm]	Weight in kg/m				Pipe dimension with insulation		
			empty	with water	with water and 50% insulation	with water and 100% insulation	Insulation thickness in mm at 100% insulation	OD in mm at an insulation of	
								50%	100%
8	13,5	1,80	0,52	0,60	1,28	1,78	20	30	50
	16,0	1,80	0,63	0,75	1,48	2,00	20	40	60
10	17,2	1,80	0,68	0,83	1,59	2,11	20	40	60
15	21,3	2,00	0,95	1,19	2,03	2,57	20	40	60
20	26,9	2,30	1,40	1,79	2,75	3,31	20	50	70
	31,8	2,60	1,87	2,43	3,77	4,72	30	60	90
25	33,7	2,60	1,99	2,63	4,02	4,98	30	60	90
32	42,4	2,60	2,55	3,64	5,23	6,24	30	70	100
	44,5	2,60	2,69	3,90	5,86	7,34	40	90	130
40	48,3	2,60	2,93	4,39	6,44	7,95	40	90	130
	51,0	2,60	3,10	4,75	6,87	8,40	40	90	130
50	57,0	2,90	3,87	5,93	8,56	10,67	50	110	160
	60,3	2,90	4,11	6,44	9,16	11,30	50	110	160
	63,5	2,90	4,33	6,95	9,75	11,92	50	110	160
	70,0	2,90	4,80	8,04	11,42	14,27	60	130	190
65	76,1	2,90	5,24	9,12	12,68	15,59	60	140	200
80	88,9	3,20	6,76	12,11	16,98	21,51	80	170	250
	101,6	3,60	8,70	15,70	22,05	28,52	100	200	300
	108,0	3,60	9,27	17,25	23,83	30,42	100	210	310
100	114,3	3,60	9,83	18,84	25,65	32,35	100	210	310
	127,0	4,00	12,13	23,26	30,52	37,47	100	230	330
	133,0	4,00	12,73	25,00	32,48	39,54	100	230	330
125	139,7	4,00	13,39	27,01	34,73	41,92	100	240	340
	152,4	4,50	16,41	32,56	40,75	48,17	100	260	360
	159,0	4,50	17,15	34,82	43,24	50,79	100	260	360
150	168,3	4,50	18,18	38,11	46,87	54,59	100	270	370
	177,8	5,00	21,31	43,42	52,52	60,43	100	280	380
	193,7	5,60	25,98	52,14	61,81	70,02	100	300	400
200	219,1	6,30	33,06	66,55	77,15	85,83	100	320	420
225	244,5	6,30	37,01	79,25	90,76	99,92	100	340	440
250	273,0	6,30	41,44	94,69	107,23	116,93	100	370	470
300	323,9	7,10	55,47	130,80	145,18	155,84	100	425	525
350	355,6	8,00	68,58	159,16	174,68	185,94	100	460	560
400	406,4	8,80	86,29	205,01	222,37	234,58	100	510	610
450	457,2	10,00	110,29	260,41	279,60	292,77	100	560	660
500	508,0	11,00	134,82	320,33	342,69	358,54	110	620	730
550	559,0	12,50	168,47	392,43	418,17	436,95	120	680	800
600	610,0	12,50	184,19	452,97	480,74	500,68	120	730	850
650	660,0	14,20	226,15	539,46	569,23	590,30	120	780	900

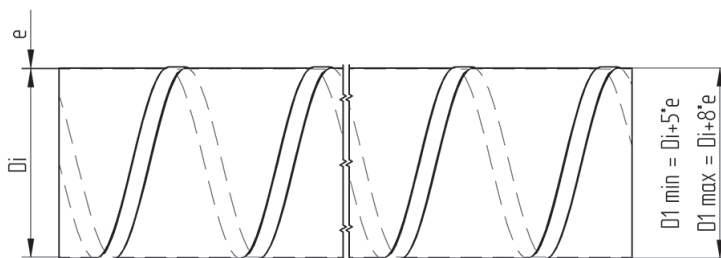
- Weights can differ

- Please note pipe manufacturer's specifications

» General pipe weights, general

DN Inside- Ø Di	Wall thickness e [mm]	Pipe- weight [kg/m]
Ventilation pipelines acc. to DIN EN 12237 (DIN 24145)		
71	0,4	0,70
80	0,4	0,79
90	0,4	0,88
100	0,6	1,47
112	0,6	1,65
125	0,6	1,84
140	0,6	2,06
150	0,6	2,21
160	0,6	2,36
180	0,6	2,65
200	0,6	2,95
224	0,6	3,31
250	0,6	3,69
280	0,6	4,13
300	0,8	5,90
315	0,8	6,20
355	0,8	6,99
400	0,8	7,88
450	0,8	8,86
500	0,8	9,85
560	0,8	11,03
600	1,0	14,77
630	1,0	15,51
710	1,0	17,49
800	1,0	19,70
900	1,0	22,17
1000	1,2	29,56
1120	1,2	33,11
1250	1,2	36,96
1400	1,5	51,73
1600	1,5	59,13
1800	1,5	66,53
2000	1,5	73,93

OD [mm]	Wall- thickness [mm]	Empty [kg/m]	Pipe weight water- filled [kg/m]	Insulated [kg/m]	Fastening distances [m]
Type copper pipe acc. to DIN EN 1057 (DIN 1786)					
8,0	1,0	0,20	0,22	0,40	0,60
10,0	1,0	0,25	0,30	0,50	1,00
12,0	1,0	0,31	0,39	0,60	1,25
15,0	1,0	0,39	0,52	0,70	1,25
18,0	1,0	0,48	0,68	0,90	1,50
22,0	1,0	0,59	0,90	1,20	2,00
28,0	1,5	1,11	1,60	2,20	2,25
35,0	1,5	1,41	2,21	2,90	2,75
42,0	1,5	1,70	2,90	3,90	3,00
54,0	2,0	2,91	4,87	6,50	3,50
64,0	2,0	3,47	6,29	8,70	4,00
76,1	2,0	4,14	8,23	11,3	4,25
88,9	2,0	4,86	10,52	14,5	4,75
108,0	2,5	7,37	15,71	21,8	5,00
133,0	3,0	10,90	23,57	30,7	5,00
159,0	3,0	13,09	31,47	37,3	5,00



- Weights can differ
- Please note pipe manufacturer's specifications

» General pipe weights

DN	OD	Wall- thickness [mm]	Pipe weight		Fastening distances [m]
	[mm]		empty [kg/m]	waterfilled [kg/m]	
Type drainpipe cast iron - acc. to DIN EN 877 (DIN 19522)					
40	48	3,0	3,10	4,50	approx. 1,50 According to the statements of the manufacturer, every pipe should be supported twice at least; additionally every shaped piece
50	58	3,5	4,30	6,40	
70	78	3,5	5,90	9,90	
80	83	3,5	6,30	10,90	
100	110	3,5	8,50	16,80	
125	135	4,0	11,90	24,60	
150	160	4,0	14,20	32,40	
200	210	5,0	23,40	54,80	
250	274	5,5	33,60	88,00	
300	326	6,0	43,70	121,20	
Type drainpipe PE (Geberit) - acc. to DIN EN 12056 (DIN 1986)					
30	32	3,0	0,26	0,79	0,8
40	40	3,0	0,33	1,23	0,8
50	50	3,0	0,42	1,94	0,8
56	56	3,0	0,47	2,43	0,8
70	75	3,0	0,65	4,38	0,8
90	90	3,5	0,91	6,32	0,9
100	110	4,3	1,35	9,42	1,1
125	125	4,9	1,75	12,20	1,3
150	160	6,2	2,84	19,95	1,6
200	200	6,2	3,58	31,22	2,0
250	250	7,8	5,63	48,78	2,0
300	315	9,8	8,92	77,45	2,0
Typ drainpipe PVC, hard - acc. to DIN 8062 (line 3)					
40	50	1,8	0,40	2,09	0,8
50	63	1,9	0,53	3,29	1,0
70	75	2,2	0,73	4,65	1,2
80	90	2,7	1,08	6,70	1,35
100	110	3,2	1,57	10,00	1,5
125	125	3,7	2,06	12,92	1,6
150	160	4,7	3,35	21,16	1,8
PP-pipe (pressure stage PN10 - SDR11) - acc. to DIN EN ISO 15874 (DIN 8077/78)					
15	20	1,9	0,11	0,32	0,6
20	25	2,3	0,17	0,50	0,75
25	32	2,9	0,27	0,80	0,9
32	40	3,7	0,41	1,25	1,0
40	50	4,6	0,64	1,95	1,2
50	63	5,8	1,01	3,09	1,4
-	75	6,8	1,42	4,36	1,5
65	90	8,2	2,03	6,28	1,6
80	110	10,0	3,01	9,37	1,8
100	125	11,4	3,90	12,10	1,9

- Weights can differ
- Please note pipe manufacturer's specifications

» General pipe weights

DN	OD	Wall- thickness [mm]	Pipe weight		Fastening distances [m]
	[mm]		empty [kg/m]	waterfilled [kg/m]	
C-steel system pipe (type Mapress) - steel, galvanized (in- and outside)					
10	12	1,2	0,32	0,39	1,25
12	15	1,2	0,41	0,53	1,25
15	18	1,2	0,50	0,69	1,50
20	22	1,5	0,76	1,04	2,00
25	28	1,5	0,98	1,47	2,25
32	35	1,5	1,24	2,04	2,75
40	42	1,5	1,50	2,69	3,00
50	54	1,5	1,94	3,99	3,50
65	76,1	2,0	3,66	7,74	4,25
80	88,9	2,0	4,29	9,95	4,75
100	108	2,0	5,23	13,72	5,00
Stainless steel system pipe (type Mapress) - grade 1.4401					
10	12	1,0	0,28	0,36	1,25
12	15	1,0	0,35	0,48	1,25
15	18	1,0	0,43	0,63	1,50
20	22	1,2	0,63	0,93	2,00
25	28	1,2	0,81	1,32	2,25
32	35	1,5	1,26	2,06	2,75
40	42	1,5	1,52	2,72	3,00
50	54	1,5	1,97	4,02	3,50
65	76,1	2,0	3,72	7,80	4,25
80	88,9	2,0	4,36	10,02	4,75
100	108	2,0	5,32	13,81	5,00
Composite system pipe (type Mepla) - alu/PE (expansion coefficient a = 0,026mm/(mK))					
12	16	2,25	0,14	0,24	1,50
15	20	2,5	0,19	0,36	1,50
20	26	3,0	0,30	0,61	1,50
25	32	3,0	0,42	0,95	2,00
32	40	3,5	0,60	1,45	2,00
40	50	4,0	0,84	2,23	2,50
50	63	4,5	1,10	3,40	2,50
65	75	4,7	1,45	4,83	2,50

- Weights can differ
- Please note pipe manufacturer's specifications

» Allocation tables pipe clamps - plastic pipes

Pipe dimension	Clipstar	Clip-master	Sigma	Trabant	Omnia MB two-part	Maxima PSM	Titan	Sliding pipe clamp		PVDF AGRU, Frank, GF	PVC DIN 8061 DIN 8062	PE-HD hart DIN 8074 DIN 8075	PP DIN 8077 DIN 8078	PP-Type 3 DIN 8077 DIN 8078 aquatherm Fusiotherm	PP-Type 3 DIN 8077 DIN 8078 Fusiotherm Stabi-Rohr
								Sigma	Omnia MB						
Inch / mm	Clamping range from - to [mm]									OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD [mm]	OD [mm]
8		8	8-10								8				
10	10	10	8-10								10	10			
12	12	12	12-15	12-15				12			12	12			
1/4"			12-15	12-15											
15	15	15	12-15	12-15	15-20	15-19		15							
16			16-19	16-20	15-20	15-19		16		16	16	16	16	16	
3/8"	18	18	16-19	16-20	15-20	15-19		18							17,8
19			16-19	16-20	15-20	15-19									
20			20-23	16-20	15-20	20-25		20		20	20	20	20	20	
1/2"	22	22	20-23	21-25	22-28	20-25		22							21,9
23			20-23	21-25	22-28	20-25									
25			25-29	21-25	22-28	20-25		25		25	25	25	25	25	
3/4"	28	28	25-29	26-30	22-28	26-30		28							27,0
32			32-35	32-37	30-35	31-36		32		32	32	32	32	32	
1"	35	35	32-35	32-37	30-35	31-36		35							34,1
38					38-42	38-45		38							
40			40-44		38-42	38-45		40		40	40	40	40	40	
11/4"	42		40-44	42-46	38-42	38-45		42							42
46				42-46	44-48	38-45		46							
48			48-52	48-52	44-48	47-51		50							
50			48-52	48-52	50-54	47-51		50	50	50	50	50	50	50	
52			48-52	48-52	50-54	47-51		52							52
53			53-57		50-54	53-57									
54			53-57	54-58	50-54	53-57		54							
57			53-57	54-58	56-60	53-57									
2"			58-60	60-65	56-60	58-64									
64				60-65	61-65	58-64	64			63	63	63	63	63	
65				60-65	61-65	65-70		65							65
70				70-76	70-73	65-70									
73				70-76	70-73	72-78									
21/2"				76-83	75-83	72-78	76			75	75	75	75	75	77
3"				85-90	84-89	84-90	89		90	90	90	90	90	90	
101,6					100-105	102-106									
108				108-114	108-112	108-112	108								
110				108-114	108-112	108-112	110		110	110	110	110	110	110	
4"				108-114	114-116	113-117	114								113,6
121				121-125	121-125	120-125									
125				121-125	121-125	120-125	125			125	125	125	125	125	
133				132-136	132-136	133-136	133								
135				132-136	132-136	133-136	135								
5"				137-141	137-141	137-142	140			140	140	140	140		
150						145-150									
159				159-163	159-163	158-163	160							160	
6"				164-168	164-168	164-168	165								
168				164-168	164-168	164-168	168								
194						190-194	194								
200						198-203	200			200	200	200	200	200	
216															
219,1						219-223	220								
225						225-230	225			225	225	225	225		
244						242-246	245								
273						270-275	273								

