

OBEN SEIN

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PRODUCT CATALOGUE

FIXING SYSTEMS

MEFA

» General Terms and Conditions of Sale (Status: February 2017)

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 ordinary 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 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.

§ 10 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.

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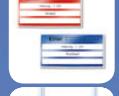
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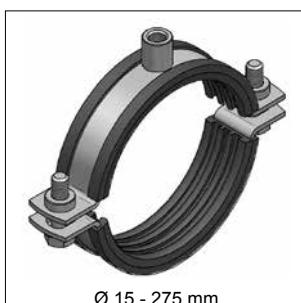
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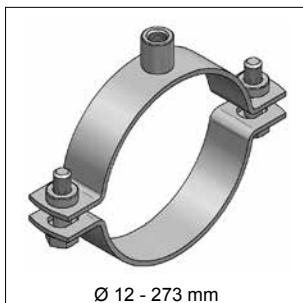
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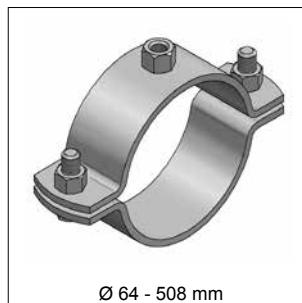
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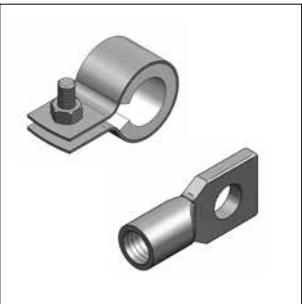
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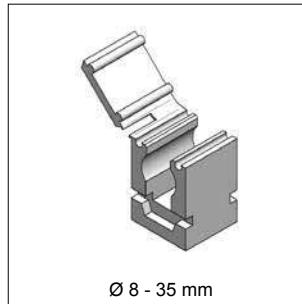


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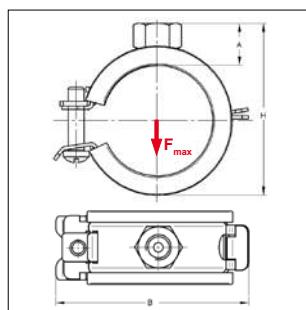
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■ Pipe clamp Sigma, lined

01



Pipe clamp Sigma

Specification

Closure: safety quick-closure
 Construction method: one-part
 OD: 12 up to 60 mm
 Connection: M8
 Sound insulation: according to DIN 4109

Technical data:

Material: steel
 Material type: DC01-A, DD11
 Surface: galvanized
 Sound insulation lining: rubber EPDM
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 3 mm

Connection: Thread M8

Clamping range		Material	Closure-screw	max. load F_{\max} [kN]	$H_{(\min-\max)}$ [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing	Part-No.
[mm]		[inch]	[mm]						[pcs.]	
12 - 15		1/4	20x1,0	M5	0,60	30-33	12	41	0,026	100
16 - 19		3/8	20x1,0	M5	0,60	34-37	12	45	0,029	100
20 - 23		1/2	20x1,0	M5	0,60	38-41	12	51	0,033	100
25 - 29		3/4	20x1,0	M5	0,60	43-47	12	56	0,036	100
32 - 35		1	20x1,0	M5	0,60	50-53	12	62	0,042	100
40 - 44		1 ^{1/4}	20x1,0	M5	0,60	58-62	12	71	0,058	50
48 - 52		1 ^{1/2}	20x1,5	M5	1,10	66-70	12	80	0,079	50
53 - 57			20x1,5	M5	1,10	71-75	12	85	0,086	50
58 - 60		2	20x1,5	M5	1,10	76-79	12	89	0,091	50

Connection: Thread M8

		with sound insulation lining rubber							white
12 - 15	1/4	20x1,0	M5	0,60	30-33	12	41	0,026	100
16 - 19	3/8	20x1,0	M5	0,60	34-37	12	45	0,029	100
20 - 23	1/2	20x1,0	M5	0,60	38-41	12	51	0,033	100
25 - 29	3/4	20x1,0	M5	0,60	43-47	12	56	0,036	100
32 - 35	1	20x1,0	M5	0,60	50-53	12	62	0,042	100

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

■ Pipe clamp Talis, lined



Pipe clamp Talis, lined

**Specification**

Closure: screwed closure
 Construction method: two-part
 OD: 12 up to 169 mm
 Connection: M8, M8/M10, M10/M12
 Sound insulation: according to DIN 4109

Technical data:

Material: steel
 Material type: DD11
 Surface: galvanized
 Sound insulation lining: EPDM
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 3 mm

Connection: Thread M8

Clamping range		Material	Closure-screw	max. load F_{\max} [kN]	Weight [kg/pc.]	Packing	EPDM Part-No.
[mm]	[inch]	[mm]				[pcs.]	
12 - 14	1/4	20x1,0	M5	1,25	0,031	100	101234012
15 - 19	3/8	20x1,0	M5	1,25	0,033	100	101234015
20 - 23	1/2	20x1,0	M5	1,25	0,037	100	101234020
24 - 28	3/4	20x1,0	M5	1,25	0,040	100	101234026
31 - 35	1	20x1,0	M5	1,25	0,044	100	101234032
38 - 43	1 1/4	20x1,0	M5	1,25	0,048	50	101234040
48 - 51	1 1/2	20x1,0	M5	1,25	0,054	50	101234048
52 - 56		20x1,2	M6	1,30	0,063	50	101234052

Connection: Thread M8/M10

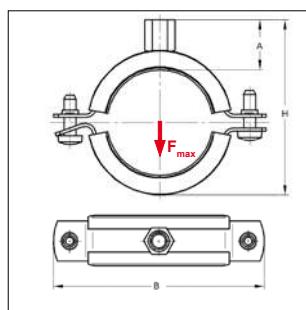
							EPDM
57 - 63	2	20x1,2	M6	1,30	0,068	50	101234057
63 - 67		20x1,5	M6	1,50	0,085	50	101234063
70 - 73		20x1,5	M6	1,50	0,091	50	101234070
74 - 80	2 1/2	20x1,5	M6	1,50	0,097	50	101234074
83 - 91	3	20x1,5	M6	1,50	0,105	50	101234083
108 - 114	4	25x1,5	M6	2,00	0,171	50	101234108

Connection: Thread M10/M12

							EPDM
120 - 125		25x2,0	M6	3,00	0,222	25	101234125
130 - 136		25x2,0	M6	3,00	0,238	25	101234130
136 - 142	5	25x2,0	M6	3,00	0,250	25	101234136
159 - 163		25x2,0	M6	3,00	0,280	25	101234159
165 - 169	6	25x2,0	M6	3,00	0,292	25	101234165

■ Pipe clamp Trabant, lined

01



Pipe clamp Trabant

Specification

Closure: snap-in closure
 Construction method: two-part
 OD: 12 up to 168 mm
 Connection: M8/M10, M10/M12
 Sound insulation: according to DIN 4109

Technical data:

Material: steel
 Material type: DC01-A, DD11
 Surface: galvanized
 Sound insulation lining: rubber TPE / EPDM
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 4,5 mm

Connection: Thread M8/M10

Clamping range		Material	Closure-screw	max. load F _{max} [kN]	H _(min-max) [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Rubber Part-No.
[mm]	[Inch]	[mm]								
12 - 15		20x1,0	M6	0,29	40-43	22	59	0,051	100	042615101
16 - 20	3/8	20x1,0	M6	0,29	43-48	22	64	0,054	100	042620101
21 - 25	1/2	20x1,0	M6	0,29	48-53	22	69	0,058	100	042625101
26 - 30	3/4	20x1,0	M6	0,29	53-58	22	75	0,064	100	042630101
32 - 37	1	20x1,0	M6	0,29	60-65	22	81	0,066	100	042637101
42 - 46	1 1/4	20x1,5	M6	0,90	71-75	23	92	0,094	50	042646101
48 - 52	1 1/2	20x1,5	M6	0,90	76-81	23	98	0,101	50	042652101
54 - 58		20x1,5	M6	0,90	82-87	23	104	0,107	50	042658101
60 - 65	2	20x1,5	M6	0,90	88-94	23	111	0,114	50	042665101
70 - 76		25x1,5	M6	1,10	98-104	22	122	0,150	50	042672101
76 - 83	2 1/2	25x1,5	M6	1,10	104-111	22	127	0,155	50	042677101
85 - 90	3	25x2,0	M6	1,50	114-119	23	134	0,202	50	0426901
108 - 114	4	25x2,5	M6	1,90	142-148	26	166	0,253	50	0427141

Connection: Thread M10/M12

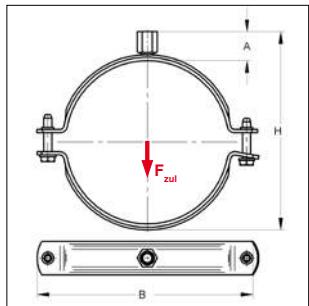
		with sound insulation lining					Rubber			
121 - 125		25x2,5	M6	2,20	156-162	27	176	0,313	25	04272251
132 - 136		25x2,5	M6	2,20	167-173	27	187	0,337	25	04272361
137 - 141	5	25x2,5	M6	2,20	172-178	27	192	0,343	25	04272411
159 - 163		25x2,5	M6	2,20	194-200	27	215	0,388	25	04272631
164 - 168	6	25x2,5	M6	2,20	199-205	27	220	0,398	25	04272681

suitable connection adaptor see on page 1/24

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

■ Pipe clamp Trabant, unlined



Pipe clamp Trabant, unlined

Specification:

Closure: snap-in closure
 Construction method: two-part
 OD: 21 up to 122 mm
 Connection: M8/M10

Technical data:

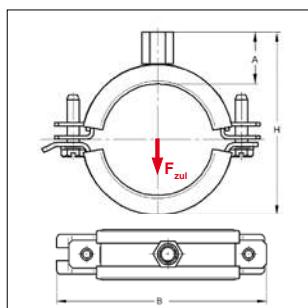
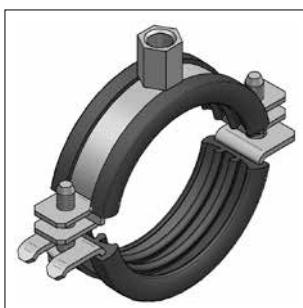
Material: Steel
 Surface: galvanized

Connection: Thread M8/M10

Clamping range [mm]	Material [mm]	Closure-screw	max. load F_{max} [kN]	H (min-max) [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
21 - 24	20x1,0	M6	0,29	40-43	18	59	0,05	100	042615201
25 - 29	20x1,0	M6	0,29	44-48	18	64	0,05	100	042620201
30 - 34	20x1,0	M6	0,29	49-53	18	69	0,05	100	042625201
35 - 39	20x1,0	M6	0,29	54-58	18	75	0,06	100	042630201
41 - 48	20x1,0	M6	0,29	60-67	18	91	0,06	100	042637201
51 - 55	20x1,5	M6	0,90	71-75	18	92	0,08	50	042646201
57 - 61	20x1,5	M6	0,90	77-81	18	98	0,09	50	042652201
63 - 67	20x1,5	M6	0,90	83-87	18	104	0,09	50	042658201
69 - 74	20x1,5	M6	0,90	89-94	18	111	0,10	50	042665201
76 - 85	25x1,5	M6	1,10	95-104	18	122	0,13	50	042672201
84 - 90	25x1,5	M6	1,10	103-109	18	127	0,14	50	042677201
94 - 97	25x2,0	M6	1,50	114-119	18	134	0,16	50	0426902
106 - 110	25x2,5	M6	1,90	132-136	22	153	0,23	50	0427022
114 - 122	25x2,5	M6	1,90	140-148	22	166	0,25	50	04272142

■ Pipe clamp Omnia MB, lined

01



Related fire loads see page 15/10

Pipe clamp Omnia MB

Specification

Closure:	swiveling U-closure
Construction method:	two-part
OD:	15 up to 168 mm
Connection:	M8/M10, M10/M12, M12
Sound insulation:	according to DIN 4109
Remark:	also available with two connections

Technical data:

Material:	steel
Material type:	DD11
Surface:	galvanized
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm
	Silicone ¹⁾ - 50 °C up to + 250 °C 6 mm

¹⁾ max. loads are also valid for pipe clamps with silicone lining, these are not RAL approved.

Connection: Thread M8/M10				with sound insulation lining					Silicone	Rubber	
Clamping range [mm]	Material [Inch]	Closure-screw [mm]	max. load F _{max} ¹⁾ [kN]	H (min-max) [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	Part-No.	
15 - 20	3/8	20x1,5	M6	1,00	42-47	24	61	0,077	100	0398220	0398020
22 - 28	1 1/2-3/4	20x1,5	M6	1,00	49-56	24	68	0,087	100	0398228	0398028
30 - 35	1	20x1,5	M6	1,00	57-62	24	78	0,095	100	0398235	0398035
38 - 42	1 1/4	20x2,0	M6	1,60	66-70	24	89	0,120	50	0398242	0398042
44 - 48	1 1/2	20x2,0	M6	1,60	72-76	24	92	0,127	50	0398248	0398048
50 - 54		20x2,0	M6	1,60	78-82	24	101	0,136	50	0398254	0398054
56 - 60	2	20x2,0	M6	1,60	84-88	24	108	0,148	50	0398260	0398060
61 - 65		20x2,0	M6	1,60	91-92	24	113	0,152	50	0398264	0398064
70 - 73		20x2,0	M6	1,60	98-101	24	117	0,165	50	0398273	0398073
75 - 83	2 1/2	20x2,0	M6	1,60	103-108	24	124	0,180	50	0398278	0398078
84 - 89	3	25x2,5	M6	1,80	113-118	25	136	0,254	50	0398289	0398089
90 - 95		25x2,5	M6	1,80	119-124	25	143	0,268	50	0398295	0398095
100 - 105		25x2,5	M6	1,80	129-134	25	152	0,268	50	0398305	0398105
108 - 112		25x2,5	M6	1,80	137-141	25	158	0,302	50	0398312	0398112
114 - 116	4	25x2,5	M6	1,80	143-145	25	165	0,312	25	0398316	0398116
121 - 125		25x2,5	M6	1,80	150-154	25	175	0,330	25	0398325	0398125

Connection: Thread M10/M12				with sound insulation lining					Silicone	Rubber	
132 - 136	25x3,0	M8	2,30	171-175	30	192	0,447	25	1418336	03981362	
137 - 141	5	25x3,0	M8	2,30	176-180	30	197	0,459	25	1418341	03981412
159 - 163		25x3,0	M8	2,30	193-197	30	219	0,516	25	1418363	03981632
164 - 168	6	25x3,0	M8	2,30	198-202	30	225	0,526	25	1418368	03981682

■ Pipe clamp Omnia MB, lined

Connection: Thread M12					with sound insulation lining				Silicone	Rubber
Clamping range	Material	Closure-screw	max. load F _{max} ¹⁾	H (min-max)	A	B	Weight	Packing	Part-No.	Part-No.
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]		
15 - 20	3/8	20x1,5	M6	1,00	43-48	24	61	0,095	100	0392227
22 - 28	1/2-3/4	20x1,5	M6	1,00	50-56	24	68	0,102	100	0392235
30 - 35	1	20x1,5	M6	1,00	58-63	24	78	0,112	100	0392243
38 - 42	1 ¹ / ₄	20x2,0	M6	1,60	67-71	24	89	0,138	50	0392251
44 - 48	1 ¹ / ₂	20x2,0	M6	1,60	73-77	24	92	0,145	50	0397448
50 - 54		20x2,0	M6	1,60	79-83	24	101	0,154	50	0397454
56 - 60	2	20x2,0	M6	1,60	85-89	24	108	0,164	50	0397460
61 - 65		20x2,0	M6	1,60	92-93	24	113	0,169	50	0397464
70 - 73		20x2,0	M6	1,60	99-102	24	117	0,183	50	0397473
75 - 83	2 ¹ / ₂	20x2,0	M6	1,60	104-109	24	124	0,193	50	0397480
84 - 89	3	25x2,5	M6	1,80	114-119	25	136	0,272	50	0397489
90 - 95		25x2,5	M6	1,80	120-125	25	143	0,285	50	0397495
100 - 105		25x2,5	M6	1,80	130-135	25	152	0,303	50	0397505
108 - 112		25x2,5	M6	1,80	138-142	25	158	0,320	50	0392405
114 - 116	4	25x2,5	M6	1,80	144-146	25	165	0,330	25	0397516
121 - 125		25x2,5	M6	1,80	151-155	25	175	0,348	25	0397525
										0398525

(i) suitable connection adaptor see on page 1/24

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

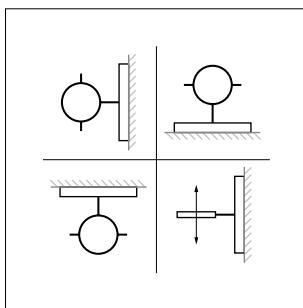
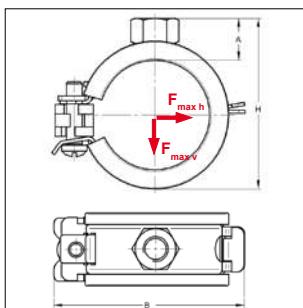
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

■ Sliding pipe clamp Sigma, lined

01



Sliding pipe clamp Sigma



Mounting recommendation

Specification

Closure: safety quick-closure
 Construction method: one-part
 OD: 12 up to 46 mm
 Connection: M8
 Sound insulation: according to DIN 4109

Technical data:

Material: steel
 Material type: DC01-A, DD11
 Surface: galvanized
 Sound insulation lining: rubber TPE , flocked
 Temperature resistance: - 30 °C up to + 70 °C
 Insulation thickness: 3 mm

Connection: Thread M8

Dimension [mm]	Material [mm]	Closure-screw	max. load		H [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Rubber Part-No.
			F _{max horizontal} [kN]	F _{max vertical} [kN]						
12	20x1,0	M5	0,08	0,25	33	13	43	0,027	100	14520121
15	20x1,0	M5	0,08	0,25	35	13	45	0,031	100	14520151
16	20x1,0	M5	0,08	0,25	35	13	45	0,032	100	14520161
18	20x1,0	M5	0,11	0,25	40	13	50	0,031	100	14520181
20	20x1,0	M5	0,11	0,25	40	13	50	0,036	100	14520201
22	20x1,0	M5	0,11	0,25	48	13	58	0,034	100	14520221
25	20x1,0	M5	0,11	0,25	48	13	58	0,038	100	14520251
28	20x1,0	M5	0,11	0,25	56	13	66	0,039	100	14520281
32	20x1,0	M5	0,16	0,25	56	13	66	0,044	100	14520321
35	20x1,0	M5	0,16	0,25	56	13	66	0,046	100	14520351
38	20x1,0	M5	0,16	0,25	64	13	74	0,053	50	14520381
40	20x1,0	M5	0,16	0,25	64	13	74	0,051	50	14520401
42	20x1,0	M5	0,16	0,25	64	13	74	0,051	50	14520421
46	20x1,5	M5	0,20	0,25	72	13	82	0,069	50	14520461

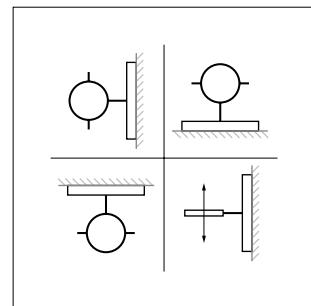
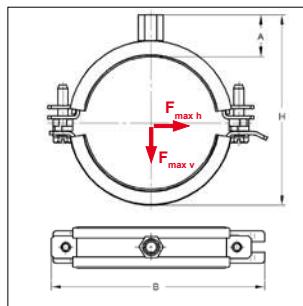
Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

With larger dimensions an unopposed sliding can not be guaranteed.

■ Sliding pipe clamp Omnia MB, lined



Sliding pipe clamp Omnia MB



Mounting recommendation

Specification

Closure: swiveling U-closure
 Construction method: two-part
 OD: 50 up to 116 mm
 Connection: M8/M10
 Sound insulation: according to DIN 4109

Technical data:

Material: steel
 Material type: DD11
 Surface: galvanized
 Sound insulation lining: rubber TPE, flocked
 Temperature resistance: - 30 °C up to + 70 °C
 Insulation thickness: 4 mm

Connection: Thread M8/M10

Dimension	Material	Closure-screw	max. load	H	A	B	Weight	Packing	Rubber	
[mm]	[mm]		F _{max horizontal} [kN]	F _{max vertical} [kN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
50	20x2,0	M6	0,23	0,50	74	24	101	0,112	50	0387250
52	20x2,0	M6	0,23	0,50	76	24	101	0,126	50	0387252
54	20x2,0	M6	0,23	0,50	78	24	101	0,126	50	0387254
56	20x2,0	M6	0,23	0,50	80	24	108	0,137	50	0387256
63	20x2,0	M6	0,23	0,50	87	24	113	0,137	50	0387263
65	20x2,0	M6	0,23	0,50	90	24	113	0,143	50	0387265
69	20x2,0	M6	0,23	0,50	93	24	117	0,150	50	0387269
75	20x2,0	M6	0,23	0,50	99	24	124	0,150	50	0387275
77	20x2,0	M6	0,25	0,70	101	24	124	0,164	50	0387277
81	20x2,0	M6	0,25	0,70	105	24	124	0,164	50	0387281
90	25x2,5	M6	0,27	1,20	115	25	143	0,261	50	0387290
96	25x2,5	M6	0,30	1,20	121	25	143	0,261	50	0387296
110	25x2,5	M6	0,30	1,40	135	25	158	0,288	50	0387310
116	25x2,5	M6	0,30	1,60	141	25	165	0,302	50	0387316

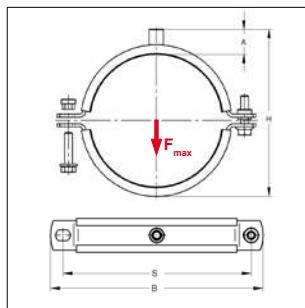
Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

With larger dimensions an unopposed sliding can not be guaranteed.

■ Pipe clamp Maxima PSM, lined



Pipe clamp Maxima PSM



Related fire loads see page 15/10

Delivery time:

Version with stepped-thread: 2 working days, ex works Kupferzell.
 Pipe clamps with thread M16 and sleeve 1/2": 5 working days, ex
 works Kupferzell (pipe clamps Maxima PSM M16 and 1/2" are special
 designed on customer' request, no exchange or return).

Variant demand on request!**Specification**

Closure: pendulum stick nut
 Construction method: two-part
 OD: 15 up to 275 mm
 Connection: M8/M10, M10/M12, M16, 1/2"
 Sound insulation: according to DIN 4109

Technical data:

Material:	steel
Material type:	DD11, S235JRG2
Surface:	galvanized ¹⁾
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm
	Silicone ²⁾
	- 50 °C up to + 250 °C
	6 mm

¹⁾ Components for usage in outdoor areas also available with zinc-nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!²⁾ max. loads are also valid for pipe clamps with silicone lining, these are not RAL approved.**Connection: Thread M8/M10**

Clamping range [mm]	Material [Inch]	Closure screw [mm]	max. load F _{max} ²⁾ [kN]	H _(min-max) [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Silicone Part-No.	Rubber Part-No.	
15 - 19	25x3,0	M8	1,50	54-58	30	80	56	0,195	1	00695358	0068819	
20 - 25	1/2	25x3,0	M8	1,50	59-64	30	87	63	0,207	1	0069536	0068823
26 - 30	3/4	25x3,0	M8	1,50	65-69	30	92	68	0,222	1	0069537	0068828
31 - 36	1	25x3,0	M8	1,50	70-75	30	98	74	0,234	1	0069538	0068873
38 - 45	1 ^{1/4}	25x3,0	M8	1,50	77-84	30	107	83	0,251	1	0069539	0068880
47 - 51	1 ^{1/2}	25x3,0	M8	1,50	86-90	30	114	90	0,273	1	0069540	0068881
53 - 57		25x3,0	M8	1,50	92-96	30	120	96	0,288	1	0069541	0068941
58 - 64	2	25x3,0	M8	1,50	97-103	30	129	105	0,300	1	00695397	00688083

Connection: Thread M10/M12

Clamping range [mm]	Material [Inch]	Closure screw [mm]	max. load F _{max} ²⁾ [kN]	H _(min-max) [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Silicone Part-No.	Rubber Part-No.	
65 - 70	30x3,0	M10	1,85	104-109	30	141	115	0,420	1	0083580	0080075	
72 - 78	2 ^{1/2}	30x3,0	M10	1,85	111-117	30	149	123	0,441	1	0083589	0080106
84 - 90	3	30x3,0	M10	1,85	123-129	30	162	135	0,477	1	0083596	0080107
94 - 100		30x3,0	M10	1,85	133-139	30	172	145	0,507	1	0083610	0080108
102 - 106		30x3,0	M10	1,85	141-145	30	178	152	0,531	1	0083626	0080148
108 - 112		30x3,0	M10	1,85	147-151	30	184	158	0,549	1	0083635	0080159
113 - 117	4	30x3,0	M10	1,85	152-156	30	189	163	0,564	1	0083636	0080167
120 - 125		35x4,0	M10	5,00	161-166	31	209	179	0,810	1	0083662	0080168
127 - 132		35x4,0	M10	5,00	168-173	31	216	186	0,841	1	0083670	0080185
133 - 136		35x4,0	M10	5,00	174-177	31	220	191	0,867	1	0083678	0088136
137 - 142	5	35x4,0	M10	5,00	178-183	31	226	196	0,885	1	0083679	0080192
145 - 150		35x4,0	M10	5,00	186-191	31	234	204	0,921	1	0083686	0080193
152 - 156		35x4,0	M10	5,00	193-197	31	240	211	0,952	1	0083694	0080198
158 - 163		35x4,0	M10	5,00	199-204	31	247	218	0,979	1	0083708	0088163
164 - 168	6	35x4,0	M10	5,00	205-209	31	252	223	1,005	1	0083711	0080222
190 - 194		35x4,0	M10	5,00	231-235	31	278	249	1,121	1	0083742	0080244
198 - 203		35x4,0	M10	5,00	239-244	31	287	258	1,156	1	0083750	0080270
207 - 213		35x4,0	M10	5,00	248-254	31	297	268	1,196	1	0083774	0080293
219 - 223	8	35x4,0	M10	5,00	260-264	31	308	278	1,250	1	0083804	0080309
225 - 230		35x4,0	M10	5,00	266-271	31	315	285	1,276	1	0083806	0088230
242 - 246		35x4,0	M10	5,00	283-287	31	331	301	1,352	1	0083839	0080331
270 - 275	10	35x4,0	M10	5,00	311-316	31	360	330	1,476	1	0083878	0080374

■ Pipe clamp Maxima PSM, lined

Connection: Thread M16					with sound insulation lining					Silicone	Rubber
Clamping range [mm]	Material [Inch]	Closure-screw [mm]	max. load F_{\max} [kN]	$H_{(\min-\max)}$ [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing	Part-No.	Part-No.
102 - 106	30x3,0	M10	1,85	140-144	29	178	152	0,547	1	0084646	0081620
108 - 112	30x3,0	M10	1,85	146-150	29	184	158	0,565	1	0084654	0081639
113 - 117 4	30x3,0	M10	1,85	151-155	29	189	163	0,580	1	0084659	0081652
120 - 125	35x4,0	M10	5,00	160-165	30	209	179	0,826	1	0084665	0081646
127 - 132	35x4,0	M10	5,00	167-172	30	216	186	0,857	1	0084670	0081655
133 - 136	35x4,0	M10	5,00	173-176	30	220	191	0,883	1	0084689	0081663
137 - 142 5	35x4,0	M10	5,00	177-182	30	226	196	0,901	1	0084692	0081668
145 - 150	35x4,0	M10	5,00	185-190	30	234	204	0,937	1	0084693	0081670
152 - 156	35x4,0	M10	5,00	192-196	30	240	211	0,968	1	0084703	0081674
158 - 163	35x4,0	M10	5,00	198-203	30	247	218	0,995	1	0084719	0081701
164 - 168 6	35x4,0	M10	5,00	204-208	30	252	223	1,021	1	0084723	0081710
190 - 194	35x4,0	M10	5,00	230-234	30	278	249	1,137	1	0084750	0081750
198 - 203	35x4,0	M10	5,00	238-243	30	287	258	1,172	1	0084754	0081756
207 - 213	35x4,0	M10	5,00	247-253	30	297	268	1,212	1	0084794	0081786
219 - 223 8	35x4,0	M10	5,00	259-263	30	308	278	1,266	1	0084811	0081797
225 - 230	35x4,0	M10	5,00	265-270	30	315	285	1,293	1	0084816	0081809
242 - 246	35x4,0	M10	5,00	282-286	30	331	301	1,368	1	0084832	0081826
270 - 275 10	35x4,0	M10	5,00	310-315	30	360	330	1,492	1	0084870	0081867

Connection: Sleeve 1/2 "					with sound insulation lining					Silicone	Rubber
102 - 106	30x3,0	M10	1,85	135-139	24	178	152	0,525	1	0085132	0082120
108 - 112	30x3,0	M10	1,85	141-145	24	184	158	0,543	1	0085154	0082139
113 - 117 4	30x3,0	M10	1,85	146-150	24	189	163	0,558	1	0085158	0082151
120 - 125	35x4,0	M10	5,00	155-160	25	209	179	0,804	1	0085165	0082146
127 - 132	35x4,0	M10	5,00	162-167	25	216	186	0,835	1	0085170	0082155
133 - 136	35x4,0	M10	5,00	168-171	25	220	191	0,861	1	0085189	0082163
137 - 142 5	35x4,0	M10	5,00	172-177	25	226	196	0,879	1	0085192	0082168
145 - 150	35x4,0	M10	5,00	180-185	25	234	204	0,915	1	0085200	0082170
152 - 156	35x4,0	M10	5,00	187-191	25	240	211	0,946	1	0085208	0082197
158 - 163	35x4,0	M10	5,00	193-198	25	247	218	0,973	1	0085219	0082201
164 - 168 6	35x4,0	M10	5,00	199-203	25	252	223	0,999	1	0085223	0082210
190 - 194	35x4,0	M10	5,00	225-229	25	278	249	1,115	1	0085250	0082250
198 - 203	35x4,0	M10	5,00	233-238	25	287	258	1,150	1	0085254	0082254
207 - 213	35x4,0	M10	5,00	242-248	25	297	268	1,191	1	0085297	0082290
219 - 223 8	35x4,0	M10	5,00	254-258	25	308	278	1,244	1	0085311	0082297
225 - 230	35x4,0	M10	5,00	260-265	25	315	285	1,271	1	0085316	0082309
242 - 246	35x4,0	M10	5,00	277-281	25	331	301	1,346	1	0085335	0082327
270 - 275 10	35x4,0	M10	5,00	305-310	25	360	330	1,470	1	0085370	0082370

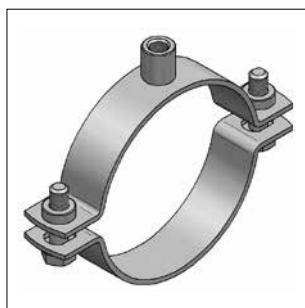
 suitable connection adaptor see on page 1/24

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

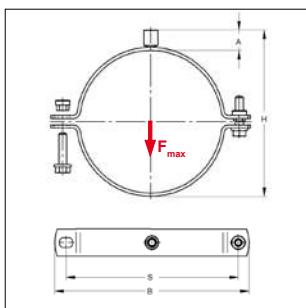
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

■ Pipe clamp Maxima PSM, unlined

01



Pipe clamp Maxima PSM, unlined



Related fire loads see page 15/10

Delivery time:

Version with stepped-thread: 2 working days, ex works

Pipe clamps with thread M16 and sleeve 1/2": 5 working days, ex works

(pipe clamps Maxima PSM M16 and 1/2" are special designed on customer's request, no exchange or return).

Variant demand on request!

Specification

Closure: pendulum stick nut
 Construction method: two-part
 OD: 12 up to 273 mm
 Connection: M8/M10, M10/M12, M16, 1/2"

Technical data:

Material: steel
 Material type: DD11, S235JRG2
 Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Connection: Thread M8/M10

Clamping range		Material	Closure-screw	max. load F _{max}	H (min-max)	A	B	S	Weight	Packing	Part-No.
[mm]	[Inch]	[mm]		[kN]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
12 - 16		25x3,0	M8	3,00	39-43	24	65	41	0,158	1	0068835
17 - 19		25x3,0	M8	3,00	44-46	24	69	45	0,168	1	00688612
20 - 23	1/2	25x3,0	M8	3,00	47-50	24	73	49	0,173	1	0068838
25 - 29	3/4	25x3,0	M8	3,00	52-56	24	80	56	0,182	1	0068837
30 - 35	1	25x3,0	M8	3,00	59-62	24	87	63	0,192	1	0068836
36 - 40		25x3,0	M8	3,00	63-67	24	92	68	0,203	1	0068841
41 - 46	1 ^{1/4}	25x3,0	M8	3,00	68-73	24	98	74	0,212	1	0068847
48 - 55	1 ^{1/2}	25x3,0	M8	3,00	75-82	24	107	83	0,225	1	0068856
57 - 61	2	25x3,0	M8	3,00	84-88	24	114	90	0,241	1	0068863
63 - 67		25x3,0	M8	3,00	90-94	24	120	96	0,253	1	0068882
70 - 76	2 ^{1/2}	25x3,0	M8	3,00	97-103	24	129	105	0,265	1	00880769

Connection: Thread M10/M12

without sound insulation lining											
		Material	Closure-screw	max. load F _{max}	H (min-max)	A	B	S	Weight	Packing	Part-No.
[mm]	[Inch]	[mm]		[kN]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
84 - 90	3	30x3,0	M10	3,00	111-117	24	149	123	0,390	1	0088093
96 - 102		30x3,0	M10	3,00	123-129	24	162	135	0,417	1	0088105
106 - 112		30x3,0	M10	3,00	133-139	24	172	145	0,440	1	0088113
114 - 118	4	30x3,0	M10	3,00	141-145	24	178	152	0,458	1	0088119
120 - 124		30x3,0	M10	3,00	147-151	24	184	158	0,472	1	0088125
125 - 129		30x3,0	M10	3,00	152-156	24	189	163	0,483	1	0088130
132 - 137		35x4,0	M10	6,30	161-166	25	209	179	0,709	1	0088138
139 - 144	5	35x4,0	M10	6,30	168-173	25	216	186	0,734	1	0088145
149 - 154		35x4,0	M10	6,30	178-183	25	226	196	0,769	1	0088155
157 - 162		35x4,0	M10	6,30	186-191	25	234	204	0,798	1	0088164
164 - 168	6	35x4,0	M10	6,30	193-197	25	240	211	0,823	1	0088169
189 - 193		35x4,0	M10	6,30	218-222	25	265	236	0,912	1	0088194
195 - 200		35x4,0	M10	6,30	224-229	25	272	243	0,934	1	0088201
210 - 215		35x4,0	M10	6,30	239-244	25	287	258	0,987	1	0088216
219 - 225	8	35x4,0	M10	6,30	248-254	25	297	268	1,020	1	0088228
244 - 250		35x4,0	M10	6,30	273-279	25	323	293	1,109	1	0088253
269 - 273	10	35x4,0	M10	6,30	298-302	25	346	316	1,198	1	0088274

■ Pipe clamp Maxima PSM, unlined

Connection: Thread M16 without sound insulation lining

Clamping range [mm]	Material	Closure-screw	max. load F_{\max} [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
106 - 112	30x3,0	M10	3,00	132-138	23	172	145	0,456	1	0081607
114 - 118 4	30x3,0	M10	3,00	140-144	23	178	152	0,474	1	0081621
120 - 124	30x3,0	M10	3,00	146-150	23	184	158	0,488	1	0081643
125 - 129	30x3,0	M10	3,00	151-155	23	189	163	0,499	1	0081645
132 - 137	35x4,0	M10	6,30	160-165	24	209	179	0,725	1	0081654
139 - 144 5	35x4,0	M10	6,30	167-172	24	216	186	0,750	1	0081657
149 - 154	35x4,0	M10	6,30	177-182	24	226	196	0,786	1	0081667
157 - 162	35x4,0	M10	6,30	185-190	24	234	204	0,814	1	0081675
164 - 168 6	35x4,0	M10	6,30	192-196	24	240	211	0,839	1	0081704
189 - 193	35x4,0	M10	6,30	217-221	24	265	236	0,928	1	0081739
195 - 200	35x4,0	M10	6,30	223-229	24	272	243	0,950	1	0081746
210 - 215	35x4,0	M10	6,30	238-243	24	287	258	1,004	1	0081762
219 - 225 8	35x4,0	M10	6,30	247-253	24	297	268	1,036	1	0081790
244 - 250	35x4,0	M10	6,30	272-278	24	323	293	1,125	1	0081818
269 - 273 10	35x4,0	M10	6,30	297-301	24	346	316	1,214	1	0081843

Connection: Sleeve 1/2" without sound insulation lining

106 - 112	30x3,0	M10	3,00	127-133	18	172	145	0,434	1	0082109
114 - 118 4	30x3,0	M10	3,00	135-139	18	178	152	0,452	1	0082123
120 - 124	30x3,0	M10	3,00	141-145	18	184	158	0,466	1	0082144
125 - 129	30x3,0	M10	3,00	146-150	18	189	163	0,477	1	0082152
132 - 137	35x4,0	M10	6,30	155-160	19	209	179	0,703	1	0082153
139 - 144 5	35x4,0	M10	6,30	162-167	19	216	186	0,728	1	0082157
149 - 154	35x4,0	M10	6,30	172-177	19	226	196	0,763	1	0082173
157 - 162	35x4,0	M10	6,30	180-185	19	234	204	0,792	1	0082175
164 - 168 6	35x4,0	M10	6,30	187-191	19	240	211	0,817	1	0082196
189 - 193	35x4,0	M10	6,30	212-216	19	265	236	0,906	1	0082237
195 - 200	35x4,0	M10	6,30	218-223	19	272	243	0,928	1	0082247
210 - 215	35x4,0	M10	6,30	233-238	19	287	258	0,981	1	0082261
219 - 225 8	35x4,0	M10	6,30	242-248	19	297	268	1,014	1	0082291
244 - 250	35x4,0	M10	6,30	267-273	19	323	293	1,103	1	0082320
269 - 273 10	35x4,0	M10	6,30	292-296	19	346	316	1,193	1	0082342

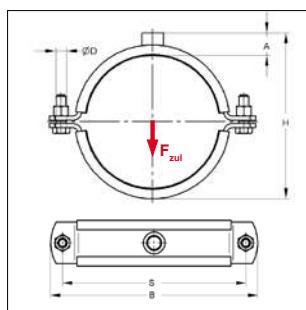
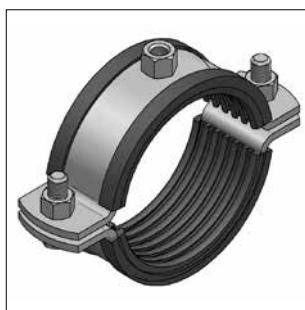
 suitable connection adaptor see on page 1/24

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

■ Pipe clamp Titan HD, lined

01



Pipe clamp Titan HD

Related fire loads see page 15/10

Delivery time:

5 working days, ex works (pipe clamps Titan HD are special designed on customer's request, no exchange or return).

Variant demand on request!**Specification**

Closure: screwed closure
 Construction method: two-part
 OD: 64 up to 508 mm
 Connection: M12, M16, 1/2", 1", 1 1/4"
 Sound insulation: according to DIN 4109

Technical data:

Material:	steel
Material type:	S235JRG2
Surface:	galvanized ¹⁾
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm
	Silicone²⁾
	- 50 °C up to + 250 °C
	6 mm

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!²⁾ max. loads are also valid for pipe clamps with silicone lining, these are not RAL approved.

Connection: Thread M12										with sound insulation lining		Silicone	Rubber
Dimension [mm]	[Inch]	Material	Closure-screw	max. load F _{max} ²⁾ [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.
64		50x5,0	M12	3,20	97	22	154	125	13	0,918	1	0067500	0066504
76	2 1/2	50x5,0	M12	3,20	109	22	166	137	13	1,008	1	0067504	0066508
89	3	50x5,0	M12	3,20	122	22	179	150	13	1,105	1	0067506	0066510
108		50x5,0	M12	3,20	141	22	199	170	13	1,248	1	0067512	0066516
110		50x5,0	M12	3,20	143	22	201	172	13	1,263	1	0067539	0066532
114	4	50x5,0	M12	3,20	147	22	205	176	13	1,293	1	0067555	0066559
125		50x5,0	M12	3,20	158	22	216	187	13	1,375	1	0067571	0066583
127		50x5,0	M12	3,20	160	22	218	189	13	1,390	1	0067598	0066591
133		50x5,0	M12	3,20	166	22	224	195	13	1,435	1	0067601	0066605
135		50x5,0	M12	3,20	168	22	226	197	13	1,450	1	0067628	0066613
140	5	50x5,0	M12	3,20	173	22	231	202	13	1,488	1	0067636	0066621
152		50x5,0	M12	3,20	185	22	243	214	13	1,578	1	0067644	0066648
160		50x5,0	M12	3,20	193	22	251	222	13	1,638	1	0067687	0066680
165	6	50x5,0	M12	3,20	198	22	256	227	13	1,675	1	0067695	0066699
168		50x5,0	M12	3,20	201	22	259	230	13	1,698	1	0067717	0066710
177		50x5,0	M12	11,50	210	22	268	239	13	1,765	1	0067733	0066737
180		50x5,0	M12	11,50	213	22	271	242	13	1,788	1	0067741	0066753
194		50x5,0	M12	11,50	227	22	286	257	13	1,893	1	0067768	0066761
200		50x5,0	M12	11,50	233	22	292	263	13	1,938	1	0067784	0066788
210		50x5,0	M12	11,50	243	22	302	273	13	2,013	1	0067814	0066818
219	8	50x5,0	M12	11,50	252	22	309	280	13	2,080	1	0067822	0066826
225		50x5,0	M12	11,50	258	22	317	288	13	2,125	1	0067849	0066842
245		50x5,0	M12	11,50	278	22	336	308	13	2,275	1	0067873	0066877
267		50x5,0	M12	11,50	300	22	359	330	13	2,440	1	0067881	0066893
273	10	50x5,0	M12	11,50	306	22	365	336	13	2,485	1	0067903	0066907
280		50x5,0	M12	11,50	313	22	372	343	13	2,538	1	0067911	0066923
298		50x5,0	M12	11,50	331	22	390	361	13	2,673	1	0067938	0066931
324	12	50x5,0	M12	11,50	357	22	416	387	13	2,867	1	0067954	0066958
356		50x5,0	M12	11,50	389	22	448	419	13	3,107	1	0067962	0066966
368		50x5,0	M12	11,50	401	22	460	431	13	3,197	1	0067989	0066982

■ Pipe clamp Titan HD, lined

01

Connection: Thread M16							with sound insulation lining				Silicone	Rubber	
Dimension [mm]	[Inch]	Material [mm]	Closure- screw	max. load F _{max} ²⁾ [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.
64		50x5,0	M12	3,20	101	26	154	125	13	0,935	1	0076499	0071516
76	2 ^{1/2}	50x5,0	M12	3,20	113	26	166	137	13	1,025	1	0076503	0071520
89	3	50x5,0	M12	3,20	126	26	179	150	13	1,122	1	0076505	0071522
108		50x5,0	M12	3,20	145	26	199	170	13	1,265	1	0076511	0071528
110		50x5,0	M12	3,20	147	26	201	172	13	1,280	1	0076538	0071536
114	4	50x5,0	M12	3,20	151	26	205	176	13	1,310	1	0076554	0071552
125		50x5,0	M12	3,20	162	26	216	187	13	1,392	1	0076589	0071587
127		50x5,0	M12	3,20	164	26	218	189	13	1,407	1	0076597	0071595
133		50x5,0	M12	3,20	170	26	224	195	13	1,452	1	0076600	0071609
135		50x5,0	M12	3,20	172	26	226	197	13	1,467	1	0076619	0071617
140	5	50x5,0	M12	3,20	177	26	231	202	13	1,505	1	0076627	0071625
152		50x5,0	M12	3,20	189	26	243	214	13	1,595	1	0076643	0071641
160		50x5,0	M12	3,20	197	26	251	222	13	1,655	1	0076686	0071684
165	6	50x5,0	M12	3,20	202	26	256	227	13	1,692	1	0076694	0071692
168		50x5,0	M12	3,20	205	26	259	230	13	1,715	1	0076716	0071714
177		50x5,0	M12	11,50	214	26	268	239	13	1,782	1	0076732	0071730
180		50x5,0	M12	11,50	217	26	271	242	13	1,805	1	0076759	0071757
194		50x5,0	M12	11,50	231	26	286	257	13	1,910	1	0076775	0071773
200		50x5,0	M12	11,50	237	26	292	263	13	1,955	1	0076783	0071781
210		50x5,0	M12	11,50	247	26	302	273	13	2,030	1	0076805	0071803
219	8	50x5,0	M12	11,50	256	26	309	280	13	2,097	1	0076821	0071838
225		50x5,0	M12	11,50	262	26	317	288	13	2,142	1	0076848	0071846
245		50x5,0	M12	11,50	282	26	336	308	13	2,292	1	0076872	0071870
267		50x5,0	M12	11,50	304	26	359	330	13	2,457	1	0076899	0071897
273	10	50x5,0	M12	11,50	310	26	365	336	13	2,502	1	0076902	0071900
280		50x5,0	M12	11,50	317	26	372	343	13	2,555	1	0076929	0071927
298		50x5,0	M12	11,50	335	26	390	361	13	2,690	1	0076937	0071935
324	12	50x5,0	M12	11,50	361	26	416	387	13	2,884	1	0076945	0071943
356		50x5,0	M12	11,50	393	26	448	419	13	3,124	1	0076961	0071978
368		50x5,0	M12	11,50	405	26	460	431	13	3,214	1	0076988	0071986
406*		50x5,0	M12	11,50	443	26	498	469	13	3,499	1	0076997	0071994
457*		50x5,0	M12	11,50	494	26	549	520	13	3,882	1	0077001	0072003
508*		50x5,0	M12	11,50	545	26	600	571	13	4,264	1	0077005	0072014

* not certified acc. to RAL-GZ 655-B

■ Pipe clamp Titan HD, lined

01

Connection: Sleeve 1/2"										with sound insulation lining		Silicone	Rubber
Dimension [mm]	Material [Inch]	Closure- screw	max. load $F_{\max}^{(2)}$ [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.	
64		50x5,0	M12	3,20	101	26	154	125	13	0,931	1	0077506	0072503
76	2 ^{1/2}	50x5,0	M12	3,20	113	26	166	137	13	1,021	1	0077510	0072508
89	3	50x5,0	M12	3,20	126	26	179	150	13	1,118	1	0077512	0072510
108		50x5,0	M12	3,20	145	26	198	169	13	1,261	1	0077518	0072516
110		50x5,0	M12	3,20	147	26	200	171	13	1,276	1	0077534	0072532
114	4	50x5,0	M12	3,20	151	26	204	175	13	1,306	1	0077550	0072559
125		50x5,0	M12	3,20	162	26	215	186	13	1,388	1	0077585	0072583
127		50x5,0	M12	3,20	164	26	217	188	13	1,403	1	0077593	0072591
133		50x5,0	M12	3,20	170	26	223	194	13	1,448	1	0077607	0072605
135		50x5,0	M12	3,20	172	26	225	196	13	1,463	1	0077615	0072613
140	5	50x5,0	M12	3,20	177	26	230	201	13	1,501	1	0077623	0072621
152		50x5,0	M12	3,20	189	26	242	213	13	1,591	1	0077631	0072648
160		50x5,0	M12	3,20	197	26	250	221	13	1,651	1	0077682	0072680
165	6	50x5,0	M12	3,20	202	26	255	226	13	1,688	1	0077690	0072699
168		50x5,0	M12	3,20	205	26	258	229	13	1,711	1	0077712	0072710
177		50x5,0	M12	11,50	214	26	267	238	13	1,778	1	0077739	0072737
180		50x5,0	M12	11,50	217	26	270	241	13	1,801	1	0077755	0072753
194		50x5,0	M12	11,50	231	26	284	255	13	1,906	1	0077771	0072761
200		50x5,0	M12	11,50	237	26	290	261	13	1,951	1	0077798	0072788
210		50x5,0	M12	11,50	247	26	300	271	13	2,026	1	0077801	0072818
219	8	50x5,0	M12	11,50	257	26	309	280	13	2,093	1	0077828	0072826
225		50x5,0	M12	11,50	262	26	315	286	13	2,138	1	0077844	0072842
245		50x5,0	M12	11,50	282	26	335	306	13	2,288	1	0077879	0072877
267		50x5,0	M12	11,50	304	26	357	328	13	2,453	1	0077895	0072893
273	10	50x5,0	M12	11,50	311	26	363	334	13	2,498	1	0077909	0072907
280		50x5,0	M12	11,50	317	26	370	341	13	2,551	1	0077925	0072923
298		50x5,0	M12	11,50	335	26	388	359	13	2,686	1	0077933	0072931
324	12	50x5,0	M12	11,50	361	26	414	385	13	2,880	1	0077941	0072958
356		50x5,0	M12	11,50	393	26	446	417	13	3,120	1	0077968	0072966
368		50x5,0	M12	11,50	405	26	458	429	13	3,210	1	0077984	0072982

Connection: Sleeve 1"										with sound insulation lining		Silicone	Rubber
Dimension [mm]	Material [Inch]	Closure- screw	max. load $F_{\max}^{(2)}$ [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.	
64		50x5,0	M12	3,20	106	31	154	125	13	0,979	1	0079498	0074507
76	2 ^{1/2}	50x5,0	M12	3,20	118	31	166	137	13	1,069	1	0079502	0074511
89	3	50x5,0	M12	3,20	131	31	179	150	13	1,166	1	0079504	0074513
108		50x5,0	M12	3,20	150	31	198	169	13	1,309	1	0079510	0074519
110		50x5,0	M12	3,20	152	31	200	171	13	1,324	1	0079537	0074535
114	4	50x5,0	M12	3,20	156	31	204	175	13	1,354	1	0079553	0074551
125		50x5,0	M12	3,20	167	31	215	186	13	1,436	1	0079588	0074586
127		50x5,0	M12	3,20	169	31	217	188	13	1,451	1	0079596	0074594
133		50x5,0	M12	3,20	175	31	223	194	13	1,496	1	0079618	0074608
135		50x5,0	M12	3,20	177	31	225	196	13	1,511	1	0079626	0074616
140	5	50x5,0	M12	3,20	182	31	230	201	13	1,549	1	0079634	0074624
152		50x5,0	M12	3,20	194	31	242	213	13	1,639	1	0079642	0074640
160		50x5,0	M12	3,20	202	31	250	221	13	1,699	1	0079685	0074683

■ Pipe clamp Titan HD, lined

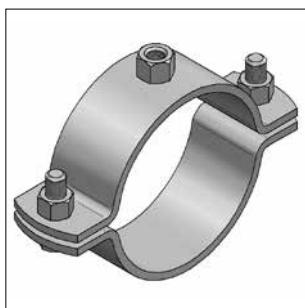
Connection: Sleeve 1"										with sound insulation lining		Silicone	Rubber
Dimension [mm]	Material [Inch]	Closure- screw	max. load F _{max} ²⁾ [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.	
165	6	50x5,0	M12	3,20	207	31	255	226	13	1,736	1	0079693	0074691
168		50x5,0	M12	3,20	210	31	258	229	13	1,759	1	0079715	0074713
177		50x5,0	M12	11,50	219	31	267	238	13	1,826	1	0079731	0074748
180		50x5,0	M12	11,50	222	31	270	241	13	1,849	1	0079758	0074756
194		50x5,0	M12	11,50	236	31	284	255	13	1,954	1	0079774	0074772
200		50x5,0	M12	11,50	242	31	290	261	13	1,999	1	0079782	0074780
210		50x5,0	M12	11,50	252	31	300	271	13	2,074	1	0079804	0074802
219	8	50x5,0	M12	11,50	262	31	309	280	13	2,141	1	0079820	0074829
225		50x5,0	M12	11,50	267	31	315	286	13	2,186	1	0079847	0074845
245		50x5,0	M12	11,50	287	31	335	306	13	2,336	1	0079871	0074861
267		50x5,0	M12	11,50	309	31	357	328	13	2,501	1	0079898	0074896
273	10	50x5,0	M12	11,50	316	31	363	334	13	2,546	1	0079901	0074918
280		50x5,0	M12	11,50	322	31	370	341	13	2,599	1	0079928	0074926
298		50x5,0	M12	11,50	340	31	388	359	13	2,734	1	0079936	0074934
324	12	50x5,0	M12	11,50	366	31	414	385	13	2,928	1	0079944	0074942
356		50x5,0	M12	11,50	398	31	446	417	13	3,168	1	0079960	0074969
368		50x5,0	M12	11,50	410	31	458	429	13	3,258	1	0079987	0074985
406*		50x5,0	M12	11,50	448	31	498	469	13	3,543	1	00799895	0074993
457*		50x5,0	M12	11,50	499	31	549	520	13	3,926	1	00799903	0075003
508*		50x5,0	M12	11,50	550	31	600	571	13	4,308	1	00799907	0075013
Connection: Sleeve 1 1/4"										with sound insulation lining		Silicone	Rubber
194		50x5,0	M12	11,50	238	33	284	255	13	1,979	1	0063845	0063941
200		50x5,0	M12	11,50	244	33	290	261	13	2,024	1	0063847	0063943
219	8	50x5,0	M12	11,50	264	33	309	280	13	2,166	1	0063853	0063951
245		50x5,0	M12	11,50	289	33	335	306	13	2,361	1	0063859	0063957
267		50x5,0	M12	11,50	311	33	357	328	13	2,526	1	0063863	0063961
273	10	50x5,0	M12	11,50	318	33	363	334	13	2,571	1	0063865	0063963
324	12	50x5,0	M12	11,50	368	33	414	385	13	2,953	1	0063881	0063978
356		50x5,0	M12	11,50	400	33	446	417	13	3,193	1	0063891	0063988
368		50x5,0	M12	11,50	412	33	458	429	13	3,283	1	0063893	0063990
406*		50x5,0	M12	11,50	450	33	498	469	13	3,568	1	0063901	0063998
457*		50x5,0	M12	11,50	501	33	549	520	13	3,951	1	00639015	00640063
508*		50x5,0	M12	11,50	552	33	600	571	13	4,333	1	00639023	0064016
Without connection thread										with sound insulation lining		Silicone	Rubber
406*		50x5,0	-	11,50	428	-	498	469	13	3,325	1	0075990	0070979
457*		50x5,0	-	11,50	479	-	549	520	13	3,708	1	0075998	0070989
508*		50x5,0	-	11,50	530	-	600	571	13	4,090	1	0076009	0070996

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

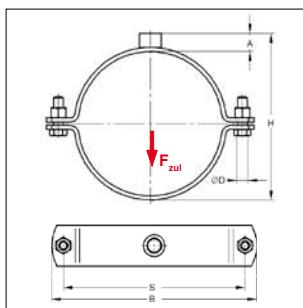
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.
 * not certified acc. to RAL-GZ 655-B.

■ Pipe clamp Titan HD, unlined

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Pipe clamp Titan HD



Related fire loads see page 15/10

Delivery time:

5 working days, ex works Kupferzell (pipe clamps Titan HD are special designed on customer's request, no exchange or return).

Variant demand on request!**Specification**

Closure: screwed closure
 Construction method: two-part
 OD: 64 up to 508 mm
 Connection: M12, M16, 1/2", 1", 1 1/4"

Technical data:

Material: steel
 Material type: S235JRG2
 Surface: galvanized

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Connection: Thread M12**without sound insulation lining**

Dimension [mm]	Material [Inch]	Closure-screw [mm]	max. load F_{\max} [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
64		50x5,0	M12	6,00	85	16	141	112	13	0,766	1 0066503
76	2 ^{1/2}	50x5,0	M12	6,00	97	16	154	125	13	0,842	1 0066507
89	3	50x5,0	M12	6,00	110	16	167	138	13	0,925	1 0066509
108		50x5,0	M12	6,00	129	16	186	157	13	1,046	1 0066515
110		50x5,0	M12	6,00	131	16	188	159	13	1,058	1 0066518
114	4	50x5,0	M12	6,00	135	16	192	163	13	1,084	1 0066520
133		50x5,0	M12	6,00	154	16	212	183	13	1,205	1 0066572
135		50x5,0	M12	6,00	156	16	214	185	13	1,217	1 0066592
140	5	50x5,0	M12	6,00	161	16	219	190	13	1,249	1 0066606
160		50x5,0	M12	6,00	181	16	239	210	13	1,376	1 0066649
165	6	50x5,0	M12	6,00	186	16	244	215	13	1,408	1 0066682
168		50x5,0	M12	6,00	189	16	247	218	13	1,427	1 0066684
194		50x5,0	M12	16,00	215	16	273	244	13	1,592	1 0066754
200		50x5,0	M12	16,00	221	16	279	250	13	1,630	1 0066762
210		50x5,0	M12	16,00	231	16	290	261	13	1,694	1 0066792
219	8	50x5,0	M12	16,00	240	16	299	270	13	1,751	1 0066819
267		50x5,0	M12	16,00	288	16	347	318	13	2,056	1 0066881
273	10	50x5,0	M12	16,00	294	16	353	324	13	2,095	1 0066894
324	12	50x5,0	M12	16,00	345	16	404	375	13	2,419	1 0066955
356		50x5,0	M12	16,00	377	16	436	407	13	2,622	1 0066965
368		50x5,0	M12	16,00	389	16	448	419	13	2,698	1 0066981

■ Pipe clamp Titan HD, unlined

Connection: Thread M16 without sound insulation lining

Dimension [mm]	Material [mm]	Closure-screw	max. load F_{\max} [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	
64	50x5,0	M12	6,00	89	20	141	112	13	0,783	1	0071515	
76	2 ^{1/2}	50x5,0	M12	6,00	101	20	154	125	13	0,859	1	0071519
89	3	50x5,0	M12	6,00	114	20	167	138	13	0,942	1	0071521
108		50x5,0	M12	6,00	133	20	186	157	13	1,063	1	0071527
110		50x5,0	M12	6,00	135	20	188	159	13	1,075	1	0071529
114	4	50x5,0	M12	6,00	139	20	192	163	13	1,101	1	0071530
133		50x5,0	M12	6,00	158	20	212	183	13	1,222	1	0071588
135		50x5,0	M12	6,00	160	20	214	185	13	1,234	1	0071596
140	5	50x5,0	M12	6,00	165	20	219	190	13	1,266	1	0071610
160		50x5,0	M12	6,00	185	20	239	210	13	1,393	1	0071642
165	6	50x5,0	M12	6,00	190	20	244	215	13	1,425	1	0071685
168		50x5,0	M12	6,00	193	20	247	218	13	1,444	1	0071687
194		50x5,0	M12	16,00	219	20	273	244	13	1,609	1	0071758
200		50x5,0	M12	16,00	225	20	279	250	13	1,647	1	0071774
210		50x5,0	M12	16,00	235	20	290	261	13	1,711	1	0071784
219	8	50x5,0	M12	16,00	244	20	299	270	13	1,768	1	0071804
267		50x5,0	M12	16,00	292	20	347	318	13	2,073	1	0071873
273	10	50x5,0	M12	16,00	298	20	353	324	13	2,112	1	0071898
324	12	50x5,0	M12	16,00	349	20	404	375	13	2,436	1	0071939
356		50x5,0	M12	16,00	381	20	436	407	13	2,639	1	0071977
368	14	50x5,0	M12	16,00	393	20	448	419	13	2,715	1	0071979
406*		50x5,0	M12	16,00	431	20	486	457	13	2,957	1	0071993
457*		50x5,0	M12	16,00	492	20	537	508	13	3,281	1	00720091
508*		50x5,0	M12	16,00	533	20	588	559	13	3,605	1	007205082

Connection: Sleeve 1/2"

without sound insulation lining

64		50x5,0	M12	6,00	89	20	142	113	13	0,779	1	0072502
76	2 ^{1/2}	50x5,0	M12	6,00	101	20	154	125	13	0,855	1	0072507
89	3	50x5,0	M12	6,00	114	20	167	138	13	0,938	1	0072509
108		50x5,0	M12	6,00	133	20	186	157	13	1,059	1	0072514
110		50x5,0	M12	6,00	135	20	188	159	13	1,071	1	0072517
114	4	50x5,0	M12	6,00	139	20	192	163	13	1,097	1	0072519
133		50x5,0	M12	6,00	158	20	211	182	13	1,218	1	0072584
135		50x5,0	M12	6,00	160	20	213	184	13	1,230	1	0072592
140	5	50x5,0	M12	6,00	165	20	218	189	13	1,262	1	0072606
160		50x5,0	M12	6,00	185	20	238	209	13	1,389	1	0072649
165	6	50x5,0	M12	6,00	190	20	243	214	13	1,421	1	0072681
168		50x5,0	M12	6,00	193	20	246	217	13	1,440	1	0072683
194	7	50x5,0	M12	16,00	219	20	272	243	13	1,605	1	0072754
200		50x5,0	M12	16,00	225	20	278	249	13	1,643	1	0072762
210		50x5,0	M12	16,00	235	20	288	259	13	1,707	1	0072791
219	8	50x5,0	M12	16,00	245	20	297	268	13	1,764	1	0072819
267		50x5,0	M12	16,00	292	20	345	316	13	2,069	1	0072892
273	10	50x5,0	M12	16,00	299	20	351	322	13	2,108	1	0072894
324	12	50x5,0	M12	16,00	349	20	402	373	13	2,432	1	0072955
356		50x5,0	M12	16,00	381	20	434	405	13	2,635	1	0072965
368	14	50x5,0	M12	16,00	393	20	446	417	13	2,711	1	0072967

* not certified acc. to RAL-GZ 655-B

■ Pipe clamp Titan HD, unlined

01

Connection: Sleeve 1"

without sound insulation lining												
Dimension	Material	Closure-screw	max. load F_{\max} [kN]	H	A	B	S	D	Weight [kg/pc.]	Packing [pc.]	Part-No.	
[mm]	[Inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]				
64		50x5,0	M12	6,00	94	25	142	113	13	0,827	1	0074505
76	2 ^{1/2}	50x5,0	M12	6,00	106	25	154	125	13	0,903	1	0074510
89	3	50x5,0	M12	6,00	119	25	167	138	13	0,986	1	0074512
108		50x5,0	M12	6,00	138	25	186	157	13	1,107	1	0074520
110		50x5,0	M12	6,00	140	25	188	159	13	1,119	1	0074522
114	4	50x5,0	M12	6,00	144	25	192	163	13	1,145	1	0074524
133		50x5,0	M12	6,00	163	25	211	182	13	1,266	1	0074587
135		50x5,0	M12	6,00	165	25	213	184	13	1,278	1	0074595
140	5	50x5,0	M12	6,00	170	25	218	189	13	1,310	1	0074609
160		50x5,0	M12	6,00	190	25	238	209	13	1,437	1	0074641
165	6	50x5,0	M12	6,00	195	25	243	214	13	1,469	1	0074684
168		50x5,0	M12	6,00	198	25	246	217	13	1,488	1	0074686
194	7	50x5,0	M12	16,00	224	25	272	243	13	1,653	1	0074757
200		50x5,0	M12	16,00	230	25	278	249	13	1,691	1	0074773
210		50x5,0	M12	16,00	240	25	288	259	13	1,755	1	0074781
219	8	50x5,0	M12	16,00	250	25	297	268	13	1,812	1	0074803
267		50x5,0	M12	16,00	297	25	345	316	13	2,117	1	0074874
273	10	50x5,0	M12	16,00	304	25	351	322	13	2,156	1	0074897
324	12	50x5,0	M12	16,00	354	25	402	373	13	2,480	1	0074939
356		50x5,0	M12	16,00	386	25	434	405	13	2,683	1	0074968
368	14	50x5,0	M12	16,00	398	25	446	417	13	2,759	1	0074970
406*		50x5,0	M12	16,00	436	25	486	457	13	3,001	1	0074992
457*		50x5,0	M12	16,00	487	25	537	508	13	3,325	1	0074995
508*		50x5,0	M12	16,00	538	25	588	559	13	3,649	1	0075012

Connection: Sleeve 1 1/4"

without sound insulation lining												
Dimension	Material	Closure-screw	max. load F_{\max} [kN]	H	A	B	S	D	Weight [kg/pc.]	Packing [pc.]	Part-No.	
[mm]	[Inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]				
200		50x5,0	M12	16,00	232	27	278	249	13	1,716	1	0063942
210		50x5,0	M12	16,00	242	27	288	259	13	1,780	1	0063947
219	8	50x5,0	M12	16,00	252	27	297	268	13	1,837	1	0063949
267		50x5,0	M12	16,00	299	27	345	316	13	2,142	1	0063960
273	10	50x5,0	M12	16,00	306	27	351	322	13	2,181	1	0063962
324	12	50x5,0	M12	16,00	356	27	402	373	13	2,505	1	0063975
356		50x5,0	M12	16,00	388	27	434	405	13	2,708	1	0063987
368	14	50x5,0	M12	16,00	400	27	446	417	13	2,784	1	0063989
406*		50x5,0	M12	16,00	438	27	486	457	13	3,026	1	0063997
457*		50x5,0	M12	16,00	489	27	537	508	13	3,350	1	0064009
508*		50x5,0	M12	16,00	540	27	588	559	13	3,674	1	0064010

Without connection thread

without sound insulation lining												
Dimension	Material	Closure-screw	max. load F_{\max} [kN]	H	A	B	S	D	Weight [kg/pc.]	Packing [pc.]	Part-No.	
[mm]	[Inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]				
406*		50x5,0	-	16,00	416	-	486	457	13	2,783	1	0070978
457*		50x5,0	-	16,00	467	-	537	508	13	3,107	1	00709887
508*		50x5,0	-	16,00	519	-	588	559	13	3,431	1	0070995

* not certified acc. to RAL-GZ 655-B

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

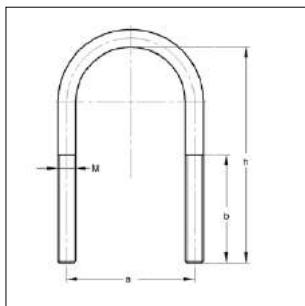
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

* not certified acc. to RAL-GZ 655-B.

■ U-bolt



U-bolt

**Specification**

- OD: 21,3 up to 323,9 mm
 Thread: M8, M10, M12, M20
 • for direct installation of piping onto steel structures
 • suitable for sprinkler
 • suitable for push-through-assembling into profile rails
 • bearing should be used with 2 nuts and 2 washers
 • fixed bearing should be used with 4 nuts and 4 washers
 • should not be used as fixpoint without required measures

Technical data:

Material: steel
 Surface: galvanized¹⁾

Admission:

- dimension 219,1 mm, M12 guideline VdS-2344 "requirements and testing methods for construction elements", VdS-approval No.: G 4940029
- other dimensions according to VdS-2092 guideline "planning and installation"

¹⁾ U-bolts for outdoor application with Zinc-Nickel-coating see chapter 14

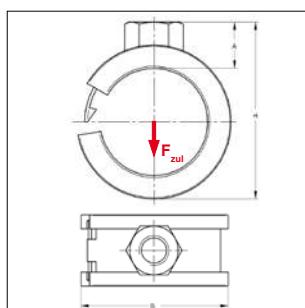
U-bolt differing from DIN 3570								without nuts
OD [mm]	Thread M [Inch]	Overall height h [mm]	Center distance a [mm]	Length of thread b [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	
21,3	1/2	M8	80	30	65	0,048	100	0507022
26,9	3/4	M8	80	35	65	0,058	100	0507028
33,7	1	M8	90	42	65	0,066	100	0507035
42,4	1 ^{1/4}	M8	100	51	70	0,074	100	0507042
48,3	1 ^{1/2}	M8	105	57	70	0,078	100	0507048
60,3	2	M10	120	71	70	0,141	100	0507060
76,1	2 ^{1/2}	M10	135	87	70	0,161	100	0507076
88,9	3	M10	150	100	70	0,179	50	0507089
108,0		M12	190	121	90	0,325	50	0507108
114,3	4	M12	195	126	90	0,334	50	0507114
133,0		M12	215	146	90	0,370	25	0507133
139,7	5	M12	220	152	90	0,387	25	0507140
159,0		M12	240	172	90	0,416	25	0507159
168,3	6	M12	250	180	90	0,433	25	0507168
219,1*	8	M12	300	233	95	0,525	25	0507219

U-bolt without nuts according to DIN 3570

273,0	10	M20	313	302	70	1,663	10	0507273
323,9	12	M20	364	352	70	1,929	1	0507324

■ Pipe clamp Clipstar, lined

01



Pipe clamp Clipstar, lined

Specification

Closure: hook closure
 Construction method: one-part
 OD: 10 up to 42 mm
 Connection: M8
 Sound insulation: according to DIN 4109

Technical data:

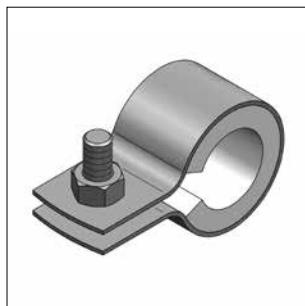
Material: steel
 Material type: DC01-A
 Surface: galvanized
 Sound insulation lining: rubber TPE
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 3 mm

Connection: Thread M8

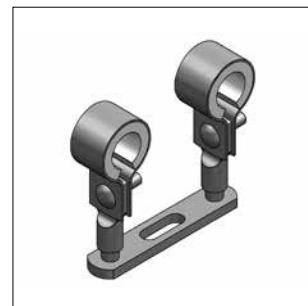
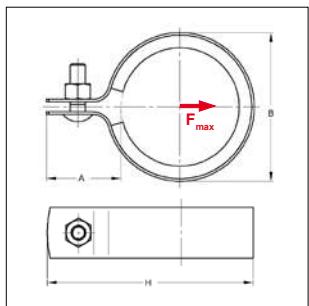
Dimension [mm]	Material [mm]	A [mm]	B [mm]	H [mm]	max. load F_{max} [kN]	with sound insulation lining		Rubber Part-No.
						Weight [kg/pc.]	Packing [pcs.]	
10	16x0,6	10	22	26	0,30	0,013	100	0290106
12	16x0,6	10	23	26	0,30	0,013	100	0290122
15	16x0,6	10	25	30	0,30	0,015	100	0290157
18	16x0,6	11	28	33	0,30	0,016	100	0290181
22	16x0,8	11	31	38	0,40	0,020	100	0290211
28	16x0,8	11	39	44	0,40	0,023	100	0290289
35	20x1,0	11	46	51	0,40	0,036	100	0290351
42	20x1,0	11	55	58	0,40	0,042	100	0290424

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

■ Visible pipe clamp, lined



Visible pipe clamp, lined

Option for assembly with
Double holder + Eye nut**Specification**

Closure: screwed closure
 Construction method: one-part
 OD: 15 up to 22 mm
 Sound insulation: according to DIN 4109

Accessory: Duplo eye nut

Double holder see chapter 5

Technical data:

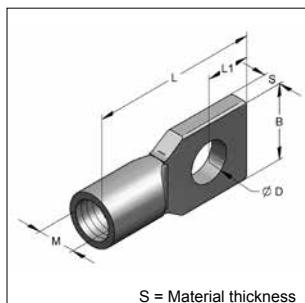
Material:	steel
Material type:	DC01-A, DD11
Surface:	galvanized
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	5 mm
Colour:	white

Visible pipe clamp

Visible pipe clamp				with sound insulation lining rubber					white	
Dimension [mm]	Material [inch]	Closure-screw	max. load F_{\max} [kN]	A [mm]	B [mm]	H [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	
15	20x1,0	M6	0,65	33	31	56	0,038	100	0311150	
18	3/8	20x1,0	M6	0,65	31	34	0,040	100	0311180	
22	1/2	20x1,0	M6	0,65	31	38	0,044	100	0311220	

Remark: Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

■ Duplo eye nut with female thread



S = Material thickness

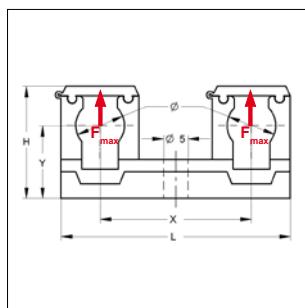
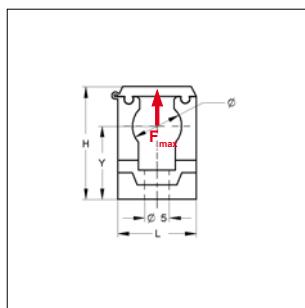
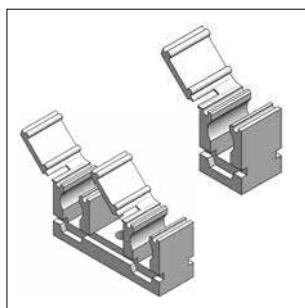
Duplo eye nut with
female thread

Material: cast-zinc
Material type: Z 410
Surface: raw

Type	D [mm]	L [mm]	L1 [mm]	B [mm]	S [mm]	Admissibly tensile loading [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
with female thread/M 6	9	38	10	17,5	4	1,0	0,018	100	0350133
with female thread/M 8	9	38	10	17,5	4	2,0	0,017	100	0350141

■ Pipe clip Clipmaster

01



Single- and double clip

Specification

Construction method: single-/ double clip
OD: 8 up to 35 mm
Mounting: with wood screws
DIN 96 Ø 3,5 - 4 mm

Technical data:

Material: Polyamide PA 6
Surface: weathering- and ageing proof
Temperature resistance: - 40 °C up to + 70 °C

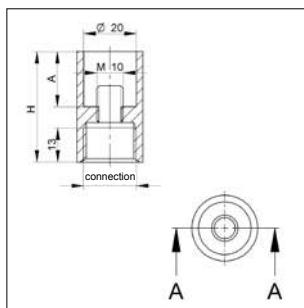
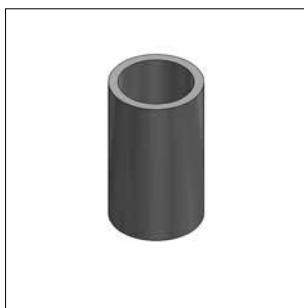
Single clip

OD [mm]	max. load F _{max} [kN]	H [mm]	Measures		Weight [kg/pc.]	Packing [pcs.]	Part-No.
8	0,09	23	16	14	0,004	100	0401080
10	0,25	23	16	15	0,004	100	0401102
12	0,25	23	16	15	0,002	100	0401129
15	0,25	28	20	17	0,005	100	0401153
18	0,35	31	23	19	0,007	100	0401188
22	0,35	35	29	20	0,007	100	0401226
28	0,35	40	35	23	0,010	100	0401285
35	0,35	47	43	26	0,013	100	0401358

Double clip

OD [mm]	max. load F _{max} [kN]	H [mm]	X [mm]	Y [mm]	L [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
10	0,25	23	31	15	47	0,010	100	0410101
12	0,25	23	32	15	47	0,008	100	0410128
15	0,25	28	36	17	55	0,011	50	0410152
18	0,35	31	39	19	60	0,012	50	0410187
22	0,35	35	45	20	73	0,018	50	0410225

■ Connection adaptor for pipe clamps



Connection adaptor
for pipe clamps

Specification

Field of application: thread adaptor
for pipe clamps
with stepped thread

Technical data:

Material: steel
Surface: galvanized

Suitable for pipe clamps: Trabant and Omnia MB with connection M8/M10

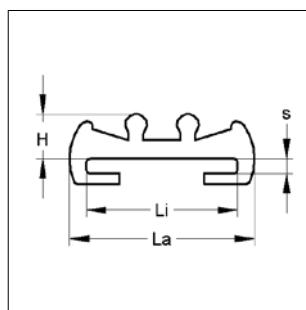
Connection with female thread	Dimension H [mm]	Dimension A [mm]	suitable for nut	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sleeve 1/2"	36	15	M8/M10	0,07	1	0830209

Suitable for pipe clamps: Maxima PSM, Omnia MB (132 - 168 mm) and Trabant (121 - 168 mm)

M16	42	21	M10/M12	0,101	1	0830202
Sleeve 1/2"	42	21	M10/M12	0,086	1	0830204

■ Sound insulation linings

01



Sound absorbing rubber profile

Sound insulation lining black (TPE)

Dimension Li x H [mm]	Measures Li [mm]	La [mm]	s [mm]	Weight [kg/m]	Packing [m]	Part-No.
20 x 4,5	20	26	2	0,100	50 m	720121401
25 x 4,5	25	28	2	0,123	50 m	720126001
20 x 6,0	20	26	2	0,130	50 m	720021801
25 x 6,0	25	28	3	0,164	50 m	720025001
30 x 6,0	30	36	3	0,213	40 m	720030701
35 x 6,0	35	40	4	0,250	40 m	720035801
50 x 6,0	50	56	5	0,341	20 m	720150801

Sound insulation lining red (Silicone)

20 x 6,0	20	26	2	0,154	50 m	7241208
25 x 6,0	25	28	3	0,174	50 m	7241259
30 x 6,0	30	36	3	0,226	50 m	7241305
35 x 6,0	35	40	4	0,265	50 m	7241356
50 x 6,0	50	56	5	0,363	50 m	7241518

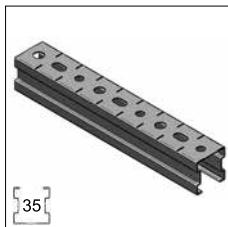
Technical data of MEFA sound insulation lining

MEFA pipe clamps with sound absorbing lining comply with DIN 4109. Test certificates on request.

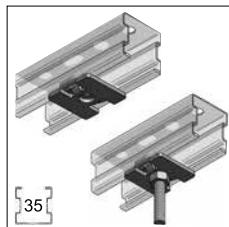
	Rubber	Rubber	Silicone
Material	Elastomer EPDM	Elastomer TPE	Silicone
Shore-hardness(DIN 53505)	50 ± 5° Shore	60 ± 5° Shore	60 ± 5 Shore
Tensile strength	-	-	800 N/cm ²
Ageing, weather and ozon resistance	acc. to DIN 53509 and 53508	acc. to DIN 53509 and 53508	acc. to DIN 53509 and 53508
Temperature resistance	- 35 °C up to + 110 °C	- 35 °C up to + 110 °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	Naturals 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)	silicone-free	silicone-free	
Building class	B2 (not burning, dropping off)	B2 (not burning, dropping off)	B2 (not burning, dropping off)

* also available with rubber flame retardant (B1) or glass fiber lining (up to + 450°C)

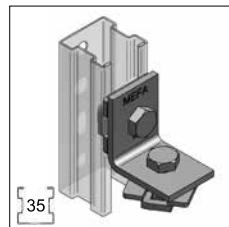
MEFA rail system



Profile rails STEX 35
Page 2/3



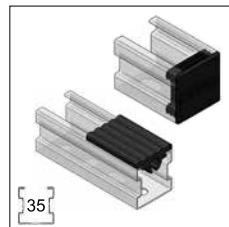
STEX 35 GP and GB
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STEX 35-angle
Page 2/5



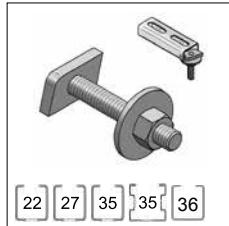
STEX 35-consoles
Page 2/6



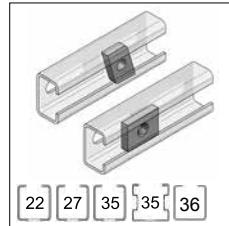
STEX 35 accessory
Page 2/8



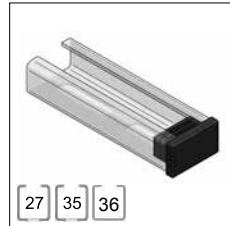
Profile rails 22 - 36
Page 2/9



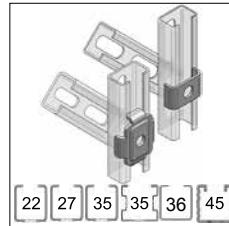
Hammer head screws
Page 2/10



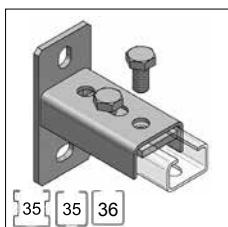
Threaded plate
Page 2/11



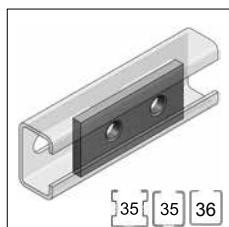
Protecting caps
Page 2/12



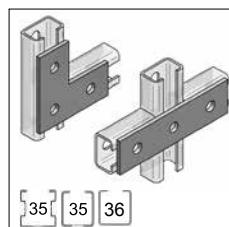
Profile holder
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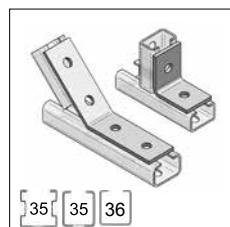
Holder 35
Page 2/14



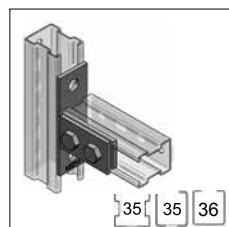
Threaded plate/ hole plate
Page 2/14



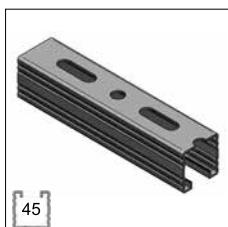
Flat connector
Page 2/15



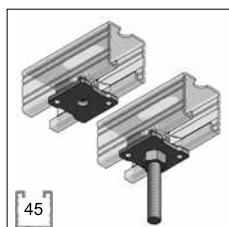
Angles
Page 2/15



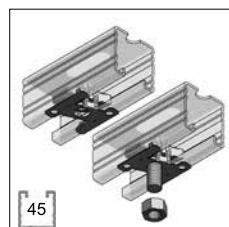
Connectors
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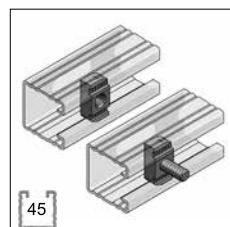
Profile rails 45
Page 2/20



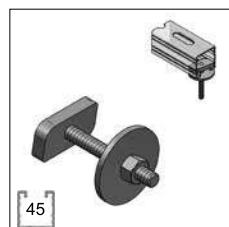
STEX 45 GP and GB
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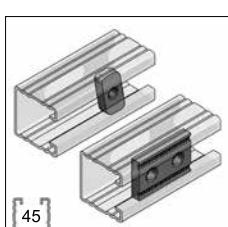
STEX 45 MP and MTB
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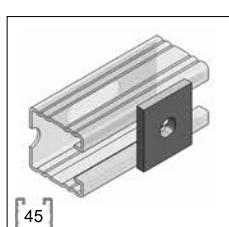
tooth plates / -bolts
Page 2/24



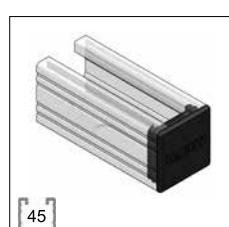
Hammer head screws
Page 2/25



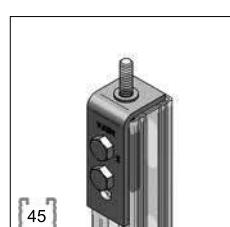
Threaded-/ tooth plates
Page 2/25



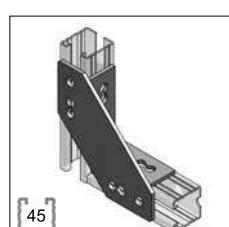
Perforated plates
Page 2/31



Protecting caps
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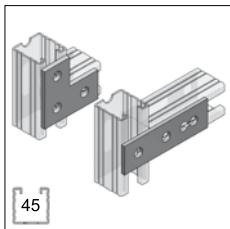
Head adapter
Page 2/31



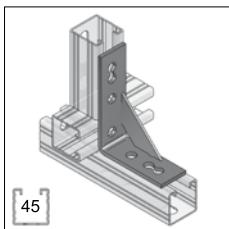
Universal knot
Page 2/32

MEFA rail system

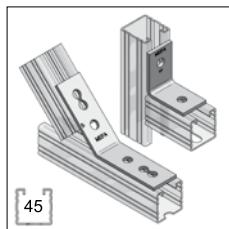
02



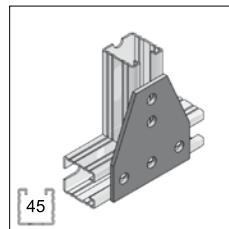
Flat connectors
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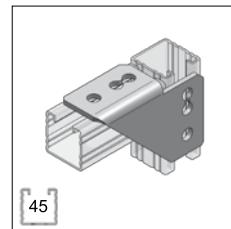
Knot triangles
Page 2/33



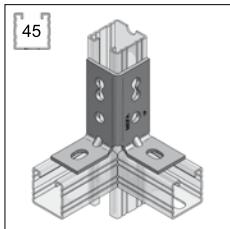
Angles
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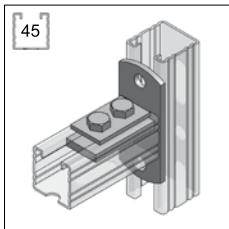
Lugs
Page 2/35



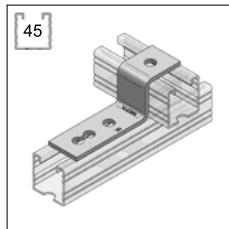
Corner angle
Page 2/35



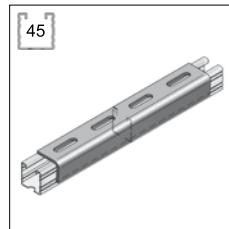
Angle connector
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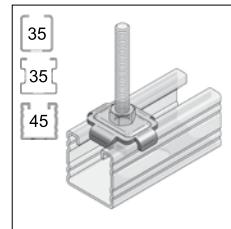
Front Connector
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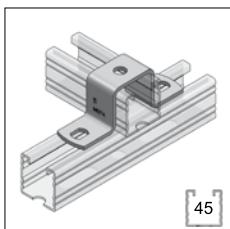
3-hole corresponding
Page 2/37



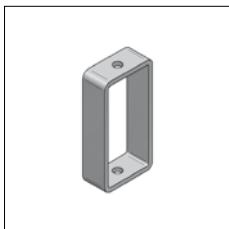
Connector 45
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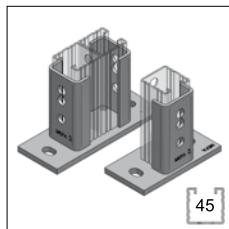
Profile holder
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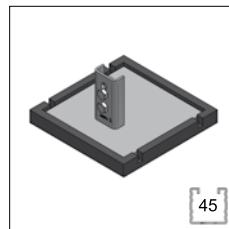
Head profile
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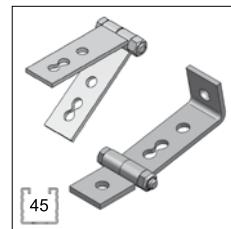
Suspending console
Page 2/39



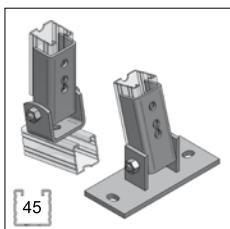
Holder
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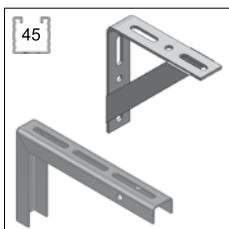
Rooftop holder
Page 2/40



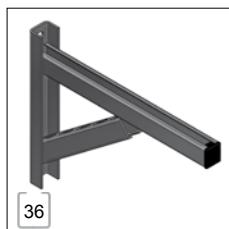
Joint connector
Page 2/41



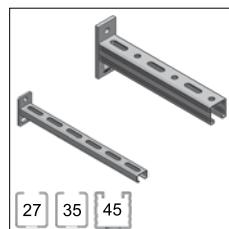
Joint holder
Page 2/43



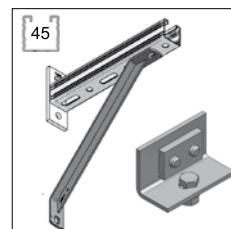
Consoles without
and with braces
Page 2/45



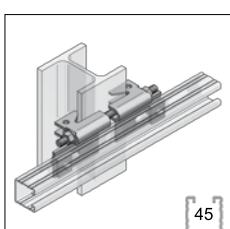
Carrier console
Page 2/46



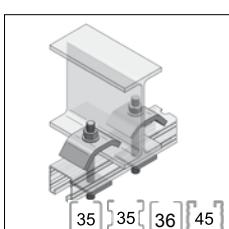
Consoles
Page 2/47



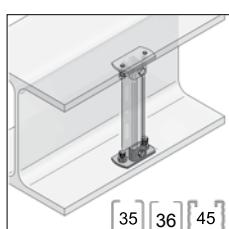
Brace 45°; Adapter angle
Page 2/54



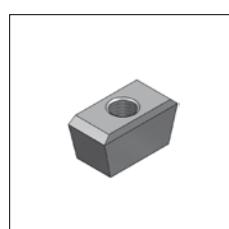
Girder connection vertical
Page 2/55



Girder connection
horizontal
Page 2/56 ff.