» Allocation tables pipe clamps - drain pipes

Pipe dimension	Sigma	Trabant	Omnia MB two-part	Maxima PSM	Titan	SML	Clamping range from - to [mm]		PVC pressure pipe DIN EN ISO 18532	Wavin AS DIN 4109 DIN EN 12056	Wavin KG DIN EN 1401 DIN EN 13476-2 PVC-U	Rostrich HT DIN EN 1451 DIN EN 4102 DIN 8078 DIN 19560-10	Geberit PE-HD DIN EN 1519-1 DIN 19535-10 DIN EN 12666-1		LORO X(SL) DIN EN 612 DIN EN 1123 XCL (A2/A4) DIN EN 112 L-N(Cu) DIN EN 612 DIN 1754/1786		LORO L Composite DIN 4102 und DIN 1986 DIN EN 1123/ DIN EN ISO 1461		Möck GM-X St-fsv Cu, VA		Möck GM-X Composite St, Cu, VA, PU	
	Inch / mm					DN	OD [mm]		DN	OD [mm]	DN	OD [mm]	DN	OD [mm]	DN	OD [mm]	DN	OD [mm]	DN	OD [mm]	DN	OD [mm]
32	32-35	32-37	30-35	31-36									30	32								
38			38-42	38-45								40	40	40				40	42			
50	48-52	48-52	50-54	47-51								50	50	50								
53	53-57		50-54	53-57														50	53			
58	58-60	54-58	56-60	53-57		50	58						56	56								
2"	58-60	60-65	56-60	58-64																		
64		60-65	61-65	58-64	64			50	63													
73		70-76	70-73	72-78																		
21/2"		76-83	75-83	72-78	76	70	78		75	78		70	75	70	70	73			70	73		
83		76-83	75-83			80	83															
3"		85-90	84-89	84-90	89				80	90			90	90	80	89			80	89	50	89
102			100-105	102-106																		
110		108-114	108-112	108-112	110	100	110		110	110	100	110	100	110	100	102			100	102	70	102
125		121-125	121-125	120-125	125					125	125	125	125	125								
133		132-136	132-136	133-136	133																	
134/135		132-136	132-136	133-136	135	125	135								125	133			125	133		
5"		137-141	137-141	137-142	140				125	140											100	134
160		159-163	159-163	158-163	160	150	160															
164		164-168	164-168	164-168	165																	
168		164-168	164-168	164-168	168																	
200				198-203	200																	
204				198-203																		
210				207-213	210	200	210														150	204
219,1				219-223	219																	
225				225-230	225				200	225												
250																						
273				270-275	273																200	273
274				270-275	273	250	274														250	273

Allocation tables pipe clamps - copper and steel pipes

Pipe dimension	Clipstar	Clipmaster	Sigma	Trabant	Omnia MB two-part	Maxima PSM	Titan	Sliding pipe clamp		Copper pipe uncoated DIN EN 1057	WICU Pipe Flex		WICU Pipe Eco		Threaded pipe DIN EN 10255		Steel pipes DIN EN 10220 DIN 2460	Stainless steel pipes DIN EN 10272	
								Sigma	Omnia MB		Dimension [mm]	OD [mm]	Dimension [mm]	OD [mm]	DN	OD [mm]			DN
Clamping range from - to [mm]																			
8	8	8-10								8x1									
10	10	8-10								10x1	9								
12	12	12-15		12-15				12		12x1	11								
1/4"		12-15	12-15	12-15						10x1	13		8	1/4"	13.5		13.5		
15	15	12-15	12-15	12-15	15-20	15-19		15		15x1									
16		16-19	15-20	15-20	15-20	15-19		16		18x1	16		10	3/8"	16.0		16.0		
3/8"	18	16-19	15-20	15-20	15-20	15-19		18			19				17.2	10	17	17.2	
19		16-19	15-20	15-20	15-20	15-19										19			
20		20-23	15-20	15-20	20-25	20-25		20								20.0			
1/2"	22	20-23	20-25	20-25	22-28	20-25		22		22x1			15	1/2"	21.3	15	21.3	15	21.3
23		20-23	20-25	22-28	20-25	20-25					22								
25		25-29	20-25	22-28	20-25	20-25		25								25			
3/4"		25-29	25-30	22-28	26-30	26-30													
3/4"	28	25-29	25-30	22-28	26-30	26-30		28		28x1,5	26		20	3/4"	26.9	20	26.9	20	26.9
32		32-35	32-37	30-35	31-36	31-36		32			33							31.8	
1"	35	32-35	32-37	30-35	31-36	31-36		35		35x1,5			25	1"	34	25	33.7	25	33.7
38				38-42	38-45	38-45		38							38.0				
40		40-44		38-42	38-45	38-45		40			40								
1 1/4"	42	40-44	42-46	38-42	38-45	38-45		42		42x1,5	35x1,2	40	32	1 1/4"	42.4	32	42.4 / 44.5	32	42.4
46			42-46	44-48	38-45	38-45		46					45						
48			48-52	47-52	44-48	47-51			50		42x1,2	48	40	1 1/2"	48.3	40	48	40	48
50			48-52	47-52	50-54	47-51			50								51	51	51
52			48-52	47-52	50-54			52											
53			53-57	53-58	50-54	53-57													
54			53-57	53-58	50-54	53-57		54		54x1,5									
57		58-60	53-58	53-58	53-57	53-57											57.0		57.0
2"			59-65	59-65	56-60	58-64					60		50	2"	60.3	50	60.3	50	60.3
64			59-65	59-65	63-64	58-64	64		63		54x1,5	63		28x1	63.5	50	63.5	50	63.5
65			59-65	59-65	65-70	65-70			65										
70			70-73	70-73	70-73	65-70			69			35x1,2	71		65	70			
73			70-73	70-73	72-78	72-78													
2 1/2"			70-76	70-76	75-83	72-78	76		77	76,1x2			65	2 1/2"	76.1	65	76.1	65	76.1
84			85-90	85-90	84-90	84-90			90	88,9x2									
3"			85-90	85-90	84-89	84-90	89							42x1,2	90	80	88.9	80	88.9
102				100-105	102-106	102-106										102	102	90	101.6
108			108-114	108-112	108-112	108-112	108			108x2,5				54x1,5	109	100	108		
110			108-114	108-112	108-112	108-112	110		110										
4"			108-114	114-116	113-117	113-117	114		116				100	4"	114.3	110	121		
121				121-125	120-125	120-125													
125				121-125	120-125	120-125	125												
133				132-136	133-136	133-136	133			133x3						125	133	125	133
135				132-136	133-136	133-136													
5"				137-141	137-142	137-142	140						125	5"	139.7	125	139.7	125	139.7
150					145-150	145-150													
159				159-163	158-163	158-163	160			159x3						150	159.0	150	159.0
6"				164-168	164-168	164-168	165						150	6"	165.1	150	165.1	150	165.1
168				164-168	164-168	164-168	168									150	168.3	150	168.3
194				190-194	190-194	190-194	194									175	193.7		
200					198-203	198-203	200												
216.0																		200	216
219					219-223	219-223	220			219x3						200	219.1		
225					225-230	225-230	225											225	245
244					242-246	242-246	245												
273					270-275	270-275	273									260	273		

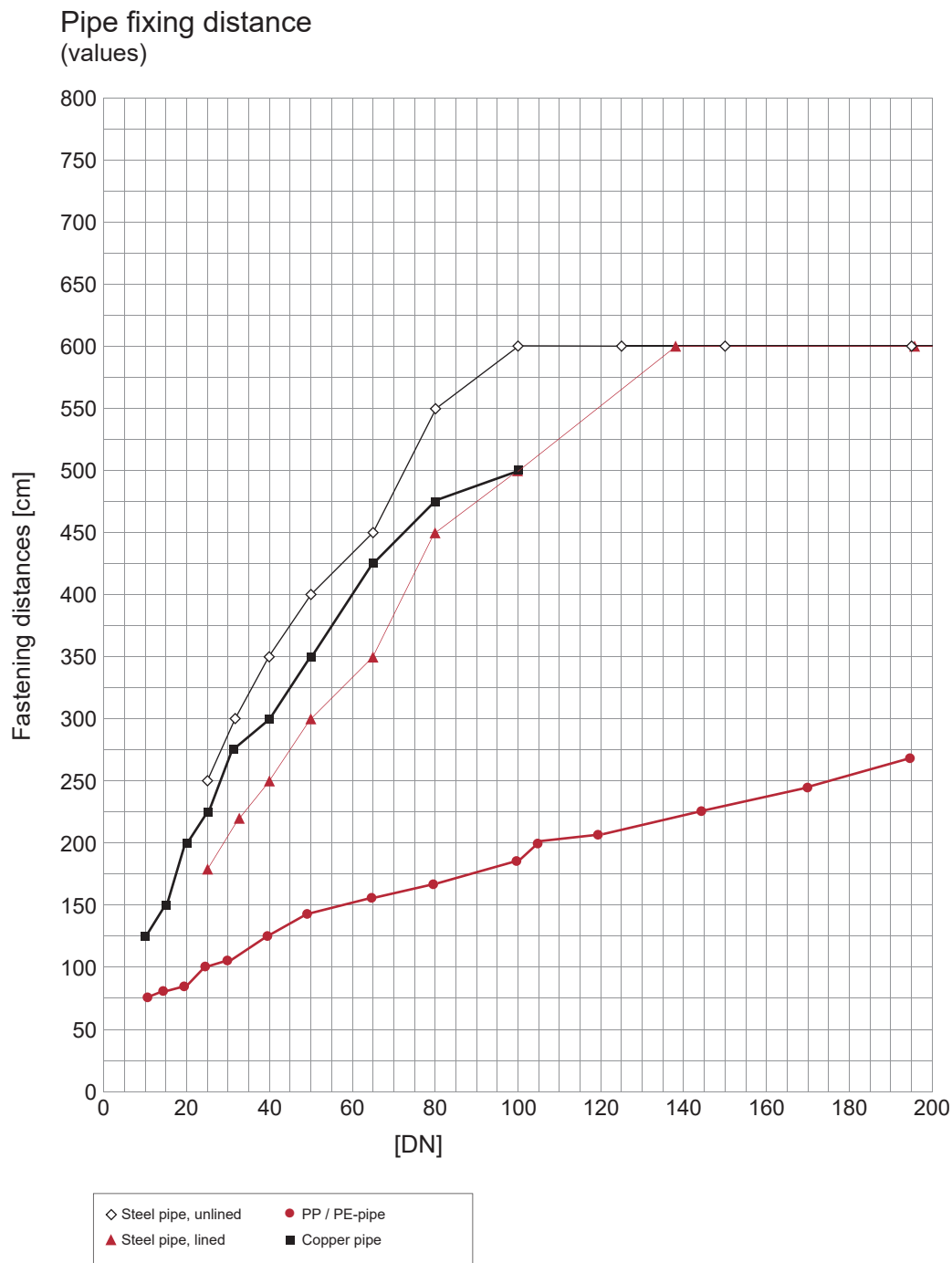
» Fastening distance

Preface:

Pipe supports of pipes, pipeline elements or e.g. fittings have to be mounted according to constructional facts, service conditions and environmental effects.

Distance of pipe clamps depending on weights and wall thickness of the conduit pipe, as well as of flow medium density and operating temperature.

Stated fastening distances are only recommended values and should be estimated for every static case of operation.