Girder clamping
Page 2/58

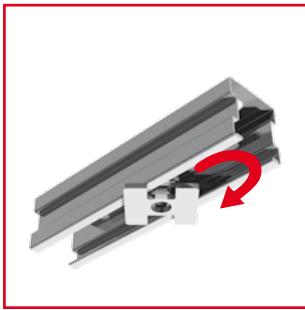


Wedge nut for ceiling
Page 2/58

Quick-fixing system STEX 35



Insert STEX



Turn STEX

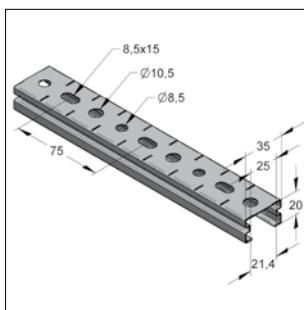


Position STEX

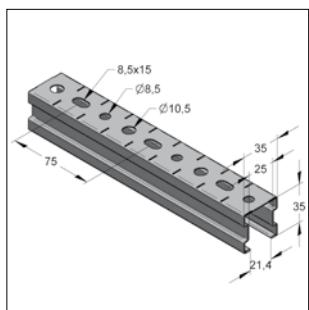


Counter STEX with nut

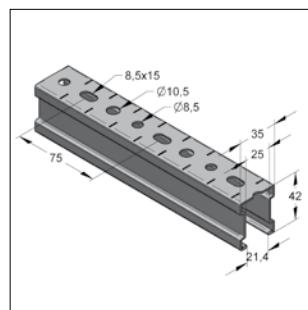
■ STEX 35 profile rail



STEX profile rail 35/20



STEX profile rail 35/35



STEX profile rail 35/42



Specification:

Profile rail type: C-profile
 Connection system: System STEX 35, system 35
 Hole pattern: round hole Ø 8,5 and 10,5 mm
 long hole 8,5 x 15 mm
 Center hole distance: 75 mm

Technical data:

Material: steel
 Materialtyp: S 250 GD-Z150-N-A, DIN EN 10346
 Surface: pre-galvanized

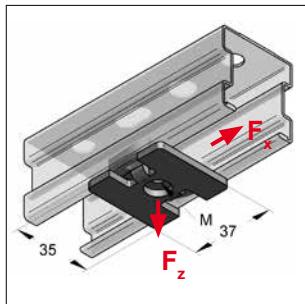
- Straight knurling against slipping of components
- Marking for fit-up aid and to cut rails

application loads see on page 2/13

Description	Length [m]	Width [mm]	Height [mm]	Weight [kg/m]	Packing [m]	Part-No.
35/20/0,8	2	35	20	0,64	336	1273520
35/20/0,8	3	35	20	0,64	504	1273523
35/35/1,0	2	35	35	1,03	252	1273538
35/35/1,0	3	35	35	1,03	378	1273539
35/42/1,5	2	35	42	1,63	80	12735422
35/42/1,5	6	35	42	1,63	240	12735426

Technical overview of profile rails see on page 2/58

■ STEX 35 threaded plate GP



STEX-threaded plate

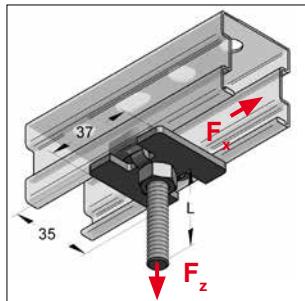
Specification:
Profile rail type: STEX
Profile rail type: 35 mm

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

application loads see on page 2/13

Description	Weight [kg/pc.]	Packing [pcs.]	Part-No.
STEX 35 threaded plate M8	0,039	50	127201001
STEX 35 threaded plate M10	0,039	50	127201101

■ STEX 35 threaded bolt GB



STEX threaded bolt

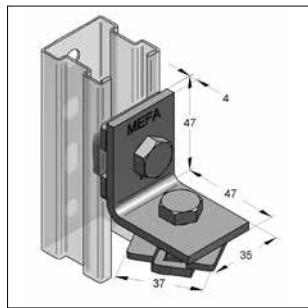
Specification:
For profile rail type: STEX
Profile rail type: 35 mm

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

application loads see on page 2/13

Description	Length L [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
STEX 35 threaded bolt M8/50	36	0,061	50	127805001
STEX 35 threaded bolt M8/70	56	0,067	50	127807001
STEX 35 threaded bolt M8/90	76	0,074	50	127809001
STEX 35 threaded bolt M8/110	96	0,080	25	127811001
STEX 35 threaded bolt M8/130	116	0,087	25	127813001
STEX 35 threaded bolt M10/50	34	0,076	50	127005001
STEX 35 threaded bolt M10/70	54	0,086	50	127007001
STEX 35 threaded bolt M10/90	74	0,097	50	127009001
STEX 35 threaded bolt M10/110	94	0,107	25	127011001
STEX 35 threaded bolt M10/130	114	0,117	25	127013001

■ STEX 35 universal angle



STEX 35 universal angle-set
Angle with two STEX threaded
plates (threaded plate turnable)

Specification:

For profile rail type:	STEX
Profile rail type:	35 mm
Remark:	suitable for all STEX-profile-rails

application loads see on page 2/13

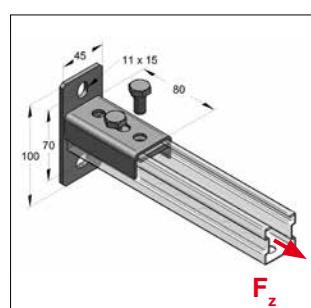
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

Description

Weight [kg/pc.]	Packing [pcs.]	Part-No.
0,216	25	127201801

STEX 35 universal angle



Holder 35 vertical

Specification:

Profile rail type:	C-Profile 35,36 and STEX 35
Scope of delivery:	completely pre-assembled with 2-hole-threaded plate M10 and hexagon screws M10

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

* Loads are based on component, not connection

Description

Dimension
base plate

tightening
torque
[Nm]

max. load *
 F_z
[kN]

Weight
[kg/pc.]

Packing
[pcs.]

Part-No.

Holder 35 vertical
Holder 35 horizontal

100 x 45 x 4,0 mm
100 x 45 x 4,0 mm

25
25

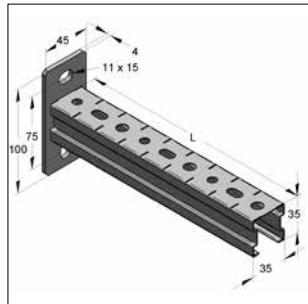
2,0
2,0

0,374
0,374

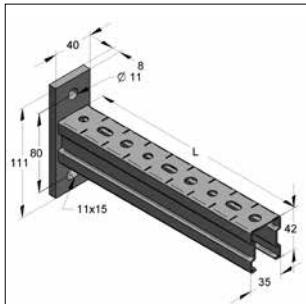
25
25

080213402
080213502

■ STEX 35 console



STEX console 35/35
Profile opening on bottom side



STEX console 35/42
Profile opening on bottom side

Technical data: galvanized

Material:	steel
Material type profile rail:	S235JR
Material type plate:	S235JR
Surface:	galvanized
global safety coefficient γ :	1,35

Static values only apply to Stex console 35/42:

limitation torque	M_G : 312,72 Nm
Reaction force	F_{AX} : 3,91 kN
Reaction force	F_{BX} : 3,91 kN
M_G , F_{AX} , F_{BX} on	LF1: up to $L = 825,0$ mm
1,35	LF2: up to $L = 525,0$ mm
	LF3: up to $L = 675,0$ mm

* max. load at elastic limit of $\sigma_{max.} = 160$ N/mm² and max. bending of $f = L/150$

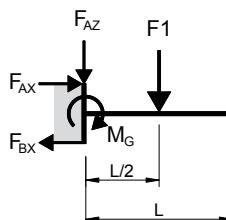
STEX console 35/35 - profile rails 35/35/1 - plate 100 x 45 x 4 mm

Description	Length [mm]	max. load *			Weight [kg/pc.]	Packing [pcs.]	Part-No.
		Loading cond. 1 F1 [kN]	Loading cond. 2 F2 [kN]	Loading cond. 3 q0 [kN/m]			
STEX 35 console	150	2,05	1,02	0,285	0,285	25	1274150
STEX 35 console	225	1,37	0,68	0,362	0,362	25	1274225
STEX 35 console	300	1,02	0,51	0,440	0,440	25	1274300
STEX 35 console	375	0,82	0,41	0,517	0,517	25	1274375
STEX 35 console	450	0,68	0,34	0,594	0,594	20	1274450
STEX 35 console	525	0,59	0,28	0,671	0,671	20	1274525

STEX console 35/42 - profile rails 35/42/1,5 - plate 111 x 40 x 8 mm

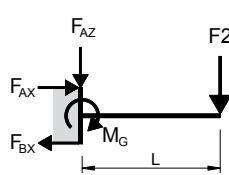
STEX 35 console	225	2,78	1,39	0,630	0,630	20	12760225
STEX 35 console	300	2,08	1,04	0,752	0,752	20	12760300
STEX 35 console	450	1,39	0,69	0,997	0,997	15	12760450
STEX 35 console	525	1,19	0,60	1,119	1,119	15	12760525
STEX 35 console	600	1,04	0,49	1,241	1,241	10	12760600

Loading condition 1



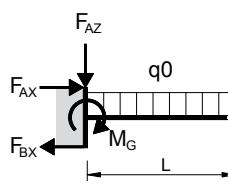
$$F_{AZ} = F1 \quad M_G = \frac{F1 * L}{2}$$

Loading condition 2



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

Loading condition 3

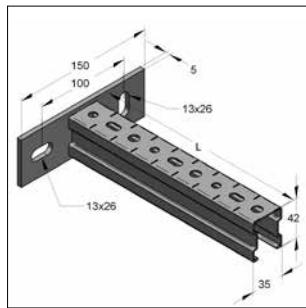


$$F_{AZ} = q0 * L \quad M_G = \frac{q0 * L^2}{2}$$

Notice:

all loads referring to static loads

■ STEX 35 console 35/42 plate horizontal



STEX console 35/42 horizontal
Profile opening on bottom side

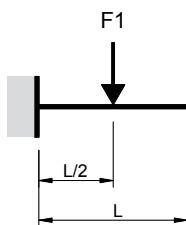
Technical data: galvanized

Material:	steel
Material type profile rail:	S235JR
Material type plate:	S235JR
Surface:	galvanized
global safety coefficient γ :	1,35

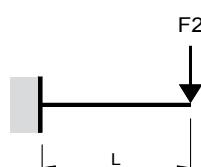
* max. load at elastic limit of $\sigma_{max} = 160 \text{ N/mm}^2$ and max. bending of $f = L/150$

Description	Length [mm]	Loading cond. 1 F1 [kN]	max. load * Loading cond. 2 F2 [kN]	Loading cond. 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
STEX 35 console 35/42 horizontal	300	1,46	0,73	4,8	0,765	20	127603001
STEX 35 console 35/42 horizontal	450	0,96	0,48	2,1	1,010	15	127604501

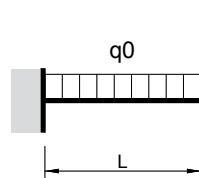
Loading condition 1



Loading condition 2

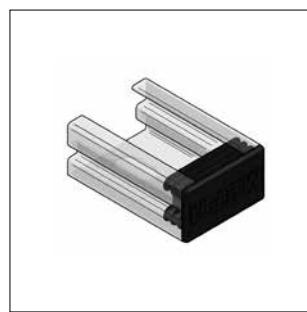


Loading condition 3

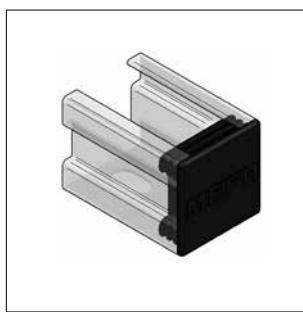


Remark:

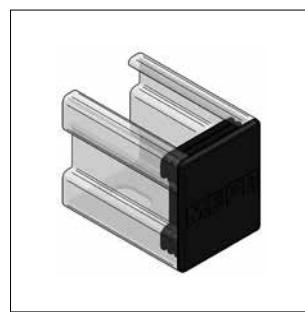
all loads referring to static loads



STEX protecting cap 35/20



STEX protecting cap 35/35



STEX protecting cap 35/42

Specification:

Profile rail type: STEX 35
Profile rail type: 35 mm

Technical data:

Material: plastic PE
Material colour: black

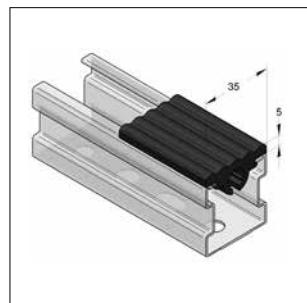
Description

Weight [kg/pc.]
Packing [pcs.]

Part-No.

STEX 35 protecting cap 35/20
STEX 35 protecting cap 35/35
STEX 35 protecting cap 35/42

0,003	50	1272017
0,005	50	1272016
0,005	50	1272024

■ STEX 35 rail rubber

STEX 35 rail rubber

Specification:

sound-, soil- and insulation resistance between rail and supporting element (e.g. ventilation duct) is guaranteed.
Mounting profiles for rapid mounting.
Suitable for STEX 35 profile rails and threaded rod M8 and M10

Technical data:

Material: Rubber TPE
Material colour: black
Temperature-resistance: - 35 °C up to + 100 °C

Description

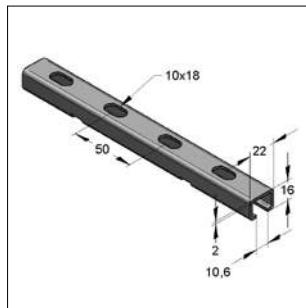
Weight [kg/m]
Packing

Part-No.

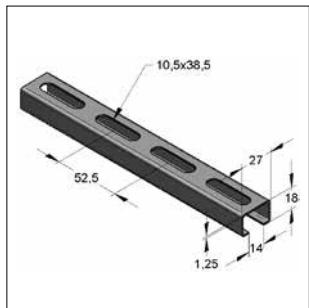
STEX 35 rail rubber, roll
STEX 35 rail rubber, part 50 mm

0,302	20 m	1272019
0,016/pc	50 pcs.	1272020

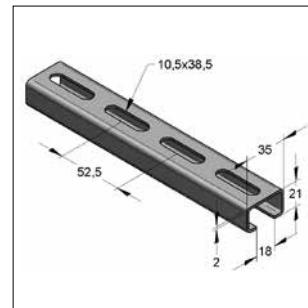
■ Profile rails, pre-galvanized, C-profile rail, perforated



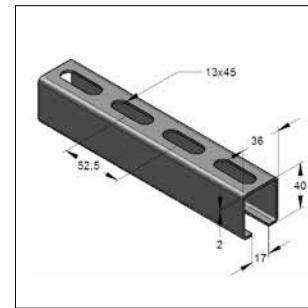
Type 22/16



Type 27/18



Type 35/21



Type 36/40

Specification:

Material: S250GD-Z275-N-A (EN 10346)
 Surface: pre-galvanized
 (sendzimir galvanized)

**Type 22/16**

Description	Corrosion protection	Weight [kg/m]	Length [m]	Packing [m]	Bulk pack [m]	Part-No.
22/16/2,0 fbv	pre-galvanized	0,78	2	20	640	0800013

Type 27/18

27/18/1,25 fbv	pre-galvanized	0,60	2	20	1000	1240013
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Type 35/21

35/21/2,0 fbv	pre-galvanized	1,16	2	12	192	0800022
35/21/2,0 fbv	pre-galvanized	1,16	6	36	576	0800026

Type 36/40

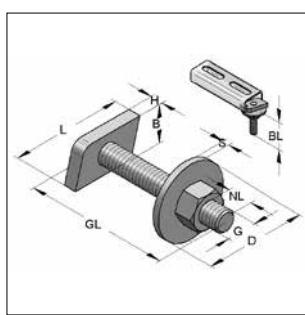
36/40/2,0 fbv	pre-galvanized	1,82	2	12	80	0800032
36/40/2,0 fbv	pre-galvanized	1,82	6	72	240	080003601



technical overview of profile rails see on page 2/58

profile rails in stainless steel V2A or V4A see chapter 13

profile rails with coating on request



Hammer head screw

Specification:

Mounting method: for glide fast connections and shear hole haunch connections with MEFA profile rails
 Application area: should preferably be used for pipe clamp mounting

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/13

¹⁾ not suitable for thread M8/M10²⁾ not suitable for thread M10/M12**For profile rails 22/16**

Description	G x GL [mm]	L x B x H [mm]	S [mm]	D [mm]	Usable length NL [mm]	Construction length BL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hammer head screw	M8x25¹⁾	17x17x5	2	25	9,5	18	0,029	100	0692320
Hammer head screw	M8x30	17x17x5	2	25	14,5	23	0,031	100	0692328
Hammer head screw	M8x40	17x17x5	2	25	24,5	33	0,034	100	0692330
Hammer head screw	M10x40	17x17x5	2	20	23,0	33	0,044	100	0693340

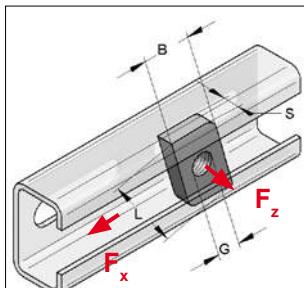
For profile rails 27/18

Hammer head screw	M8x20¹⁾	24x13x4	2	25	6,3	15	0,025	100	0695289
Hammer head screw	M8x30	24x13x4	2	25	16,3	25	0,028	100	0695300
Hammer head screw	M8x40	24x13x4	2	25	26,3	35	0,032	100	0695327

For profile rails 35/21, 36/40, STEX 35/20, STEX 35/35, STEX 35/42

Hammer head screw	M8x30¹⁾	35x18x6	3	35	12,5	22	0,060	50	0697044
Hammer head screw	M8x40	35x18x6	3	35	22,5	32	0,063	50	0697051
Hammer head screw	M8x50	35x18x6	3	35	32,5	42	0,066	50	0697060
Hammer head screw	M8x70	35x18x6	3	35	52,5	62	0,073	50	0697075
Hammer head screw	M10x30²⁾	35x18x6	3	35	10,5	22	0,070	50	0697540
Hammer head screw	M10x40	35x18x6	3	35	21,0	32	0,075	50	0697560
Hammer head screw	M10x50	35x18x6	3	35	31,0	42	0,080	50	0697570
Hammer head screw	M10x70	35x18x6	3	35	51,0	62	0,090	50	0697590
Hammer head screw	M12x35	35x18x6	3	37	14,0	27	0,086	50	0698040
Hammer head screw	M12x50	35x18x6	3	37	29,0	42	0,097	50	0698050
Hammer head screw	M12x70	35x18x6	3	37	49,0	62	0,111	50	0698070

■ Threaded plate



Threaded plate

Specification:
 Mounting method:

for glide fast connections and shear hole haunch connections with MEFA profile rails in combination with hexagon screws, threaded bolts or rods (property class 4.6), washers and hexagon nuts

Application area:

for direct mounting of pipe clamps or bearing support

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/13

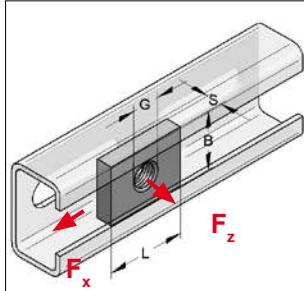
For profile rails 27/18

Description	Thread G	Dimension L x B x S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded plate 28 x 15	M8	24 x 13 x 4	0,008	100	0750069

For profile rail 35/21, 36/40, Stex 35/20, Stex 35/35, Stex 35/42

Threaded plate 38 x 17	M8	35 x 18 x 6	0,024	100	0750077
Threaded plate 38 x 17	M10	35 x 18 x 6	0,023	100	0750085
Threaded plate 38 x 17	M12	35 x 18 x 6	0,022	100	0750093

■ Threaded square plate



Threaded square plate

Specification:
 Mounting method:

for glide fast connections and shear hole haunch connections with MEFA profile rails in combination with hexagon screws, threaded pins or rods (property class 4.6), washers and hexagon nuts

Application area:

for mounting of connecting parts and profile rails

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

application loads see on page 2/13

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

For profile rail 22 mm

Description	Dimension L x B x S [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded square plate	17 x 17 x 5	M6	0,011	100	0740012
Threaded square plate	17 x 17 x 5	M8	0,010	100	0740020
Threaded square plate	17 x 17 x 5	M10	0,010	100	0740039

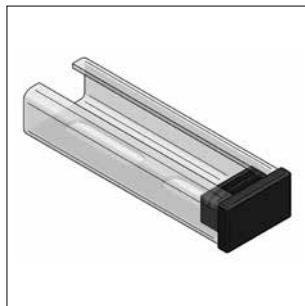
For profile rail 27, 35, 36 mm

Threaded square plate	30 x 22 x 6	M8	0,030	100	0750808
Threaded square plate	30 x 22 x 6	M10	0,029	100	0750810

For profile rail 35, 36 mm (*should not be used for STEX 35/20 and 35/35)

Threaded square plate	35 x 30 x 6	M8	0,048	50	0816112
Threaded square plate	35 x 30 x 6	M10*	0,047	50	081612001
Threaded square plate	35 x 30 x 6	M12*	0,046	50	081613801
Threaded square plate	35 x 30 x 8	M16*	0,058	50	0816146

■ Protecting cap



Protecting cap

Specification:

Profile rail type: C-Profile 27/18, 35/21, 36/40
 Profile rail type: 27 mm, 35 mm, 36 mm

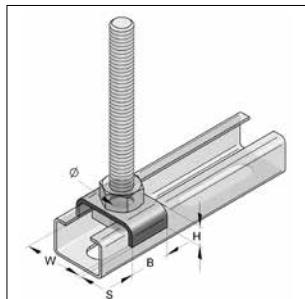
Technical data:

Material: plastic PE
 Material colour: black

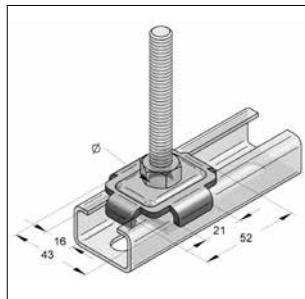
02

Description	For profile rail	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Protecting cap	27/18	0,005	50	0809032
Protecting cap	35/21	0,006	50	0809012
Protecting cap	36/40	0,009	50	0809045

■ Profile holder



Profile holder



Profile holder combi

Specification:

Profile rail type: C-Profile 22, 27, 35, 36, STEX 35
 C-Profile 45

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

For profile rail 22

Description	W [mm]	B [mm]	Dimension hole-Ø [mm]	H [mm]	S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile holder 22	23,0	20	10,5	10	2	0,013	100	0809502

For profile rail 27

Profile holder 27	28,0	20	10,5	8	2	0,013	100	0809504
--------------------------	------	----	------	---	---	-------	-----	---------

For profile rail 35, 36, 45 mm and STEX 35

Profile holder combi 11	-	-	11,0	-	-	0,049	100	08095035
Profile holder combi 13	-	-	13,0	-	-	0,047	100	08162945

■ 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]
STEX 35/20/0,8	1,5	0,4		
STEX 35/35/1,0		0,5	12	10
STEX 35/42/1,5	2,5			

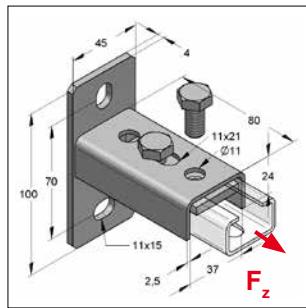
Profile rail pre-galvanized	Threaded plate 28 x 15 (24 x 13 x 4)			
				
	F_z [kN]	F_x [kN]	M8 4.6 [Nm]	
27/18/1,25	1,4	0,5	10	

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					
36/40/2,0					
STEX 35/20/0,8	1,8	0,5	30	25	20
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				
35/21/2,0		0,5	30	25	20
36/40/2,0	4,3				

Holder 35



Holder 35 vertical

Specification:

Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42
Scope of delivery: completely pre-assembled with 2-hole-threaded plate M10 and hexagon screws M10

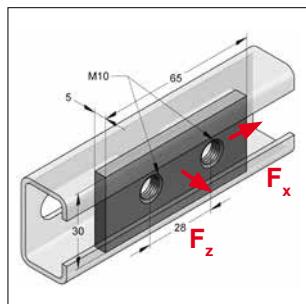
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

* Loads are based on component, not connection

Description	Dimension base plate	tightening torque [Nm]	max. load * F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Holder 35 vertical	100 x 45 x 4,0 mm	25	2,0	0,374	25	080213402
Holder 35 horizontal	100 x 45 x 4,0 mm	25	2,0	0,374	25	080213502

2-hole threaded plate



2-hole threaded plate 35/4

Specification:

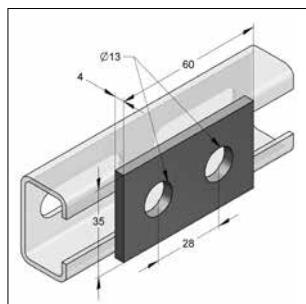
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42
Application area: for mounting of connecting parts and profile rails

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Description	Dimension [mm]	Thread	tightening torque [Nm]	max. load F_x [kN]	max. load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole threaded plate	65 x 30 x 5	M10	25	1,1	5,0	0,072	50	0816092

2-hole plate 35/4



2-hole plate 35/4

Specification:

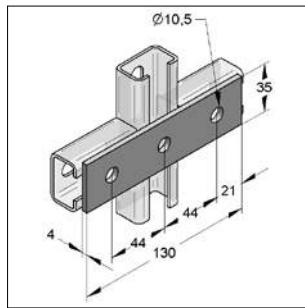
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42
Application area: for connections between profile rails and components

Technical data:

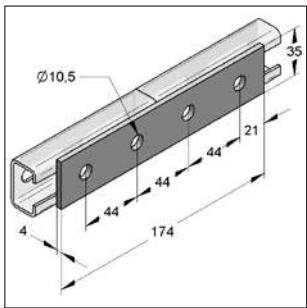
Material: steel
Material type: S235JR
Surface: galvanized

Description	Dimension	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole plate 35/4	60 x 35 x 4	0,059	50	0816086

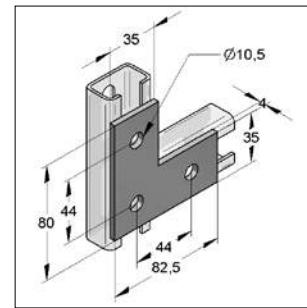
Flat connector 35/4



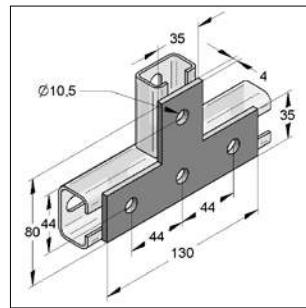
3-hole flat connector 35/4



4-hole flat connector 35/4



Flat connector 35/4 L-shape



Flat connector 35/4 T-shape

Specification:

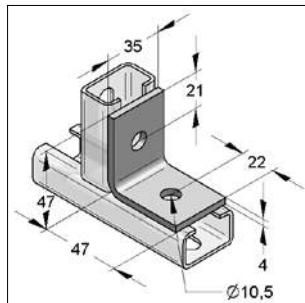
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42

Technical data:Material: steel
Material type: S235JR
Surface: galvanized

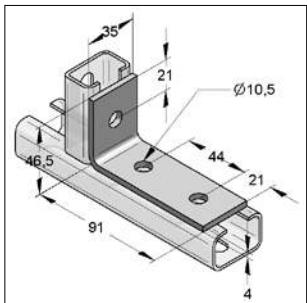
Remark: admissible loads are depending on component.

Description	Dimension [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
3-hole flat connector 35/4	130 x 35 x 4	0,138	25	0814457
4-hole flat connector 35/4	174 x 35 x 4	0,184	25	0814465
Flat connector 35/4 L-shape	82,5 x 80 x 4	0,135	25	0814430
Flat connector 35/4 T-shape	130 x 80 x 4	0,185	25	0814449

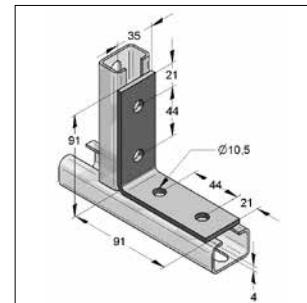
Angle 35/4



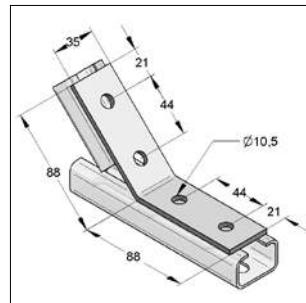
2-hole angle 35/4



3-hole angle 35/4 K



4-hole angle 35/4 90°



4-hole angle 35/4 135°

Specification:

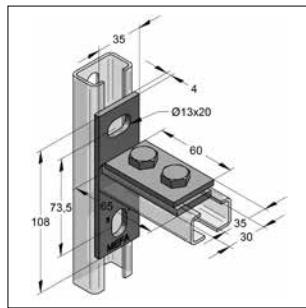
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42

Technical data:Material: steel
Material type: S235JR
Surface: galvanized

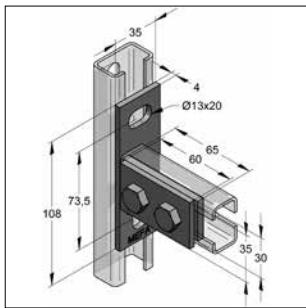
Remark: admissible loads are depending on component.

Description	Dimension [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole angle 35/4	47 x 47	0,094	100	0814510
3-hole angle 35/4 K	91 x 47	0,139	50	0814520
4-hole angle 35/4 90°	91 x 91	0,185	50	0814530
4-hole angle 35/4 135°	88 x 88	0,185	50	0814540

■ Connector 35



Connector 35 horizontal



Connector 35 vertical

Specification:

Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

Scope of supply: 2-hole plate 13 mm
hexagon screw M10Remark:

- not applicable as ceiling support or vertical use (hanging)
- no use as console connection

Description	Screws	Plate L x B x S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 35 horizontal	M10	108 x 35 x 4	0,283	20	081645302
Connector 35 vertical	M10	108 x 35 x 4	0,283	20	081655802

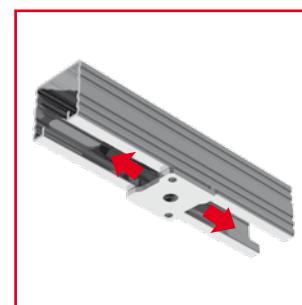
Quick-fixing system Stex 45



Insert Stex in



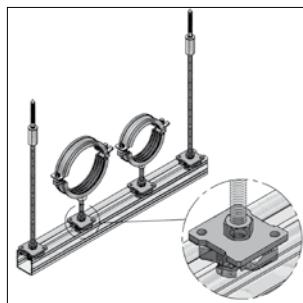
Turn Stex



Position Stex



Counter Stex with nut

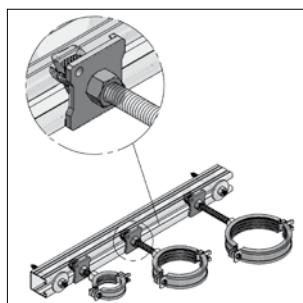


■ Stex 45 threaded plate GP

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, turn it about 45°, 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

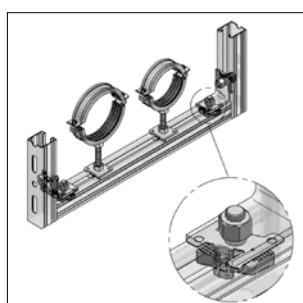


■ Stex 45 threaded bolt GB

optional with threaded pin M8, M10 or M12

Your advantages:

- tooth and counter plate, as well as threaded pin can be replaced by one-part STEX 45 threaded bolt
- insert STEX 45 threaded bolt into profile rail, turn it about 45°, 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

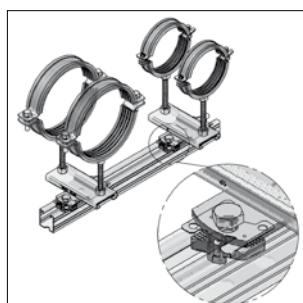


■ Stex 45 mounting bolt MTB

for mounting the rail constructions

Your advantages:

- insert mounting bolt into profile rail, turn it about 45°, position component and counter nut
- circumstantial insertion of tooth bolts and tooth plates is not necessary
- profile rail keeps components on its own
- 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, turn it about 45°, 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

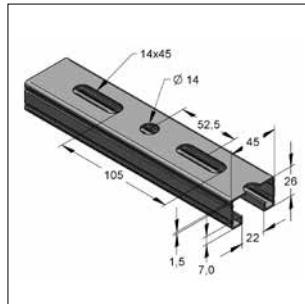
Identification - catalogue page	Part-No.	Profile type					Recommended connecting parts					
		45/45	45/60	45/75	45/90	45/120	45/150	Mounting plate M12	Mounting bolt	Tooth plate M12	Threaded square plate M12	
Identification - catalogue page	Part-No.							1280012	1280001	0818103	081613801	0818110
2-hole angle 40/5	081402400											
								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	
Page 2/34												
3-hole angle 40/5	L 08140300											
	K 08140400							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 Mounting bolt 3 hex. screws M12x25
Page 2/34												
4-hole angle 40/5	08141000											
45°	08140500							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
90°	08140600											
135°												
Page 2/34												
4-hole knot triangle	08140701											
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
Universal knot	08141600											
Page 2/32												
5-hole knot triangle	08141701											
Page 2/33								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 Mounting bolt Accessory: 5 hex. screws M12x25
3-hole flat connector	0814331											
Page 2/33								Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x2	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
4-hole flat connector	0814349											
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	
Flat connector 40/6	0814307											
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	
Page 2/33												
Flat connector 40/6	0814315											
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	
Page 2/33												
Universal knot K	08141601											
Page 2/32								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 *	
4-hole corner angle												
left	08147100							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	08147200											
Page 2/35												
Cross strap	0816582											
Page 2/35								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 Mounting bolt + 6 hex. screws M12x25

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

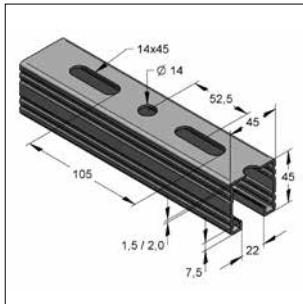
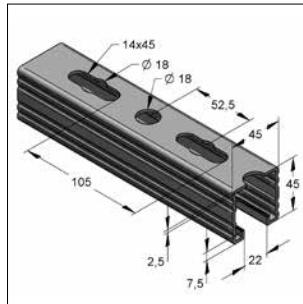
System components		Profile type					Recommended connecting parts					
		45/45	45/60	45/75	45/90	45/120	45/150	Mounting plate M12	Mounting bolt	Tooth plate M12	Threaded square plate M12	2-hole tooth plate M12
Identification - catalogue page	Part-No.							1280012	1280001	0818103	081613801	0818110
T-lug not angled 90° angled Page 2/35	0816574 0816870	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	□ ○	□ ○	●	□▲○	▲●
4-hole corner plate Page 2/35	08165900	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	○	▲○	▲○
Angle connector Angle connector 90° Angle connector 180° Page 2/36	08123000 08123200 08123100	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	○	▲○	▲○
Head profile 45 60 75 90 120 150 Page 2/38	08162445 0816253 08162875 08162690 0816274 081628150	■	■	■	■	■	■	○	●	○		
3-hole corresp. angle 45 3-hole corresp. angle 60 Page 2/37	08141245 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 Mounting bolt 3 hex. screws M12x25
Profile holder combi 13 mm - hole Ø 17 mm - hole Ø Page 2/38	08162945 08163365	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	●	○	
Connector 45 Page 2/37	08162000	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	○	□○▲	▲○
Holder 45/26-52 vertical 45/26-75 horizontal 45/60-75 vertical Page 2/39	08120102 08120402 08121802	■						●	□○	○	▲○	●
Holder 45/90 45/120 45/150 Page 2/39	08120952 08121002 08121452				■			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
Joint holder vertical horizontal Page 2/44	08120600 08121100	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	○	▲○	▲○
Joint holder with base plate vertical Page 2/43	08122600 08122500	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	○	●	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 Joint holder Joint connector Page 2/36 Page 2/44 Page 2/41		Page 2/36 Page 2/44 Page 2/41										

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

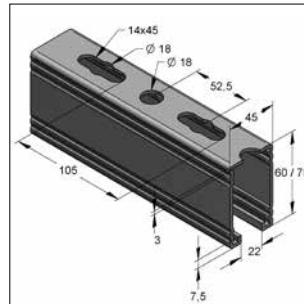
■ Profile rail 45, galvanized, C-profile rail, perforated, toothed



Type 45/26/1,5

Type 45/45/1,5
and Type 45/45/2,0

Type 45/45/2,5

Type 45/60/3,0
and Type 45/75/3,0**Specification:**

Profile rail type: C-profile rail, perforated, toothed
 Mounting method: form-locking connections and shear hole haunch connections
 Remark: double rails are perforated and welded

Technical data:

Material: steel
 Material type: S250GD-Z275-N-A
 Surface: pre-galvanized
 Material type: S235JRG2
 Surface: hot-dip galvanized

¹⁾ variations up to 1 mm at hot-dip galvanized elements possible²⁾ not certified acc. RAL³⁾ Load calculation acc. DIN EN 1993-1-2 (EC3)**Type 45/26**

Identification	Surface	Weight [kg/m]	Length [m]	Bulk pack [m]	Part-No.
45/26/1,5 fbv	pre-galv.	1,34	2	120	08202622
45/26/1,5 fbv	pre-galv.	1,34	6	360	08202662

Type 45/45

45/45/1,5 fbv	pre-galv.	1,89	2	80	082045215
45/45/1,5 fbv	pre-galv.	1,89	6	240	082045615
45/45/2,0 fbv ³⁾	pre-galv.	2,45	2	80	082045220
45/45/2,0 fbv ³⁾	pre-galv.	2,45	6	240	082045620
45/45/2,5 fbv ³⁾	pre-galv.	2,96	3	120	0820453251
45/45/2,5 fbv ³⁾	pre-galv.	2,96	6	240	0820456251
45/45/2,5 fsv ^{1) 3)}	hot-dip galv.	3,21	3	120	0820453252
45/45/2,5 fsv ^{1) 3)}	hot-dip galv.	3,21	6	240	0820456252

Type 45/60

45/60/3,0 fbv ³⁾	pre-galv.	4,06	6	180	0810762
45/60/3,0 fsv ^{1) 2) 3)}	hot-dip galv.	4,35	6	180	0810770

Type 45/75

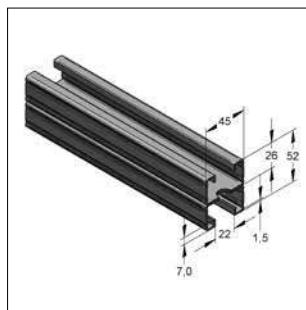
45/75/3,0 fbv ³⁾	pre-galv.	4,82	6	180	08207562
45/75/3,0 fsv ^{1) 2) 3)}	hot-dip galv.	5,15	6	180	08207561

(i) technical overview of profile rails see on page 2/58

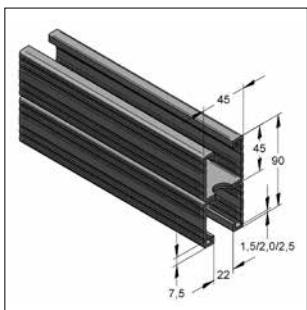
profile rails made of stainless steel V2A or V4A see in chapter 13

profile rails with various coatings on request

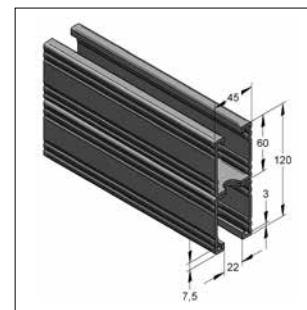
Profile rail 45, galvanized, C-profile rail, perforated, toothed



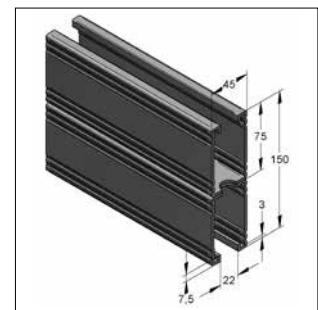
Type 45/52



Type 45/90



Type 45/120



Type 45/150

Specification:

Profile rail type: C-profile rail, perforated, toothed
 Mounting method: form-locking connections and shear hole haunch connections
 Remark: double rails are perforated and welded

Technical data:

Material: steel
 Material type: S250GD-Z275-N-A
 Surface: pre-galvanized
 Material type: S235JRG2
 Surface: hot-dip galvanized



¹⁾ variations up to 1 mm at hot-dip galvanized elements possible

²⁾ not certified acc. RAL

³⁾ Load calculation acc. DIN EN 1993-1-2 (EC3)

**Type 45/52**

Identification	Surface	Weight [kg/m]	Length [m]	Bulk pack [m]	Part-No.
45/52/1,5 D fbv ³⁾	pre-galv	2,69	6	180	08215262

Type 45/90

45/90/1,5 D fbv ³⁾	pre-galv	3,78	6	120	0821901615
45/90/2,0 D fbv ³⁾	pre-galv	4,90	6	120	0821901620
45/90/2,5 D fbv ³⁾	pre-galv	5,92	6	120	0821901625
45/90/2,5 D fsv ^{1) 3)}	hot-dip galv	6,35	6	120	0821902625

Type 45/120

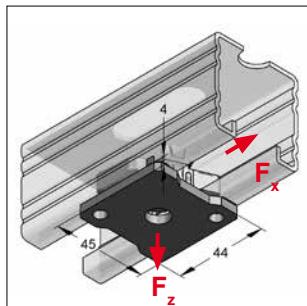
45/120/3,0 D fbv ³⁾	pre-galv	8,12	6	96	0810825
45/120/3,0 D fsv ^{1) 3)}	hot-dip galv	8,63	6	96	0810833

Type 45/150

45/150/3,0 D fbv ³⁾	pre-galv	9,64	6	96	08225062
45/150/3,0 D fsv ^{1) 2) 3)}	hot-dip galv	10,24	6	96	08225061

(i) Technical overview of profile rails see on page 2/58

■ STEX 45 threaded plate GP

**Specification:**

Profile rail type: rail system 45, toothed
 Mounting method: form-locking connections and shear hole haunch connections
 Applications area: pipe clamp fixation

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/27

* not certified acc. to RAL

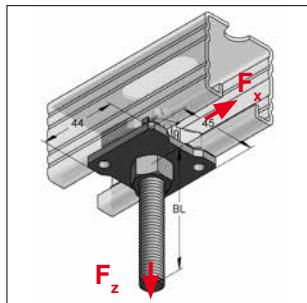
Stex 45 threaded plate GP

Identification

Stex 45 threaded plate GP M8*
Stex 45 threaded plate GP M10
Stex 45 threaded plate GP M12

	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 threaded plate GP M8*	0,113	30	1280508
Stex 45 threaded plate GP M10	0,111	30	1280510
Stex 45 threaded plate GP M12	0,108	30	1280512

■ STEX 45 threaded bolt GB

**Specification:**

Profile rail type: rail system 45, toothed
 Mounting method: form-locking connections and shear hole haunch connections
 Applications area: pipe clamp fixation

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 Threaded bolt: property class 4.6

application loads see on page 2/29

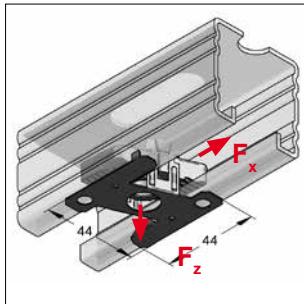
Stex 45 threaded bolt GB

Identification

Stex 45 threaded bolt GB M8/50
Stex 45 threaded bolt GB M8/70
Stex 45 threaded bolt GB M8/90
Stex 45 threaded bolt GB M8/110
Stex 45 threaded bolt GB M8/130
Stex 45 threaded bolt GB M10/50
Stex 45 threaded bolt GB M10/70
Stex 45 threaded bolt GB M10/90
Stex 45 threaded bolt GB M10/110
Stex 45 threaded bolt GB M10/130
Stex 45 threaded bolt GB M12/50
Stex 45 threaded bolt GB M12/70
Stex 45 threaded bolt GB M12/90
Stex 45 threaded bolt GB M12/110
Stex 45 threaded bolt GB M12/130

	Construction length BL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 threaded bolt GB M8/50	23	0,134	40	1281050
Stex 45 threaded bolt GB M8/70	43	0,141	20	1281070
Stex 45 threaded bolt GB M8/90	63	0,147	20	1281090
Stex 45 threaded bolt GB M8/110	83	0,154	20	1281110
Stex 45 threaded bolt GB M8/130	103	0,160	20	1281130
Stex 45 threaded bolt GB M10/50	23	0,147	40	1282050
Stex 45 threaded bolt GB M10/70	43	0,157	20	1282070
Stex 45 threaded bolt GB M10/90	63	0,166	20	1282090
Stex 45 threaded bolt GB M10/110	83	0,178	20	1282110
Stex 45 threaded bolt GB M10/130	103	0,188	20	1282130
Stex 45 threaded bolt GB M12/50	23	0,159	40	1283050
Stex 45 threaded bolt GB M12/70	43	0,174	20	1283070
Stex 45 threaded bolt GB M12/90	63	0,189	20	1283090
Stex 45 threaded bolt GB M12/110	83	0,203	20	1283110
Stex 45 threaded bolt GB M12/130	103	0,218	20	1283130

■ STEX 45 mounting plate MP


Specification:

Profile rail type: rail system 45, toothed
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts
 Required accessory: hexagon screw FK 8.8

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/27

* not certified acc. to RAL

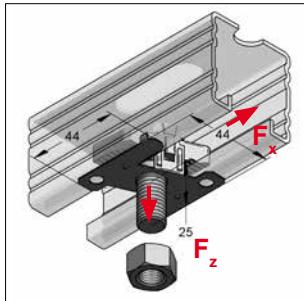
Stex 45 mounting plate MP

Identification

- Stex 45 mounting plate MP M6***
- Stex 45 mounting plate MP M8***
- Stex 45 mounting plate MP M10**
- Stex 45 mounting plate MP M12**

	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 mounting plate MP M6*	0,059	30	1280006
Stex 45 mounting plate MP M8*	0,058	30	1280008
Stex 45 mounting plate MP M10	0,056	30	1280010
Stex 45 mounting plate MP M12	0,053	30	1280012

■ STEX 45 mounting bolt MTB


Specification:

Profile rail type: rail system 45, toothed
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 Threaded bolt: property class 8.8

application loads see on page 2/27

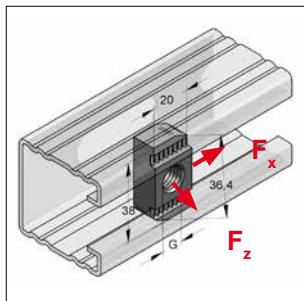
Stex 45 mounting bolt MTB
incl. nut M12

Identification

- Stex 45 mounting bolt MTB M12x40**

	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 mounting bolt MTB M12x40	0,099	40	1280001

■ Tooth plate S



Tooth plate S

Specification:

Profile rail type: rail system 45, toothed
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts, pipe clamp fixation
 Required accessory: hexagon screw, threaded pin or -rod, washer and hexagon nut

Technical data:

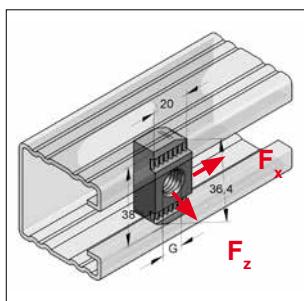
Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/27

* not certified acc. to RAL

Identification	Dimension L x W [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth plate	34 x 21	M6*	0,053	100	0818000
Tooth plate S	36 x 20	M8*	0,060	100	0818101
Tooth plate S	36 x 20	M10	0,058	100	0818102
Tooth plate S	36 x 20	M12	0,056	100	0818103

■ Tooth plate S Zinc-Nickel



Tooth plate S Zinc-Nickel

Specification:

Profile rail type: rail system 45, toothed
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts, pipe clamp fixation, hot-dip galvanized profile rail for outside application
 Required accessory: hexagon screw, threaded bolt or -rod, washer and hexagon nut

Technical data:

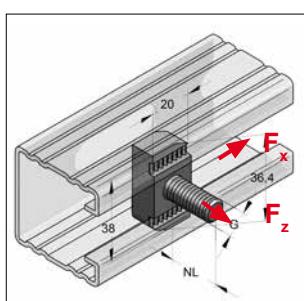
Material: steel
 Material type: S235JR
 Surface: zinc-nickel

application loads see on page 2/27

* not certified acc. to RAL

Identification	Dimension L x W [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth plate S Zinc-Nickel	34 x 20	M8*	0,042	100	0818101/zn
Tooth plate S Zinc-Nickel	36 x 20	M10	0,058	100	0818102/zn
Tooth plate S Zinc-Nickel	36 x 20	M12	0,056	100	0818103/zn

■ Tooth bolt



Tooth bolt

Specification:

Profile rail type: rail system 45, toothed
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts, pipe clamp fixation
 Required accessory: washer and hexagon nut

Technical data:

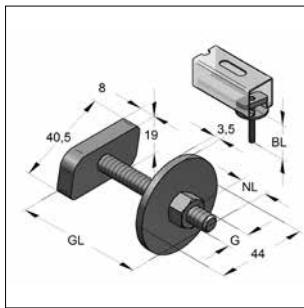
Material: steel
 Material type: S235JR
 Surface: galvanized
 Tooth bolt: property class 8.8

application loads see on page 2/27

* not certified acc. to RAL

Identification	Usable length NL [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth bolt	17,5	M8*	0,072	100	0816936
Tooth bolt	17,5	M10	0,070	100	0816944
Tooth bolt	22,5	M12	0,085	100	0816952

■ Hammer head screw 45



Hammer head screw

Specification:

Profile rail type: rail system 45
 Mounting method: glide fast connections and shear hole haunch connections
 Applications area: pipe clamp fixations

Technical data:

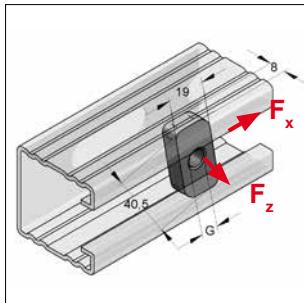
Material: steel
 Material type: S235JR
 Surface: galvanized

¹⁾ not in combination with thread M8/10

²⁾ not in combination with thread M10/12

Identification	Thread GxGL [mm]	Construction length BL [mm]	Usable length NL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hammer head screw	M8x35 ¹⁾	19,5	9,5	0,099	50	0698735
Hammer head screw	M8x40	24,5	14,5	0,101	50	0698740
Hammer head screw	M8x50	34,5	24,5	0,104	50	0698750
Hammer head screw	M8x70	54,5	44,5	0,111	50	0698770
Hammer head screw	M10x35 ²⁾	19,5	8,0	0,109	50	0699235
Hammer head screw	M10x50	34,5	23,0	0,117	50	0699250
Hammer head screw	M10x70	54,5	43,0	0,127	50	0699270
Hammer head screw	M12x40	25,0	11,0	0,123	50	0699740
Hammer head screw	M12x50	35,0	21,0	0,130	50	0699750
Hammer head screw	M12x70	55,0	41,0	0,145	50	0699770

■ Threaded plate



Threaded plate

Specification:

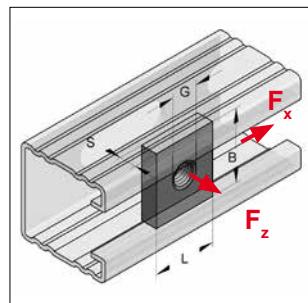
Profile rail type: rail system 45
 Mounting method: glide fast connections and shear hole haunch connections
 Applications area: pipe clamp fixation
 Required accessory: hexagon screw, threaded bolt or -rod, washer and hexagon nut

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/29

Identification	Type	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded plate	40 x 22	M8	0,043	100	0750107
Threaded plate	40 x 22	M10	0,041	100	0750115
Threaded plate	40 x 22	M12	0,040	100	0750123



Threaded square plate

Specification:

Profile rail type: rail system 45
 Mounting method: glide fast connections and shear hole haunch connections
 Applications area: connecting parts, can be mounted on bottom of profile
 Required accessory: hexagon screw property class 8.8, threaded bolt or- rod, washer and hexagon nut

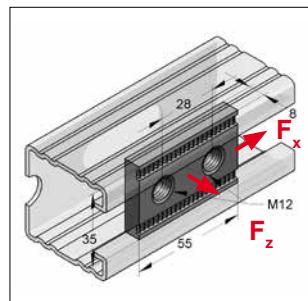
Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

application loads see on page 2/29

For profile rail width 45 mm

Identification	Dimension L x B x S [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded square plate	30 x 35 x 6	M8	0,048	50	0816112
Threaded square plate	30 x 35 x 6	M10	0,047	50	081612001
Threaded square plate	30 x 35 x 6	M12	0,046	50	081613801
Threaded square plate	30 x 35 x 8	M16	0,058	50	0816146

2-hole tooth plate

2-hole tooth plate

Specification:

Profile rail type: rail system 45
 Mounting method: form-lock connections and shear hole haunch connections
 Applications area: connecting parts, threaded plate can be mounted on bottom of profile rail
 Required accessory: hexagon screw property class 8.8, washer and hexagon nut

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

application loads see on page 2/27

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole tooth plate	55 x 35 x 8	M12	0,106	50	0818110

■ 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				
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/90/2,0 D				
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				
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/90/2,0 D				
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, tooth bolt			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5				
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/90/2,0 D				
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 $\gamma = 2$

02

Profile rail hot-dip 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]
45/45/2,5				
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	2-hole threaded plate			
			M12 8.8	
	F_z [kN]	F_x [kN]	tightening torque [Nm]	
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	Tooth plate S, tooth bolt			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
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			
45/52/1,5 D			
45/45/1,5			
45/90/1,5 D			
45/45/2,0			
45/90/2,0 D			
45/45/2,5	4,11	2,80	
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0	9,54	2,80	
45/150/3,0 D			29

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			
45/52/1,5 D			
45/45/1,5			
45/90/1,5 D			
45/45/2,0			
45/90/2,0 D			
45/45/2,5	4,24	1,10	
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0	10,00	1,10	
45/150/3,0 D			40

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				
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/90/2,0 D				
45/45/2,5	2,80 (3,23)*	1,45 (1,70)*		
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0	8,6 (8,8)*	1,75 (2,00)*		
45/150/3,0 D				35
* Values in brackets only for M16 35 x 30 x 8				40 (60)*

* 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	STEX 45 GB, threaded bolt GB		
			M12 4.6
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D	9,54	2,36	29
45/75/3,0*			
45/150/3,0 D*			

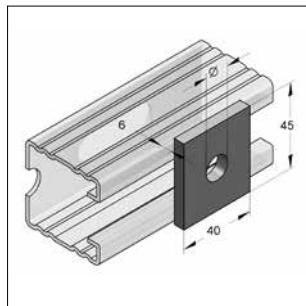
Profile rail hot-dip galvanized	Threaded plate 40 x 22		
			M12 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/45/2,5			
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D	10,00	1,74	60
45/75/3,0*			
45/150/3,0 D*			

Profile rail hot-dip 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]
45/45/2,5				
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D	8,60 (8,80)**	1,60 (1,90)**	40 (60)**	35
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

■ Perforated plate



Perforated plate

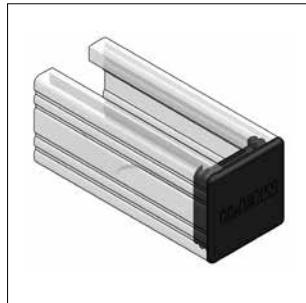
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ components for outdoor application areas also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Perforated plate	13	0,081	50	0814016
Perforated plate	17	0,076	50	0814017

■ Protecting cap



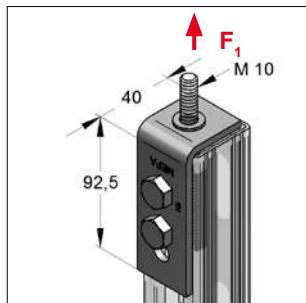
Protecting cap

Specification:
Profile rail type: rail system 45

Technical data:
Material: plastic PE
Material colour: black

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Protecting cap 45 / 26	0,007	50	0819005
Protecting cap 45 / 40 (for stainless steel profile rails)	0,010	50	0819032
Protecting cap 45 / 45	0,008	50	0819036
Protecting cap 45 / 60	0,015	50	0819042
Protecting cap 45 / 75	0,019	50	0819046

■ Head adapter



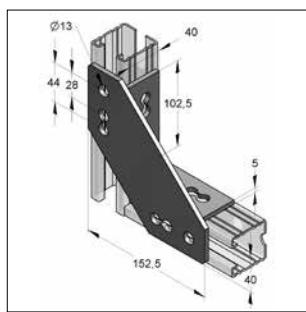
Head adapter K

Specification:
Profile rail type: rail system 45/45
Applications area: Connection angle for the head-side thread connection for 45-45 rails

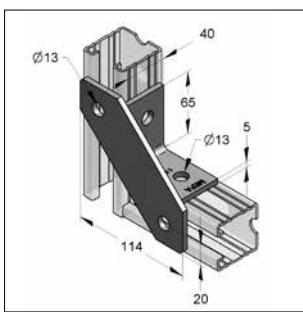
Technical data:
Material: steel
Material colour: S235JR
Surface: galvanized

Identification	thread	max. load F1 [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Head adapter K	M10	1,0	0,398	1	081656710

■ Universal knot



Universal knot



Universal knot K

Specification:

Profile rail type: rail system 45
 Applications area: corner joint of C-profile channels
 combination of knot triangle,
 corner lug and corner angle
 left and right

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

Loads referring to component, not to connection

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223).

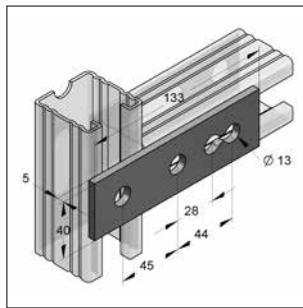
Delivery time on demand!

²⁾ Remark: torque free rail connection.

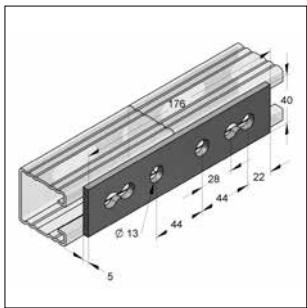
Identification

	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Universal knot	0,803	10	08141600
Universal knot K*	0,445	25	08141601

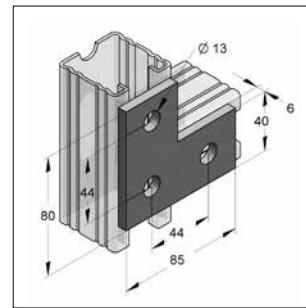
Flat connector



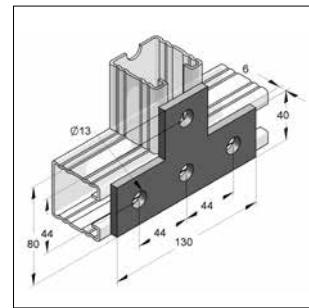
3-hole flat connector 40/5



4-hole flat connector 40/5



L-shaped flat connector 40/6



T-shaped flat connector 40/6

Specification:

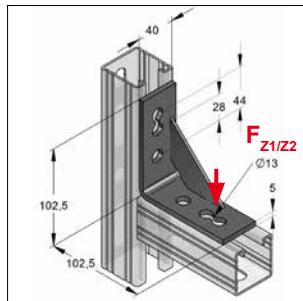
Profile rail type: rail system 45

Technical data:Material: steel
Material type: S235JR
Surface: galvanized

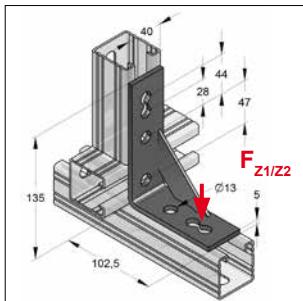
Remark: torque free rail connection

Identification	Dimension [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
3-hole flat connector 40/5	133 x 40 x 5	0,192	25	0814331
4-hole flat connector 40/5	176 x 40 x 5	0,250	25	0814349
Flat connector 40/6 L-shape	85 x 80 x 6	0,221	25	0814307
Flat connector 40/6 T-shape	130 x 80 x 6	0,301	25	0814315

Knot triangle



4-hole knot triangle 40/5



5-hole knot triangle 40/5

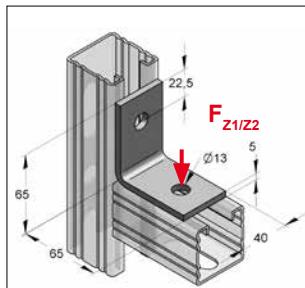
Specification:

Profile rail type: rail system 45

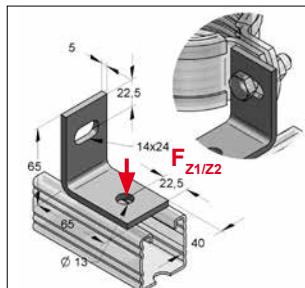
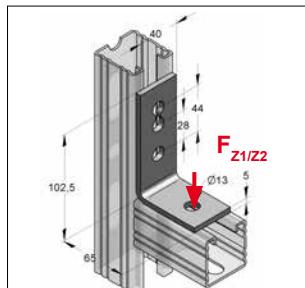
Technical data:Material: steel
Material type: S235JR
Surface: galvanized¹⁾¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!²⁾ loads referring to component, not to connection³⁾ loads referring to component, double-sided fixed on profile

Identification	Dimension L x W [mm]	Max. load without profile rail F_Z1 ²⁾ [kN]	Max. load with profile rail F_Z2 ³⁾ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole knot triangle 40/5	102,5 x 102,5	2,0	6,0	0,327	25	08140701
5-hole knot triangle 40/5	135 x 102,5	2,0	6,0	0,373	25	08141701

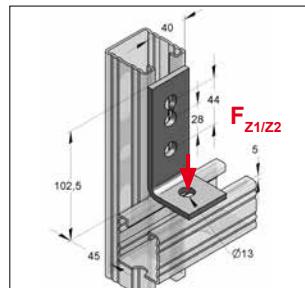
■ Angle 40/5



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

Specification:

Profile rail type: rail system 45

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!²⁾ loads referring to component, not to connection³⁾ loads referring to component, double-sided fixed on profile**Technical data:**

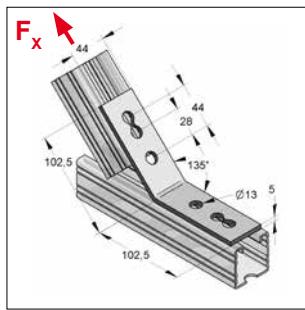
Material: steel

Material type: S235JR

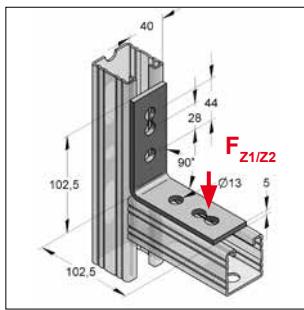
Surface: galvanized¹⁾

Identification	Dimension	Max. load F _{Z1} ²⁾ without profile rail [mm]	Max. load F _{Z2} ³⁾ with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole angle 40/5	65 x 65	1,0	2,5	0,185	50	081402400
2-hole angle 40/5, elongated hole horizontal	65 x 65	1,0	2,5	0,178	50	08147300
3-hole angle 40/5 L	102,5 x 65	1,0	2,5	0,234	25	08140300
3-hole angle 40/5 K	102,5 x 45	1,0	2,5	0,202	50	08140400

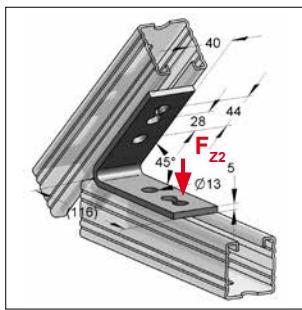
■ Angle 40/5



4-hole angle 40/5 135°



4-hole angle 40/5 90°



4-hole angle 40/5 45°

Specification:

Profile rail type: rail system 45

^{1), 3)} loads referring to component, not to connection²⁾ loads referring to component, double-sided fixed on profile**Technical data:**

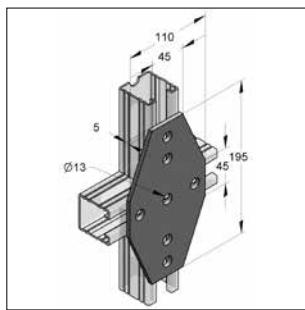
Material: steel

Material type: S235JR

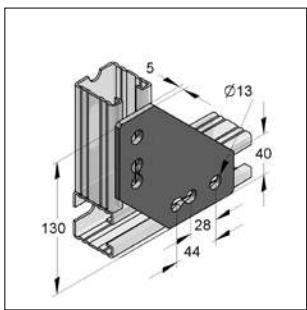
Surface: galvanized

Identification	Dimension	Max. load F _{Z1} ¹⁾ without profile rail [mm]	Max. load F _{Z2} ²⁾ with profile rail [kN]	F _x ³⁾ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole angle 40/5 135°	102,5 x 102,5	-	-	6,6	0,293	50	08140600
4-hole angle 40/5 90°	102,5 x 102,5	1,0	2,5	-	0,283	50	08140500
4-hole angle 40/5 45°	116 x 116	-	2,5	-	0,336	25	08141000

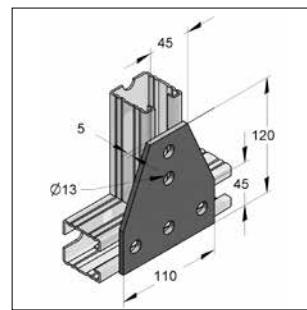
Lug



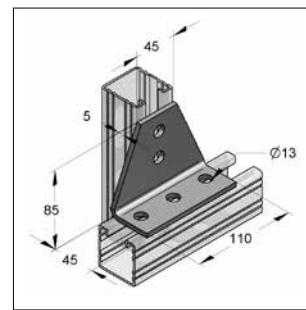
Cross strap



4-hole corner plate



T-lug, not angled



T-lug, angled

Specification:

Profile rail type: rail system 45

Technical data:

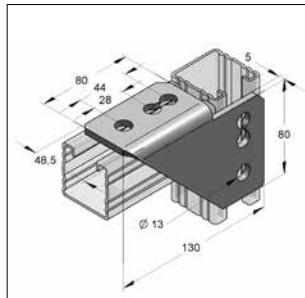
Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

Remark: admissible loads are dependant on component

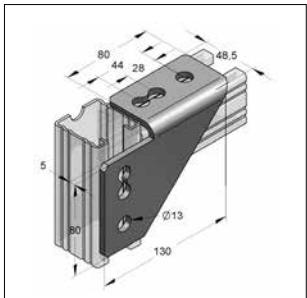
¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Cross strap	195 x 110 x 5	0,626	10	0816582
4-hole corner plate	130 x 40 x 5	0,417	10	08165900
T-lug, not angled	120 x 110 x 5	0,404	25	0816574
T-lug 90° angled	85 x 110 x 5	0,404	25	0816870

Corner angle



4-hole corner angle right



4-hole corner angle left

Specification:

Profile rail type: rail system 45

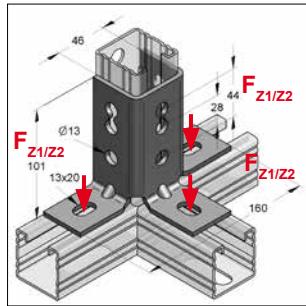
Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

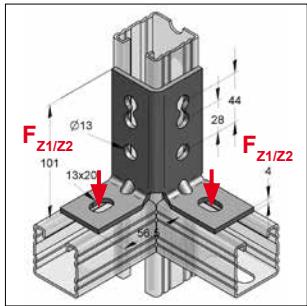
Remark: admissible loads are dependant of component

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole corner angle right	0,384	15	08147200
4-hole corner angle left	0,384	15	08147100

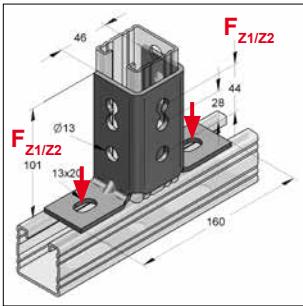
■ Angle connector



Angle connector C 45



Angle connector C 45 90°



Angle connector C 45 180°

Specification:

Profile rail type: rail system 45
Applications area: connection of profile rail and frames

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

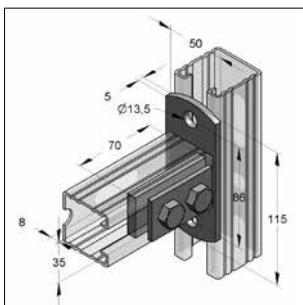
²⁾ loads referring to component, not to connection

³⁾ loads referring to component, double-sided fixed on profile

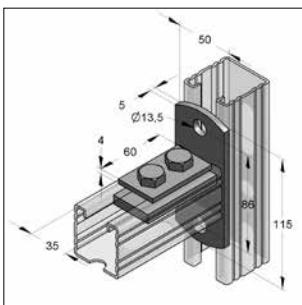
Remark: With lateral screw connection, 2-hole tooth plates have to be used

Identification	Max. load $F_{Z1}^{2)}$ without profile rail [kN]	Max. load $F_{Z2}^{3)}$ with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Angle connector C45	1,5	4,0	0,548	15	08123000
Angle connector C45 90°	1,5	4,0	0,361	15	08123200
Angle connector C45 180°	1,5	4,0	0,481	15	08123100

■ Connector 45



Connector 45 lengthways



Connector 45 horizontal

Specification:

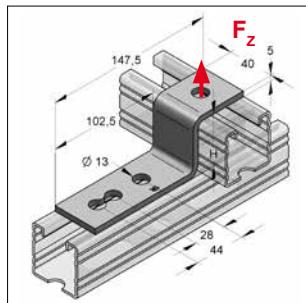
Profile rail type: rail system 45
Applications area: connection of profile rails, moment-free connections only (not for connection of consoles)
Scope of supply:: 2-hole plate 13 mm hexagon screw M12

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Screws	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 45 lengthways	M12	0,491	25	081656601
Connector 45 horizontal	M12	0,491	25	081646501

■ 3-hole corresponding angle 40/5



Corresponding angle 40/5

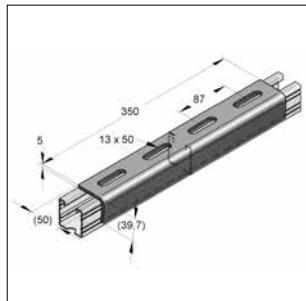
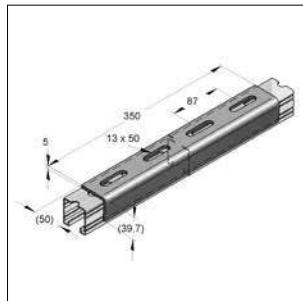
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

* loads referring to component, not to connection

Identification	Dimension H [mm]	Max. load * F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Corresponding angle 45	45	1,0	0,272	25	08141245
Corresponding angle 60	60	1,0	0,301	25	08141300

■ Connector 45

Connector 45
rail slot at topConnector 45
rail slot at bottom

Remark:
fixation on top of rail
(not double profile rails) to
reach equal load capacity as
unbroken rail

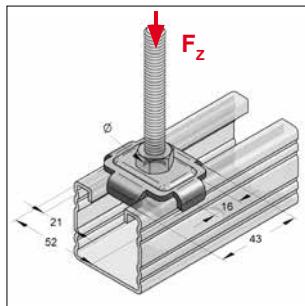
Specification: Profile rail type: Applications area:	rail system 45 for static load connection and extension of C-profile rails of the rail system 45	Technical data: Material: Material type: Surface:
Recommended accessory:	4 x tooth plate S M12 or Stex 45 MP/MTB M12 4 x hexagon screw M12 x 25 4 x washer 13 x 24 x 2,5 (DIN 7089-12)	¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion- protection class C3 acc. to ISO 9223).
Remark:	connecting of double profile rails with two connectors 45	Delivery time on demand!

For profile rail width 45

Identification	Height [mm]	Width [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 45	39,7	50	1,05	15	08162001

mounting recommendation see chapter 15

■ Profile holder



Profile holder

Specification:

Profile rail type: rail system 35, 45, Stex 35
Applications area: suitable for connection of profile rails

Technical data:

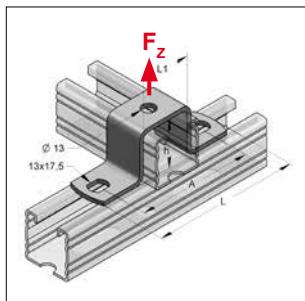
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

For profile rail 35, 45 and Stex 35

Identification	Tightening torque [Nm]	Max. load F_z [kN]	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile holder combi 11	10	4,7	11,0	0,049	100	08095035
Profile holder combi 13	10	4,7	13,0	0,047	100	08162945
Profile holder combi 17	10	4,7	17,0	0,046	100	08163365

■ Head profile



Head profile

Specification:

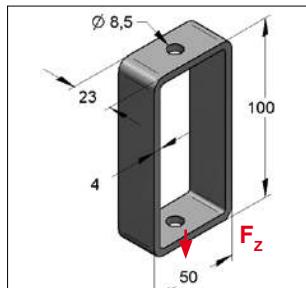
Profile rail type: rail system 45
Applications area: suitable for connection of profile rails

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Suitable for profile rail	L [mm]	A [mm]	L1 [mm]	h [mm]	Max. load F_z [kN]	Material thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Head profile 26	45/26	134,5	105	46	26	3,5	4	0,176	25	08162326
Head profile 45	45/45	134,5	105	46	45	3,5	4	0,218	25	08162445
Head profile 52	45/52-D	134,5	105	46	52	3,5	4	0,235	25	08162452
Head profile 60	45/60	134,5	105	46	60	3,5	4	0,253	25	0816253
Head profile 75	45/75	134,5	105	46	75	3,5	4	0,286	25	08162875
Head profile 90	45/90-D	134,5	105	46	90	3,5	4	0,320	25	08162690
Head profile 120	45/120-D	134,5	105	46	120	3,5	4	0,387	25	0816274
Head profile 150	45/150-D	134,5	105	46	150	3,5	4	0,454	1	081628150

■ 2-hole suspending console

2-hole suspending console
100/50/4**Specification:**

Application area: universal fixation e.g.
suitable for ceiling suspension

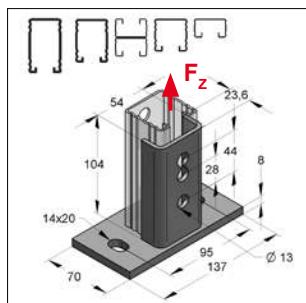
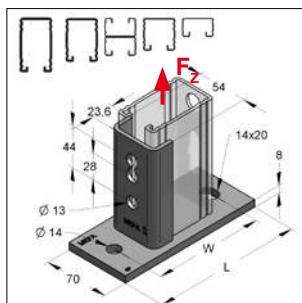
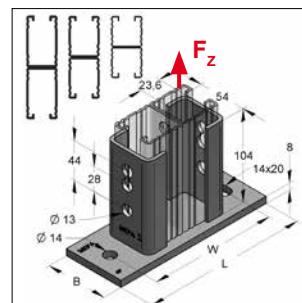
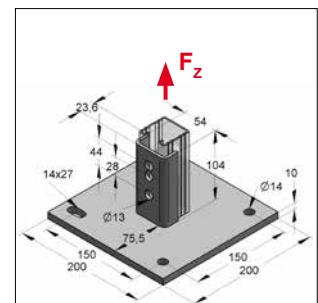
¹⁾ loads referring to component, not to connection

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Dimension L x B x S [mm]	Hole-Ø [mm]	max. load $F_z^{(1)}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole suspending console	100 x 50 x 4	8,5	1,9	0,196	50	9998541

■ Holder

Holder horizontal
for C-profile railHolder vertical
for C-profile railHolder for double
C-profile railHolder square
for C-profile rail**Specification:**

Profile rail type: rail system 45
Applications area: for fixation of profile rails
on construction

Technical data:

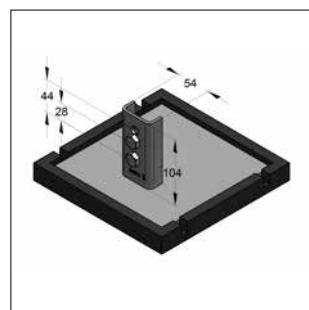
Material: steel
Material type: S235JR
Surface: hot-dip galv¹⁾

¹⁾ variations in dimension up to 1 mm possible

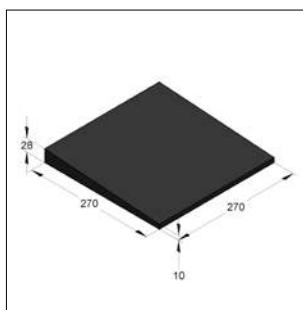
²⁾ loads referring to component, not to connection

³⁾ matching sound-decoupling set see on page 3a/11

Identification	Plate L x B [mm]	Hole distance W [mm]	Max. profile height [mm]	Suitable for								Max. load $F_z^{(2)}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	
				26	45	60	75	52D	90D	120D	150D					
Holder 45/26-75 horizontal⁽³⁾	137 x 70	95	75	•	•	•	•	•					12,0	0,90	15	08120402
Holder 45/26-52 vertical⁽³⁾	137 x 70	95	52	•	•				•				9,3	0,90	15	08120102
Holder 45/60-70 vertical	160 x 70	118	75			•	•						7,3	1,01	15	08121802
Holder 45/90	186 x 70	144	90							•			13,7	1,41	10	08120952
Holder 45/120	216 x 70	174	120								•		13,7	1,55	5	08121002
Holder 45/150	246 x 70	204	150									•	13,5	1,68	5	08121452
Holder „Holorib“	200 x 200	150		•	•	•	•	•	•	•	•	•	10,0	3,49	5	08197000



Rooftop holder complete



Rubber wedge 4°

Rooftop holder complete with
rubber wedge underneath**Specification:**

Profile rail type: 45/26, 45/45, 45/60, 45/52, 45/60, 45/75, 45/90, 45/120
 Applications area: for profile channel constructions onto rooftop
 Installation advise: position rooftop holder on rubber pad.
 For compensation of possible roof pitch place rubber wedge (4°) below rubber pad
 Separation fleece: recommended for use on PVC membrane roof surfaces to prevent migration of plasticizer
 Scope of delivery (Rooftop holder complete): 1 x rubber pad
 1 x holder
 2 x hexagon screws M12 x 25
 1 x 2-hole tooth plate

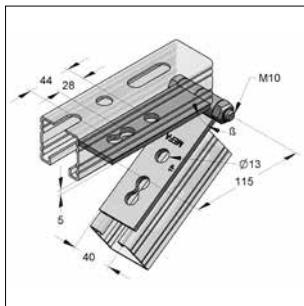
Technical data:

Material holder:	steel
Material type:	S235JR
Surface screw :	zinc-nickel
Surface holder::	hot-dip galv.
Material	
rubber pad:	EPDM
separation fleece:	polyester
according to building	
material class DIN 4102: B2	
temperature resistance	
separation fleece:	-60°C up to +220°C

* Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Identification	Dimension steel plate	Dimension rubber pad / seperation fleece	Pressure load	Weight	Packing	Part-No.
	[mm]	[mm]	[kN]	[kg/pc.]	[pcs.]	
Rooftop holder complete	200x200x6	225x225x17	4,0	3,71	2	08197500
Rooftop holder rubber wedge	-	270x270x28/10	4,0	1,73	1	08197598
Rooftop holder separation fleece	-	270x270x3,5	-	0,04	1	0819759701

Joint connector for C-profile rails



Joint connector
for C-profile rails

Specification:

Profile rail type: rail system 45
Applications area: mounting of two profile rails
of various angularity

Technical data:

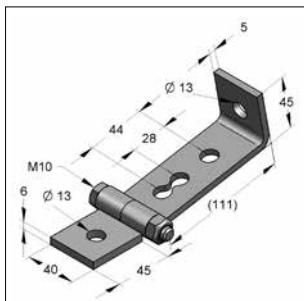
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

Loads see Profile joint connector page 2/42

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T [mm]	Angle β	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint connector	115 x 40 x 5	+/-160°	0,461	25	08122200

Joint angle

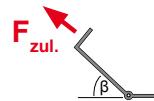


Joint angle



Mounting example
Joint angle with bracing

Admissible load at angle β



Angle β	0°	30°	45°	60°	90°
Fzul.* [kN]	4,5	5,2	4,0	3,2	2,8

Specification:

Applications area: for bracing of threaded rod M12 with arbitrary angularity.
fixation onto profile channel or direct-mounting onto building structure.

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized¹⁾

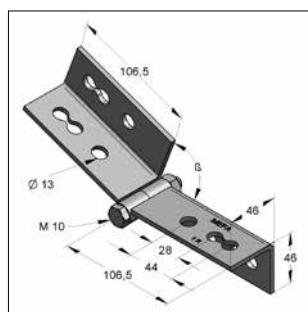
Remark:

for upright mounting consider shear forces in radial tubular axle

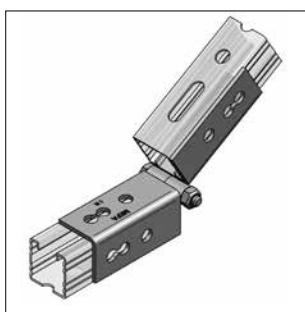
¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

* loads referring to component, not to connection

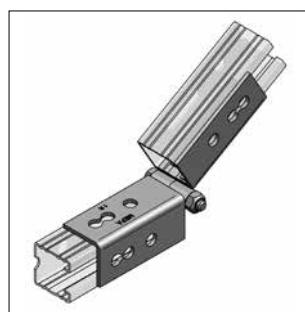
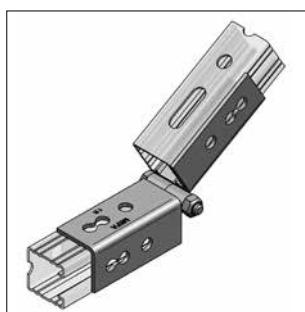
Identification	Hole-Ø [mm]	Angle β	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint angle 40/5	13	0° - 90°	0,407	20	08122300



Profile joint connector



Position of channel arbitrary

**Specification:**

Profile rail type:
rail system 45
Applications area:
connection of C-profile channels of system 45
with adjustable angle, position of channel arbitrary
Recommended accessory:
2 x 2-hole tooth plate
4 x hexagon screws M12 x 25

Technical data:

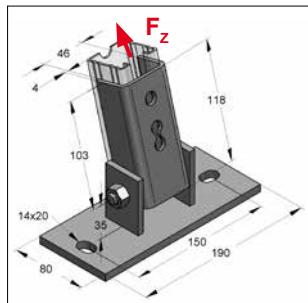
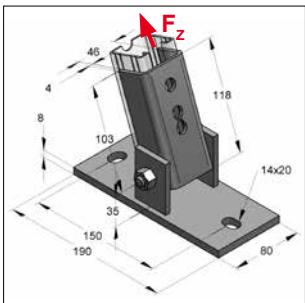
Material: steel
Material type: S235JR
Surface: galvanized

* loads referring to component, not to connection

Identification	Hole-Ø [mm]	Angle β	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile joint connector	13	30° - 90°	0,684	10	08122700

Admissible load at angle β				
Angle β	30°	45°	60°	90°
Fzul.* [kN]	6,0	4,24	3,45	3,0

Joint holder with base plate

Joint holder with
base plate horizontalJoint holder with
base plate vertical**Specification:**

Profile rail type: rail system 45
Mounting method: on inclined roof- and bottom construction
stepless fixable

Recommended accessory: 1 x 2-hole tooth plate
2 x hexagon screw M12 x 25
2 x washer DIN 7089-12

Applications area: cross girder at various angle up to 90°

Technical data:

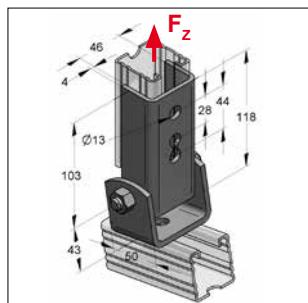
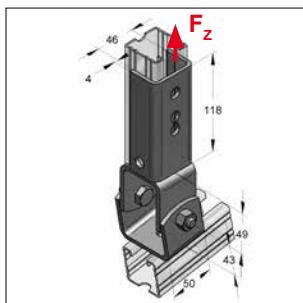
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

²⁾ loads referring to component, not to connection

Identification	Dimension plate [mm]	Tightening torque [Nm]	Max. load $F_z^{2)}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with base plate horizontal	190 x 80 x 8,0	50	7,0	1,67	10	08122500
Joint holder with base plate vertical	190 x 80 x 8,0	50	7,0	1,67	10	08122600

■ Joint holder

Joint holder
verticalJoint holder
horizontal**Specification:**

Profile rail type: rail system 45
Mounting method: on inclined roof- and bottom construction
stepless fixable

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized¹⁾

Recommended accessory: 1 x 2-hole tooth plate
2 x hexagon screw M12 x 25
2 x washer DIN 7089-12

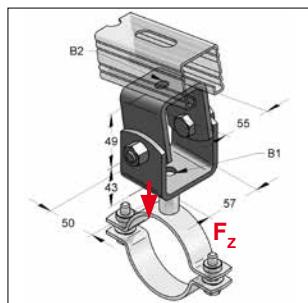
Applications area: cross girder at various
angle up to 90°

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

²⁾ loads referring to component, not to connection

Identification	For profile rail width	Hole-Ø	Tightening torque	Max. load	Weight	Packing	Part-No.
	[mm]	[mm]	[Nm]	$F_z^{2)}$ [kN]	[kg/pc.]	[pcs.]	
Joint holder vertical	45	13	50	7,0	0,82	15	08120600
Joint holder horizontal	45	13	50	7,0	1,13	5	08121100

■ Joint holder with terminal hole



Joint holder with terminal hole

Specification:

Mounting method: on inclined roof- and bottom construction
stepless fixable
Applications area: for connecting pipe clamps

Technical data:

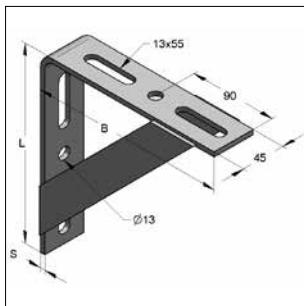
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

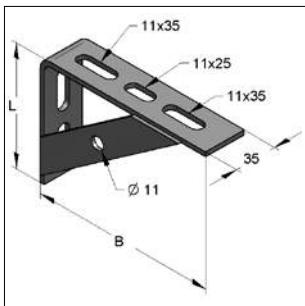
²⁾ loads refer to component, not to connection

Identification	For threaded rods	B1	B2	Max. load	Weight	Packing	Part-No.
	B1 / B2	[mm]	[mm]	$F_z^{2)}$ [kN]	[kg/pc.]	[pcs.]	
Joint holder with terminal hole	M8-M12 / M8-M12	13	13	10,0	0,722	25	0812072
Joint holder with terminal hole	M8-M12 / M16	13	17	10,0	0,719	15	0812080
Joint holder with terminal hole	M16 / M16	17	17	10,0	0,715	15	0812177

■ Angle bracket



Angle bracket



Knot bracket 100/150/4 L

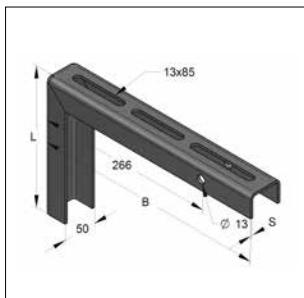
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

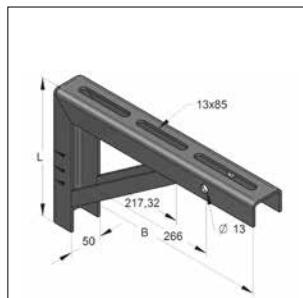
¹⁾ loads referring to component, not to connection

Identification	Dimension L x B x S [mm]	max. load ¹⁾ [kN]	Length [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Angle bracket with 2 braces	200 x 200 x 5	5,0	150	1,07	15	0814083
Angle bracket with 2 braces	300 x 300 x 5	5,0	250	1,69	10	0814091
Knot bracket L	100 x 152 x 4	2,5	120	0,30	25	0803100

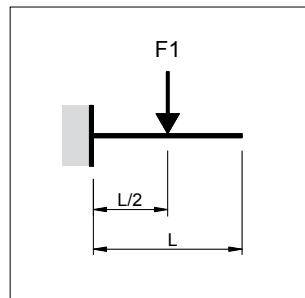
■ Universal console



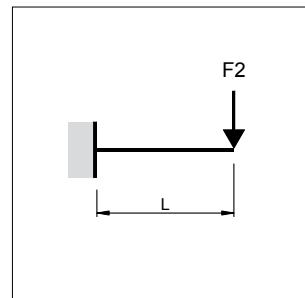
Universal console



Universal console with knot



Loading condition 1 (LC1)



Loading condition 2 (LC2)

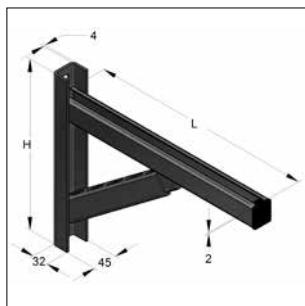
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

¹⁾ loads referring to component, not to connection

Identification	Dimension L x B x S [mm]	max. load ¹⁾ F_1 [kN]	max. load ¹⁾ F_2 [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Universal console	200 x 200 x 4,0	6,5	4,0	1,02	15	0814201
Universal console	200 x 350 x 4,0	5,0	3,0	1,64	10	081421901
Universal console	350 x 550 x 4,0	4,0	1,5	2,73	6	081422701
Universal console with knot	200 x 350 x 4,0	6,2	4,9	2,03	10	081423501
Universal console with knot	350 x 550 x 4,0	6,5	3,7	4,14	6	081424301

Carrier console 36/40/2,0

Carrier console
with brace**Specification:**

Dimension u-steel: 45 x 32 x 4,0 mm
Dimension profile rails: 36 x 40 x 2,0 mm

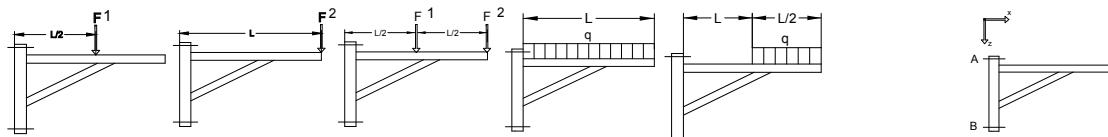
With enclosed protecting caps

Technical data:

Material type u-steel: S235JR, fy = 235 N/mm²
Material type profile rails: S235JR, fy = 235 N/mm²
Material: steel
Surface: hot-dip galvanized
global safety coefficient: 1,54

Load specifications refer to component, not to connection

Identification	Length L [mm]	Height H [mm]	hole distance dowel Ø14x21 [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Carrier console 36/40/2,0	420	320	275	2,36	6	180304203/fvz
Carrier console 36/40/2,0	525	355	310	2,88	6	180305253/fvz
Carrier console 36/40/2,0	630	380	335	3,38	6	180306303/fvz
Carrier console 36/40/2,0	735	490	445	4,14	6	180307353/fvz
Carrier console 36/40/2,0	840	490	445	4,35	6	180308403/fvz

Load and permissible loads:

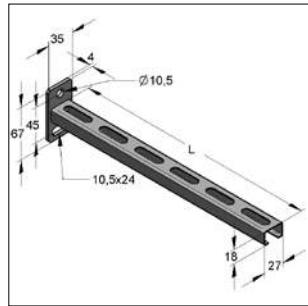
load situation 1 load situation 2 LS1 + LS2 load situation 3 load situation 4 bearing reaction forces

L	F1	F2	F1 = F2	q(0-L)	q(L/2-L)	F _{A,x} =	F _{B,x} =	F _{A,z} =
420 mm	4,97 kN					3,73 kN	-3,73 kN	4,97 kN
		1,53 kN				2,30 kN	-2,30 kN	1,53 kN
			1,42 kN			3,20 kN	-3,20 kN	2,84 kN
				11,14 kN/m ²		3,51 kN	-3,51 kN	4,68 kN
					13,53 kN/m ²	3,20 kN	-3,20 kN	2,84 kN
525 mm	5,66 kN					4,72 kN	-4,72 kN	5,66 kN
		1,53 kN				2,55 kN	-2,55 kN	1,53 kN
			1,53 kN			3,83 kN	-3,83 kN	3,06 kN
				9,82 kN/m ²		4,30 kN	-4,30 kN	5,16 kN
					11,78 kN/m ²	3,87 kN	-3,87 kN	3,10 kN
630 mm	4,84 kN					4,49 kN	-4,49 kN	4,84 kN
		1,54 kN				2,87 kN	-2,87 kN	1,54 kN
			1,54 kN			4,30 kN	-4,30 kN	3,08 kN
				8,49 kN/m ²		4,97 kN	-4,97 kN	5,36 kN
					10,12 kN/m ²	4,44 kN	-4,44 kN	3,19 kN
735 mm	4,56 kN					3,73 kN	-3,73 kN	4,56 kN
		1,06 kN				1,74 kN	-1,74 kN	1,06 kN
			1,23 kN			3,03 kN	-3,03 kN	2,46 kN
				8,49 kN/m ²		5,11 kN	-5,11 kN	6,25 kN
					9,42 kN/m ²	4,25 kN	-4,25 kN	3,47 kN
840 mm	5,60 kN					3,75 kN	-3,75 kN	5,60 kN
		0,65 kN				1,23 kN	-1,23 kN	0,65 kN
			0,69 kN			1,93 kN	-1,93 kN	1,38 kN
				4,08 kN/m ²		3,75 kN	-3,75 kN	4,02 kN
					4,77 kN/m ²	2,41 kN	-2,41 kN	1,73 kN

Remark:

All load specifications refer exclusively to static loads.

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



Console C 27/18/1,25 mm
Profile slot at bottom side

Technical data:

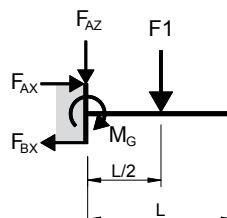
Material type plate: S235JR, $f_y = 235 \text{ N/mm}^2$
 Material type profile rail: DC01, $f_y = 160 \text{ N/mm}^2$
 Surface: galvanized
 Material: steel
 global safety coefficient γ : 1,35

limitation torque M_G : 36,74 Nm
 Reaction force F_{AZ} : 0,82 kN
 Reaction force F_{BX} : 0,82 kN
 M_G, F_{AZ}, F_{BX} on LC1: up to $L = 630,5 \text{ mm}$
 LC2: up to $L = 315,5 \text{ mm}$
 LC3: up to $L = 420,5 \text{ mm}$

02

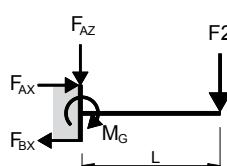
Identification	Length L [mm]	Load situation 1 F1 [kN]	max. load Load situation 2 F2 [kN]	Load situation 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-27/18	157,5	0,47	0,23	2,94	0,159	25	18010158
Console C-27/18	210,0	0,35	0,17	1,66	0,190	25	18010210
Console C-27/18	262,5	0,28	0,14	1,06	0,222	25	18010263
Console C-27/18	315,0	0,23	0,12	0,74	0,253	25	18010315

Loading condition 1 (LC1)



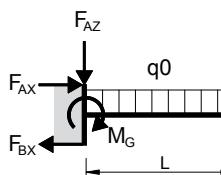
$$F_{AZ} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

Loading condition 2 (LC2)



$$F_{AZ} = F_2 \quad M_G = F_2 * L$$

Loading condition 3 (LC3)

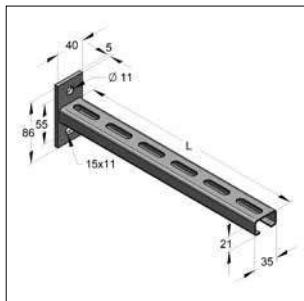


$$F_{AZ} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

Notice:

all loads referring to static loads

■ Console C-profile 35/21/2,0 mm



Console C 35/21/2,0 mm
Profile slot at bottom side

Technical data:

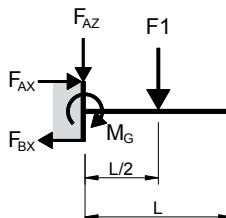
Material type plate: S235JR, $f_y = 235 \text{ N/mm}^2$ Dimension plate: 86 x 40 x 5,0 mm
 Material type profile rail: S250JR, $f_y = 250 \text{ N/mm}^2$ Dimension profile rail: 35 x 21 x 2,0 mm
 Surface: galvanized
 Material: steel
 global safety coefficient γ : 1,35

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 LC1: up to $L = 630,0 \text{ mm}$
 LC2: up to $L = 315,0 \text{ mm}$
 LC3: up to $L = 472,5 \text{ mm}$

¹⁾ load limitation due to admissible bending L/150. Limitation torque M_G and bearing strengths F_{Ax}, F_{Bx} not valid anymore

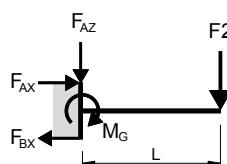
Identification	Length [mm]	max. load			Weight [kg/pc.]	Packing [pcs.]	Part-No.
		loading condition 1 F_1 [kN]	loading condition 2 F_2 [kN]	loading condition 3 q_0 [kN/m]			
Console C-35/21	157,5	1,19	0,60	7,57	0,307	25	18020158
Console C-35/21	210,0	0,89	0,45	4,26	0,368	25	18020210
Console C-35/21	262,5	0,72	0,36	2,72	0,429	25	18020263
Console C-35/21	315,0	0,60	0,30	1,89	0,490	25	18020315
Console C-35/21	420,0	0,45	0,19 ¹⁾	1,06	0,612	25	18020420
Console C-35/21	525,0	0,36	0,12 ¹⁾	0,62 ¹⁾	0,734	25	18020525

Loading condition 1 (LC1)



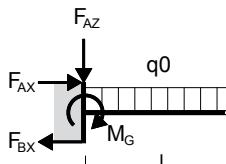
$$F_{AZ} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

Loading condition 2 (LC2)



$$F_{AZ} = F_2 \quad M_G = F_2 * L$$

Loading condition 3 (LC3)

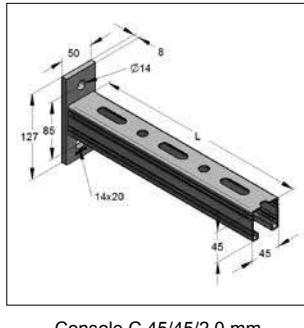


$$F_{AZ} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

Notice:

all loads referring to static loads

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



Console C 45/45/2,0 mm

Technical data: galvanized / hot-dip galv

Material type plate: S355J2, fy = 355 N/mm² Dimension plate: 127 x 50 x 8,0 mm
 Material type profile rail: S235JR, fy = 235 N/mm² Dimension profile rail: 45 x 45 x 2,0 mm¹⁾

Surface: galvanized / hot-dip galvanized
 Material: steel
 Global safety coefficient γ: 1,54

Limitation torque	M _G :	522 Nm
Reaction force	F _{AX} :	6,15 kN
Reaction force	F _{BX} :	6,15 kN
M _G , F _{AX} , F _{BX} on	LC1:	up to = 1155 mm
	LC2:	up to = 525 mm
	LC3:	up to = 735 mm

¹⁾ Console with dimension profile rail: 45 x 45 x 2,5 mm see page 12/9

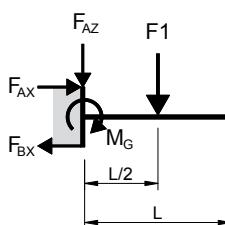
²⁾ load limitation due to admissible bending L/150. Limitation torque M_G and bearing strengths F_{AX}, F_{BX} not valid anymore

02

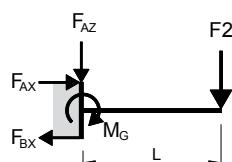
Console C-45/45 - profile rail 45/45/2,0							galvanized
Identification	Length L [mm]	Max. load			Weight [kg/pc.]	Packing [pcs.]	Part-No.
		Loading condition 1 F1 [kN]	Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]			
Console C-45/45	210,0	4,98	2,49	23,70	0,89	15	180450210
Console C-45/45	315,0	3,32	1,66	10,53	1,15	15	180450315
Console C-45/45	420,0	2,49	1,24	5,92	1,41	10	180450420
Console C-45/45	525,0	1,99	1,00	3,79	1,67	10	180450525
Console C-45/45	630,0	1,66	0,82 ²⁾	2,63 ²⁾	1,93	5	180450630
Console C-45/45	735,0	1,42	0,61 ²⁾	1,93 ²⁾	2,19	5	180450735
Console C-45/45	1050,0	1,00	0,30 ²⁾	0,75 ²⁾	2,96	5	180451050

Console C-45/45 - profile rail 45/45/2,0					hot-dip galv
Console C-45/45	315,0	3,32	1,66	10,53	1,24
Console C-45/45	525,0	1,99	1,00	3,79	1,81

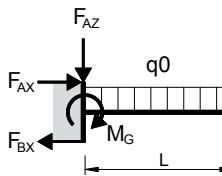
Loading condition 1 (LC1)



Loading condition 2 (LC2)



Loading condition 3 (LC3)



$$F_{AZ} = F1 \quad M_G = \frac{F1 * L}{2}$$

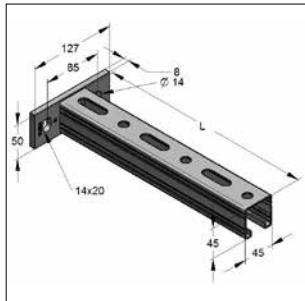
$$F_{AZ} = F2 \quad M_G = F2 * L$$

$$F_{AZ} = q0 * L \quad M_G = \frac{q0 * L^2}{2}$$

Remark:

all loads refer to static loads

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



Console C 45/45/2,0 horizontal

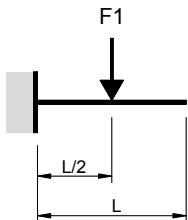
Technical data: galvanized

Material type profile rail:	S355J2, fy = 355 N/mm ²	Dimension plate:	127 x 50 x 8,0 mm
Material type plate:	S235JR, fy = 235 N/mm ²	Dimension profile rail:	45 x 45 x 2,0 mm ¹⁾
Material:	steel		
Surface:	galvanized		
Global safety coefficient γ :	1,35		

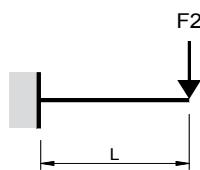
¹⁾ Console with dimension profile rail: 45 x 45 x 2,5 mm see page 12/9

Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/45	210,0	3,68	1,84	17,52	0,89	15	180460210
Console C-45/45	315,0	2,45	1,23	7,78	1,15	15	180460315
Console C-45/45	420,0	1,84	0,92	4,38	1,41	10	180460420
Console C-45/45	525,0	1,47	0,74	2,80	1,67	10	180460525

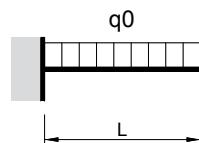
Loading condition 1 (LC1)



Loading condition 2 (LC2)



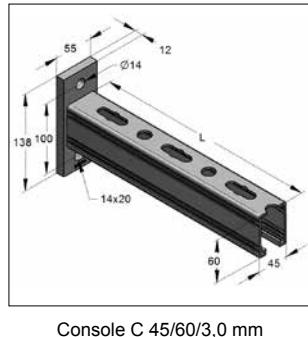
Loading condition 3 (LC3)



Remark:

all loads refer to static loads

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



Technical data:

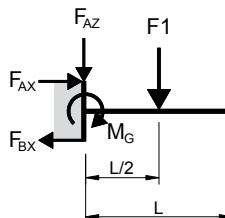
Material type plate:	S235JR, $f_y = 235 \text{ N/mm}^2$	Dimension plate:	138 x 55 x 12,0 mm
Material type profile rail:	S235JR, $f_y = 235 \text{ N/mm}^2$	Dimension profile rail:	45 x 60 x 3,0 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ :	1,35		

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	LC1:	up to $L = 1155 \text{ mm}$
	LC2:	up to $L = 630 \text{ mm}$
	LC3:	up to $L = 840 \text{ mm}$

¹⁾load limitation due to admissible bending L/150. Limitation torque M_G and bearing strengths F_{Ax}, F_{Bx} not valid anymore

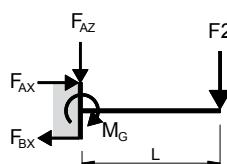
Identification	Length L [mm]	Max. load			Weight [kg/pc.]	Packing [pcs.]	Part-No.
		Loading condition 1 F1 [kN]	Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]			
Console C-45/60	525,0	4,36	2,18	8,30	2,81	5	18050525
Console C-45/60	630,0	3,63	1,82	5,77	3,23	5	18050630
Console C-45/60	735,0	3,11	1,45 ¹⁾	4,24	3,66	5	18050735
Console C-45/60	840,0	2,72	1,11 ¹⁾	3,24	4,08	5	18050840

Loading condition 1 (LC1)



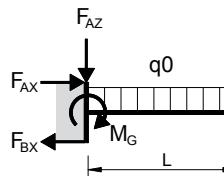
$$F_{Az} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

Loading condition 2 (LC2)



$$F_{Az} = F_2 \quad M_G = F_2 * L$$

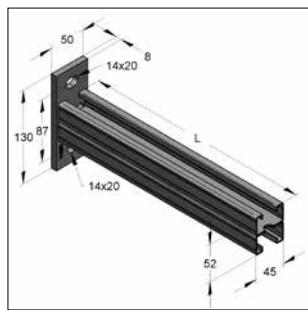
Loading condition 3 (LC3)



$$F_{Az} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

Remark:

all loads refer to static loads



Double console C 45/52/1,5

Technical data:

Material type plate:
Material type profile rail:
Surface:
Material:
Global safety coefficient γ :

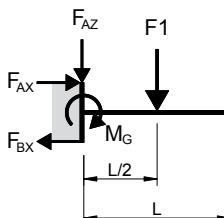
S235JR, $f_y = 235 \text{ N/mm}^2$ Dimension plate:
S235JR, $f_y = 235 \text{ N/mm}^2$ Dimension profile rail:
galvanized
steel
 $1,35$

$130 \times 50 \times 8,0 \text{ mm}$
 $45 \times 52 \times 1,5 \text{ mm}$

Limitation torque	M_G :	461,54 Nm
Reaction force	F_{AZ} :	5,31 kN
Reaction force	F_{BX} :	5,31 kN
M_G, F_{AZ}, F_{BX} on	LC1:	up to $L = 1155 \text{ mm}$
	LC2:	up to $L = 735 \text{ mm}$
	LC3:	up to $L = 945 \text{ mm}$

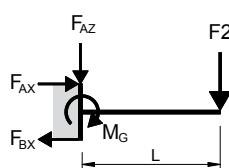
Identification	Length L [mm]	Loading condition 1 F_1 [kN]	Max. load Loading condition 2 F_2 [kN]	Loading condition 3 q_0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/52 D	315,0	2,93	1,47	9,30	1,22	15	18070315
Console C-45/52 D	420,0	2,20	1,10	5,23	1,50	10	18070420
Console C-45/52 D	525,0	1,76	0,88	3,35	1,78	10	18070525
Console C-45/52 D	630,0	1,47	0,73	2,33	2,07	5	18070630

Loading condition 1 (LC1)



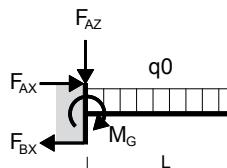
$$F_{AZ} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

Loading condition 2 (LC2)



$$F_{AZ} = F_2 \quad M_G = F_2 * L$$

Loading condition 3 (LC3)

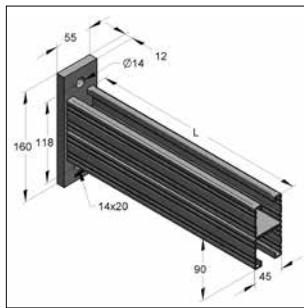


$$F_{AZ} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

Remark:

all loads refer to static loads

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



Double console C 45/90/2,0

Technical data: galvanized / hot-dip galv

Material: steel
 Material type plate: S235JR
 Material type profile rail: S235JR
 Surface: galvanized / hot-dip galvanized
 Global safety coefficient γ : 1,54

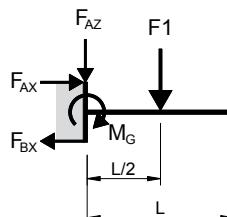
Dimension plate: 160 x 55 x 12,0 mm
 Dimension profile rail: 45 x 90 x 2,0 mm

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	LC1:	up to =1155 mm
	LC2:	up to =1155 mm
	LC3:	up to =1155 mm

Console D-45/90 - profile rail 45/90/2,0 D - plate 160 x 55 x 12,0 mm							galvanized
Identification	Length L [mm]	Loading condition 1 F_1 [kN]	Max. load Loading condition 2 F_2 [kN]	Loading condition 3 q_0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/90 D	630,0	4,97	2,48	7,88	3,90	5	180900630
Console C-45/90 D	735,0	4,26	2,13	5,79	4,42	5	180900735
Console C-45/90 D	840,0	3,72	1,86	4,43	4,94	5	180900840
Console C-45/90 D	945,0	3,31	1,66	3,50	5,46	5	180900945
Console C-45/90 D	1050,0	2,98	1,49	2,84	5,98	5	180901050

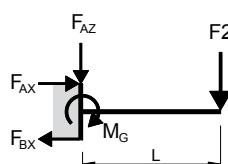
Console D-45/90 - profile rail 45/90/2,0 D - plate 160 x 55 x 12,0 mm							hot-dip galv
Console C-45/90 D	630,0	4,97	2,48	7,88	4,19	5	180900630/fvz
Console C-45/90 D	840,0	3,72	1,86	4,43	5,32	5	180900840/fvz

Loading condition 1 (LC1)



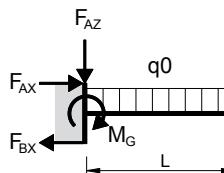
$$F_{AZ} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

Loading condition 2 (LC2)



$$F_{AZ} = F_2 \quad M_G = F_2 * L$$

Loading condition 3 (LC3)

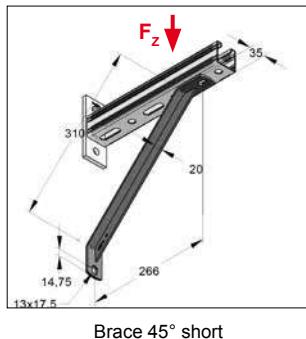


$$F_{AZ} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

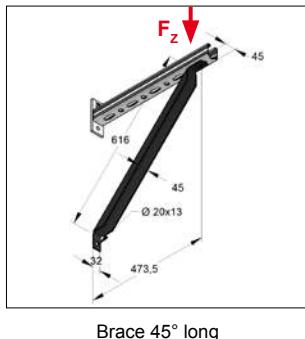
Remark:

all loads refer to static loads

■ Brace 45°



Brace 45° short



Brace 45° long

Specification:

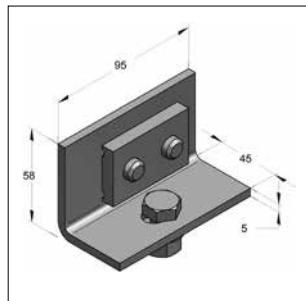
Applications area:
to increase the loading capacity
of consoles and wall brackets

Technical data:

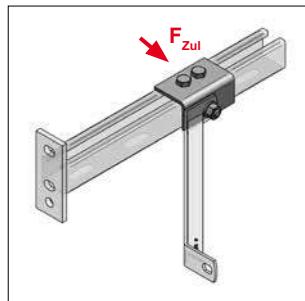
Material: steel
Material type: S235JR
Surface: galvanized

Identification	max. load (pressure) F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Brace 45° short	11,5	0,68	25	0815101
Brace 45° long	10,0	2,07	1	0815102

■ Adapter angle



Adapter angle



Mounting example

Specification:

Applications area:
angle for lateral bracing of consoles

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

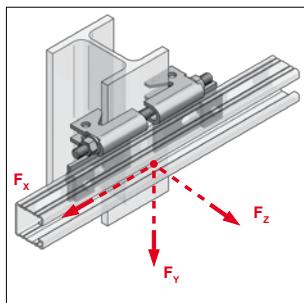
scope of delivery adapter angle:
3 x hexagon screws M12 x 25
1 x 2-hole tooth plate
1 x washer 13 x 24 x 2,5
1x nut M12

* Loads do refer to components, not to connections

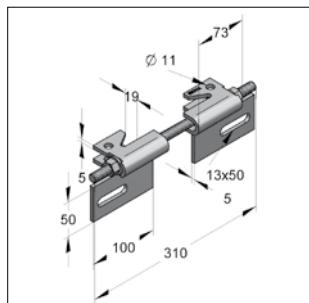
Adapter angle for braces 45°

Identification	max. load F_{zul} [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Adapter angle	10,0	0,59	5	08151500

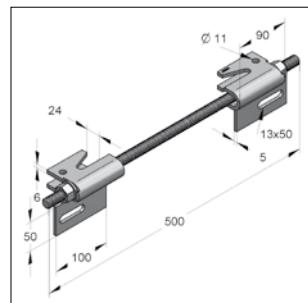
Girder connection vertical



Girder connection vertical



Typ D III



Typ D IV

Specification:

Applications area: vertical clamping connection of profile rails at steel girder

Recommended accessory: 2 x guide cleat
1 x threaded rod
2 x nut
2 x washer

Mounting instruction: fix buttstraps on load anticipated side. Can be combined with rail system 45. Screwing of profile rail on buttstrap of guide cleat thru profile base with 2 screws M12 x 25, washers and threaded square plates or tooth plate

Technical data:

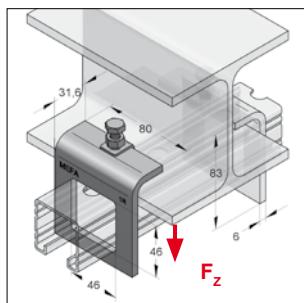
Material: steel
Material type: S235JR (clamps)

Surface
- Clamps: hot-dip galv.
- Screw connection: zinc-nickel

Identification	Clamping-thickness Flange [mm]	Clamping-range Flange [mm]	Threaded rod [mm]	Tightening torque [Nm]	Max. load F_x [kN]	Max. load F_y [kN]	Max. load F_z [kN]	Weight [kg/set]	Packing [pcs.]	Part-No.
Typ D III	8-15	100-220	M12 x 310	64	4,0	4,0	4,0	1,14	1	08146103
Typ D IV	13-20	110-360	M16 x 500	64	4,0	4,0	4,0	2,05	1	08146104

mounting recommendation see chapter 15

Clamping claw



Clamping claw

Specification:

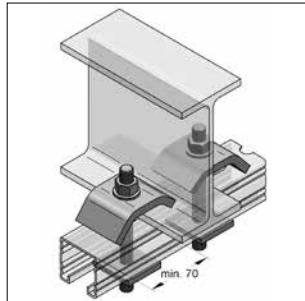
Profile rail type: C-profile rail 45/45
Application area: for mounting of C-profile rail 45/45 on T-girder

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	max. load with 2 clamping claws F_z [kN]	tightening torque [Nm]	max. clamping thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Clamping claw 45/45	6,00	8	17	0,336	50	08165071

■ Clamping claw (set) steel



Clamping claw (set) steel

Specification:

Profile rail type: rail system 35, 36, 45, Stex 35
Application area: for mounting of C-profile rail on steel girder

Technical data:

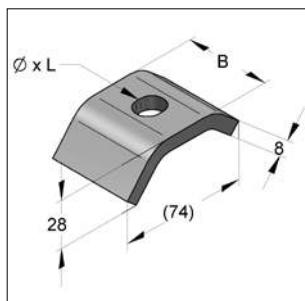
Material: steel
Material type: S235JR
Surface: galvanized

Assembly kit consisting of:

- 2 clamping claws
- 2 threaded bolts
- 4 hexagon nuts
- 2 perforated plates
- 2 washers DIN 7089

Identification	threaded pin [mm]	max. profile height [mm]	max. clamping thickness [mm]	Weight [kg/set]	Packing [sets]	Part-No.
Clamping claw (set) steel 35 + 36	M10 x 110	42	26	0,549	20	0814595
Clamping claw (set) steel 45	M12 x 130	60	26	0,922	10	0819527

■ Clamping claw



Clamping claw

Specification:
without accessories**Technical data:**

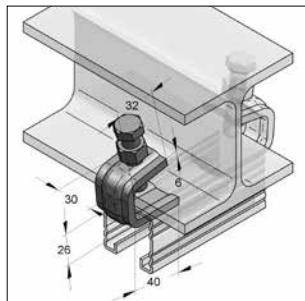
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

²⁾ loads referring to component, not to connection

Identification	Dimension Ø x L [mm]	suitable for threaded rod	tightening torque [Nm]	max. load ²⁾ [kN]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Clamping claws	12 x 18	M10	5	6,7	35	0,170	50	0814591
Clamping claws	14 x 18	M12	5	8,2	50	0,246	50	0816515
Clamping claws	Ø 18	M16	10	11,9	50	0,243	25	0819519

■ Rail clamp



Rail clamp

Specification:

Profile rail type: rail system 35/21, 36/40, 45/45, Stex 35/35, 35/42

Technical data:

Material type: St 44-2
Surface: galvanized
hexagonal nut: M12, SW19
hexagonal screw: M12x50, SW19
with cup point

Application area:

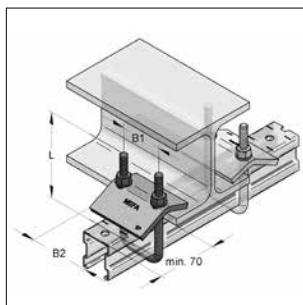
for mounting the C-profile rail on steel girder

Assembly instruction:
pre-stressing 8 Nm
requiring counter nuts, if
necessary

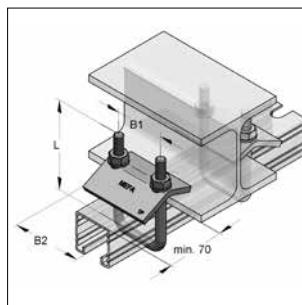
max. clamping thickness 23 mm

Identification	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Rail clamp	5,0	0,226	20	0816477

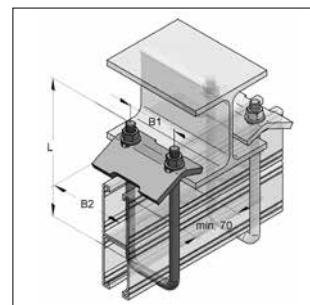
Clamping bow



Clamping bow M8 35 + 36



Clamping bow M10 45/60



Clamping bow M12 45/150

Specification:

Profile rail type: rail system 35, 36, 45, Stex 35, 36
 Application area: for mounting of C-profile rail
 on steel girder

Clamping bow consisting of:

1 U-bolt pipe hanger
 1 tensioning bracket
 2 nuts DIN 4032
 2 serrated lock washer

Technical data:

Material: steel
 Material type: St 36 FK 4.6
 Surface: galvanized

Remark: - 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 clamping bow
 - application loads of C-profile rail should be noticed

Suitable for profile rail 35, 36 and STEX 35

Identification	L [mm]	B1 [mm]	recommended tightening torque [Nm]	max. B2 [mm]	recommended clamping thickness [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Clamping bow M8 35 + 36	100	48	8	70	26	3,5	0,307	20	0816710

Suitable for profile rail 45/26, 45/45, 45/60

Clamping bow M10 45/60	100	56	15	80	26	4,0	0,401	20	0816720
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Suitable for profile rail 45/75, 45/90

Clamping bow M10 45/90	140	56	15	80	26	4,0	0,440	20	0816730
------------------------	-----	----	----	----	----	-----	-------	----	---------

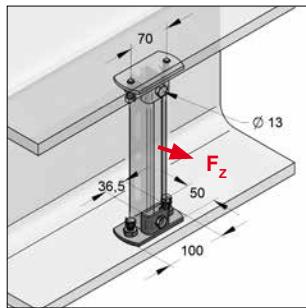
Suitable for profile rail 45/75, 45/90

Clamping bow M12 45/90	140	59	30	100	29	7,0	0,749	20	08167401
------------------------	-----	----	----	-----	----	-----	-------	----	----------

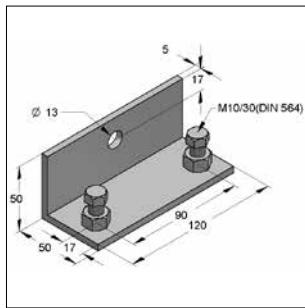
Suitable for profile rail 45/120, 45/150

Clamping bow M12 45/150	210	59	30	100	29	7,0	0,831	20	08167501
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■ Girder clamping



Girder clamping 35



Girder clamping L 45

Max. load on girders at a length of ≤ 400 mm

Identification	in combination with profile rail	max. load F_z [kN]
Girder clamping 35	35/21	2,0
Girder clamping 35	Stex 35/35	2,0
Girder clamping 35	36/40, Stex 35/42	3,0
Girder clamping L 45	45/45	3,0

Specification:

Profile rail type: 35/21, 36/40, Stex 35/35, Stex 35/42, 45/45

Application area: for clamped fixation

at steel girder
(IPE 120 or U 160)

Assembly instruction: tightening torque min. 25 Nm. For a rail fastening two girder clamps are required.

Recommended accessory: threaded square plate 35x30 (Beam clamping device L 45)

threaded square plate 30x22 (Beam clamping device 35)

Technical data:

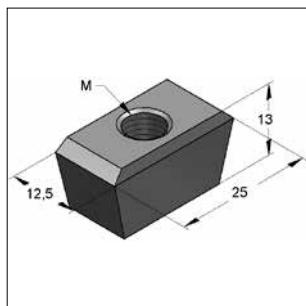
Material: steel

Material type: S235JR

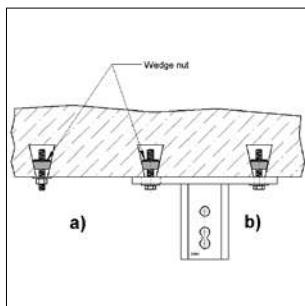
Surface: galvanized

Identification	for profile rail	Weight	Packing	Part-No.
Girder clamping 35	35/21, 36/40, Stex 35/35, Stex 35/42	0,301	20	9999695
Girder clamping L 45	45/45	0,519	20	08163909

■ Wedge nut for ceiling



Wedge nut for ceiling



Fixed under ceiling

Assembly instruction:
Illustration a): single mounting

- 1 wedge nut for ceiling
- 1 threaded bolt M8 or M10 (min. length 50 mm)
- 1 washer DIN 7089 (8,4 or 10,5) M8 or M10
- 1 hexagon nut M8 or M10

Illustration b): mounting of ceiling holder

- 1 holder for C-profile rail, plate 200 x 200
- 4 wedge nut for ceiling (M8 or M10)
- 4 hexagon screw, galvanized (M8 x 50 or M10 x 50)
- 2 washer DIN 7089 (8,4 or 10,5)

Specification:

Application area: for ceiling 38 / 51 x 150
type „HOLORIB“ and „HOESCH“

Technical data:

Material:

GTW

Surface:

galvanized

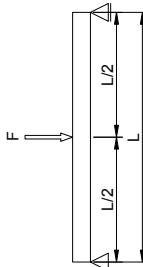
* Maximum load of HOLORIB-ceiling (system: Montana) is 9 kN/m² and max. 4 fixing points per m².

Identification	max. load* [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Wedge nut, female thread M8	1,50	0,022	100	0819715
Wedge nut, female thread M10	2,25	0,020	100	0819722

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

		System 35		System 45 (toothed)																	
Surface	F [kN]	fbv [kN]	fbv [kN]	35/21/2,0	35/20/0,8	27/18/1,25	36/40/2,0	45/45/1,5	45/45/2,0	45/45/2,5	45/60/3,0	45/75/3,0	45/90/1,5	45/90/2,0, D	45/90/2,5, D	45/100/2,5, D	45/1120/3,0, D	45/1150/3,0, D	45/1150/3,0, D		
		[mm]																			
	250	0,26	0,81	1,02	1,85	2,71	4,86	5,15	2,76	7,04	8,96	9,87	9,28	16,05	15,09	24,26	22,8	7,94	8,79	14,8	
	500	0,13	0,41	0,51	0,92	1,35	2,43	2,57	1,38	3,52	4,48	4,93	4,64	8,02	7,54	12,12	11,39	4,09	8,79	15,92	
	750	0,26	0,34	0,62	0,9	1,62	1,71	0,92	2,34	2,98	3,28	3,09	5,34	5,02	8,07	7,59	2,72	6,9	8,86	10,68	
	1000	0,15	0,2	0,4	0,68	1,21	1,28	0,69	1,76	2,23	2,46	2,31	4	3,76	6,05	5,68	2,04	5,17	6,64	8	
	1250	0,13	0,25	0,54	0,97	1,07	0,45	1,4	1,78	1,96	1,84	3,19	3	4,83	4,53	1,62	4,13	5,3	6,38	6	
	1500	0,17	0,41	0,8	0,85	0,31	1,16	1,48	1,63	1,53	2,65	2,49	4,01	3,77	1,35	3,43	4,41	5,31	4,98	8,59	
	1750	0,12	0,3	0,67	0,66	0,22	0,99	1,26	1,39	1,3	2,26	2,12	3,43	3,22	1,15	2,93	3,77	4,54	4,26	7,34	
	2000			0,23	0,51	0,50	0,17	0,75	0,96	1,08	1,08	1,97	1,85	2,99	2,8	1	2,56	3,28	3,96	3,71	
	2250	0,18	0,4	0,39	0,13	0,59	0,75	0,84	0,84	1,74	1,63	2,65	2,48	0,78	2,27	2,91	3,5	3,29	5,68	5,32	
	2500			0,14	0,32	0,31	0,10	0,47	0,6	0,67	0,67	1,45	1,44	2,37	2,22	0,62	2,03	2,61	3,14	2,94	
	2750			0,11	0,26	0,25		0,38	0,48	0,54	0,54	1,18	1,18	2,15	2,01	0,51	1,84	2,36	2,84	2,66	
	3000			0,21	0,20	0,31	0,4	0,44	0,44	0,44	0,98	0,97	1,9	1,83	0,41	1,68	2,15	2,59	2,42	4,21	
	3250			0,17	0,16	0,26	0,33	0,37	0,36	0,81	0,81	1,6	1,59	0,34	1,54	1,97	2,38	2,22	3,86	3,62	
	3500			0,14	0,13	0,22	0,27	0,3	0,3	0,69	0,68	1,36	1,35	0,28	1,4	1,8	2,17	2,05	3,57	3,34	
	3750			0,12	0,10	0,18	0,23	0,25	0,25	0,58	0,57	1,16	1,15	0,24	1,21	1,55	1,86	1,85	3,31	3,1	
	4000			0,15	0,19	0,21	0,21	0,2	0,49	0,49	1	0,99	0,2	1,04	1,34	1,61	1,6	3,09	2,88	4,86	
	4250			0,13	0,16	0,17	0,17	0,17	0,42	0,41	0,87	0,86	0,16	0,91	1,16	1,4	1,39	2,89	2,69	4,56	
	4500					0,11	0,13	0,14	0,14	0,36	0,35	0,75	0,74	0,13	0,79	1,02	1,23	1,21	2,71	2,52	
	4750					0,11	0,12	0,11	0,3	0,3	0,65	0,64	0,11	0,7	0,89	1,07	1,06	2,44	2,37	4,03	
	5000									0,26	0,25	0,57	0,56		0,61	0,78	0,94	0,93	2,17	2,15	
	5250									0,22	0,21	0,5	0,49		0,54	0,69	0,83	0,82	1,93	1,92	
	5500										0,18	0,17	0,43	0,42	0,48	0,61	0,73	0,72	1,73	1,71	3,42
	5750										0,15	0,14	0,37	0,36	0,42	0,54	0,64	0,63	1,54	1,53	3,22
	6000										0,12	0,11	0,32	0,31	0,37	0,47	0,57	0,55	1,38	1,36	2,91

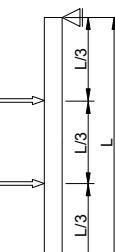
Calculation according to RAL-GZ 655-C	Surface property
Safety factor $\chi = 1,54$	fbv: pre-galvanized
max. bending moment $\delta_{zul} = L/200$	fsv: hot-dip galvanized



Loads of profile rails, galvanized: maximum loads for 2 x F

		System 35												System 45 (toothed)																							
		f _{bv}						f _{fv}						f _{sv}						f _{tv}						f _{fv}						f _{sv}					
Surface	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]	[kN]	[kN]	[kN]	[kN]					
		[mm]																																			
250	0,2	0,61	0,76	1,39	2,03	3,65	3,86	2,07	5,28	6,72	7,4	6,96	12,04	11,32	18,2	17,1	3,97	4,4	7,4	7,96	8,67	7,63	7,63	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11				
500	0,10	0,31	0,38	0,69	1,02	1,82	1,93	1,04	2,64	3,36	3,7	3,48	6,02	5,66	9,09	8,55	3,07	4,4	7,4	7,96	8,67	7,63	7,63	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11				
750	0,16	0,21	0,42	0,68	1,21	1,29	0,69	1,76	2,24	2,46	2,32	4,01	3,77	6,06	5,69	2,04	4,4	6,65	7,96	7,53	7,63	7,63	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11					
1000		0,12	0,24	0,51	0,91	0,96	0,42	1,32	1,68	1,84	1,73	3	2,82	4,54	4,26	1,53	3,88	4,98	6	5,64	7,63	7,63	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11					
1250		0,15	0,35	0,73	0,77	0,27	1,05	1,34	1,47	1,38	2,39	2,25	3,62	3,4	1,22	3,1	3,98	4,79	4,5	7,63	7,28	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11	8,11						
1500		0,10	0,24	0,54	0,53	0,18	0,8	1,02	1,15	1,15	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	8,11	8,11	8,11	8,11						
1750		0,18	0,4	0,39	0,13	0,59	0,74	0,84	1,7	1,59	2,57	2,42	0,78	2,2	2,83	3,4	3,19	5,51	5,17	8,11	8,07																
2000		0,14	0,3	0,29	0,1	0,44	0,56	0,64	0,63	1,36	1,35	2,24	2,1	0,59	1,92	2,46	2,97	2,79	4,81	4,51	7,51	7,05															
2250		0,11	0,24	0,23		0,35	0,44	0,5	0,49	1,06	1,06	1,99	1,86	0,46	1,7	2,18	2,63	2,47	4,26	3,99	6,66	6,25															
2500		0,19	0,18			0,28	0,35	0,4	0,39	0,85	0,85	1,64	1,63	0,37	1,52	1,96	2,36	2,21	3,82	3,58	5,97	5,61															
2750		0,15	0,15			0,23	0,29	0,32	0,32	0,7	0,69	1,34	1,34	0,3	1,37	1,76	2,12	2	3,46	3,24	5,42	5,08															
3000		0,12	0,12			0,19	0,23	0,26	0,26	0,57	0,57	1,12	1,11	0,25	1,14	1,47	1,77	1,76	3,16	2,96	4,95	4,64															
3250		0,10	0,10			0,15	0,19	0,22	0,21	0,48	0,48	0,94	0,94	0,2	0,97	1,24	1,49	1,49	2,9	2,71	4,55	4,26															
3500		0,13	0,16	0,18	0,18	0,4	0,4	0,8	0,79	0,17	0,82	1,06	1,27	1,27	2,68	2,5	4,21	3,94																			
3750		0,11	0,14	0,15	0,15	0,34	0,34	0,68	0,68	0,14	0,71	0,91	1,09	1,09	1,09	2,41	3,91	3,66																			
4000						0,11	0,13	0,12	0,29	0,29	0,59	0,58	0,12	0,61	0,79	0,95	0,94	2,1	2,1	3,65	3,41																
4250						0,10	0,10	0,10	0,25	0,24	0,51	0,51	0,10	0,54	0,69	0,83	0,82	1,84	1,83	3,42	3,19																
4500									0,21	0,21	0,44	0,44	0,47	0,6	0,72	0,71	1,62	1,61	3,21	3																	
4750									0,18	0,18	0,39	0,38	0,41	0,53	0,63	0,63	1,44	1,43	2,9	2,82																	
5000									0,15	0,15	0,34	0,33	0,36	0,46	0,56	0,55	1,28	1,27	2,59	2,58																	
5250									0,13	0,12	0,29	0,29	0,32	0,41	0,49	0,48	1,14	1,13	2,32	2,31																	
5500									0,11	0,10	0,26	0,25	0,28	0,36	0,43	0,42	1,02	1,01	2,09	2,08																	
5750												0,22	0,21	0,25	0,32	0,38	0,37	0,91	0,9	1,89	1,88																
6000												0,19	0,18	0,22	0,33	0,32	0,81	0,80	1,71	1,70																	

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

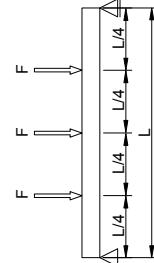


Surface property	
fbv:	pre-galvanized
fsv:	hot-dip galvanized

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

		System 35										System 45 (toothed)										
Surface	F	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv		
	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	
	250	0,13	0,41	0,51	0,93	1,36	2,43	2,58	1,38	3,52	4,48	4,94	4,64	8,03	7,55	12,13	11,4	2,65	2,93	4,94	5,31	5,78
	500	0,21	0,26	0,46	0,68	1,22	1,29	0,69	1,76	2,24	2,47	2,32	4,01	3,77	6,06	5,7	2,05	2,93	4,94	5,31	5,78	5,09
	750	0,11	0,15	0,3	0,45	0,81	0,86	0,46	1,17	1,49	1,64	1,55	2,67	2,51	4,04	3,8	1,36	2,93	4,43	5,31	5,02	5,09
	1000					0,17	0,34	0,61	0,64	0,3	0,88	1,12	1,23	1,16	2	1,88	3,03	2,84	1,02	2,59	3,32	4
	1250					0,11	0,25	0,49	0,51	0,19	0,7	0,89	0,98	0,92	1,6	1,5	2,42	2,27	0,81	2,07	2,65	3,19
	1500					0,18	0,39	0,38	0,13	0,58	0,73	0,82	0,77	1,33	1,25	2,01	1,89	0,68	1,72	2,21	2,66	2,49
	1750					0,13	0,29	0,28	0,10	0,42	0,53	0,6	0,6	1,13	1,06	1,72	1,61	0,56	1,47	1,89	2,27	2,13
	2000					0,10	0,22	0,21		0,32	0,41	0,46	0,46	0,97	0,93	1,5	1,4	0,43	1,28	1,64	1,98	3,21
	2250					0,17	0,17			0,25	0,32	0,36	0,36	0,76	0,76	1,33	1,24	0,33	1,14	1,46	1,75	1,65
	2500					0,14	0,13			0,2	0,25	0,29	0,28	0,61	0,61	1,17	1,11	0,27	1,02	1,31	1,57	1,47
	2750					0,11	0,11			0,16	0,21	0,23	0,23	0,5	0,5	0,96	0,96	0,22	0,92	1,18	1,42	1,33
	3000					0,13	0,17	0,19	0,19	0,41	0,41	0,41	0,41	0,8	0,8	0,18	0,8	0,18	0,82	1,05	1,27	1,21
	3250					0,11	0,14	0,16	0,16	0,35	0,34	0,34	0,34	0,67	0,67	0,15	0,69	0,89	1,07	1,93	1,93	1,97
	3500									0,12	0,13	0,13	0,29	0,29	0,29	0,57	0,57	0,12	0,59	0,76	0,91	1,79
	3750									0,10	0,11	0,11	0,25	0,24	0,49	0,49	0,10	0,51	0,65	0,79	0,78	1,66
	4000										0,21	0,21	0,42	0,42	0,42	0,42	0,44	0,57	0,68	0,68	1,51	1,44
	4250										0,18	0,18	0,37	0,37	0,36	0,36	0,39	0,49	0,59	0,59	1,32	1,32
	4500										0,15	0,15	0,32	0,32	0,32	0,32	0,34	0,43	0,52	0,51	1,17	1,16
	4750										0,13	0,13	0,28	0,27	0,27	0,27	0,3	0,38	0,46	0,45	1,03	1,03
	5000										0,11	0,11	0,24	0,24	0,24	0,24	0,26	0,33	0,4	0,4	0,92	0,91
	5250															0,21	0,21	0,23	0,29	0,35	0,82	0,81
	5500															0,18	0,18	0,26	0,31	0,3	0,73	0,72
	5750															0,16	0,16	0,23	0,27	0,65	0,65	1,36
	6000															0,14	0,13	0,20	0,24	0,23	0,59	0,58

Calculation according to RAL-GZ 655-C
Safety $\chi = 1,54$
max. bending $\delta_{\text{ail}} = L/200$
module of elasticity $E = 21000 \text{ N/mm}^2$

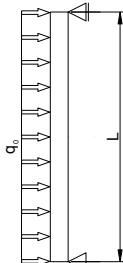


Surface property
fbv: pre-galvanized
fsv: hot-dip galvanized

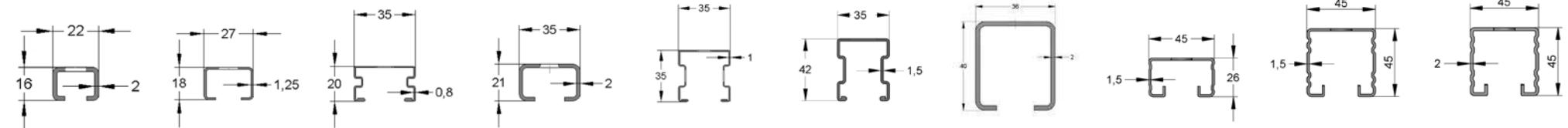
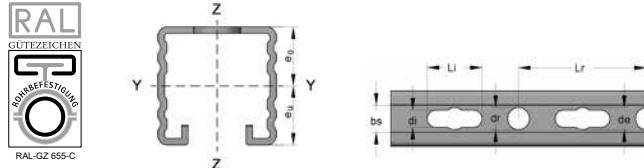
Loads of profile rails, galvanized: maximum loads for distributed load

		System 35										System 45 (toothed)											
		35/20/0,8					36/40/2,0					45/45/2,0					45/52/1,5						
		F	L	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv		
		[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]		
		[mm]																					
250	2,08	6,44	8,1	14,75	21,61	38,85	41,13	22,02	56,3	71,67	78,94	74,2	128,38	120,67	183,37	172,37	31,76	35,16	59,17	63,65	69,32	60,97	64,88
500	0,52	1,61	2,02	3,68	5,4	9,7	10,27	5,50	14,06	17,9	19,72	18,53	32,07	30,14	48,48	45,56	15,88	17,58	29,59	31,83	34,66	30,49	32,44
750	0,21	0,55	0,76	1,52	2,4	4,31	4,56	2,44	6,24	7,95	8,75	8,22	14,23	13,37	21,52	20,22	7,25	11,72	19,73	21,22	23,11	20,33	21,63
1000	0,23	0,32	0,64	1,35	2,42	2,56	1,14	3,51	4,46	4,91	4,61	7,99	7,51	12,09	11,36	4,07	8,79	13,27	15,92	15,02	15,25	16,22	
1250	0,12	0,16	0,32	0,76	1,54	1,63	0,58	2,24	2,85	3,13	2,94	5,1	4,79	7,72	7,25	2,6	6,6	8,48	10,21	9,59	12,2	12,2	12,98
1500																							
1750																							
2000																							
2250																							
2500																							
2750																							
3000																							
3250																							
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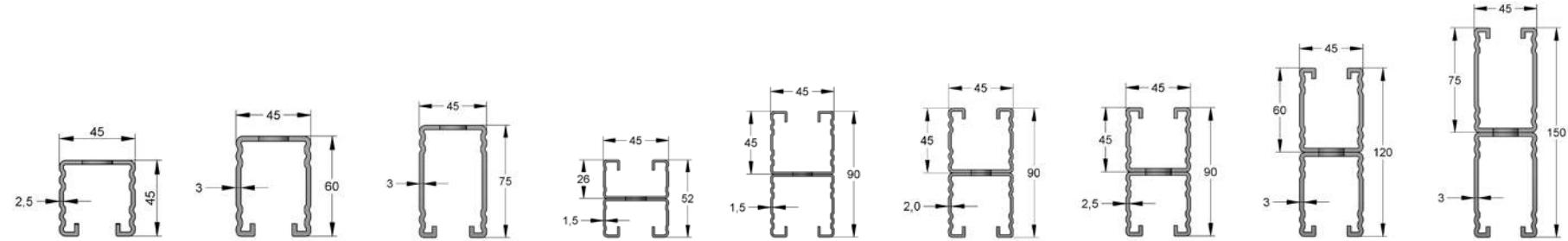
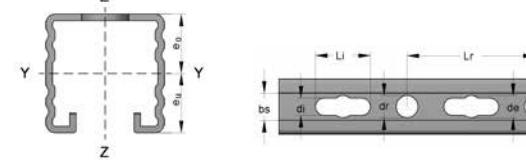
Calculation according to RAL-GZ 655-C	Surface property
Safety	$\chi = 1,54$
max. bending	$\delta_{zul} = L/200$
module of elasticity	$E = 210000 \text{ N/mm}^2$



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



Profile rail overview, pre- and hot-dip galvanized



Profile rail	System 45 (toothed)								
	45/45/2,5	45/60/3,0	45/75/3,0	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			S250GD-Z275-N-A						
Elastic limit	f_y	N/mm ²	250	250	250	250	250	250	250
Weight/ meter	G/m	kg/m	2,96	4,06	4,82	2,69	3,78	4,90	5,92
Surface hot-dip galvanized according to DIN EN ISO 1461									
Material according to DIN EN 10025-2			S235JR	S235JR	S235JR	-	-	S235JR	S235JR
Elastic limit	f_y	N/mm ²	235	235	235	-	-	235	235
Weight/meter	G/m	kg/m	3,21	4,35	5,15	-	-	6,35	8,63
Delivery length 1	l_1	m	3,0	6,0	6,0	6,0	6,0	6,0	6,0
Delivery length 2	l_2	m	6,0	-	-	-	-	-	-
Area (least cross section of the profile rail)	A_k	cm ²	3,53	4,52	5,66	2,99	4,59	5,96	7,05
Slot width	b_s	mm	22,0	22,0	22,0	22,0	22,0	22,0	22,0
Grid dimension	l_r	mm	105,0	105,0	105,0	105,0	105,0	105,0	105,0
Diameter round hole	d_r	mm	18,0	18,0	18,0	14,0	14,0	18,0	18,0
Diameter elongated hole x length	$d_l \times l_1$	mm x mm	14,0 x 45,0						
Extension diameter elongated hole	d_e	mm	18,0	18,0	18,0	-	-	18,0	18,0
Characteristic values YY-axis									
Axial angular impulse	I_y	cm ⁴	8,81	18,67	35,36	8,19	35,91	46,13	55,61
Section modulus	W_y	cm ³	3,80	6,18	9,34	3,15	7,98	10,25	12,35
Centroid distance	e_o	cm	2,19	3,02	3,71	2,60	4,50	4,50	6,00
Centroid distance	e_u	cm	2,31	2,98	3,79	2,60	4,50	4,50	6,00
Radius of inertia	i_y	cm	1,58	2,03	2,50	1,66	2,80	2,78	3,64
Characteristic values ZZ-axis									
Axial angular impulse	I_z	cm ⁴	12,69	17,15	21,90	10,30	16,74	21,32	25,37
Section modulus z-axis	W_z	cm ³	5,64	7,62	9,74	4,58	7,44	9,47	11,27
Centroid distance	e_z	cm	2,25	2,25	2,25	2,25	2,25	2,25	2,25
Radius of inertia	i_z	cm	1,90	1,95	1,96	1,86	1,91	1,89	1,90
Approvals/quality marks									
RAL quality mark	RAL-GZ 655-C		x	x	x	x	x	x	x

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.

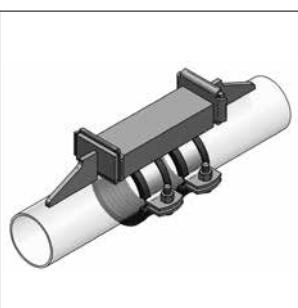
The total load of a fixpoint in connection with a compensator is independent of pressure, temperature differences and pipe lengths between the compensator and fixpoints, as well as the valve balgen cross-section and axial valve resistance. Pipelines fixed on building constructions have to be mounted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

Specification:

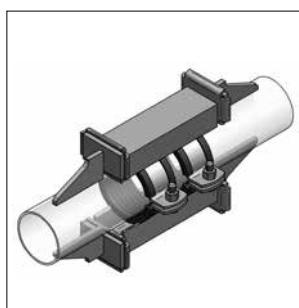
The body material of the fixpoint is galvanized. Raw parts e.g. the welding lug for fixpoints should also be coated after welding. We recommend to protect all raw parts and weldigs by zinc-rich primer or zinc-spray.

Operation/Installation advice:

- suitable for straight, unramified pipeline alignment with axial compensator or U-expansion bend
- forced guide bearing within spitting distance of the compensator is obligatory



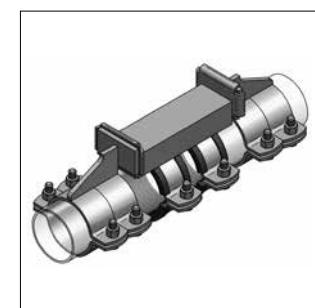
Fixpoint type A
Page 3a/2



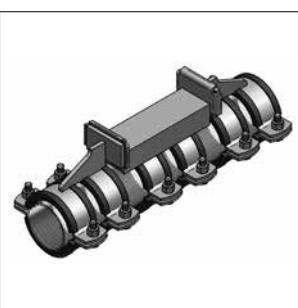
Fixpoint type B
Page 3a/3



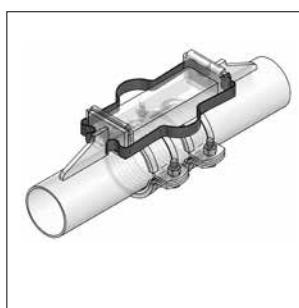
Fixpoint type A with joint holder
Page 3a/4



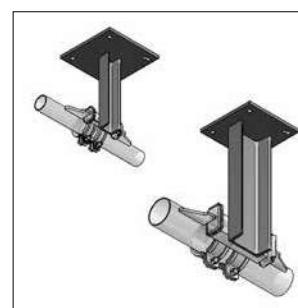
Fixpoint type A/K
Page 3a/5



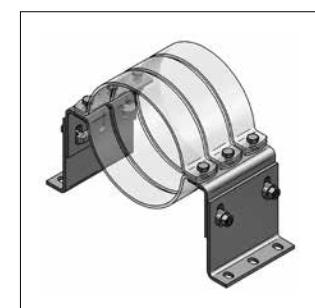
Fixpoint type A/K-MD
Page 3a/6



Mounting clamps for fixpoints
Page 3a/7



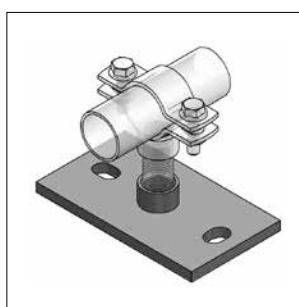
Fixpoint consoles
Page 3a/8



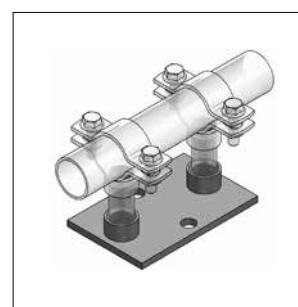
Fixpoint bracket HV
Page 3a/9



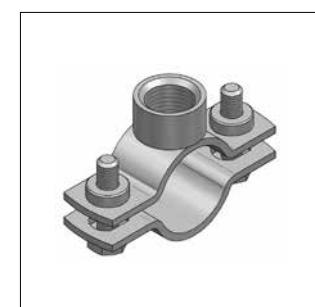
Insulated fixpoint
Page 3a/10



Clamping fixpoint
Page 3a/11



Fixpoint type FGL
Page 3a/12



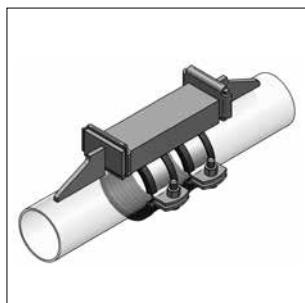
Pipe clamp FGL
Page 3a/12

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

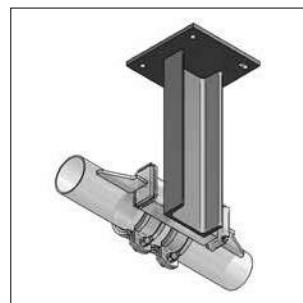
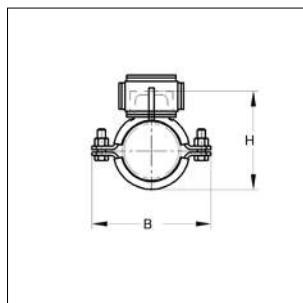
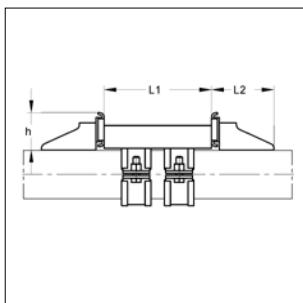
Remarks to fixpoints see chapter 15

3a

■ Fixpoint type A (for welding)



Fixpoint type A (mounted)

Fixpoint type A
with fixpoint console

3a

Specification:

Application area: ferritic steel pipes
 Number of sectional steels: 1 piece
 Number of pressure pads: 2 pieces
 OD: 15 up to 160 mm
 Sectional steel: T-steel (up to Ø pipe 57,0 mm)
 U-steel (from Ø pipe 60,3 mm)
 Sound insulation: for DIN 4109

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized



Sound insulation lining: Rubber TPE
 Temperature resistance: - 35 °C up to + 100 °C Silicone - 50 °C up to + 250 °C

¹⁾ bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

The quality of weld seam has to be proofed.

Fixpoint size I, T-steel (accessory: mounting clamp 1a / Part-No. 9000310)

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel					max. axial ¹⁾				Part-No.	Part-No.
		L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	reactive force [kN]	Weight [kg/pc.]	Packing [pc.]			
15 - 19	25 x 3	30 x 30 x 100	81	47	60 - 64	80	8,5	0,92	1	0030171	0020171	
20 - 25	25 x 3	30 x 30 x 100	81	47	66 - 71	87	8,5	0,95	1	0030221	0020221	
26 - 30	25 x 3	30 x 30 x 100	81	47	72 - 76	92	8,5	0,98	1	0030271	0020271	
31 - 36	25 x 3	30 x 30 x 100	81	47	77 - 82	98	8,5	1,00	1	0030341	0020341	
38 - 45	25 x 3	30 x 30 x 100	81	47	84 - 91	107	8,5	1,04	1	0030421	0020421	
47 - 51	25 x 3	30 x 30 x 100	81	47	93 - 97	114	8,5	1,08	1	0030481	0020481	
53 - 57	25 x 3	30 x 30 x 100	81	47	99 - 103	120	8,5	1,11	1	0030571	0020571	

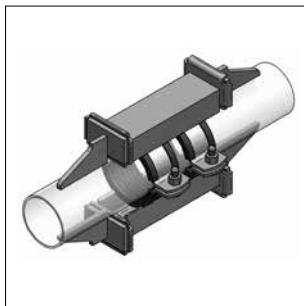
Fixpoint size II, U-steel (accessory: mounting clamp 2 / Part-No. 9000312)

											Silicone	Rubber
60,3	50 x 5	65 x 42 x 200	116	69	112,5	148	20	4,51	1	0030601	0020601	
76,1	50 x 5	65 x 42 x 200	116	69	131,0	166	20	4,75	1	0030761	0020761	
88,9	50 x 5	65 x 42 x 200	116	69	146,0	179	20	4,95	1	0030891	0020891	
108,0	50 x 5	65 x 42 x 200	116	69	165,0	199	20	5,23	1	0031081	0021081	
114,3	50 x 5	65 x 42 x 200	116	69	171,5	205	20	5,32	1	0031141	0021141	
133,0	50 x 5	80 x 45 x 200	116	69	191,0	224	20	5,98	1	0031331	0021331	
139,7	50 x 5	80 x 45 x 200	116	69	198,5	231	20	6,78	1	0031401	0021401	
159 - 160	50 x 5	80 x 45 x 200	116	69	218 - 219	251	20	6,37	1	0031591	0021591	

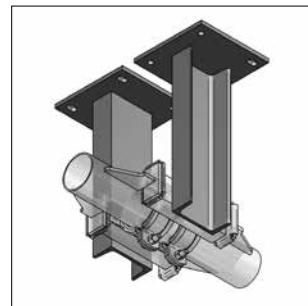
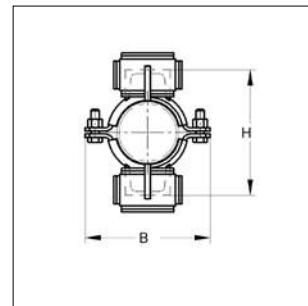
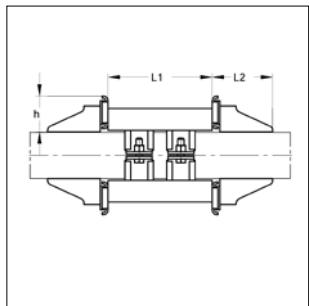
mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

mounting recommendation see chapter 15

■ Fixpoint type B (for welding)



Fixpoint type B (mounted)

Fixpoint type B
with two fixpoint consoles

3a

Specification:

Application area: ferritic steel pipes
 Number of sectional steels: 2 pieces
 Number of Pressure pads: 4 pieces
 OD: 20 up to 356 mm
 Sectional steel: T-steel (up to Ø pipe 57,0 mm)
 Sound insulation: according to DIN 4109
 U-steel (from Ø pipe 60,3 mm)

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 Sound insulation
 lining: Rubber TPE
 Temperature resistance: - 35 °C up to + 100 °C **Silicone**
 - 50 °C up to + 250 °C



¹⁾ bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).

The quality of weld seam has to be proofed.

Fixpoint size I, T-steel (accessory: mounting clamp 1a /Part-No. 9000310)

Clamping-range [mm]	Material pipe-clamp [mm]	Sectional steel						max. axial ⁽¹⁾			Silicone Part-No.	Rubber Part-No.
		L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	reactive force [kN]	Weight [kg/pc.]	Packing [pc.]			
20 - 25	25 x 3	30 x 30 x 100	81	47	96 - 101	87	17	1,54	1	0030222	0020222	
26 - 30	25 x 3	30 x 30 x 100	81	47	102 - 106	92	17	1,57	1	0030272	0020272	
31 - 36	25 x 3	30 x 30 x 100	81	47	107 - 112	98	17	1,59	1	0030342	0020342	
38 - 45	25 x 3	30 x 30 x 100	81	47	114 - 121	107	17	1,62	1	0030422	0020422	
47 - 51	25 x 3	30 x 30 x 100	81	47	123 - 127	114	17	1,67	1	0030482	0020482	
53 - 57	25 x 3	30 x 30 x 100	81	47	129 - 133	120	17	1,70	1	0030572	0020572	

Fixpoint size II, U-steel (accessory: mounting clamp 2 /Part-No. 9000312)

										Silicone	Rubber
60,3	50 x 5	65 x 42 x 200	116	69	143	148	40	7,29	1	0030602	0020602
76,1	50 x 5	65 x 42 x 200	116	69	164	166	40	7,54	1	0030762	0020762
88,9	50 x 5	65 x 42 x 200	116	69	180	179	40	7,73	1	0030892	0020892
108,0	50 x 5	65 x 42 x 200	116	69	200	199	40	8,02	1	0031082	0021082
114,3	50 x 5	65 x 42 x 200	116	69	207	205	40	8,11	1	0031142	0021142
133,0	50 x 5	80 x 45 x 200	116	69	227	224	40	9,13	1	0031332	0021332
139,7	50 x 5	80 x 45 x 200	116	69	235	231	40	9,23	1	0031402	0021402
159 - 160	50 x 5	80 x 45 x 200	116	69	256 - 257	251	40	9,52	1	0031592	0021592

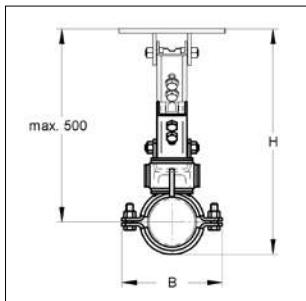
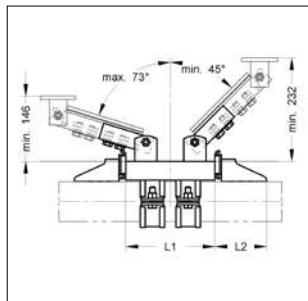
Fixpoint size III, U-steel

										Silicone	Rubber
168,3	50 x 5	120 x 55 x 330	116	70	263	258	60	16,94	1	0031682	0021682
193,7	50 x 5	120 x 55 x 330	116	71	294	284	60	17,33	1	0031942	0021942
219,0	50 x 5	120 x 55 x 330	116	72	322	309	60	17,70	1	0032192	0022192
273 - 274	50 x 5	120 x 55 x 330	116	73	382 - 383	363	60	18,51	1	0032732	0022732
323,9	50 x 5	120 x 55 x 330	116	74	437	414	60	19,28	1	0033242	0023242
355 - 356	50 x 5	120 x 55 x 330	116	75	469 - 470	446	60	19,76	1	0033562	0023562

(i) mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

☒ mounting recommendation see chapter 15

■ Fixpoint type A with joint holder (for welding)



3a

Fixpoint type A with joint holder
(mounted)

Specification:

Application area:	ferritic steel pipes
Number of sectional steels:	1 piece
Number of pressure pads:	2 pieces
OD:	20 up to 160 mm
Sectional steel:	T-steel (up to Ø pipe 57,0 mm) U-steel (from Ø pipe 60,3 mm)
Sound insulation:	according to DIN 4109

Technical data:

Material	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation lining:	Rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C

Needed accessory:

- 2 x joint holder with plate
- 2 x profile rail 45/45/2,5 (length on request)
- 8 x hexagon screw M12 x 25
- 4 x 2-hole tooth plate M12
- 8 x washer
- 2 x mounting clamp 1b or 2

Delivery time:

5 working days, ex works

¹⁾ 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.

The quality of weld seam has to be proofed.