- Please note pipe manufacturer's specifications

» Pipe expansion

When calculating, due to thermal fluctuation, elongations of pipes, following information should be noticed:

1. Mounting- or rather installation temperature (e.g. environmental effects)
2. Temperature of medium in pipeline

Determination of elongation

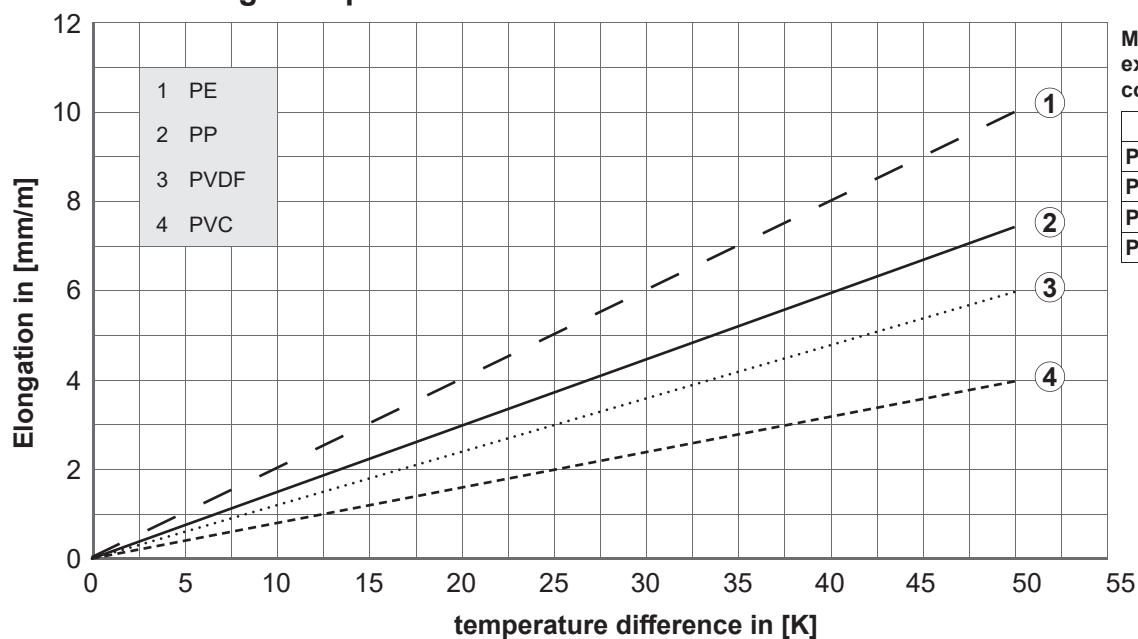
The elongation can be determined by:

- ΔL = elongations mm
- L = length of calculated pipe m
- ΔT = temperature difference between medium- and installation temperature K
- α = coefficient of linear expansion mm/m * K

Formula:

$$\Delta L = L \times \Delta T \times \alpha$$

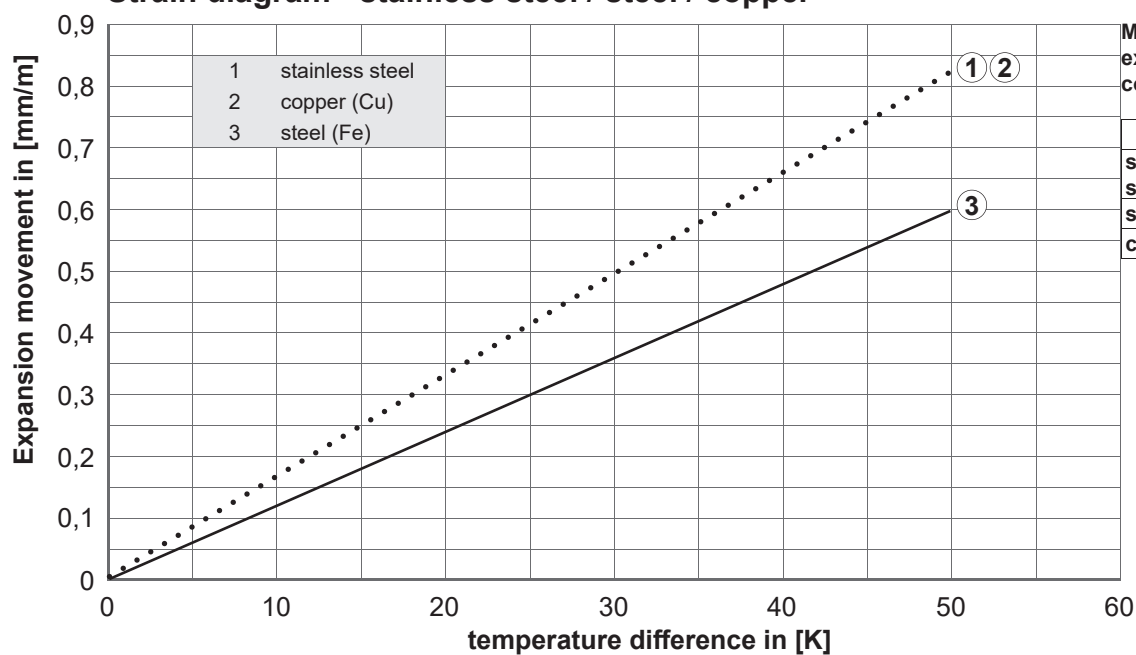
Strain diagram - plastics



Material-specific expansion coefficients.

	mm/mK
PVC	0,0800
PE	0,2000
PP	0,1500
PVDF	0,1200

Strain diagram - stainless steel / steel / copper



Material-specific expansion coefficients.

	mm/mK
stainless steel	0,0165
steel (Fe)	0,0120
copper (Cu)	0,0166

» Fire protection in Building Services Engineering



What is fire protection?

Modern buildings are increasingly subject to high fire loads. On the one hand, this is due to the extensive interior finishes, which include a wide variety of objects and cladding materials that contribute to the spread of fire. On the other hand, it is a result of building services systems, whose components not only act as conduits for the spread of fire throughout the entire building but can also become obstacles in the vicinity of emergency exits.

The goal of effective fire protection must be to enable the rescue of people and animals within a certain time frame while not hindering effective firefighting efforts. This necessitates the use of suitable construction products.

Fire load is the most important factor influencing the progression of a fire. The steel construction industry has developed technically advanced and



cost-effective solutions that often also fulfill other important functions, such as sound insulation, thermal insulation, and corrosion protection.

The requirements for structural fire protection depend on the fire hazard. In structural analysis, fire is treated as a load case. Components are designed to withstand the respective load.



The thing about the "F"

When it comes to fire protection, there are many terms in use that cause a great deal of confusion. Contractors, designers, and building owners are repeatedly confronted with the letter "F" in designations such as F30, F60, and so on.

What's behind it?

Is this "F" even relevant for securing the pipe?

The "F" stands for the fire-resistance grading of load-bearing components.

DIN 4102 specifies various fire-resistance gradings.

Fire-resistance grading

F30 - F120	Structural Components
G30 - G180	Glasses
I30 - I120	Installation Technology
K30 - K90	Dampers, Elevator shafts
L30 - L120	Ventilation Ducts
T30 - T180	Fire-Rated Doors
W30 - W180	Non-load-bearing exterior walls

All of these descriptions are based on testing procedures and clear regulations.

According to DIN 4102, pipe fasteners are not load-bearing components.

The pipe fastening system has not yet been assigned to a Fire-resistance grading.

Therefore, certification under F30, F60, F90, etc., is not currently possible.

In order to still provide users with a basis for design in the event of a fire, fire tests are conducted in practice. These are generally carried out in accordance with DIN 4102. The results of these tests are documented in so-called test reports.



A new path

MEFA is breaking new ground. By combining practical fire tests with computational solutions, MEFA has developed a reliable and transparent method. This eliminates the need for individual fire safety analyses.

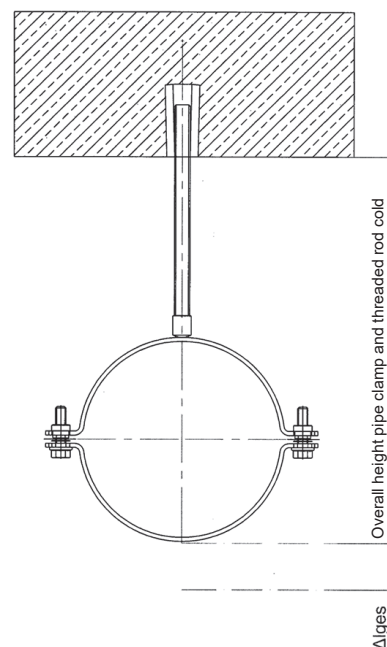
The new method not only enables the structural analysis of individual components but also provides insights into entire installation scenarios in the event of a fire.

For example, in the case of a pipe clamp suspended by a threaded rod, the threaded rod is included in the calculation.

The MPA's test reports document and summarize the results of both the practical tests and the calculation method.

In addition to the certified loads, the total deflection of the systems is also shown.

Example of a system in use:



Δl_{ges} = vertical change in length of the pipe clamp including suspension

Graphical representation of the total deflection of the MEFA pipe clamp in combination with a threaded rod under the influence of a fire load.

» Fire protection in Building Services Engineering



The Fire Test

MEFA works closely with MPA Stuttgart. As previously specified, the load behavior of a selected system is first calculated based on applicable Norms. In various test series, representative diameters of the Titan HD, Maxima PSM, and Omnia MB, among others, were tested. The task: conducting fire tests on fixation and mounting systems to investigate their fire behavior in the event of a fire, in accordance with DIN 4102. The components are fitted with special weights that simulate the maximum pipe loads. The test setup is mounted inside a special furnace (Fig. 1). The sensors, which document the test procedure, are mounted on the ceiling of the furnace (Fig. 2).

The tests last at least 90 minutes. During this time, the temperature is increased according to what is known as the standard temperature curve. This simulates the increasing heat as a fire continues to burn inside a building. The following temperatures are reached in the furnace:

- after 30 min: 842 °C
- after 60 min: 945 °C
- after 90 min: 1,006 °C

Based on the test results, the permissible loads for a family of pipe clamps were determined. This was verified by MPA Stuttgart and documented in test reports.

In addition, certificates of recognition from the RAL Quality Association are also available.

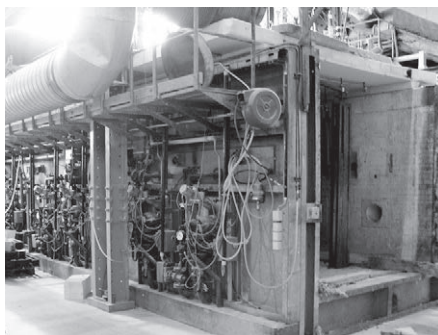


Fig. 1: Special furnace for fire tests at the MPA



Fig. 2: Measurement system for recording the load behavior of the systems in the furnace

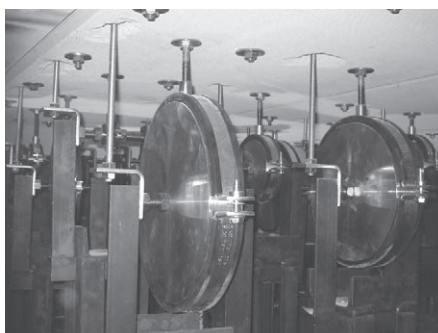


Fig. 3: Before the fire test



Fig. 4: Systems after 90 min. (approx. 1,000 °C)



» Methods for Verifying the Load-Bearing Capacity of Profile Rails Used for Pipe Clamp Mounting

To date, there is no regulation governing the installation and structural verification of profile rails under fire protection requirements similar to Class F (load-bearing components) according to DIN 4102, Part .

However, there are currently two methods for evaluating the performance of profile rails in the event of a fire.

Method 1:

Fire tests based on DIN 4102 T2. However, these tests do not include clear guidelines for conducting or evaluating the tests.

The failure and service loads are determined individually by the testing MPA. The permissible loads apply only to the test setup used (rail configuration).

Method 2:

Calculation of channel sections according to DIN EN 1993-1-2. (Eurocode 3—Design and Construction of Steel Structures—Structural Design in Case of Fire).

The difference between the two methods lies in the following points:

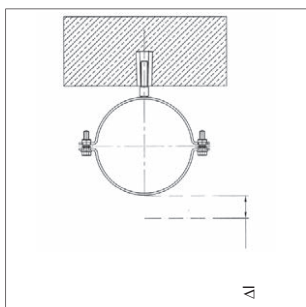
- The permissible load values are higher in Method 1. The calculation method provides approximately twice the safety margin compared to the practical test.

- In Method 2, the individual load caused by the pipe clamp mounting (varying loads and suspension points) can be taken into account.

The Company has opted for Method 2. Although the higher safety factor must be taken into account, this design method allows the component to be specifically tailored to the application, which also makes it possible to account for different rail systems.

In the future, there will be a general standard for the sizing of profile rails. This standard is currently being developed by the Fire protection Working Group of the Quality Association for Pipe Fastening (RAL).

» Maximum fire load for pipe clamps Trabant



$\Delta l_{ges.}$ = elongation of
system (pipe clamp and hanger)



Identification	Diameter range [mm]
Pipe clamp Trabant, lined	12 - 114
Pipe clamp Trabant, unlined	21 - 122

Summary: Admissible loads (RAL GZ 656)

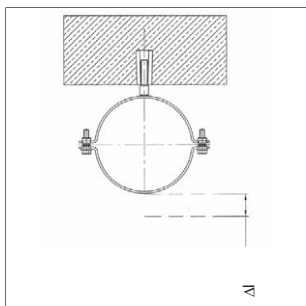
Admissible loads $F_{zul, Rd}$ and elongation Δl for Trabant pipe clamp (ceiling-mounted)

Diameter range pipe lined / unlined [mm]	fire resistance period					
	30 min		60 min		90 min	
	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]
12-37 / 21-48	0,18	20	0,09	27	0,06	27
42-65 / 51-74	0,39	58	0,19	58	0,12	58
70-83 / 76-90	0,28	30	0,18	39	0,13	39
85-90 / 94-97	0,48	31	0,21	31	0,11	31
98-114 / 106-122	0,41	21	0,23	38	0,16	38

$F_{zul, Rd}$ = max. admissible central tensile load on Trabant pipe clamp

Δl = vertical elongation of Trabant pipe clamp

» Maximum fire load for pipe clamps Omnia MB



Δl = elongation



Identification	Diameter range [mm]
Pipe clamp Omnia MB, lined	15 - 125

Summary: Admissible fire loads (RAL GZ 656)

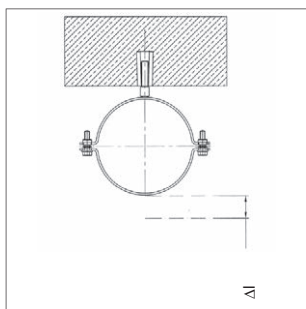
Admissible loads $F_{zul, Rd}$ and elongation Δl for Omnia MB pipe clamp
(ceiling-mounted)

Diameter range Pipe [mm]	Fire resistance period					
	30 min		60 min		90 min	
	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]
15 up to 35	0,20	30	0,11	30	0,08	30
38 up to 83	0,35	27	0,23	46	0,17	46
84 up to 125	0,62	47	0,36	47	0,25	47