Fixpoint size I, T-steel (accessory: mounting clamp 1b /Part-No. 9000311)

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel				H _{max.} [mm]	H _{min.} [mm]	B [mm]	max. axial ¹⁾ reactive force [kN]	Weight [kg/pc.]	Packing [pc.]	Rubber Part-No.
20 - 25	25 x 3	30 x 30 x 140	81	521	186	87	8,5	2,66	1	9999671		
26 - 30	25 x 3	30 x 30 x 140	81	523	192	92	8,5	2,69	1	9999932		
31 - 36	25 x 3	30 x 30 x 140	81	526	197	98	8,5	2,71	1	9999835		
38 - 45	25 x 3	30 x 30 x 140	81	531	204	107	8,5	2,75	1	9999868		
47 - 51	25 x 3	30 x 30 x 140	81	534	213	114	8,5	2,79	1	9999869		
53 - 57	25 x 3	30 x 30 x 140	81	537	219	120	8,5	2,82	1	9999864		

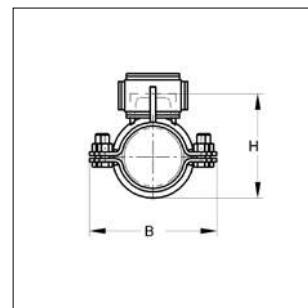
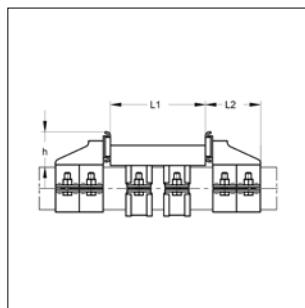
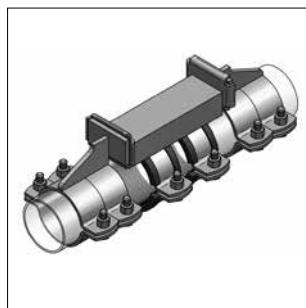
Fixpoint size II, U-steel (accessory: mounting clamp 2 /Part-No. 9000312)

												Rubber Part-No.
60,3	50 x 5	65 x 42 x 200	116	541	232,5	149	15	6,15	1	9999672		
76,1	50 x 5	65 x 42 x 200	116	549	251,5	166	15	6,39	1	9999933		
88,9	50 x 5	65 x 42 x 200	116	556	266	179	15	6,58	1	9999865		
108,0	50 x 5	65 x 42 x 200	116	565	285	199	15	6,87	1	9999866		
114,3	50 x 5	65 x 42 x 200	116	568	291,5	205	15	6,96	1	9999773		
133,0	50 x 5	80 x 45 x 200	116	578	311	224	15	7,61	1	9999772		
139,7	50 x 5	80 x 45 x 200	116	581	318,5	231	15	7,72	1	9999673		
159 - 160	50 x 5	80 x 45 x 200	116	591	339	251	15	8,00	1	9999674		

(i) mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

☒ mounting recommendation see chapter 15

■ Fixpoint type A/K (for clamping)



Fixpoint type A/K (mounted)

3a

Specification:

Application area: galvanized steel pipes,
ferritic steel pipes
Number of sectional steels: 1 piece
OD: 15 up to 160 mm
Sectional steel: T-steel (up to Ø pipe 57,0 mm)
U-steel (from Ø pipe 60,3 mm)
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation lining: Rubber TPE
Temperature resistance: - 35 °C up to + 100 °C

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

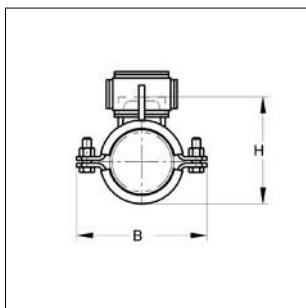
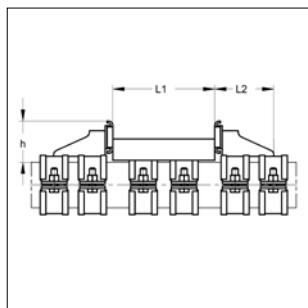
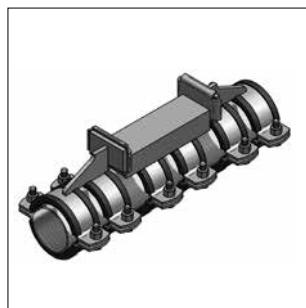
Fixpoint size I, T-steel

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel				L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	tightening torque [Nm]	max. reactive force [kN]	Weight [kg/pc.]	Packing [pc.]	Rubber Part-No.
15,0	25 x 3	30	x	30	x	100	81	50	61,0	80	6	8,50	1,44	1	0020153
17,2	25 x 3	30	x	30	x	100	81	50	63,2	80	6	8,50	1,48	1	0020173
20,0	25 x 3	30	x	30	x	100	81	50	66,0	87	6	8,50	1,52	1	0020203
21,3	25 x 3	30	x	30	x	100	81	50	67,3	87	6	8,50	1,52	1	0020223
22 - 23	25 x 3	30	x	30	x	100	81	50	68 - 69	87	6	8,50	1,52	1	0020233
26 - 28	25 x 3	30	x	30	x	100	81	50	72 - 74	92	6	8,50	1,59	1	0020273
30,0	25 x 3	30	x	30	x	100	81	50	76,0	92	6	8,50	1,63	1	0020303
32 - 35	25 x 3	30	x	30	x	100	81	50	78 - 81	98	6	8,50	1,65	1	0020343
38 - 40	25 x 3	30	x	30	x	100	81	50	84 - 86	107	6	8,50	1,73	1	0020403
41 - 45	25 x 3	30	x	30	x	100	81	50	87 - 91	107	6	8,50	1,76	1	0020423
48 - 51	25 x 3	30	x	30	x	100	81	50	94 - 97	114	6	8,50	1,86	1	0020483
53 - 55	25 x 3	30	x	30	x	100	81	50	99 - 101	120	6	8,50	1,89	1	0020543
58 - 60	25 x 3	30	x	30	x	100	81	50	106 - 108	129	6	8,50	1,98	1	0020583

Fixpoint size II, U-steel

																Rubber
60,3	50 x 5	65	x	42	x	200	127	70	112,5	148	60	20,0	7,37	1	0020603	
63,0	50 x 5	65	x	42	x	200	127	70	116	151	60	20,0	7,49	1	0020630	
64,0	50 x 5	65	x	42	x	200	127	70	117	152	60	20,0	7,54	1	0020633	
70,0	50 x 5	65	x	42	x	200	127	70	124	158	60	20,0	7,78	1	0020703	
75,0	50 x 5	65	x	42	x	200	127	70	129,5	163	60	20,0	7,98	1	0020753	
76,1	50 x 5	65	x	42	x	200	127	70	131,5	166	60	20,0	8,02	1	0020763	
88,9	50 x 5	65	x	42	x	200	127	70	146	179	60	20,0	8,55	1	0020893	
108,0	50 x 5	65	x	42	x	200	127	70	165	198	60	20,0	9,32	1	0021083	
110,0	50 x 5	65	x	42	x	200	127	70	167	200	60	20,0	9,39	1	0021103	
114,3	50 x 5	65	x	42	x	200	127	70	171,5	204	60	20,0	9,56	1	0021143	
125,0	50 x 5	80	x	45	x	200	127	70	182,5	215	60	20,0	10,37	1	0021253	
133,0	50 x 5	80	x	45	x	200	127	70	191	223	60	20,0	10,70	1	0021333	
135,0	50 x 5	80	x	45	x	200	127	70	193	225	60	20,0	10,77	1	0021353	
139,7	50 x 5	80	x	45	x	200	127	70	198,5	230	60	20,0	10,98	1	0021403	
159 - 160	50 x 5	80	x	45	x	200	127	70	219 - 220	250	60	20,0	11,76	1	0021603	

■ Fixpoint type A/K-MD (for clamping)



3a

Fixpoint type A/K-MD (mounted)

Specification:

Application area: plastic pipes, copper pipes
stainless steel pipes

Number of sectional steels: 1 piece

OD: 15 up to 160 mm

Sectional steel: T-steel (up to Ø pipe 57,0 mm)
U-steel (from Ø pipe 60,3 mm)

Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Sound insulation lining: Rubber TPE
Temperature resistance: - 35 °C up to + 100 °C

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

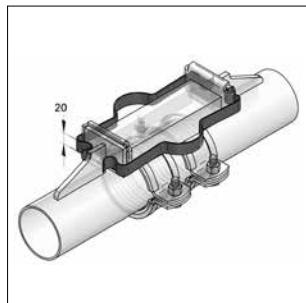
Fixpoint size I, T-steel

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	tightening torque [Nm]	max. axial reactive force [kN]	Weight [kg/pc.]	Packing [pc.]	Rubber	Part-No.
15 - 19	25 x 3	30 x 30 x 100	81	56	61 - 65	80	6	2,00	1,58	1		0020155	
20 - 25	25 x 3	30 x 30 x 100	81	56	66 - 71	87	6	2,00	1,66	1		0020215	
26 - 30	25 x 3	30 x 30 x 100	81	56	72 - 76	92	6	2,00	1,75	1		0020265	
31 - 36	25 x 3	30 x 30 x 100	81	56	77 - 82	98	6	2,00	1,82	1		0020315	
38 - 45	25 x 3	30 x 30 x 100	81	56	84 - 91	107	6	4,00	1,92	1		0020385	
47 - 51	25 x 3	30 x 30 x 100	81	56	93 - 97	114	6	4,00	2,05	1		0020475	
53 - 57	25 x 3	30 x 30 x 100	81	56	99 - 103	120	6	4,00	2,14	1		0020535	

Fixpoint size II, U-steel

												Rubber	
60,3	50 x 5	65 x 42 x 200	116	80	112,5	149	60	8,50	7,96	1		0020605	
63,0	50 x 5	65 x 42 x 200	116	80	116,0	152	60	8,50	8,10	1		0020635	
64,0	50 x 5	65 x 42 x 200	116	80	117,0	153	60	8,50	8,14	1		0020645	
70,0	50 x 5	65 x 42 x 200	116	80	124,0	160	60	8,50	8,41	1		0020705	
75,0	50 x 5	65 x 42 x 200	116	80	129,5	165	60	8,50	8,64	1		0020755	
76,1	50 x 5	65 x 42 x 200	116	80	131,5	166	60	8,50	8,68	1		0020765	
88,9	50 x 5	65 x 42 x 200	116	80	146,0	179	60	8,50	9,27	1		0020895	
108,0	50 x 5	65 x 42 x 200	116	80	165,0	199	60	8,50	10,12	1		0021085	
110,0	50 x 5	65 x 42 x 200	116	80	167,0	201	60	8,50	10,21	1		0021105	
114,3	50 x 5	65 x 42 x 200	116	80	171,5	205	60	8,50	10,39	1		0021155	
125,0	50 x 5	80 x 45 x 200	116	80	182,5	212	60	8,50	11,26	1		0021255	
133,0	50 x 5	80 x 45 x 200	116	80	191,0	224	60	8,50	11,62	1		0021335	
135,0	50 x 5	80 x 45 x 200	116	80	193,0	226	60	8,50	11,71	1		0021355	
139,7	50 x 5	80 x 45 x 200	116	80	198,5	231	60	8,50	11,93	1		0021405	
160,0	50 x 5	80 x 45 x 200	116	80	219,5	251	60	8,50	12,82	1		0021605	

■ Mounting clamps for fixpoints



Mounting clamps for fixpoints

3a

Specification:

Required quantity: 2 pieces
Suitable for: fixpoint type A and B

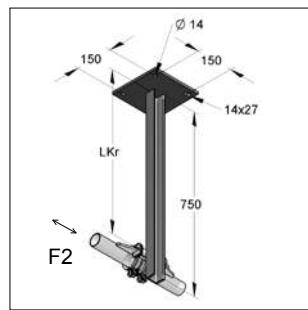
Remark: clamps are re-usable

Technical data:

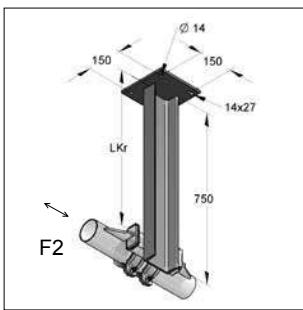
Material: steel
Material type: S235JR
Surface: galvanized

Description	suitable for OD [mm]	suitable for fixpoint type	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Mounting clamp size 1a	21,3 - 57,0	Type A, Type B	0,060	2	9000310
Mounting clamp size 1b	21,3 - 57,0	Type A with joint holder	0,070	2	9000311
Mounting clamp size 2	60,3 - 159,0	Type A, Type B, Type A with joint holder	0,086	2	9000312

■ Fixpoint consoles



Fixpoint console 50/38/750



Fixpoint console 120/55/750

3a

Technical data: Fixpoint console 50/38/750

Material:	steel
Material type:	S235JR
Surface:	raw
U-steel:	overleaf welded on anchor plate,
Suitable for:	fixpoint type A and B
Mounting recommendation:	foundation concrete \geq C20/25
Delivery time:	5 working days, ex works
global safety coefficient γ :	1,35
maximum torque: M_G :	1617,53 Nm
Reaction force F_{AX} :	10,78 kN
Reaction force F_{BX} :	10,78 kN
M_G, F_{AX}, F_{BX} valid for LF2:	up to L= 600 mm

Technical data: Fixpoint console 120/55/750

Material:	steel
Material type:	S235JR
Surface:	raw
U-steel:	overleaf welded on anchor plate,
Suitable for:	fixpoint type A and B
Mounting recommendation:	foundation concrete \geq C20/25
Delivery time:	5 working days, ex works
global safety coefficient γ :	1,35
maximum torque: M_G :	3504,20 Nm
Reaction force F_{AX} :	23,36 kN
Reaction force F_{BX} :	23,36 kN
M_G, F_{AX}, F_{BX} valid for LF2:	up to L= 1000 mm

* Fixpoint consoles in galvanized on request

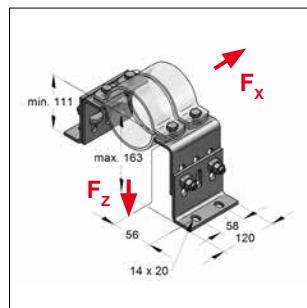
Fixpoint console 50/38/750

Description	Length	Length LKr	max.load		Anchor plate	Weight	Packing	Part-No.
			[mm]	[mm]				
Fixpoint console 50/38 raw	750	100	16,18		200 x 200 x 10	7,40	1	9997799
		200	8,09					
		300	5,39					
		400	4,04					
		500	3,24					
		600	2,70					
		700	2,27					

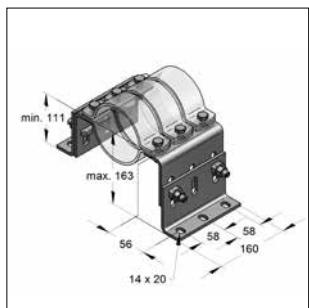
Fixpoint console 120/55/750

Fixpoint console 120/55 raw	750	100	35,04	200 x 200 x 10	13,60	1	9996491
		200	17,50				
		300	11,68				
		400	8,76				
		500	7,00				
		600	5,84				
		700	5,00				

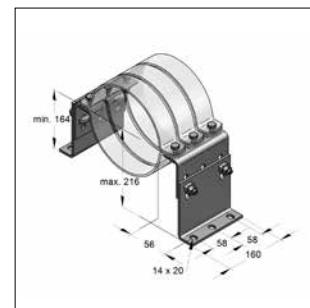
■ Fixpoint bracket HV



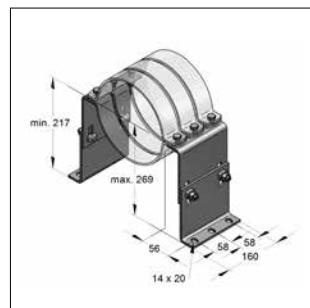
Fixpoint bracket HV1



Fixpoint bracket HV2



Fixpoint bracket HV3



Fixpoint bracket HV4

Specification:

Application area: Height adjustable bracket for fixation of pipes without sound insulation.
To use as fixpoint in conjunction with MEFA Titan HD clamps. Also applicable as height adjustable substructure of rail constructions.

Remark: High-strength bolting through CENTUM-T-lock head connection can be fixed on any substructure (C-profile rail, CENTUM, steel girder)

Scope of delivery: 2 x angle (stilt)
2 x angle (side part)
4 x T-lock head M12x40
4 or 6 x hexagon screw M12x40 + nut M12

Technical data:

Material: steel
Material type: S235JR
Surface:
- angle: hot-dip galvanized
- screw joint: zinc-nickel

Tightening torque

- pipe clamp: 60 Nm
- T-lock head: 120 Nm

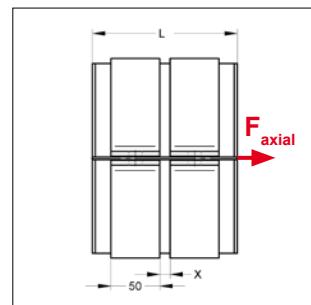
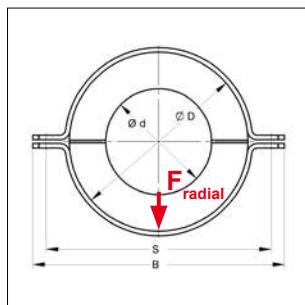
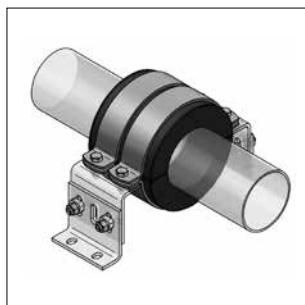
(* OD < 168 mm = 18 kN, OD > 168 mm = 40 kN (limited by T-lock head connection))

Type	Length L [mm]	Axis height min.-max. [mm]	Number of fixpoint clamps [pcs.]	Recom-mended pipe OD [mm]	Angle stilt [pair]	Angle side part [pair]	max. load F_x [kN]	max. load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
HV1	120	111-163	2	64-273	120/6/100	120/6/100	20	12	3,58	1	00200405/fvz
HV2	160	111-163	3	64-273	160/6/100	160/6/100	30	18/40*	4,74	1	00200406/fvz
HV3	160	164-216	3	64-406	160/6/153	160/6/100	30	18/40*	5,69	1	00200407/fvz
HV4	160	217-269	3	64-508	160/6/153	160/6/153	30	18/40*	6,52	1	00200408/fvz

Suitable Titan HD clamps without connection thread see on chapter 1 (also available in hot-dip galvanized coating)

mounting recommendation see chapter 15

■ Insulated fixpoint

3a
Insulated fixpoint**Specification:**

Application area: Insulated fixpoint mounting of chilled water pipes of steel

Technical data:

Insulating material:

PUR (with natural rubber on front ends)

Characteristic: Can be mounted to any substructures (C-profile rails, CENTUM®, steel girder). Height adjustable in combination with Fixpoint brackets HV. High water vapor diffusion resistance and low thermal conductivity. Acc. AGI the requirements

Density: 200 kg/m³
Thermal conductivity: 0,037 W/mK
Temperature range: -50 °C up to +105 °C

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

Inner / outer split ring
Material: steel
Surface: raw / galvanized

Delivery time: approx. 15 working days, ex works

*Required accessory:

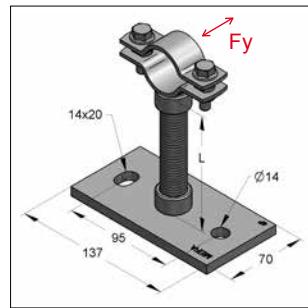
Fixpoint bracket HV

OD [mm]	Insulation thickness [mm]	Recom. fixpoint bracket*	Length of shell [mm]	Dimension			Max. load		Weight [kg/pc.]	Packing [pc.]	Part-No.
		[type]	L	B [mm]	S [mm]	F _{axial} [kN]	F _{radial} [kN]				
76,1	40	HV1	148	235	206	2,7	5,4	3,76	1	698400076	
88,9	40	HV1	148	246	217	2,8	6,3	4,03	1	698400089	
114,3	40	HV1	148	272	243	3,3	8,0	4,66	1	698400114	
139,7	40	HV1	148	300	271	4,5	9,2	5,58	1	698400140	
168,3	40	HV1	148	328	299	5,6	10,4	6,30	1	698400168	
219,1	40	HV3	204	378	349	8,0	12,4	8,27	1	698400219	
273,0	40	HV3	204	433	404	8,9	13,6	9,85	1	698400273	
323,9	40	HV4	204	484	455	11,1	16,8	11,31	1	698400324	
355,6	40	HV4	204	516	487	12,1	18,2	12,22	1	698400356	
406,4	40	HV4	204	567	538	13,6	20,3	13,68	1	698400406	

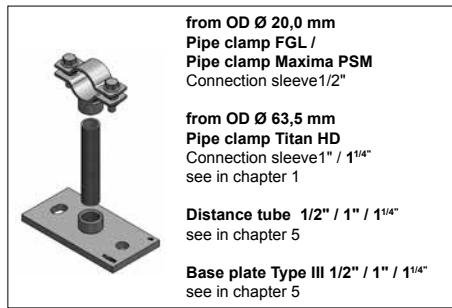
(i) Suitable Fixpoint brackets as substructure see page 3a/9

mounting recommendation see chapter 15

Clamping fixpoint



Clamping fixpoint



Elements of the clamping fixpoint

max. load* Fy Distance L [mm]	1/2"	1"	1 1/4"
	Fy [kN]	Fy [kN]	Fy [kN]
50	1,482	5,350	10,362
100	0,741	2,675	5,181
150	0,494	1,783	3,454
200	0,371	1,337	2,591
250	0,290	1,070	2,072
300	0,201	0,892	1,727
350	0,148	0,764	1,480
400	0,113	0,665	1,295
450	0,089	0,525	1,151
500	0,072	0,425	1,036

* at $\sigma_{\max} = 160 \text{ N/mm}^2$, max. bending f = L/150**Specification:**

Application area: ferritic steel pipes, plastic pipes
 Mounting: screw fastening
 OD: 20 up to 114 mm

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

Specification with sound-decoupling set :

Sound insulation: according to DIN 4109

Sound insulation lining: EPDM lining
 Temperature resistance: - 35 °C up to + 100 °C

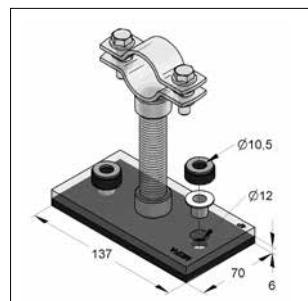
Remark: use only distance tubes with straight thread

Recommended axial load of pipe clamp type:

Description	tightening torque [Nm]	max. load [kN]
Pipe clamp Maxima PSM unlined 1/2"	5	0,7
Pipe clamp Titan HD unlined 1" or 1 1/4"	60	5,0

(i) Admissible load based on lowest value of load table and max. recommend load of pipe clamp. To prevent from contact corrosion of Cu- and stainless steel pipes, pipe clamps with KTL-coating (for indoor application only) are available on demand.

Sound-decoupling set K

Sound-decoupling set
for the clamped fixpoint

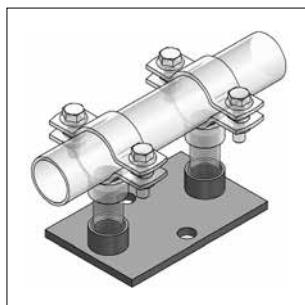
Specification:
 Sound insulation: according to DIN 4109
 Washers with integrated insulation ring

Technical data:
 Material
 Sound insulation lining: EPDM lining
 Temperature resistance: - 35 °C up to + 100 °C

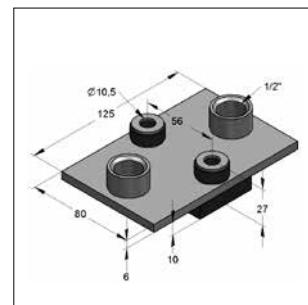
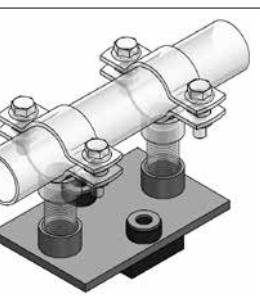
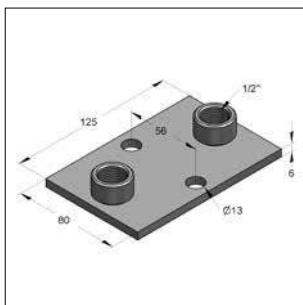
Notice: suitable for Base plate type III as well as Holder 45 horizontal and vertical.

Description	Insulating board [mm]	Thickness insulating board [mm]	Insulating sleeve for bolting	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sound-decoupling set K	137 x 70	6	M10	0,086	1	077034001

■ Fixpoint type FGL (for clamping)



Fixpoint type FGL
(mounted with
2 double nipples 1/2")



Fixpoint type FGL, lined
(mounted with
2 double nipples 1/2")

3a

Specification:

Application area: ferritic steel pipes,
plastic pipes
Mounting: screw fastening
OD: 20 up to 46 mm

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Specification with sound-decoupling set:

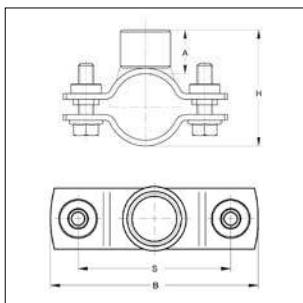
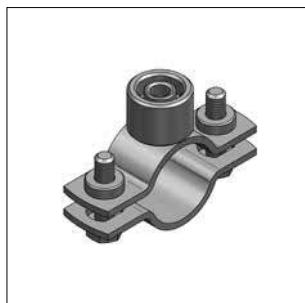
Sound insulation: according to DIN 4109

Sound insulation lining: EPDM lining
Temperature resistance: - 35 °C up to + 100 °C

Required accessory: 2 x pipe clamp FGL
2 x double nipple 1/2"
distance tube, max. length 100 mm

Description	Connection	axial pressure absorption [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Fixpoint FGL	2 x sleeve 1/2"	1,4	0,531	1	0770335
Fixpoint FGL, lined	2 x sleeve 1/2"	1,4	0,588	1	9997700

■ Pipe clamp FGL



Pipe clamp FGL 3G
(with pendulum stick nut)

Specification:

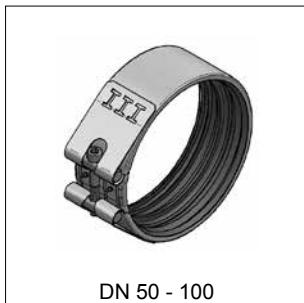
Closing: pendulum stick nut
Model: 2-part
OD: 20 up to 46 mm
Connection: combination M8/M10 + 1/2"

Technical data:

Material: steel
Material type: DD11
Surface: galvanized

Clamping range [mm]	Material [mm]	Closure screws	tightening torque [Nm]	max. axial load [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
20 - 23	25 x 3,0	M8	5	0,7	41-44	18	73	49	0,216	1	0069047
25 - 29	25 x 3,0	M8	5	0,7	46-50	18	80	56	0,225	1	0069049
30 - 35	25 x 3,0	M8	5	0,7	51-56	18	87	63	0,235	1	0069053
36 - 40	25 x 3,0	M8	5	0,7	57-61	18	92	68	0,246	1	0069081
41 - 46	25 x 3,0	M8	5	0,7	62-67	18	98	74	0,298	1	0069097

MEFA connectors for waste water piping



DN 50 - 100
SIMA >G< one screw
Page 3b/2



DN 125 - 150
SIMA >G< two screws
Page 3b/2



DN 200
SIMA >CV<
Page 3b/2



DN 50 - 150
SIMA RAPID
Page 3b/3



DN 50 - 125
SIMA-Cramp grip connector
Page 3b/4



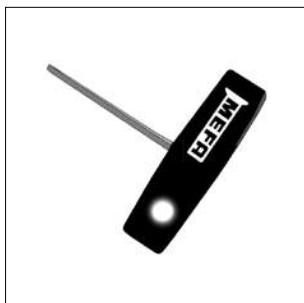
DN 150 - 250
SIMA-Cramp grip connector
Page 3b/4



DN 80 - 200
Downstream support
Page 3b/5



DN 50 - 125
SIMA-CON reducing connector
Page 3b/6

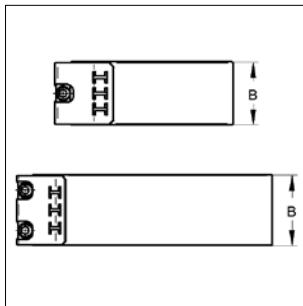
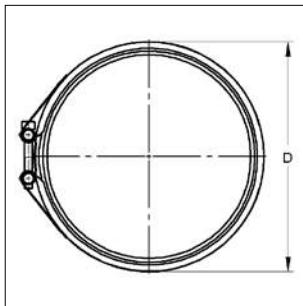


SIMA handdriver 5/150
Page 3b/6

SIMAX >G< connector



SIMAX >G< one screw
SIMAX >G< two screws



SIMAX >G< one screw
SIMAX >G< two screws

**Plug connector suitable
for cast iron pipe and
fittings**

Entspricht
DIN EN 877

350 h
Salzsprühnebeltest
nach
ISO 7253

3b

Specification:

Connector type:	plug connector
Closure part connection:	seamed joint
Nominal width:	DN 50 up to 150
OD:	58 up to 160 mm
Pressure load:	tested up to 0,5 bar
Tightening torque per screw:	6 Nm
Type of screw (DIN 912):	hexagon socket, M6 (SW 5)
Property class of screw:	8.8
Number of seals in rubber cuff:	4

Technical data:

Material pipe clamp strap:	steel
Material type:	S 320 GD
Surface:	Zinc-Aluminium casting
Material clamp strap:	steel
Material type:	9 S 20
Surface:	Zinc-Aluminium casting
Rubber cuff:	EPDM lining
Temperature resistance:	- 35 °C up to + 80 °C
Shore-hardness	55 ± 5° shore

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

Nominal width DN 50 up to 100 (connector with one screw)

Identification	Nominal width	OD	Width clamp strap	Overall width	Weight	Packing	Part-No.
	[DN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
SIMAX >G<	50	58	46	70	0,165	100	4470050
SIMAX >G<	70	78	46	90	0,196	100	4470070
SIMAX >G<	80	83	46	95	0,201	50	4470080
SIMAX >G<	100	110	46	122	0,237	50	4470100

Nominal width DN 125 up to 150 (connector with two screws)

SIMAX >G<	125	135	51	150	0,313	25	4470125
SIMAX >G<	150	160	51	175	0,368	20	4470150

(i) Discontinued product. SIMAX >G< connector is replaced by SIMA RAPID connector, see page 3b/3.

SIMAX >CV< connector



SIMAX >CV<

Specification:

Connector type:	plug connector
Closure part connection:	welded connection
Nominal width:	DN 200
OD:	210 mm
Pressure load:	tested up to 0,5 bar
Number of seals in rubber cuff:	4

Technical data:

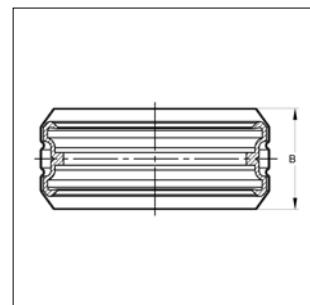
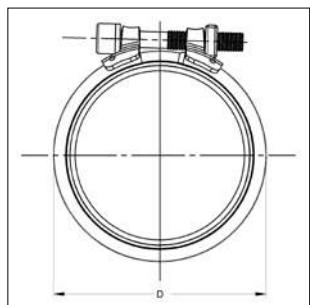
Material pipe clamp strap:	stainless steel
Materials:	1.4510/11
Material clamp strap:	steel
Surface:	galvanized
Rubber cuff:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C

Identification	Nominal width	OD	Width clamp strap	Overall width	Weight	Packing	Part-No.
	[DN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
SIMAX >CV<	200	210	78	220	0,681	10	4472002

■ SIMA RAPID connector



SIMA RAPID



**Plug connector
for cast iron pipe
and fittings**

according to
DIN EN 877

3b

Specification:

Connector type:	plug connector
Closure part connection:	welded connection
Nominal width:	DN 50 up to 150
OD:	58 up to 160 mm
Pressure load:	tested up to 0,5 bar
Tightening torque per screw:	block tightly, no torque control necessary
Type of screw (DIN 4762):	hexagon socket, M8
Property class of screw:	8.8
Number of seals in rubber cuff:	2

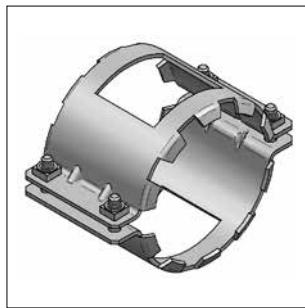
Technical data:

Material pipe clamp strap:	ferritic chromium steel
Material type:	1.4520
Material clamp lock:	stainless steel
Material type:	1.4301, 1.4510
Rubber cuff:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C
Shore-hardness:	50 ± 5° shore
PWIS free:	approved

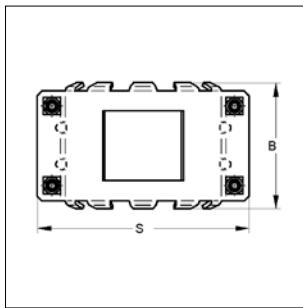
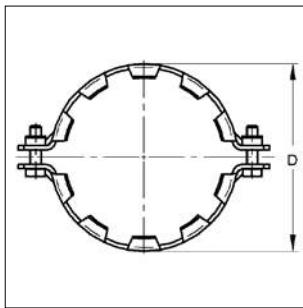
Remark: For pressure loads > 0,5 bar the SIMA-Cramp grip connector should be used

Identification	Nominal width	OD	Width clamp strap B [mm]	Overall width D [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
	[DN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
SIMA RAPID	50	58	38,6	71,6	0,11	50	447710050
SIMA RAPID	70	78	38,6	91,6	0,12	50	447710070
SIMA RAPID	80	83	38,6	96,6	0,13	50	447710080
SIMA RAPID	100	110	45,5	124,8	0,19	50	447710100
SIMA RAPID	125	135	55,0	151,6	0,31	20	447710125
SIMA RAPID	150	160	55,0	176,6	0,36	15	447710150

■ SIMA-Cramp grip connector



SIMA-Cramp grip connector
DN 50 up to 125



MEFA

MEFA GmbH
Kupferzell
Verbinderkralle
SIMA-Cramp >S<
22 1130 3 94

MPA NRW

3b

Specification:

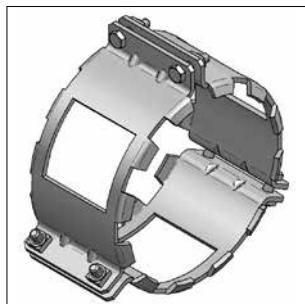
Application area:	grip connector without sleeves, drain pipes in connection with connector SIMA >G<
Nominal width:	DN 50 up to 250
OD:	58 up to 274 mm
Pressure load:	tested up to 5 bar

Technical data:

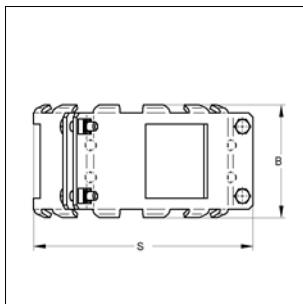
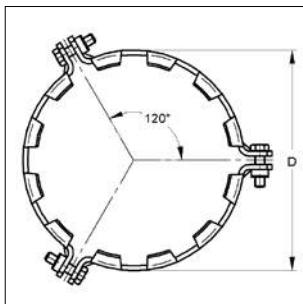
Material pipe clamp strap:	steel
Material type:	S235JR
Surface:	galvanized

¹⁾ For DN80 test certificate MPA NRW-00093-1 is essential

Identification	Nominal width [DN]	OD [mm]	Number of components	Tightening torque [Nm]	D [mm]	B [mm]	S [mm]	Pressure load tested [bar]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIMA-Cramp	50	58	2	15	75	79	113	5	0,447	20	4472500
SIMA-Cramp	70	78	2	15	99	92	134	5	0,576	20	4472705
SIMA-Cramp	80¹⁾	83	2	20	102	74	138	5	0,800	10	4472805
SIMA-Cramp	100	110	2	15	130	103	174	5	0,992	10	4473000
SIMA-Cramp	125	135	2	20	154	103	202	5	1,142	10	4473256



SIMA-Cramp grip connector
DN 150 up to 250



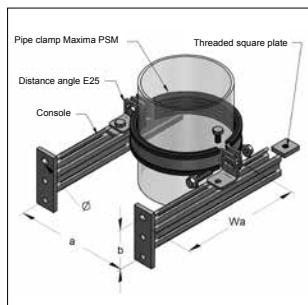
MEFA

MEFA GmbH
Kupferzell
Verbinderkralle
SIMA-Cramp >S<
22 1130 3 94

MPA NRW

Identification	Nominal width [DN]	OD [mm]	Number of components	Tightening torque [Nm]	D [mm]	B [mm]	Pressure load tested [bar]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIMA-Cramp	150	160	3	20	183	106	5	1,792	10	4473507
SIMA-Cramp	200	210	3	20	236	120	5	2,569	5	4474000
SIMA-Cramp	250	274	3	30	300	133	5	3,902	4	4474508

■ Fixpoint support for downstream piping



Downstream support
(mounted)

3b

Specification:

Nominal width: DN 80 up to 200
OD: 83 up to 210 mm
Sound insulation: according to DIN 4109

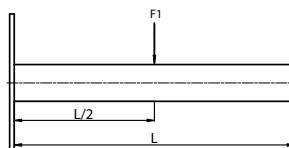
Technical data:

Material:	steel
Surface:	galvanized
Sound insulation lining:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm

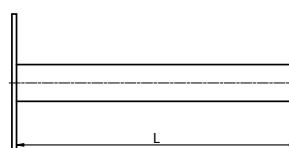
Remark: To prevent slippage of the pipe a flange or similar should be placed above the clamp

Identification	Nominal width	OD	a	b	WA _{min.}	WA _{max.}	Console hole Ø	max. load		Weight	Packing	Part-No.
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	F1	F2	[kg/pc.]	[pcs.]	
Set	DN 80	83	140	55	75	260	15 x 11	1,44	0,72	1,63	1	4500800
Set	DN 100	110	165	55	75	260	15 x 11	1,44	0,72	1,70	10	4501000
Set	DN 125	135	200	80	85	300	15 x 11	4,16	2,08	2,69	10	4501250
Set	DN 150	160	230	80	100	300	15 x 11	4,16	2,08	2,80	10	4501500
Set	DN 200	210	280	85	125	315	20 x 14	6,64	3,32	4,09	1	45020045

Loading condition 1 (LC1)



Loading condition 2 (LC2)



Set-content

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

■ SIMA-CON reducing connector



SIMA-CON



3b

Specification:

Connector type:

Application area:

Nominal width:

OD:

Pressure load:

Sound insulation lining according to:

reducing connector
for connecting pipes of PE and HT
according to DIN 19535 and all pipes according
to DIN 19 560
on SML-piping system according to DIN 19 522

DN 50 up to 125

40 up to 125 mm

tested up to 0,5 bar

DIN 4060 of EN 877
DIN 19 522

Technical data:

Material

rubber cuff:

EPDM lining

Temperature resistance:

- 35 °C up to + 100 °C

Material pipe clamp

stainless steel

Materials:

1.4016

Screw:

cross slot, SW7

Tightening torque:

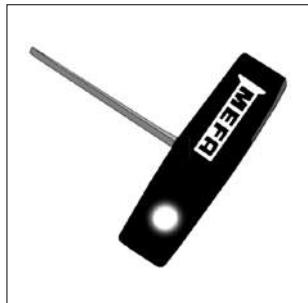
2 Nm

Manufacturer identification: EK-Fix-Verbinder

Identification	Nominal width SML-pipe [DN]	Connecting pipe OD [mm]	Plug-in depth [mm]	Overall height [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIMA-CON	50	40-56	42	63	0,120	50	4475050
SIMA-CON	70	56-75	55	77	0,180	50	4475070
SIMA-CON	80	75-90	60	83	0,242	20	4475080
SIMA-CON	100	104-110	65	95	0,313	20	4475100
SIMA-CON	125	125	75	103	0,430	10	4475125

assembly instruction see chapter 15

■ SIMA handdriven



SIMA handdriven 5/150



Hexagon bit 25 mm

Identification

SIMA handdriven 5/150**Hexagon bit 25 mm, 1/4", SW 5**

Packing

[pc.]

Part-No.

1 5010065

1 5010075

MEFA Spring hanger

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

Applications:

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

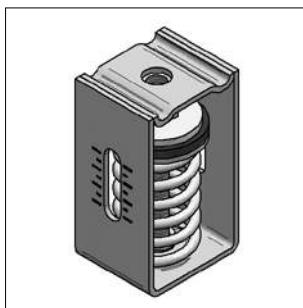
Spring bearings or -insulator can be used for installations where no rigid storage of plant systems (e.g. pipelines, assemblies) are allowed. For example a pipeline exposed to a certain temperature which requires due to its temperature bending an elastic storage.

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 structure-born-sound via the steel spring can be avoided.

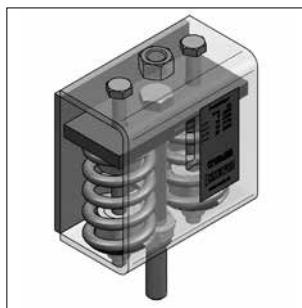
MEFA spring hanger meet the requirements of vibration insulation and disconnection of structure-borne-sound.

For an optimum dimensioning of the spring bearings/ -hanger please contact our technical department.

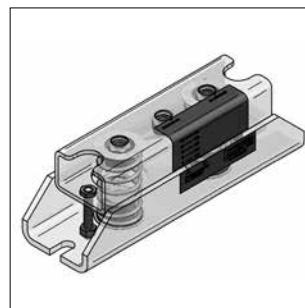
3c



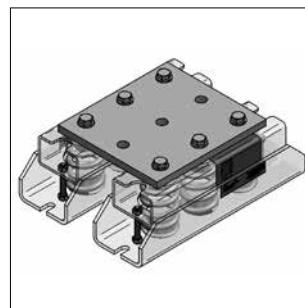
Spring insulator FH1
Page 3c/2



Spring insulator FH2
Page 3c/2

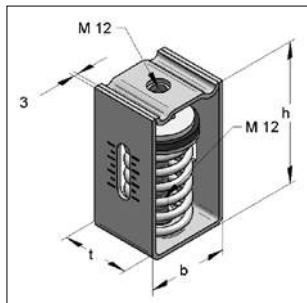


Spring bearing FL
Page 3c/3



Spring bearing FLD
Page 3c/3

■ Spring insulator FH 1 with one spring



Spring insulator FH1

Load range: up to 3000 N

3c Specification:

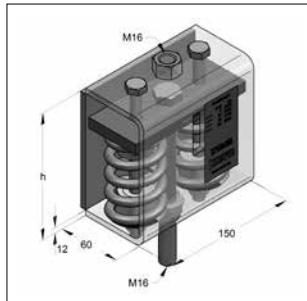
Number of springs: 1 piece
 Load range: up to 3000 N
 Spring deflection: up to 32 mm

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

Identification	Load range [N]	Spring deflection [mm]	connection thread	Dimension h [mm]	Dimension b [mm]	Dimension t [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
FH 1 - 400	0 - 386	0 - 30,0	M12	105	60	50	0,620	1	0794040
FH 1 - 600	0 - 619	0 - 30,0	M12	105	60	50	0,657	1	0794060
FH 1 - 1000	0 - 1006	0 - 32,0	M12	105	60	50	0,659	1	0794100
FH 1 - 1300	0 - 1289	0 - 31,0	M12	130	80	60	1,040	1	0794130
FH 1 - 2100	0 - 2113	0 - 28,0	M12	130	80	60	1,228	1	0794210
FH 1 - 3000	0 - 3084	0 - 23,0	M12	130	80	60	1,266	1	0794300

■ Spring insulator FH 2 with two springs



Spring insulator FH2

Load range: up to 9300 N

3c Specification:

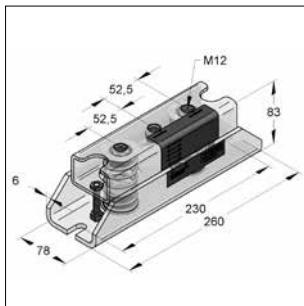
Number of springs: 2 pieces
 Load range: up to 9068 N
 Spring deflection: up to 28,5 mm

Technical data:

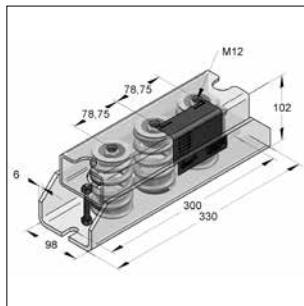
Material: steel
 Material type: S235JR
 Surface: galvanized

Identification	Load range [N]	Spring deflection [mm]	connection thread	Dimension h [mm]	Dimension width [mm]	Dimension Length [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
FH 2 - 4300 plus	0 - 4301	0 - 28,5	M16	140	80	140	4,99	1	079170430
FH 2 - 6000 plus	0 - 6044	0 - 22,5	M16	140	80	140	5,01	1	079170600
FH 2 - 9300 plus	955 - 9068	0 - 19,0	M16	140	80	140	5,03	1	079180930

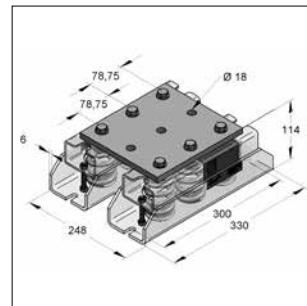
■ Spring bearing FL



Spring bearing FL
2 springs



Spring bearing FL
3 springs



Spring bearing FLD
two spring bearings connected
with interface

Specification:

Number of springs: 2 pieces / 3 pieces
Casing: type 1 / type 2
Load range: up to 21354 N
Spring deflection: up to 26,5 mm

Recommended anchor: Bolt anchor BZ plus M12

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

3c

Spring bearing FL

Identification	Casing	Load range	Number of springs	Spring Deflection [mm]	Weight [kg/pc.]	VPE [pc.]	Part-No.
		[N]					
FL-700	Type 1	0 - 682	2	0 - 26,5	3,00	1	07919007
FL-1000	Type 1	0 - 1023	3	0 - 26,5	3,10	1	07919010
FL-2300	Type 2	0 - 2204	2	0 - 26,5	5,70	1	07919023
FL-3800	Type 2	0 - 3999	2	0 - 26,5	5,70	1	07919038
FL-5700	Type 2	0 - 5999	3	0 - 26,5	6,00	1	07919057
FL-7200	Type 2	0 - 7118	2	0 - 26,5	5,70	1	07919072
FL-10500	Type 2	0 - 10677	3	0 - 26,5	6,00	1	07919105

Spring bearing FLD

FLD-21000	0 - 21354	2 x 3	0 - 26,5	16,23	1	07929210
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■ 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 $F_{v,\text{operation}}$)
4. Spring hanger should be choosed with help of the detected point of support and the suited selection chart (page 3cl5). 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.)

3c

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 schedule):

- 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

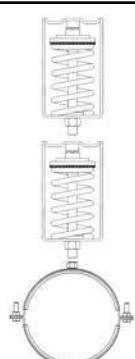
Δs = spring deflection / vertical forming

R = spring rate

Series connection with 2 equal spring hanger:

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

$$\Delta S_{\text{compl.}} = \Delta s_1 + \Delta s_2$$



Parallel connection

e.g. for the increasing of bearing pressure

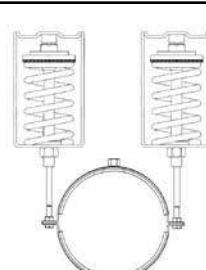
F_v = vertical operation load

Δs = spring deflection / vertical forming

R = spring rate

$$R_{\text{compl.}} = R_1 + R_2$$

$$\Delta S_{\text{compl.}} = \Delta s/2$$



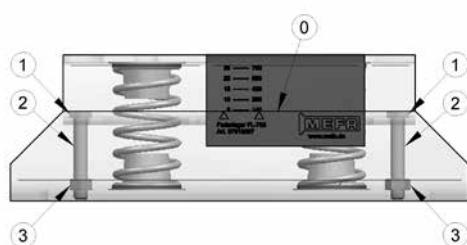
■ Spring insulator selection table

Spring-insulator	Spring rate	Max. working load	Distance at max. working load	Load dependent on spring deflection s									
				5 [mm]	10 [mm]	15 [mm]	17,5 [mm]	20 [mm]	22,5 [mm]	25 [mm]	26,5 [mm]	30 [mm]	
[Type]	[N/mm]	[N]	[mm]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]
FH1-400	12,87	386	30,0	64	129	193	225	257	290	322	341	386	
FH1-600	20,62	619	30,0	103	206	309	361	412	464	516	546	619	
FH1-1000	31,43	1.006	32,0	157	314	471	550	629	707	786	833	943	
FH1-1300	41,58	1.289	31,0	208	416	624	728	832	936	1.040	1.102	1.247	
FH1-2100	75,46	2.113	28,0	377	755	1.132	1.321	1.509	1.698	1.887	2.000	-	
FH1-3000	134,1	3.084	23,0	671	1.341	2.012	2.347	2.682	3.017	-	-	-	
FH2-4300 p	150,92	4.301	28,5	755	1.509	2.264	2.641	3.018	3.396	3.773	3.999	-	
FH2-6000 p	268,60	6.044	22,5	1.343	2.686	4.029	4.701	5.372	6.044	-	-	-	
FH2-9300 p	477,28	9.068	19,0	2.386	4.773	7.159	8.352	-	-	-	-	-	
FL-700	25,74	682	26,5	129	257	386	450	515	579	644	682	-	
FL-1000	38,61	1.023	26,5	193	386	579	676	772	869	965	1.023	-	
FL-2300	83,16	2.204	26,5	416	832	1.247	1.455	1.663	1.871	2.079	2.204	-	
FL-3800	150,92	3.999	26,5	755	1.509	2.264	2.641	3.018	3.396	3.773	3.999	-	
FL-5700	226,38	5.999	26,5	1.132	2.264	3.396	3.962	4.528	5.094	5.660	5.999	-	
FL-7200	268,60	7.118	26,5	1.343	2.686	4.029	4.701	5.372	6.044	6.715	7.118	-	
FL-10500	402,90	10.677	26,5	2.015	4.029	6.044	7.051	8.058	9.065	10.073	10.677	-	
FL-21000	805,80	21.354	26,5	4.029	8.058	12.087	14.102	16.116	18.131	20.145	21.354	-	

3c

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

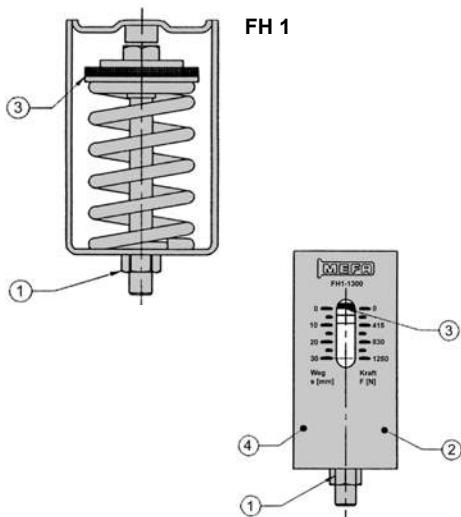
■ Assembly instruction for Spring bearing FL



Target: Vibration isolation

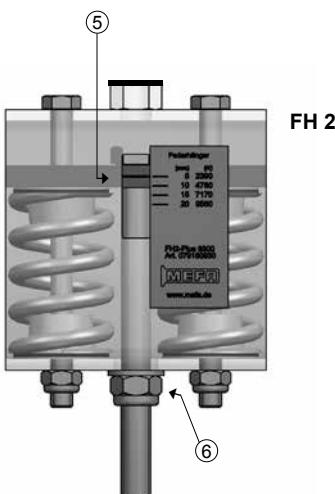
1. The spring bearing can be clamped via 2 hex. screws with suitable load for stationary handling with help of prestressed hex. screws M8 (SW13 mm) [1]. (values for direct reading, significant value for direct reading on upper edge of casing base part [0])
2. Spring bearing should be mounted on substructure
3. Spring bearing can be mounted with pipeline or a compressor via:
 - 1 pipe clamp and suitable threaded rod or
 - 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

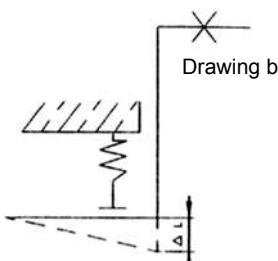
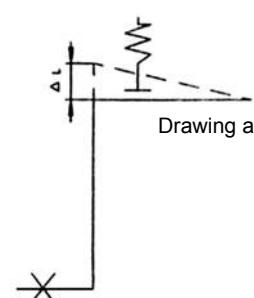
1. The spring insulator is prestressed to absorb the load, for stationary handling, via the suitable hex. nut M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] (for direct reading FH 1: scale on the outside [2] or notch [5] on label, FH 2: bottom edge red washer [3])
2. The spring insulator has to be mounted on 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, threaded 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



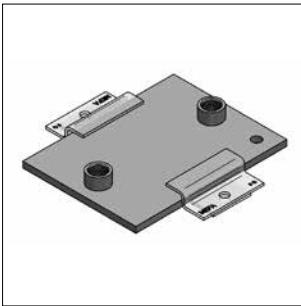
Target: Compensation of expansion movement

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])
 - During mounting the pipeline is prestressed !**
 - according to **drawing b**, not prestressed

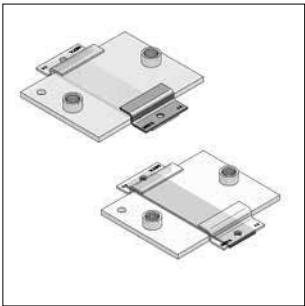
The pipeline load of this bracket has to be noticed when choosing the spring bearing. The load and the spring deflection have to be regarded. The load of the pipeline increases, in the stationary section, about the amount of the equivalent spring rate to the spring deflection
2. The spring insulator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



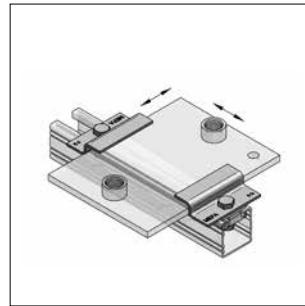
MEFA sliding elements



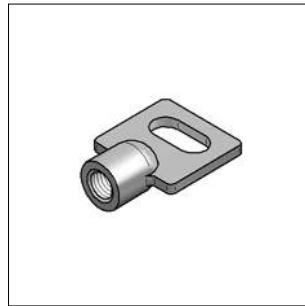
Sliding plates
Page 4/2



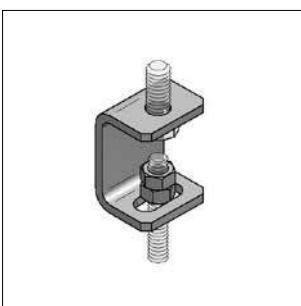
Z-pressure pads, sliding stripes
Page 4/3



Sliding element radial-axial
Page 4/4



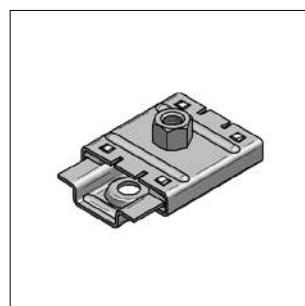
Spline end
Page 4/4



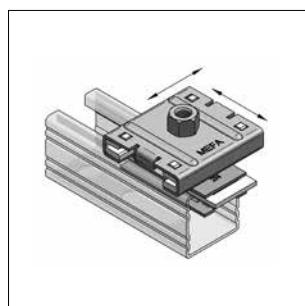
Suspended bracket
Page 4/5



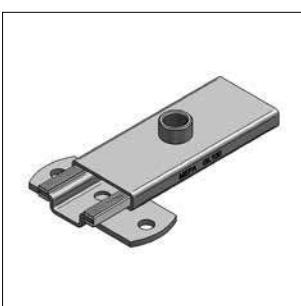
Ceiling hanger TF
Page 4/5



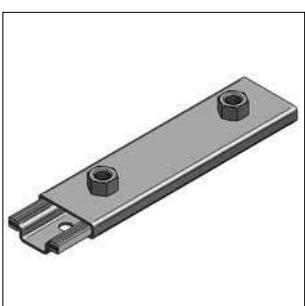
Slider GL 37
Page 4/6



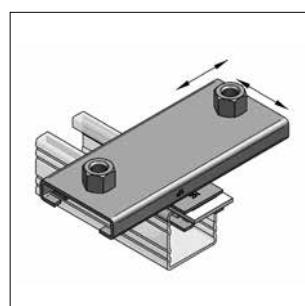
Sliding element radial-axial 37
Page 4/7



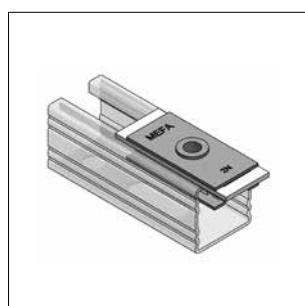
Slider GL 100
Page 4/8



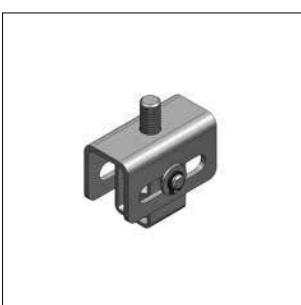
Slider GL 200
Page 4/8



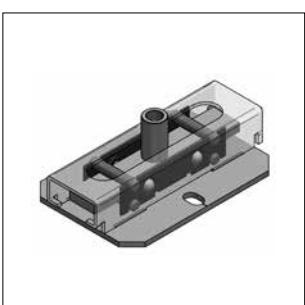
Sliding element radial-axial
Page 4/9



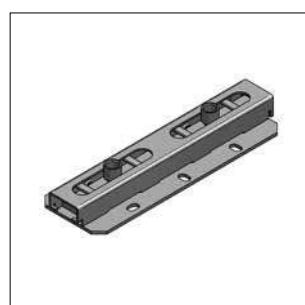
Profile rail slider 45
Page 4/10



Suspended bracket 35 mm
Page 4/11



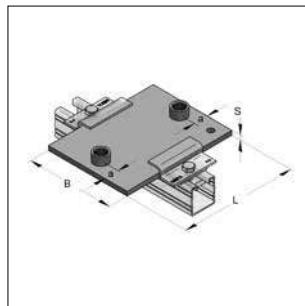
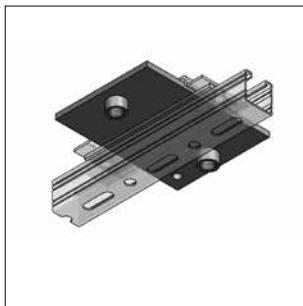
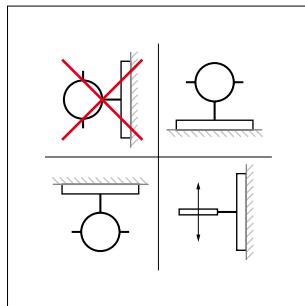
Roller bearing
Page 4/11



Roller bearing Duo
Page 4/12

sliding elements of stainless steel see chapter 13

■ Sliding plates

Sliding plate
standing installationSliding plate
hanging installation

Assembly instruction

Specification:

Application area: absorption of axial length expansion
 Required accessory: sliding stripe, Z-pressure pad (80 mm, 1-hole)

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾

Recommended pipe diameters: L 150 = up to OD 193,0 mm
 L 200 = up to OD 299,5 mm
 L 250 = up to OD 419,0 mm

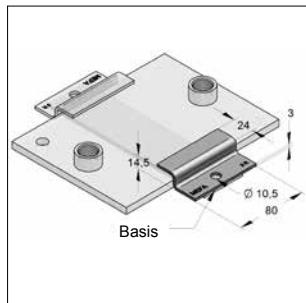
04

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

* Delivery times on request

Identification	Dimension L x B x S [mm]	Connection	a [mm]	Sliding distance standing [mm]	Sliding distance hanging [mm]	max. load [kN]	Accessory sliding stripe [Part-No.]	Weight [kg/pc.]	Packing [pc.]	Part-No. Sliding plate
Sliding plate 150 x 100 x 8	1x nut M16	-	100	-	1,5	077955501	1,00	1	0771162	
Sliding plate 150 x 100 x 8	1x sleeve 1/2"	-	100	-	1,5	077955501	1,00	1	0771200	
Sliding plate 150 x 100 x 8*	1x sleeve 3/4"	-	100	-	1,5	077955501	1,01	1	0771227	
Sliding plate 150 x 100 x 8	2x nut M16	25	100	20	4,8	077955501	1,04	1	0771164	
Sliding plate 150 x 100 x 8	2x sleeve 1/2"	25	100	20	4,8	077955501	1,03	1	0771202	
Sliding plate 150 x 100 x 8*	2x sleeve 3/4"	25	100	20	4,8	077955501	1,05	1	0771229	
Sliding plate 200 x 100 x 8	2x nut M16	25	150	70	3,0	077955501	1,36	1	0771163	
Sliding plate 200 x 100 x 8	2x sleeve 1/2"	25	150	70	3,0	077955501	1,35	1	0771201	
Sliding plate 200 x 100 x 8*	2x sleeve 3/4"	25	150	70	3,0	077955501	1,38	1	0771228	
Sliding plate 200 x 100 x 8	2x sleeve 1"	25	150	70	3,0	077955501	1,44	1	0771236	
Sliding plate 200 x 150 x 8*	2x sleeve 1/2"	25	150	70	4,4	077956701	1,98	1	0771331	
Sliding plate 250 x 100 x 8	2x nut M16	25	200	120	2,2	077955501	1,68	1	0771465	
Sliding plate 250 x 100 x 8	2x sleeve 1/2"	25	200	120	2,2	077955501	1,66	1	0771503	
Sliding plate 250 x 100 x 8*	2x sleeve 3/4"	25	200	120	2,2	077955501	1,69	1	0771511	
Sliding plate 250 x 100 x 8	2x sleeve 1"	25	200	120	2,2	077955501	1,76	1	0771538	
Sliding plate 250 x 200 x 8*	2x sleeve 1/2"	25	200	120	4,2	077956001	3,26	1	0771707	
Sliding plate 250 x 200 x 10*	2x sleeve 1/2"	25	200	120	6,4	077956001	4,06	1	0771710	
Sliding plate 300 x 200 x 10*	2x sleeve 1"	25	200	160	5,6	077956001	4,96	1	0771811	
Sliding plate 300 x 200 x 12*	2x sleeve 1"	25	200	160	8,1	077956001	5,91	1	0771814	
Sliding plate 300 x 250 x 12*	2x sleeve 1"	25	200	160	10,2	077957001	7,36	1	0771817	
Sliding plate 350 x 200 x 12*	2x sleeve 1 1/4"	35	300	200	6,0	077956001	6,94	1	0771902	
Sliding plate 350 x 250 x 12*	2x sleeve 1"	25	300	200	7,4	077957001	8,56	1	0771911	
Sliding plate 400 x 250 x 12*	2x sleeve 1 1/4"	35	350	250	5,4	077957001	9,82	1	0771973	

■ Z-pressure pad



Z-pressure pad with basis

Specification:

Application area: mounting of MEFA sliding plates
 Needed accessory: hexagon screw M10 x 25,
 threaded plate (consistent to profile rail)

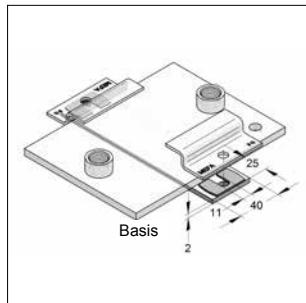
Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized¹⁾
 Hole OD: 10,5 mm

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	L [mm]	lifting stress/pair [kN]	Number of mounting holes [pc.]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Z-pressure pad	80	4,5	1	0,114	1	077951201

■ Basis for Z-pressure pad



Z-pressure pad with basis

Specification:

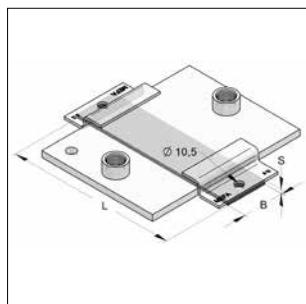
Application area: Increasing of Z-pressure pad

Technical data:

Material: steel
 Surface: pre-galvanized

Identification	thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Basis for Z-pressure pad	2	0,012	1	0779508

■ Sliding stripe PA 6



Sliding stripe

Specification:

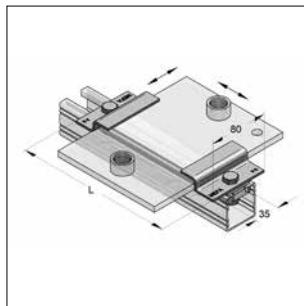
Product attributes: improvement of sliding characteristic
 Application area: sliding plates

Technical data:

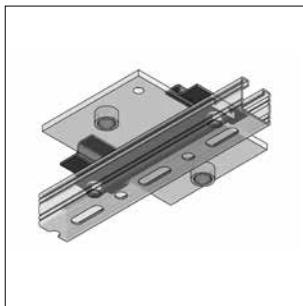
Material: polyamide 6
 Static friction factor: 0,2 - 0,3
 Sliding: 0,15 - 0,25
 Thermal load: - 30 °C up to + 110 °C
 Hole OD: 10,5 mm

Identification	Type	Dimension L x B x S [mm]	Hole distance [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding stripe standard		1000 x 50 x 5	unperforated	0,288	1	0779550
Sliding stripe for sliding plates 100 mm wide		163 x 50 x 5	138	0,046	1	077955501
Sliding stripe for sliding plates 150 mm wide		213 x 50 x 5	188	0,061	1	077956701
Sliding stripe for sliding plates 200 mm wide		263 x 50 x 5	238	0,075	1	077956001
Sliding stripe for sliding plates 250 mm wide		313 x 50 x 5	288	0,089	1	077957001

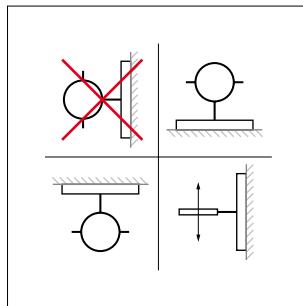
■ Sliding element radial-axial



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



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



Assembly instruction

Specification:

Profile rail type: C-profile 45 mm

Application area:
- absorption of radial and axial length expansion
- for standing, hanging and vertical installed pipes
- not suitable for lateral passed pipes

Technical data:

Material sliding element: steel

Material type sliding element: S235JR

Surface sliding element: galvanized

Material sliding stripe: polyamide 6

Static friction factor: 0,2 - 0,3

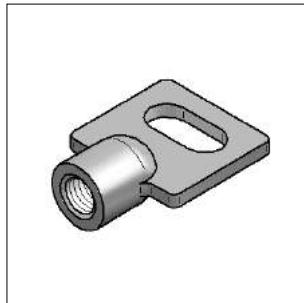
Sliding friction factor: 0,15 - 0,25

Thermal load: -30 °C up to + 110 °C

04

Identification	Size	Type	L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial I		for sliding plates 100 mm wide	163	0,391	1	0779971
Sliding element radial-axial II		for sliding plates 150 mm wide	213	0,415	1	0779972
Sliding element radial-axial III		for sliding plates 200 mm wide	263	0,440	1	0779973

■ Spline end

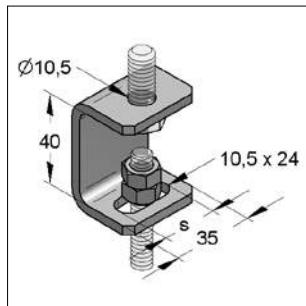


Spline end

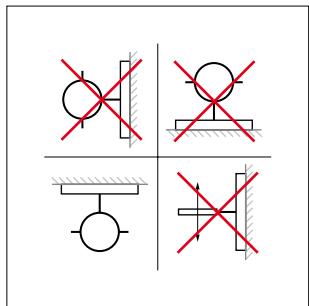
Specification:	Application area:	Technical data:
	absorption of axial length expansion of simple suspensions	Material: malleable cast iron Surface: galvanized

Identification	Thread	Dimension elongated hole [mm]	max. load [kN]	Material thickness lug [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Spline end	M10	25 x 11,5	3,5	4,0	0,068	50	0600011
Spline end	M12	22 x 10,5	4,7	5,0	0,074	50	0610046

■ 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

Technical data:

Material: steel

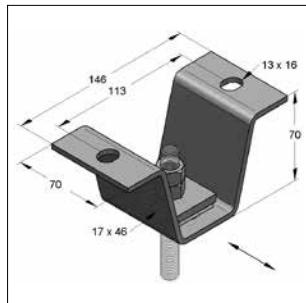
Material type: S235JR

Surface: galvanized

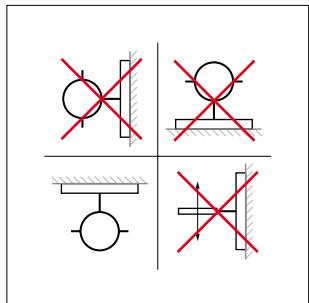
Identification	Thread	Adjustable height [mm]	Sliding distance s [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket type L	M8	30	16	1,6	0,104	100	0781010
Suspended bracket type L	M10	30	14	1,6	0,119	100	0781029

04

■ Ceiling hanger TF



Ceiling hanger TF



Assembly instruction

Specification:

Application area: ceiling- and rail suspension

Scope of delivery: sliding plate, perforated plate and two nuts

Technical data:

Material ceiling hanger: steel

Material type ceiling hanger: S235JR

Surface ceiling hanger: galvanized

Material sliding stripe: polyamide 6

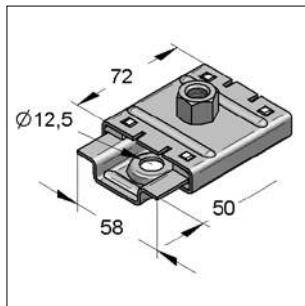
Static friction factor: 0,2 - 0,3

Sliding friction factor: 0,15 - 0,25

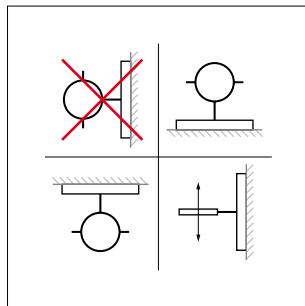
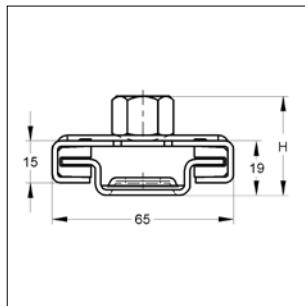
Thermal load: -30 °C up to + 110 °C

Identification	Thread	max. sliding piece [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Ceiling hanger TF M10		36	12,0	0,619	1	0816604
Ceiling hanger TF M12		34	12,0	0,630	1	0816612
Ceiling hanger TF M16		30	12,0	0,670	1	0816639

■ Slider GL 37



Slider GL 37



Assembly instruction

Specification:

Application area: absorption of axial length expansion of max. 37 mm at standing, hanging or vertical passed pipes

Remark: after mounting protection lugs should be turned up, thereby slipping can be avoided

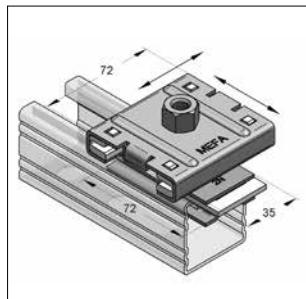
Technical data:

Material slider: steel
Material type slider: S235JR
Surface slider: galvanized
Sliding distance slider: up to 37 mm

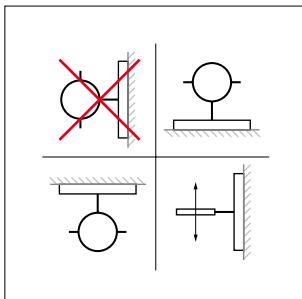
Material sliding plate: polyamide 6
Static friction factor: 0,2 - 0,3
Sliding friction factor: 0,15 - 0,25
Thermal load: -30 °C up to + 110 °C

Identification	Connection	H [mm]	max. loading hanging [kN]	max. loading standing [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Slider GL 37	1 x M8	32	1,3	1,3	0,204	25	0770515
Slider GL 37	1 x M10	34	1,3	1,3	0,214	25	0770523
Slider GL 37	1 x M12	36	1,3	1,3	0,223	25	0770531
Slider GL 37	1 x M16	34	1,3	1,3	0,232	25	0770558
Slider GL 37	1 x 1/2"	35	1,3	1,3	0,225	25	0770604

■ Sliding element radial-axial GL 37



Sliding element radial-axial GL 37



Assembly instruction

Specification:

- For profile rail type: C-profile 45 mm
 Application area: absorption of radial and axial length expansion for standing, hanging or vertical passed pipes
 Constitution: slider GL 37 and profile rail slider; pre-assembled (without C-profile)
 Remark: after mounting protection lugs should be turned up, thereby slipping can be avoided

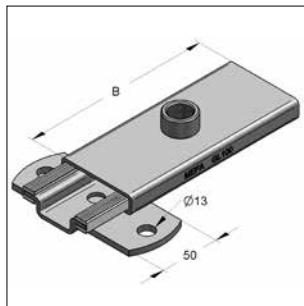
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Sliding distance axial:	up to 37 mm
Sliding distance radial:	max. rail length
Material sliding plate:	polyamide 6
Static friction factor:	0,2 - 0,3
Sliding friction factor:	0,15 - 0,25
Thermal load:	-30 °C up to + 110 °C

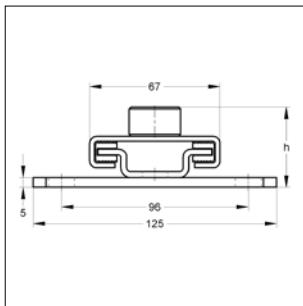
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Identification	max. loading hanging [kN]	max. loading standing [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial GL 37 M8	1,3	1,3	0,357	1	077046801
Sliding element radial-axial GL 37 M10	1,3	1,3	0,367	1	077046001
Sliding element radial-axial GL 37 M12	1,3	1,3	0,376	1	077046201
Sliding element radial-axial GL 37 M16	1,3	1,3	0,385	1	077046601
Sliding element radial-axial GL 37 sleeve 1/2"	1,3	1,3	0,378	1	077046401

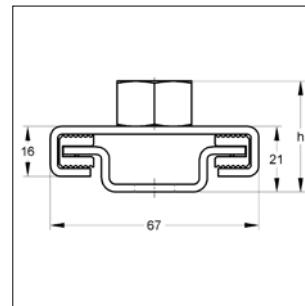
■ Slider GL 100 and GL 200



Slider GL 100
(Illustration with lug)



Slider GL 200



Specification:

For profile rail type: C-profile 45 mm
Application area: absorption of axial length expansion
for standing, hanging or vertical passed pipes

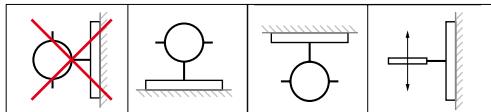
Technical data:

Material slider:	steel
Material type slider:	S235JR
Surface slider:	galvanized ¹⁾
Sliding distance GL 100	approx. 75 mm
Sliding distance GL 200	approx. 165 mm
Material sliding plate:	polyamide 6
Static friction factor:	0,2 - 0,3
Sliding friction factor:	0,15 - 0,25
Thermal load:	-30 °C up to + 110 °C

04 Remark:

after mounting protection lugs should be turned up,
thereby slipping can be avoided

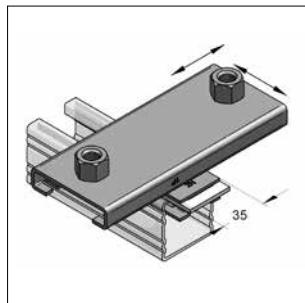
Assembly instruction:



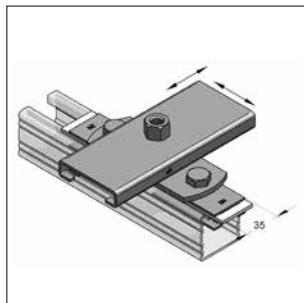
¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Connection		A	H	B	max. load	Weight	Packing	Part-No.
			[mm]	[mm]	[mm]				
Slider GL 100	1x nut	M10	-	35	160	3,0	0,517	1	0770524
	1x nut	M12	-	37	160	3,0	0,526	1	0770532
	1x nut	M16	-	36	160	3,0	0,535	1	0770559
	1x sleeve	1/2"	-	36	160	3,0	0,528	1	0770605
Slider GL 100 with lug	1x nut	M10	-	40	160	3,0	0,748	1	0770528
	1x nut	M12	-	42	160	3,0	0,757	1	0770536
	1x nut	M16	-	41	160	3,0	0,766	1	0770563
	1x sleeve	1/2"	-	41	160	3,0	0,759	1	0770609
Slider GL 100	2x nut	M10	120	35	160	3,0	0,538	1	0770526
	2x nut	M12	120	37	160	3,0	0,562	1	0770534
	2x nut	M16	120	36	160	3,0	0,581	1	0770561
	2x sleeve	1/2"	120	36	160	3,0	0,559	1	0770607
Slider GL 100 with lug	2x nut	M10	120	40	160	3,0	0,769	1	0770530
	2x nut	M12	120	42	160	3,0	0,793	1	0770538
	2x nut	M16	120	41	160	3,0	0,812	1	0770565
	2x sleeve	1/2"	120	41	160	3,0	0,790	1	0770611
Slider GL 200	2x nut	M10	150	35	250	3,0	0,746	1	0770527
	2x nut	M12	150	37	250	3,0	0,763	1	0770535
	2x nut	M16	160	36	250	3,0	0,781	1	0770562
	2x sleeve	1/2"	160	36	250	3,0	0,767	1	0770608
Slider GL 200 with lug	2x nut	M10	150	40	250	3,0	0,977	1	0770638
	2x nut	M12	150	42	250	3,0	0,994	1	0770539
	2x nut	M16	160	41	250	3,0	1,012	1	0770566
	2x sleeve	1/2"	160	41	250	3,0	0,998	1	0770615

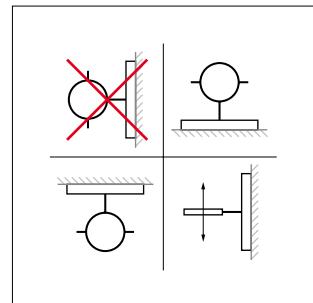
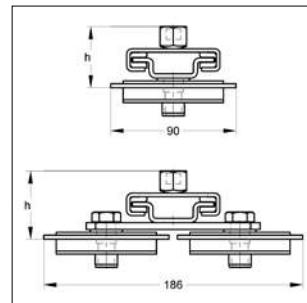
Sliding element radial-axial GL 100 and GL 200



Sliding element radial-axial
without lug



Sliding element radial-axial
with lug



Assembly instruction

Specification:

For profile rail type: C-profile 45 mm
Application area: absorption of radial and axial length expansion
for standing, hanging or vertical passed pipes

Constitution: slider GL 100 or GL 200 and radial-axial
sliding element, pre-assembled (without C-profile)

Notice: after mounting protection lugs should be turned up,
thereby slipping can be avoided

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Sliding distance GL 100: approx. 75 mm
Sliding distance GL 200: approx. 165 mm

Material sliding plate: polyamide 6
Static friction factor: 0,2 - 0,3
Sliding friction factor: 0,15 - 0,25
Thermal load: -30 °C up to + 110 °C

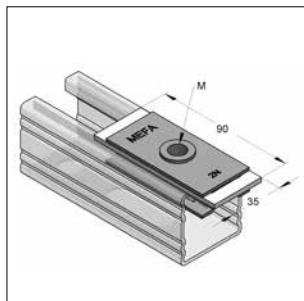
Identification	Connection	h [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial GL 100	1x nut M10	42	2,0	0,670	1	077048401
	1x nut M12	44	2,0	0,679	1	077048301
	1x nut M16	43	2,0	0,688	1	077048501
	1x sleeve 1/2"	43	2,0	0,700	1	077048601
Sliding element radial-axial GL 100 with lug	1x nut M10	47	3,0	1,074	1	077048402
	1x nut M12	49	3,0	1,083	1	077048302
	1x nut M16	48	3,0	1,092	1	077048502
	1x sleeve 1/2"	48	3,0	1,080	1	077048602
Sliding element radial-axial GL 100	2x nut M10	42	2,0	0,691	1	077048001
	2x nut M12	44	2,0	0,715	1	077048101
	2x nut M16	43	2,0	0,734	1	077048701
	2x sleeve 1/2"	43	2,0	0,712	1	077048201
Sliding element radial-axial GL 100 with lug	2x nut M10	47	3,0	1,095	1	077048002
	2x nut M12	49	3,0	1,119	1	077048102
	2x nut M16	48	3,0	1,138	1	077048702
	2x sleeve 1/2"	48	3,0	1,116	1	077048202
Sliding element radial-axial GL 200	2x nut M10	42	2,0	0,899	1	077047101
	2x nut M12	44	2,0	0,916	1	077047001
	2x nut M16	43	2,0	0,949	1	077047201
	2x sleeve 1/2"	43	2,0	0,920	1	077047301
Sliding element radial-axial GL 200 with lug	2x nut M10	47	3,0	1,303	1	077047102
	2x nut M12	49	3,0	1,320	1	077047002
	2x nut M16	48	3,0	1,321	1	077047202
	2x sleeve 1/2"	48	3,0	1,324	1	077047302

■ Recommended values for slider GL-insert

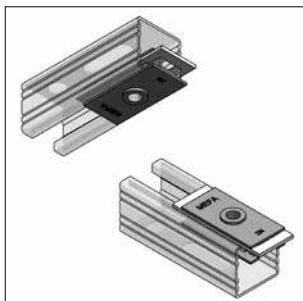
The quoted data is valid for standing and hanging mounting and point out limit values for the system function of the mounting combination.

Slider	Pipe clamps	max. recommended length threaded pin/ 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

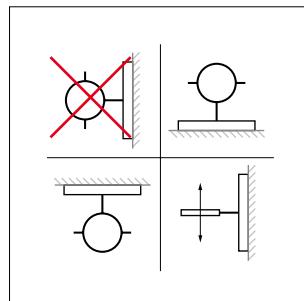
■ Profile rail slider 45



Profile rail slider 45



Assembly instruction



Assembly instruction

Specification:

For profile rail type: C-profile 45 mm

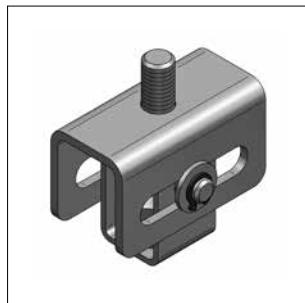
Application area: absorption of axial length expansion of pipes.
For standing, hanging or vertical passed pipes.
Release of lateral shear force.

Technical data:

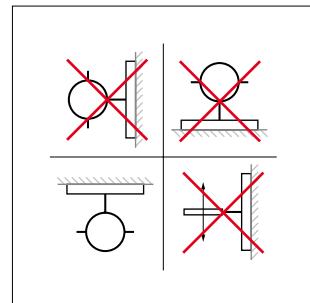
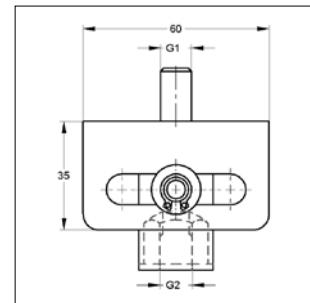
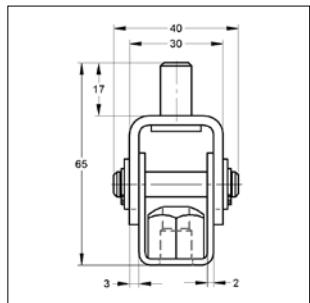
Material:	steel
Material type:	S235JR
Surface:	galvanized
Material sliding plate:	polyamide 6
Static friction factor:	0,2 - 0,3
Sliding friction factor:	0,15 - 0,25
Thermal load:	-30 °C up to + 110 °C

Identification	max. recom. distances sliding body - pipe clamp [mm]	max. load		Weight [kg/pc.]	Packing [pc.]	Part-No.
		hanging	standing			
Profile rail slider 45 M8	45	2,0	2,0	0,115	1	077002801
Profile rail slider 45 M10	55	2,0	2,0	0,120	1	077003001
Profile rail slider 45 M12	55	2,0	2,0	0,126	1	077003201

Suspended bracket 35 mm, hanging



Suspended bracket 35 mm
hanging



Assembly instruction

Specification:

Application area: absorption of axial expansion for hanging assembly
Remark: at adjustment do not overwind the slider
Suggestion: to adjust and fix with lock nut

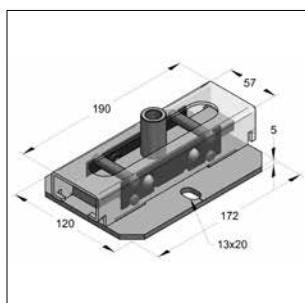
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

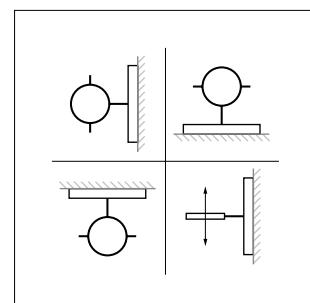
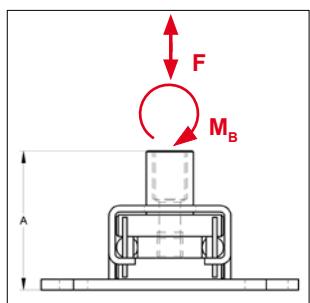
Identification	G1	G2	Sliding distance s [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket 35 mm M10	M10	M8/M10	35	1,5	0,199	50	07709902

04

Roller bearing



Roller bearing



Assembly instruction

Specification:

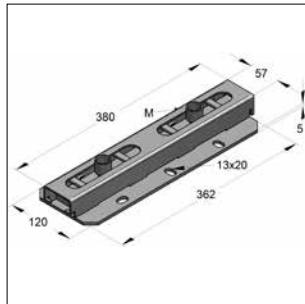
Application area: absorption of axial length expansion for standing, hanging, horizontal or vertical passed pipes

Technical data:

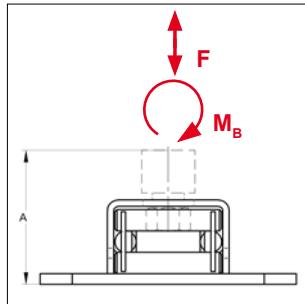
Material: steel
Material type: S235JR
Surface: galvanized
Rolling resistance: 0,004 - 0,02
Sliding distance: 120 mm
max. temperature: up to + 300 °C

Identification	A [mm]	max. load tensile and pressure load F [kN]	max. load bending moments M _B [Nm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roller bearing thread M10	65	4,0	150	1,93	1	175811811
Roller bearing thread M12	65	4,0	150	1,92	1	175811813
Roller bearing thread M16	65	4,0	150	1,97	1	175811816
Roller bearing sleeve 1/2"	45	4,0	150	1,92	1	175811839
Roller bearing sleeve 3/4"	86	4,0	150	2,10	1	175811840

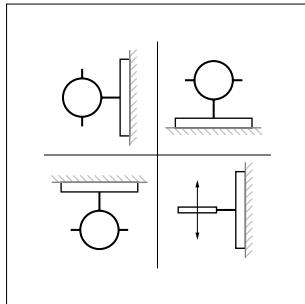
■ Roller bearing Duo



Roller bearing Duo



Assembly instruction



Mounting points

Specification:

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

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

Technical data:

Material: steel

S235

Surface: galvanized

Rolling resistance: 0,004 - 0,02

Sliding distance: 120 mm

max. temperature: up to +300°C

04

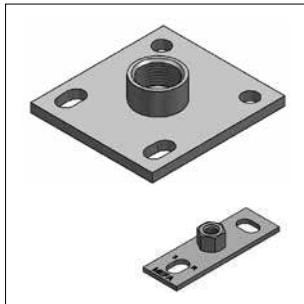
Identification	Connection	A [mm]	max. load tensile and pressure load F* [kN]		max. load bending moments M_B [Nm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roller bearing Duo M10	2 x M10	65	4,0	8,0	300	4,05	1	175911811
Roller bearing Duo M12	2 x M12	65	4,0	8,0	300	4,03	1	175911813
Roller bearing Duo M16	2 x M16	65	4,0	8,0	300	4,13	1	175911816
Roller bearing Duo 1/2"	2 x 1/2"	45	4,0	8,0	300	4,03	1	175911839
Roller bearing Duo 3/4"	2 x 3/4"	86	4,0	8,0	300	4,38	1	175911840

* 4 kN with two screw connections at positions 2 and 5.

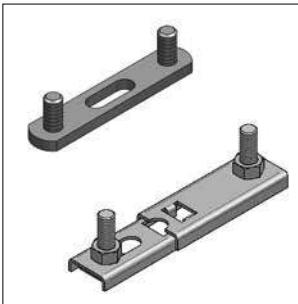
8kN with tree screw connections at positions 1, 3 and 5 or positions 2, 4 and 6.

8kNwith four screw connections at positions 1, 3, 4 and 6.

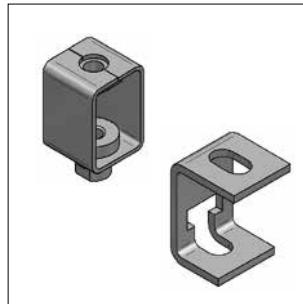
MEFA mounting accessories



Base plates
Page 5/2



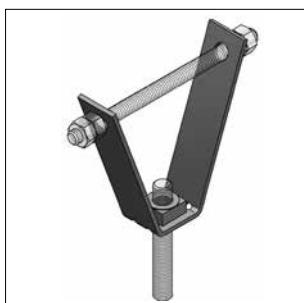
Double holder
Page 5/4



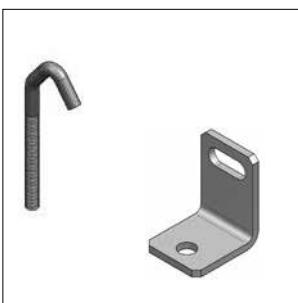
Height-adjustable suspensions
Page 5/5



Pendular bolt joints
Page 5/6



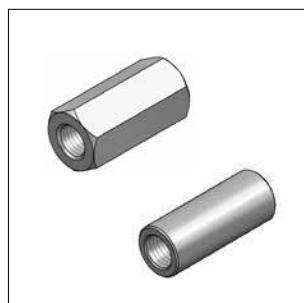
Trapeze hanger
Page 5/7



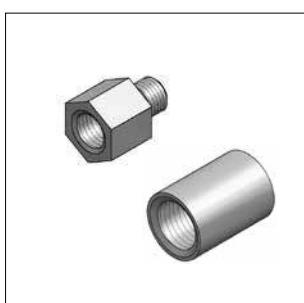
Threaded hooks, distance angles
Page 5/8



Threaded rods and bolts,
protecting caps
Page 5/9



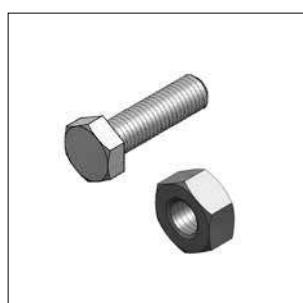
Threaded couplings, reducer
Page 5/11



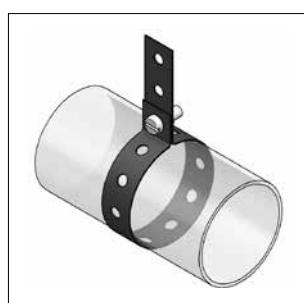
Reducer hexagon, reducing
adaptors
Page 5/12



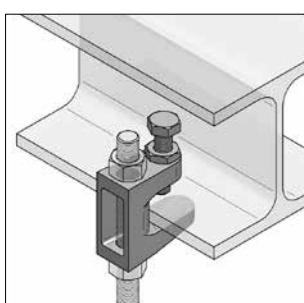
Double nipples, distance tubes
Page 5/13



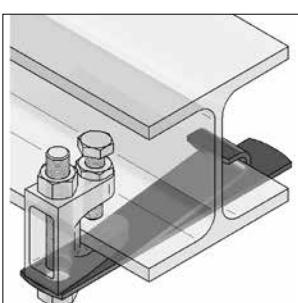
Screws, nuts and washers
Page 5/14



MEFA Plastahl
Page 5/20

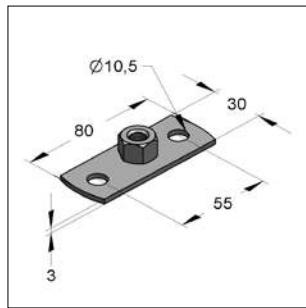


Girder clamps
Page 5/21

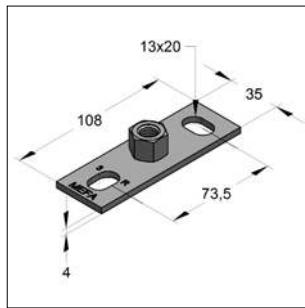


Safety lug
Page 5/22

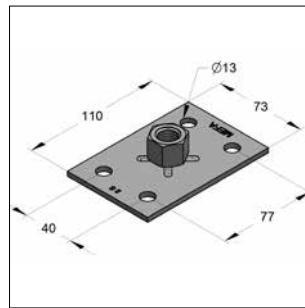
■ Base plates



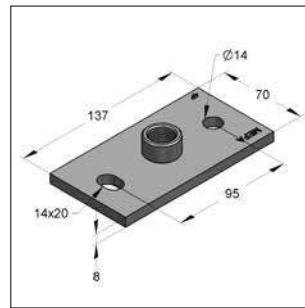
Base plate type 0



Base plate type I



Base plate type II



Base plate type III

Specification:

Application area: plates with threaded connection suitable for mounting on steel structure or profile rails.
Used for manufacturing pipe clamp connections via threaded pin-/ rod or distance tube.