$F_{zul, Rd}$ = max. admissible central tensile load on Omnia MB pipe clamp

Δl = vertical elongation of Omnia MB pipe clamp

» Maximum fire load for pipe clamps Maxima PSM



Identification	Diameter range [mm]
Pipe clamp Maxima PSM, lined	15 - 275
Pipe clamp Maxima PSM, unlined	12 - 273

$\Delta l_{ges.}$ = elongation of system (pipe clamp and hanger)

Summary: Admissible loads (RAL GZ 656)

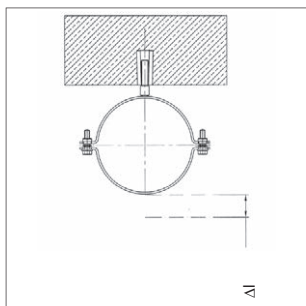
Admissible loads $F_{zul, Rd}$ and elongation Δl for Maxima PSM pipe clamp (ceiling-mounted)

Diameter range pipe lined / unlined [mm]	Fire resistance period					
	30 min		60 min		90 min	
	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]
15-64 / 12-76	1,50	62	0,82	62	0,47	62
65-117 / 84-129	1,70	47	0,91	85	0,58	85
120-275 / 132-273	1,03	31	0,52	89	0,30	89

$F_{zul, Rd}$ = max. admissible central tensile load on Maxima PSM pipe clamp

Δl = vertical elongation of Maxima PSM pipe clamp

» Maximum fire load for pipe clamps Titan HD



Identification	Diameter range [mm]
Pipe clamp Titan HD, lined	64 - 368
Pipe clamp Titan HD, unlined	64 - 368

Δl = elongation

Summary: Admissible fire loads (RAL GZ 656)

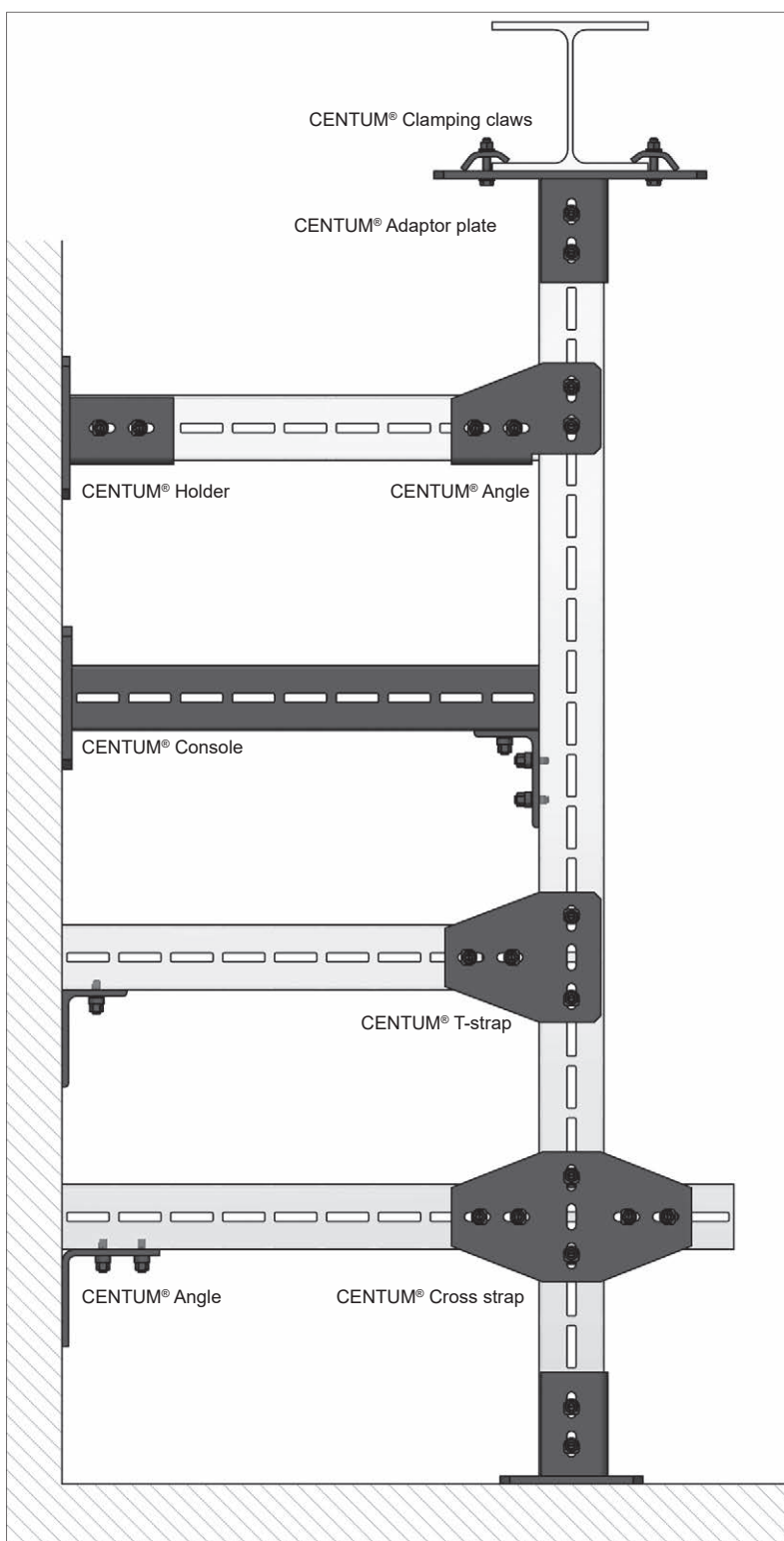
Admissible loads $F_{zul, Rd}$ and elongation Δl for Omnia MB pipe clamp (ceiling-mounted)

Diameter range pipe [mm]	Fire resistance period					
	30 min		60 min		90 min	
	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]	$F_{zul, Rd}$ [kN]	Δl [mm]
64 up to 168	2,49	45	1,57	88	1,16	88
177 up to 368	3,01	40	1,88	75	1,39	75

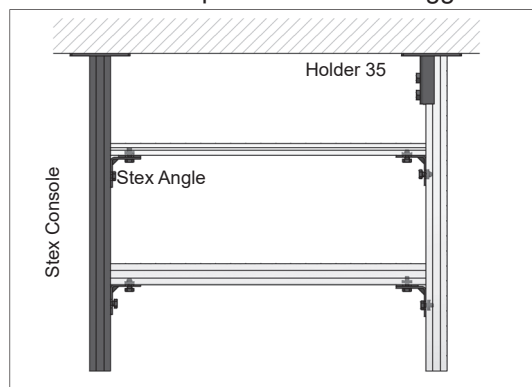
» Construction examples for pipe installations

With application of MEFA profile rail system pipe bridges, frame- and supporting structures can be designed easily and in a short time on site. Due to the flexibility of the system all tolerances on site can be balanced. All units are galvanized or hot-dip galvanized.

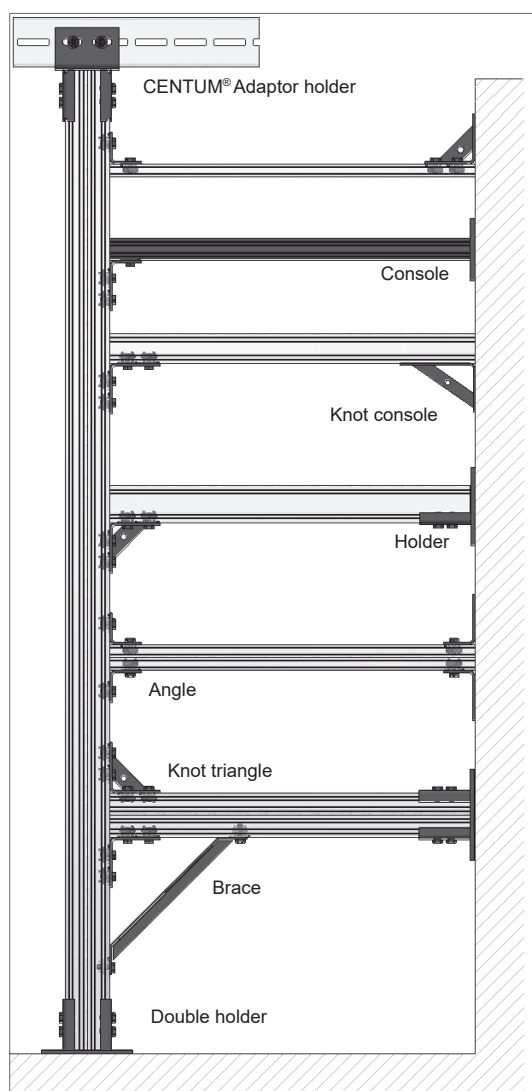
If there are any problems, MEFA guarantees to find the best solution to resolve and present suitable suggestions for occurred problem.



Construction example CENTUM®



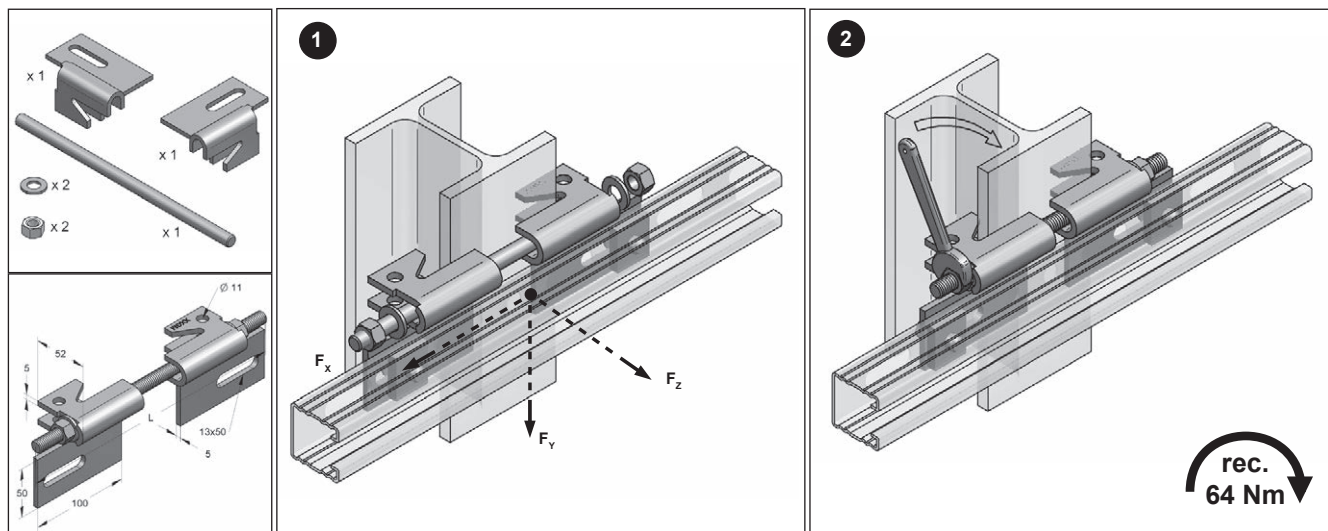
Construction example Stex 35



Construction example Stex 45

» Assembly instructions beam connection vertical

Resilient, vertical clamping connection of c-profile rails to steel beam



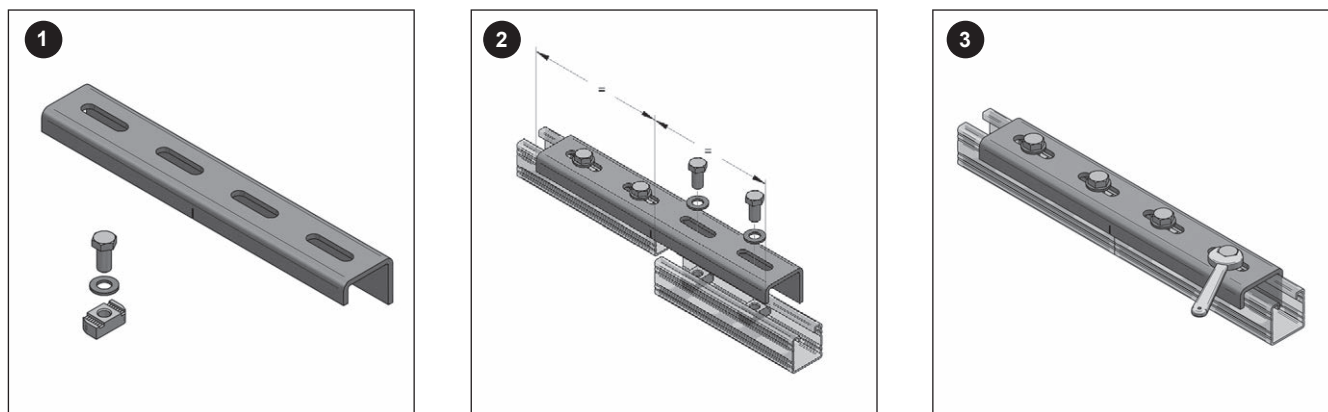
Identification	Max. load			For girder		Weight [kg/pc.]	Part-No.
	F_x [kN]	F_y [kN]	F_z [kN]	HEA	HEB		
Beam connection vertical type D III	4,0	4,0	4,0	100-220	100-200	1,10	08146103
Beam connection vertical type D IV	4,0	4,0	4,0	280-360	160-300	1,99	08146104

Important:

Please note recommended torques!

» Assembly instructions connector 45

Element to connect profile rail system 45



Scope of delivery:

Connector 45

Accessory (not included):

- 4 x tooth plate S M12 or Stex MP/MTB M12
- 4 x hexagon screw M12 x 25
- 4 x washer DIN125

Center connector element between both ends of profile rails (consider central mark).

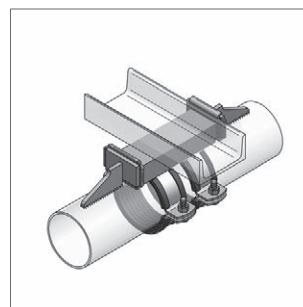
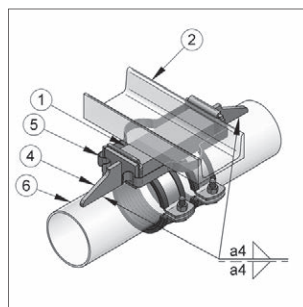
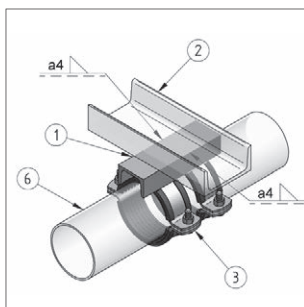
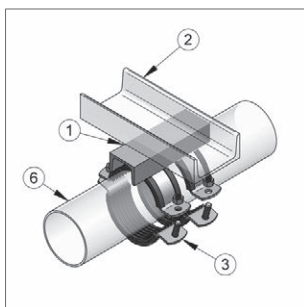
For double profile rails and single rails from size 45/60 two connectors shall be taken.

Please consider recommended torques of tooth plates / Stex elements (see MEFA catalogue).

No gap may exist between rails.

Identification	Limit Moment M_G [Nm]	H [mm]	B [mm]	L [mm]	Weight [kg/Set]	Part-No.
Connector 45	675	47	57	350	1,47	08162002
Connector 45	675	47	57	350	1,47	08162002/fvz

» Assembly instructions of fixpoints



Version I: Pipe not installed yet

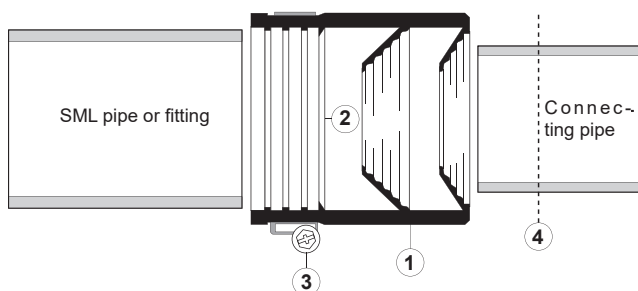
1. Mount body material of fixpoint (1) on supporting structure (2) (e.g. by welding)
2. When installing pipe, fix pipe (6) in fixpoint clamps (3).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

Version II: Pipe already installed

1. Screw fixpoint clamps (3) of fixpoint structure (1) on pipe (6).
2. Align fixpoint body of fixpoint (1) and fix with supporting structure (2) (e.g. by welding).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

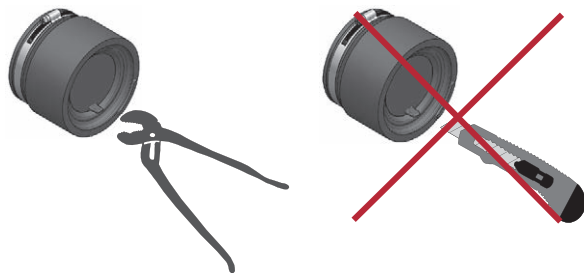
Please note: Remove the galvanizing at the welded points of the fixpoint structure (1).

» Assembly instructions SIMA-CON



1. Put completely delivered SIMA-CON (1) onto tube end or fitting up to distance ring (2). Fix with tensioning strap (3) (cross slot, SW 7, rec. torque 2 Nm).
2. Mark connecting pipe for required plug-in insertion depth (4), if necessary use lubricant for insertion.

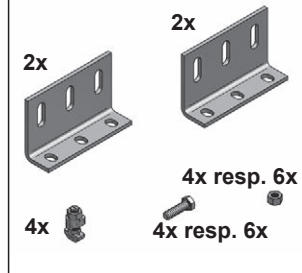
⚠ Attention: Do not use sharp-edged items. To pull out opening pin just use pliers.



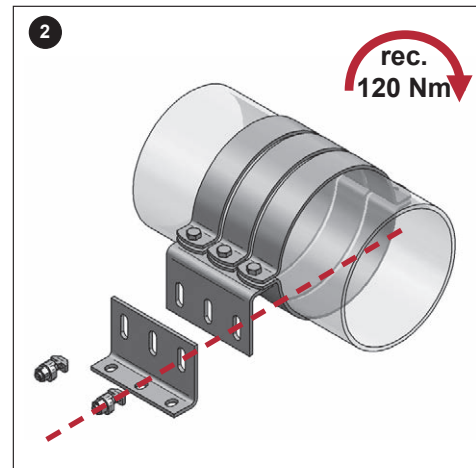
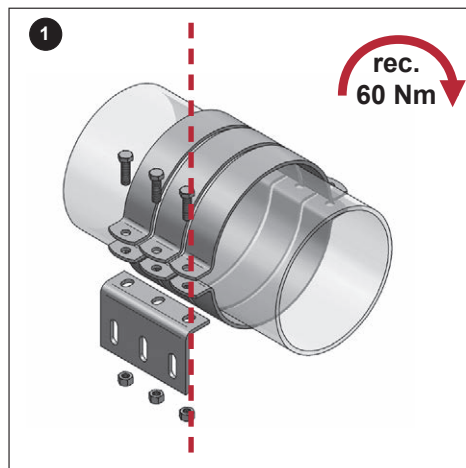
» Assembly instructions Fixpoint bracket HV

for height adjustable bracket of pipes, without sound insulation

scope of delivery:

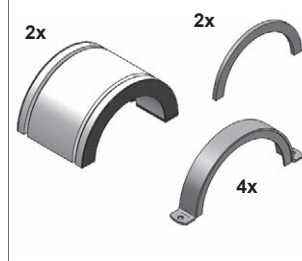


not included:

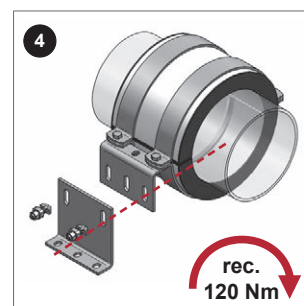
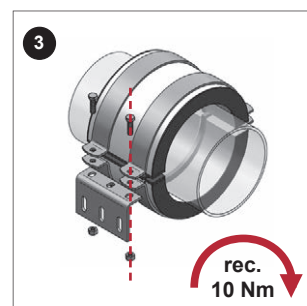
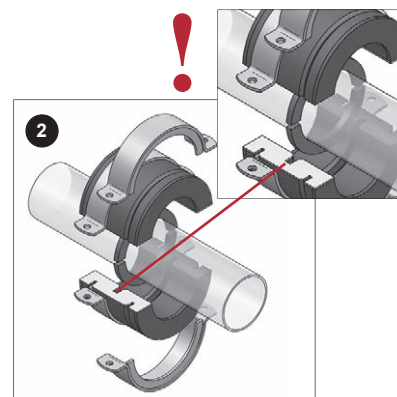
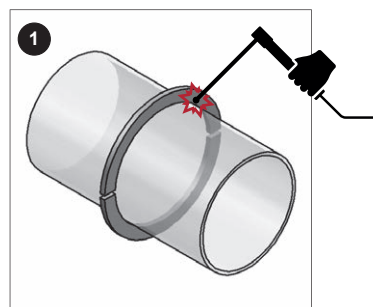
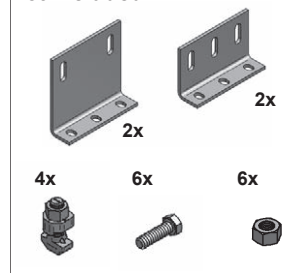


» Assembly instruction insulated fixpoint

scope of delivery:



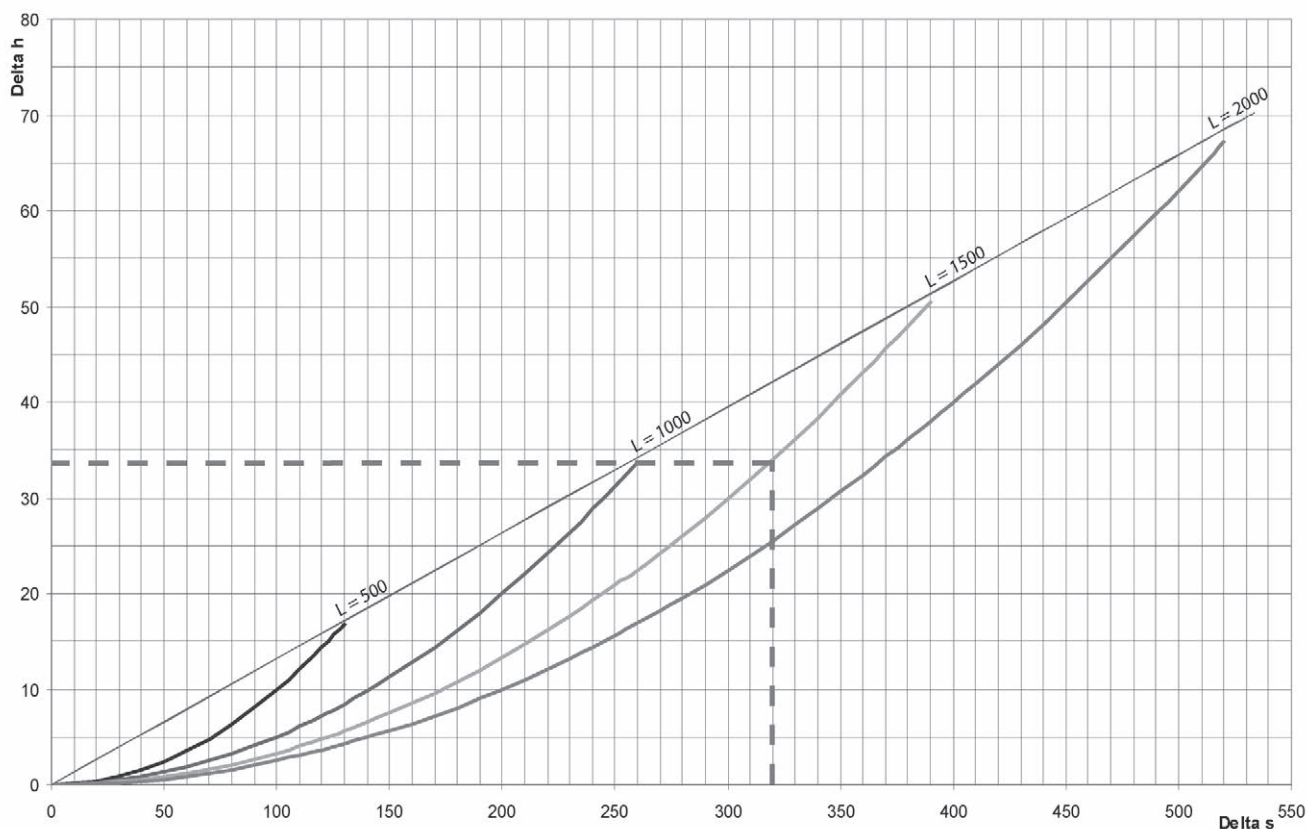
not included:



Important:
Please note recommended torque!

Technical data see catalogue chapter 3a.

» Max. absorptional pipe expansion of pendular pin joint

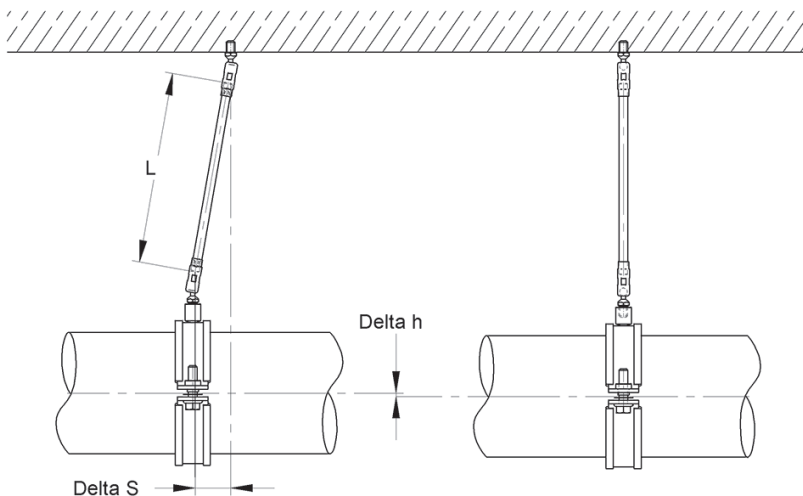


Example:

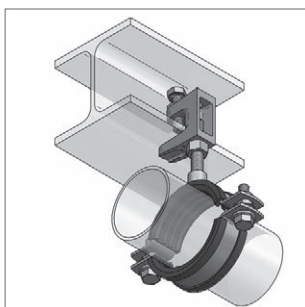
With threaded rod length of 1500 mm and pipe expansion of 320 mm, pipe is lifted about 34 mm. That means that the pendular stick joint can achieve the lifting, as no angle came up to $\geq 15^\circ$.