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

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

²⁾ matching sound-decoupling set see on page 3a/11

Type 0

Identification	Thread	Dimension plate length x width x thickness [mm]	Perforation [mm]	max. load suspension [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Base plate type 0	M8	80 x 30 x 3,0	10,5	1,05	0,063	50	05900008
Base plate type 0	M10	80 x 30 x 3,0	10,5	1,05	0,074	50	05900010

Type I

Base plate type I	M8/M10	108 x 35 x 4,0	13,0 x 20	1,50	0,137	50	0590044302
Base plate type I	M12	108 x 35 x 4,0	13,0 x 20	1,50	0,137	50	059006102
Base plate type I	M16	108 x 35 x 4,0	13,0 x 20	1,50	0,163	50	059008802
Base plate type I	1/2"	108 x 35 x 4,0	13,0 x 20	1,50	0,137	50	059004502

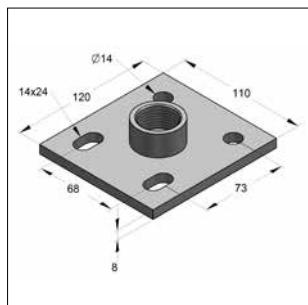
Type II

Base plate type II	M8	110 x 73 x 4,0	13,0	3,40	0,225	50	059050701
Base plate type II	M10	110 x 73 x 4,0	13,0	3,40	0,226	50	059054101
Base plate type II	M12	110 x 73 x 4,0	13,0	3,40	0,274	50	059052501
Base plate type II	M16	110 x 73 x 4,0	13,0	3,40	0,301	50	059053301
Base plate type II	1/2"	110 x 73 x 4,0	13,0	3,40	0,277	50	059050901
Base plate type II	3/4"	110 x 73 x 4,0	13,0	3,40	0,290	50	059051701
Base plate type II	1"	110 x 73 x 4,0	13,0	3,40	0,324	50	059056801

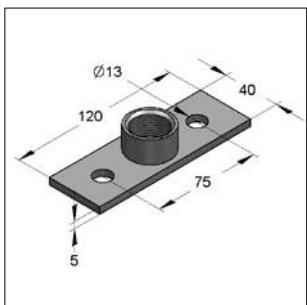
Type III²⁾

Base plate type III	M10	137 x 70 x 8,0	14,0 x 20,0	10,0	0,602	1	059060801
Base plate type III	M12	137 x 70 x 8,0	14,0 x 20,0	10,0	0,606	1	059060601
Base plate type III	M16	137 x 70 x 8,0	14,0 x 20,0	10,0	0,628	1	059060101
Base plate type III	1/2"	137 x 70 x 8,0	14,0 x 20,0	10,0	0,621	1	059060201
Base plate type III	3/4"	137 x 70 x 8,0	14,0 x 20,0	10,0	0,634	1	059059901
Base plate type III	1"	137 x 70 x 8,0	14,0 x 20,0	10,0	0,668	1	059060001
Base plate type III	1 1/4"	137 x 70 x 8,0	14,0 x 20,0	10,0	0,699	1	059060301
Base plate type III	1 1/2"	137 x 70 x 8,0	14,0 x 20,0	10,0	0,737	1	059060501

■ Base plates



Base plate type IV



Base plate type V

Specification:

Application area: plates with threaded connection suitable for mounting on steel structure or profile rails.
Used for manufacturing pipe clamp connections via threaded pin-/ rod or distance tube.

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

Technical data:

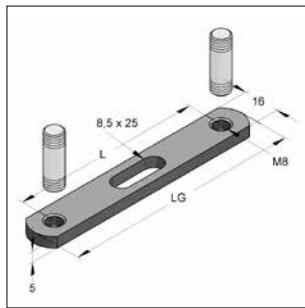
Material: steel
Material type: S235JR
Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

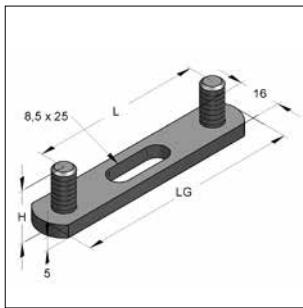
Type IV							
Identification	Thread	Dimension plate length x width x thickness [mm]	Perforation [mm]	max. load suspension [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Base plate type IV	M16	120 x 110 x 8,0	14,0 x 24,0	14,0	0,827	1	059055501
Base plate type IV	1/2"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,820	1	059055601
Base plate type IV	3/4"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,833	1	059055701
Base plate type IV	1"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,867	1	059055801
Base plate type IV	1 1/4"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,898	1	059055901

Type V							
Base plate type V	1/2"	120 x 40 x 5,0	13,0	2,7	0,213	50	0590586
Base plate type V	3/4"	120 x 40 x 5,0	13,0	2,7	0,226	50	0590587
Base plate type V	1"	120 x 40 x 5,0	13,0	2,7	0,260	50	0590588

■ Double holder



Double holder



Double holder MD

Specification:

Double holder: suitable for threaded bolts with female thread
in different lengths, without threaded bolt

Double holder MD: with fixed threaded pin

Technical data:

Material: steel
Surface: galvanized

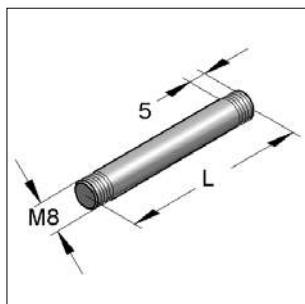
Double holder

Identification	L [mm]	Female thread	Dimension LG [mm]	H [mm]	max. tensil load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Double holder	65	M8	87,0	-	0,2	0,042	100	0763071
Double holder	85	M8	105,5	-	0,2	0,055	100	0763098
Double holder	105	M8	125,5	-	0,2	0,068	100	0763128
Double holder	160	M8	181,0	-	0,2	0,104	100	0763160

Double holder MD

Double holder MD	65	M8	85,0	20,0	0,2	0,055	50	0760048
Double holder MD	105	M8	125,0	20,0	0,2	0,081	50	0760056

■ Threaded bolt



Threaded bolt

Specification:

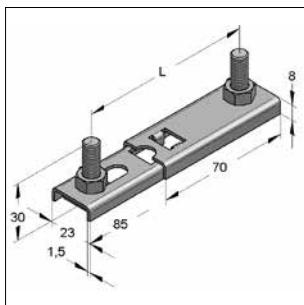
Application area: suitable for double holder
with female thread

Technical data:

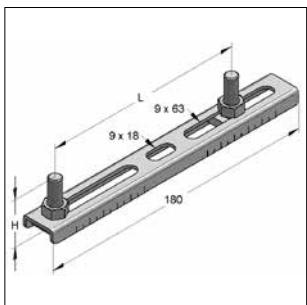
Material: steel
Surface: galvanized

Identification	L [mm]	Male thread	Thread length [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded bolt	13	M8	5	0,005	100	0766151
Threaded bolt	25	M8	5	0,009	100	0766259
Threaded bolt	35	M8	5	0,012	100	0766356
Threaded bolt	45	M8	5	0,015	100	0766453
Threaded bolt	55	M8	5	0,018	100	0766550
Threaded bolt	65	M8	5	0,021	100	0766658

■ Double holder movable



Double holder VS



Double holder VSG

Specification:

Double holder VS: length can be telescopic adjusted, with threaded bolts and nuts

Double holder VSG: adjustable distance of the threaded bolts, with threaded bolts and nuts

Technical data:

Material: steel

Material type: S235JR

Surface: galvanized

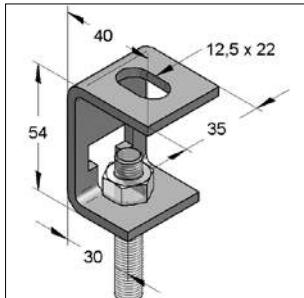
Double holder VS

Identification	L [mm]	Threaded bolt	H [mm]	max. tensil load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Double holder VS	65 - 110	M8 x 30	30	0,15	0,103	100	0590199

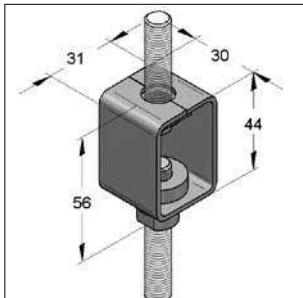
Double holder VSG

Double holder VSG	46 - 154	M8 x 20	20	0,35	0,122	50	0590118
Double holder VSG	46 - 154	M8 x 30	30	0,35	0,128	50	0590126
Double holder VSG	46 - 154	M8 x 40	40	0,35	0,135	50	0590134
Double holder VSG	46 - 154	M8 x 50	50	0,35	0,141	50	0590142

■ Height-adjustable suspension



Suspended bracket type T



Height adjuster

Specification:

Application area: suitable for single mounting with threaded rods on the ceiling; stepless height-adjustment

Suspended bracket type T: suitable threaded rods: M8, M10, M12

Technical data:

Material: steel

Surface: galvanized

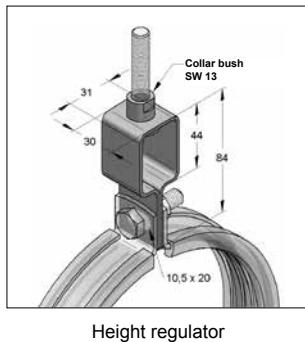
Suspended bracket

Identification	max. load [kN]	Adjustable height [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket type T	1,5	36	0,100	100	0781100

Height adjuster

Height adjuster M8 / SMU8	3,0	30	0,101	50	0783021
Height adjuster M10 / SMU10	3,0	30	0,103	50	0783110

■ Height-adjustable suspension

**Specification:**

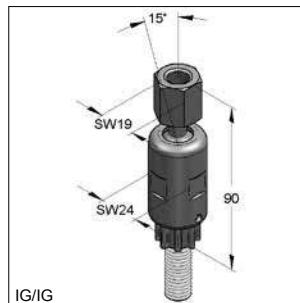
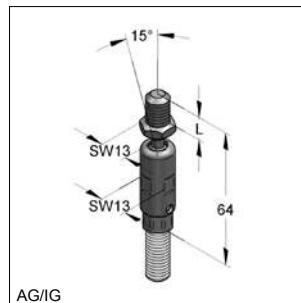
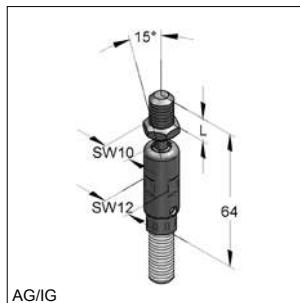
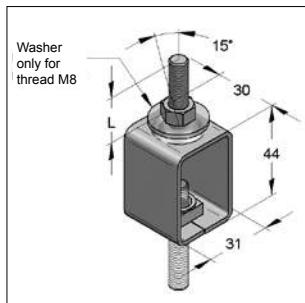
Application area: suitable for single mounting with threaded rods under ceiling; stepless height-adjustment

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	max. load [kN]	Adjustable height [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Height regulator M8	3,0	30	0,125	50	0780014

■ Pendular bolt joints

**Specification:**

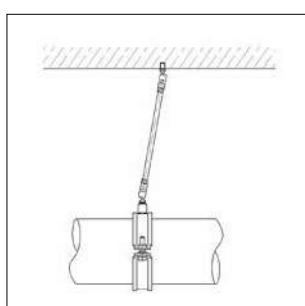
Pendular bolt joint with inspection hole to check the thread depth of threaded rods

Technical data:

Material: steel
Surface: galvanized

Pendulum hanger: height adjustment and pendulum function

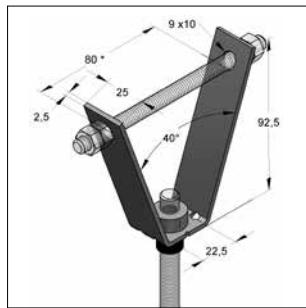
Identification	Connection	Thread length L [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Pendulum hanger M8/M8	-	22	2,5	0,106	50	0784031
Pendulum hanger M10/M10	-	22	3,0	0,119	50	0784136
Pendulum hanger M12/M12	-	20	3,6	0,137	50	0784250
Pendular bolt joint M8/M8	AG / IG	15	2,5	0,040	50	0788088
Pendular bolt joint M10/M10	AG / IG	13	2,5	0,037	50	0788108
Pendular bolt joint M12/M12	IG / IG	-	5,0	0,140	50	0788128

**Remark:**

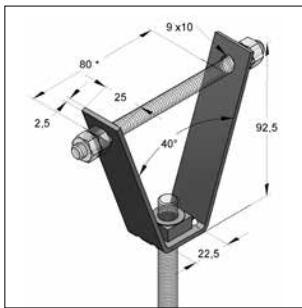
For stainless pipe mounting always two pendulum joints are required

(i) max. absorbtional tube extension when using pendular bolt joint see chapter 15

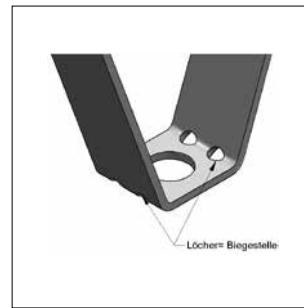
■ Trapeze hanger



Trapeze hanger with height regulator



Trapeze hanger with welded nut

can bend open
(up to approx. 120 mm)

VdS-approval number:
G4930025 with connection
M8 and M10, up to OD 50

Specification:

Mounting instruction: trapeze hanger with threaded rod should be mounted via the lateral holes.
For mounting the pipelines and ventilation ducts directly under a trapeze sheeting.

Needed accessory: threaded bolt M8 / 110 hexagon nut M8, DIN EN ISO 4032

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

* not approved according to VdS

With mounted height-adjustment nut

Identification	Threaded connection	max. load	Weight [kg/pc.]	Packing [pcs.]	Part-No.
		[kN]			
Trapeze hanger MU-B	M8	2,0	0,117	100	0783803
Trapeze hanger MU-B	M10	2,0	0,121	100	0783838

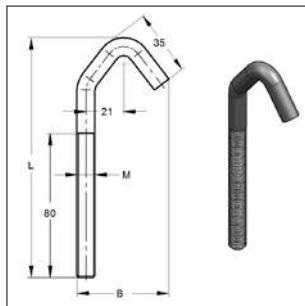
With welded nut for mounting rails

Trapeze hanger MU-S	M8	2,0	0,111	100	0783900
Trapeze hanger MU-S	M10	2,0	0,117	100	0783935
Trapeze hanger MU-S*	M12	2,0	0,121	100	0783950

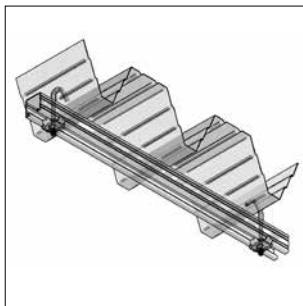
With hole

Trapeze hanger hole 16,5 mm*		2,0	0,101	100	0783801
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■ Threaded hook



Threaded hook



Mounting example

Specification:

Application area: for mounting the pipelines and ventilation ducts directly under trapeze sheeting

*Load specifications refer only to component

Technical data:

Material: steel
Surface: galvanized

Identification

Dimension

M x L
[mm]B
[mm]

max. load*

[kN]

Weight

[kg/pc.]

Packing

[pcs.]

Part-No.

Threaded hook
Threaded hook

M8 x 130
M10 x 130

48
50

0,7
1,3

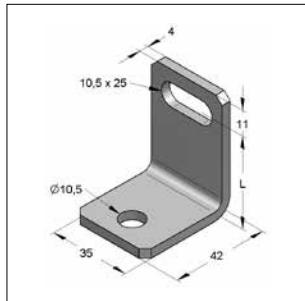
0,059
0,092

50
50

0592131
0592132

05

■ Distance angle



Distance angle E

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification

L

[mm]

Weight

[kg/pc.]

Part-No.

Distance angle E
Distance angle E

25

0,069

1

0630268

30

0,075

1

0630306

35

0,080

1

0630357

40

0,086

1

0630403

50

0,097

1

0630500

60

0,108

1

0630608

70

0,120

1

0630705

90

0,142

1

0630918

100

0,153

1

0631000

■ Protection cap, round



Protection cap, round

Technical data:

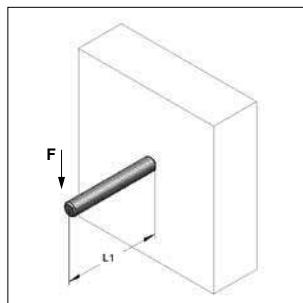
Material: plastic
Colour: black

Identification	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Protection cap M8		0,001	100	0730008
Protection cap M10		0,001	100	0730010
Protection cap M12		0,002	100	0730012

■ Threaded rods



Threaded rod

**Admissible load* on bending**

Distance L1 [mm]	M8 F [kN]	M10 F [kN]	M12 F [kN]	M16 F [kN]
50	0,10	0,20	0,34	0,87
100	0,04	0,10	0,17	0,43
150	0,02	0,05	0,11	0,29
200	0,01	0,03	0,06	0,21
250		0,02	0,04	0,13
300		0,01	0,03	0,09
350			0,02	0,07
400			0,01	0,05

* $f_y = 235 \text{ N/mm}^2$, safety factor = 1,5, E-module=210.000 N/mm²
max. bending f = L/150 related to tensile stress area

Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12, M16

Length: 1000 up to 3000 mm

Technical data:

Material: steel

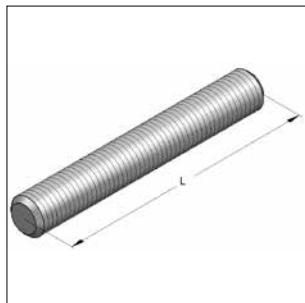
Surface: galvanized

Property class: 4.8

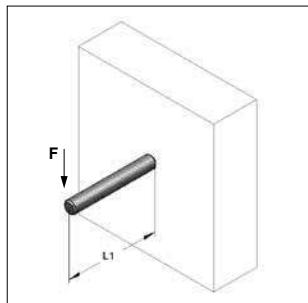
¹⁾ FWD = fire endurance

Identification	Thread	L	Limited tractive force max. [kN]	FWD ¹⁾ 30			FWD ¹⁾ 60			FWD ¹⁾ 90			Weight [kg/pc.]	Packing [pcs.]	Part-No.
				FWD ¹⁾ 30 [kN]	FWD ¹⁾ 60 [kN]	FWD ¹⁾ 90 [kN]									
Threaded rod M8	M8	1000	8,96	0,79	0,45	0,34							0,326	50	0730084
Threaded rod M8	M8	2000	8,96	0,79	0,45	0,34							0,653	1	0730289
Threaded rod M8	M8	3000	8,96	0,79	0,45	0,34							0,980	1	0730483
Threaded rod M10	M10	1000	14,20	1,26	0,72	0,55							0,510	25	0730106
Threaded rod M10	M10	2000	14,20	1,26	0,72	0,55							1,021	1	0730300
Threaded rod M10	M10	3000	14,20	1,26	0,72	0,55							1,531	1	0730505
Threaded rod M12	M12	1000	20,64	1,83	1,05	0,8							0,735	25	0730122
Threaded rod M12	M12	2000	20,64	1,83	1,05	0,8							1,470	1	0730327
Threaded rod M12	M12	3000	20,64	1,83	1,05	0,8							2,205	1	0730521
Threaded rod M16	M16	1000	38,43	3,42	1,95	1,49							1,306	10	0730165
Threaded rod M16	M16	2000	38,43	3,42	1,95	1,49							2,613	1	0730378
Threaded rod M16	M16	3000	38,43	3,42	1,95	1,49							3,920	1	0730564

■ Threaded bolts



Threaded bolt



Distance L [mm]	M8	M10	M12	M16
	F [kN]	F [kN]	F [kN]	F [kN]
50	0,10	0,20	0,34	0,87
100	0,04	0,10	0,17	0,43
150	0,02	0,05	0,11	0,29
200	0,01	0,03	0,06	0,21
250		0,02	0,04	0,13
300		0,01	0,03	0,09
350			0,02	0,07
400			0,01	0,05

* $f_y = 235 \text{ N/mm}^2$, safety factor = 1,5, E-module=210.000 N/mm²
max. deflection $f = L/150$ related to tensile stress area

Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12, M16

Length: 20 up to 160 mm

Technical data:

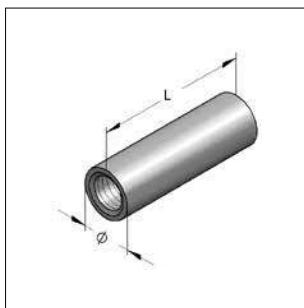
Material: steel

Surface: galvanized

Property class: 4.8

Identification	Thread	L [mm]	Limited tractive force max. [kN]	FWD 30 [kN]	FWD 60 [kN]	FWD 90 [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded bolt	M8	20	8,96	0,79	0,45	0,34	0,007	100	0730815
Threaded bolt	M8	30	8,96	0,79	0,45	0,34	0,010	100	0730823
Threaded bolt	M8	35	8,96	0,79	0,45	0,34	0,012	100	0731358
Threaded bolt	M8	40	8,96	0,79	0,45	0,34	0,013	100	0730831
Threaded bolt	M8	50	8,96	0,79	0,45	0,34	0,017	100	0730858
Threaded bolt	M8	70	8,96	0,79	0,45	0,34	0,023	100	0730874
Threaded bolt	M8	90	8,96	0,79	0,45	0,34	0,030	100	0730890
Threaded bolt	M8	110	8,96	0,79	0,45	0,34	0,036	100	0730912
Threaded bolt	M8	140	8,96	0,79	0,45	0,34	0,046	100	0730940
Threaded bolt	M8	160	8,96	0,79	0,45	0,34	0,053	100	0730963
Threaded bolt	M10	20	14,20	1,26	0,72	0,55	0,010	100	0731021
Threaded bolt	M10	25	14,20	1,26	0,72	0,55	0,013	100	0731032
Threaded bolt	M10	30	14,20	1,26	0,72	0,55	0,016	100	0731048
Threaded bolt	M10	35	14,20	1,26	0,72	0,55	0,018	100	0733350
Threaded bolt	M10	40	14,20	1,26	0,72	0,55	0,021	100	0731056
Threaded bolt	M10	50	14,20	1,26	0,72	0,55	0,026	100	0731064
Threaded bolt	M10	70	14,20	1,26	0,72	0,55	0,036	100	0731072
Threaded bolt	M10	90	14,20	1,26	0,72	0,55	0,046	100	0731099
Threaded bolt	M10	110	14,20	1,26	0,72	0,55	0,056	50	0731110
Threaded bolt	M12	35	20,64	1,83	1,05	0,8	0,026	50	0731234
Threaded bolt	M12	50	20,64	1,83	1,05	0,8	0,037	50	0731250
Threaded bolt	M12	70	20,64	1,83	1,05	0,8	0,052	50	0731269
Threaded bolt	M12	90	20,64	1,83	1,05	0,8	0,066	50	0731293
Threaded bolt	M12	110	20,64	1,83	1,05	0,8	0,081	50	0731315
Threaded bolt	M16	70	38,43	3,42	1,95	1,49	0,091	25	0731672
Threaded bolt	M16	110	38,43	3,42	1,95	1,49	0,143	25	0731715
Threaded bolt	M16	160	38,43	3,42	1,95	1,49	0,208	25	0731763

■ Threaded coupling



Threaded coupling, round

Threaded coupling hexagon
(version with inspection slot)**Specification:**

Application area: For extension of threaded rods.
Hexagonal distance sleeve with checking taps, for sprinkler installations.

Remark: Fire loads on demand

Technical data:

Material: steel
Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Threaded coupling, round

Identification	Female thread	L [mm]	OD [mm]	SW [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded coupling, round	M6	25	10	-	0,012	100	0700010
Threaded coupling, round	M8	30	11	-	0,015	100	0700029
Threaded coupling, round	M10	40	13	-	0,024	100	0700037
Threaded coupling, round	M12	40	15	-	0,030	100	0700045

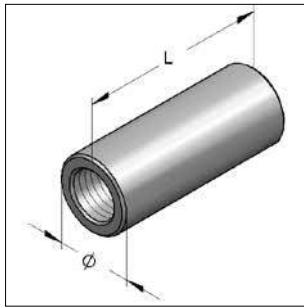
Threaded coupling hexagon

Threaded coupling, hexagon	M8	30	-	13	0,026	100	0700084
Threaded coupling, hexagon	M10	40	-	17	0,061	50	0700104
Threaded coupling, hexagon	M12	40	-	17	0,046	50	0700123
Threaded coupling, hexagon	M16	50	-	24	0,136	25	0700167

Threaded coupling hexagon, with inspection hole

Threaded coupling hexagon, with inspection hole	M8	25	-	13	0,021	100	0700092
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■ Reducing socket



Reducing socket, round

Specification:

Version: round

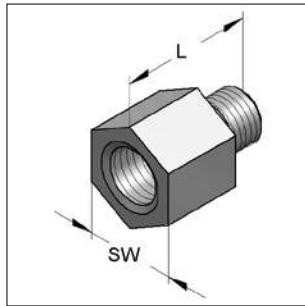
Remark: Fire loads on demand

Technical data:

Material: steel
Surface: galvanized

Identification	Female threads	L [mm]	OD [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Reducing socket	M8 / M10	40	16	0,049	100	0710016
Reducing socket	M8 / M12	40	16	0,044	100	0710024
Reducing socket	M10 / M12	40	16	0,041	100	0710032
Reducing socket	M12 / M16	40	22	0,081	25	0710105

■ Reducer hexagon



Reducer hexagon

Specification:

Version: hexagon
Female- and male thread

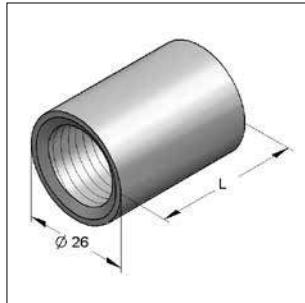
Technical data:

Material: steel
Surface: galvanized

Identification	Thread female/male	Wrench size	L	Drilling hole depth [mm]	Thread length [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Reducer, hexagon	M8 / M10	13	21	8,0	8	0,017	100	0725528
Reducer, hexagon	M10 / M8	13	23	8,0	10	0,016	100	0720518
Reducer, hexagon	M10 / M12	13	23	10,0	10	0,019	100	0720496
Reducer, hexagon	M12 / M10	17	25	10,0	10	0,028	100	0720011
Reducer, hexagon	M16 / M12	24	32	10,0	15	0,072	50	0726508
Reducer, hexagon	1/2" / M12	24	29	11,0	8	0,049	50	0726509
Reducer, hexagon	1/2" / M16	30	35	13,5	11	0,116	25	0726510

05

■ Reducing adaptor



Reducing adaptor

Specification:

Application area: for all MEFA pipe clamps with welded nut M8 or M10.
Applicable as transition for M8 or M10 to 1/2".

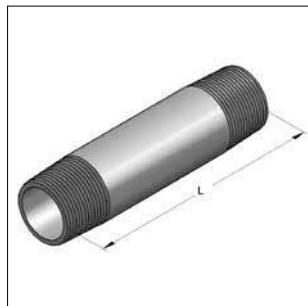
Version M8: suited threaded bolt M8x20
Version M10: suited threaded bolt M10x20

Technical data:

Material: steel
Surface: galvanized

Dimension	Female thread	L [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Reducing adaptor	M8/ 1/2"	36	0,079	50	0590304
Reducing adaptor	M10/1/2"	36	0,078	50	0590401

■ Double nipple



Double nipple

Specification:
Length: 40 up to 150 mm

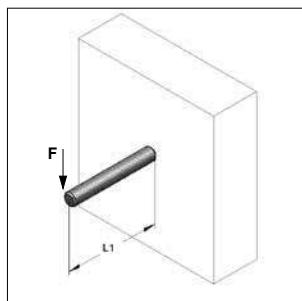
Technical data:
Material: steel
Surface: galvanized

Identification	Thread	L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Double nipple	1/2"	40	0,037	1	0700403
Double nipple	1/2"	60	0,063	1	0700603
Double nipple	1/2"	80	0,085	1	0700803
Double nipple	1/2"	100	0,119	1	0701003
Double nipple	1/2"	120	0,142	1	0701203
Double nipple	1/2"	150	0,162	1	0701503

■ Distance tube



Distance tube



Admissible load* on bending

Distance L1 [mm]	1/2"	3/4"	1"	1 1/4"
	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 $f = L/150$

Specification:

Version: tube with male thread
Thread: according to DIN EN ISO 228 „G“

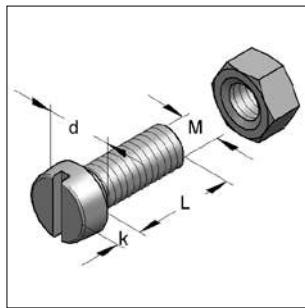
Technical data:

Material: steel
Surface: galvanized

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Thread	Length [mm]	Weight [kg/pc.]	Packing [m]	Part-No.
Distance tube	1/2"	2000	2,44	2	0737002
Distance tube	3/4"	2000	3,16	2	0737003
Distance tube	1"	2000	4,88	2	0737004
Distance tube	1 1/4"	2000	6,28	2	0737005

■ Slotted screw



Slotted screw

Specification:

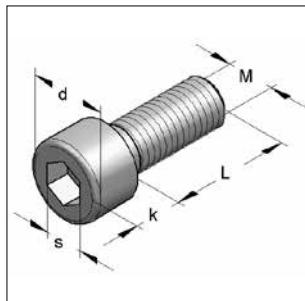
Scope of delivery: with nut according to
DIN EN ISO 4032

Technical data:

Material: steel
Surface: galvanized
Property class: 4.6

Identification	Thread M	L [mm]	d [mm]	k [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Slotted screw	M6	20	10	3,9	0,008	100	3220060
Slotted screw	M8	20	13	5,0	0,015	100	3220095

■ Allen screw



Allen screw

Specification:

according to DIN EN ISO 4762

Version: Allen head with metric thread

Application area: for mounting of C-profile rail in profile back

Technical data:

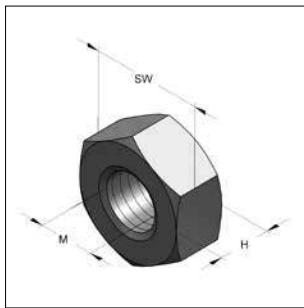
Material: steel
Surface: galvanized¹⁾

Needed accessory: washer according to DIN EN ISO 7089

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Thread M	L [mm]	s [mm]	d [mm]	k [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Allen screw	M8	16	6	13	8	0,014	100	3443167
Allen screw	M8	20	6	13	8	0,016	100	3443205
Allen screw	M10	20	8	16	10	0,026	100	3444200
Allen screw	M10	25	8	16	10	0,029	100	3444252
Allen screw	M12	25	10	18	12	0,042	100	3445259

■ Hexagon nut



Hexagon nut

Specification:

according to DIN EN ISO 4032

Technical data:

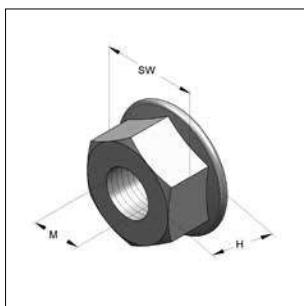
Material: steel

Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Thread M	Height H [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagon nut	M6	5,0	10	0,003	100	4120442
Hexagon nut	M8	6,5	13	0,005	200	4120450
Hexagon nut	M10	8,0	17	0,012	100	4120477
Hexagon nut	M12	10,0	19	0,017	100	4120485
Hexagon nut	M16	13,0	24	0,039	100	4120523

■ Flange nut



Flange nut

Specification:

according to DIN 6923

Technical data:

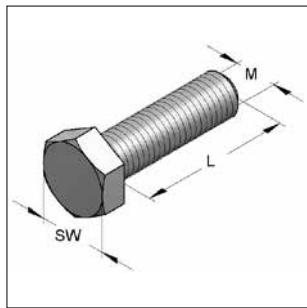
Material: steel

Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Thread M	Height H [mm]	Wrench size SW	Ø - Flange [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
flange nut	M8	8	13	17,9	0,0076	50	0470008
flange nut	M10	10	15	21,8	0,0140	25	0470020
flange nut	M12	12	18	26,0	0,0236	25	0470022
flange nut	M16	16	24	34,5	0,0521	25	0470016

■ Hexagon screw



Hexagon screw

Specification:

according to DIN EN ISO 4017
 Thread: M8, M10, M12
 Length: 16 up to 60 mm

Technical data:

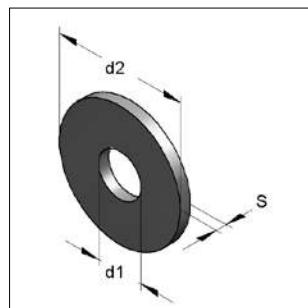
Material: steel
 Surface: galvanized¹⁾
 Property class: 8.8

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

05

Identification	Thread M	Wrench size SW	Length L [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagon screw	M8	13	16	0,013	100	3204165
			20	0,014	100	3204205
			25	0,016	100	3204255
			30	0,018	100	3204305
			35	0,020	100	3204355
			40	0,022	100	3204405
			45	0,024	100	3204455
			50	0,026	100	3204503
Hexagon screw	M10	17	16	0,021	100	3205162
			20	0,023	100	3205201
			25	0,027	100	3205251
			30	0,030	100	3205301
			35	0,033	100	3205302
			40	0,036	100	3205401
			45	0,039	100	3206508
			50	0,042	100	3205501
			60	0,048	100	3206602
Hexagon screw	M12	19	20	0,034	100	3206205
			25	0,039	100	3206591
			30	0,043	100	3206305
			35	0,047	100	3206306
			40	0,052	100	3206606
			45	0,056	100	32066064
			50	0,061	100	32066065
			55	0,065	100	320660655
			60	0,070	100	32066066

■ Washer



Washer
(according to DIN EN-ISO 7089)

Specification:

reinforced washer with enlarged outer diameter, enlarged surface, improved pressure distribution

Technical data:

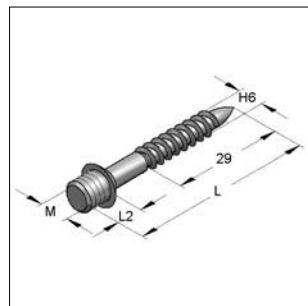
Material: steel
Surface: galvanized¹⁾

¹⁾ Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

Identification	Dimension d1 x d2 x S [mm]	DIN EN-ISO	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Washer	6,4 x 12,0 x 1,6	7089	0,001	100	4320247
Washer	8,4 x 16,0 x 1,6	7089	0,002	100	4320255
Washer	10,5 x 20,0 x 2,0	7089	0,004	100	4320263
Washer	13,0 x 24,0 x 2,5	7089	0,007	100	4320271
Reinforced washer	5,3 x 15,0 x 1,6	7093-1	0,002	100	4330226
Reinforced washer	6,4 x 18,0 x 1,6	7093-1	0,003	100	4330242
Reinforced washer	8,4 x 24,0 x 2,0	7093-1	0,007	100	4330250
Reinforced washer	10,5 x 30,0 x 2,5	7093-1	0,013	100	4330269
Reinforced washer	13,0 x 37,0 x 3,0	7093-1	0,023	100	4330277
Reinforced washer	17,0 x 50,0 x 3,0	7093-1	0,041	100	4330285
Reinforced washer	8,4 x 35,0 x 3,0	-	0,022	100	4350847
Reinforced washer	10,5 x 35,0 x 3,0	-	0,021	100	4351053
Reinforced washer	13,0 x 30,0 x 2,5	-	0,012	100	4351282
Reinforced washer	8,4 x 44,0 x 3,5	-	0,041	100	4350850
Reinforced washer	10,5 x 44,0 x 3,5	-	0,040	100	4351059
Reinforced washer	13,5 x 44,0 x 3,5	-	0,038	100	4351344
Reinforced washer	17,0 x 44,0 x 3,5	-	0,036	100	4351744

05

■ Bolt screw



Bolt screw
with wood- and metric thread

Specification:

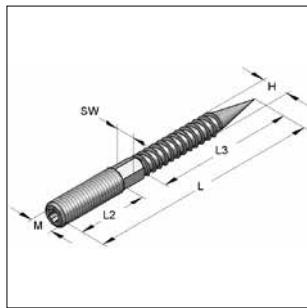
Version: with wood- and metric thread

Technical data:

Material: steel
Surface: galvanized

Identification	Thread M	L [mm]	L2 [mm]	Recommended anchor	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Bolt screw	M6	50	7	8 x 40	0,008	100	3616053
Bolt screw	M6	80	7	8 x 40	0,013	100	3616088
Bolt screw	M8	120	7	10 x 50	0,028	100	3618129

■ Hanger bolt



Hanger bolt
multi-tooth TX 25

Specification:

Version: with wood- and metric thread
multi-tooth TX 25
* Specification without multi-tooth TX 25

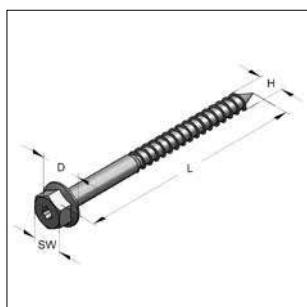
Technical data:

Material: steel
Surface: galvanized

Identification	Thread M L [mm]	H [mm]	L2 [mm]	L3 [mm]	Wrench size hexagon SW	Recomm. anchor	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hanger bolt	M6 60*	6,0	25	35	without	8x44	0,010	100	3600025
Hanger bolt	M8 50	6,7	13	35	without	10 x 44	0,011	100	3600032
Hanger bolt	M8 60	6,7	20	35	without	10 x 44	0,013	100	3600033
Hanger bolt	M8 80	6,7	32	35	6	10 x 60	0,019	100	3600041
Hanger bolt	M8 100	6,7	40	45	6	10 x 60	0,024	100	3600068
Hanger bolt	M8 120	6,7	50	45	6	10 x 60	0,029	100	3608123
Hanger bolt	M8 140	6,7	40	57	6	10 x 60	0,035	100	3608131
Hanger bolt	M8 160	6,7	40	57	6	10 x 60	0,043	100	3608166
Hanger bolt	M10 60	8,8	20	27	without	12 x 60	0,027	100	3609063
Hanger bolt	M10 80	8,8	20	45	8	12 x 60	0,029	100	3609081
Hanger bolt	M10 100	8,8	30	57	8	12 x 60	0,036	50	3609103
Hanger bolt	M10 120	8,8	40	57	8	12 x 60	0,046	50	3609138
Hanger bolt	M10 140	8,8	40	57	8	12 x 60	0,057	50	3609146
Hanger bolt	M10 180	8,9	40	57	8	12 x 60	0,076	50	3609189
Hanger bolt	M12 100*	10,3	22	57	10	14 x 80	0,054	50	3609510

05

■ Wood screw with washer



Specification:

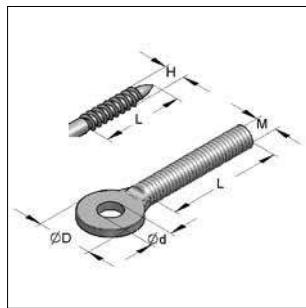
Version: with contact pressed washer

Technical data:

Material: steel
Surface: galvanized

Identification	Thread H L [mm]	Wrench size SW	Torx drive	D x t [mm]	Recommended anchor K2	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Wood screw with washer	8 50	13	-	25 x 1,5	10 x 44	0,022	100	3500012
Wood screw with washer	8 60	13	30	18 x 2,0	10 x 44	0,024	100	350002018
Wood screw with washer	8 70	13	30	18 x 2,0	10 x 60	0,025	100	350003918
Wood screw with washer	8 80	13	30	18 x 2,0	10 x 60	0,029	100	350004718
Wood screw with washer	8 90	13	30	18 x 2,0	10 x 60	0,033	100	350005518
Wood screw with washer	8 100	13	30	18 x 2,0	10 x 60	0,036	100	350006318

■ Eye screw



Eye screw

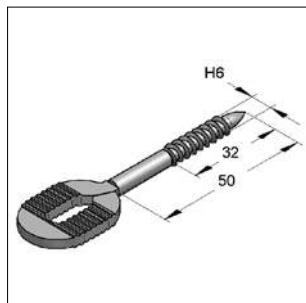
Specification:

Version: with wood (H)- and metric (M) thread

Technical data:Material: steel
Surface: galvanized

Identification	Thread	L [mm]	Ø D [mm]	Ø d [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Eye screw	H6	32	18	9,0	0,012	100	1180010
Eye screw	M8	20	21	8,5	0,015	100	1190059
Eye screw	M10	20	25	12,0	0,028	100	1190040
Eye screw	M10	45	25	12,0	0,044	100	1190032

■ Elongated hole screw



Elongated hole screw

Specification:

Version: with wood thread

Technical data:Material: steel
Surface: galvanized

Identification	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Elongated hole screw	H 6	0,018	100	1140019

■ Countersunk woodscrew



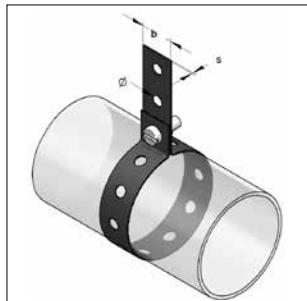
Countersunk woodscrew

Specification:			Technical data:		
Version:	Countersunk woodscrew with torx drive		Material:	steel galvanized	

Identification	Dimension H [mm]	Dimension L [mm]	Torx drive	Recommended anchor	Weight [kg/100]	Packing [pcs.]	Part-No.
Countersunk woodscrew	4,0	40	20	K2 5x25 K2 6x33	0,220	1000	372040040
Countersunk woodscrew	4,5	45	20	K2 6x33 K2 8x44	0,320	500	372045045
Countersunk woodscrew	5,0	50	25	K2 8x44	0,440	500	372050050
Countersunk woodscrew	6,0	60	30	K2 10x44 K2 10x60	0,750	200	372060060

05

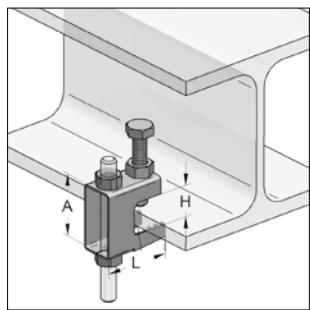
■ MEFA Plastahl

Mounting steel belt -
PLASTAHL

Specification:			Technical data:		
Application:	suspension of round and squared channel ducts		max. load against breaking:	determined safety factor 3	

Identification	Dimension width [mm]	Steel band [mm]	OD [mm]	max. load [kN]	Delivery length [m]	Weight [kg/m]	Packing [m]	Part-No.
PLASTAHL - plastic coated	19	17 x 0,8	6,4	0,8	10	0,11	10	1100017
PLASTAHL - plastic coated	27	25 x 1,0	8,4	1,4	10	0,16	10	1100025
Steel band, galvanized	17	17 x 0,8	6,4	0,8	10	0,09	10	1110012
Steel band, galvanized	25	25 x 1,0	8,4	1,4	10	0,15	10	1110020

■ Girder clamp MKS



Girder clamp MKS

Specification:

- Application area: fast and simple mounting at steel structures and profiles
- Variable height-adjustment: possible via hole
possible via thread
- Clamp bolt screw: steppless adjustment of different clamp bolt strengths

Technical data:

- Material: steel
Surface: galvanized

* only VdS approved

05

With hole

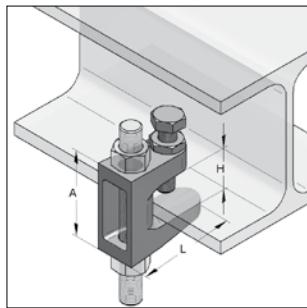
Identification	Thread	Borehole [mm]	L [mm]	A [mm]	H [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Girder clamp MKS 8*	for M8	9	38	37	0-18	1,2	0,072	50	0576801
Girder clamp MKS 10	for M10	11	44	44	0-20	2,5	0,134	50	0576805
Girder clamp MKS 12	for M12	13	58	56	0-26	3,5	0,236	50	0576807

With thread

Girder clamp MKS 8*	M8	-	32	37	0-18	1,2	0,072	50	0576802
Girder clamp MKS 10	M10	-	44	44	0-20	2,5	0,134	50	0576806
Girder clamp MKS 12	M12	-	58	56	0-26	3,5	0,236	50	0576808

(i) mounting example see chapter 15

■ Girder clamp, cast iron



G 400 0005
G 403 0026
G 491 0044



from M10

Girder clamp, cast iron

Specification:

Application area:	fast and simple mounting at steel structures and profiles
Variable height-adjustment:	possible via hole possible via thread
Clamp bolt screw:	steppless adjustment of different clamp bolt strengths
Brand:	VS Guss

Technical data:

Material:	malleable cast iron
Surface:	galvanized
Approval:	VdS and FM (starting with M10) approved
	¹⁾ VdS-approval number: G 400 0005
	²⁾ VdS-approval number: G 491 0044
	³⁾ VdS-approval number: G 403 0026

With hole

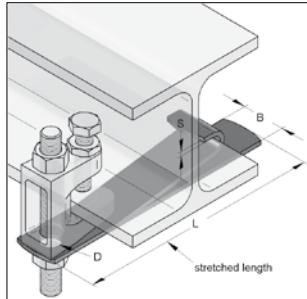
Identification	Thread	Borehole [mm]	L [mm]	A [mm]	H [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Girder clamp TKN 8 ¹⁾	for M8	9	38	35	18	1,2	0,081	50	0579458
Girder clamp TKN 10 ¹⁾	for M10	11	44	42	20	2,5	0,143	50	0579460
Girder clamp TK 12 ²⁾	for M12	13	58	54	26	3,5	0,216	50	0579462
Girder clamp TK 16 ³⁾	for M16	17	58	58	28	5,5	0,318	50	0579448

With thread

Girder clamp TKN 8 ¹⁾	M8	-	32	37	18	1,2	0,081	50	0579558
Girder clamp TKN 10 ¹⁾	M10	-	44	42	20	2,5	0,144	50	0579560
Girder clamp TK 12 ²⁾	M12	-	58	54	26	3,5	0,216	50	0579562
Girder clamp TK 16 ³⁾	M16	-	58	58	26	5,5	0,318	50	0579548

(i) mounting example see chapter 15

■ Safety lug



Safety lug

Specification:

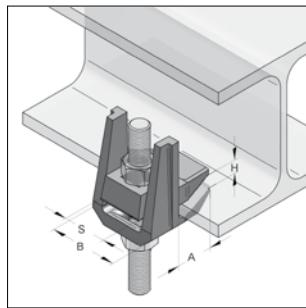
Application:	for stationary sprinkler plant constructions according to VdS codes. Recommended for pipes above 3"
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Technical data:

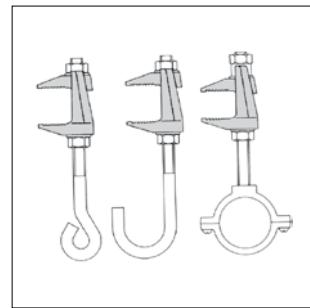
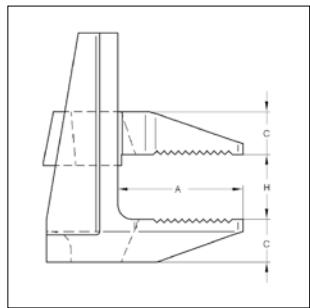
Material:	steel
Material type:	S235JR
Surface:	galvanized

Identification	Type	for pipe	Drilling D [mm]	Material length x width x thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Safety lug	S 3	3" - 4"	10,5	300 x 25 x 3,0	0,177	50	0579303
Safety lug	S 5	5" - 6"	13,5	300 x 30 x 3,0	0,213	50	0579305
Safety lug	S 8	8"	17,0	300 x 45 x 3,0	0,319	50	0579308

Girder clamp F3, two-part



Girder clamp F3
two-part



Specification:

Application area: mounting of suspensions on steel girder up to 55 mm flange thickness
Mounting: mounting in combination with hexagon screws, threaded rods or carriage bolt (not included)
Brand: Lindapter

* safety factor 4:1 against breaking

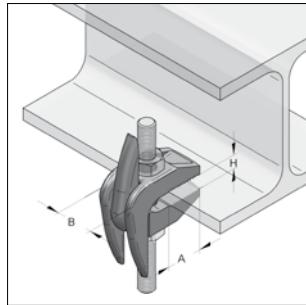
Technical data:

Material: malleable cast iron
Surface: hot-dip galvanized

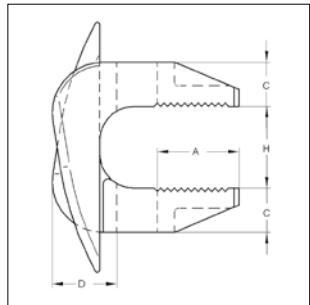
Remark: Not suitable for disposed flanges

Identification	Type	Suited thread	max. load tensile* [kN]	Tightening torque (property class screw 4.6) [Nm]	Dimension					Weight [kg/pc.]	Packing [pc.]	Part-No.
					A [mm]	H [mm]	C [mm]	B [mm]	S [mm]			
Girder clamp	F3/M8	M8	0,90	6	20	0-25	8	33	19	0,091	1	0579613
Girder clamp	F3/M10	M10	1,20	20	25	0-30	10	38	22	0,150	1	0579625
Girder clamp	F3/M12	M12	2,00	39	35	0-40	12	49	29	0,301	1	0579637
Girder clamp	F3/M16	M16	4,00	93	46	0-55	16	60	36	0,610	1	0579649

Girder clamp F9



Girder clamp F9



Specification:

Application area: mounting of strong walled steel girder up to 82 mm flange thickness.
Remark: Not suitable for disposed flanges

* safety factor 5:1 against breaking

Technical data:

Material: malleable cast iron
Surface: galvanized

Identification	Type	max. load tensile* [kN]	Tightening torque (property class screw 4.6) [Nm]	Dimension					Weight [kg/pc.]	Packing [pc.]	Part-No.
				A [mm]	H [mm]	C [mm]	D [mm]	B [mm]			
Girder clamp	F9/M10	1,96	20,0	25	19-42	13	19	24	0,176	1	0579702
Girder clamp	F9/M12	2,80	39,0	35	26-60	17	24	30	0,430	1	0579703
Girder clamp	F9/M16	5,60	93,0	43	29-69	21	28	35	0,688	1	0579704
Girder clamp	F9/M20	8,40	177,0	51	32-82	25	35	44	1,134	1	0579705

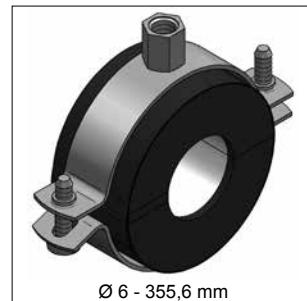
■ MEFA insulated pipe clamps



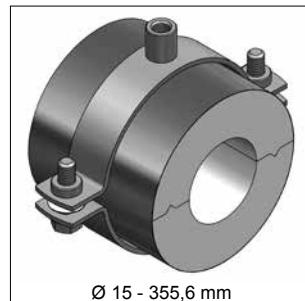
Polar plus
insulated pipe clamp
Page 6/2



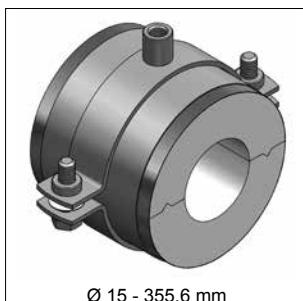
Polar plus sliding sledge
U120 / U140
Page 6/5



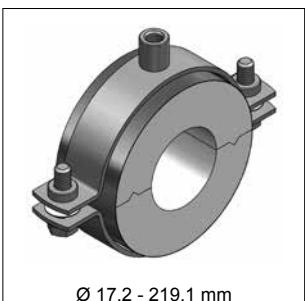
Husky
insulated pipe clamp
Page 6/6



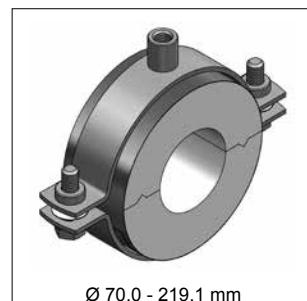
ALU/PU >80<
insulated pipe clamp
Page 6/9



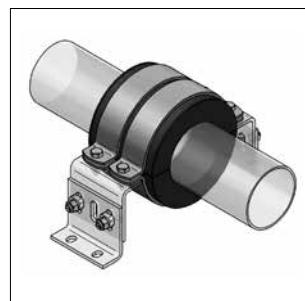
ALU/PU >80<
insulated pipe clamp
with sheet jacket
Page 6/9



ALU/PU >80< s
insulated pipe clamp
Page 6/12



ALU/PU >80< s
insulated pipe clamp
with half jacket
Page 6/12



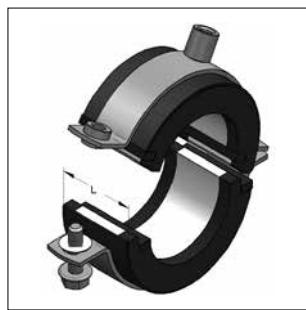
Insulated fixpoint
Page 6/14



Foamglas®
insulated pipe clamp
Page 6/14

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

■ Polar plus insulated pipe clamp



- Pipe clamp body situated outside of insulation
- Joining surface of half shells 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

Polar plus insulated pipe clamp
(Pict. with clamp Maxima PSM)

Application range

OD	Insulation thickness	Shell lenght	
[mm]	[mm]	[mm]	
10,0 - 54,0	20	36	
57,0 - 88,9	20	41	
108,0 - 114,3	20	51	
42,4 - 88,9	30	41	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
108,0 - 160,0	30	51	
168,3 - 219,1	30	66	
108,0 - 160,0	40	51	
168,3 - 323,9	40	66	
355,6 - 457,0	40	86	

06

Materials

Polyurethane rigid foam (PU):

Density:	145 kg/m ³	Bracket-system:	Pipe clamp
Static load:	0,38 N/mm ² (according to AGI Q 03 only 20 % of average nominal compressive strength)	Material:	steel
		Material type:	DD11 (Omnia MB), DD11 / S235JRG2 (Maxima PSM) S235JRG2 (Titan HD) S235JR (Pipe clamp form A, type TGA)

Average nominal compressive strength: 1,9 N/mm²

Surface: galvanized

Synthetic rubber (elastomer):

$\mu \geq 7000$ Coating: acrylic dispersion (vapour barrier)
 $\mu \geq 36000$

Technical data

Fire-performance: Building material class B2
(according to DIN 4102 D,E Euro-class)

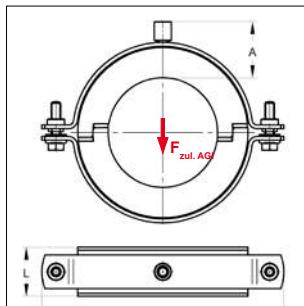
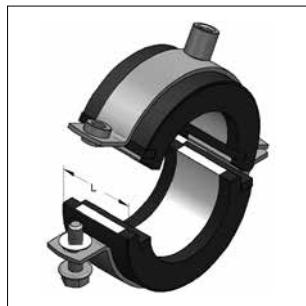


Temperature range: - 50 °C up to + 105 °C

Thermal conductivity according to DIN EN 12667

Thermal conductivity: 0,031 W/mk

■ Polar plus insulated pipe clamp



Polar plus insulated pipe clamp
(with clamp Maxima PSM)

the insulated pipe clamps of MEFA
special designed on customer's request,
no exchange or return.

customized demand on request!

* Delivery time on request

Insulation thickness 20 mm

Steel [mm]	Copper [mm]	Plastic [mm]	OD	Pipe clamp type	Connection	Dimension		max. load $F_{\text{max. AGI}}^{**}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
						A [mm]	B [mm]				
17,2	10	Omnia MB	M8/M10	37	89	0,18	0,111	20	74620100		
		Omnia MB	M8/M10	37	89	0,18	0,111	20	74620120		
		Omnia MB	M8/M10	37	89	0,18	0,111	20	74620150		
	15	Omnia MB	M8/M10	38	92	0,21	0,118	20	74620170		
		Omnia MB	M8/M10	38	92	0,21	0,118	20	74620180		
		Omnia MB	M8/M10	37	92	0,25	0,118	20	74620210		
21,3	18	Omnia MB	M8/M10	37	92	0,26	0,118	20	74620220		
		Omnia MB	M8/M10	37	92	0,32	0,126	20	74620270		
		Omnia MB	M8/M10	37	101	0,33	0,126	20	74620280		
	22	Omnia MB	M8/M10	40	113	0,38	0,142	20	74620320		
		Omnia MB	M8/M10	38	113	0,40	0,142	20	74620340		
		Omnia MB	M8/M10	38	113	0,42	0,141	20	74620350		
26,9	28	Omnia MB	M8/M10	40	117	0,48	0,153	20	74620400		
		Omnia MB	M8/M10	38	117	0,51	0,152	20	74620430		
		Omnia MB	M8/M10	39	124	0,58	0,164	20	74620480		
	32*	Omnia MB	M8/M10	39	124	0,60	0,163	20	74620500		
		Omnia MB	M8/M10	37	124	0,65	0,162	20	74620540		
		Omnia MB	M8/M10	40	136	0,79	0,241	20	74620570		
33,7	35	Omnia MB	M8/M10	38	136	0,84	0,239	15	74620600		
		Omnia MB	M8/M10	39	143	0,89	0,250	15	74620640		
		Omnia MB	M8/M10	39	152	1,05	0,281	15	74620750		
	40*	Omnia MB	M8/M10	38	152	1,06	0,284	15	74620760		
		Omnia MB	M8/M10	39	165	1,24	0,295	15	74620890		
		Maxima PSM	M10/M12	45	226	1,93	0,837	10	74621080		
42,4	42	Maxima PSM	M10/M12	45	226	2,05	0,832	10	74621140		
		Maxima PSM	M10/M12	45	307	3,16	1,256	1	746316802		
		Titan HD	M16	45	358	5,23	2,382	1	746321902		
	48,3	Omnia MB	M8/M10	48	136	0,59	0,249	20	74630430		
		Omnia MB	M8/M10	48	143	0,67	0,262	20	74630480		
		Omnia MB	M8/M10	51	152	0,70	0,281	20	74630500		
48,3	50*	Omnia MB	M8/M10	49	152	0,75	0,280	20	74630540		
		Omnia MB	M8/M10	47	152	0,79	0,280	20	74630570		
		Omnia MB	M8/M10	49	158	0,84	0,298	15	74630600		
	54	Omnia MB	M8/M10	48	158	0,89	0,296	15	74630640		
		Omnia MB	M8/M10	49	175	1,05	0,326	15	74630750		
		Omnia MB	M8/M10	48	175	1,06	0,326	15	74630760		
57,0	64	Omnia MB	M8/M10	59	206	1,24	0,459	15	74630890		
		Omnia MB	M10/M12	55	240	1,93	0,921	10	74631080		
		Omnia MB	M10/M12	54	240	1,97	0,918	10	74631100		
	75*	Omnia MB	M10/M12	57	252	2,05	0,977	10	74631140		
		Omnia MB	M10/M12	55	258	2,24	0,992	1	74631250		
		Omnia MB	M10/M12	55	265	2,38	1,028	1	74631330		
60,3	76,1	Omnia MB	M10/M12	55	272	2,50	1,055	1	74631400		
		Omnia MB	M10/M12	57	297	2,85	1,164	1	74631590		
		Omnia MB	M10/M12	57	297	2,87	1,162	1	74631600		
	88,9	Maxima PSM	M10/M12	45	307	3,16	1,256	1	746316802		
		Maxima PSM	M10/M12	45	307	3,16	1,256	1	746316802		
		Titan HD	M16	45	358	5,23	2,382	1	746321902		

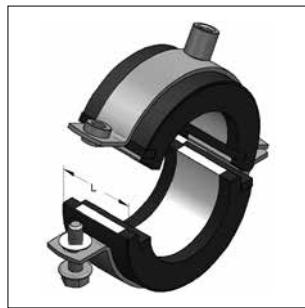
Insulation thickness 30 mm

42,4*	Omnia MB	M8/M10	48	136	0,59	0,249	20	74630430
48,3	Omnia MB	M8/M10	48	143	0,67	0,262	20	74630480
	Omnia MB	M8/M10	51	152	0,70	0,281	20	74630500
57,0*	Omnia MB	M8/M10	49	152	0,75	0,280	20	74630540
60,3	Omnia MB	M8/M10	47	152	0,79	0,280	20	74630570
63,5*	Omnia MB	M8/M10	49	158	0,84	0,298	15	74630600
63,5*	Omnia MB	M8/M10	48	158	0,89	0,296	15	74630640
	Omnia MB	M8/M10	49	175	1,05	0,326	15	74630750
76,1	Omnia MB	M8/M10	48	175	1,06	0,326	15	74630760
88,9	Omnia MB	M10/M12	59	206	1,24	0,459	15	74630890
108,0*	Maxima PSM	M10/M12	55	240	1,93	0,921	10	74631080
114,3	Maxima PSM	M10/M12	54	240	1,97	0,918	10	74631100
	Maxima PSM	M10/M12	57	252	2,05	0,977	10	74631140
	Maxima PSM	M10/M12	55	258	2,24	0,992	1	74631250
133,0*	Maxima PSM	M10/M12	55	265	2,38	1,028	1	74631330
139,7	Maxima PSM	M10/M12	55	272	2,50	1,055	1	74631400
159,0*	Maxima PSM	M10/M12	57	297	2,85	1,164	1	74631590
	Maxima PSM	M10/M12	57	297	2,87	1,162	1	74631600
168,3	Maxima PSM	M10/M12	45	307	3,16	1,256	1	746316802
219,1	Titan HD	M16	45	358	5,23	2,382	1	746321902

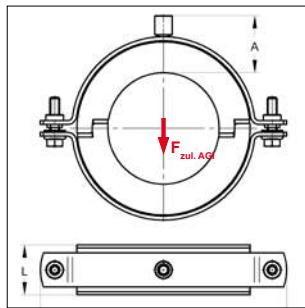
assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

■ Polar plus insulated pipe clamp



Polar plus insulated pipe clamp
(with clamp Maxima PSM)



the insulated pipe clamps of MEFA
special designed on customer's request,
no exchange or return.

customized demand on request!

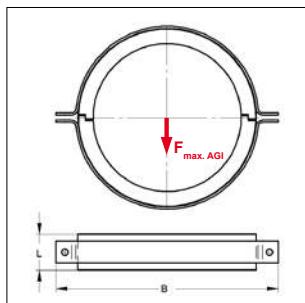
* Delivery time on request

Insulation thickness 40 mm

Steel [mm]	OD [mm]	Copper [mm]	Plastic [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	max. load $F_{\text{max. AGI}}^{**}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
108,0*	110*			Maxima PSM	M10/M12	67	265	1,93	1,059	10	74641080
				Maxima PSM	M10/M12	66	265	1,97	1,056	10	74641100
114,3	125*			Maxima PSM	M10/M12	64	265	2,05	1,055	10	74641140
				Maxima PSM	M10/M12	66	278	2,24	1,117	1	74641250
133,0*				Maxima PSM	M10/M12	66	287	2,38	1,153	1	74641330
139,7				Maxima PSM	M10/M12	67	297	2,50	1,198	1	74641400
159,0*				Maxima PSM	M10/M12	67	315	2,85	1,277	1	74641590
	160*			Maxima PSM	M10/M12	66	315	2,87	1,275	1	74641600
168,3*				Titan HD	M16	56	330	4,02	2,225	1	746416802
219,1				Titan HD	M16	55	380	5,23	2,603	1	746421903
273,0				Titan HD	M16	56	428	6,52	3,025	1	746427302
323,9				Titan HD	M16	56	486	7,73	3,413	1	746432404



Polar plus insulated pipe clamp
(with clamp form A, type TGA)



Insulation thickness 40 mm

OD Steel [mm]	Pipe clamp type	Ø Flange punch hole [mm]	Connection	Dimension L [mm]	Dimension B [mm]	max. load $F_{\text{max. AGI}}^{**}$ [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
355,6*	TGA	17	-	86	560	9,91	5,000	1	74643560
406,4	TGA	17	-	86	610	11,32	5,516	1	74644060
457,0*	TGA	17	-	86	660	12,73	6,041	1	74644570

assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

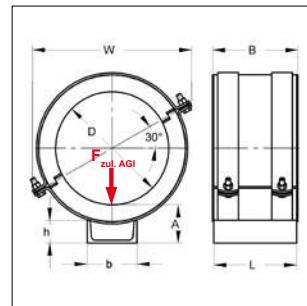
■ Polar plus sliding sledge U120 / U140



Polar plus sliding sledge 120



Polar plus sliding sledge 140



the insulated pipe clamps of MEFA are special designed on customer's request, no exchange or return.

Delivery time
and variant demand
on request!

Specification:

Application area: Load-bearing sliding sledge
with welded U-profiles for direct
sliding on substructure

Technical data:

Material insulated pipe clamp: Polar plus insulated pipe clamp see page 6/2
Material pipe bracket: steel / S235JR
Surface: galvanized

Insulation thickness 40 mm

OD Steel [mm]	Shell lenght B [mm]	Material pipe clamp	U-Steel b x h x L [mm]	Dimension A [mm]	Dimension W [mm]	max. load $F_{\text{max. AGI}}$ [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
219,1	181	50 x 5,0	120 x 55 x 175	90	336	8,90	7,80	1	74742219
273,0	206	50 x 5,0	120 x 55 x 200	93	384	10,50	9,19	1	74742273
323,9	226	50 x 5,0	140 x 60 x 220	96	427	12,00	11,05	1	74742324
355,6	226	60 x 6,0	140 x 60 x 220	98	498	15,60	15,39	1	74742356
406,4	226	60 x 6,0	140 x 60 x 220	99	538	17,40	16,55	1	74742406
457,0	226	60 x 6,0	140 x 60 x 220	99	585	19,20	17,72	1	74742457

① Sliding stripe see page 14/18

HUSKY insulated pipe clamp



HUSKY insulated pipe clamp

- Consisting of pipe clamp, PU pipe shells with synthetic rubber interface and diffusion-tight 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

Application range

OD [mm]	Type	Shell length [mm]	
6,0 - 42,4	Typ II-13	36	
48,3 - 139,7	Typ II-13	42	
160,0 - 168,3	Typ II-13	51	
12,0 - 33,7	Typ IV-19	36	
35,0 - 114,3	Typ IV-19	42	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.
133,0 - 219,1	Typ IV-19	51	
273,0 - 356,0	Typ IV-19	66	
18,0 - 88,9	Typ VI-32	42	
114,3 - 168,3	Typ VI-32	51	
219,1 - 356,0	Typ VI-32	66	

06

Materials

Polyurethane rigid foam (PU):

Density:	120 kg/m³	Bracket-system:	pipe clamp
Static load:	0,27 N/mm² (according to AGI Q 03 only 20 % of average nominal compressive strength)	Material:	steel
Average nominal compressive strength:	1,35 N/mm²	Material type::	DC01-A/DD11 (Sigma) DC01-A/DD11 (Trabant) DD11/S235JRG2 (Maxima PSM) S235JRG2 (Titan HD)
Synthetic rubber:	$\mu \geq 7000$	Surface:	galvanized

Jacket:	self-adhesive (vapour barrier) $\mu \geq 20000$
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Technical data

Fire-performance: Building material class B2
(according to DIN 4102 D,E Euro-class)

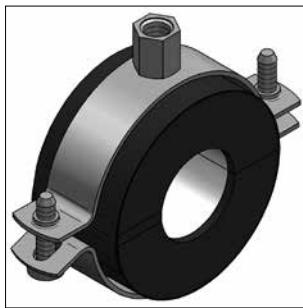


Temperature range: -45 °C up to + 105 °C

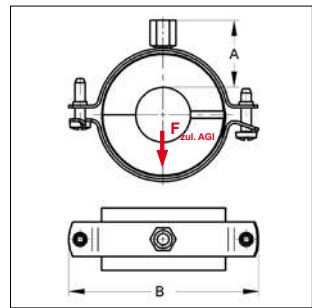
Thermal conductivity according to DIN EN 12667

Thermal conductivity: 0,029 W/mK

HUSKY insulated pipe clamp



HUSKY insulated pipe clamp



the insulated pipe clamps of MEFA
special designed on customer's request,
no exchange or return.

customized demand on request!

* Delivery time on request

Assembly instruction see chapter 15

Type II-13

Steel [mm]	OD [mm]	Copper [mm]	Plastic [mm]	Insulation thickness [mm]	Pipe clamp type	Connection	Dimension		max. load $F_{zul. AGI}^{**}$ [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	
							A [mm]	B [mm]					
17,2	6*			12,5	Sigma	M8	22	56	0,05	0,035	24	6830060	
	10			12,5	Trabant	M8/M10	30	69	0,08	0,059	24	6830100	
	12	18	12	13,5	Trabant	M8/M10	31	77	0,10	0,067	24	6830120	
	15	18	15	13,0	Trabant	M8/M10	31	77	0,13	0,067	24	6830150	
			20*	14,0	Trabant	M8/M10	33	88	0,17	0,092	24	6830200	
	21,3	22		13,0	Trabant	M8/M10	32	88	0,19	0,091	24	6830220	
			25*	13,0	Trabant	M8/M10	32	88	0,21	0,092	12	6830250	
	26,9			13,1	Trabant	M8/M10	32	88	0,23	0,093	12	6830270	
			28	12,5	Trabant	M8/M10	32	88	0,24	0,093	12	6830280	
	31,8		32	13,0	Trabant	M8/M10	32	94	0,27	0,099	12	6830320	
33,7*			35	14,2	Trabant	M8/M10	33	102	0,29	0,105	12	6830340	
				13,5	Trabant	M8/M10	32	102	0,30	0,104	12	6830350	
	42,4	42		40*	14,0	Trabant	M8/M10	33	109	0,34	0,111	12	6830400
	48,3			14,9	Trabant	M8/M10	33	121	0,48	0,143	10	6830480	
			50	14,5	Trabant	M8/M10	33	121	0,49	0,143	10	6830500	
			54*	14,5	Trabant	M8/M10	33	124	0,53	0,148	10	6830540	
	57,0			14,5	Trabant	M8/M10	33	124	0,56	0,149	10	6830570	
	60,3			16,9	Trabant	M8/M10	35	134	0,60	0,200	10	6830600	
	63,5	64		15,0	Trabant	M8/M10	34	134	0,63	0,198	10	6830640	
	70,0*			13,5	Trabant	M8/M10	32	134	0,69	0,197	8	6830700	
76,1				16,0	Trabant	M8/M10	34	153	0,75	0,265	8	6830761	
	88,9			16,1	Trabant	M8/M10	35	165	0,86	0,281	8	6830891	
	108,0			17,5	Trabant	M10/M12	42	187	1,01	0,350	8	6831081	
			110*	17,5	Trabant	M10/M12	42	187	1,02	0,351	4	6831101	
	114,3			16,4	Trabant	M10/M12	40	192	1,04	0,358	4	6831141	
			125*	21,5	Trabant	M10/M12	45	215	1,17	0,410	4	6831251	
	133,0*			17,5	Trabant	M10/M12	42	215	1,19	0,401	4	6831331	
	139,7			17,7	Trabant	M10/M12	42	220	1,24	0,413	4	6831401	
			160	16,5	Maxima PSM	M10/M12	42	265	1,91	0,993	4	6831600	
				15,9	Maxima PSM	M10/M12	41	272	1,98	1,015	2	6831680	

Type IV-19

	12*	12*	19,5	Trabant	M8/M10	38	88	0,10	0,094	24	6840120
	15	15	18,0	Trabant	M8/M10	37	88	0,13	0,094	24	6840150
17,2	18	18	19,0	Trabant	M8/M10	38	94	0,15	0,100	12	6840180
21,3	22		20,0	Trabant	M8/M10	39	102	0,19	0,107	12	6840220
26,9*			20,6	Trabant	M8/M10	39	109	0,23	0,114	12	6840270
	28		20,0	Trabant	M8/M10	39	109	0,24	0,114	12	6840280
31,8*		32*	19,5	Trabant	M8/M10	38	109	0,27	0,115	12	6840320
33,7*			19,7	Trabant	M8/M10	38	109	0,29	0,116	12	6840340
	35		21,0	Trabant	M8/M10	40	121	0,35	0,148	12	6840350
42,4	42		21,0	Trabant	M8/M10	40	124	0,40	0,153	12	6840400
48,3			21,8	Trabant	M8/M10	40	124	0,42	0,156	12	6840420
			23,4	Trabant	M8/M10	42	134	0,48	0,207	10	6840480
57,0*		50*	22,5	Trabant	M8/M10	41	134	0,49	0,206	10	6840500
60,3			21,5	Trabant	M8/M10	40	134	0,53	0,206	10	6840540
			25,5	Trabant	M8/M10	42	153	0,56	0,278	8	6840571
			23,9	Trabant	M8/M10	42	153	0,60	0,275	8	6840601

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

Type IV-19

Steel [mm]	OD Copper [mm]	Plastic [mm]	Insulation thickness [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	max. load F _{zul. AGI} ** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
63,5	64		23,0	Trabant	M8/M10	44	153	0,63	0,275	8	6840641
70,0*			23,5	Trabant	M8/M10	43	165	0,69	0,290	8	6840701
76,1			23,5	Trabant	M8/M10	42	165	0,75	0,293	8	6840761
88,9			26,6	Trabant	M10/M12	43	187	0,88	0,365	8	6840891
108,0			29,0	Trabant	M10/M12	53	215	1,07	0,424	4	6841081
	110*		28,0	Trabant	M10/M12	52	215	1,09	0,423	4	6841101
114,3			25,9	Trabant	M10/M12	50	215	1,13	0,418	4	6841141
133,0*			29,0	Maxima PSM	M10/M12	54	265	1,69	1,030	4	6841330
139,7			25,7	Maxima PSM	M10/M12	51	265	1,78	1,021	4	6841400
	160		26,0	Maxima PSM	M10/M12	51	287	2,04	1,110	2	6841600
168,3			26,4	Maxima PSM	M10/M12	51	297	2,14	1,149	2	6841680
219,1			26,0	Maxima PSM	M10/M12	51	346	2,68	1,358	1	6842190
273,0			25,5	Titan HD	M16	42	402	4,58	2,679	1	68427304
323,9*			26,6	Titan HD	M16	43	457	5,33	3,069	1	68432404
355,6*			25,0	Titan HD	M16	41	486	5,74	3,264	1	68435604

Type VI-32

17,2*	18*	18*	30,0	Trabant	M8/M10	49	121	0,18	0,152	12	6850180
21,3*	22*		30,0	Trabant	M8/M10	49	121	0,22	0,155	12	6850220
26,9*			29,6	Trabant	M8/M10	48	124	0,27	0,158	12	6850270
33,7*			31,7	Trabant	M8/M10	50	134	0,33	0,215	12	6850340
42,4*			36,3	Trabant	M8/M10	56	165	0,42	0,301	12	6850420
48,3*			36,4	Trabant	M8/M10	56	165	0,48	0,306	10	6850480
60,3*			34,9	Trabant	M10/M12	57	176	0,60	0,352	8	6850601
76,1*			36,5	Trabant	M10/M12	62	192	0,75	0,391	8	6850761
88,9*			40,1	Trabant	M10/M12	64	215	0,88	0,444	8	6850891
114,3*			41,4	Maxima PSM	M10/M12	67	272	1,45	1,089	4	6851140
139,7*			42,2	Maxima PSM	M10/M12	67	297	1,78	1,202	4	6851400
168,3*			44,9	Maxima PSM	M10/M12	70	331	2,14	1,364	2	6851680
219,1*			52,5	Titan HD	M16	68	402	3,72	2,855	1	68521904
273,0*			53,5	Titan HD	M16	70	460	4,63	3,303	1	68527304
323,9*			50,6	Titan HD	M16	67	505	5,49	3,636	1	68532404
355,6*			50,5	Titan HD	M16	67	537	6,04	3,885	1	68535604

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

■ ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp

The ALU/PU>80< insulated pipe clamp is a mounting unit, consisting of ALU/PU-compound shell and two-part pipe clamp. After mounting, all pieces are connected. This system is characterized by a high steam diffusion resistance as well as low thermal conductivity, proper mounting provided. Further dimensions for OD or insulation thickness on request. Halogen free.