- Length threaded rod L = 500 mm
- Length threaded rod L = 1000 mm
- Length threaded rod L = 1500 mm
- Length threaded rod L = 2000 mm
- Max. deflection angle = 15°

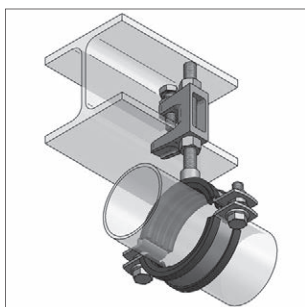
Example



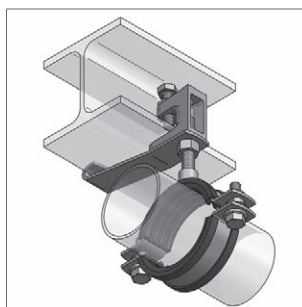
» Construction examples beam clamps



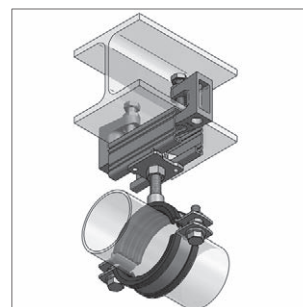
Single fixation of beam clamp underneath



Single fixation of beam clamp underneath with pass hole



Beam clamp with safety lug



Beam clamps combined with profile channel

Notice for mounting of beam clamp on beam:

Tighten screw of girder clamp manual; then tighten with open-end wrench by a half turn

For stationary sprinkler systems according to VdS, a safety lug has to be used in connection with a beam clamp for fixation on pipes > DN 65 mm. It should be noticed that beam clamps, suitable for pipes above DN 65 only can be mounted on beam with a bearing area, differing less than 10° of horizontal.

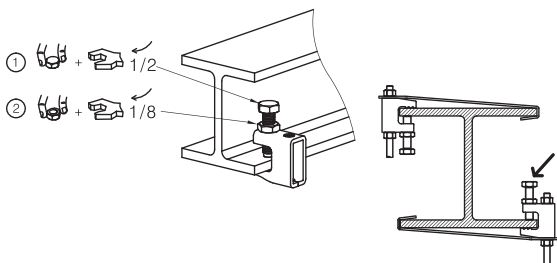
Clamps may only be loaded by vertical tension.

Clamping screws have to grip on inclined surface of beam.

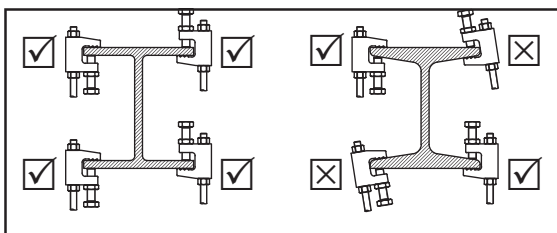
Nominal pipe diameter (mm)	Safety lug
≤ DN 65	-
> DN 65 ≤ 100	S 3
> DN 100 ≤ 150	S 5

i Construction examples are valid for beam clamps of cast iron and steel

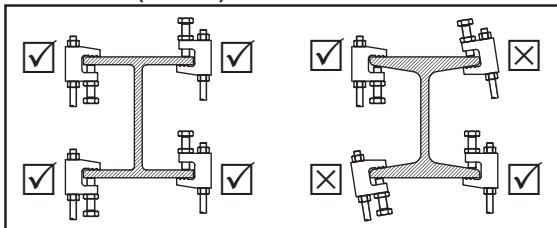
» Construction examples beam clamps PK / PKB



For VdS (PKB 8, PKB 10, PK 12):



For FM & UL (PKB 10):



Pipe width	Beam clamp	Threaded rod	Safety lug	Safe working load (kN)
≤ DN 65	PKB 8	M8	-	1,2
> DN 65 ≤ 100	PKB 10	M10	S 3	2,5
> DN 100 ≤ 150	PK 12	M12	S 5	3,5

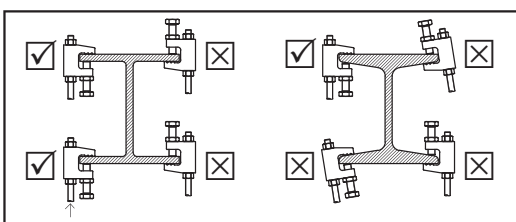
Installation Tips:

Slide PK / PKB steel beam clamp onto beam flange and tighten set screw according to the instruction ① and ②. To avoid over tightening, a rough guide to achieve the correct torque is to tighten the setscrew with thumb and forefinger and then apply a further half turn ① (180°) with a spanner. Tighten the locknut as per the instruction ②. When used with taper flanges, it is important to ensure that the screw of the PK / PKB steel beam clamp bites into the tapered face of the flange, rather than the parallel underside.

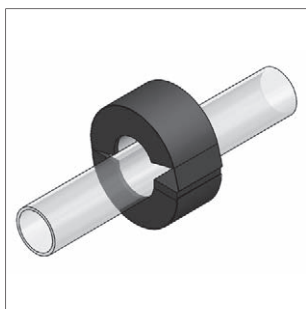
Application:

According to the German VdS regulations, the beam clamps must be secured by safety strip when the pipe to be fixed is larger than DN 65 (see table). Dimensions and material meet the VdS CEA-guideline for sprinkler systems.

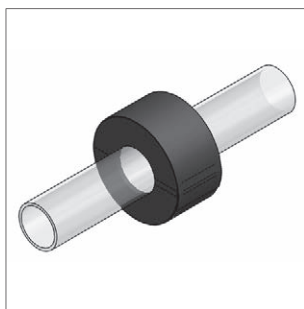
For FM & UL (PK 12):



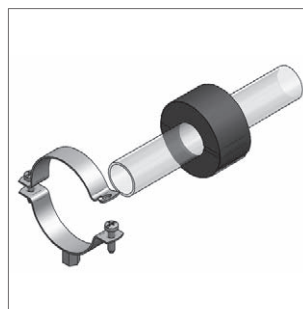
» Assembly instructions HUSKY



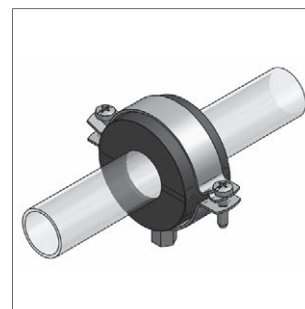
Position insulation body on pipe



Close insulation body and press overlap*

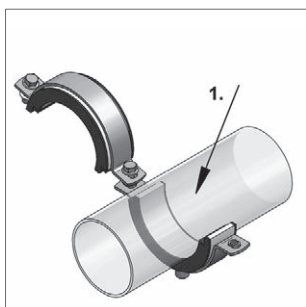


Position insulation body on pipe to pipe

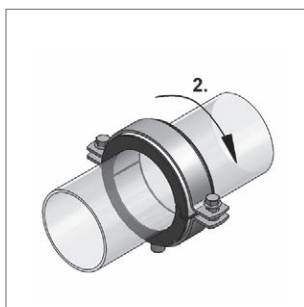


Close clamp and adjust closings in parallel

» Assembly instructions POLAR plus insulated pipe clamp



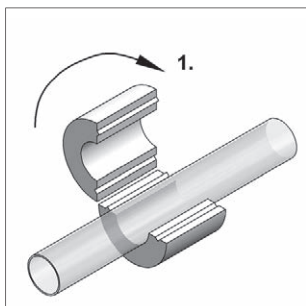
Position pipe in insulated pipe clamp



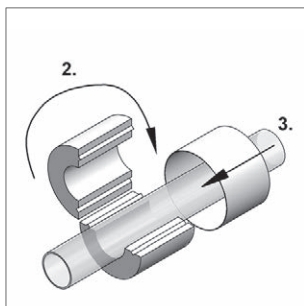
Close insulated pipe clamp*

* Bonding of shell and pipe is not necessary

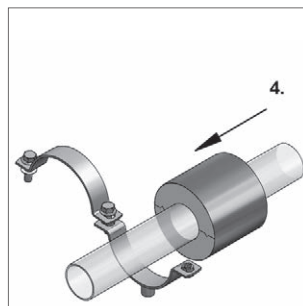
» Assembly instructions ALU/PU >80< insulated pipe clamp



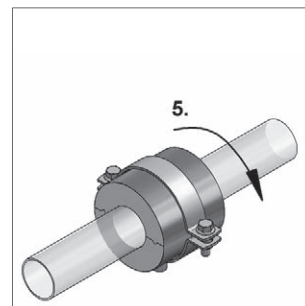
Enclose insulation body on pipe and close



Position insulation body on pipe.*
optional: cover joining surface with sheet jacket



Position insulation body on pipe to pipe.
optional: with insulation. protection shield



Close clamp and adjust closings parallel

MEFA-asurement: Insulated pipe clamp with insulated connection interface

Gluing of insulated pipe clamps with sound proofing, made of synthetic rubber or closed cell PE material can be executed easily with usual glue of the insulation manufacturers (for example Armaflex 520 / Kaiflex „Spezial Kleber“).

Notice:

Insulated pipe clamp ALU/PU 80: less insulation thickness is recommended for glueing with insulated connection interface

a) sealing via applying frontides completely with insulating glue or

b) buildup insulation at connection field with fitted insulation strips to insulation thickness of PUR-field.

» MEFA Insulated fixpoint, “Hochfest” with structure-borne sound insulation

Pipes that are subject to longitudinal expansion due to heat or cold are equipped with expansion joints or expansion bends. To prevent damage to the structure or to the expansion joints, fixpoints must be installed to limit the movement of the pipe sections. This can result in significant forces of different sizes.

Thermal Insulation

Effective cold insulation systems consist of a closed-cell insulation material and a vapor barrier, which must be wrapped as completely as possible around the insulation material (insulation thickness depending on: ambient temperature, humidity, and fluid temperature) and the supporting structure. The pipe must be protected against corrosion.

Vapor barrier

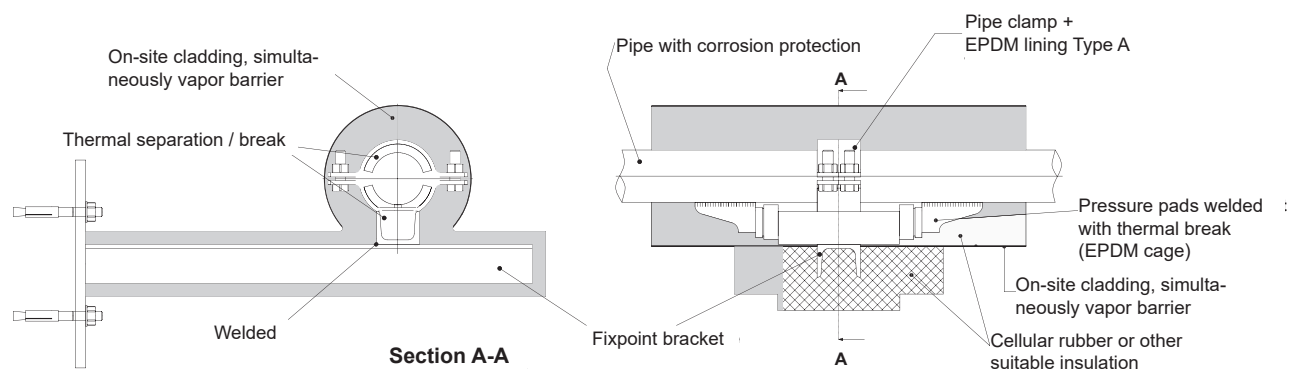
A vapor barrier, as defined in AGI Worksheet Q112, is a layer that reduces the penetration of moisture into the insulation material. It is required for cold-weather insulation and must be installed on the warm side of the insulation material.

Thermal Bridges

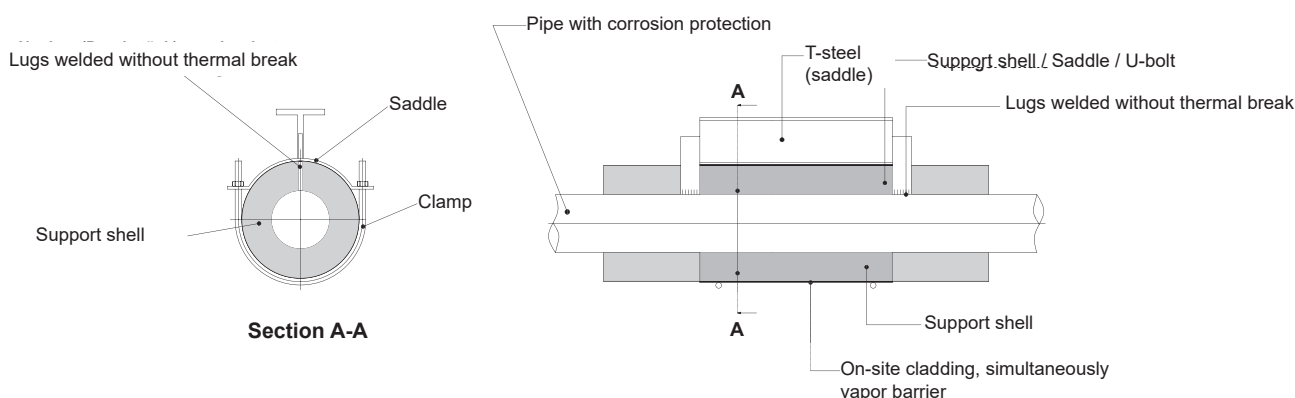
Thermal bridges cause a higher, localized heat flux density compared to an undisturbed insulation system. These areas have higher surface temperatures; in the case of cold-weather insulation, this is where the risk of condensation or even ice formation first arises.

A distinction is made between thermal bridges caused by building systems—such as pipe supports—and those caused by insulation—such as supporting structures. They can occur at regular intervals or sporadically in specific locations.

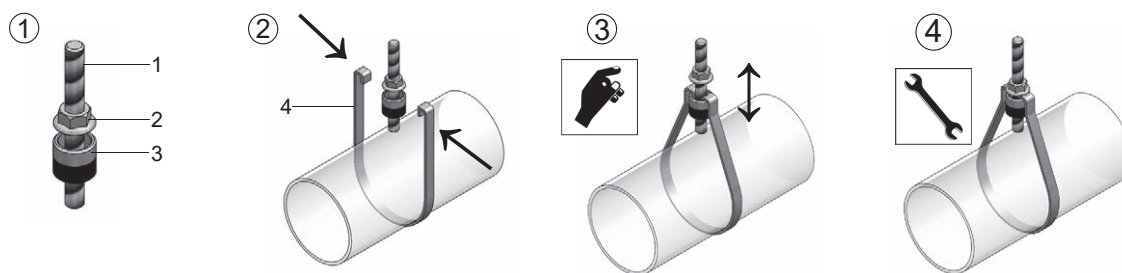
» MEFA - Insulated fixpoint According to Q05/Q03



» Insulated fixpoint According to AGI Worksheet Q05/Q03



» Assembly instructions Pipe Loop Hanger SLH



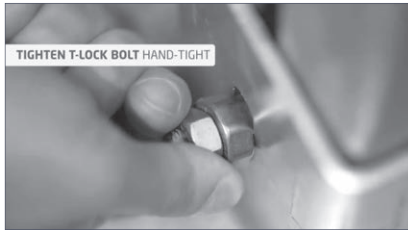
1. Mount threaded rod (1) into dowel/anchor. Fix flange nut (2) onto threaded rod (1). Allocation as per margined table. Push cup nut (3) from down across threaded rod (1).
2. Push pipe loop (4) across pipe with open end on top. Press open ends of pipe loop (4) and fasten downwards into cup nut (3).
3. Relieve cup nut (3) thru lifting pipe loop (4) and adjust mounting height by hand.
4. Finally screw pipe loop together with flange nut (2).

Cup / Sleeve	Cup Ø (mm)	Only for thread	Only for pipe DN
Size 1	19,0	M8	≤ DN 50
Size 2	22,0	M10	> DN 50 ≤ DN 100
Size 3	26,0	M12	> DN 100 ≤ DN 150
Size 4	34,0	M16	> DN150 ≤ DN 200

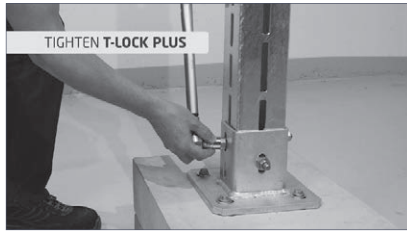
» CENTUM® T-Lock



Insert T-lock plus through component and profile, position as required.

Fixation:

Tilt T-lock plus forward, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).



Wrench size 19 mm.

Recommended torque XL 80: 90 Nm.

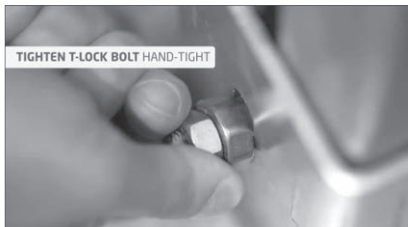
Recommended torque XL 100: 120 Nm.

T-lock plus must not be used again after dismantling.

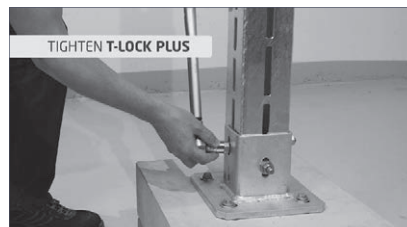
» CENTUM® T-Lock plus



Insert T-lock plus through component and profile, position as required.

Fixation:

Tilt T-lock plus forward, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).



Wrench size 19 mm.

Recommended torque XL 80: 90 Nm.

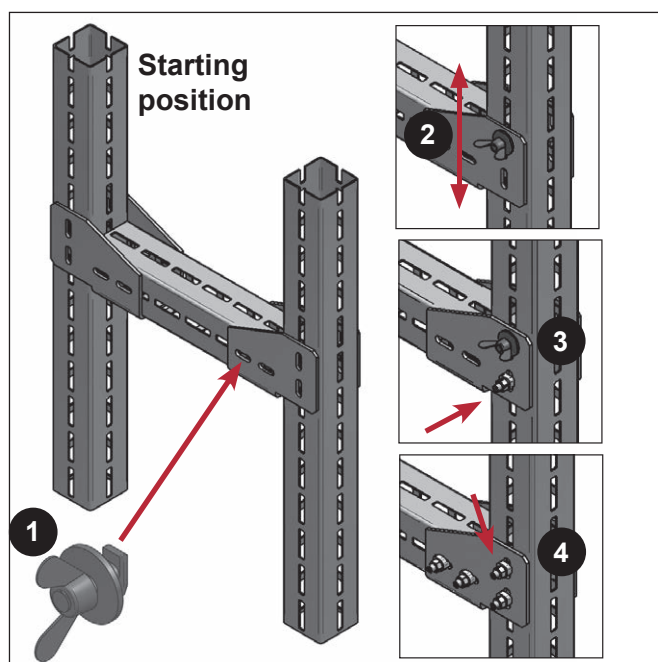
Recommended torque XL 100: 120 Nm.

T-lock plus must not be used again after dismantling.



» Assembly instruction for CENTUM® FixBOB

Adjusting aid to position CENTUM® components.



- 1. Placing:** Insert CENTUM® FixBOB through component and profile at desired position and tighten it hand-tight.

- 2. Align:** To align the profile, loosen the CENTUM® FixBOB and tighten again (hand-tight only) after reaching desired position/location.
- 3. Fixation:** Insert T-lock through component and profile in desired position. Tighten T-lock professionally according to „assembly instructions for T-lock“.
- 4. Final assembly:** Loosen and remove CENTUM® FixBOB. Instead of the CENTUM® FixBOB, insert T-lock through the component and profile and tighten again properly according to „assembly instructions for T-lock“.

General Terms and Conditions of Sale (Status: April 2026)

Following terms and conditions apply to international customers (outside of Germany), only.

§ 1 General information, scope of application

(1) The following General Terms and Conditions of Sale (GTCs) shall apply to all business relationships with our customers ("Purchaser"). These GTCs only apply if the Purchaser is an entrepreneur (Section 14 German Civil Code (BGB)), a legal entity governed by public law or special assets of the Federal Government.

(2) The GTCs apply, in particular, to contracts for the sale and/or supply of movable things ("goods"), regardless of whether or not such goods are manufactured by ourselves or purchased from third-party suppliers (Sections 433, 651 BGB). Unless otherwise agreed upon, the GTCs, in the version valid at the time of the Purchaser's purchase order or in the version last notified to the Purchaser in text form, also apply as a framework agreement to any similar future contracts, without us having to refer to these again in each individual case.

(3) Our GTCs shall apply exclusively. Any deviating, contrary or supplementary General Terms and Conditions of Business of the Purchaser only become a part of the contract, if and insofar as we have explicitly approved their validity. This approval requirement shall apply in any case, including, for example, if we carry out the delivery to the Purchaser without reservation, although we are aware of the GTCs of the Purchaser.

(4) Any individual agreements with the Purchaser made in the individual case (including ancillary agreements, supplements and amendments) shall in all cases have precedence over these GTCs. In the absence of any evidence to the contrary, a written contract or our written confirmation shall be decisive for the content of such agreements.

(5) Legally relevant declarations and notifications to be given to us by the Purchaser after conclusion of the contract (e.g. setting of deadlines, notifications of defects, declaration of cancellation or price reduction) require the written form in order to be valid.

(6) References to the validity of statutory regulations shall only have clarifying significance. Therefore, the statutory regulations shall also apply without such a clarification, unless they are directly modified or explicitly excluded by these GTCs.

§ 2 Conclusion of contract

(1) Our offers are always subject to confirmation and not binding. This also applies if we have handed over catalogues, technical documentation (e.g. drawings, plans, calculations, cost estimates, references to DIN standards), other product descriptions or documents – including in electronic form – to the Purchaser, to which we reserve property rights and copyrights.

(2) The order of the goods placed by the Purchaser is deemed to be a binding contractual offer. Unless otherwise indicated in the purchase order, we are entitled to accept this contractual offer within 10 days after its receipt by us.

(3) The acceptance can be declared either in writing (e.g. by confirmation of the order) or by delivery of the goods to the Purchaser.

§ 3 Delivery period and delay in delivery

(1) The delivery period will be agreed upon individually or stated by us with the acceptance of the purchase order. Otherwise, the delivery period shall be approx. 2 weeks from conclusion of the contract. A prerequisite for compliance with this delivery period is that the documents, consents and approvals, in particular plans, to be provided by the Purchaser are available upon conclusion of the contract. If this prerequisite is not met, the delivery period shall be extended reasonably, unless we are responsible for the delay.

(2) If we are not able to meet binding delivery periods for reasons for which we are not responsible (non-availability of performance), we shall notify the Purchaser thereof immediately and at the same time indicate the expected, new delivery period. If performance cannot be rendered within the new delivery period either, we shall be entitled to cancel the contract in whole or in part; we will immediately reimburse any consideration already provided by the Purchaser. A case of non-availability of performance within this sense is, in particular, late supply by our sub-supplier if we have concluded a congruent cover transaction, if neither we nor our sub-suppliers were at fault or if we are not obliged to procurement in the individual case.

(3) The occurrence of our delay in delivery shall be determined in accordance with the statutory provisions. In any case, however, a reminder given by the Purchaser is required.

(4) We are entitled to make partial deliveries. In the case of tailor-made products, we are entitled to over delivery of up to 10%.

(5) The Purchaser's rights pursuant to § 8 of these GTCs and our statutory rights, in particular in the case of exclusion of the obligation to perform (for instance, due to impossibility or unreasonableness of performance and/or subsequent performance) remain unaffected.

§ 4 Delivery, passing of risk, acceptance, delay in acceptance

(1) The delivery is carried out ex warehouse, which is also the place of performance for the delivery and any subsequent performance. At the request and cost of the Purchaser, the goods will be sent to another place of destination (contract of sale involving the carriage of goods [Versendungskauf]). Unless otherwise agreed upon, we are entitled to determine the type of shipment (in particular, the transport company, shipping route, and packaging).

(2) The risk of accidental loss and accidental deterioration of the goods shall

pass to the Purchaser, at the latest, when the goods are handed over. In the event of a contract of sale involving the carriage of goods, however, the risk of accidental loss and accidental deterioration of the goods and the risk of delay shall already pass upon the delivery of the goods to the carrier, the freight forwarder or the other person or institution designated to perform the shipment. If an acceptance has been agreed, this shall be decisive for the passing of risk. Incidentally, the statutory provisions of the law governing contracts for work and services [Werkvertragsrecht] shall also apply mutatis mutandis to an agreed acceptance. If the Purchaser is in default with the acceptance, this shall be deemed to be equivalent to handover or acceptance.

(3) If the Purchaser is in default of acceptance, if it fails to provide assistance or if our delivery is delayed for other reasons for which the Purchaser is responsible, we are entitled to request compensation for any resulting losses including additional expenses (e.g. storage costs). For this, we will charge flat-rate compensation per calendar month in the amount of 0.5% of the net price (delivery value), but a maximum of 5% of the delivery value, beginning with the delivery deadline or – in the absence of a delivery deadline – with the notification that the goods are ready for shipment.

The proof of higher losses and our statutory claims (in particular reimbursement of additional expenses, reasonable compensation, termination) remains unaffected; however, the flat rate is to be offset against further monetary claims. The Purchaser has the right to give proof that we have not suffered any losses at all or only substantially lower losses than the aforementioned flat rate.

§ 5 Prices and terms of payment

(1) Unless otherwise agreed in the individual case, our prices valid at the date of contract conclusion shall apply, ex warehouse, plus the applicable value added tax.

(2) For orders with a net goods value of less than € 250.00, we charge, at our discretion, either a minimum quantity surcharge of € 25.00 per order item or we increase the net goods value, after consultation of the Purchaser, to at least € 250.00.

(3) As a rule, the goods are delivered in packaging units in accordance with the most recent sales documents. For orders of incomplete packaging units, requested in exceptional cases, we will levy a surcharge of 30% based on the item price.

(4) In the event of a contract of sale involving the carriage of goods (§ 4 (1)), the Purchaser shall bear the transport costs ex works and the cost of transport insurance requested by the Purchaser, if applicable. Any customs duties, fees, taxes and other public charges shall be borne by the Purchaser.

(5) The purchase price is due and payable within the specified period of payment. However, we are entitled at any time, including during an ongoing business relationship, to provide a delivery in whole or in part only against cash in advance. We will declare a corresponding reservation at the latest in the confirmation of order.

(6) The Purchaser is in default upon the expiry of the aforementioned period of payment. During the period of default, default interest at the applicable statutory rate will be charged on the purchase price. We reserve the right to claim higher damages caused by default. Our claim to the commercial interest after the due date (Section 353 German Commercial Code, HGB) against traders shall remain unaffected.

(7) The Purchaser is only entitled to any offsetting or retention rights insofar as its claim is undisputed or legally established. In the event of any defects in the delivery, the Purchaser's counterclaims, in particular pursuant to § 7 (6) sentence 2 of these GTCs shall remain unaffected.

(8) If there are indications after conclusion of the contract that our entitlement to the purchase price is at risk due to the Purchaser's insufficient ability to pay (e.g. as a result of an application for the opening of insolvency proceedings), we are entitled under the statutory provisions to refuse performance and – if applicable, after having set a deadline – to cancel the contract (Section 321 BGB). In the case of contracts for the manufacture of non-fungible items (custom-made products), we may declare the cancellation immediately; the statutory regulations concerning dispensability of setting a deadline shall remain unaffected.

§ 6 Reservation of title

(1) We retain title to the goods sold until payment in full of all our present and future claims under the purchase contract or contract for work and services and an ongoing business relationship (secured claims).