Application range

OD [mm]	Insulation thickness [mm]	Shell length [mm]	Specification
15,0 - 273,0	20	100	ALU/PU-compound shell completely covered by aluminium foil, overlapping with self-adhesive strip
17,2 - 355,6	30	100	
17,2 - 355,6	40	100	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
17,2 - 355,6	50	100	

Materials

Aluminium (ALU)-foil coat:	vapour barrier	Bracket-system:	pipe clamp
Density:	2700 kg/m ³	Material:	steel
Thickness:	0,08 mm	Material type:	S235JR
Polyurethane (PU) rigid foam:			Surface: galvanized
insulating insert			
Density:	80 kg/m ³		
Static load:	0,1 N/mm ²	(according to AGI Q 03 at least 20 % of average nominal compressive strength)	
Average nominal compressive strength:	0,5 N/mm ²		

Technical data

Steam diffusion resistance number

$\mu = 18.750$ average value (vapour leak-proof according to DIN 4108)

Fire-performance: Building class B2 according to DIN 4102 D,E euro-class)



Temperature range: - 50 °C up to + 120 °C

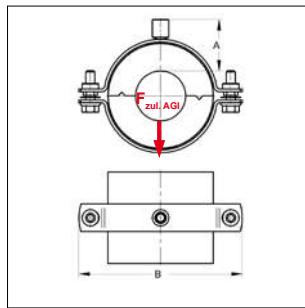
Thermal conductivity according to DIN 52612

Average Temperature: 21 °C
Thermal conductivity: 0,025 W/mk

■ ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp

ALU/PU >80< insulated pipe clamp
with sheet jacket

Delivery time:
5 working days, ex works
(no exchange or return)

¹⁾ At shell length 100 mm:
sheet jacket width 80 mm

Insulation thickness 20 mm shell length 100 mm¹⁾

OD Steel	Material Copper	Connection	Dimension		max. load		Weight without sheet jacket [kg/pc.]	Packing	Part-No. Ins. pipe clamp without sheet jacket	Part-No. Ins. pipe clamp with sheet jacket ¹⁾
			A	B	F _{max AGI} without sheet jacket [kN]	F _{max AGI} with sheet jacket [kN]				
			[mm]	[mm]	[mm]	[mm]				
17,2	15	25x3,0	M8/M10	46	114	0,2	0,3	0,261	1	75601545
17,2	18	25x3,0	M8/M10	45	114	0,2	0,3	0,261	1	75601745
21,3	22	25x3,0	M8/M10	46	120	0,2	0,3	0,275	1	75602145
26,9	28	25x3,0	M8/M10	46	129	0,3	0,4	0,292	1	75602745
33,7	35	25x3,0	M8/M10	44	129	0,3	0,5	0,292	1	75603445
42,4	42	30x3,0	M10/M12	46	151	0,4	0,6	0,424	1	7560426
48,3		30x3,0	M10/M12	44	151	0,4	0,7	0,423	1	7560486
	54	30x3,0	M10/M12	46	162	0,4	0,7	0,458	1	75605432
57,0		30x3,0	M10/M12	45	162	0,4	0,8	0,456	1	75605742
60,3		30x3,0	M10/M12	44	162	0,4	0,9	0,456	1	7560606
63,5		30x3,0	M10/M12	46	172	0,5	0,9	0,486	1	75606442
70,0		30x3,0	M10/M12	44	172	0,5	1,0	0,484	1	75607042
76,1		30x3,0	M10/M12	47	184	0,5	1,1	0,527	1	7560766
88,9		35x4,0	M10/M12	47	209	0,7	1,3	0,770	1	7560896
108,0		35x4,0	M10/M12	46	226	0,8	1,6	0,837	1	75610844
114,3		35x4,0	M10/M12	47	234	0,8	1,7	0,871	1	75611444
133,0		35x4,0	M10/M12	47	252	0,9	1,9	0,950	1	75613344
139,7		35x4,0	M10/M12	45	252	0,9	2,0	0,940	1	75614044
159,0		35x4,0	M10/M12	47	278	1,0	2,3	1,056	1	75615944
168,3		35x4,0	M10/M12	46	287	1,1	2,5	1,086	1	75616844
219,1		50x5,0	M16	46	342	1,9	3,1	2,181	1	7562197
273,0		50x5,0	M16	45	396	2,3	3,7	2,553	1	7562733

Insulation thickness 30 mm shell length 100 mm¹⁾

17,2	18	30x3,0	M10/M12	55	141	0,3	0,3	0,410	1	7590182	7590182/B
21,3	22	30x3,0	M10/M12	56	151	0,3	0,3	0,433	1	75902142	75902142/B
26,9	28	30x3,0	M10/M12	55	151	0,4	0,4	0,433	1	75902742	75902742/B
33,7	35	30x3,0	M10/M12	56	162	0,4	0,5	0,469	1	75903442	75903442/B
42,4	42	30x3,0	M10/M12	57	172	0,5	0,6	0,500	1	75904242	75904242/B
48,3		30x3,0	M10/M12	55	172	0,5	0,7	0,499	1	75904842	75904842/B
	54	30x3,0	M10/M12	55	178	0,5	0,7	0,516	1	75905442	75905442/B
57,0		30x3,0	M10/M12	54	178	0,5	0,8	0,515	1	75905742	75905742/B
60,3		30x3,0	M10/M12	55	184	0,5	0,9	0,535	1	75906042	75906042/B
63,5		30x3,0	M10/M12	56	189	0,6	0,9	0,550	1	75906442	75906442/B
70,0		35x4,0	M10/M12	57	209	0,7	1,0	0,792	1	75907042	75907042/B
76,1		35x4,0	M10/M12	57	216	0,7	1,1	0,812	1	75907644	75907644/B
88,9		35x4,0	M10/M12	56	226	0,8	1,3	0,870	1	75908944	75908944/B
108,0		35x4,0	M10/M12	57	247	0,9	1,6	0,963	1	75910844	75910844/B
114,3		35x4,0	M10/M12	57	252	0,9	1,7	0,995	1	75911444	75911444/B
133,0		35x4,0	M10/M12	57	272	1,0	1,9	1,064	1	75913344	75913344/B
139,7		35x4,0	M10/M12	57	278	1,0	2,0	1,104	1	75914044	75914044/B
159,0		35x4,0	M10/M12	56	297	1,1	2,3	1,164	1	75915912	75915944/B
168,3		35x4,0	M10/M12	57	308	1,2	2,5	1,231	1	75916844	75916844/B
219,1		50x5,0	M16	55	364	2,1	3,2	2,357	1	7592193	7592193/B
273,0		50x5,0	M16	55	416	2,5	3,9	2,719	1	7592733	7592733/B
323,9		50x5,0	M16	55	467	2,8	4,5	3,086	1	7593243	7593243/B
355,6		50x5,0	M16	55	495	3,1	4,9	3,423	1	7593563	7593563/B

assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

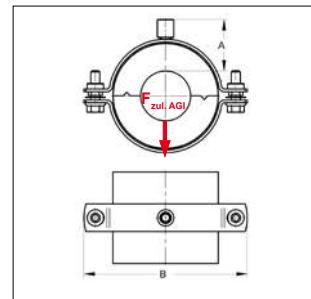
■ ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp with sheet jacket



Delivery time:
5 working days, ex works
(no exchange or return)

¹⁾ At shell length 100 mm:
sheet jacket width 80 mm

Insulation thickness 40 mm shell length 100 mm¹⁾

Steel	OD [mm]	Material Copper pipe clamp [mm]	Connection	Dimension		max. load $F_{\text{max. AG I}}^{**}$		Weight without sheet jacket [kg/pc.]	Packing	Part-No. Ins. pipe clamp without sheet jacket	Part-No. Ins. pipe clamp with sheet jacket ¹⁾
				A [mm]	B [mm]	without sheet jacket [kN]	with sheet jacket [kN]				
	17,2	18	30x3,0	M10/M12	65	162	0,3	0,3	0,472	1	76201742
	21,3	22	30x3,0	M10/M12	67	172	0,3	0,3	0,503	1	76202142
	26,9	28	30x3,0	M10/M12	65	172	0,4	0,4	0,502	1	76202742
	33,7	35	30x3,0	M10/M12	65	178	0,5	0,5	0,528	1	76203442
	42,4	42	30x3,0	M10/M12	64	184	0,5	0,6	0,547	1	76204282
	48,3		35x4,0	M10/M12	66	209	0,7	0,7	0,807	1	7620488
		54	35x4,0	M10/M12	66	209	0,7	0,7	0,807	1	76205444
	57,0		35x4,0	M10/M12	67	216	0,7	0,8	0,828	1	76205744
	60,3		35x4,0	M10/M12	66	216	0,7	0,9	0,829	1	76206044
	63,5		35x4,0	M10/M12	67	220	0,7	0,9	0,875	1	76206444
	70,0		35x4,0	M10/M12	66	226	0,8	1,0	0,888	1	76207044
	76,1		35x4,0	M10/M12	66	234	0,8	1,1	0,926	1	76207644
	88,9		35x4,0	M10/M12	66	247	0,9	1,3	0,987	1	7620898
108,0			35x4,0	M10/M12	67	265	1,0	1,6	1,066	1	76210844
114,3			35x4,0	M10/M12	66	272	1,0	1,7	1,094	1	76211444
133,0			35x4,0	M10/M12	65	287	1,1	1,9	1,158	1	76213344
139,7			35x4,0	M10/M12	66	297	1,1	2,0	1,202	1	7621408
159,0			35x4,0	M10/M12	65	315	1,2	2,3	1,287	1	76215944
168,3			35x4,0	M10/M12	68	331	1,3	2,5	1,380	1	7621688
219,1			50x5,0	M16	65	382	2,2	3,2	2,554	1	7622196
273,0			50x5,0	M16	65	436	2,6	4,0	2,936	1	7622736
323,9			50x5,0	M16	65	486	3,0	4,7	3,297	1	7623247
355,6			50x5,0	M16	65	519	3,2	5,1	3,527	1	7623565

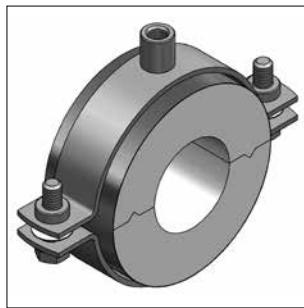
Insulation thickness 50 mm shell length 100 mm¹⁾

17,2	18	30x3,0	M10/M12	76	184	0,3	0,3	0,556	1	76501742	76501742/B
21,3	22	30x3,0	M10/M12	75	184	0,3	0,3	0,556	1	76502142	76502142/B
26,9	28	30x3,0	M10/M12	74	189	0,4	0,4	0,572	1	76502742	76502742/B
33,7	35	35x4,0	M10/M12	76	209	0,5	0,5	0,819	1	76503444	76503444/B
42,4	42	35x4,0	M10/M12	75	216	0,6	0,6	0,840	1	76504244	76504244/B
48,3		35x4,0	M10/M12	76	226	0,7	0,7	0,904	1	76504844	76504844/B
	54	35x4,0	M10/M12	75	234	0,7	0,7	0,944	1	76505444	76505444/B
57,0		35x4,0	M10/M12	76	234	0,8	0,8	0,942	1	76505744	76505744/B
60,3		35x4,0	M10/M12	75	234	0,8	0,9	0,942	1	76506044	76506044/B
63,5		35x4,0	M10/M12	76	240	0,8	0,9	0,973	1	76506444	76506444/B
70,0		35x4,0	M10/M12	76	247	0,9	1,0	1,006	1	76507044	76507044/B
76,1		35x4,0	M10/M12	76	252	0,9	1,1	1,042	1	76507644	76507644/B
88,9		35x4,0	M10/M12	76	265	1,0	1,3	1,090	1	76508944	76508944/B
108,0		35x4,0	M10/M12	77	297	1,1	1,6	1,193	1	76510844	76510844/B
114,3		35x4,0	M10/M12	78	297	1,1	1,7	1,240	1	76511446	76511444/B
133,0		35x4,0	M10/M12	75	308	1,2	1,9	1,300	1	76513344	76513344/B
139,7		35x4,0	M10/M12	75	315	1,2	2,0	1,333	1	76514044	76514044/B
159,0		35x4,0	M10/M12	77	340	1,3	2,3	1,440	1	76515944	76515944/B
168,3		35x4,0	M10/M12	76	346	1,4	2,5	1,467	1	76516844	76516844/B
219,1		50x5,0	M16	75	404	2,4	3,2	2,777	1	7652195	7652195/B
273,0		50x5,0	M16	75	456	2,8	4,0	3,152	1	7652734	7652734/B
323,9		50x5,0	M16	75	507	3,1	4,7	3,526	1	7653245	7653245/B
355,6		50x5,0	M16	75	539	3,4	5,2	3,764	1	7653567	7653567/B

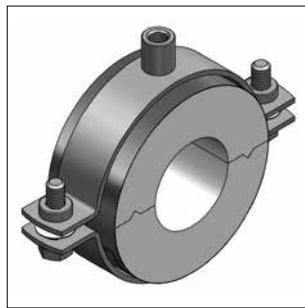
assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

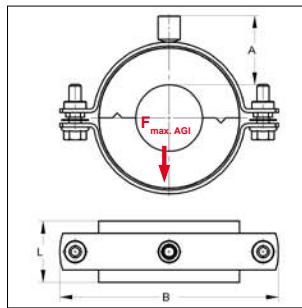
■ ALU/PU >80< short insulated pipe clamp



ALU/PU >80< s insulated pipe clamp



ALU/PU >80< s insulated pipe clamp with half jacket



Delivery time:
5 working days, ex works
(no exchange or return)

¹⁾ At shell length 100 mm:
sheet jacket width 80 mm

Insulation thickness 20 mm

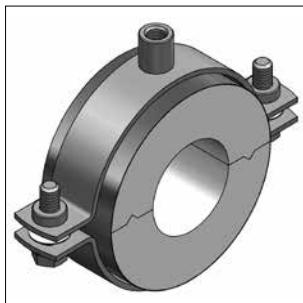
Steel	OD	Material	Connection	Dimension			max. load		Weight without half jacket [kg/p.c.]	Packing	Part-No. Ins. pipe clamp without half jacket	Part-No. Ins. pipe clamp with half jacket	
				A [mm]	L [mm]	B [mm]	F _{max. AGI} ** without sheet jacket [kN]	F _{max. AGI} ** with sheet jacket [kN]					
	17,2	18	20x1,5	M8/M10	38	40	104	0,1	-	0,081	1	70401848	-
	21,3	22	20x1,5	M8/M10	40	40	111	0,1	-	0,094	1	70402248	-
	26,9	28	20x1,5	M8/M10	40	40	119	0,2	-	0,099	1	70402848	-
	33,7	35	20x2,0	M8/M10	39	40	113	0,2	-	0,125	1	70403449	-
	42,4	42	25x1,5	M8/M10	39	40	128	0,2	-	0,133	1	70404248	-
	48,3		20x2,0	M8/M10	39	50	124	0,3	-	0,141	1	70504849	-
	54,0		25x2,0	M8/M10	43	50	141	0,3	-	0,189	1	70505448	-
	57,0		25x2,0	M8/M10	38	50	141	0,4	-	0,189	1	70505748	-
	60,3		25x2,5	M8/M10	39	50	136	0,4	-	0,235	1	70506049	-
	63,5		25x2,5	M8/M10	41	50	143	0,4	-	0,240	1	70506449	-
	70,0		25x2,5	M8/M10	39	66	152	0,4	0,7	0,254	1	70607049	70607049/T
	76,1		25x2,5	M8/M10	42	66	158	0,4	0,7	0,278	1	70607649	70607649/T
	88,9		25x2,5	M8/M10	42	83	175	0,5	1,1	0,316	1	75208949	75208949/T
	108,0		25x3,0	M10/M12	45	83	197	0,5	1,3	0,493	1	75210850	75210850/T
	114,3		30x3,0	M10/M12	46	83	234	0,7	1,4	0,574	1	75211442	75211442/T
	133,0		25x3,0	M10/M12	46	100	225	0,7	1,9	0,554	1	75613350	75613350/T
	139,7		30x3,0	M10/M12	45	100	252	0,8	2,0	0,665	1	75614042	75614042/T
	159,0		30x3,0	M10/M12	46	100	278	0,9	2,3	0,735	1	75615942	75615942/T
	168,3		30x3,0	M10/M12	45	100	288	1,1	2,5	1,070	1	75616842	75616842/T
	219,1		35x4,0	M16	45	100	340	1,9	3,1	1,317	1	75621927	75621927/T

Insulation thickness 30 mm

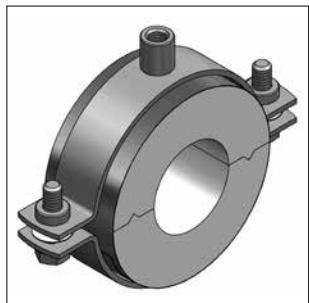
	17,2	18	25x1,5	M8/M10	48	40	123	0,1	-	0,131	1	71101848	-
	21,3	22	25x1,5	M8/M10	49	40	128	0,1	-	0,139	1	71102248	-
	26,9	28	20x2,0	M8/M10	49	40	124	0,2	-	0,157	1	71102849	-
	33,7	35	25x2,0	M8/M10	50	40	141	0,2	-	0,189	1	71103448	-
	42,4	42	25x2,5	M8/M10	52	40	143	0,2	-	0,236	1	71104249	-
	48,3		25x2,5	M8/M10	50	50	152	0,4	-	0,255	1	71204849	-
	54,0		25x2,5	M8/M10	49	50	152	0,4	-	0,264	1	71205449	-
	57,0		25x2,5	M8/M10	49	50	152	0,4	-	0,265	1	71205749	-
	60,3		25x2,5	M8/M10	50	50	158	0,4	-	0,278	1	71206049	-
	63,5		25x2,5	M8/M10	51	50	158	0,5	-	0,279	1	71206449	-
	70,0		25x2,5	M8/M10	51	66	165	0,5	0,7	0,302	1	71307049	71307049/T
	76,1		25x2,5	M8/M10	51	66	175	0,5	0,7	0,317	1	71307649	71307649/T
	88,9		25x3,0	M10/M12	55	83	197	0,5	1,1	0,513	1	75308950	75308950/T
	108,0		25x3,0	M10/M12	56	83	219	0,6	1,3	0,580	1	75310850	75310850/T
	114,3		25x3,0	M10/M12	56	83	225	0,7	1,4	0,584	1	75311450	75311450/T
	133,0		30x3,0	M10/M12	56	100	272	0,9	1,9	0,748	1	75913342	75913342/T
	139,7		30x3,0	M10/M12	56	100	278	0,9	2,0	0,763	1	75914042	75914042/T
	159,0		30x3,0	M10/M12	55	100	297	1,0	2,3	0,820	1	75915942	75915942/T
	168,3		35x4,0	M10/M12	57	100	308	1,2	2,5	1,200	1	75916844	75916844/T
	219,1		35x4,0	M16	55	100	360	2,1	3,2	1,440	1	75921927	75921927/T

assembly instruction see chapter 15

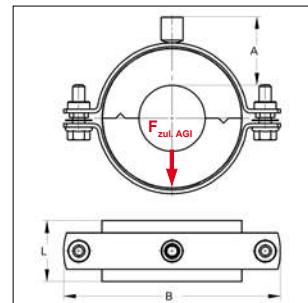
■ ALU/PU >80< Short insulated pipe clamp



ALU/PU >80< s insulated pipe clamp



ALU/PU >80< s insulated pipe clamp with half jacket



Delivery time:
5 working days, ex works
(no exchange or return)

¹⁾ At shell length 100 mm:
sheet jacket width 80 mm

Insulation thickness 40 mm

OD Steel	Material Copper	Connection pipe clamp	Dimension			max. load $F_{\max, AGI}^{**}$	Weight without half jacket	Packing	Part-No. Ins. pipe clamp without half jacket	Part-No. Ins. pipe clamp with half jacket	
			A	L	B						
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kg/pc.]	[pc.]		
17,2	18	25x2,0	M8/M10	58	40	141	0,1	-	0,195	1	71401848
21,3	22	25x2,5	M8/M10	62	40	143	0,1	-	0,242	1	71402249
26,9	28	25x2,5	M8/M10	60	40	152	0,2	-	0,253	1	71402849
33,7	35	25x2,5	M8/M10	60	40	152	0,2	-	0,262	1	71403449
42,4	42	25x2,5	M8/M10	59	40	158	0,2	-	0,277	1	71404249
48,3		25x2,5	M8/M10	62	50	165	0,4	-	0,294	1	71504849
54,0		25x2,5	M8/M10	61	50	175	0,4	-	0,311	1	71505449
57,0		25x2,5	M8/M10	61	50	175	0,4	-	0,311	1	71505749
60,3		30x3,0	M10/M12	65	50	203	0,4	-	0,547	1	71506042
63,5		25x3,0	M10/M12	66	50	192	0,5	-	0,464	1	71506450
70,0		25x3,0	M10/M12	65	66	197	0,5	0,7	0,494	1	71607050
76,1		30x3,0	M10/M12	65	66	219	0,6	0,7	0,614	1	71607642
88,9		25x3,0	M10/M12	65	83	219	0,6	1,1	0,599	1	75408950
108,0		30x3,0	M10/M12	65	83	265	0,8	1,3	0,738	1	75410842
114,3		30x3,0	M10/M12	65	83	271	0,9	1,4	0,746	1	75411442
133,0		30x3,0	M10/M12	64	100	288	1,1	1,9	0,882	1	76213342
139,7		30x3,0	M10/M12	65	100	297	1,1	2,0	0,896	1	76214042
159,0		35x4,0	M10/M12	65	100	315	1,2	2,3	1,300	1	76215944
168,3		35x4,0	M10/M12	68	100	323	1,3	2,5	1,310	1	7621688
219,1		35x4,0	M16	65	100	380	2,2	3,2	1,631	1	7622195
											7622195/T

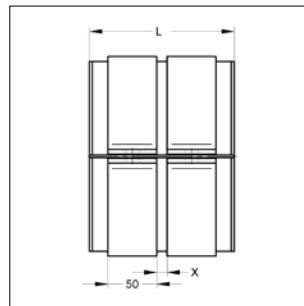
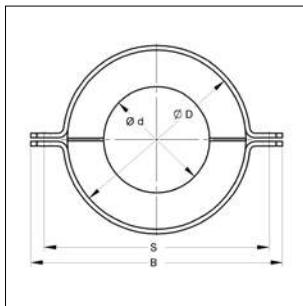
Insulation thickness 50 mm

17,2	18	25x2,5	M8/M10	71	40	158	0,1	-	0,278	1	71701849	-
21,3	22	25x2,5	M8/M10	70	40	158	0,1	-	0,281	1	71702249	-
26,9	28	25x2,5	M8/M10	69	40	165	0,2	-	0,292	1	71702849	-
33,7	35	25x2,5	M8/M10	70	40	175	0,2	-	0,306	1	71703449	-
42,4	42	25x3,0	M10/M12	74	40	192	0,2	-	0,460	1	71704250	-
48,3		25x3,0	M10/M12	75	50	197	0,4	-	0,484	1	71804850	-
54,0		30x3,0	M10/M12	75	50	234	0,4	-	0,596	1	71805442	-
57,0		30x3,0	M10/M12	75	50	220	0,4	-	0,600	1	71805742	-
60,3		30x3,0	M10/M12	74	50	223	0,4	-	0,610	1	71806042	-
63,5		30x3,0	M10/M12	75	50	226	0,5	-	0,627	1	71806442	-
70,0		25x3,0	M10/M12	75	66	219	0,6	0,7	0,527	1	71907050	71907050/T
76,1		25x3,0	M10/M12	75	66	225	0,6	0,7	0,581	1	71907650	71907650/T
88,9		30x3,0	M10/M12	75	83	252	0,8	1,1	0,750	1	75508942	75508942/T
108,0		30x3,0	M10/M12	76	83	272	0,9	1,3	0,818	1	75510842	75510842/T
114,3		30x3,0	M10/M12	77	83	290	1,0	1,4	0,838	1	75511442	75511442/T
133,0		35x4,0	M10/M12	75	100	308	1,2	1,9	1,280	1	76513344	76513344/T
139,7		35x4,0	M10/M12	75	100	323	1,2	2,0	1,340	1	76514044	76514044/T
159,0		35x4,0	M10/M12	77	100	332	1,3	2,3	1,420	1	76515944	76515944/T
168,3		35x4,0	M10/M12	76	100	342	1,4	2,5	1,460	1	76516844	76516844/T
219,1		35x4,0	M16	77	100	400	2,4	3,2	1,745	1	76521927	76521927/T

assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (max. load of clamps are to be considered, see chapter 1)

■ Insulated fixpoint



Insulated fixpoint mounted
with fixpoint bracket HV1

Specification:

Application area: Insulated fixpoint mounting of chilled water pipes of steel

Characteristic: Can be mounted to any substructures (C-profile rails, CENTUM®, steel girder). Height adjustable in combination with Fixpoint brackets HV. High water vapor diffusion resistance and low thermal conductivity. Acc. AGI requirements

Technical data:

Insulating material:

PUR (with natural rubber on the face)

Density:

200 kg/m³

Thermal conductivity:

0,037 W/mK

Temperature range:

-50 °C up to +105 °C

Inner / outer split ring

steel

Material:

raw / galvanized

Surface:

(i) For detailed information about Insulated fixpoint see chapter 3a

06

■ Foamglas® insulated pipe clamp



Delivery time on request

Due to high risk of breakage during shipment of Foamglas® insulated pipe clamps, suitable packing is mandatory. A handling fee of 60 € will apply.

When ordering, please consider the following:
Quantity and length of shells must be devisable through 600 mm (max. shell length).

No exchange or return.



Foamglas® insulated pipe clamp
with sheet jacket

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. Recommended for horizontales pipeline laying.

Remark: Insulated clamps Foamglas will be delivered always with half jacket (not overlapping)

Scope of supply: Insulation thickness: 30 - 50 mm
Pipe diameter: 21,3 - 610,0 mm
Variant demand on request.

Characteristic: Acc. AGI requirements

Needed accessory: Single-package bitumen system PC® 18

Part-No.: 5919001
Temperature range: -30°C - +80°C
Water vapor diffusion: $\mu = 50000$
Color: black

Technical data:

Identification:

Foamglas® shell
aluminium-silicate-glass,

inorganic, without binding material
dimension-stable, no swelling,
no shrinking, no distortion and
no dishing

Deformation resistance:

noncombustible acc. DIN 4102,
T1, reaction to fire classification A1,

Euro class A

-260°C - +430°C

Fire-performance:

vapour leak-proof according DIN 52615
0,041 W/mK

Density:

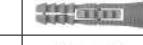
120 kg/m³

Thermal conductivity:

0,7 N/mm²

Maximum pressure load:

■ Anchor Overview

Identification		Page	Approval		Anchorage													
			Pressure area proofed (uncracked concrete)	Tensile area, (cracked concrete)	With approval ETA or DIBt	Stainless steel	Concrete	Dense natural stone	Solid brick	Lime-sand-brick	Pumice	Porous concrete	Plasterboard	Vertical coring brick	Lime-sand plate	Hollow block	fiber-cement, chipboard, plasterboard	Metal profile, trapeze sheet metal
General anchoring																		
MEFA nylon dowel K2		7/3				■	■	■	■	■	■	■	■	□	□	□	□	
Brass expansion anchor		7/3				■	■	■	■	■				□	□	□	□	
Heavy-duty anchors																		
Concrete screw R-LX		7/4	●	●	●	x	■	□	□	□	□							
TSM concrete screw		7/6	●	●	●	x	■	□	□	□	□							
Bolt anchor BZ plus		7/11	●	●	●	x	■	□	□	□	□							
Nail anchor N		7/14		●	● ²	x	■	□	□	□	□							
Zykon hammerset anchor FZEA II		7/16	●	●	●	x	■	□	□	□	□							
Impact anchor E / ES and E A4		7/18	●	●	● ²	x	■	□	□	□	□							
Cavity fixing																		
Hollow core anchor Easy		7/22	●	●	● ¹		■											
Toggle bolt		7/24												□	□	□	□	
Toggle bolt BIG M		7/24												□	□	□	□	

■ well suited □ suited to a limited extend

● available

¹ prestressed concrete, false ceiling plate

² min. 3 running anchorage points
(multiple use for non-structural applications)

■ Overview

Overview for the fixing of single and paired anchors Loads N_{zul} : according to the general technical approval for tensile area ^{1) 2)} (permanent loads)	Clearance hole on the component	Thread	Execution		Drill-Ø [mm]	min. drill hole depth [mm]	Clamping strength [mm]	characteristic wall clearance $C_{cr,N}$ [mm]	characteristic axial distance $S_{cr,N}$ [mm]	Centric tensile load N_{zul} [kN]	N_{zul} in tensile area for 2 anchors with standardised axial distance of MEFA-components			reduced tensile loads N_{zul} single anchor with possible min. axial distance S_{min} [mm]	needed anchorage-concrete (tensile area)	min. component thickness [mm]
			Galvanized steel	Stainless steel							150 mm [kN]	100 mm [kN]	80 mm [kN]			

Zykon hammerset anchor FZEA II

FZEA II 10 x 40		M8	x	x	10	40	-	60	120	1,6	3,2	3,2	3,2	1,6	40	$\geq C20/25$	80
FZEA II 12 x 40		M10	x	x	12	40	-	60	120	3,0	6,1	6,1	6,1	2,5	45		80
FZEA II 14 x 40		M12	x	x	14	40	-	60	120	3,7	7,4	6,8	6,2	2,6	50	$\geq B25$	80

Bolt anchor BZ plus

BZ 8-10/75	9	M8	x	x	8	60	10	69,0	138	2,5	4,9	4,9	4,9	2,5	40		80
BZ 8-30/95	9	M8	x	x	8	60	30	69,0	138	2,5	4,9	4,9	4,9	2,5	40		80
BZ 10-10/90	12	M10	x	x	10	75	10	90,0	180	4,4	8,9	8,9	8,9	4,4	50		100
BZ 10-30/110	12	M10	x	x	10	75	30	90,0	180	4,4	8,9	8,9	8,9	4,4	50		100
BZ 10-50/130	12	M10	x	x	10	75	50	90,0	180	4,4	8,9	8,9	8,9	4,4	50	$\geq C20/25$	100
BZ 12-15/110	14	M12	x	x	12	90	15	97,5	195	5,9	11,8	11,8	11,8	5,9	60	or	110
BZ 12-30/125	14	M12	x	x	12	90	30	97,5	195	5,9	11,8	11,8	11,8	5,9	60	$\geq B25$	110
BZ 12-50/145	14	M12	x	x	12	90	50	97,5	195	5,9	11,8	11,8	11,8	5,9	60		110
BZ 12-105/200	14	M12	x	x	12	90	105	97,5	195	5,9	11,8	11,8	11,8	5,9	60		110
BZ 16-25/145	18	M16	x	x	16	110	25	127,5	255	12,3	22,1	19,4	18,3	8,6	60		170 (140) ⁴⁾
BZ 16-100/220	18	M16	x	x	16	110	100	127,5	255	12,3	22,1	19,4	18,3	8,6	60		170 (140) ⁴⁾

Hollow core anchor Easy

Easy M8	9	M8	x		12	55	by screw length	150	300	0,70	0,94	0,79	0,73	0,35	70	Prestressed concrete- $\geq C45/55$	thickness $\geq 25\text{mm}$
Easy M10	12	M10	x		16	60		150	300	1,20	2,13	2,04	2,00	1,00	80	or $\geq B55$	$\geq 30\text{mm}$

Impact anchor E (for multiple use of non-structural systems) ⁵⁾

E M6	7	M6	x	x	8	30	selectable by screw length	65	130	1,2	2,2	2,1	2,0	0,9	55	$\geq C20/25$	100
E M8	9	M8	x	x	10	30		90	180	1,7	2,2	2,2	2,2	1,1	60		100
E M8x40	9	M8	x	x	10	40		105	210	2,1	2,2	2,2	2,2	1,1	80	or	100
E M10	12	M10	x	x	12	40		85	170	2,1	2,2	2,2	2,2	-	100	$\geq B25$	120
E M12	14	M12	x	x	15	50		85	170	2,5	2,2	2,2	2,2	-	120		130

TSM concrete screw

TSM 6x60 ⁵⁾	-	x	-	6	65	5	100	200	0,8	1,6	1,6	1,6	0,8	40		110
TSM 6x80 ⁵⁾	-	x	-	6	65	25	100	200	0,8	1,6	1,6	1,6	0,8	40		110
TSM 6x100 ⁵⁾	-	x	-	6	65	45	100	200	0,8	1,6	1,6	1,6	0,8	40	$\geq C20/25$	110
TSM 8x70	-	x	-	8	85	5	76,5	153	1,5	3,4	3,4	3,4	1,5	50		120
TSM 8x100	-	x	-	8	85	35	76,5	153	1,5	3,4	3,4	3,4	1,5	50	or	120
TSM 10x90	-	x	-	10	95	5	102	204	2,5	5,1	5,1	5,1	2,5	70	$\geq B25$	130
TSM 10x120	-	x	-	10	95	25	102	204	2,5	5,1	5,1	5,1	2,5	70		130
TSM 10x150	-	x	-	10	95	50	102	204	2,5	5,1	5,1	5,1	2,5	70		130
TSM 10x105 A4	-	-	x	10	95	20	102	204	4,0	7,4	7,4	7,4	4,0	70		130

¹⁾ Live load or load-mix has to be considered special.

²⁾ All loading capacities are determined without influence of wall distances.

³⁾ Pre-positioned installation.

⁴⁾ Wall- and axial distance for reduced min. component thickness see approval

⁵⁾ 3 running anchorage points; max. load per anchorage point max. 2,0 kN

MEFA nylon dowel K2



MEFA nylon dowel K2

Specification:

Application area: concrete- and masonry material, perforated brick, porous concrete, gas concrete
 Mounting method: Wood- and chipboard screw

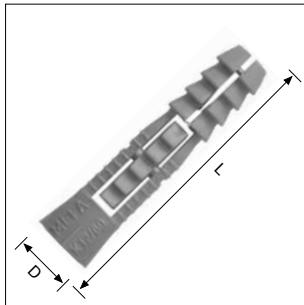
Technical data:

Material: plastic
 Material type: polyamide PA 6 / nylon
 Color: yellow
 Temperature resistance: - 40 °C up to + 100 °C

Installation advise: The screw should drive through the end of dowel

Size [mm]	Length [mm]	drill diameter [mm]	min. drilling depth [mm]	screw OD [mm]	Weight [kg/100]	Packing [pcs.]	Part-no.
5	25	5,0 - 5,5	30	2,5 - 4,0	0,038	100	2010011
6	33	6,0 - 6,5	40	3,5 - 5,0	0,076	100	2010038
8	44	8,0 - 8,5	64	4,5 - 6,0	0,162	100	2010046
10	44	10,0 - 10,5	64	6,0 - 8,0	0,246	50	2010054
10	60	10,0 - 10,5	80	6,0 - 8,0	0,304	50	2010062
12	60	12,0 - 13,0	80	8,0 - 10,0	0,472	25	2010070
14	80	14,0	100	8,0 - 12,0	0,748	25	2010089

Load values MEFA nylon dowel K2

**Allowable tensile load and shear stress (in pressure zone)**

Type of dowel / length of dowel	[mm]	8/44	10/44	10/60	12/60	14/80
Screw size	[mm]	6/80	8/80	8/110	10/110	12/140
Drilling hole depth	[mm]	64	64	80	80	100
Min. depth of anchoring	[mm]	44	44	60	60	80
Tensile load						
Min. thickness of the component	[mm]	8,5	8,5	10,0	10,0	12,0
Admissible load (concrete quality B 25)	[kN]	0,65	1,30	2,00	2,40	3,40
Shear stress						
Min. thickness of the component	[mm]	20	20	20	20	20
Admissible load (concrete quality B 25)	[kN]	1,75	2,30	2,70	3,60	5,50

Inspected: Official research and material test establishment for building industry Otto-Graf-Institut at university Stuttgart

Brass expansion anchor

**Specification:**

Application area: concrete, solid brick, natural stone, lime sand brick
 Mounting method: machine screw, threaded bolt

Technical data:

Material: brass

Installation advise: Length of screw should correspond exactly with length of anchor plus material thickness of attaching part.

Brass expansion anchor

Size	Length [mm]	drill diameter [mm]	drilling depth [mm]	depth of anchoring [mm]	Weight [kg/100]	Packing [pcs.]	Part-no.
M6	22,0	8,0	26	23	0,360	100	2060035
M8	27,5	11,0	34	30	0,790	100	2060043
M10	32,0	13,0	38	34	1,300	100	2060051
M12	40,0	18,0	44	40	2,360	50	2060078

Concrete screw R-LX

Concrete screw R-LX
with sleeveConcrete screw R-LX
with hexagon headConcrete screw R-LX
with pan-head screwConcrete screw R-LX
with countersunk head**Specification:**

Application area: cracked concrete C20/25-C50/60
Suitable for: profile rails, consoles, pipe clamps, duct holder

Technical data:

Material: steel
Surface: galvanized

Approval:

Brand: Rawlplug

Application example:

- Drilling holes are to be cleaned with the blow-out pump
- only use impact screw driver
- further information on the packaging

¹⁾ **ETA-17/0783**

for multiple use for non-structural applications

²⁾ **ETA-17/0806**

all sizes

Sleeve, galvanized

Type x Length L	Drill-Ø [mm]	SW / Torx	min. drill hole depth h_0^* [mm]	min. embedment depth h_{nom}^* [mm]	max.Thick- ness of the fixture t_{fix} [mm]	head-Ø [mm]	Weight [kg/100]	Packing [pcs.]	Part-no.
6x35 sleeve M8 ¹⁾	6	SW 13	45	35	-	16	2,60	100	2234000
6x35 sleeve M10 ¹⁾	6	SW 13	45	35	-	16	2,60	100	2234001
6x55 sleeve M8 ¹⁾⁺²⁾	6	SW 13	65	55	-	16	3,10	100	2234002
6x55 sleeve M10 ¹⁾⁺²⁾	6	SW 13	65	55	-	16	3,10	100	2234003

Hexagon head with pressed washer, galvanized

6x50 hexagon head ¹⁾⁺²⁾	6	SW 10	50	43	7	14	1,50	100	2234004
8x60 hexagon head ¹⁾⁺²⁾	8	SW 13	60	50	10	18	3,40	100	2234005
8x100 hexagon head ¹⁾⁺²⁾	8	SW 13	60	50	50	18	5,00	100	2234006
10x85 hexagon head ¹⁾⁺²⁾	10	SW 15	65	55	30	22	7,00	50	2234007

Pan-head with Torx-drive, galvanized

6x40 pan-head screw ¹⁾	6	TX 30	50	39	1	14	1,40	100	2234008
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Countersunk head with Torx-drive, galvanized

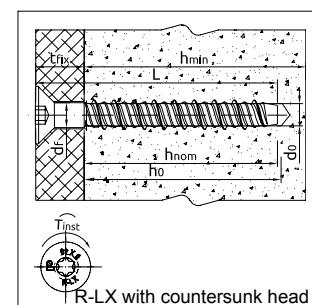
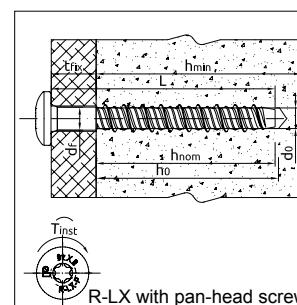
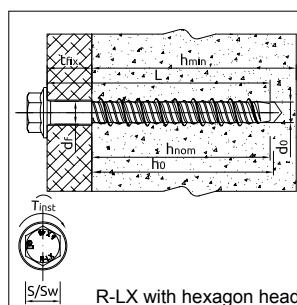
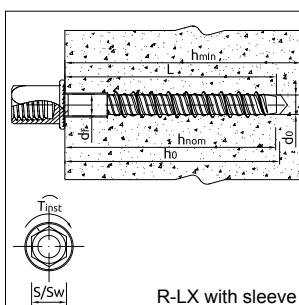
6x75 countersunk head ¹⁾⁺²⁾	6	TX 30	50	43	32	13	1,80	100	2234009
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* different embedment depth see installation parameters R-LX (page 7/5)

(i) Loads see page 7/5

(i) Partly replaces TSM concrete screws

Load values and installation parameters concrete screw R-LX



Load values and installation parameters for concrete screws R-LX			for multiple use for non-structural applications acc. to ETA -17/0783			for all sizes acc. to ETA -17/0806		
			R-LX 6	R-LX 8	R-LX 10	R-LX 6	R-LX 8	R-LX 10
Standard embedment depth								
Recommended loading in cracked concrete*	N _{rec,s}	[kN]	4,28	5,71	9,52	3,36	6,21	8,98
Recommended shear load in cracked concrete*	V _{rec,s}	[kN]	4,28	5,71	9,52	4,64	6,64	17,97
Recommended tensile loading for fire resistance 30 min.*	F _{RK,30,s}	[kN]	0,28	0,75	1,57	0,28	0,75	1,57
Recommended tensile loading for fire resistance 60 min.*	F _{RK,60,s}	[kN]	0,25	0,65	1,18	0,25	0,65	1,18
Recommended tensile loading for fire resistance 90 min.*	F _{RK,90,s}	[kN]	0,20	0,50	1,02	0,20	0,50	1,02
Recommended tensile loading for fire resistance 120 min.*	F _{RK,120,s}	[kN]	0,14	0,40	0,79	0,14	0,40	0,79
of drill hole depth	h _{0,s}	[mm]	65	80	95	65	80	95
nominal embedment depth	h _{nom,s}	[mm]	55	70	85	55	70	85
Effective embedment depth	h _{ef,s}	[mm]	42	53	65	42	53	65
min. of number thickness	h _{min,s}	[mm]	100	110	130	100	110	130
char. spacing (cold)	s _{cr,s}	[mm]	126	160	196	126	160	196
char. edge distance (cold)	c _{cr,s}	[mm]	63	80	98	63	80	98
min. spacing (cold)	s _{min,s}	[mm]	45	50	60	45	50	60
min. edge distance (cold)	c _{min,s}	[mm]	45	50	60	45	50	60
Reduced anchorage depth								
Recommended loading in cracked concrete*	N _{rec,r}	[kN]	2,85 (1,42**)	3,57	4,29	3,10	3,57	3,81
Recommended shear load in cracked concrete*	V _{rec,r}	[kN]	2,85 (1,42**)	3,57	4,29	3,10	3,70	4,36
Recommended tensile loading for fire resistance 30 min.*	F _{RK,30,r}	[kN]	0,28	0,75	1,57	0,28	0,75	1,57
Recommended tensile loading for fire resistance 60 min.*	F _{RK,60,r}	[kN]	0,25	0,65	1,18	0,25	0,65	1,18
Recommended tensile loading for fire resistance 90 min.*	F _{RK,90,r}	[kN]	0,20	0,50	1,02	0,20	0,50	1,02
Recommended tensile loading for fire resistance 120 min.*	F _{RK,120,r}	[kN]	0,14	0,40	0,79	0,14	0,40	0,79
of drill hole depth	h _{0,r}	[mm]	50 (45**)	60	65	50	60	65
nominal embedment depth	h _{nom,r}	[mm]	39 (35**)	50	55	43	50	55
Effective embedment depth	h _{ef,r}	[mm]	30 (24,7**)	37	40	32	36	40
min. of number thickness	h _{min,r}	[mm]	80	80	80	100	100	100
char. spacing (cold)	s _{cr,r}	[mm]	90 (100**)	120	120	90	112	120
char. edge distance (cold)	c _{cr,r}	[mm]	45 (50**)	60	60	45	56	60
min. spacing (cold)	s _{min,r}	[mm]	45	50	60	45	50	60
min. edge distance (cold)	c _{min,r}	[mm]	45	50	60	45	50	60
Technical Data								
installation torque	T _{inst}	[Nm]	20	40	80	20	40	80
Clearance in the fixture	d _f	[mm]	9	12	14	9	12	14
Design bending moment	M	[Nm]	21,2	48,27	82,4	21,2	48,27	82,4

Load values and installation parameters for concrete screws R-LX			for hollow-concrete slabs*** acc. to ETA-17/0783		
			R-LX 6		
Bottom flange thickness ≥ 35 mm					
Recommended loading (C30/37)	N _{rec}	[kN]	2,38		
Recommended loading (C40/50)	N _{rec}	[kN]	2,86		
Recommended tensile loading for fire resistance 30 min.	F _{RK,30}	[kN]	0,28		
Recommended tensile loading for fire resistance 60 min.	F _{RK,60}	[kN]	0,25		
Recommended tensile loading for fire resistance 90 min.	F _{RK,90}	[kN]	0,20		
Recommended tensile loading for fire resistance 120 min.	F _{RK,120}	[kN]	0,14		
of drill hole depth	h ₀	[mm]	45		
nominal embedment depth	h _{nom}	[mm]	35		
Effective embedment depth	h _{ef}	[mm]	24,7		
char. spacing (cold)	s _{cr} =s _{min}	[mm]	100		
char. edge distance (cold)	c _{cr} =c _{min}	[mm]	100		
installation torque	T _{inst}	[Nm]	20		
Clearance in the fixture	d _f	[mm]	9		

* Concrete min. C20/25.
Loads without influence of edge resistance and spacing
** for version with sleeve

*** Position and mounting position of hollow-concrete slabs must be observed in accordance with the approval ETA-17/0783.

■ TSM concrete screws



Cheese-head screw VZ 30

Hexagon head
with pressed washer**Specification**

Application area: concrete

Suitable for: profile rails, consoles, pipe clamps, duct holder

Brand: Togé

Technical data:

Material TSM:

Surface:

Material TSM A4:

steel

zinc-lamella coating, galvanized
stainless steel V4A**Approval:**

ETA-16/0123 (TSM 5+6)

for multiple fastening
(TSM 6 for pre-stressed
hollow concrete slabs)

ETA-15/0514 (TSM 6-14)

for single fixation

ETA-15/0055 (TSM-L 6)
for multiple fastening

Application example: Drilling holes have to be drilled vertically to the mounting plane and with predefined minimum drilling depth.
Drilling dust has to be removed from drilling hole. When turning screw in - put pressure onto impact driver.

Mounting tool: TSM concrete screw has to be fixed by an impact screw driver with a torque control (direction of rotation
to be checked). Impact drilling machines are not allowed!!

*The TSM-L 6 may not be screwed with an impact screw driver.

Allen-head screw VZ 30, galvanized

Type / thread	Length L [mm]	Drill-Ø d [mm]	SW	min. drill hole t [mm]	min. anchoring- depth [mm]	Clamping- thickness d_a, t_{fix} [mm]	head-Ø [mm]	Weight [kg/100]	Packing [pcs.]	Part-no.
TSM-L 6*	28	6	-	28	25	3	14,3	0,76	100	2230628
TSM 6	60	6	-	60	55	5	14,4	1,54	100	2230660

Hexagon head with pressed washer, zinc-lamella coating

TSM 6	60	6	13	60	55	5	15,0	1,88	100	2230664
TSM 8	70	8	13	75	65	5	16,0	3,83	50	2230876
TSM 8	100	8	13	75	65	35	16,0	5,00	50	2230901
TSM 10	90	10	15	95	85	5	20,0	7,30	50	22310091

Hexagon head with pressed washer, stainless steel V4A

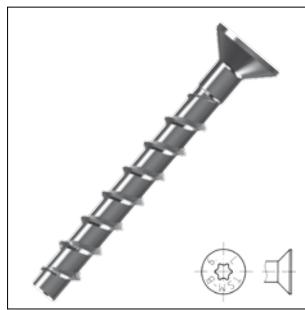
TSM-A4 10	100	10	15	95	85	15	20,0	8,10	50	2231238
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i Delivery time: 2 working days

i Loads see from page 7/8

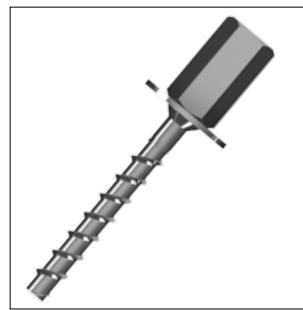
■ TSM concrete screws



Countersunk head VZ 30



Shoulder screw



Sleeve

**Specification**

Application area:
concrete
Suitable for:
profile rails, consoles,
pipe clamps, duct holder

Technical data:

Material TSM:
steel
Surface:
zinc-lamella coating / galvanized

Approval:

ETA-16/0123 (TSM 5 + 6)
for multiple fastening
(TSM 6 for pre-stressed
hollow concrete slabs)
ETA-15/0514 (TSM 6 - 14)
for single fixation

Application example:

The screw head is designed for fixing of MEFA-profile rails trough the slot of C-Profile.
Drilling holes have to be drilled vertically to the mounting plane and with predefined minimum drilling depth.
The drilling dust has to be removed from the drilling hole. When turning in screw - put pressure onto impact driver.

Machines:

The TSM concrete screw has to be screwed with impact driver with torque control (direction of rotation and torque to be checked). Impact drilling machines are not allowed!!

Countersunk head VZ 30, galvanized

Type / thread	Length L	Drill-Ø d	min. drill hole t	Clamping- thickness da, tfl x [mm]	Male- thread	Female- thread	Weight [kg/100]	Packing [pcs.]	Part-no.
TSM 6	80	6	60	25,0	-	-	1,80	100	2230681

Shoulder screw SW 10, galvanized

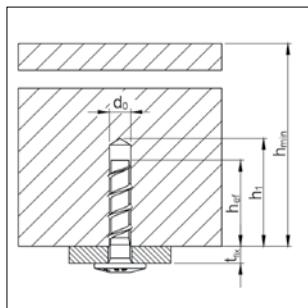
TSM 6	55	6	65	M8x16	-	1,85	100	2230002
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Sleeve SW 13, galvanized

TSM 6	55	6	65	-	M8/M10	3,80	50	2230001
TSM 6	35	6	40	-	M8/M10	3,40	50	2230000

Loads see page 7/8

■ Load values TSM L 6 concrete screws



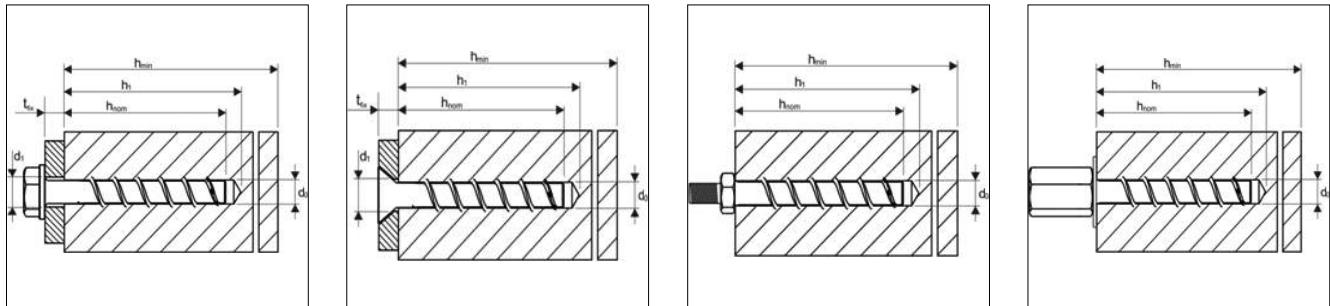
Technical characteristics without fire request			
Drill diameter	d ₀	[mm]	6
Drilling hole depth	h _i	[mm]	28
Depth of anchoring	h _{ef}	[mm]	25
Min. thickness of the component	h _{min}	[mm]	80
Edge distance	c	[mm]	150
Center distance	s	[mm]	200
Allowable load in cracked and uncracked concrete C 20/25 to C 50/60 ¹⁾	N _{zul}	[kN]	0,43

¹⁾ The partial safety factor for material resistance from the approval Y_M = 1.5 as well a partial safety factor for load actions Y_F = 1.4 were considered for determining the load.

Technical characteristics resistant to fire			
	TSM L 6		
Fire resistance class			
R 30	Allowable load F _{f_i, zul, 30¹⁾}	[kN]	0,34
R 60	Allowable load F _{f_i, zul, 60¹⁾}	[kN]	0,31
R 90	Allowable load F _{f_i, zul, 90¹⁾}	[kN]	0,22
R 120	Allowable load F _{f_i, zul, 120¹⁾}	[kN]	0,17
R 30 to R 120	Center distance S _{f_i}	[mm]	120
	Edge distance C _{f_i}		60

¹⁾ The partial safety factor for material resistance from the approval Y_M = 1.0 as well a partial safety factor for load actions Y_F = 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		h_{nom} [mm]	TSM 6		TSM 8			TSM 10				
Nominal screw-in depth			$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},3}$	$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},3}$		
Nominal borehole diameter	d_0 [mm]		6		8			10				
Borehole depth	$h_1 \geq$ [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	$d_f \leq$ [mm]		8		12			14				
Admissible tensile loading in cracked concrete	N_{zul} [kN]		1,0	1,9	2,4	4,3	5,7	4,3	8,0	9,6		
Admissible shear load in cracked concrete	V_{zul} [kN]		3,0	4,0	3,5	4,8	6,4	4,8	15,9	19,2		
Admissible tensile loading in uncracked concrete	N_{zul} [kN]		1,9	4,3	3,6	5,7	7,6	5,7	9,5	12,0		
Admissible shear load in uncracked concrete	V_{zul} [kN]		4,0	4,0	5,0	6,8	9,0	6,8	19,4	19,4		
Minimum edge distance	C_{min} [mm]		40		50			50				
Minimum center distance	S_{min} [mm]		40		50			50				
Minimum component thickness	h_{min} [mm]		100		100			100	130			
Installation torque	T_{inst} [Nm]		10		20			40				
Max. torque		[Nm]	160		300			400				
ETA seismic C1	C1		x		x			yes	x	yes		

¹⁾ The partial safety factor for material resistance from the approval $Y_M = 1.5$ as well a partial safety factor for load actions $Y_F = 1.4$ were considered for determining the load.

²⁾ These values apply without influence of center distance and edge distances.

07

Technical characteristics without 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]		$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},3}$	$h_{\text{nom},1}$	$h_{\text{nom},2}$	$h_{\text{nom},3}$									
Admissible tensile and shear load ($F_{\text{zul},f} = N_{\text{zul},f} = V_{\text{zul},f}$)																			
R 30	permitted resistance	$F_{\text{f}, \text{zul}, 30}^{1)}$ [kN]	0,5	0,9	1,3	2,3	2,3	2,3	4,1	4,3									
R 60		$F_{\text{f}, \text{zul}, 60}^{1)}$ [kN]	0,5	0,8	1,3	1,7	1,7	2,3	3,3	3,3									
R 90		$F_{\text{f}, \text{zul}, 90}^{1)}$ [kN]	0,5	0,6	1,3	1,1	1,1	2,3	2,2	2,2									
R 120		$F_{\text{f}, \text{zul}, 120}^{1)}$ [kN]	0,4	0,4	0,7	0,7	0,7	1,7	1,7	1,7									
R 30		$M^0_{\text{zul},f, 30}$ [kN]	0,7		2,4			5,9											
R 60		$M^0_{\text{zul},f, 60}$ [kN]	0,6		1,8			4,5											
R 90		$M^0_{\text{zul},f, 90}$ [kN]	0,5		1,2			3,0											
R 120		$M^0_{\text{zul},f, 120}$ [kN]	0,3		0,9			2,3											
Edge distance																			
R 30 to R 120		$C_{\text{cr},f}$ [mm]	$2 \times h_{\text{ef}}$																
Edge distance must be ≥ 300 mm under fire exposure from more than one side.																			
Center distance																			
R 30 to R 120		$S_{\text{cr},f}$ [mm]	$2 \times C_{\text{cr},f}$																
concrete edge failure																			
R 30 to R 120		k [-]	1,0																
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 $Y_M = 1.0$ as well a partial safety factor for load actions $Y_F = 1.0$ 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 5	TSM 6	
Nominal screw-in depth	h_{nom}	[mm]	35	35	55
Nominal borehole diameter	d_0	[mm]	5	6	
Borehole depth	h_1	\geq [mm]	40	40	60
Effective anchorage depth	h_{ef}	[mm]	27	27	44
Round hole in the mounting part	d_i	\leq [mm]	7	8	
Admissible tensile loading in cracked concrete	N_{zul}	[kN]	0,6	0,6	3,6
Admissible shear load in cracked concrete	V_{zul}	[kN]	2,4	2,4	4,0
Admissible tensile loading in uncracked concrete	N_{zul}	[kN]	0,6	0,6	3,6
Admissible shear load in uncracked concrete	V_{zul}	[kN]	2,5	3,4	4,0
Minimum edge distance	C_{min}	[mm]	35	35	40
Minimum center distance	S_{min}	[mm]	35	35	40
Minimum component thickness	h_{min}	[mm]	80	80	100
Installation torque	T_{inst}	[Nm]	8	10	
Max. torque		[Nm]	140	160	

¹⁾ The partial safety factor for material resistance from the approval $Y_M = 1.5$ as well a partial safety factor for load actions $Y_F = 1.4$ were considered for determining the load.

Only for screw size 6

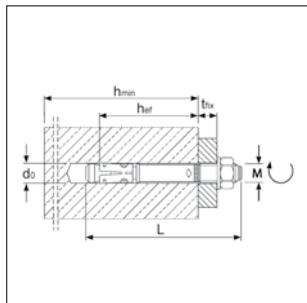
Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR					
Screw size TSM high performance			TSM 6	TSM 6 A4 / HCR	
Nominal screw-in depth	h_{nom}	[mm]	35	55	35 55
Admissible tensile and shear load ($F_{\text{zul},f} = N_{\text{zul},f} = V_{\text{zul},f}$)					
R 30	$F_{\text{f}, \text{zul}, 30}^{1)}$	[kN]	0,4	0,9	0,4 1,2
R 60	$F_{\text{f}, \text{zul}, 60}^{1)}$	[kN]	0,4	0,8	0,4 1,2
R 90	$F_{\text{f}, \text{zul}, 90}^{1)}$	[kN]	0,4	0,6	0,4 1,2
R 120	$F_{\text{f}, \text{zul}, 120}^{1)}$	[kN]	0,3	0,4	0,3 0,8
R 30	$M_{\text{zul},f,30}^0$	[kN]	0,7	0,9	
R 60	$M_{\text{zul},f,60}^0$	[kN]	0,6	0,9	
R 90	$M_{\text{zul},f,90}^0$	[kN]	0,5	0,9	
R 120	$M_{\text{zul},f,120}^0$	[kN]	0,3	0,6	
Edge distance					
R 30 to R 120	$C_{\text{cr},f}$	[mm]		$2 \times h_{\text{ef}}$	
Edge distance must be ≥ 300 mm under fire exposure from more than one side.					
Center distance					
R 30 to R 120	$S_{\text{cr},f}$	[mm]		$2 \times C_{\text{cr},f}$	

¹⁾ The partial safety factor for material resistance from the approval $Y_M = 1.0$ as well a partial safety factor for load actions $Y_F = 1.0$ were considered for determining the load.

Bolt anchor BZ plus



Bolt anchor BZ plus
Bolt anchor BZ plus 4A



M 8 - M 20

Brandschutz-geprüft

SEISMIC 1)

Specification:

Application area: cracked and non-cracked concrete C20/25 up to C50/60

Installation advise: bolt anchor for pre-fabrication and push-through-assembling

Technical data:

Material BZ plus: steel
Surface: galvanized
Material BZ plus A4: stainless steel V4A

Approval: ETA-99/0010

Application example: Anchorage for moderately heavy up to heavy loads in cracked and uncracked concrete:
Pillars, steel girder, handrail fittings, cable routes, wooden construction, consoles.

¹⁾ Applies only for standard anchorage depth.

Bolt anchor BZ plus, galvanized

Identification	standard anchorage depth / reduced anchorage depth												Part no.	
	clamping strength	Drill-Ø		Setting-depth	anchoring depth	Seismic ¹⁾ C1 / C2	Anchor-length	Thread	Weight	Packing				
		[mm]	x Drillhole depth							[kg/100]	[pcs.]			
BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	nein	75	M8x32	2,99	100	221108010
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	nein	95	M8x52	3,60	100	221108030
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	ja	90	M10x42	5,88	50	221110010
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	ja	110	M10x62	6,88	50	221110030
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	ja	130	M10x82	7,90	50	221110050
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	ja	110	M12x51	10,20	25	221112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	ja	125	M12x66	11,36	25	22111203001
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	ja	145	M12x86	12,92	25	221112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	ja	200	M12x141	16,84	25	221112105
BZ 16 -15-35/135	15	35	16x110	16x90	97	77	85	65	ja	135	M16x56	21,60	20	221116015
BZ 16 -25-45/145	25	45	16x110	16x90	97	77	85	65	ja	145	M16x66	23,00	20	221116025
BZ 16 -80-100/200	80	100	16x110	16x90	97	77	85	65	ja	220	M16x121	32,00	10	221116080

Bolt anchor BZ plus A4, stainless steel

BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	nein	75	M8x32	2,99	100	222108010
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	nein	95	M8x52	3,60	100	222108030
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	ja	90	M10x42	5,88	50	222110010
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	ja	110	M10x62	6,88	50	222110030
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	ja	130	M10x82	7,90	50	222110050
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	ja	110	M12x51	10,20	25	222112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	ja	125	M12x66	11,36	25	222112030
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	ja	145	M12x86	12,92	25	222112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	ja	200	M12x141	16,84	25	222112105
BZ 16 -25-45/145	25	45	16x110	16x90	97	77	85	65	ja	145	M16x66	23,40	20	222116025



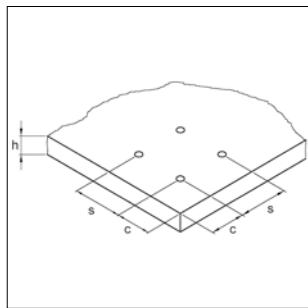
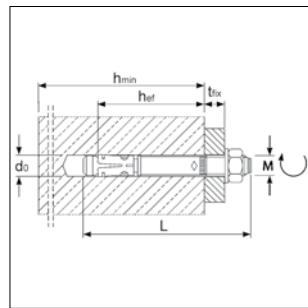
Delivery time: 3 working days

Loads see on page 7/12



assembly instruction see chapter 15

Load values Bolt anchor BZ plus



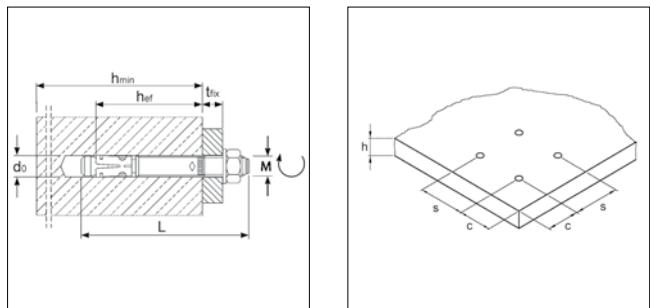
Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M und 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	-
cracked concrete									
Mean ultimate loads, tension	C20/25 appr. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9
	C25/30 appr. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0
	C30/37 appr. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5
	C40/50 appr. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8
	C50/60 appr. N	[kN]	3,7	3,7	6,6	5,5	11,8	9,4	18,4
non-cracked concrete									
Approved loads, tension	C20/25 appr. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7
	C25/30 appr. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3
	C30/37 appr. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3
	C40/50 appr. N	[kN]	7,5	5,1	10,8	6,1	16,8	12,0	23,6
	C50/60 appr. N	[kN]	7,5	5,5	11,8	6,6	18,4	13,2	25,8
cracked / non-cracked concrete									
Approved loads, shear	C20/25 appr. V	[kN]	7,0	7,0	11,5	10,4/11,5	17,1	14,5/17,1	31,4
	≥ C25/30 appr. V	[kN]	7,0	7,0	11,5	11,4/11,5	17,1	15,9/17,1	31,4
Approved bending moments	appr. M	[Nm]	13,1	13,1	26,9	26,9	46,9	46,9	123,4
Spacing and edge distance									
Effective anchorage depth	h_{ef}	[mm]	46	35	60	40	70	50	85
Characteristic spacing	$s_{cr, N}$	[mm]	138	105	180	120	210	150	255
Characteristic edge distance	$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5
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
ungerissener Beton									
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
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	50/60	45 / 90	50/100	60 / 100	50/160	70 / 160
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40 / 80	40/185	50 / 115	65/180	60 / 140	65/250	80 / 180
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
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	40/185	90 / 140	65/180	75 / 150	100/185	90 / 200
ungerissener Beton									
Installation parameters									
Drill hole diameter	d_o	[mm]	8	8	10	10	12	12	16
Diameter of clearance hole in the fixture	d_f	[mm]	9	9	12	12	14	14	18
Depth of drill hole	h_1	[mm]	60	49	75	55	90	70	110
Installation torque	T_{inst}	[Nm]	20	20	25	25	45	45	90
Width across nut	SW	[mm]	13	13	17	17	19	19	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 und 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 appr. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9	9,0
	C25/30 appr. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0	9,8
	C30/37 appr. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5	10,9
	C40/50 appr. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8	12,7
	C50/60 appr. 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 appr. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7	12,6
	C25/30 appr. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3	13,8
	C30/37 appr. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3	15,3
	C40/50 appr. N	[kN]	7,5	5,1	10,8	6,1	16,8	12,0	23,6	17,8
	C50/60 appr. 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 appr. V	[kN]	7,0	7,0	11,5	10,4/11,5	17,1	14,5/17,1	31,4	21,6/30,2
	\geq C25/30 appr. 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	appr. 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_f	[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	SW	[mm]	13	13	17	17	19	19	24	24

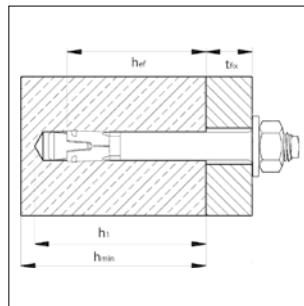
■ Nail anchor N



Nail anchor N
Nail anchor N A4



Nail anchor N-M



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ETA-11/0240



Specification:

Application area: cracked concrete with redundant fastening C12/15 - C50/60
Installation advise: hammer Nail anchor N trough fixture into concrete. When load is applied Nail anchor expands automatically

Technical data:

Material: steel/ stainless steel
Surface: galvanized / A4

Approval: ETA-11/0240

Application example: ceiling constructions, piping, cladding etc.

¹⁾ Please note reduced loads at reduced anchorage depth.

Nail anchor N, galvanized

Identification	Drill Ø	Drillhole depth	effective-anchoring depth	max. clamping strength ¹⁾	Washer-Ø	Anchor-length	Weight	Packing	Part no.
	d [mm]	h_1 [mm]	$h_{1,\text{red}}^{(1)}$ [mm]	h_{ef} [mm]	$h_{\text{ef},\text{red}}^{(1)}$ [mm]	t_{fix} [mm]	$t_{\text{fix},\text{red}}^{(1)}$ [mm]	L [mm]	[kg/100] [pcs.]
N 6-5-10/49	6	40	35	30	25	5	10	18	49 1,40 200

Nail anchor N A4, stainless steel

N 6-5/49 A4	6	40	40	30	30	5	5	18	49 1,40 200	222861010541
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Please regard delivery times

Nail anchor N-M, galvanized

Identification	Drill Ø	Drillhole depth	effective-anchoring depth	SW	female thread	Anchor-length	Weight	Packing	Part no.
	d [mm]	h_1 [mm]	h_{ef} [mm]			L [mm]	[kg/100]	[pcs.]	
N-M 6-25 M8/M10	6	35	25		13	M8/M10	58	2,75	100
N-M 6-30 M8/M10	6	40	30		13	M8/M10	63	2,85	100



(i) Delivery time: 3 working days

(i) Loads see on page 7/15

(X) assembly instruction see chapter 15

Load values Nail anchor N



Extract from Permissible Service Conditions of ETA-11/0240

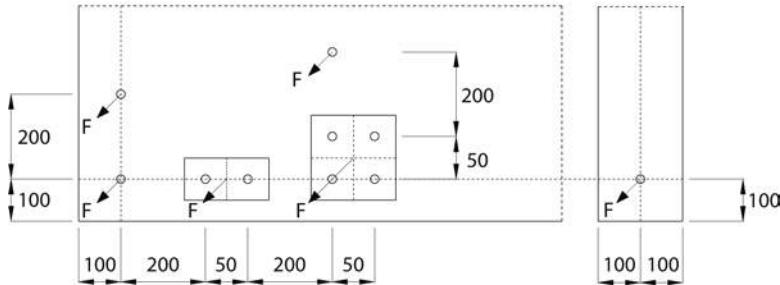
Multiple use for non-structural systems.

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
Approved loads (picture 1)	C12/15 appr. F [kN]	1,43	1,90
	C20/25 - C50/60 appr. F [kN]	2,14	2,81
Approved loads (picture 2)	C12/15 appr. F [kN]	0,71	0,95
	C20/25 - C50/60 appr. F [kN]	0,95	1,19
Approved bending moments	appr. M [Nm]	5,3	5,3
Minimum thickness of concrete slab	h_{min} [mm]	80	80
Installation parameters			
Drill hole diameter	d_o [mm]	6	6
Diameter of clearance hole in the fixture	d_f [mm]	7	7
Diameter nailhead	[mm]	-	-
Depth of drill hole	h_1 [mm]	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.

Picture 1: maximum loads



The approved load F is for one fixing point.

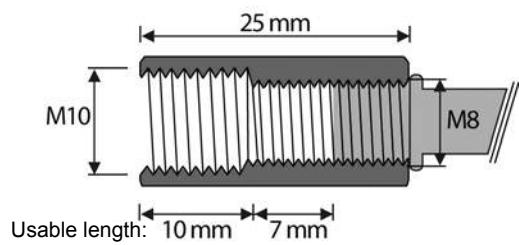
One fixing point can be:

- Single anchor,
- Pair of anchors with spacing s ≥ 50 mm or
- Group of four anchors with s ≥ 50 mm

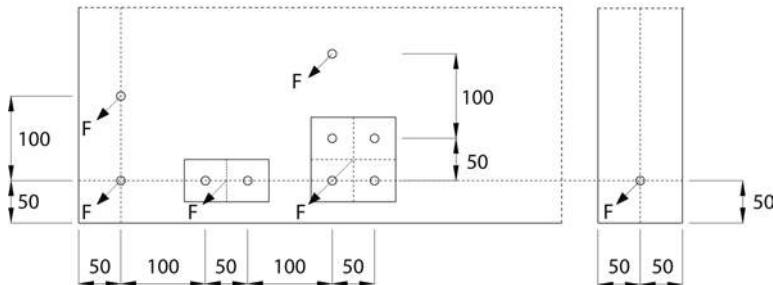
If spacing in fixing point is above or equal to respective spacing between fixing points, characteristic resistances apply to every single anchor.

07

Dimensions threaded sleeve N-M:



Picture 2: minimum spacing and edge distance

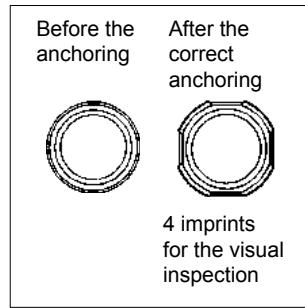


Assembly instruction see chapter 15

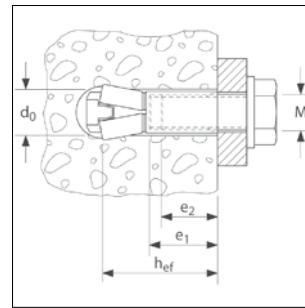
Zykon hammerset anchor FZEA II and FZEA II A4



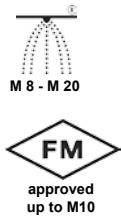
Zykon hammerset anchor FZEA II



FZEA II-imprint



Zykon hammerset anchor FZEA II A4

**Specification:**

Application area: cracked and non-cracked concrete B25 up to B55 / C20/25 up to C50/60, concrete B15, natural stone with dense structure, solid brick, solid sand-lime brick.
Application: undercut anchor with female thread pre-positioned installation

Technical data:

Material FZEA II: steel
Surface: galvanized
Material FZEA II A4: stainless steel V4A

Approval: ETA-06/0271

Application example: When the internal expansion pin is driven in with setting tool, anchor sleeve expands to fill undercut hole with a positive fit. Therefore assembly defects can be avoided.

Steel, galvanized

Identification	Drill hole-Ø d_0 [mm]	Anchorage depth h_{ef} [mm]	min. screw in depth e_2 [mm]	max. screw in depth e_1 [mm]	Thread M	Weight [kg/100] 1,50	Packing [pcs.] 100	Part no. 21721040
FZEA II 10 x 40	10	40	11	17	M8	1,50	100	21721040
FZEA II 12 x 40	12	40	13	19	M10	2,06	100	21721240
FZEA II 14 x 40	14	40	15	21	M12	2,78	50	21721440

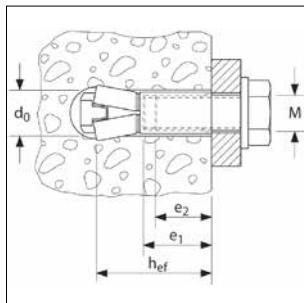
Stainless steel, V4A

FZEA II 10 x 40 A4	10	40	11	17	M8	1,50	100	2176042
FZEA II 12 x 40 A4	12	40	13	19	M10	2,06	100	2176242
FZEA II 14 x 40 A4	14	40	15	21	M12	2,78	50	2176442

07 **(i)** Delivery time: 3 working days **(i)** Loads see on page 7/17 assembly instruction see chapter 15

Please regard delivery times

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.

				Non-cracked concrete				Cracked concrete		
Anchor type				FZEA 10 x 40 M 8	FZEA 12 x 40 M 10	FZEA 14 x 40 M 12	FZEA 10 x 40 M 8	FZEA 12 x 40 M 10	FZEA 14 x 40 M 12	
Effective anchorage depth	h_{ef}	[mm]		40	40	40	40	40	40	
Mean ultimate loads N_u and V_u [kN]										
Tensile	0°	N_u	[kN]	gvz	9,6*	17,0*	17,1	9,6*	12,0	12,0
				A4/C	12,2*	17,1	17,1	12,0	12,0	12,0
Shear	90°	V_u	[kN]	gvz	10,2*	17,1*	23,4*	10,2*	17,1*	23,4*
				A4/C	15,1*	19,5*	26,0*	15,1*	19,5*	26,0*
Design resistant loads N_{Rd} and V_{Rd} [kN]										
Tensile	0°	N_{Rd}	[kN]	gvz	6,4	8,0	8,0	5,7	6,0	6,1
				A4/C	8,0 (5,5) ¹⁾	8,0	8,0	5,7 (5,5) ¹⁾	6,0	6,1
Shear	90°	V_{Rd}	[kN]	gvz	6,6 (5,2) ²⁾	10,9 (8,5) ²⁾	12,2 (11,9) ²⁾	6,6 (5,2) ²⁾	7,9	7,9
				A4/C	8,0 (3,8) ¹⁾	12,0 (5,8) ¹⁾	12,2 (7,9) ¹⁾	7,9 (3,8) ¹⁾	7,9 (5,8) ¹⁾	7,9
Recommended loads N_{rec} and V_{rec} [kN]										
Tensile	0°	N_{rec}	[kN]	gvz	4,6	5,7	5,7	4,0	4,3	4,3
				A4/C	5,7 (4,0) ¹⁾	5,7	5,7	4,0	4,3	4,3
Shear	90°	V_{rec}	[kN]	gvz	4,7 (3,7) ²⁾	7,8 (6,1) ²⁾	8,7 (8,5) ²⁾	4,7 (3,7) ²⁾	5,6	5,6
				A4/C	5,7 (2,7) ¹⁾	8,6 (4,1) ¹⁾	8,7 (5,7) ¹⁾	5,6 (2,7) ¹⁾	5,6 (4,1) ¹⁾	5,6
Recommended bending moment M_{rec} [Nm]										
	M_{rec}	[Nm]	gvz		8,6 (7,7) ²⁾	13,1 (11,7) ²⁾	17,7 (15,8) ²⁾	8,6 (7,7) ²⁾	13,1 (11,7) ²⁾	17,7 (15,8) ²⁾
			A4/C		10,9 (5,4) ¹⁾	16,6 (8,3) ¹⁾	22,3 (11,1) ¹⁾	10,9 (5,4) ¹⁾	16,6 (8,3) ¹⁾	22,3 (11,1) ¹⁾
Component dimensions, minimum axial spacings and edge distances										
Characteristic axial spacing	S_{cr}, N	[mm]			$= 3 \times h_{ef}$			$= 3 \times h_{ef}$		
Characteristic edge distance	S_{cr}, N	[mm]			$= 1,5 \times h_{ef}$			$= 1,5 \times h_{ef}$		
Min. axial spacing ³⁾	S_{min}	[mm]			40	45	50	40	45	50
Min. edge distance ³⁾	c_{min}	[mm]			40	45	50	40	45	50
Min. structural component thickness	h_{min}	[mm]			80	80	80	80	80	80
Min. screw penetration depth	min l_s	[mm]			11	13	15	11	13	15
Max. screw penetration depth	max l_s	[mm]			17	19	21	17	19	21
Clearance-hole in fixture to be attached	d_f	[mm]			9	12	14	9	12	14
Installation torque	T_{inst}	[Nm]			≤ 10	≤ 15	≤ 20	≤ 10	≤ 15	≤ 20
Universal drill bit FZUB ⁴⁾		[-]			FZUB 10 x 40	FZUB 12 x 40	FZUB 14 x 40	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	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	FZEM 10 x 40	FZEM 12 x 40	FZEM 14 x 40

* Steel failure value.

1) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class A50.

2) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class 5.6.

3) For minimum spacing and minimum edge distance the above described loads have to be reduced.

4) For drilling obligatory.

5) For installation of FZEA II the setting mandrel FZED or alternatively the setting tool FZEM is obligatory. All load values apply for concrete C20/25 without edge or spacing influences.

Design resistant loads: material safety factors yM are included. Material safety factor yM depends on type of anchor.

Permissible loads: material safety factors yM and safety factor for load $yL = 1,4$ are included.

Source: Fischer

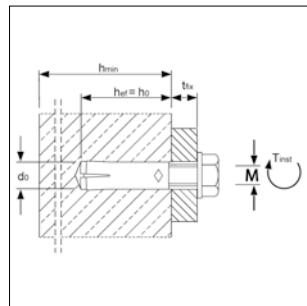
■ Impact anchor E / ES and E / ES A4



Impact anchor E
Impact anchor E A4



Impact anchor ES
Impact anchor ES A4


Specification:

Application area: cracked concrete (multiple fastening),
non-cracked concrete C20/25 up to C50/60

Technical data:

Material E / ES: steel
Surface: galvanized
Material E / ES A4: stainless steel V4A

Approval:

ETA-05/0116

Application example: Attaching suspended ceilings, ventilation and sprinkler systems,
structural steel, brackets, threaded rods.

* from length \geq 30 mm

Steel, galvanized

Identification	Drill hole $\varnothing \times$ depth	Thread \times length	Minimum screwing depth L_{sd} [mm]	Maximum screwing depth L_{th} [mm]	Weight [kg/100]	Packing [pcs.]	Part no.
E M6x30	8 x 30	M6 x 13	7	13	0,84	100	210805005101
ES M8x25	10 x 25	M8 x 12	8	12	1,05	100	210805125101
ES M8x30	10 x 30	M8 x 13	9	13	1,15	100	210805130101
ES M8x40	10 x 40	M8 x 20	9	20	1,53	100	210805155101
ES M10x25	12 x 25	M10 x 12	10	12	1,60	50	210805225101
ES M10x40	12 x 40	M10 x 15	11	15	2,20	50	210805240101
ES M12x50	15 x 50	M12 x 18	13	18	4,30	50	210805330101
E M16x65	20 x 65	M16 x 23	18	23	10,20	25	210805500101

Stainless steel V4A

ES M8x30 A4	10 x 30	M8 x 13	9	13	1,15	100	211805150501
ES M10x40 A4	12 x 40	M10 x 15	11	15	2,20	50	211805250501
ES M12x50 A4	15 x 50	M12 x 18	13	18	4,30	50	211805350501
E M16x65 A4	20 x 65	M16 x 23	18	23	10,28	25	211805500501



(i) Delivery time: 2 working days

(i) Loads see on page 7/19

Please regard delivery times (i) assembly instruction see chapter 15

Load values impact 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 (Y_M and Y_F). 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		impact 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	33,7	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 spacing ¹⁾	smin	[mm]	30	55	50	60	80	60	100	100	100	120	150	
Minimum edge distance ¹⁾	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 depth ¹⁾	Lsd	[mm]	6	7	8	9	9	10	10	11	12	13	18	
Maximum screwing depth ¹⁾	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
	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
(for screw ≥ 5.6)	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		impact 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

■ Drop-in Anchor for non-cracked concrete and multiple use in cracked and non-cracked concrete



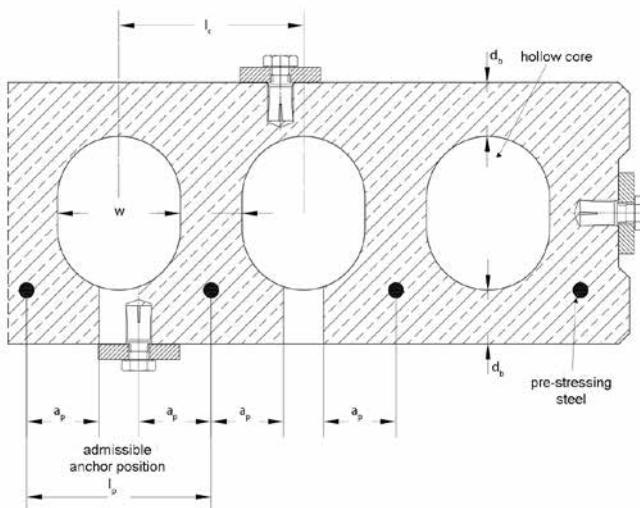
Extract from Permissible Service Conditions of ETA-05/0116

Multiple use for non-structural applications. Total safety factor as per ETAG 001 included (Y_M and Y_F). 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	impact anchor ES	M6x25	M8x25	M10x25	M12x25
Pre-stressed hollow concrete slabs C30/37 to C50/60					
Web thickness	db \geq [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 \geq [mm]	25	25	25	25
Installation torque	Tinst \leq [Nm]	4	8	15	35

¹⁾ Drill hole must not cut hollow core.

Admissible anchor positions in precast pre-stressed hollow core slabs

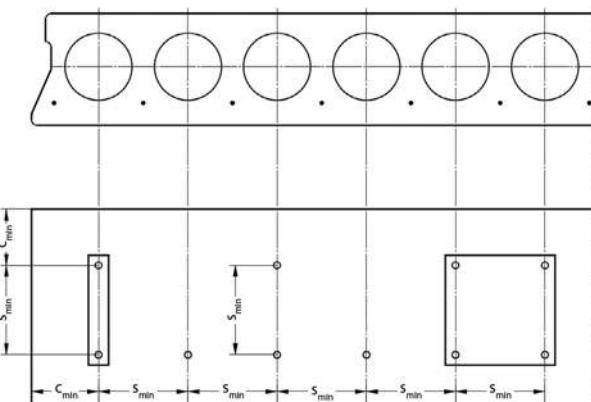


$$w / e \leq 4,2$$

w = hollow core width
e = web thickness

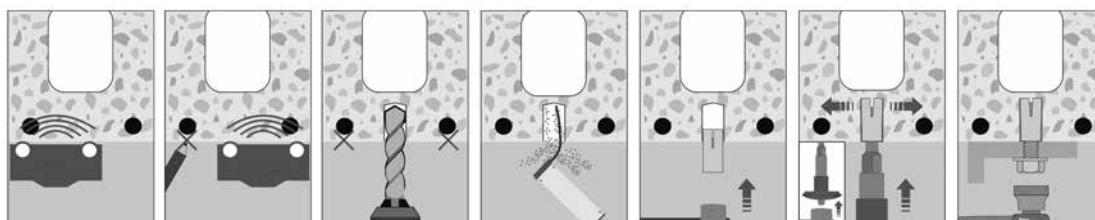
Core distance $l_c \geq 100 \text{ mm}$
Pre-stressing steel distance $l_p \geq 100 \text{ mm}$
Distance between anchor position and pre-stressing steel $a_p \geq 50 \text{ mm}$

Minimum spacing and edge distance in precast pre-stressed hollow core slabs



Minimum edge distance $c_{\min} \geq 150 \text{ mm}$
Minimum spacing $s_{\min} \geq 200 \text{ mm}$

Montage



■ Setting tool for E / ES



Setting tool E SW and E MSH

Identification	Fits anchor	Weight [kg/pc.]	Packing [pc.]	Part no.
E SW 6*x30 (without hand guard)	E M6	0,09	1	531809005150
E MSH 8x25	ES M8 x 25	0,42	1	531809125801
E MSH 8x30	ES M8 / ES M8 A4	0,42	1	531809100180
E MSH 8x40	ES M8 x 40	0,38	1	531809105180
E MSH 10x25	ES M10 x 25	0,50	1	531809225180
E MSH 10x40	ES M10 / ES M10 A4	0,45	1	531809200180
E MSH 12x50	ES M12 / ES M12 A4	0,47	1	531809300180
E MSH 16x65	E M16 / E M16 A4	0,50	1	531809500180

* without placing mark

■ Plug-on setting tool for E / ES



Plug-on setting tool E-ASW

Identification	Fits anchor	related Stop drill bit	Weight [kg/pc.]	Packing [pc.]	Part no.
E ASW 8x25	ES M8 x 25	BB 10 x 25	0,20	1	531809197101
E ASW 8x30	ES M8 x 30	BB 10 x 30	0,20	1	531809198101
E ASW 8x40	ES M8 x 40	BB 10 x 40	0,23	1	531809199101
E ASW 10x25	ES M10 x 25	BB 12 x 25	0,21	1	531809297101
E ASW 10x40	ES M10 x 40	BB 12 x 40	0,24	1	531809299101

Plug-on setting tool
with stop drill bit

■ Stop drill bit for E / ES



Stop drill bit BB

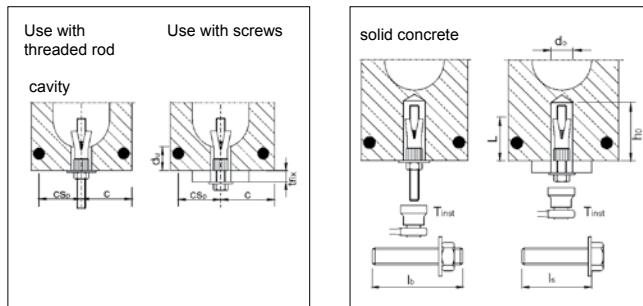
Identification	Drill hole Ø x depth	Fits impact anchor	Fits Plug-on setting tool	Weight [kg/pc.]	Packing [pc.]	Part no.
	[mm]					
BB 10x25*	10 x 25	ES M8 x 25	E ASW 8x25	0,11	1	531850041001
BB 10x30*	10 x 30	ES M8 x 30	E ASW 8x30	0,11	1	531850041501
BB 10x40*	10 x 40	ES M8 x 40	E ASW 8x40	0,12	1	531850042001
BB 12x25*	12 x 25	ES M10 x 25	E ASW 10x25	0,12	1	531850051001
BB 12x40*	12 x 40	ES M10 x 40	E ASW 10x40	0,12	1	531850052001

*on request

Hollow core anchor Easy



Hollow core acnhor Easy



VdS

Specification:

Application area: pre-stressed hollow concrete slabs
Concrete B55 / C45/55

Technical data:

Material: steel
Surface: galvanized

Mounting:

The Hollow-Core Anchor Easy is a one -piece unit, specially designed in pre-stressed hollow concrete slabs. Tightening the screw or nut pulls the expansion cone inside the anchor sleeve which keys into in the cavity or provides strong expansion in solid concrete. The approval Z-21.1-1785 allows the anchor to be installed even if the drill hole does not hit the cavity.

Approval:

Z-21.1-1785

!! The anchor may also be used, if the expansion area isn't located in a hollow chamber !!

Application example:

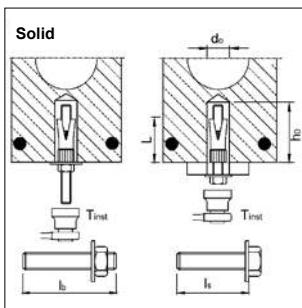
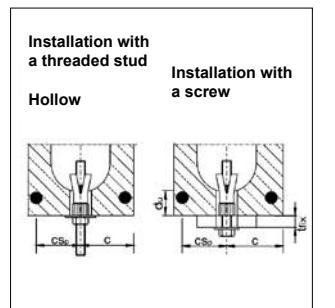
Suspension of ventilation, sprinkler system, false ceilings, brackets with threaded studs or screws, ducts, anchoring prefabricated panelson hollow concrete floors/ceilings.

Identification	Drill-Ø	Thread Ø	Drill hole-depth	Sleeve length (without cone)	min. screw length	Tightening torque T_{inst}	Weight	Packing	Part-no.
	[mm]	[mm]	[mm]	[mm]	[mm]	[Nm]	[kg/100]	[pcs.]	
Easy M8	12	M8	55	35	$47 + t_{fix}$	20	1,44	50	221851100101
Easy M10	16	M10	60	40	$55 + t_{fix}$	30	3,32	50	221851200101

Loads see on page7/23

assembly instruction see chapter 15

Load values Hollow core anchor Easy



Extract from Permissible Service Conditions of Z-21.1-1785

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M und γ_F).

t_{fix} = Fixture thickness

b_{st} = Width of web

d_u = Web thickness

c_{sp} = Spacing to tension wire

b_h = Width of hollow

c = Edge distance

Hollow core anchor Easy			M 6					M 8					M 10					M 12				
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			100			
spacing	s_{cr}	[mm]				300				300			300			300			300			
Pair of anchors²⁾																						
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			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			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 + t_{fix}				47 + t_{fix}			55 + t_{fix}			61 + t_{fix}						
minimum length of stud	min l_b	[mm]				47 + t_{fix}				53 + t_{fix}			63 + t_{fix}			71 + t_{fix}						
minimum strength of stud / screw						8,8				5,8			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_0	[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 $s_{min} < s < s_{cr}$ 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.

■ Toggle bolts



KV 8 Toggle bolt



K 8 Toggle bolt



K 10 Heavy-duty-toggle bolt



G 489 0027



APPROVED



BIG M Heavy-duty-toggle bolt

Specification:

Application area: cavity walls, ceilings,
suspended ceilings

Technical Data:

Material: steel
Surface: galvanized, chromated

Brand: SMK Meister

Approval: 1) VdS G 4890027

Mounting:

The required cavity depth and hollow depth must be observed.
Min. hollow depth = Length of the anchor

2) FM

KV 8/10: For stationary fire protection systems apply guidelines of VdS or FM
(for pipes up DN 2"). Nominal load per fixing point for pipes on profiled
sheeting is max. 0,8 kN, for other fixation objects on profiled sheeting 1,0 kN.
It is recommended to mount every 4th or 5th fixation on a higher static load-
bearing position.

Toggle bolt KV 8

Type	Threaded rod	Drill-Ø [mm]	min. Hollow depth [mm]	Breaking load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-no.
100 Toggle bolt x KV 8 ¹⁾	M8 x 100	22	90	20	0,110	50	2120081
200 Toggle bolt x KV 8 ¹⁾	M8 x 200	22	90	20	0,138	25	2120082
300 Toggle bolt x KV 8 ¹⁾	M8 x 300	22	90	20	0,170	25	2120083
500 Toggle bolt x KV 8 ¹⁾	M8 x 500	22	90	20	0,229	25	2120085

Toggle bolt KV 10

100 Toggle bolt x KV 10 ^{1), 2)}	M10 x 100	25	90	20	0,140	25	212010100
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Toggle bolt K 8

Toggle bolt K 8	M8 x 100	20	75	13	0,081	100	2128306
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Toggle bolt K 10 - Heavy-duty

Toggle bolt K 10	M10 x 180	30	140	12	0,205	25	2120518
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Toggle bolt BIG M - Heavy-duty

Toggle bolt BIG M	M10 x 180	30	90	11	0,232	20	2123517
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MEFA mounting systems for ventilation



Ventilation pipe clamp VENTUS
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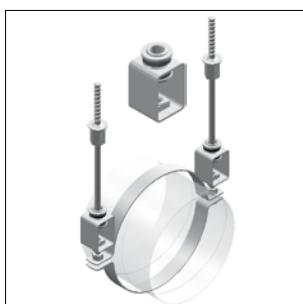
Ventilation pipe clamp lined
Page 8/3



Ventilation pipe clamp
Page 8/5



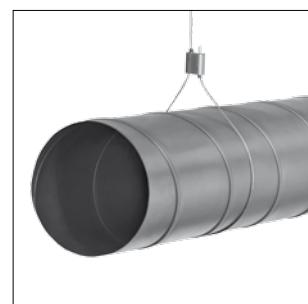
Ventilation pipe clamp DHL
Page 8/7



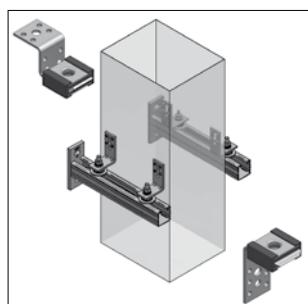
Sound absorption element DHL
Page 8/8



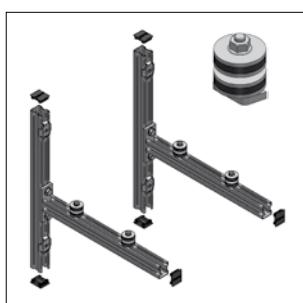
Ducting strap
Page 8/8



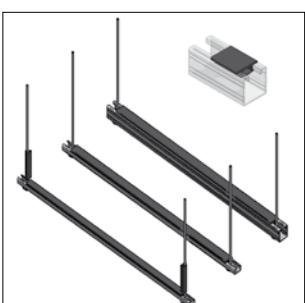
Wire rope L-Fix
Page 8/9



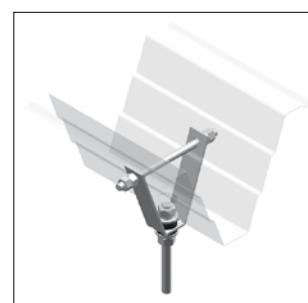
Duct holder
Page 8/11



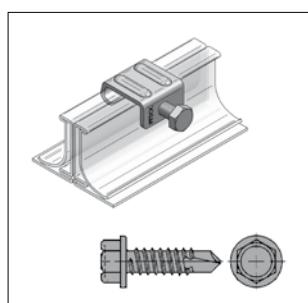
Console-set, Sound absorption
element
Page 8/13



C-profile linings, TPE
Page 8/14



Trapeze hanger
Page 8/15



Duct clamp, Self-drilling screw
Page 8/16



Duct sealing tape, Cold shrink tape
Page 8/17

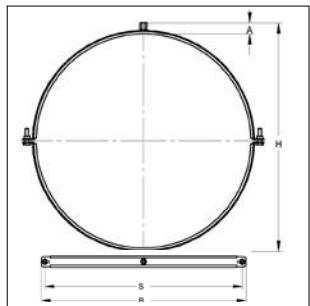


Duct sealing compound
Page 8/17



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

■ VENTUS, ventilation pipe clamp



VENTUS, ventilation pipe clamp

Specification:

Closure: closure-screw
 Construction: two-part
 Nominal width [DN]: 80 up to 630
 Connection: thread M8, thread M8/M10
 Sound insulation: for DIN 4109

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 Sound insulation: EPDM lining
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 4,5 mm

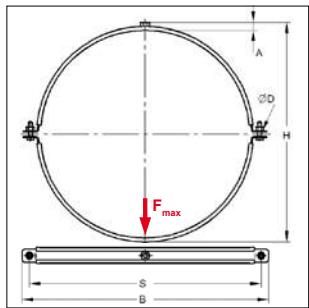
Connection: Thread M8, thread M8/M10**with sound insulation lining EPDM**

Dimension [DN]	OD [mm]	Material [mm]	Thread	H [mm]	A [mm]	B [mm]	S [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
80	84	20 x 1,5	M8	102	15	127	109	0,75	0,12	50	0449931080
100	105	20 x 1,5	M8	122	15	147	130	0,75	0,14	50	0449931100
125	130	20 x 1,5	M8	147	15	173	155	0,75	0,16	50	0449931125
140	145	20 x 1,5	M8	162	15	188	170	0,75	0,18	25	0449931140
150	155	20 x 1,5	M8	172	15	198	180	0,75	0,19	25	0449931150
160	165	20 x 1,5	M8	182	15	208	190	0,75	0,20	25	0449931160
180	185	20 x 1,5	M8	202	15	228	210	0,75	0,22	25	0449931180
200	205	25 x 1,5	M8	222	15	248	230	1,00	0,24	25	0449931200
224	229	25 x 1,5	M8	248	16	281	263	1,00	0,36	10	0449931224
250	255	25 x 1,5	M8	274	16	307	289	1,00	0,39	10	0449931250
280	285	25 x 1,5	M8	304	16	337	319	1,00	0,43	10	0449931280
300	307	25 x 1,5	M8	325	16	358	340	1,00	0,45	10	0449931300
315	322	25 x 1,5	M8	340	16	373	355	1,00	0,47	10	0449931315
355	362	25 x 1,5	M8	380	16	413	395	1,00	0,52	10	0449931355
400	407	25 x 1,5	M8/M10	433	24	458	440	1,00	0,59	10	0449932400
450	457	25 x 1,5	M8/M10	483	24	508	490	1,00	0,65	10	0449932450
500	507	25 x 2,5	M8/M10	535	25	560	542	1,50	1,09	10	0449932500
560	567	25 x 2,5	M8/M10	595	25	620	602	1,50	1,21	10	0449932560
600	607	25 x 2,5	M8/M10	635	25	660	642	1,50	1,28	10	0449932600
630	639	25 x 2,5	M8/M10	665	25	690	672	1,50	1,35	10	0449932630

Ventilation pipe clamp, lined



Ventilation pipe clamp,
lined



Specification:

Closure: nut / closure-screw
 Construction: two-part
 Nominal width [DN]: 71 up to 1250
 Connection: thread M8, M10, without connection
 Sound insulation: according to DIN 4109

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	Rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm

Connection: thread M8

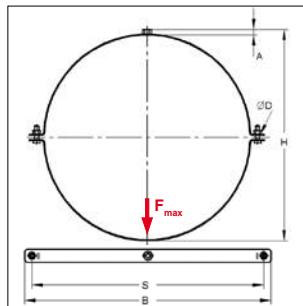
with sound insulation lining rubber

Dimension [DN]	Material [mm]	Closure-screw M8	max. load F_{\max} [kN]	H [mm]	A [mm]	B [mm]	S [mm]	\emptyset D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
71	20x2,0	M8	0,8	103	20	145	120	8,5	0,189	1	0430711
80	20x2,0	M8	0,8	112	20	154	129	8,5	0,202	1	0430801
90	20x2,0	M8	0,8	122	20	164	139	8,5	0,216	1	0430901
100	20x2,0	M8	0,8	133	20	175	150	8,5	0,231	1	0431001
112	20x2,0	M8	0,8	145	20	187	162	8,5	0,248	1	0431121
125	20x2,0	M8	0,8	158	20	200	175	8,5	0,266	1	0431251
140	20x2,0	M8	0,8	173	20	215	190	8,5	0,287	1	0431401
150	20x2,0	M8	0,8	183	20	225	200	8,5	0,301	1	0431501
160	20x2,0	M8	0,8	193	20	235	210	8,5	0,315	1	0431601
180	20x2,5	M8	1,5	213	20	255	230	8,5	0,414	1	0431801
200	20x2,5	M8	1,5	233	20	275	250	8,5	0,449	1	0432001
224	20x2,5	M8	1,5	257	20	299	274	8,5	0,491	1	0432241
250	20x2,5	M8	1,5	283	20	325	300	8,5	0,620	1	0432501
280	25x2,5	M8	2,0	315	21	356	331	8,5	0,682	1	0432801
300	25x2,5	M8	2,0	337	21	378	353	8,5	0,727	1	0433001
315	25x2,5	M8	2,0	352	21	393	368	8,5	0,772	1	0433151
355	25x2,5	M8	2,0	392	21	433	408	8,5	0,840	1	0433551
400	25x2,5	M8	2,0	437	21	478	453	8,5	0,949	1	0434001
450	25x2,5	M8	2,0	487	21	528	503	8,5	1,035	1	0434501
500	25x2,5	M8	2,0	537	21	578	553	8,5	1,138	1	0435001
560	25x2,5	M8	2,0	597	21	638	613	8,5	1,262	1	0435601

Ventilation pipe clamp, lined

Connection: Thread M10										with sound insulation lining rubber		
Dimension	Material	Closure-screw	max. load F_{\max} [kN]	H	A	B	S	\varnothing D	Weight [kg/pc.]	Packing	Part-No.	
[DN]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]		[pc.]		
71	20x2,0	M8	0,8	105	22	145	120	8,5	0,189	1	0430712	
80	20x2,0	M8	0,8	114	22	154	129	8,5	0,202	1	0430802	
90	20x2,0	M8	0,8	124	22	164	139	8,5	0,216	1	0430902	
100	20x2,0	M8	0,8	135	22	175	150	8,5	0,231	1	0431002	
112	20x2,0	M8	0,8	147	22	187	162	8,5	0,248	1	0431122	
125	20x2,0	M8	0,8	160	22	200	175	8,5	0,266	1	0431252	
140	20x2,0	M8	0,8	175	22	215	190	8,5	0,287	1	0431402	
150	20x2,0	M8	0,8	185	22	225	200	8,5	0,301	1	0431502	
160	20x2,0	M8	0,8	200	22	235	210	8,5	0,315	1	0431602	
180	20x2,5	M8	1,5	215	22	255	230	8,5	0,414	1	0431802	
200	20x2,5	M8	1,5	235	22	275	250	8,5	0,449	1	0432002	
224	20x2,5	M8	1,5	259	22	299	274	8,5	0,491	1	0432242	
250	20x2,5	M8	1,5	285	22	325	300	8,5	0,620	1	0432502	
280	25x2,5	M8	2,0	317	23	356	331	8,5	0,682	1	0432802	
300	25x2,5	M8	2,0	332	23	378	353	8,5	0,727	1	0433002	
315	25x2,5	M8	2,0	354	23	393	368	8,5	0,758	1	0433152	
355	25x2,5	M8	2,0	394	23	433	408	8,5	0,840	1	0433552	
400	25x2,5	M8	2,0	439	23	478	453	8,5	0,932	1	0434002	
450	25x2,5	M8	2,0	489	23	528	503	8,5	1,035	1	0434502	
500	25x2,5	M8	2,0	539	23	578	553	8,5	1,138	1	0435002	
560	25x2,5	M8	2,0	599	23	638	613	8,5	1,262	1	0435602	
Without connection, without closure-screws										with sound insulation lining rubber		
224	20x2,5	for M8	1,5	245	-	299	274	8,5	0,440	1	0432240	
250	20x2,5	for M8	1,5	271	-	325	300	8,5	0,560	1	0432500	
280	25x2,5	for M8	2,0	303	-	356	331	8,5	0,622	1	0432800	
300	25x2,5	for M8	2,0	325	-	378	353	8,5	0,667	1	0433000	
315	25x2,5	for M8	2,0	340	-	393	368	8,5	0,698	1	0433150	
355	25x2,5	for M8	2,0	380	-	433	408	8,5	0,780	1	0433550	
400	25x2,5	for M8	2,0	425	-	478	453	8,5	0,872	1	0434000	
450	25x2,5	for M8	2,0	475	-	528	503	8,5	0,975	1	0434500	
500	25x2,5	for M8	2,0	525	-	578	553	8,5	1,078	1	0435000	
560	25x2,5	for M8	2,0	585	-	638	613	8,5	1,202	1	0435600	
600	25x2,5	for M8	2,0	625	-	678	653	8,5	1,255	1	0436000	
630	25x3,0	for M10	2,0	657	-	711	686	10,5	1,552	1	0436300	
710	25x3,0	for M10	2,0	737	-	791	766	10,5	1,755	1	0437100	
800	25x3,0	for M10	2,0	828	-	882	857	10,5	1,965	1	0438000	
900	30x3,0	for M10	2,0	928	-	982	957	10,5	2,673	1	0439000	
1000	30x3,0	for M10	2,0	1030	-	1084	1059	10,5	2,961	1	0440000	
1120	30x3,0	for M10	2,0	1150	-	1204	1179	10,5	3,392	1	0441200	
1250	30x3,0	for M10	2,0	1280	-	1334	1309	10,5	3,776	1	0442500	

Ventilation pipe clamp



Ventilation pipe clamp

Specification:

Closure: nut / closure-screw
 Construction: two-part
 Nominal width [DN]: 71 up to 1250
 Connection: thread M8, M10, without connection

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

Connection: thread M8**without sound insulation**

Dimension [DN]	Material [mm]	Closure-screw	max. load F_{\max} [kN]	H [mm]	A [mm]	B [mm]	S [mm]	\emptyset D [mm]	Weight [kg/p.c.]	Packing [pc.]	Part-No.
71	20x2,0	M8	1,5	91	14	133	108	8,5	0,151	1	0430721
80	20x2,0	M8	1,5	100	14	142	117	8,5	0,160	1	0430811
90	20x2,0	M8	1,5	110	14	152	127	8,5	0,170	1	0430911
100	20x2,0	M8	1,5	121	14	163	138	8,5	0,180	1	0431011
112	20x2,0	M8	1,5	133	14	175	150	8,5	0,192	1	0431131
125	20x2,0	M8	1,5	146	14	188	163	8,5	0,205	1	0431261
140	20x2,0	M8	1,5	161	14	203	178	8,5	0,220	1	0431411
150	20x2,0	M8	1,5	171	14	213	188	8,5	0,230	1	0431511
160	20x2,0	M8	1,5	181	14	223	198	8,5	0,240	1	0431611
180	20x2,5	M8	2,0	201	14	243	218	8,5	0,310	1	0431811
200	20x2,5	M8	2,0	221	14	263	238	8,5	0,334	1	0432011
224	20x2,5	M8	2,0	245	14	287	262	8,5	0,364	1	0432251
250	20x2,5	M8	2,0	271	14	313	288	8,5	0,396	1	0432511
280	25x2,5	M8	2,0	302	15	345	320	8,5	0,526	1	0432811
300	25x2,5	M8	2,0	324	15	367	342	8,5	0,560	1	0433011
315	25x2,5	M8	2,0	339	15	382	357	8,5	0,583	1	0433161
355	25x2,5	M8	2,0	379	15	422	397	8,5	0,662	1	0433561
400	25x2,5	M8	2,0	424	15	467	442	8,5	0,714	1	0434011
450	25x2,5	M8	2,0	474	15	517	492	8,5	0,791	1	0434511
500	25x2,5	M8	2,0	524	15	567	542	8,5	0,868	1	0435011
560	25x2,5	M8	2,0	584	15	627	602	8,5	0,961	1	0435611

Ventilation pipe clamp

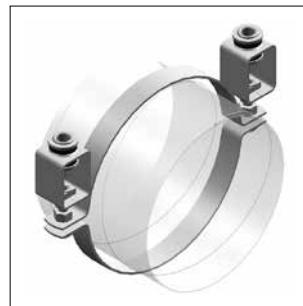
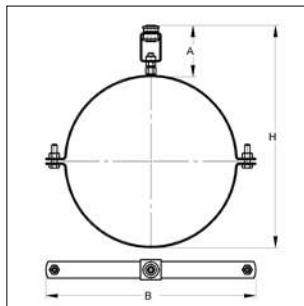
Connection: Thread M10										without sound insulation		
Dimension	Material	Closure-screw	max. load F_{\max} [kN]	H	A	B	S	$\varnothing D$	Weight [kg/pc.]	Packing	Part-No.	
[DN]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]		[pc.]		
71	20x2,0	M8	1,5	93	16	133	108	8,5	0,151	1	0430722	
80	20x2,0	M8	1,5	102	16	142	117	8,5	0,160	1	0430812	
90	20x2,0	M8	1,5	112	16	152	127	8,5	0,170	1	0430912	
100	20x2,0	M8	1,5	123	16	163	138	8,5	0,180	1	0431012	
112	20x2,0	M8	1,5	135	16	175	150	8,5	0,192	1	0431132	
125	20x2,0	M8	1,5	148	16	188	163	8,5	0,205	1	0431262	
140	20x2,0	M8	1,5	163	16	203	178	8,5	0,220	1	0431412	
150	20x2,0	M8	1,5	173	16	213	188	8,5	0,230	1	0431512	
160	20x2,0	M8	1,5	183	16	223	198	8,5	0,240	1	0431612	
180	20x2,5	M8	2,0	203	16	243	218	8,5	0,310	1	0431812	
200	20x2,5	M8	2,0	223	16	263	238	8,5	0,334	1	0432012	
224	20x2,5	M8	2,0	247	16	287	262	8,5	0,364	1	0432252	
250	20x2,5	M8	2,0	273	16	313	288	8,5	0,396	1	0432512	
280	25x2,5	M8	2,0	305	17	345	320	8,5	0,526	1	0432812	
300	25x2,5	M8	2,0	327	17	367	342	8,5	0,560	1	0433012	
315	25x2,5	M8	2,0	342	17	382	357	8,5	0,583	1	0433162	
355	25x2,5	M8	2,0	382	17	422	397	8,5	0,645	1	0433562	
400	25x2,5	M8	2,0	427	17	467	442	8,5	0,714	1	0434012	
450	25x2,5	M8	2,0	477	17	517	492	8,5	0,791	1	0434512	
500	25x2,5	M8	2,0	527	17	567	542	8,5	0,868	1	0435012	
560	25x2,5	M8	2,0	587	17	627	602	8,5	0,961	1	0435612	

Without connection, without closure-screws										without sound insulation		
71	20x2,0	für M8	1,5	79	-	133	108	8,5	0,091	1	0430720	
80	20x2,0	für M8	1,5	88	-	142	117	8,5	0,100	1	0430810	
90	20x2,0	für M8	1,5	98	-	152	127	8,5	0,110	1	0430910	
100	20x2,0	für M8	1,5	109	-	163	138	8,5	0,120	1	0431010	
112	20x2,0	für M8	1,5	121	-	175	150	8,5	0,132	1	0431130	
125	20x2,0	für M8	1,5	134	-	188	163	8,5	0,145	1	0431260	
140	20x2,0	für M8	1,5	149	-	203	178	8,5	0,160	1	0431410	
150	20x2,0	für M8	1,5	159	-	213	188	8,5	0,170	1	0431510	
160	20x2,0	für M8	1,5	169	-	223	198	8,5	0,180	1	0431610	
180	20x2,5	für M8	2,0	189	-	243	218	8,5	0,250	1	0431810	
200	20x2,5	für M8	2,0	209	-	263	238	8,5	0,274	1	0432010	
224	20x2,5	für M8	2,0	233	-	287	262	8,5	0,304	1	0432250	
250	20x2,5	für M8	2,0	259	-	313	288	8,5	0,336	1	0432510	
280	25x2,5	für M8	2,0	291	-	345	320	8,5	0,466	1	0432810	
300	25x2,5	für M8	2,0	313	-	367	342	8,5	0,500	1	0433010	
315	25x2,5	für M8	2,0	328	-	382	357	8,5	0,523	1	0433160	
355	25x2,5	für M8	2,0	368	-	422	397	8,5	0,585	1	0433560	
400	25x2,5	für M8	2,0	413	-	467	442	8,5	0,676	1	0434010	
450	25x2,5	für M8	2,0	463	-	517	492	8,5	0,731	1	0434510	
500	25x2,5	für M8	2,0	513	-	567	542	8,5	0,808	1	0435010	
560	25x2,5	für M8	2,0	573	-	627	602	8,5	0,928	1	0435610	
600	25x2,5	für M8	2,0	610	-	665	640	8,5	0,955	1	0436010	
630	25x3,0	für M10	2,0	645	-	699	674	10,5	1,245	1	0436310	
710	25x3,0	für M10	2,0	725	-	779	754	10,5	1,396	1	0437110	
800	25x3,0	für M10	2,0	816	-	870	845	10,5	1,562	1	0438010	
900	30x3,0	für M10	2,0	916	-	970	945	10,5	2,102	1	0439010	
1000	30x3,0	für M10	2,0	1018	-	1072	1047	10,5	2,329	1	0440010	
1120	30x3,0	für M10	2,0	1138	-	1192	1167	10,5	2,600	1	0441210	
1250	30x3,0	für M10	2,0	1322	-	1292	1297	10,5	2,895	1	0442510	

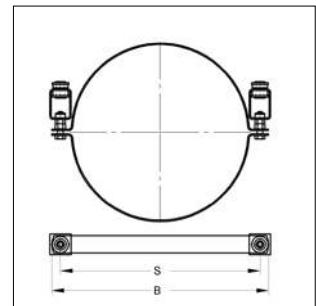
■ Ventilation pipe clamp with sound absorption element



Ventilation pipe clamp with
sound absorption element DHL



Ventilation pipe clamp with two
sound absorption elements DHL



Specification:

Closure: nut / closure-screw
Construction: two-part
Nominal width [DN]: 150 up to 1600
Connection: thread M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C

Scope of delivery 1 x DHL:	threaded pin M8/20 nut M8 sound absorption element DHL M8, pre-assembled	1 piece 1 piece 1 piece
Scope of delivery 2 x DHL:	closure-screws M8/35 M10/35 nuts M8, M10 (from DN 900) sound absorption elements DHL M8/M10, enclosed	2 pieces 4 pieces 2 pieces



With 1 sound absorption element DHL

Dimension [DN]	OD [mm]	Material [mm]	max. load [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
150	155	20x2,0	1,5	237,0	80	213	-	0,339	1	0448150
160	165	20x2,0	1,5	247,0	80	223	-	0,349	1	0448160
180	185	20x2,5	2,0	267,5	80	243	-	0,422	1	0448180
200	205	20x2,5	2,0	287,5	80	263	-	0,448	1	0448200
224	229	20x2,5	2,0	311,5	80	287	-	0,478	1	0448224
250	255	20x2,5	2,0	337,5	80	313	-	0,510	1	0448250
280	285	25x2,5	2,0	367,5	80	345	-	0,646	1	0448280
300	307	25x2,5	2,0	389,5	80	367	-	0,676	1	0448300
315	322	25x2,5	2,0	404,5	80	382	-	0,700	1	0448315
355	362	25x2,5	2,0	444,5	80	422	-	0,762	1	0448355
400	407	25x2,5	2,0	489,5	80	467	-	0,834	1	0448400
450	457	25x2,5	2,0	539,5	80	517	-	0,915	1	0448450
500	507	25x2,5	2,0	589,5	80	567	-	0,992	1	0448500
560	567	25x2,5	2,0	649,5	80	627	-	1,086	1	0448560

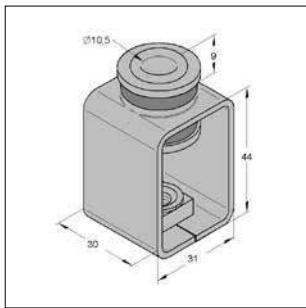
With 2 sound absorption elements DHL

600	609	25x2,5	2,0	-	-	671	640	1,176	1	0448600
630	639	25x3,0	2,0	-	-	705	674	1,412	1	0448630
710	719	25x3,0	2,0	-	-	785	754	1,586	1	0448710
800	810	25x3,0	2,0	-	-	876	845	1,774	1	0448800
900	910	30x3,0	2,0	-	-	922	891	2,318	1	0448909
1000	1012	30x3,0	2,0	-	-	1078	1047	2,558	1	0448910
1120	1132	30x3,0	2,0	-	-	1198	1167	2,830	1	0448911
1250	1262	30x3,0	2,0	-	-	1298	1267	3,124	1	0448912
1400	1412	30x3,0	2,0	-	-	1478	1447	3,448	1	0448914
1600	1612	30x3,0	2,0	-	-	1678	1647	3,904	1	0448916

■ Sound absorption element DHL



Ventilation pipe clamp with
sound absorption element DHL



Sound absorption element DHL



Specification:

Connection: for M8, M10
Sound insulation: according to DIN 4109

Technical data:

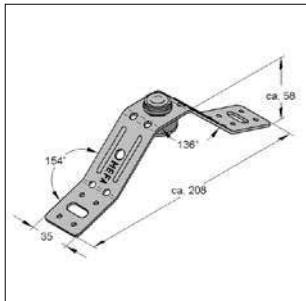
Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C

Identification	Thread	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Sound absorption element DHL M8		2,5	0,090	50	0783301
Sound absorption element DHL M10		3,0	0,096	50	0783302

■ Ducting strap with sound absorption



Ducting strap with sound
absorption with ventilation pipe



Ducting strap with sound
absorption



Specification:

Connection: for M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C

Identification	Material [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Ducting strap with sound absorption	35 x 2,0	0,9	0,151	50	9998349

■ Wire rope L-Fix thread



Wire rope L-Fix thread
set incl. wire rope and lock

Specification:

for fixing in impact anchors, threaded sleeves, MEFA-profile rails with STEX threaded plates

Scope of supply: Set incl. wire rope and lock

Remark: Loading data with safety factor 5:1

* other wire rope lengths on demand

Technical data:

Material wire rope:

steel

galvanized

Material lock:

aluminium

Identification	Thread	Wire-Ø [mm]	Length Thread [mm]	Length* [m]	max. load F [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
L-Fix thread	M8	2,5	40	3	0,82	0,121	10	05985782

■ Wire rope L-Fix loop



Wire rope L-Fix loop
set incl. wire rope and lock

Specification:

for looping around girder structures of steel, wood, concrete

Scope of supply: Set incl. wire rope and lock

Remark: Loading data with safety factor 5:1

* other wire rope lengths on demand

Technical data:

Material wire rope:

steel

galvanized

Material lock:

08

Identification	Wire-Ø [mm]	Length [m]	max. load F [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
L-Fix loop	1,5	3	0,32	0,041	10	05985770
L-Fix loop	2,5	3	0,82	0,092	10	05985774

Remark:

Wire rope L-Fix only for static loads.

Do not use for lifting equipment!

■ Wire rope L-Fix lock



Wire rope L-Fix lock

Specification:

- fast tool-free suspension,
- flexible, stepless height adjustment,
- particularly advantageous for inclined ceilings

Remark: Loading data with safety factor 5:1

* can also be used for rope Ø 1,5 mm

Technical data:

Material: aluminium

Identification	max. load F [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
L-Fix lock for wire rope-Ø 1,5 mm	0,32	0,008	50	05985762
L-Fix lock for wire rope-Ø 2,5 mm*	0,82	0,018	50	05985763

■ Wire rope L-Fix spool



Wire rope L-Fix spool

Specification:

to create individual rope lengths

Scope of supply: Wire rope 150 m

Remark: Loading data with safety factor 5:1

Technical data:

Material wire rope: steel
Surface wire rope: galvanized

Identification	Wire-Ø [mm]	Length [m]	max. load F [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
L-Fix spool	1,5	150	0,32	1,520	1	05985764
L-Fix spool	2,5	150	0,82	3,940	1	05985765

■ Wire rope L-Fix cutter



Wire rope L-Fix cutter

Specification:

for easy separation of steel galvanized wire ropes or stainless steel up to Ø 3 mm

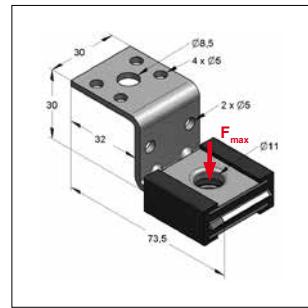
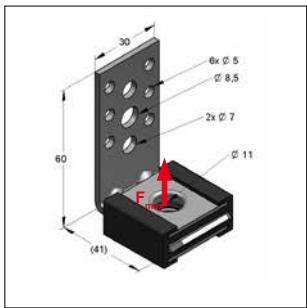
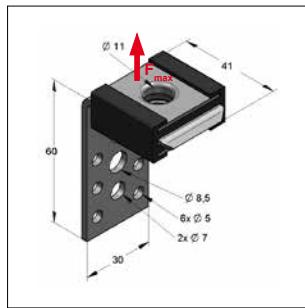
- no splitting of wire ends when cutting
- minimal effort due to large leverage
- ergonomic handle and opening spring for easy work
- hook for safe transport

Technical data:

Material: steel
Surface: the handle is rubber lined

Identification	Weight [kg/pc.]	Packing [pc.]	Part-No.
L-Fix cutter	0,275	1	05985767

■ Duct holder soundproofed


Specification:

Application area: mounting of ventilation ducts
Connection: threaded rod M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: DC01
Surface: galvanized
Sound insulation: EPDM lining
Temperature resistance: - 35 °C up to + 100 °C

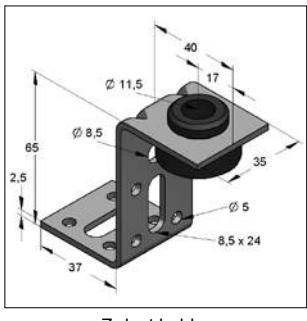
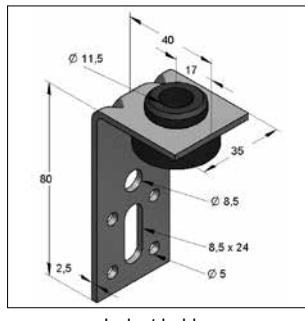
Duct holder L

Identification	Length [mm]	Height [mm]	Sound absorption elements	Material [mm]	max. load F_{\max} hanging [kN]	max. load F_{\max} standing [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Duct holder L	41,0	60,0	stuck	30 x 2,5	0,7	0,5	0,080	50	05900200

Duct holder Z

Duct holder Z	73,5	30,0	stuck	30 x 2,5	0,7	-	0,082	50	05900280
---------------	------	------	-------	----------	-----	---	-------	----	----------

■ Duct holder plugged, soundproofed


Specification:

Application area: mounting of ventilation ducts
Connection: threaded rod M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C

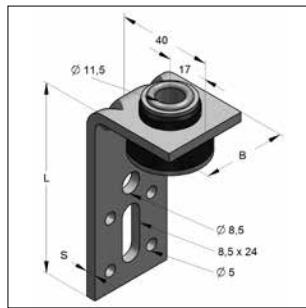
L-duct holder

Identification	Length [mm]	Material [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SD-LL	80	35 x 2,5	0,3	0,085	50	0590022

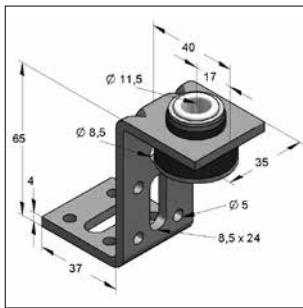
Z-duct holder

SD-ZL	65	35 x 2,5	0,3	0,094	50	0590027
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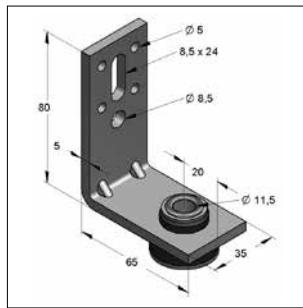
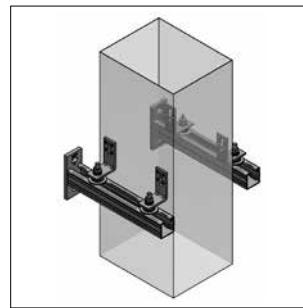
■ Duct holder riveted, soundproofed



duct holder SD-LLN



Z-duct holder

L-duct holder
for riserVentilation duct with
duct holder**Remark:**

Duct holder type SD-LSK has been especially designed for riser. The duct holder SD-LSK can bear loads up to max. 3,2 kN in case of 4 mounted duct holders at every mounting plane.

**Specification:**

Application area: mounting of ventilation ducts
Connection: threaded rod M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	SBR lining
Temperature resistance:	- 35 °C up to + 100 °C

L-duct holder

Identification	Length L [mm]	Sound absorption element	Material B x S [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SD-LSN	80	riveted	35 x 4,0	1,8	0,135	50	0590011
SD-LLN	165	riveted	35 x 2,5	0,9	0,159	50	9998373
SD-LLN	255	riveted	35 x 2,5	0,9	0,221	50	9998372

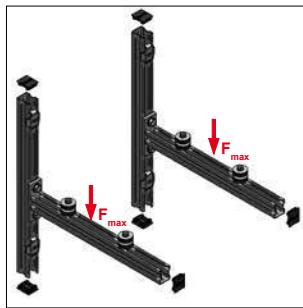
Z-duct holder

SD-ZSN	65	riveted	35 x 4,0	1,8	0,131	50	9998370
--------	----	---------	----------	-----	-------	----	---------

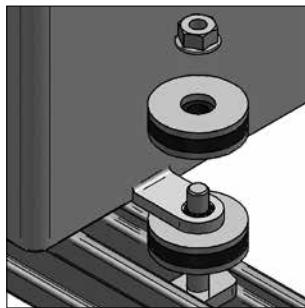
L-duct holder for riser

SD-LSK	80	riveted	35 x 5,0	0,8	0,175	50	9998376
--------	----	---------	----------	-----	-------	----	---------

Console-set, soundproofed



Console-set soundproofed



Insulation element, mounted

**Specification:**

Application area: mounting of air
air conditioning units
Sound insulation: according to DIN 4109

Scope of delivery:

Stex consoles 35/42/1,5
sound absorption elements**
rail sections each 525 mm profile 35/42
profile holders
protecting caps 35/42
threaded plates
washers DIN EN ISO 7089
hexagon screws DIN EN ISO 4017

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	SBR lining
Temperature resistance:	- 35 °C up to + 100 °C

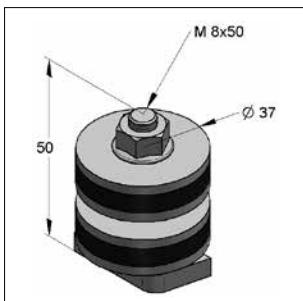
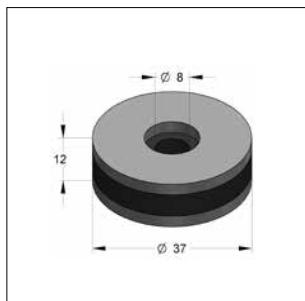
Remark:

* max. allowable load per cantilever. Differing load situation see on page 2/6

** Console-set without insulating elements available on demand.

Identification	Length [mm]	max. load* F _{max} [kN]	maximum total load [kN]	Stex	Weight [kg/pc.]	Packing [pc.]	Part-No.
Console-set 1	450	1,39	2,78	35/42	4,76	1	0813500450
Console-set 2	525	1,19	2,38	35/42	5,00	1	0813500526
Console-set 3	600	1,04	2,08	35/42	5,25	1	0813500600

Sound absorption element

Sound absorption element
with hammer head

Insulation element, single

Specification:

Application area: sound absorption element for direct mounting on
consoles C for noise decoupled mounting

Load capacity: 1,3 kN (at deformation 1 mm)

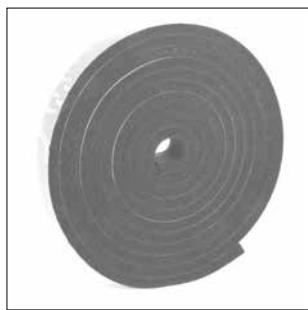
Sound insulation: according to DIN 4109

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	SBR lining
Shore hardness (DIN 53505):	60 ± 5° Shore
Temperature resistance:	- 35 °C up to + 100 °C

Identification	for C-Profile	Hammer head	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sound absorption element 35	35/21, 36/40, STEX 35	M8x50 - 38x17	0,152	1	0783395
Sound absorption element 45	45/26, 45/45, 45/60, 45/75	M8x50 - 40x22	0,187	1	0783396
Insulation element, single			0,052	1	07833908

■ Insulating coat LK, self-adhesive



Insulating coat LK

Specification:

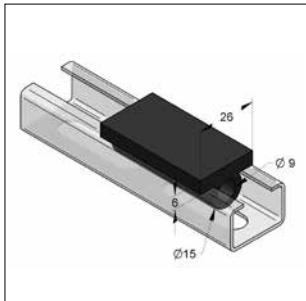
Application area:	Sound insulation for suspensions of ventilation ducts
Sound insulation:	according to DIN 4109
Building material class according to DIN 4102:	B2
ÖNORM 8 3800/T1:	B1

Technical data:

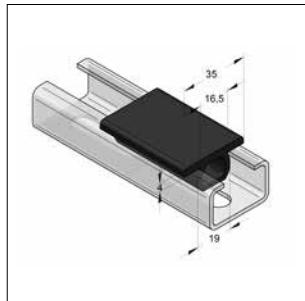
Material:	closed-cell, synthetic rubber
Temperature resistance:	- 40 °C up to + 105 °C
Insulation thickness:	13 mm
Thermal conductivity according to 52613:	0,040 W/mk

Identification	Length [m]	Dimension width x thickness [m]	Packing [roll]	Part-No.
Insulating coat LK	7	25 x 13	1	7250025
Insulating coat LK	7	35 x 13	1	7250035
Insulating coat LK	7	45 x 13	1	7250045

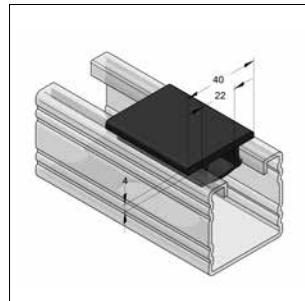
■ C-profile lining



C-profile lining 27/18



C-profile lining 35



C-profile lining 45

**Specification:**

Sound insulation:	according to DIN 4109
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Technical data:

Material:	TPE
Temperature resistance:	- 35 °C up to + 100 °C

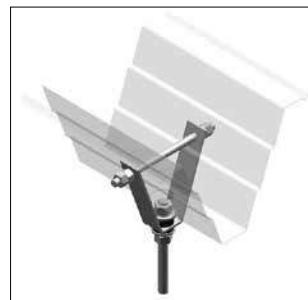
Identification	Length [m]	suitable for threaded rod	Weight [kg/m]	Packing [roll]	Part-No.
C-profile lining KG 27/18	20	M8	0,290	1	7100019
C-profile lining KG 35	20	-	0,287	1	710003501
C-profile lining KG 45	10	-	0,295	1	710004501
STEX-rail rubber	20	M8	0,302	1	1272019
STEX-rail rubber, section 50 mm	0,05	M8	0,016	50 pieces	1272020

(i) allocation table profile rails see on following page

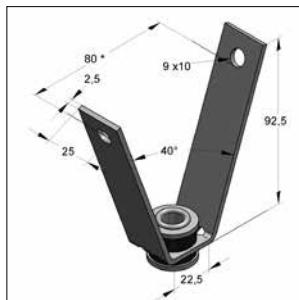
Allocation table for profile rails: C-profile lining EPDM - insulating coats

Profile rails	C-profile lining EPDM			STEX-rail rubber see chapter 2	Insulating coat		
	KG 27	KG 35	KG 45		LK 25x13	LK 35x13	LK 45x13
STEX 35				●		●	
27/18	●				●		
35/21		●				●	
36/40		●					
45/26			●				●
45/45			●				●
45/52			●				●
45/60			●				●
45/75			●				●
45/90			●				●
45/120			●				●
45/150			●				●
Stainless steel							
45/40				●			●
45/80				●			●

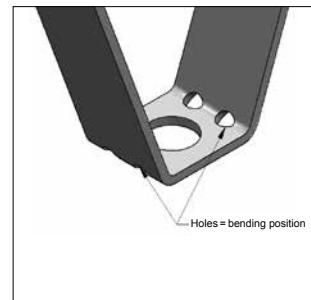
Trapeze hanger, soundproofed



Trapeze hanger
(mounting example)



Trapeze hanger
soundproofed



can bend open
up to 120 mm approx.



Specification:

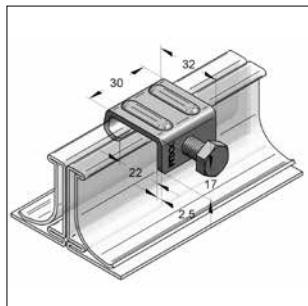
Connection: thread M8, M10
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C
Insulation thickness: 6 mm

Identification	Material	max. load	Weight	Packing	Part-No.
	[mm]	[kN]	[kg/pc.]	[pcs.]	
Trapeze hanger LL A	25 x 2,5	0,8	0,123	100	0783840

■ Duct clamp



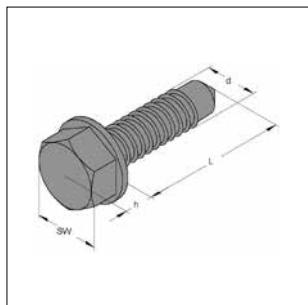
Duct clamp

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

Identification	Material w x t [mm]	fastening torque [Nm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Duct clamp	30 x 2,5	4,0	0,048	50	0593001

■ Drilling screw DIN 7504 K

**Technical data:**

Material:	steel
Surface:	galvanized

Dimension d x L [mm]	h [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4,2 x 13	4	7	0,0016	500	3700413
4,2 x 16	4	7	0,0018	500	3700416
4,2 x 19	4	7	0,0022	500	3700419

■ Duct sealing tape



Duct sealing tape

Specification:

Application
area: sealing of ventilation ducts
Attributes:

- onesided self-adhesive
- no triangular bond
- chemical and weather proofed
- no pull-off foil
- building material class B2 (acc. DIN 4102)

Technical data:

Material: cell closed PE
Bulk density: approx. 33 kg / m³ (according to 54320)
Tensile strength: 0,42 N/mm² (according to 53571)
Shelf life: 1 year (at + 18 °C)
Temperature resistance: - 30 °C up to + 80 °C
Processing temperature: min. + 5 °C

Identification [mm]	Width [mm]	Insulation thickness [mm]	Length [m]	Packing [rolls]	Part-No.
Duct sealing tape 9x4	9	4	20	5	725110904
Duct sealing tape 12x4	12	4	20	5	725111204
Duct sealing tape 15x4	15	4	20	5	725111504

■ Duct sealing compound



Duct sealing compound

Specification:

Application
area: sealing of ventilation shafts
Attributes:

- sealing of ventilation ducts and similar components
- special sealing compound on dispersion base
- solvent-free
- suitable for canteen kitchen exhaust ducts

Technical data:

Colour: silver gray
Processing temperature: + 5 °C up to + 50 °C
Temperature resistance: - 20 °C up to + 80 °C
Shelf life, unopened: approx. 18 months
at an stock temperature: + 5 °C up to + 25 °C

Identification	Capacity [ml]	Packaging	Packing [pcs.]	Part-No.
Duct sealing compound	310	cartridge	20	725100310

08

■ Cold shrink tape



Cold shrink tape

Specification:

Application
area: sealing of ventilation ducts and folded spiral-seam pipe
Colour: grey
Attributes:

- cold self-adhesive butyl rubber glue
- coated with a stretchy PE foil

Technical data:

Adhesive power of steel during detach 90°: approx. 9 N/cm²
Adhesive power of concrete during detach 90°: approx. 9 N/cm²
Water vapour permeability: approx. 4 g/m²/24h
Temperature resistance: - 30 °C up to + 80 °C
Processing temperature: + 5 °C up to + 40 °C

Identification	Width [mm]	Length [m]	Packing [rolls]	Part-No.
Cold shrink tape	50	15	1	725120050
Cold shrink tape	75	15	1	725120070
Cold shrink tape	100	15	1	725120100

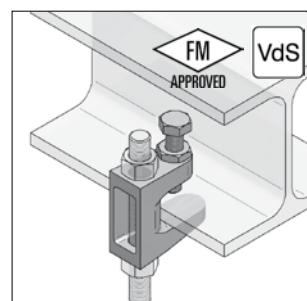
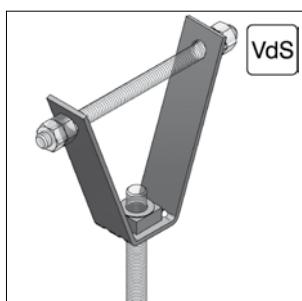
Weights for Ventilation ducts

Weight of the duct (kg/m) of galvanized metal ducts, **without** insulation
 (Dimension of the duct Width x Height mm)

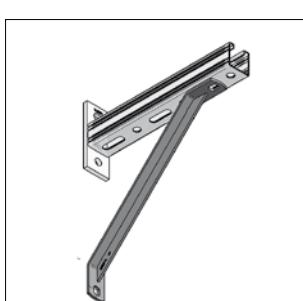
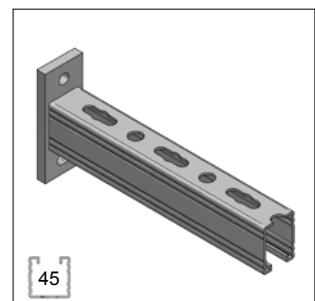
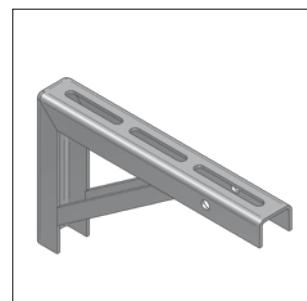
metal 0,75 mm			metal 0,88 mm					metal 1,0 mm					metal 1,13 mm					metal 1,25 mm				s			
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	B H
4,9	5,2	5,6	7,0	7,5	8,1	8,7	9,4	10,2	12,5	13,7	15,0	16,5	18,1	19,8	24,6	27,0	29,8	33,5	37,3	41,0	50,3	55,6	61,8	69,0	200
5,5	5,9	6,2	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
									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
									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
									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
									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
									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
									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
									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	1200	1800									
									74,5	87,4	92,7	98,9	106,1												
									92,3	97,7	103,9	111,1										2240			
									103,0	109,2	116,4												2500		
									115,4	122,6														2800	
									129,8																3150

■ MEFA mounting systems for Sprinkler

Approved products for water extinguishing systems

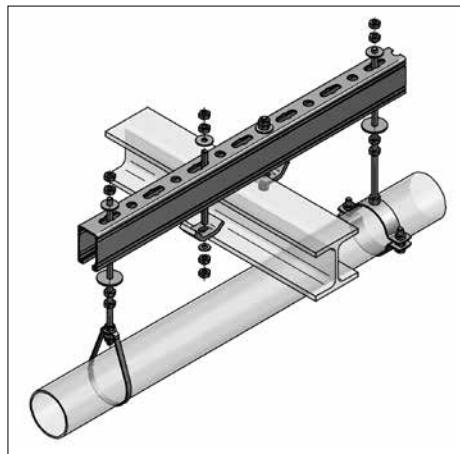


**Pipe supports and components acc. to
VdS CEA-guidelines for sprinkler systems VdS CEA 4001
"planning and installation"**

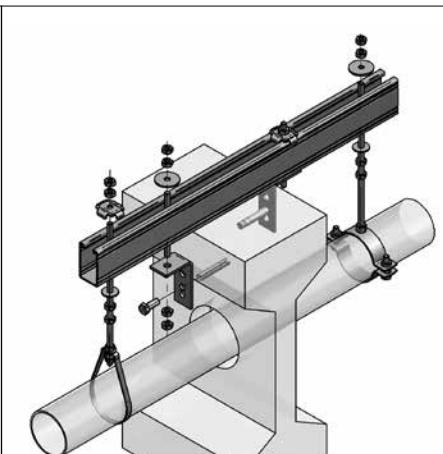


Tightening torque of locking screws on pipe clamps see chapter 15.

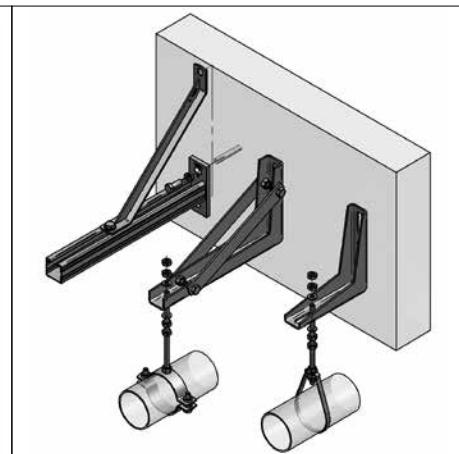
■ Assembly examples



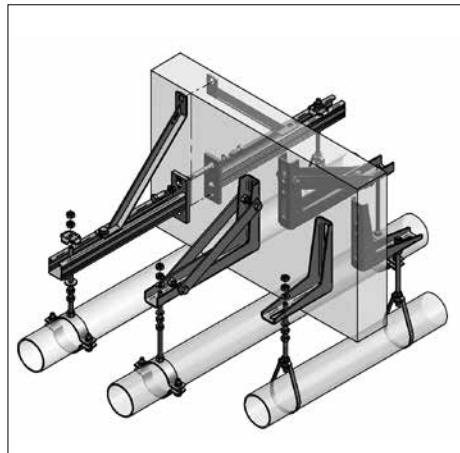
with steel girder



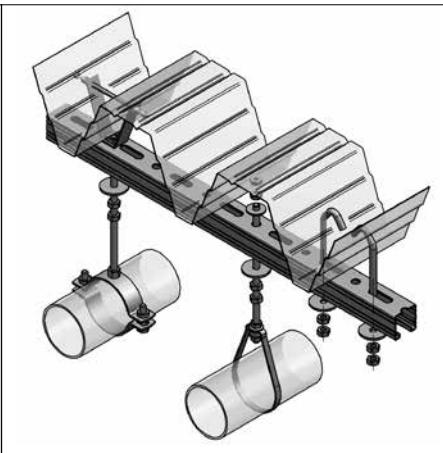
with reinforced concrete girder



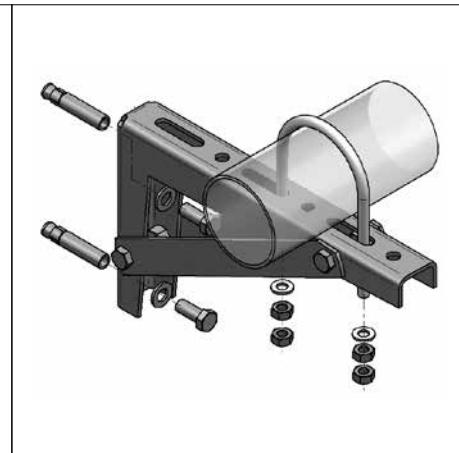
one-way projecting



12 two-way projecting



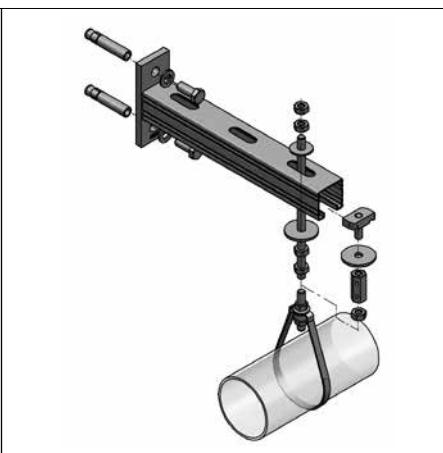
on trapeze sheet



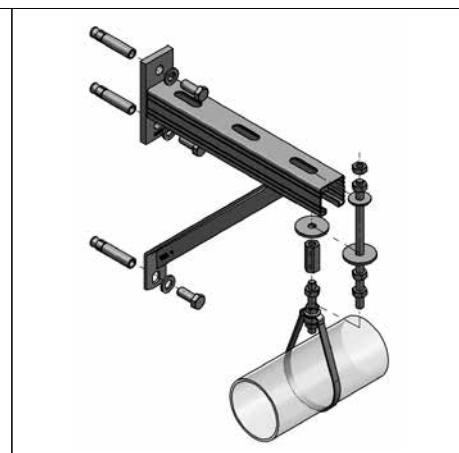
U-bolt on console



Universal console



Console C-Profile

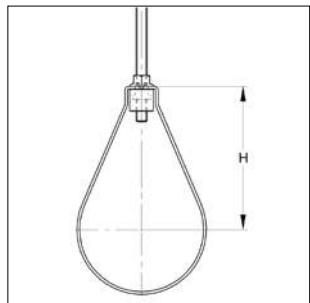


Console C-Profile with brace

■ Sprinkler pipe loop "S"



Sprinkler pipe loop „S“

**Specification:**

Application area:

- for stationary fire-protection in fixed water-extinguishing-systems
- sprinkler plant engineering
- deluge installation
- CO₂ extinguishing system
- halon fire extinguishing system
- foam extinguishing system
- powder fire extinguishing system

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Delivery form: not mounted, flange nuts and cup nuts enclosed
Loads: according to VdS specifications

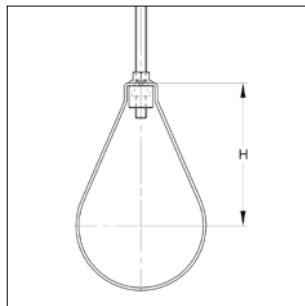
Construction according to VdS guidelines

Identification	Pipe [Inch]	max. load [kN]	Connection thread	Pipe-OD	H [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Sprinkler pipe loop "S"	1	2,0	M8	33,7	57,0	0,060	100	470003401
Sprinkler pipe loop "S"	1^{1/4}	2,0	M8	42,4	57,0	0,062	50	470004201
Sprinkler pipe loop "S"	1^{1/2}	2,0	M8	48,3	62,0	0,065	50	470004801
Sprinkler pipe loop "S"	2	2,0	M8	60,3	71,0	0,071	50	470006001
Sprinkler pipe loop "S"	1	2,0	M10	33,7	57,0	0,080	100	470103401
Sprinkler pipe loop "S"	1^{1/4}	2,0	M10	42,4	57,0	0,081	50	470104201
Sprinkler pipe loop "S"	1^{1/2}	2,0	M10	48,3	62,0	0,085	50	470104801
Sprinkler pipe loop "S"	2	2,0	M10	60,3	71,0	0,091	50	470106001
Sprinkler pipe loop "S"	2^{1/2}	3,5	M10	76,1	87,5	0,119	25	470007601
Sprinkler pipe loop "S"	3	3,5	M10	88,9	102,5	0,129	25	470008901
Sprinkler pipe loop "S"	4	3,5	M10	114,3	132,5	0,150	25	470011401
Sprinkler pipe loop "S"	5	5,0	M12	139,7	147,0	0,233	25	470014001
Sprinkler pipe loop "S"	6	5,0	M12	168,3	175,0	0,262	25	470016501

assembly instructions see chapter 15

Single flang nuts see page 5/15

Sprinkler pipe loop "FM" SLH



Sprinkler pipe loop „FM“

Specification:

Application area: - for stationary fire-protection in fixed water-extinguishing-systems
 - sprinkler plant engineering
 - deluge installation
 - CO₂ extinguishing system
 - halon fire extinguishing system
 - foam extinguishing system
 - powder fire extinguishing system

Brand: Eurofix Jiangmen

Delivery form: not mounted, flange nuts and cup nut enclosed

Loads: according to FM specifications

Technical data:

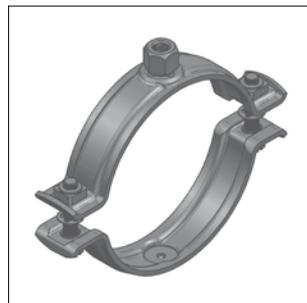
Material: steel
 Material type: S235JR
 Surface: galvanized

Construction according to FM guidelines

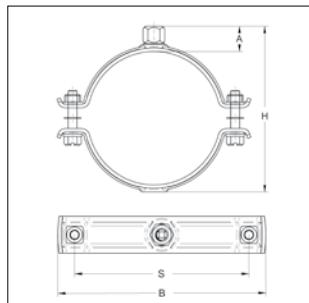
Identification	Pipe [Inch]	max. load [kN]	Connection thread	Pipe-OD	H [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Sprinkler pipe loop "FM" SLH	1	2,0	M10	33,7	55	0,077	100	47072034
Sprinkler pipe loop "FM" SLH	1^{1/4}	2,0	M10	42,4	55	0,079	100	47072042
Sprinkler pipe loop "FM" SLH	1^{1/2}	2,0	M10	48,3	60	0,082	50	47072048
Sprinkler pipe loop "FM" SLH	2	2,0	M10	60,3	69	0,087	50	47072060
Sprinkler pipe loop "FM" SLH	2^{1/2}	3,5	M10	76,1	85	0,147	50	47072076
Sprinkler pipe loop "FM" SLH	3	3,5	M10	88,9	100	0,162	25	47072089
Sprinkler pipe loop "FM" SLH	4	3,5	M10	114,3	130	0,191	25	47072114
Sprinkler pipe loop "FM" SLH	5	5,0	M12	139,7	145	0,247	20	47073140
Sprinkler pipe loop "FM" SLH	6	5,0	M12	168,3	173	0,278	20	47073168
Sprinkler pipe loop "FM" SLH	8	8,5	M16	219,1	220	0,608	10	47073219

Single flang nuts see page 5/15

■ Sprinkler pipe clamp SPC



Sprinkler pipe clamp SPC

**Specification:**

Application area: for Sprinkler systems according to VdS and FM guidelines

Technical data:

Material: steel

Version: Pipe clamp with connection thread according to sprinkler guidelines.
Locking screws are secured by a plastic washer.

Surface: galvanized

* Correspond guidelines for Sprinkler systems "VdS CEA 4001 planning and installation"

Connection: Thread M8

clamping range [mm]	Classification according to [Inch]	Material [mm]	Closure-screws	max. load [kN]	H [mm]	A [mm]	B [mm]	s [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
20-24	1/2"	VdS	30x2,5	M8	2,5	42	15	66	0,141	50	47300020
25-30	3/4"	VdS	30x2,5	M8	2,5	50	17	71	0,148	50	47300025
31-35	1"	VdS	30x2,5	M8	2,5	55	16	77	0,155	50	47300031
40-45	1 1/4"	VdS	30x2,5	M8	2,5	65	16	88	0,174	50	47300040
48-53	1 1/2"	VdS	30x2,5	M8	2,5	73	16	96	0,192	50	47300048
60-65	2"	VdS	30x2,5	M8	2,5	85	16	108	0,217	50	47300061

Connection: Thread M10

20-24	1/2"	VdS	30x2,5	M8	2,5	44	17	66	0,141	50	47300022
25-30	3/4"	VdS/FM	30x2,5	M8	2,5	52	19	71	0,148	50	47300027
31-35	1"	VdS/FM	30x2,5	M8	2,5	57	18	77	0,155	50	47300034
40-45	1 1/4"	VdS/FM	30x2,5	M8	2,5	67	18	88	0,174	50	47300043
48-53	1 1/2"	VdS/FM	30x2,5	M8	2,5	75	18	96	0,192	50	47300050
60-65	2"	VdS/FM	30x2,5	M8	2,5	87	18	108	0,217	50	47300060
76-81	2 1/2"	VdS/FM	30x3,0	M8	3,5	105	20	135	0,292	25	47300076
88-93	3"	VdS/FM	30x3,0	M8	3,5	117	20	147	0,319	25	47300088
110-116	4"	FM*	30x3,0	M8	3,5	140	20	171	0,365	25	47300110

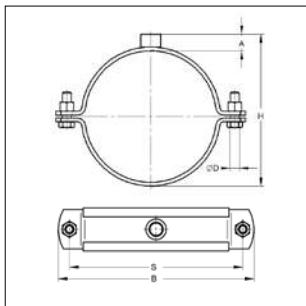
Connection: Thread M12

140-148	5"	VdS/FM	40x4,0	M12	5,0	168	19	216	186	0,806	10	47300140
167-173	6"	FM*	40x4,0	M12	5,0	193	19	242	212	0,903	10	47300167

Sprinkler pipe clamp "SP"



Sprinkler pipe clamp "SP"



max. load according to VdS

nominal width of pipe	cross section	max. load
≤ DN 50	75 mm ²	2,0 kN
> DN 50 ≤ DN 100	90 mm ²	3,5 kN
> DN 100 ≤ DN 150	90 mm ²	5,0 kN
> DN 150 ≤ DN 200	250 mm ²	8,5 kN
> DN 200 ≤ DN 250	250 mm ²	10,0 kN

Specification:

- Application area: - for Sprinkler systems (choice and application according to VdS guidelines for Sprinkler systems VdS CEA 4001, planning and installation)
- Version: - connection thread from dimension 50x5 circular welded
- for double mounting thru flange holes on request

Technical data:

- Material: steel
Material type: S235JR
Surface: galvanized



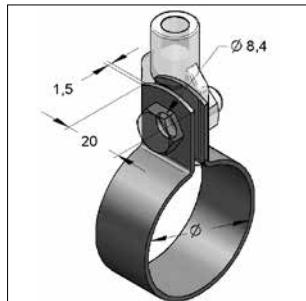
Meeting VdS guidelines for Sprinkler systems VdS CEA 4001, planning and installation

* similar closure screws as Titan HD clamp
(see chapter 1)

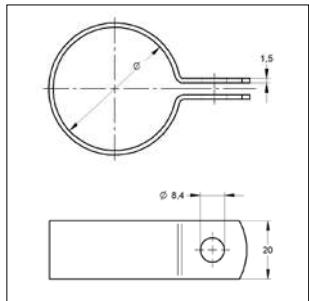
Connection: Thread M16 DN > 150 ≤ 200											
Type "SP"	219 *	8	50x5,0	M12	249	25	297	268	1,724	1	0477219

Connection: Thread M20 DN > 200 ≤ 250											
Type "SP"	273 *	10	50x5,0	M12	300	22	351	322	2,100	1	0478273

■ Sprinkler pipe loop "R"



Sprinkler pipe loop "R"



G 494 0028

Specification:

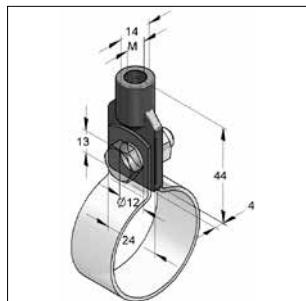
- Application area:
- one-part
 - pipe clamps without closure-screws
 - sprinkler pipe loop "R" may be mounted only in connection with adapter-mounting eye
- Needed accessory:
- required closure-screws M8 according to DIN EN ISO 4017
 - nuts according to DIN EN ISO 4032

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

Identification	Pipe [Inch]	Pipe- OD	Weight [kg/pc.]	Packing [pc.]	Part-No
Sprinkler pipe loop "R"	1/2	21,3	0,024	1	0340014
Sprinkler pipe loop "R"	3/4	26,9	0,028	1	0340022
Sprinkler pipe loop "R"	1	33,7	0,033	1	0340030

■ Eye adaptor



Eye adaptor

Specification:

- Application area:
- for sprinkler pipe loop "R"
- Needed accessory:
- required closure-screws M8 according to DIN EN ISO 4017,
 - nuts according to DIN EN ISO 4032

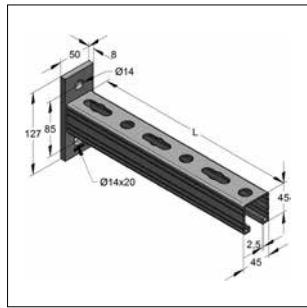
Technical data:

Material:	malleable cast iron
Surface:	galvanized

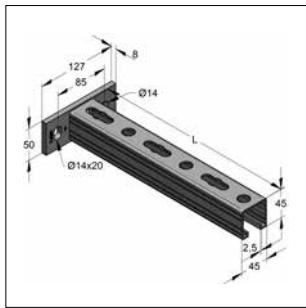
Identification	female- thread [M]	max. load according to VdS [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Eye adaptor BO 25-8	M8	2,0	0,028	50	0350152
Eye adaptor BO 25-10	M10	3,5	0,025	50	0350174

Sprinkler

Console C-profile 45/45/2,5 mm



Sprinkler- Console 45/45//2,5
lengthwise



Sprinkler- Console 45/45//2,5
crosswise

Technical data: galvanized

Material type plate:	S355J2, fy = 355 N/mm ²	dimensions plate:	127 x 50 x 8,0 mm
Material type profile rails:	S235JR, fy = 235 N/mm ²	dimensions profile rails:	45 x 45 x 2,5 mm
Surface:	galvanized		
Material:	steel		
global safety coefficient	1,54		

* on request

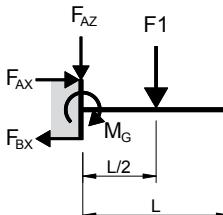
Console 45/45//2,5 lengthwise

Identification	Length L [mm]	max. load			Weight [kg/pc.]	Packing [pcs.]	Part-No
		load situation 1 F1 [kN]	load situation 2 F2 [kN]	load situation 3 q0 [kN/m]			
Console 45/45/2,5	210*	4,98	2,49	23,70	0,99	1	9992222
Console 45/45/2,5	315	3,32	1,66	10,53	1,30	15	9992306
Console 45/45/2,5	420	2,49	1,24	5,92	1,61	10	9992307
Console 45/45/2,5	525	1,99	1,00	3,79	1,92	10	9992308
Console 45/45/2,5	630	1,66	0,83	2,63	2,24	5	9992309
Console 45/45/2,5	735	1,42	0,68	1,93	2,55	5	9992310

Console 45/45//2,5 crosswise

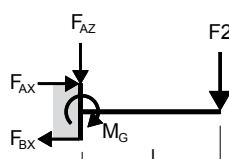
Identification	Length L [mm]	load situation 1 F1 [kN]	load situation 2 F2 [kN]	load situation 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No
Console 45/45/2,5	210*	3,68	1,84	17,52	0,99	1	9992218
Console 45/45/2,5	315	2,45	1,23	7,78	1,30	15	9992219
Console 45/45/2,5	420	1,84	0,92	4,38	1,61	10	9992220
Console 45/45/2,5	525*	1,48	0,74	2,80	1,92	10	9992221

load situation 1



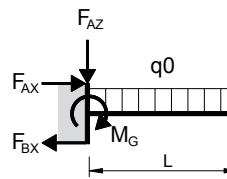
$$F_{AZ} = F_1 \quad M_G = \frac{F_1 * L}{2}$$

load situation 2



$$F_{AZ} = F_2 \quad M_G = F_2 * L$$

load situation 3



$$F_{AZ} = q_0 * L \quad M_G = \frac{q_0 * L^2}{2}$$

Notice:

All load capacities excessive refer to static loads

■ Stainless steel



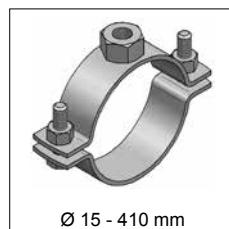
\varnothing 15 - 116 mm

Pipe clamp Inoxina
Page 13/2



\varnothing 15 - 410 mm

Pipe clamp stainless steel
Page 13/3



\varnothing 15 - 410 mm

Pipe clamp stainless steel
Page 13/5



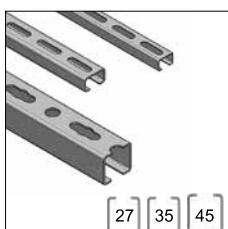
\varnothing 67 - 407 mm

Ventilation pipe clamp
Page 13/7



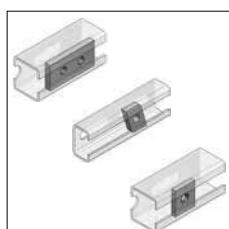
\varnothing 21,3 - 219,1 mm

U-bolt
Page 13/8

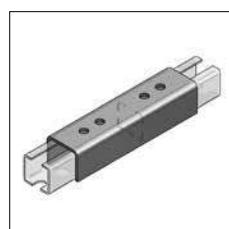


[27] [35] [45]

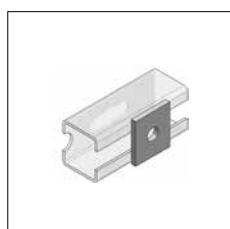
Profile rails
Page 13/9



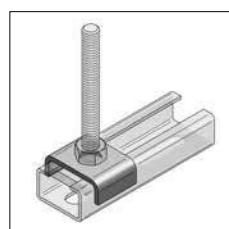
Threaded plate
Page 13/10



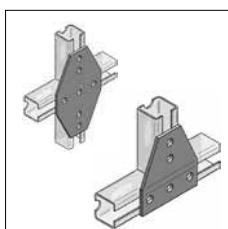
Connector 45/40
Page 13/11



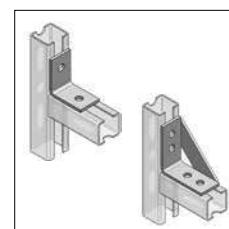
Perforated plate
Page 13/12



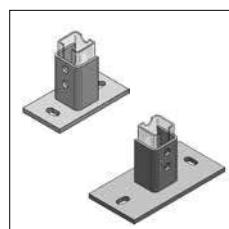
Profile holder
Page 13/13



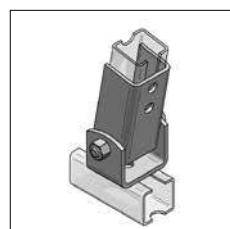
Lugs
Page 13/13



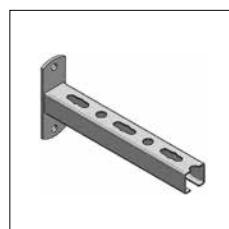
Angle 40/5
Page 13/14



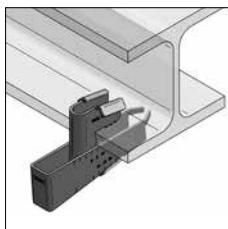
Holder
Page 13/15



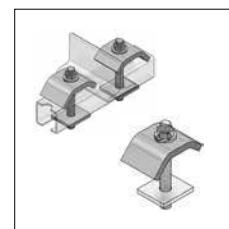
Joint holder
Page 13/15



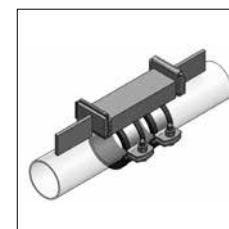
Consoles and braces
Page 13/17



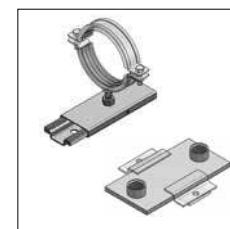
Girder clamp
Page 13/18



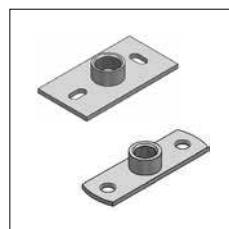
Clamping claws
Page 13/19



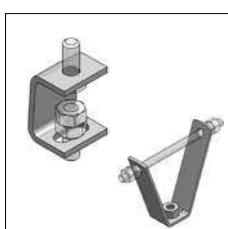
Fixpoint
Page 13/20



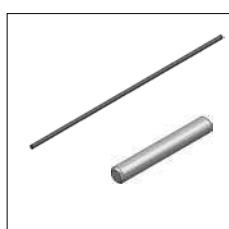
Sliding element
Page 13/21



Base plates
Page 13/22



Suspended bracket
Trapeze hanger
Page 13/24



Threaded rods and pins
Page 13/25



Threaded couplings,
reducers
Page 13/26



Screws, nuts and washers
Page 13/27

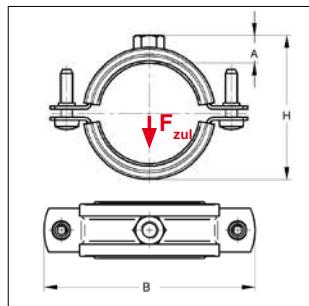


Duct holder
Page 13/29

Stainless steel anchors see chapter 07

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

■ Pipe clamp Inoxina



Pipe clamp Inoxina

Specification:

Closure: snap-in closure
 Construction method: two-part
 OD: 15 - 116 mm
 Connection: M8 SW 13, M10 SW 17
 Sound insulation: according to DIN 4109

Technical data:

Material: Stainless steel V4A
 Material type:
 Sound insulation lining: EPDM
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 4,0 mm

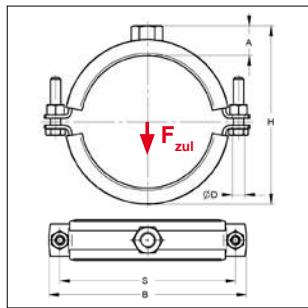
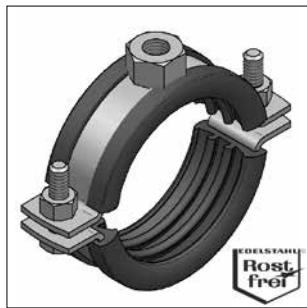
Connection: Thread M8

Dimension		Material	Closure-screw	max. load F _{zul} [kN]	H (min-max) [mm]	A [mm]	B [mm]	Weight [kg/St]	Packing	V4A
[mm]	[Zoll]	[mm]								
15 - 19	3/8	20x1,25	M6	0,90	39	12	64	0,046	100	051001018
20 - 23	1/2	20x1,25	M6	0,90	42	12	67	0,050	100	051001023
25 - 28	3/4	20x1,25	M6	0,90	47	12	72	0,053	100	051001029
31 - 35	1	20x1,25	M6	0,90	55	12	80	0,062	100	051001035
40 - 43	1 ^{1/4}	20x1,25	M6	0,90	62	13	87	0,072	50	051001043
47 - 51	1 ^{1/2}	20x1,25	M6	0,90	71	13	96	0,081	50	051001051
52 - 56		20x1,25	M6	0,90	75	13	100	0,081	50	051001056
57 - 63	2	20x1,25	M6	0,90	83	13	108	0,088	50	051001063

Connection: Thread M10

64 - 67		20x2,0	M6	1,35	89	15	109	0,129	25	051002067
70 - 76	2 ^{1/2}	20x2,0	M6	1,35	98	15	118	0,138	25	051002076
86 - 91	3	20x2,0	M6	1,35	109	15	130	0,160	25	051002091
108 - 116	4	20x2,5	M6	1,71	137	15	158	0,224	25	051002116

■ Pipe clamp stainless steel, lined

Pipe clamp stainless steel
lined**Specification:**

Closure: screwed closure
 Construction method: two-part
 OD: 15 - 410 mm
 Connection: M8, M10, M12, M16, without connection
 Sound insulation: according DIN 4109
 Variant demand: on request
 Delivery time
 for variant demand: 5 working days, ex works

Technical Data:

Material: stainless steel
 Material type: V4A
 V2A
 Sound insulation lining: TPE Silicone (on request)
 Temperature resistance: -35 °C up to +100 °C -50 °C up to +250 °C
 Insulation thickness:
 Clamp OD ≤ 45 mm 3,5 mm
 Clamp OD ≥ 47 mm 6,0 mm

- other sizes and connection threads on request -

Connection: Thread M8**with sound insulation lining rubber****V4A****V2A**

Dimension	Material	Closure-screw	max. load F_{zul}	H (min-max)	A	B	S	$\varnothing D$	Weight	Packing	Part-No.	Part-No.
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]		
15 - 20	3/8	20x1,5	M6	0,97	31 - 35	11	56	43	6,5	0,060	50	0498174
21 - 25	1/2	20x1,5	M6	0,97	36 - 40	11	61	48	6,5	0,064	50	0498175
26 - 30	3/4	20x1,5	M6	0,97	41 - 45	11	66	53	6,5	0,069	50	0498176
31 - 34	1	20x1,5	M6	0,97	46 - 50	11	72	59	6,5	0,072	50	0498177
35 - 40		20x1,5	M6	0,97	51 - 56	11	78	65	6,5	0,077	50	0498178
41 - 45	1 1/4	20x1,5	M6	0,97	58 - 65	11	86	73	6,5	0,084	50	0498179

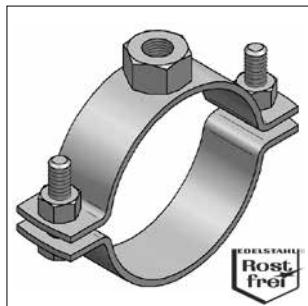
Connection: Thread M10**with sound insulation lining rubber**

Dimension	Material	Closure-screw	max. load F_{zul}	H (min-max)	A	B	S	$\varnothing D$	Weight	Packing	Part-No.	Part-No.
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]		
47 - 52	1 1/2	20x2,0	M6	1,78	69 - 74	16	96	82	6,5	0,126	50	0498210
53 - 57		20x2,0	M6	1,78	75 - 79	16	101	88	6,5	0,134	50	0498211
58 - 64	2	20x2,0	M6	1,78	80 - 86	16	108	94	6,5	0,144	50	0498212
65 - 70		20x2,0	M6	1,78	87 - 92	16	114	101	6,5	0,152	50	0498213
72 - 80	2 1/2	20x2,0	M6	1,78	94 - 102	16	123	110	6,5	0,162	50	0498214
82 - 90	3	20x2,0	M6	1,78	104 - 112	16	134	120	6,5	0,175	50	0498215
93 - 100		20x2,0	M6	1,78	115 - 122	16	144	130	6,5	0,189	50	0498216
102 - 107		20x2,0	M6	1,78	124 - 129	16	152	138	6,5	0,199	50	0498217
108 - 116	4	20x2,0	M6	1,78	130 - 138	16	160	147	6,5	0,210	50	0498218

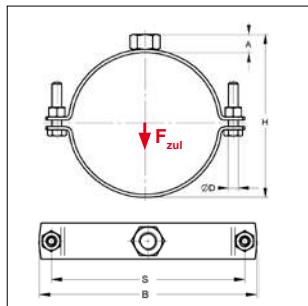
■ Pipe clamp stainless steel, lined

Connection: Thread M12				with sound insulation lining rubber							V4A	V2A
Dimension [mm]	Material [Inch]	Closure-screw [mm]	max. load F _{zul} [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.	Part-No.
102 - 107	25x3,0	M8	2,61	129-134	20	171	150	9	0,368	50	0490317	0460317
108 - 116 4	25x3,0	M8	2,61	135-143	20	179	158	9	0,383	50	0490318	0460318
119 - 127	25x3,0	M8	2,61	146-154	20	190	169	9	0,408	50	0496319	0466319
128 - 132	25x3,0	M8	2,61	155-159	20	197	176	9	0,425	50	0496320	0466320
133 - 141 5	25x3,0	M8	2,61	160-168	20	205	184	9	0,438	50	0496321	0466321
142 - 149	25x3,0	M8	2,61	169-176	20	213	192	9	0,459	50	0496322	0466322
150 - 158	25x3,0	M8	2,61	177-185	20	222	201	9	0,476	50	0496323	0466323
159 - 163	25x3,0	M8	2,61	186-190	20	228	207	9	0,499	50	0496324	04663241
164 - 168 6	25x3,0	M8	2,61	191-195	20	233	212	9	0,504	50	0496325	04663242
Connection: Thread M16				with sound insulation lining rubber								
174 - 182	35x4,0	M10	5,00	204-212	24	265	236	11	1,015	1	0490426	0462426
192 - 200	35x4,0	M10	5,00	222-230	24	285	255	11	1,087	1	0490428	0462428
201 - 205	35x4,0	M10	5,00	231-235	24	290	261	11	1,123	1	0490429	0462429
206 - 214	35x4,0	M10	5,00	236-244	24	298	269	11	1,142	1	0490430	0462430
215 - 225 8	35x4,0	M10	5,00	255-265	24	309	280	11	1,178	1	0490431	0462431
241 - 248	35x4,0	M10	5,00	281-288	24	332	303	11	1,289	1	0492434	0462434
250 - 257	35x4,0	M10	5,00	280-287	24	341	312	11	1,322	1	0492435	0462435
272 - 277 10	35x4,0	M10	5,00	302-307	24	362	333	11	1,408	1	0492438	0462438
Without connection, closurescrew				with sound insulation lining rubber								
321 - 325 12	50x5,0	-	9,00	341-345	-	414	382	17	2,510	1	0494046	0464046
351 - 360 14	50x5,0	-	9,00	371-380	-	448	416	17	2,718	1	0494051	0464051
361 - 370	50x5,0	-	9,00	389-390	-	458	426	17	2,797	1	0494052	0464052
401 - 410 16	50x5,0	-	9,00	421-430	-	498	466	17	3,051	1	0494056	0464056

■ Pipe clamp stainless steel



Pipe clamp stainless steel



Specification:

Closure: screwed closure
 Construction method: two-part
 OD: 15 up to 410 mm
 Connection: M8, M10, M12, M16, without connection
 Variant demand: on request
 Delivery time for variant demand: 5 working days, ex works

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

- other sizes and connection threads on request -

Connection: Thread M8

Dimension	Material	Closure-screw	max. load F _{zul} [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing	V4A Part-No.	V2A Part-No.
[mm]	[Inch]	[mm]										
15 - 20	3/8	20x1,5	M6	0,97	25 - 30	8	49	36	6,5	0,051	50	0499175
21 - 25	1/2	20x1,5	M6	0,97	31 - 35	8	56	43	6,5	0,056	50	0499176
26 - 30	3/4	20x1,5	M6	0,97	36 - 40	8	61	48	6,5	0,058	50	0499177
31 - 35	1	20x1,5	M6	0,97	41 - 45	8	66	53	6,5	0,060	50	0499178
36 - 40		20x1,5	M6	0,97	46 - 50	8	72	59	6,5	0,063	50	0499171
41 - 46	1 ¹ / ₄	20x1,5	M6	0,97	51 - 56	8	78	65	6,5	0,066	50	0499179
												0469170

Connection: Thread M10

48 - 55	1 ¹ / ₂	20x2,0	M6	1,78	60 - 67	10	87	74	6,5	0,097	50	0499210	0469210
57 - 62	2	20x2,0	M6	1,78	69 - 74	10	96	82	6,5	0,103	50	0499212	0469212
63 - 67		20x2,0	M6	1,78	75 - 79	10	101	88	6,5	0,110	50	0499211	0469211
68 - 74		20x2,0	M6	1,78	80 - 86	10	108	94	6,5	0,115	50	0499213	0469213
75 - 80	2 ¹ / ₂	20x2,0	M6	1,78	87 - 92	10	114	101	6,5	0,118	50	0499214	0469214
82 - 90	3	20x2,0	M6	1,78	94 - 102	10	113	110	6,5	0,127	50	0499215	0469215
92 - 100		20x2,0	M6	1,78	104 - 112	10	134	120	6,5	0,135	50	0499216	0469216
103 - 110		20x2,0	M6	1,78	115 - 122	10	144	131	6,5	0,144	50	0499217	0469217
112 - 117	4	20x2,0	M6	1,78	124 - 129	10	152	138	6,5	0,151	50	0499218	0469218

Connection: Thread M12

103 - 110		25x3,0	M8	2,61	120 - 127	14	163	142	9,0	0,295	50	0491317	0461317
112 - 117	4	25x3,0	M8	2,61	129 - 134	14	171	150	9,0	0,313	50	0491318	0461318
118 - 126		25x3,0	M8	2,61	135 - 143	14	179	158	9,0	0,321	50	0497319	0467319
129 - 137		25x3,0	M8	2,61	146 - 154	14	190	169	9,0	0,339	50	0497320	0467320
138 - 142	5	25x3,0	M8	2,61	155 - 159	14	197	176	9,0	0,356	50	0497321	0467321
143 - 151		25x3,0	M8	2,61	160 - 168	14	205	184	9,0	0,367	50	0497322	0467322
152 - 159		25x3,0	M8	2,61	169 - 176	14	213	192	9,0	0,379	50	0497323	0467323
160 - 168	6	25x3,0	M8	2,61	177 - 185	14	222	201	9,0	0,397	50	0497324	0467324

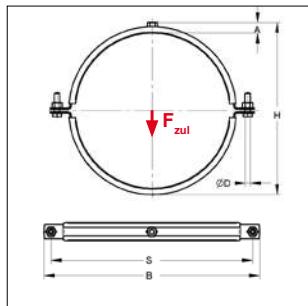
■ Pipe clamp stainless steel

Connection: Thread M16											V4A	V2A	
Dimension	Material	Closure-screw	max. load F_{zul} [kN]	H (min-max)	A	B	S	ØD	Weight	Packing	Part-No.	Part-No.	
[mm]	[Inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]			
169 - 173	35x4,0	M10	5,00	192-196	19	247	218	11,0	0,825	1	04934251	04634251	
174 - 178	35x4,0	M10	5,00	197-201	19	252	223	11,0	0,843	1	04934252	04634252	
193 - 200	35x4,0	M10	5,00	216-223	19	274	245	11,0	0,905	1	0493428	0463428	
202 - 210	35x4,0	M10	5,00	225-233	19	284	255	11,0	0,933	1	0493429	0463429	
211 - 215	35x4,0	M10	5,00	234-238	19	290	261	11,0	0,955	1	0493430	0463430	
216 - 224	8	35x4,0	M10	5,00	239-247	19	298	269	11,0	0,972	1	0493431	0463431
244 - 250		35x4,0	M10	5,00	267-273	19	324	295	11,0	1,068	1	0493434	0463434
251 - 258		35x4,0	M10	5,00	274-281	19	332	303	11,0	1,093	1	0493435	0463435
272 - 280	10	35x4,0	M10	5,00	295-303	19	354	325	11,0	1,160	1	0493438	0463438
Without connection, closurescrew													
321 - 325	12	50x5,0	-	9,00	331-335	-	404	372	17,0	2,100	1	0495046	0465046
356 - 360	14	50x5,0	-	9,00	366-370	-	439	407	17,0	2,300	1	0495051	0465051
361 - 370		50x5,0	-	9,00	371-380	-	448	416	17,0	2,327	1	0495052	0465052
401 - 410	16	50x5,0	-	9,00	411-420	-	488	456	17,0	2,560	1	0495056	0465056

■ Pipe clamp stainless steel for ventilation



Pipe clamp stainless steel
for ventilation



Specification:

Closure: screwed closure

Construction method: two-part

Nominal width: 63 - 400 mm

Connection: M8

Sound insulation: according to DIN 4109

Variant demand: on request

Delivery time

for variant demand: 5 working days, ex works

Technical data:

Material: stainless steel

Material type: V2A

Sound insulation lining: TPE

Silicone (on request)