(2) The goods subject to reservation of title may neither be pledged to third parties, nor assigned as collateral, before payment in full of the secured claims. The Purchaser must notify us immediately in writing if an application for opening insolvency proceedings is filed or insofar as third parties access (e.g. attachments) to the goods belonging to us.

(3) In the event of a breach of contract by the Purchaser, in particular non-payment of the purchase price due, we shall be entitled to cancel the contract in accordance with the statutory regulations and/or to demand return of the goods on the basis of the reservation of title. If the Purchaser fails to pay the purchase price due, we can only exercise these rights if we have previously set a reasonable deadline for payment or if setting such a deadline is dispensable pursuant to the statutory regulations.

(4) The Purchaser is authorised, until further notice pursuant to (c) below, to resell and/or process the goods subject to reservation of title in the ordina-

» General Terms and Conditions of Sale (Status: April 2026)

ry course of business. In this case, the following provisions shall also apply.

(a) The reservation of title covers the full value of the products created through processing, mixing or combining our goods, whereby we are deemed the manufacturer. If, in the event of processing, mixing or combining with goods of third parties, the ownership rights of these third parties continue to exist, we shall acquire co-ownership in the ratio of the invoice values of the processed, mixed or combined goods. Incidentally, the same shall apply to the resulting product as is applicable to the goods delivered under reservation of title.

(b) The Purchaser hereby now assigns to us as collateral the claims against third parties resulting from the resale of the goods or the product in their full amount or in the amount of any co-ownership share acquired by us pursuant to the above paragraph. We accept the assignment. The obligations of the Purchaser stated in paragraph (2) also apply with regard to the claims assigned.

(c) The Purchaser remains authorised to collect the claim in addition to us. We undertake not to collect the claim as long as the Purchaser meets its payment obligations towards us, no impairment concerning its ability to pay exists and we do not invoke the reservation of title by exercising a right pursuant to paragraph 3. However, if this is the case, we can request that the Purchaser informs us about the assigned claims and their debtors, provides all information which is necessary for the collection, furnishes all pertinent documents and informs the debtors (third parties) of the assignment. In this case, we are also entitled to revoke the authority of the Purchaser to resell and process the goods subject to reservation of title.

(d) If the realisable value of the collateral exceeds our claims by more than 10%, we shall release collateral items at our choice upon request of the Purchaser.

§ 7 Purchaser's claims for defects

(1) The statutory regulations shall apply to the Purchaser's rights in the event of defects of quality and title (including wrong or short deliveries as well as improper assembly or faulty assembly instructions), insofar as not otherwise determined below.

(2) The basis of our liability for defects is, above all, the agreement made concerning the characteristics of the goods. Agreements concerning the characteristics of the goods are all product descriptions that are the subject matter of the individual contract; it is irrelevant whether the product description stems from the Purchaser, from the manufacturer or from us.

(3) If no agreement has been made concerning the characteristics, the assessment of whether a defect is present or not must be based on the statutory regulation (Section 434 (1) sentences 2 and 3 BGB). However, we do not assume any liability for public statements of the manufacturer or other third parties (e.g. advertising statements).

(4) The Purchaser's claims for defects presuppose that it has met its statutory obligations to examine and notify (Sections 377, 381 HGB). If a defect becomes apparent during the examination or subsequently, we must be notified thereof immediately in writing. The notice is deemed as immediate if it is made within two weeks, whereby the timely dispatch of the notice is sufficient in order to safeguard the deadline. Irrespective of these obligations to examine and notify, the Purchaser must report obvious defects (including incorrect and under delivery) in writing within two weeks from delivery; here, too, timely dispatch of the notice is sufficient in order to safeguard the deadline. If the Purchaser fails to carry out the proper examination and/or to give notice of defects, our liability for the unnotified defect is excluded.

(5) If the delivered item is defective, we can initially choose whether we provide subsequent performance by remedying the defect (improvement) or by delivery of a non-defective item (substitute delivery). Our right to refuse subsequent performance under the statutory prerequisites remains unaffected.

(6) We are entitled to make the owed subsequent performance conditional upon the Purchaser having paid the purchase price due. However, the Purchaser is entitled to withhold a part of the purchase price, which is reasonable in proportion to the defect.

(7) The Purchaser must give us the time and opportunity which are necessary for the owed subsequent performance, in particular hand over the defective goods for purposes of inspection. In the event of substitute delivery, the Purchaser must return the defective item to us in accordance with the statutory regulations. Subsequent performance does not include the disassembly of the defective item nor reassembly if we were originally not obliged to perform the assembly.

(8) We will bear the expenses which are necessary for the purpose of inspection and subsequent performance, in particular, transport, travel, labour and material costs (but excluding disassembly and installation costs), provided that a defect actually exists. Otherwise, we are entitled to demand from the Purchaser reimbursement of any costs incurred by the unjustified request of defect rectification (in particular, inspection and transport costs), unless the Purchaser was unable to recognise that no defect existed.

(9) In urgent cases, e.g., given a threat to operational safety or for the purpose of avoiding disproportionate damage, the Purchaser shall be entitled to remedy the defect itself and to demand reimbursement by us of the costs objectively necessary for this. We must be informed immediately, if possible in advance, of any such removal of defects by the Purchaser itself. The Purchaser's right to

remove defects itself shall not apply if we had been entitled to refuse corresponding subsequent performance pursuant to the statutory regulations.

(10) If subsequent performance has failed or if a reasonable deadline to be set by the Purchaser for the subsequent performance has expired unsuccessfully or is dispensable according to the statutory regulations, the Purchaser may cancel the purchase contract or reduce the purchase price. However, no right of cancellation exists in the case of an insignificant defect.

(11) Claims of the Purchaser for damages or reimbursement of fruitless expenses in the event of defects only exist in accordance with § 8 of these GTCs and are excluded in other respects.

§ 8 Other liability

(1) Unless otherwise specified in these GTCs, including the provisions below, we shall be liable for a violation of contractual and non-contractual obligations in accordance with the statutory regulations.

(2) We shall be liable for damages – regardless of the legal grounds – within the limits of fault-based liability for intent and gross negligence. In the event of slight negligence, we shall be liable, subject to a lower degree of liability, pursuant to the statutory regulations (e.g. for care and diligence in its own affairs) only

a) for damage resulting from injury of life, limb or health,

b) for damage resulting from the more than insignificant violation of a material contractual obligation (obligation whose fulfilment makes proper execution of the contract possible in the first place and on which the contracting partner regularly relies and may rely); in this case, however, our liability is limited to compensation for the foreseeable, typically occurring damage.

(3) The restrictions of liability resulting from para. 2 also apply to violations of duty by or to the favour of persons for whose fault we are responsible pursuant to the statutory regulations. They shall not apply if we maliciously conceal a defect or have assumed a guarantee for the characteristics of the goods and for any claims of the Purchaser under the Product Liability Act.

(4) The Purchaser may only cancel or terminate the contract due to breach of duty which does not involve a defect if we are responsible for the breach of duty. A free right of termination of the Purchaser (in particular according to Sections 651, 649 BGB) is excluded. Incidentally, the statutory prerequisites and legal consequences shall apply.

§ 9 Return of goods

(1) Goods ordered by the buyer and contractually delivered by MEFA being generally excluded from return. If, in extra-ordinary cases only, stock articles will be taken back upon prior agreement, at least 15% administrative costs, but no less than € 50.00, will be deducted from the credit note amount. Credits granted in this way will be offset against delivery of goods only. The reconsignment is generally on buyer's account. Necessary rework and/or re-packaging, if applicable, will be displayed to the buyer and deducted after release. Customized products are generally excluded from return.

§ 10 Limitation period

(1) In deviation from Section 438 (1) no. 3 BGB, the general limitation period for claims resulting from defects of quality and title shall be one year from delivery, when purchasing goods (without assembly). Insofar as an acceptance has been agreed upon, the period of limitation shall begin with the acceptance.

(2) However, if the goods relate to a building or an item that has been used for a building in accordance with its normal method of use and has caused this building to be defective (building materials), the period of limitation shall be five years from delivery in accordance with statutory regulation (Section 438 (1) no. 2 BGB). Any other special statutory regulations regarding the statute-of-limitations (in particular, Section 438 (1) no. 1 and (3), Sections 444, 479 BGB) shall also not be affected.

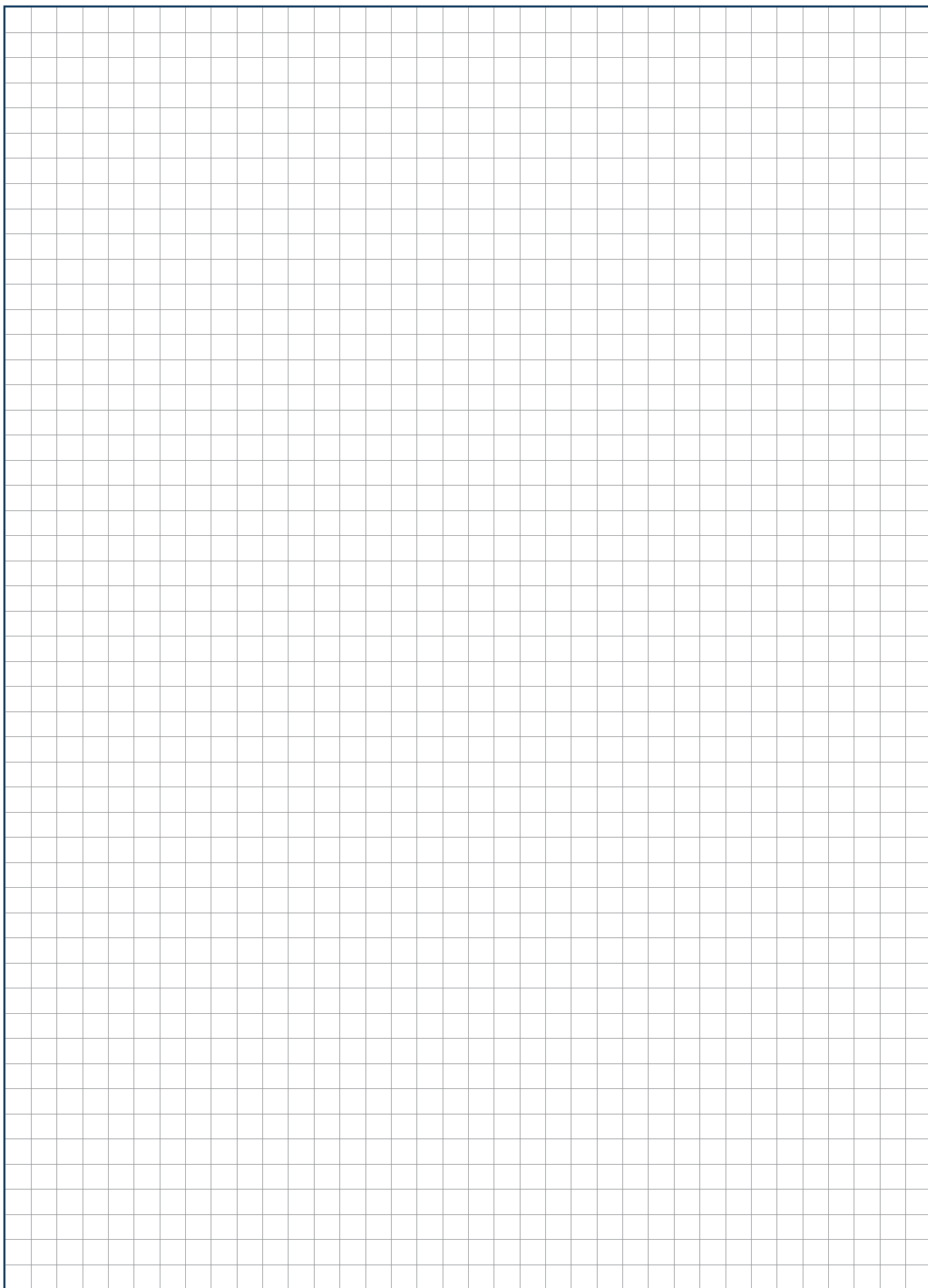
(3) The afore-mentioned periods of limitation of the law governing purchases shall also apply to contractual and non-contractual claims for damages of the Purchaser which are due to a defect in the goods, unless the application of the regular legal statute-of-limitations (Sections 195, 199 BGB) would lead to a shorter period of limitation in an individual case. However, the Purchaser's claims for damages pursuant to § 8 (2) sentences 1 and 2(a) of these GTCs and pursuant to the Product Liability Act shall be statute-barred exclusively pursuant to the statutory periods of limitation.

§ 11 Choice of law and place of jurisdiction

(1) These GTCs and the contractual relationship between us and the Purchaser shall be subject to the laws of the Federal Republic of Germany under exclusion of international uniform law, in particular the UN Convention on Contracts for the International Sale of Goods.

(2) If the Purchaser is a trader as defined in the German Commercial Code, a legal entity governed by public law or special assets of the Federal Government, the exclusive – including international – place of jurisdiction for all disputes arising directly or indirectly from the contractual relationship is our corporate seat in D-74635 Kupferzell. The same applies if the Purchaser is an entrepreneur as defined by Section 14 BGB. However, we are in all cases also entitled to file a suit at the place of performance of the delivery obligation pursuant to these GTCs or a higher-ranking individual agreement or at the general place of jurisdiction of the Purchaser. Any overriding statutory provisions, in particular, regarding exclusive places of jurisdiction, shall not be affected.

» Notes

A large rectangular area filled with a fine grid of light gray lines, intended for writing notes. The grid is composed of 20 columns and 40 rows of small squares.