Temperature resistance: -35 °C up to +100 °C - 50 °C up to + 250 °C

Insulation thickness: 6 mm

6 mm

- other sizes and connection threads on request -

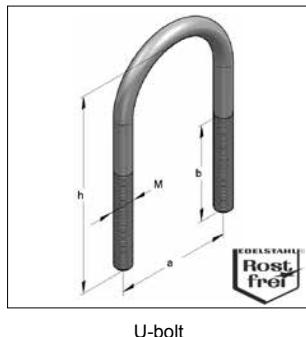
Connection: Thread M8

with sound insulation lining rubber

V2A

Type	OD	Material	Closure-screw	max. load	H	A	B	S	ØD	Weight	Packing	Part-No.
[DN]	[mm]	[mm]		F _{zul} [kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
63	67	20x2,0	M6	1,0	91	15,0	117	104	6,5	0,145	50	0468113
71	75	20x2,0	M6	1,0	99	15,0	126	113	6,5	0,155	50	0468114
80	84	20x2,0	M6	1,0	108	15,0	135	122	6,5	0,168	50	0468115
90	94	20x2,0	M6	1,0	118	15,0	146	133	6,5	0,192	50	0468116
100	105	20x2,0	M6	1,0	129	15,0	156	143	6,5	0,200	50	0468117
112	117	20x2,0	M6	1,0	141	15,0	168	155	6,5	0,226	50	0468118
125	130	20x2,0	M8	1,0	154	15,0	201	181	8,4	0,258	50	0468120
140	145	20x2,0	M8	1,0	169	15,0	216	196	8,4	0,265	50	0468122
150	155	20x2,0	M8	1,0	179	15,0	226	206	8,4	0,305	50	0468123
160	165	20x2,0	M8	1,0	189	15,0	236	216	8,4	0,316	50	0468124
180	185	20x2,0	M8	1,0	209	15,0	256	236	8,4	0,350	1	0468127
200	205	20x2,0	M8	1,0	229	15,0	281	261	8,4	0,387	1	0468129
224	229	20x2,0	M8	1,0	253	15,0	302	282	8,4	0,423	1	0468132
250	255	20x2,0	M8	1,0	279	15,0	328	308	8,4	0,453	1	0468135
280	285	20x2,0	M8	1,0	309	15,0	358	338	8,4	0,498	1	0468140
300	307	20x2,0	M8	1,0	331	15,0	378	358	8,4	0,513	1	0468143
315	322	20x2,0	M8	1,0	346	15,0	386	366	8,4	0,556	1	0468146
355	362	20x2,0	M8	1,0	386	15,0	433	413	8,4	0,613	1	0468152
400	407	20x2,0	M8	1,0	431	15,0	481	461	8,4	0,680	1	0468156

■ U-bolt, without nuts


Specification:

- for direct installation of piping onto steel girder
- suitable for sprinkler and VdS-systems
- suitable for the push-through-assembling into profile rails
- bearing should be used with 2 nuts and 2 washers
- fixed bearing should be used with 4 nuts and 4 washers

Technical data:

Material: stainless steel
Material type: V4A

Required accessories: washers and nuts

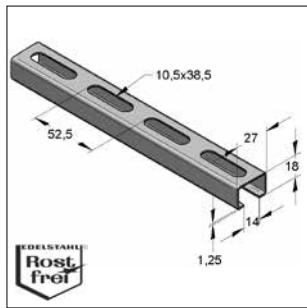
For max. profile rail height 40 mm
V4A

Description	Nominal width [DN]	Thread M	OD [mm]	a [Inch]	h [mm]	b [mm]	OD [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
U-bolt	15	M8	21,3	1/2	30	80	65	0,060	1	0506022
U-bolt	20	M8	25,0		35	80	65	0,061	1	0506027
			26,9	3/4						
U-bolt	25	M8	30,0		42	90	65	0,068	1	0506034
			33,7	1						
U-bolt	32	M8	38,0		51	100	70	0,076	1	0506042
			42,4	1 ^{1/4}						
U-bolt	40	M8	44,5		57	105	70	0,081	1	0506048
			48,3	1 ^{1/2}						
U-bolt	50	M10	57,0		71	120	70	0,147	1	0506060
			60,3	2						
U-bolt	65	M10	76,1	2 ^{1/2}	87	135	70	0,167	1	0506076
U-bolt	80	M10	88,9	3	100	150	70	0,188	1	0506089

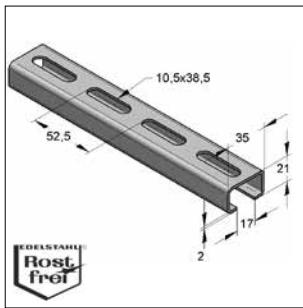
For max. profile rail height 60 mm

U-bolt	100	M12	108,0		121	190	95	109	0,337	1	0506108
U-bolt	100	M12	114,3	4	126	195	95	114	0,347	1	0506114
U-bolt	125	M12	133,0		146	215	95	134	0,385	1	0506133
U-bolt	125	M12	139,7	5	152	220	95	140	0,394	1	0506140
U-bolt	150	M12	159,0		172	240	95	160	0,432	1	0506159
U-bolt	150	M12	168,3	6	180	250	95	168	0,450	1	0506168
U-bolt	200	M12	219,1	8	233	300	95	221	0,546	1	0506219

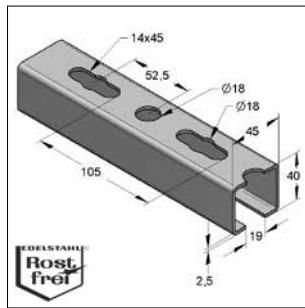
■ Profile rails, perforated



Profile rails 27/18



Profile rails 35/21



Profile rails 45/40

Specification:

- double rails are perforated and welded

Protecting cap see chapter 2

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Type 27/18

Identification	Weight [kg/m]	Lenght [m]	Packing [m]	V4A	V2A
27/18/1,25	0,61	2	2	0800150	0800050

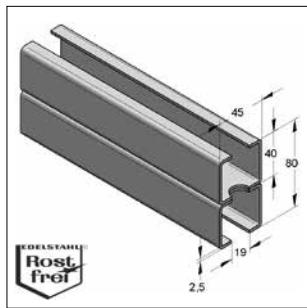
Type 35/21

35/21/2,0	1,21	3	3	0800151	0800051
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Type 45/40

45/40/2,5	2,56	6	6	0800155	0800055
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■ Profile rails, double, perforated



Profile rails, double 45/80

Specification:

- double rails are perforated and welded

Protecting cap see chapter 2

Technical data:

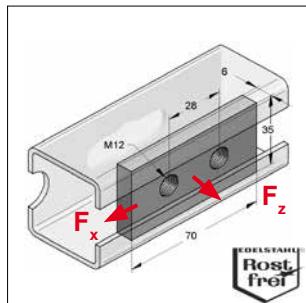
Material: stainless steel
 Material type: V4A
 V2A

Type 45/80

Identification	Weight [kg/m]	Lenght [m]	Packing [m]	V4A	V2A
D 45/80/2,5	5,12	6	6	0800170	0800070

(i) technical overview for profile rails stainless steel see on page 13/30

■ 2-hole threaded plate



2-hole threaded plate

Specification:

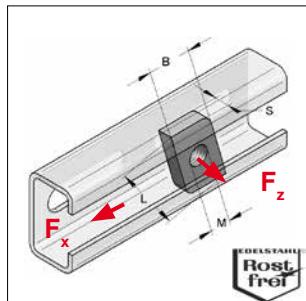
Profile rail type: rail system 45
 Mounting method: glide fast connections and shear hole haunch connections
 Application area: connecting parts, can be mounted on bottom of profile
 Required accessories: hexagon screw, washer and hexagon nut
application loads see on page 13/12

Technical data:

Material: stainless steel
 Material type: V2A
 V4A

Identification	Dimension LxBxS [mm]	Thread	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
					Part-No.	Part-No.
2-hole threaded plate	35x70x6,0	M12	0,110	1	0481610	0480610

■ Threaded plate



Threaded plate

Specification:

Profile rail type: 27/18, 35/21, 45/40, 45/80
 Mounting method: glide fast connections and shear hole haunch connections
 Required accessories: hexagon screw, threaded pin or- rod, washer and hexagon nut

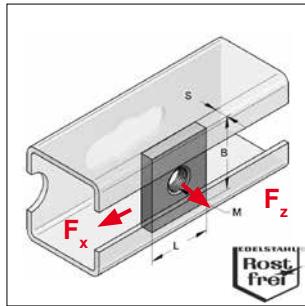
Technical data:

Material: stainless steel
 Material type: V4A

* application loads see on page 13/12

For profile rail 27/18						
Identification		Thread M	Dimension LxBxS [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded plate	28x15	M8	24x13x4	0,008	50	07507508
For profile rail 35/21						
Threaded plate	38x17	M8	35x18x6	0,024	50	07507708
Threaded plate	38x17	M10	35x18x6	0,023	50	07507710
Threaded plate	38x17	M12	35x18x6	0,022	50	07507712
For profile rail 45/40, 45/80						
Threaded plate	40x22	M8	40,5x19x8	0,043	50	07507908
Threaded plate	40x22*	M10	40,5x19x8	0,042	50	07507910
Threaded plate	40x22*	M12	40,5x19x8	0,040	50	07507912

■ Threaded square plate



4-Kt-Threadplatte

Specification:

- Profile rail type: 27/18, 35/21, rail system 45
 Mounting method: glide fast connections and shear hole haunch connections
 Application area: connecting parts, can be mounted on the bottom of the profile
 Required accessories: hexagon screw, threaded pin or- rod, washer and hexagon nut

Technical data:

- Material: stainless steel
 Material type: V4A
 V2A

* application loads see on page 13/12

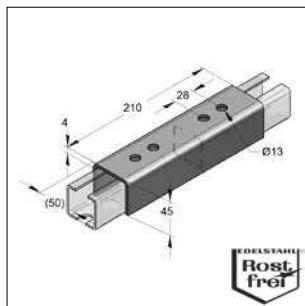
For profile rail width 27 and 35 mm

Identification	Dimension LxBxS [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Threaded square plate	30x22x5,0	M8	0,025	100	0750838	0750818
Threaded square plate	30x22x5,0	M10	0,025	100	0750840	0750820
Threaded square plate	30x22x5,0	M12	0,024	100	0750842	0750822

For profile rail width 35 and 45 mm

Threaded square plate	35x30x5,0	M8	0,041	50	0481611	0480611
Threaded square plate	35x30x6,0*	M10	0,048	50	0481612	0480612
Threaded square plate	35x30x6,0*	M12	0,047	50	0481613	0480613
Threaded square plate	35x30x6,0	M16	0,043	50	0481614	0480614

■ Connector 45/40



Connector for stainless steel profile rails

Specification:

- Profile rail type: rail system 45
 Applications area: for static load connection and extension of C-profile rails of the rail system 45

Technical data:

- Material: stainless steel
 Material type: V2A

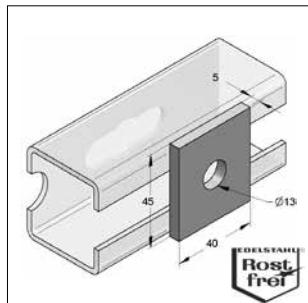
- Recommended accessory: 2 x 2-hole threaded plate
 4 x hexagon screw M12 x 25
 4 x washer 13,0 x 24,0 x 2,5

Remark: connecting of double profile rails with two connectors 45/40

For profile rail width 45

Identification	Height [mm]	Width [mm]	Length [mm]	Material thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Connector 45/40	41	54	210	4	0,88	1	0480620

■ Perforated plate



Perforated plate

Specification:

Profile rail type: rail system 45

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification	Dimension [mm]	Weight [kg/pc.]	Technical data:	
			V4A	V2A
Perforated plate	45x40x5	0,068	1	0481401 0480401

■ Admissible loading

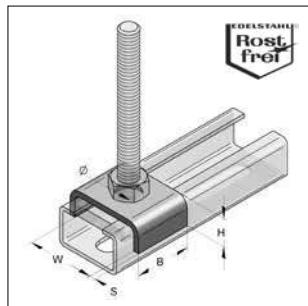
in combination with 2-hole threaded plate V2A/V4A, threaded plate V4A, Threaded square plate V2A/V4A
 global safety coefficient $\gamma = 2$

Profile rail V2A/V4A	2-hole threaded plate V2A/V4A			
	F_z [kN]	F_x [kN]	M12	
			tightening torque [Nm]	
45/40/2,5	14,00		2,10	60
45/80/2,5 D	14,00			

Profile rail V2A/V4A	Threaded plate 40x22 V4A			
	F_z [kN]	F_x [kN]	M10	M12
			tightening torque [Nm]	tightening torque [Nm]
45/40/2,5	9,00		1,40	50
45/80/2,5 D	9,00			60

Profile rail V2A/V4A	Threaded square plate 35x30x6 V2A/V4A			
	F_z [kN]	F_x [kN]	M10	M12
			tightening torque [Nm]	tightening torque [Nm]
45/40/2,5	7,00		1,00	50
45/80/2,5 D	7,00			60

■ Profile holder



Profile holder

Specification:

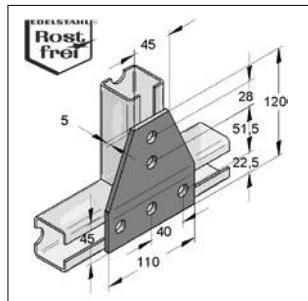
For profile rail type: rail system 27, 35 and 45
 Application area: suitable for connection of profile rails

Technical data:

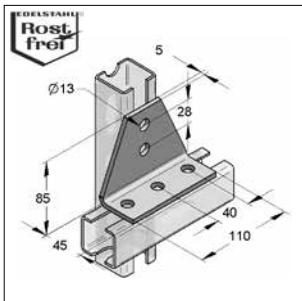
Material: stainless steel
 Material type: V4A
 V2A

Identification	profile rail width [mm]	W [mm]	B [mm]	Ø D [mm]	H [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
									Part-No.	Part-No.
Profile holder	27	28	20	10,5	8	2	0,014	1	-	0809513
Profile holder	35	36	30	13,0	12	3	0,042	1	-	0809511
Profile holder	45	46	35	13,0	15	4	0,086	1	0481629	0480629

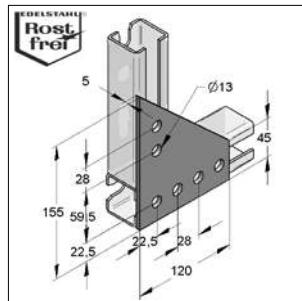
■ Lug



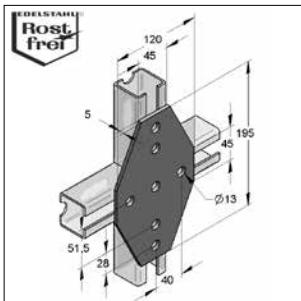
T-lug



T-lug 90°, angled



Corner plate



Cross strap

Specification:

For profile rail type: rail system 45

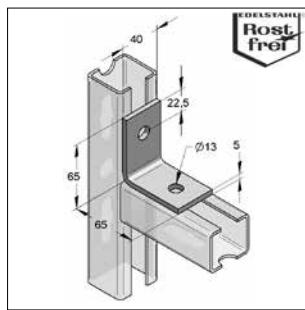
Technical data:

Material: stainless steel
 Material type: V4A
 V2A

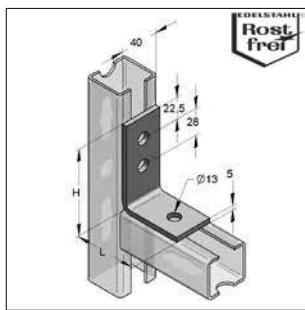
Remark: max. load depending on type of connection
 (see table page 13/12)

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
				Part-No.	Part-No.
T-Lug	13	0,412	1	0481657	0480657
T-Lug 90° angled	13	0,405	1	0481687	0480687
Corner plate	13	0,457	1	0481659	0480659
Cross strap	13	0,687	1	---	0480658

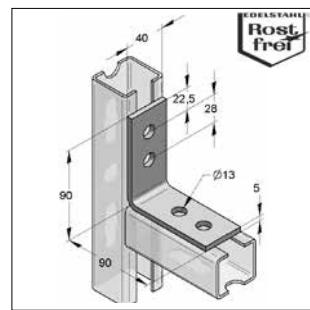
■ Angle 40/5



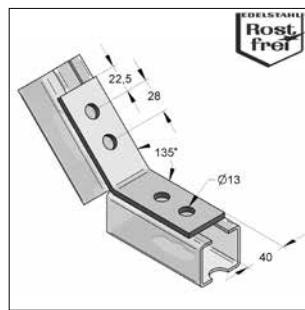
Angle 40/5 2-hole



Angle 40/5 3-hole L and K



Angle 40/5 4-hole 90°



Angle 40/5 4-hole 135°

Specification:

For profile rail type: rail system 45

Remark: Max. load depending on type of connection
(see table page 13/12)**Technical data:**

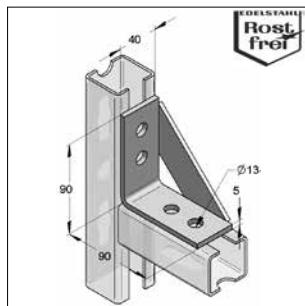
Material: stainless steel

Material type: V4A

V2A

Identification	Dimension LxHxS [mm]	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
					Part-No.	Part-No.
Angle 40/5 2-hole	65x65x5,0	13	0,185	1	0481402	0480402
Angle 40/5 3-hole L	65x90x5,0	13	0,220	1	0481403	0480403
Angle 40/5 3-hole K	45x90x5,0	13	0,291	1	0481404	0480404
Angle 40/5 4-hole 90°	90x90x5,0	13	0,259	1	0481405	0480405
Angle 40/5 4-hole 135°	90x90x5,0	13	0,259	1	0481406	0480406

■ Knot triangle 40/5 4-hole



Knot triangle 40/5 4-hole

Specification:

For profile rail type: rail system 45

Remark: max. load depending on type of connection
(see table page 13/12)**Technical data:**

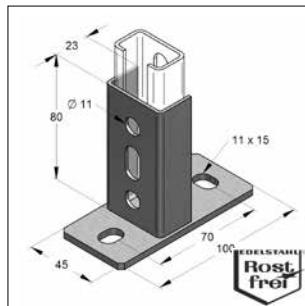
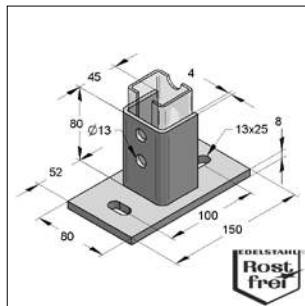
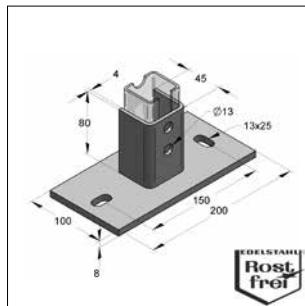
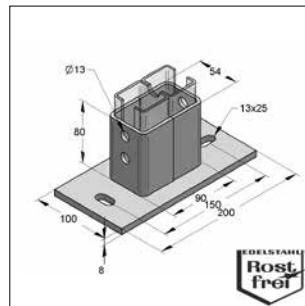
Material: stainless steel

Material type: V4A

V2A

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
				Part-No.	Part-No.
Knot triangle 40/5 4-hole	13	0,348	1	0481407	0480407

Holder

Holder 35
with base plate verticalHolder 45
with base plate verticalHolder 45
with base plate horizontalHolder for
double C-profile rail 45/80**Specification:**

Profile rail type: rail system 35, 45
 Required accessories holder 35: 2-hole-thread plate 38x17
 hexagon screw M10x25
 Required accessories holder 45: 2-hole-thread plate M12
 hexagon screw M12x25

Remark: max. load depending on type of connection (see table page 13/12)

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification

Holder C-profile rail 35 vertical

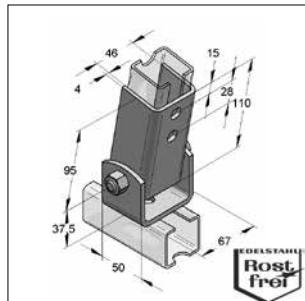
Holder C-profile rail 45 vertical

Holder C-profile rail 45 horizontal

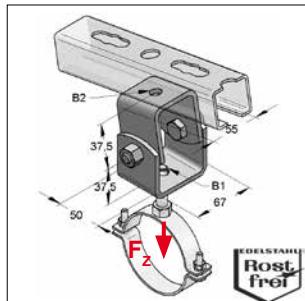
Holder for double C-profile rail 45/80

	V4A	V2A		
Identification	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.
Holder C-profile rail 35 vertical	0,23	1	9993300	-
Holder C-profile rail 45 vertical	1,08	1	0481201	0480201
Holder C-profile rail 45 horizontal	1,60	1	0481204	0480204
Holder for double C-profile rail 45/80	1,94	1	0481209	0480209

Joint holder



Joint holder



Joint holder with terminal hole

Specification:

Mounting method: on inclined roof- and bottom construction
 stepless fixable
 Application area: for connecting pipe clamps, for connecting profile rail

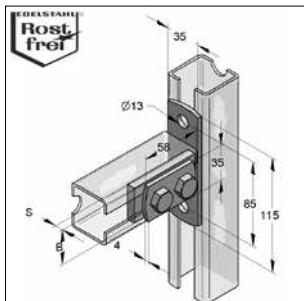
Technical data:

Material: stainless steel
 Material type: V4A
 V2A

* Loads are based on component, not connection

Identification	for threaded rods B1 / B2	B1 [mm]	B2 [mm]	max. load* F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
							Part-No.	Part-No.
Joint holder		-	-	-	0,790	1	0481206	0480206
Joint holder with terminal hole	M8-M12 / M8-M12	13	13	10	0,671	1	0481207	0480207
Joint holder with terminal hole	M16 / M16	17	17	10	0,663	1	0481208	0480208

■ Connector



Connector

Specification:

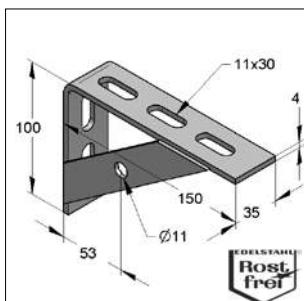
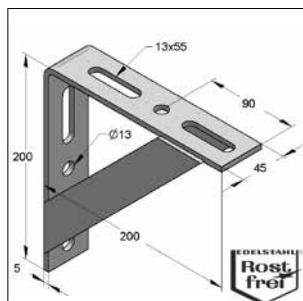
Profile rail type: rail system 35 and 45
 Application area: suitable for connection of profile rails
 Scope of delivery: hexagon screw M12x25

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification	s [mm]	B [mm]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
					Part-No.	Part-No.
Connector 35/21	5	30	0,301	1	---	0480660
Connector 45/40	6	35	0,363	1	0481656	0480656

■ Angle bracket

Knot console L
with a braceAngle console
with two braces**Specification:**

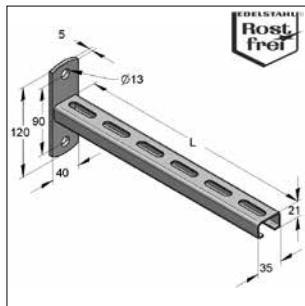
Profile rail type: rail system 45
 hole distance 105 mm

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification	max. load at L=120 mm [kN]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
				Part-No.	Part-No.
Knot bracket L	2,5	0,304	1	0803102	0803101
Angle bracket	5,0	1,368	1	0481408	0480408

Console 35/21/2,0



Console 35/21/2,0

Specification:

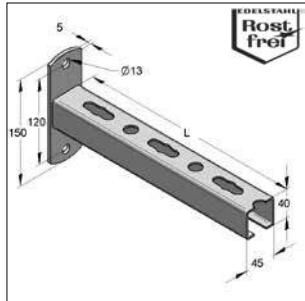
Plate: 120 x 40 x 5 mm
Holes: Ø 13,0 mm

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	Length	max. load						Weight	Packing	V4A	V2A	
		L [mm]	q [kN/m]	F ₁ [kN]	F ₂ [kN]	q [kN/m]	F ₁ [kN]	F ₂ [kN]	[kg/pc.]	[pc.]	Part-No.	Part-No.
Console 35/21	262,5		2,24	0,59	0,29		1,87	0,49	0,25	0,51	1	0582021
Console 35/21	315,0		1,56	0,49	0,25		1,30	0,41	0,20	0,57	1	0583021
Console 35/21	420,0		0,88	0,37	0,18		0,73	0,31	0,15	0,69	1	0584021

Console 45/40/2,5



Console 45/40/2,5

Specification:

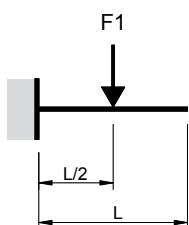
Plate: 150 x 50 x 5 mm
Holes: Ø 13,0 mm

Technical data:

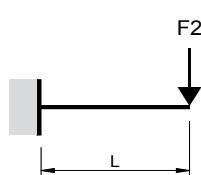
Material: stainless steel
Material type: V4A
V2A

Identification	Length	max. load						Weight	Packing	V4A	V2A	
		L [mm]	q [kN/m]	F ₁ [kN]	F ₂ [kN]	q [kN/m]	F ₁ [kN]	F ₂ [kN]	[kg/pc.]	[pc.]	Part-No.	Part-No.
Console 45/40	210,0		5,04	1,06	0,53		4,20	0,88	0,44	0,83	1	0481331
Console 45/40	315,0		2,24	0,71	0,35		1,87	0,59	0,29	1,10	1	0481330
Console 45/40	420,0		1,26	0,53	0,26		1,05	0,44	0,22	1,37	1	0481333
Console 45/40	525,0		0,81	0,42	0,21		0,67	0,35	0,18	1,63	1	0481335

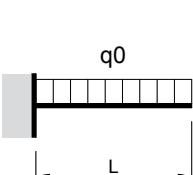
Loading condition 1 (LF1)



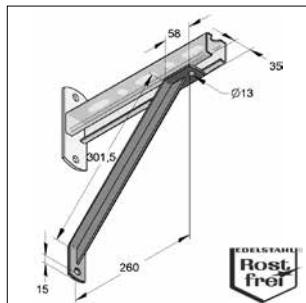
Loading condition 2 (LF2)



Loading condition 3 (LF3)



Brace 45°-T-profile



Brace 45° T-profile

Specification:

Holes: Ø 13,0 mm

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification

Brace 45° T-profileWeight
[kg/pc.]

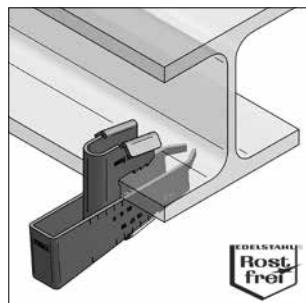
0,679

Packing
[pc.]

1

V4A	V2A
Part-No.	Part-No.
0481510	0480510

Girder clamp TKM



Girder clamp TKM

**Specification:**

Application area: fast and simple mounting at steel structures and profiles

Mounting: Girder clamp for stroking by hammer (3 graduation marks).

Brand: SMK Meister

Technical data:

Material: stainless steel

Material type: V4A

Approval: VdS and FM
VdS G 413001

Identification

Girder clamp TKM 2 M10clamping range
[mm]

8 - 20

for threaded

M10

max. load
[kN]

3,5

Weight
[kg/pc.]

0,161

Packing
[pcs.]

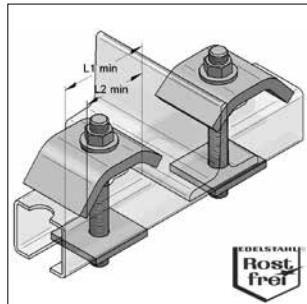
25

V4A

Part-No.

0481711

■ Clamping claw (set)



Clamping claw (set)

Specification:

Application area: for mounting
C-profile rail on T-girder

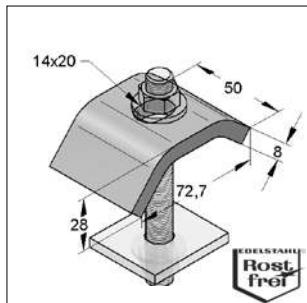
Scope of delivery: 2 clamping claws
2 threaded pins M12/110
4 hexagon nuts DIN 934
2 perforated plates 45/40/5 mm
2 washers DIN 125 13 mm

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	max. clamping thickness [mm]	L1 min.	L2 min.	Weight	Packing	V4A	V2A
		[mm]	[mm]	[kg/set]	[sets]	Part-No.	Part-No.
Clamping claw (set) 45/40	26	70	36-45	0,839	1	0481652	0480652

■ Clamping claw



Clamping claw

Specification:

without accessories

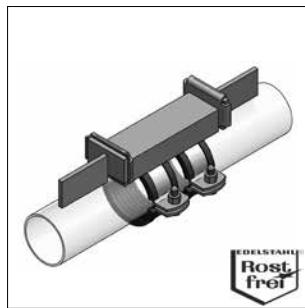
Technical data:

Material: stainless steel
Material type: V4A
V2A

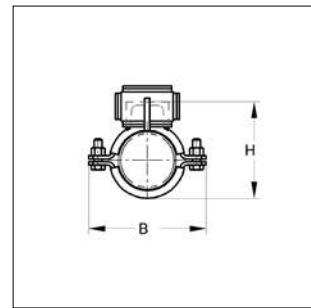
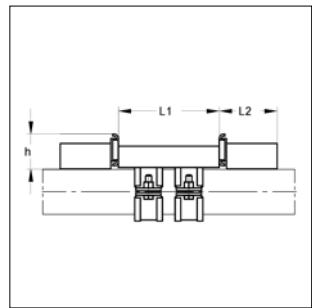
* Loads are based on component, not connection

Identification	for threaded rod	tightening torque [Nm]	max. load*	Weight	Packing	V4A	V2A
			[kN]	[kg/pc.]	[pc.]	Part-No.	Part-No.
Clamping claw	M12	5	8,2	0,247	1	0481651	0480651

■ Fixpoint type A (for welding)



Fixpoint type A
(specification stainless steel)



Specification:

Insulated fixpoint for high pressure loads, designed to avoid any metal connection of pipe and building.

Material Fixpoint: steel (S235JR)

Material Pressure pads: stainless steel V4A / V2A

Surface Fixpoint: galvanized

Sound insulation lining: TPE Silicone

Temperature resistance: - 35 °C up to + 100 °C - 50 °C up to + 250 °C

Remark: Mounting clamps for fixation of pressure pads as well as further technical information see chapter 3a.

¹⁾ Due to safety reasons we recommend type B for diameters >DN80 (on demand).

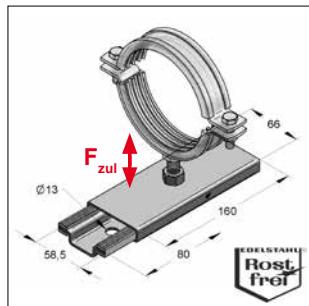
Fixpoint size I, T-steel (accessory: mounting clamp 1a)										Silicone	Rubber
Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel				max. axial ¹⁾				Part-No.	Part-No.
		L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	reactive force [kN]	Weight [kg/pc.]	Packing [pc.]		
20 - 25	25 x 3	30 x 30 x 100	96	43	66 - 71	87	8,5	1,07	1	9999384	9999370
26 - 30	25 x 3	30 x 30 x 100	96	43	72 - 76	92	8,5	1,10	1	9999385	9999371
31 - 36	25 x 3	30 x 30 x 100	96	43	77 - 82	98	8,5	1,12	1	9999386	9999372
38 - 45	25 x 3	30 x 30 x 100	96	43	84 - 91	107	8,5	1,16	1	9999387	9999373
47 - 51	25 x 3	30 x 30 x 100	96	43	93 - 97	114	8,5	1,20	1	9999388	9999374
53 - 57	25 x 3	30 x 30 x 100	96	43	99 - 102	120	8,5	1,23	1	9999389	9999375

Fixpoint size II, U-steel (accessory: mounting clamp 2)										Silicone	Rubber
60,3	50 x 5	65 x 42 x 200	126	43	112,5	148	20	4,75	1	9999390	9999376
76,1	50 x 5	65 x 42 x 200	126	63	131,5	166	20	4,99	1	9999391	9999377
88,9	50 x 5	65 x 42 x 200	126	63	146,0	179	20	5,20	1	9999392	9999378
108,0	50 x 5	65 x 42 x 200	126	63	165,0	198	20	5,47	1	9999393	9999379
114,3	50 x 5	65 x 42 x 200	126	63	171,5	204	20	5,56	1	9999394	9999380
133,0	50 x 5	80 x 45 x 200	126	63	191,0	223	20	6,21	1	9999395	9999381
139,7	50 x 5	80 x 45 x 200	126	63	198,5	230	20	6,32	1	9999396	9999382
159 - 160	50 x 5	80 x 45 x 200	126	63	218 - 219	250	20	6,60	1	9999397	9999383

Fixpoint size I, T-steel (accessory: mounting clamp 1a)										Silicone	Rubber
20 - 25	25 x 3	30 x 30 x 100	96	43	66 - 71	87	8,5	1,07	1	9999746	9999530
26 - 30	25 x 3	30 x 30 x 100	96	43	72 - 76	92	8,5	1,10	1	9999745	9999350
31 - 36	25 x 3	30 x 30 x 100	96	43	77 - 82	98	8,5	1,12	1	9999524	9999351
38 - 45	25 x 3	30 x 30 x 100	96	43	84 - 91	107	8,5	1,16	1	9999361	9999352
47 - 51	25 x 3	30 x 30 x 100	96	43	93 - 97	114	8,5	1,20	1	9999744	9999353
53 - 57	25 x 3	30 x 30 x 100	96	43	99 - 103	120	8,5	1,23	1	9999362	9999354

Fixpoint size II, U-steel (accessory: mounting clamp 2)										Silicone	Rubber
60,3	50 x 5	65 x 42 x 200	126	43	112,5	148	20	4,75	1	9999525	9999419
76,1	50 x 5	65 x 42 x 200	126	63	113,5	166	20	4,99	1	9999363	9999355
88,9	50 x 5	65 x 42 x 200	126	63	146,0	179	20	5,20	1	9999364	9999356
108,0	50 x 5	65 x 42 x 200	126	63	165,0	198	20	5,47	1	9999365	9999357
114,3	50 x 5	65 x 42 x 200	126	63	171,5	204	20	5,56	1	9999366	9999358
133,0	50 x 5	80 x 45 x 200	126	63	191,0	223	20	6,21	1	9999367	9999359
139,7	50 x 5	80 x 45 x 200	126	63	198,5	230	20	6,32	1	9999368	9999429
159,0	50 x 5	80 x 45 x 200	126	63	218 - 219	250	20	6,60	1	9999369	9999360

■ Slider GL 100



Slider GL 100

Specification:

max. sliding way:	75 mm	
max. pipe clamp size:	1 x M10: 88,9 mm	
	1 x M12: 114,3 mm	
	2 x M12: 139,7 mm	
	2 x sleeve 1/2": 219,1 mm	

Technical data:

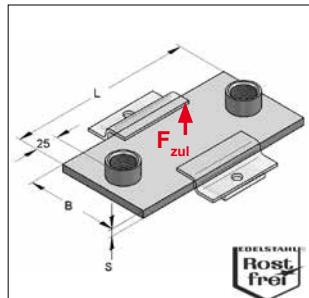
Material:	stainless steel
Material type:	V2A

Delivery time:

5 working days, ex works

Identification	Connection	max. load		Weight [kg/pc.]	Packing [pc.]	V2A Part-No.
		F _{zul} hanging [kN]	F _{zul} standing [kN]			
Slider GL 100	1 x M10	0,8	1,1	0,431	1	0770540
Slider GL 100	1 x M12	1,2	1,5	0,436	1	0770542
Slider GL 100	2 x M12	2,0	2,4	0,453	1	0770543
Slider GL 100	2 x 1/2"	3,5	4,0	0,487	1	0770544

■ Sliding plates



Sliding plate

Specification:

Application area:

absorption of
axial length extensions
sliding stripe
Z-pressure pad**Technical data:**

Material:	stainless steel
Material type:	V4A V2A

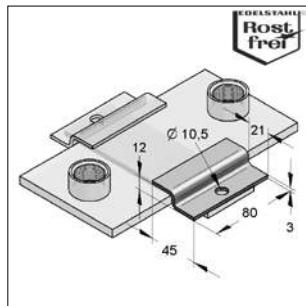
Required accessories:

Recommended pipe diameters:

L 150 = up to OD 193,0 mm
L 200 = up to OD 299,5 mm
L 250 = up to OD 419,0 mm

Identification	Dimension LxBxS [mm]	Connection	max. sliding piece hanging [mm]	max. load F _{zul} [kN]	Accessory sliding stripe [Part-No.]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
								[Part-No.]	[pc.]
Sliding plates 150x100x8	2 x M16	20	100	6,8	0779555	1,06	1	0772831	0772808
Sliding plates 200x100x8	2 x M16	70	150	4,5	0779555	1,39	1	0772832	0772805
Sliding plates 200x150x8	2 x 1/2"	70	150	6,8	0779567	2,03	1	0772824	0772804
Sliding plates 250x100x8	2 x 1/2"	120	200	3,4	0779555	1,70	1	0772823	0772803

■ Z-pressure pad



Z-pressure pad

Specification:
Application area:
Required accessories:

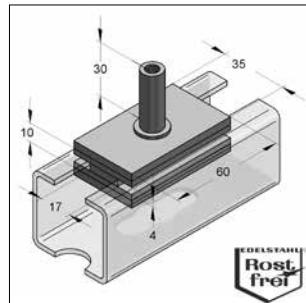
for mounting of MEFA sliding plates on on-site supports
hexagon screw M10x25,
threaded plate
(related to profile rail)

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	Length [mm]	Weight [kg/pc.]			V4A	V2A
			Packing [pc.]	Part-No.	Part-No.	
Z-pressure pad	80	0,102	1	0779516	0779511	

■ Profile rail sliders 45



Profile rail slider 45

Specification:

For profile rail type: C-profile 45 mm
Application area: absorption of radial and axial length extensions of pipes. For standing, hanging or vertical passed pipes
release of lateral shear force

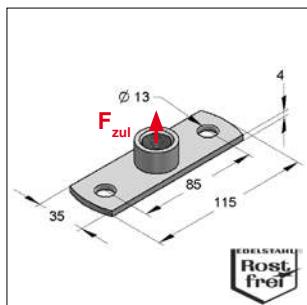
Technical data:

Material: stainless steel
Material type: V4A
V2A

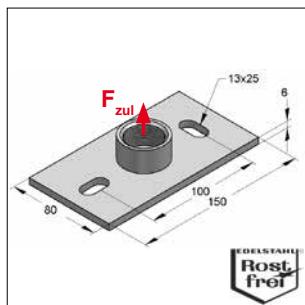
Version V4A: hexagonal distance sleeve

Identification	Connection	max. recom. distances sliding body - pipe clamp [mm]	max. load		Weight [kg/pc.]	Packing [pc.]	V4A	V2A
			hanging	standing			Part-No.	Part-No.
Profile rail sliders	M8	70	2,0	2,0	0,198	1	0770010	0770005
Profile rail sliders	M10	100	2,0	2,0	0,232	1	0770011	0770006

■ Base plates



Base plate type I



Base plate type III

Specification:

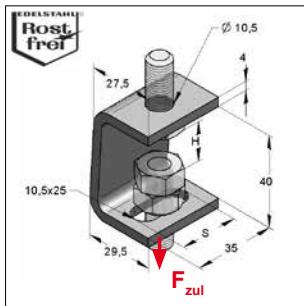
Application area: plates with threaded connection suitable for mounting on structure or profile rails.
applicable for pipe clamp connections via threaded pin/- rod or distance tube

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	Dimension plate			max. load suspension F_{zul} [kN]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
	length [mm]	width [mm]	thickness [mm]				Part-No.	Part-No.
Base plate type I / M8	115	35	4	1,35	0,125	1	0598479	0599479
Base plate type I / M10	115	35	4	1,35	0,132	1	0598495	0599495
Base plate type I / M12	115	35	4	1,35	0,137	1	0598061	0599061
Base plate type I / M16	115	35	4	1,35	0,159	1	0598088	0599088
Base plate type I / 1/2"	115	35	4	1,35	0,154	1	0598045	0599045
Base plate type III / M16	150	80	6	5,9	0,598	1	0598601	0599601
Base plate type III / 1/2"	150	80	6	5,9	0,593	1	0598602	0599602
Base plate type III / 3/4"	150	80	6	5,9	0,605	1	0598599	0599599
Base plate type III / 1"	150	80	6	5,9	0,639	1	0598600	0599600

Suspended bracket type L



Suspended bracket type L

Specification:

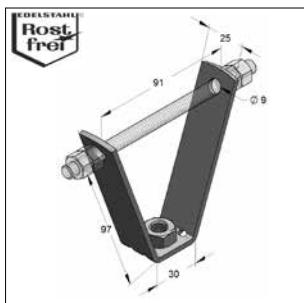
Application area: for single fixation with threaded rods
 Required accessories: 1 threaded bolt M8/M10
 2 hexagon nuts M8/M10

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification	Thread	Adjustable height H [mm]	Sliding piece S [mm]	max. load F_{zul} [kN]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
							Part-No.	Part-No.
Suspended bracket type L M8 and M10	20/16	15-17	2,0	0,096	1	0781002	0781001	

Trapeze hanger



Trapeze hanger

Specification:

Application area: trapeze hanger with threaded rod should be mounted via lateral holes.
 For mounting pipelines and ventilation ducts directly under trapeze sheeting
 Required accessories: 1 threaded bolt M8
 4 hexagon nuts M8

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Identification	Thread	max. load [kN]	Weight [kg/pc.]	Packing [pc.]	V4A	V2A
					Part-No.	Part-No.
Trapeze hanger	M8	2,0	0,130	1	0783971	0783961
Trapeze hanger	M10	2,0	0,136	1	0783972	0783962

■ Threaded rods



Admissible load* on bending												
Distance L [mm]	V4A		V2A		V4A		V2A		V4A		V2A	
	M8	F [kN]	M10	F [kN]	M12	F [kN]	M16	F [kN]	M8	F [kN]	M10	F [kN]
50	0,10	0,09	0,20	0,18	0,35	0,32	0,89	0,81	* V4A $f_y=240 \text{ N/mm}^2$ safety factor=1,5 E-module=200.000 N/mm ²			
100	0,04	0,04	0,10	0,09	0,17	0,16	0,44	0,41	* V2A $f_y=220 \text{ N/mm}^2$ safety factor=1,5 E-module=200.000 N/mm ²			
150	0,02	0,02	0,05	0,05	0,10	0,10	0,30	0,27	max. deflection $f = L/150$ related to tensile stress area			
200	0,01	0,01	0,03	0,03	0,06	0,06	0,20	0,20				
250			0,02	0,02	0,04	0,04	0,13	0,13				
300			0,01	0,01	0,03	0,03	0,09	0,09				
350					0,02	0,02	0,06	0,06				
400							0,05	0,05				

Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12, M16

Length: 1000 mm

Technical data:

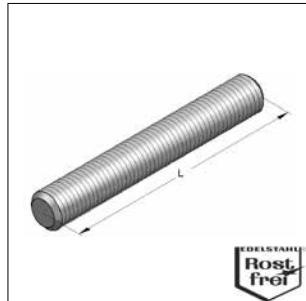
Material: stainless steel

Material type: V4A

V2A

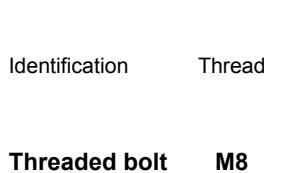
Identification	Thread	Limited tractive force max.		Weight [kg/m]	Packing [pc.]	V4A	V2A
		V4A / V2A [kN]				Part-No.	Part-No.
Threaded rod	M8	12,08		0,333	1	0738508	0738006
Threaded rod	M10	19,14		0,520	1	0738510	0738009
Threaded rod	M12	27,82		0,749	1	0738512	0738012
Threaded rod	M16	51,81		1,331	1	0738516	0738016

■ Threaded bolts



Specification:				Technical data:	
according to DIN EN ISO 976-1				Material:	stainless steel
Thread:	M8, M10, M12	Material type:	V4A	Material:	stainless steel
Length:	30 up to 110 mm	Material type:	V2A	Material:	stainless steel

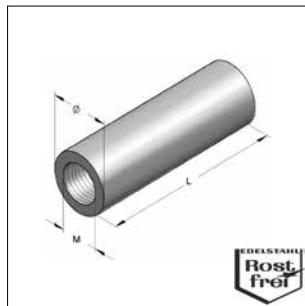
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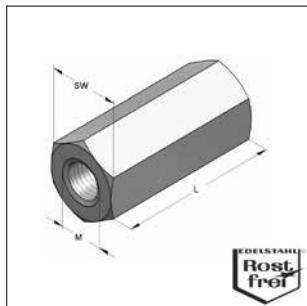
Threaded pin

Identification	Thread	Length L [mm]	Limited tractive force max.		Weight [kg/pc.]	Packing [pcs.]	V4A	V2A
			V4A / V2A [kN]				Part-No.	Part-No.
Threaded bolt	M8	30	12,08		0,010	100	---	0732130
Threaded bolt	M8	50	12,08		0,017	100	---	0732150
Threaded bolt	M8	70	12,08		0,024	100	---	0732170
Threaded bolt	M8	110	12,08		0,037	100	---	0732210
Threaded bolt	M10	50	19,14		0,026	100	---	0732350
Threaded bolt	M10	70	19,14		0,037	100	---	0732370
Threaded bolt	M10	110	19,14		0,057	50	---	0732410
Threaded bolt	M12	50	27,82		0,038	50	0734550	0732550
Threaded bolt	M12	110	27,82		0,083	50	0734610	0732610

■ Threaded coupling



Threaded coupling



Threaded coupling hexagon

Specification:

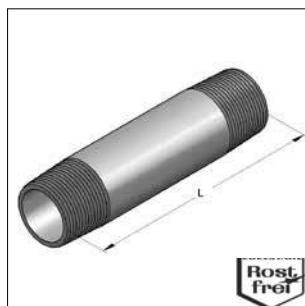
Thread: M8, M10, M12, M16
 Length: 30 up to 50 mm

Technical data:

Material: stainless steel
 Material type: V4A
 V2A

Round								V4A	V2A
Identification	Female thread M	Length L V4A [mm]	Length L V2A [mm]	OD [mm]	SW	Weight [kg/pc.]	Packing [pcs.]	Part-No.	Part-No.
Threaded coupling	M8	---	30	11	---	0,015	100	---	0700025
Threaded coupling	M10	---	40	13	---	0,025	50	---	0700026
Threaded coupling	M12	---	40	15	---	0,031	50	---	0700027
Threaded coupling	M16	---	50	22	---	0,092	25	---	0700028
Hexagon									
Threaded coupling	M8	30	30	---	13	0,027	100	0702880	0702830
Threaded coupling	M10	30	40	---	17	0,062	50	0702883	0702835
Threaded coupling	M12	30	40	---	19	0,074	50	0702888	0702840
Threaded coupling	M16	40	40	---	24	0,111	25	0702894	0702844

■ Double nipple



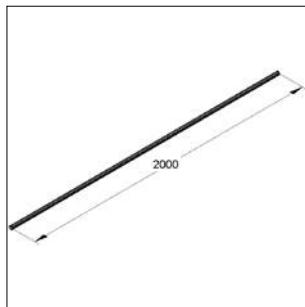
Double nipple

Specification:
 Length: 30 up to 140 mm

Technical data:
 Material: stainless steel
 Material type: V4A

Identification	Thread	Length L [mm]	Weight [kg/pc.]	Packing [pc.]	V4A
Double nipple	1/2"	30	0,028	1	0701803
Double nipple	1/2"	45	0,048	1	0701804
Double nipple	1/2"	60	0,066	1	0701806
Double nipple	1/2"	100	0,115	1	0701810
Double nipple	1/2"	125	0,136	1	0701812
Double nipple	1/2"	140	0,166	1	0701612

■ Distance tube



Distance tube

Specification:

Version: tube with male thread

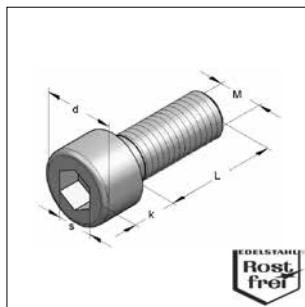
Technical data:

Material: stainless steel

Material type: V4A

Identification	Thread	Length [mm]	Weight [kg/pc.]	Packing [m]	V4A
Distance tube	1/2"	2000	2,480	2	0737002A4
Distance tube	1"	2000	4,980	2	0737004A4

■ Allen head cap screw, DIN EN ISO 4762



Allen head screw

Specification:

with hexagon socket

according to DIN EN ISO 4762

Thread: M8, M10, M12

Length: 20 up to 30 mm

Technical data:

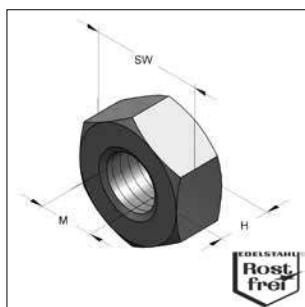
Material: stainless steel

Material type: V4A

V2A

Identification	Thread M	L [mm]	d [mm]	k [mm]	s [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A	V2A
								Part-No.	Part-No.
Allen head screw	M8	20	13	8	6	0,016	100	3445220	3445201
Allen head screw	M10	30	16	10	8	0,033	50	3445230	3445231
Allen head screw	M12	25	18	12	10	0,043	50	3445225	3445226

■ Hexagon nut, DIN EN ISO 4032



Hexagon nut

Specification:

according to DIN EN ISO 4032

Thread: M6, M8, M10, M12, M16

Wrench size: 10, 13, 17, 19, 24

Technical data:

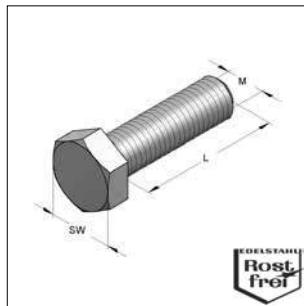
Material: stainless steel

Material type: V4A

V2A

Identification	Thread M	Height [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pcs.]	V4A	V2A
						Part-No.	Part-No.
Hexagon nut	M6	5,0	10	0,003	100	4128006	4128106
Hexagon nut	M8	6,5	13	0,005	100	4128108	4128008
Hexagon nut	M10	8,0	17	0,013	100	4128110	4128010
Hexagon nut	M12	10,0	19	0,017	100	4128112	4128012
Hexagon nut	M16	13,0	24	0,040	100	4128116	4128016

■ Hexagon screw, DIN EN ISO 4017



Hexagon screw

Specification:

according to DIN EN ISO 4017

Thread: M8, M10, M12

Length: 20 up to 60 mm

Technical data:

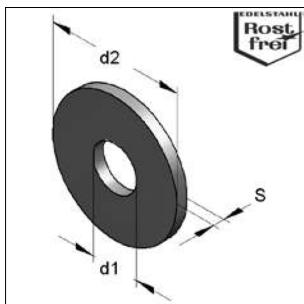
Material: stainless steel

Material type: V4A

V2A

Identification	Thread M	Length L	Wrench size SW [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A	V2A
						Part-No.	Part-No.
Hexagon screw	M8	20	13	0,014	100	3206621	3206620
Hexagon screw	M8	30	13	0,018	100	3206631	3206630
Hexagon screw	M10	25	17	0,027	100	3206702	3206701
Hexagon screw	M10	40	17	0,039	50	3206741	3206740
Hexagon screw	M10	60	17	0,049	50	3206761	3206760
Hexagon screw	M12	25	19	0,035	50	3206802	3206801
Hexagon screw	M12	40	19	0,053	50	3206826	3206825
Hexagon screw	M12	60	19	0,071	50	3206836	3206835

■ Washer



Washer

Specification:

according to DIN EN ISO 7089 and DIN EN ISO 7093-1

reinforced washer with enlarged outer diameter,
enlarged surface and improved pressure distribution**Technical data:**

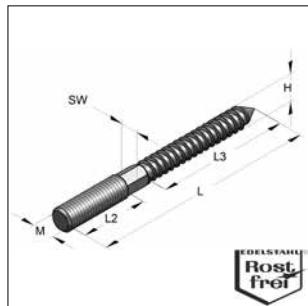
Material: stainless steel

Material type: V4A

V2A

Identification	Dimension				DIN EN ISO	Weight [kg/pc.]	Packing [pcs.]	V4A	V2A
	d1 [mm]	x	d2 [mm]	x	s [mm]			Part-No.	Part-No.
Washer	8,4	x	16	x	1,6	7089	0,002	100	4338118
Washer	10,5	x	20	x	2,0	7089	0,004	100	4338120
Washer	13,0	x	24	x	2,5	7089	0,007	100	4338123
Washer	8,4	x	25	x	2,0	7093-1	0,008	100	4338208
Washer	10,5	x	30	x	2,5	7093-1	0,013	100	4338210
Washer	13,0	x	37	x	3,0	7093-1	0,024	100	4338213
Washer	17,0	x	50	x	3,0	7093-1	0,043	50	4338217
Washer	10,5	x	40	x	3,0	-	0,029	100	43385103
									-

■ Hanger bolt



Hanger bolt

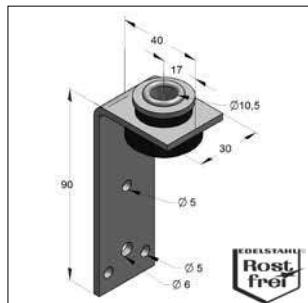
Specification:
with wood- and metric thread

Technical data:

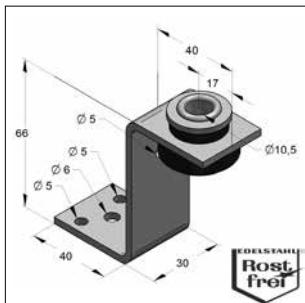
Material: stainless steel
Material type: V4A
V2A

Identification	Thread M	L [mm]	H [mm]	L2 [mm]	L3 [mm]	SW	Suited anchor K2	Weight [kg/pc.]	V4A		V2A	
									Packing [pcs.]	Part-No.	Part-No.	
Hanger bolt	M8	60	7,0	20	30	6	10 x 44	0,016	100	3600037	3600035	
Hanger bolt	M8	80	7,0	30	37	6	10 x 44	0,021	100	3600045	3600043	
Hanger bolt	M8	100	7,0	40	47	6	10 x 44	0,027	100	3600072	3600070	
Hanger bolt	M10	80	8,9	20	47	8	12 x 60	0,035	50	---	3609083	
Hanger bolt	M10	100	8,9	30	57	8	12 x 60	0,042	50	---	3609105	

■ Duct holder sound proofed



Duct holder LLN



Duct holder ZLN



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Specification:

Application area: for mounting of air ducts, suitable for M8 and M10

Technical data:

Material: stainless steel
Material type: V4A
V2A

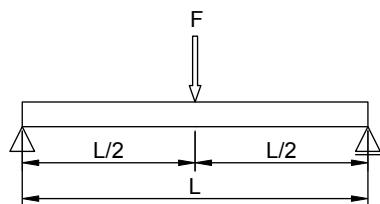
Product features: guiding rivet in sound insulation element
integrated washer in sound insulation element for type L

Sound insulation: SBR lining
Temperature resistance: - 35 °C up to + 100 °C

Identification	Length	Material [mm]	max. load [kN]	Weight [kg/pc.]	Packing [pc.]	V4A		V2A	
						Part-No.	Part-No.	Part-No.	Part-No.
Duct holder LLN	90 mm	30x3,0	0,9	0,109	1	0590004	0590003		
Duct holder ZLN	66 mm	30x3,0	0,9	0,117	1	0590039	0590038		

Loads profile rails, stainless steel

maximum loads for 1 x F



Profile rails stainless steel

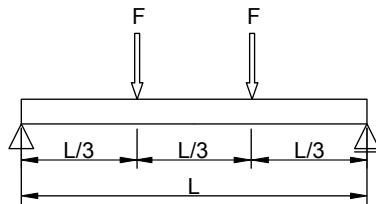
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/40/2,5	45/40/2,5	45/80/2,5	45/80/2,5
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
F L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]								
250	0,75	0,78	1,77	1,85	6,69	6,98	11,84	11,84
500	0,37	0,39	0,89	0,92	3,34	3,49	9,86	10,29
750	0,25	0,25	0,59	0,62	2,23	2,32	6,57	6,85
1000	0,15	0,14	0,4	0,4	1,67	1,74	4,91	5,13
1250			0,25	0,25	1,33	1,39	3,92	4,09
1500			0,17	0,17	1,1	1,15	3,26	3,4
1750			0,12	0,12	0,87	0,87	2,78	2,9
2000					0,66	0,66	2,42	2,53
2250					0,51	0,51	2,14	2,24
2500					0,4	0,4	1,92	2
2750					0,32	0,32	1,73	1,81
3000					0,26	0,26	1,57	1,65
3250					0,21	0,21	1,4	1,4
3500					0,17	0,17	1,19	1,19
3750					0,14	0,14	1,01	1,01
4000					0,11	0,11	0,87	0,87
4250							0,75	0,75
4500							0,65	0,65
4750							0,56	0,56
5000							0,48	0,48
5250							0,42	0,42
5500							0,36	0,36
5750							0,3	0,3
6000							0,26	0,26

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	45/40/2,5	45/40/2,5	45/80/2,5	45/80/2,5
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{F}{L}$	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	max. load F							
250	0,56	0,58	1,33	1,39	5,02	5,24	5,92	5,92
500	0,28	0,29	0,67	0,69	2,51	2,62	5,92	5,92
750	0,16	0,15	0,42	0,42	1,67	1,74	4,93	5,14
1000			0,24	0,24	1,25	1,3	3,69	3,85
1250			0,15	0,15	1	1,02	2,94	3,07
1500			0,1	0,1	0,7	0,7	2,44	2,55
1750					0,51	0,51	2,09	2,18
2000					0,39	0,39	1,82	1,9
2250					0,3	0,3	1,61	1,68
2500					0,24	0,24	1,44	1,45
2750					0,19	0,19	1,18	1,18
3000					0,16	0,16	0,98	0,98
3250					0,13	0,13	0,83	0,83
3500					0,1	0,1	0,7	0,7
3750							0,6	0,6
4000							0,51	0,51
4250							0,44	0,44
4500							0,38	0,38
4750							0,33	0,33
5000							0,28	0,28
5250							0,25	0,25
5500							0,21	0,21
5750							0,18	0,18
6000							0,15	0,15

Calculation according

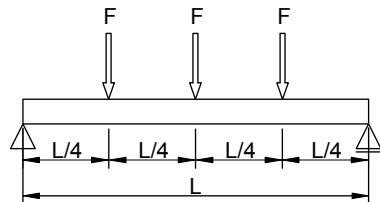
Safety $\chi = 1,54$

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



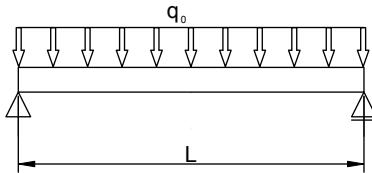
Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/40/2,5	45/40/2,5	45/80/2,5	45/80/2,5
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{F}{L}$	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	max. load F							
250	0,38	0,39	0,89	0,93	3,35	3,49	3,95	3,95
500	0,19	0,2	0,45	0,46	1,67	1,75	3,95	3,95
750	0,11	0,11	0,3	0,3	1,12	1,16	3,29	3,43
1000			0,17	0,17	0,84	0,87	2,46	2,57
1250			0,11	0,11	0,67	0,7	1,96	2,05
1500					0,51	0,51	1,63	1,7
1750					0,37	0,37	1,39	1,45
2000					0,28	0,28	1,21	1,27
2250					0,22	0,22	1,07	1,12
2500					0,17	0,17	0,96	1
2750					0,14	0,14	0,85	0,85
3000					0,11	0,11	0,71	0,71
3250							0,59	0,59
3500							0,5	0,5
3750							0,43	0,43
4000							0,37	0,37
4250							0,32	0,32
4500							0,28	0,28
4750							0,24	0,24
5000							0,21	0,21
5250							0,18	0,18
5500							0,15	0,15
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 $E = 200.000 \text{ N/mm}^2$

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	45/40/2,5	45/40/2,5	45/80/2,5	45/80/2,5
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
$\frac{q_0}{L}$	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
[mm]	max. load F							
250	5,93	6,18	14,14	14,75	53,51	55,83	47,34	47,34
500	1,48	1,54	3,53	3,68	13,36	13,94	23,67	23,67
750	0,55	0,53	1,52	1,52	5,93	6,19	15,78	15,78
1000	0,23	0,22	0,64	0,64	3,33	3,47	9,82	10,25
1250	0,12	0,11	0,32	0,32	2,12	2,21	6,27	6,55
1500			0,18	0,18	1,27	1,27	4,34	4,53
1750			0,11	0,11	0,79	0,79	3,18	3,32
2000					0,53	0,53	2,42	2,53
2250					0,36	0,36	1,9	1,99
2500					0,26	0,26	1,53	1,58
2750					0,19	0,19	1,17	1,17
3000					0,14	0,14	0,89	0,89
3250					0,11	0,11	0,69	0,69
3500							0,55	0,55
3750							0,44	0,44
4000							0,35	0,35
4250							0,29	0,29
4500							0,23	0,23
4750							0,19	0,19
5000							0,16	0,16
5250							0,13	0,13
5500							0,11	0,11
5750								
6000								

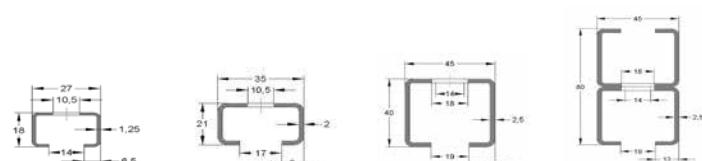
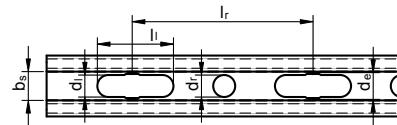
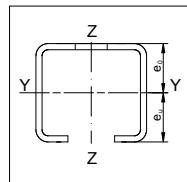
Calculation according

Safety $\chi = 1,54$

max. bending $\delta_{zul} = L/200$

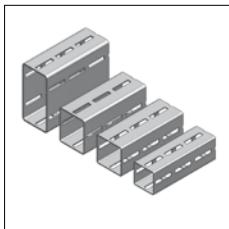
module of elasticity $E = 200.000 \text{ N/mm}^2$

Profile rail overview stainless steel

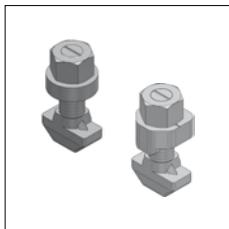


Profile rail			stainless steel			
			27/18/1,25	35/21/2,0	45/40/2,5	45/80/2,5
V2A						
Material			1.4301	1.4301	1.4301	1.4301
Elastic limit	f_y	N/mm ²	230	230	230	230
Weight/ meter	G/m	kg/m	0,61	1,21	2,56	5,12
V4A						
Material			1.4571	1.4571	1.4571	1.4571
Elastic limit	f_y	N/mm ²	240	240	240	240
Weight/ meter	G/m	kg/m	0,61	1,21	2,56	5,12
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	2,79	5,59
Slot width	b_s	mm	14,0	17,0	19,0	19,0
Grid dimension	l_r	mm	52,5	52,5	105,0	105,0
Diameter round hole	d_r	mm	-	-	18	18
Diameter elongated hole x length	$d_i \times l_i$	mm x mm	10,5x38,5	10,5x38,5	14x45	14x45
Extension diameter elongated hole	d_e	mm	-	-	18	18
Characteristic values YY-axis						
Axial angular impulse	I_y	cm ⁴	0,29	0,84	5,68	33,02
Section modulus	W_y	cm ³	0,31	0,74	2,80	8,26
Centroid distance	e_o	cm	0,85	0,97	1,97	4,00
Centroid distance	e_u	cm	0,95	1,13	2,03	4,00
Radius of inertia	i_y	cm	0,66	0,76	1,43	2,43
Characteristic values ZZ-axis						
Axial angular impulse	I_z	cm ⁴	0,89	2,94	10,40	20,80
Section modulus z-axis	W_z	cm ³	0,66	1,68	4,62	9,24
Centroid distance	e_z	cm	1,35	1,75	2,25	2,25
Radius of inertia	i_z	cm	1,15	1,43	1,93	1,93

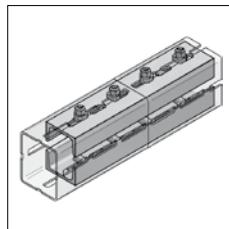
■ CENTUM® - components list



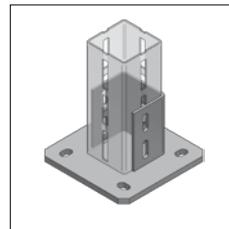
CENTUM Square profile
Page 14/4



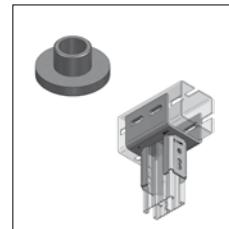
CENTUM Connection system
Page 14/5



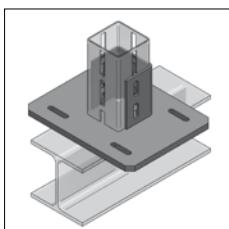
CENTUM Connector-set
Page 14/6



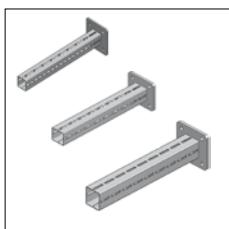
CENTUM Holder
Page 14/7



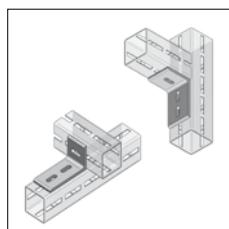
CENTUM Adaptation anchor
CENTUM Adaptor
Page 14/8



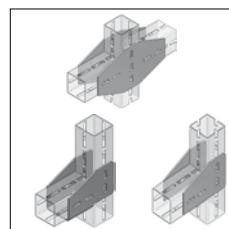
CENTUM Girder fixation
Page 14/9



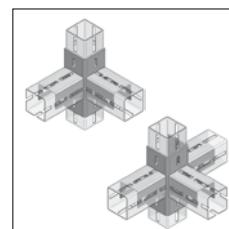
CENTUM Consoles
Page 14/10



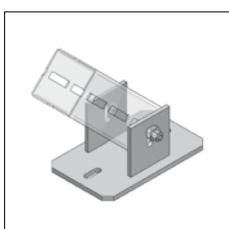
CENTUM Angles
Page 14/11



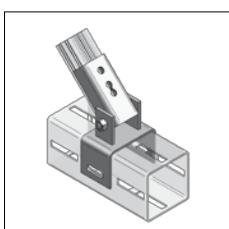
CENTUM Angle-shoe
CENTUM Plates
Page 14/12



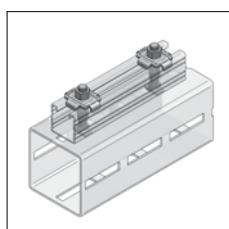
CENTUM Angle coupler
Page 14/14



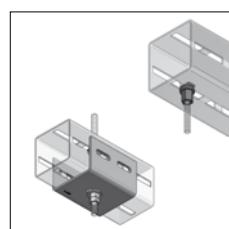
CENTUM Joint holder
Page 14/14



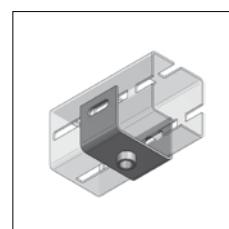
CENTUM Joint connection
Page 14/15



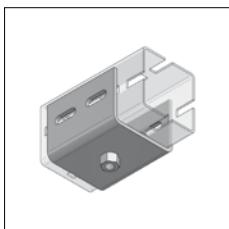
CENTUM C-profile connector
Page 14/15



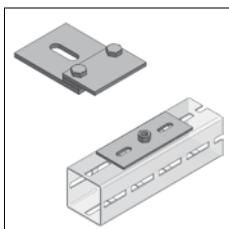
CENTUM hanger massive
Direct connector
Page 14/16



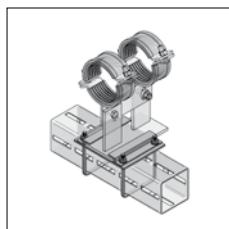
CENTUM Thread connector
Page 14/17



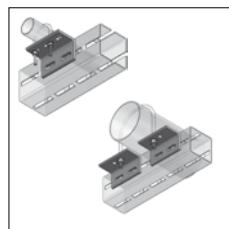
CENTUM Massive connector
Page 14/18



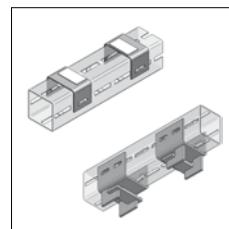
CENTUM Z-pressure pad
CENTUM Base plate
Page 14/19



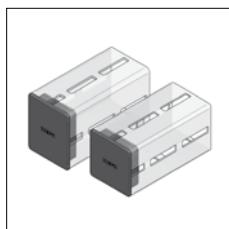
CENTUM Z-pressure pad Set with U-bolt
Page 14/20



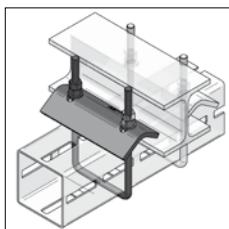
CENTUM Pipe holder
Page 14/21



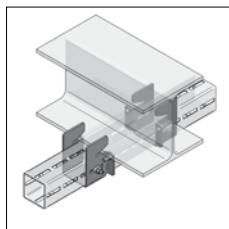
CENTUM Sliding base
Page 14/22



CENTUM Protecting cap
Page 14/22



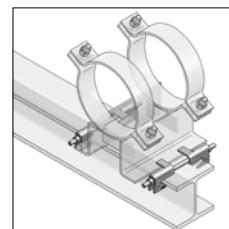
CENTUM Clamping bow
Page 14/23



CENTUM Clamping shoe
Page 14/24



CENTUM Clamping claws
Page 14/25



CENTUM Guiding Clamp-Set
Page 14/29

■ CENTUM® - components list



Pipe clamp Form A/C
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Pipe clamp Form A
Maxima/Titan HD
Page 14/30



Pipe clamp Form A
type TGA
Page 14/30



Stirrup clamp
Page 14/31



U-Bolt
Page 14/31



Sliding support T
Page 14/32



Sliding support T HV,
1 Pipe clamp
Page 14/33



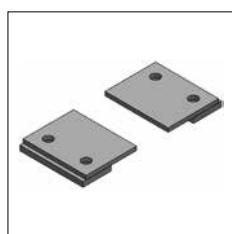
Sliding support T HV,
2 Pipe clamps
Page 14/34



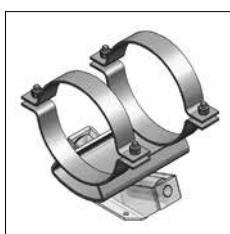
Sliding sledge
Page 14/35



Sliding sledge HV
Page 14/36



Fixation plate for
Sliding sledge
Page 14/36



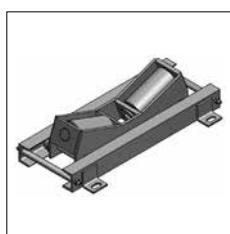
Isolation saddle for roller
bearings
Page 14/37



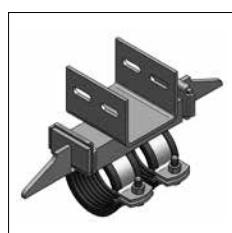
Single-roller-bearing
Page 14/37



Double roller bearing, axial
Page 14/37



Double roller bearing,
radial-axial
Page 14/37



Fixpoint with CENTUM
Massive connector
Page 14/38

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

■ 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®:

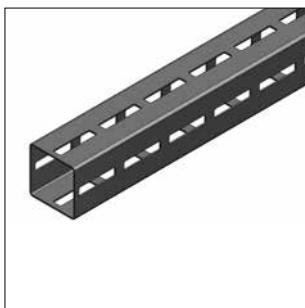
- Saving time and labour costs
- Stepless positioning of system components
- Unique, shape-fitting screw connection system with a max. load capacity up to 10 kN per connection
- Dismantlement at any time
- Compatible interface for MEFA-profile channels
- All parts are hot-dip galvanized or zinc-nickel coated
- Closed profile geometric for max. torsion stiffness
- A well thought-out range of system components offering a maximum of possible variants in construction



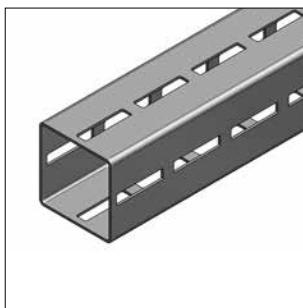
Approval/
calculation options:

- RAL-GZ-655-B+C+D+E
- DIN EN 13480-3
- DIN 1090-2 CE
- DIN EN 1998-4 (Seismic)
- DIN EN ISO 9001
- DIN EN 1993

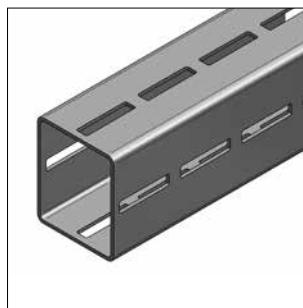
■ CENTUM® Square profile



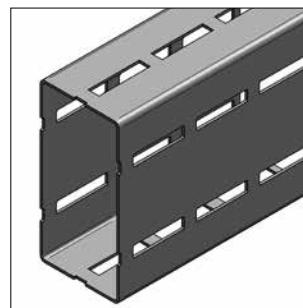
CENTUM® profile XL 80



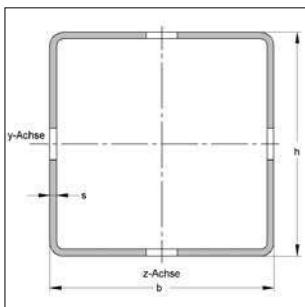
CENTUM® profile XL 100



CENTUM® profile XL 120



CENTUM® profile XL 200

**Description of system:**

- modular system
- 4-sided without raster in connection with mounting parts
- torsion stiffness
- high load capacity

Technical data:

Material:	steel
Material type of all profiles:	S275J2H
Surface:	hot-dip galvanized according to DIN EN ISO 1461

** At 8 m delivery length special delivery conditions

* not certified acc. to RAL

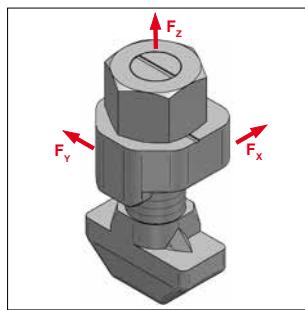
Identification	Dimensions h x b [mm]	Profile thickness s [mm]	perforation	Length L [m]	Weight [kg/m]	Packing [m]	Part-No.
CENTUM® profile XL 80	80 x 80	2,5	4-sided	6	5,51	6	16008060
CENTUM® profile XL 100	100 x 100	3	4-sided	6	8,46	6	16010060
CENTUM® profile XL 120	120 x 100	4	4-sided	6	12,20	6	16012060
CENTUM® profile XL 120s*	120 x 100	5	4-sided	6	14,83	6	16012061
CENTUM® profile XL 200	200 x 100	5	4-sided	6	20,46	6	16020060
CENTUM® profile XL 200 WST	200 x 100	5	4-sided	8**	20,46	8	16020080

CENTUM® overview technical values

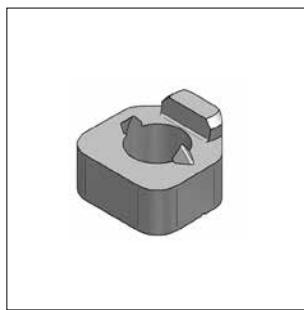
Identification	cross-section area A_k cm ²	Section modulus of torsion W_t cm ³	Geometrical moment of inertia		Section modulus W_{Y-Y} cm ³	gyration radius i_Y cm	gyration radius i_z cm
			I_{Y-Y} cm ⁴	I_{Z-Z} cm ⁴			
Profile XL 80	6,19	36,04	64,51	64,51	16,13	16,13	3,23
Profile XL 100	9,73	56,40	157,14	157,14	31,43	31,43	4,02
Profile XL 120	14,45	89,10	310,55	237,23	51,76	47,44	4,64
Profile XL 120s	17,55	109,25	372,76	284,42	62,12	56,88	4,61
Profile XL 200	24,15	185,25	1255,68	433,47	125,56	86,69	7,21
							4,24

(i) Load values for CENTUM® profile rails can be found at the end of the chapter.

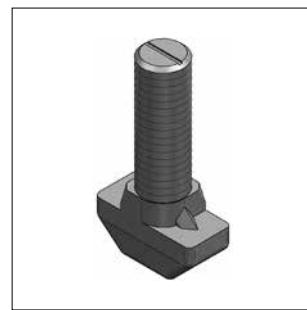
■ CENTUM® T-lock head, toothed



CENTUM® T-lock head



CENTUM® Lock washer



CENTUM® T-lock bolt



RAL-GZ 655-D

Specification:

For profile type:	XL 80, XL 100, XL 120 and XL 200		
Features:	immovable and form-locking connection		
max. load:	F_x	F_y	F_z
XL 80:	8 kN	8kN	3kN
from XL 100:	10 kN	10kN	3kN
Safety γ :	2		
Application:	C-profile connector		

Technical data:

Material:	steel
Surface:	zinc-nickel

Identification	Property class	recommended tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® T-lock head M12x40, toothed	10.9	XL 80	from XL 100			
consisting of:		90	120	0,120	50	1610011000
CENTUM® Lock washer	10	--	--	0,031	100	1610019000/zn
CENTUM® T-lock bolt, toothed	10.9	90	120	0,064	50	1610012100/zn
CENTUM® hex nut M12 FK10, DIN EN ISO 4032	10	--	--	0,017	100	8989995/zn

■ Assembly instruction for T-lock head

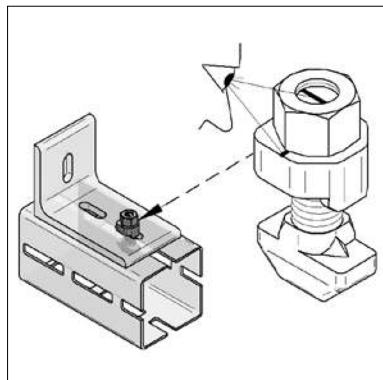


Figure 1

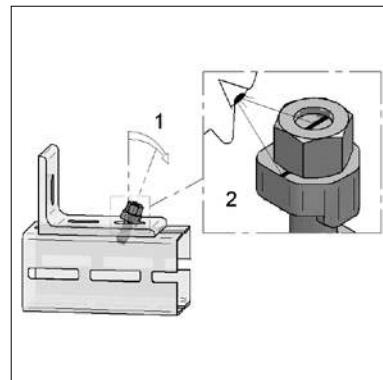


Figure 2

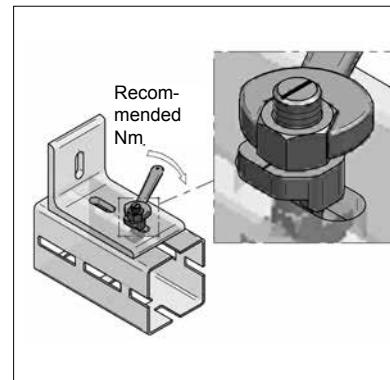


Figure 3

14

Positioning:

Locate T-lock head into mounting part like shown in Figure 1.

Adjustment:

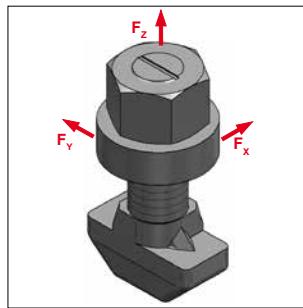
Turn T-lock head around 90 degrees, so that T-lock bolt stands diagonally to long hole (see 1).

Tilt forward T-lock head, so that guide wedge of Lock washer snaps in long hole (see 2).

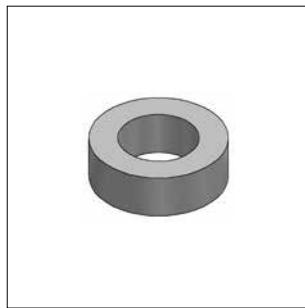
Fixation:

Tighten tilted T-lock with 90 Nm (XL 80) or 120 Nm (from XL 100). T-lock head after dismounting non-reusable.

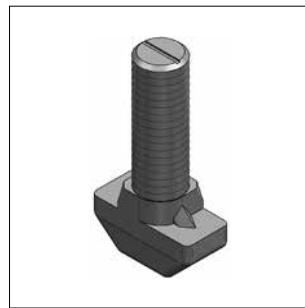
■ CENTUM® T-bolt, with steel disk



CENTUM® T-bolt



CENTUM® steel disk



CENTUM® T-lock bolt, toothed

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200

Features: frictional connection

max. load:

	F_x	F_y	F_z
XL 80:	3 kN	8kN	3kN
from XL 100:	3 kN	10kN	3kN

Safety γ :

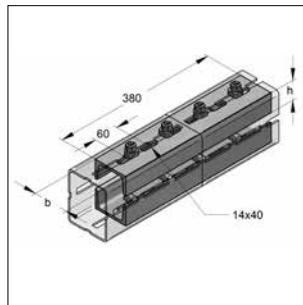
Application: C-profile connector

Technical data:

Material:	steel
Surface:	zinc-nickel

Identification	Property class	recommended tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® T-bolt M12x40	10.9	XL 80	from XL 100			
consisting of:		90	120	0,100	50	1610012000
CENTUM® steel disk	4.6	--	--	0,019	100	1610019100/zn
CENTUM® T-lock bolt, toothed	10.9	90	120	0,064	50	1610012100/zn
CENTUM® Hexagon nut M12 FK10, DIN EN ISO 4032	10	--	--	0,017	100	8989995/zn

■ CENTUM® Connector



CENTUM® Connector

Specification:Scope of supply: mounting accessories, loose insert
(8x T-lock head, toothed, M 12/40)

Function: connection of XL 80, XL 100, XL 120 or XL 200

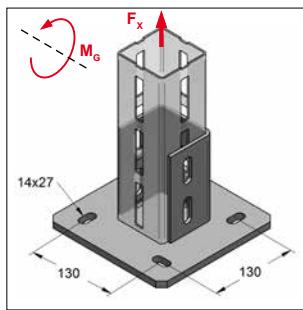
Technical data:

Material:	steel
Surface u-steel:	hot-dip galvanized
Surface screws:	zinc-nickel

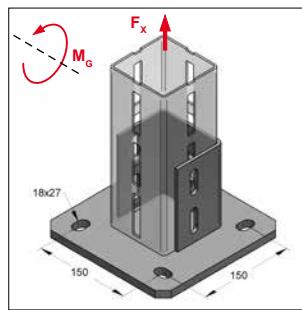
14

Identification	Profile type:	Limit moment M_G [kNm]	Length [mm]	Width b [mm]	Hight h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Connector-Set	XL 80	1,6	380	60	30	4,94	1	1640805010
CENTUM® Connector-Set	XL 100, XL 120, XL 200	2	380	80	45	7,90	1	1640005010

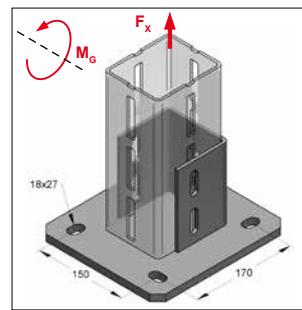
■ CENTUM® Holder



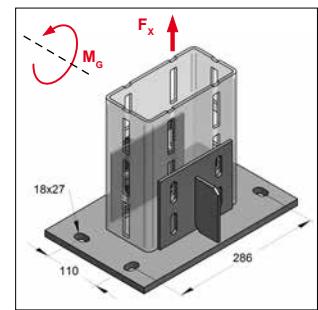
CENTUM® Holder XL 80



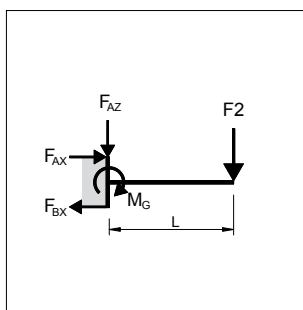
CENTUM® Holder XL 100



CENTUM® Holder XL 120



CENTUM® Holder XL 200



$$M_G = F_2 \times L$$

Specification:

For profile type: XL 80, XL 100, XL 120 und XL 200
 Scope of supply: T-lock head, toothed, M12/40

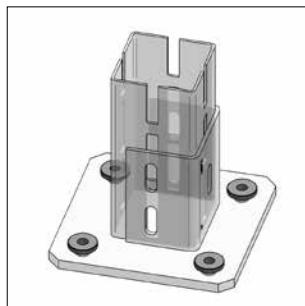
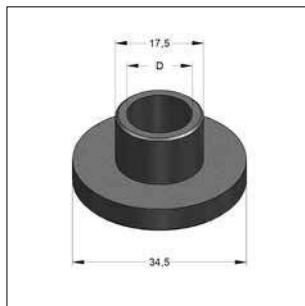
* at utilization of all bolt holes

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

Identification	max. load*	maximum torque	Plate-width	Plate-length	Plate-thickness	Weight	Packing	Part-No.
	F _x [kN]	M _G [kNm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
CENTUM® Holder XL 80	32	4,2	200	200	10	4,48	1	1620801000
CENTUM® Holder XL 100	40	5,2	220	220	12	6,15	1	1621001000
CENTUM® Holder XL 120	40	5,2	220	240	12	6,71	1	1621201000
CENTUM® Holder XL 200	40	5,2	220	340	12	9,57	1	1622001000

■ CENTUM® Adaptation anchor M16



CENTUM® Adaptation

Specification:

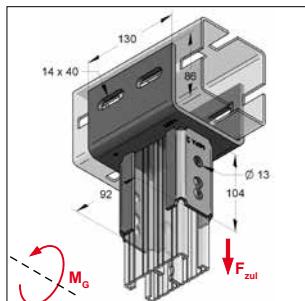
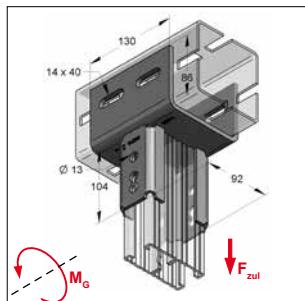
For rail holder: XL 100, XL 120 and XL 200
application area: Reduction of mounting holes from M16 to M12 or M10

Technical data:

Material: steel
Material type: zinc-nickel

Identification	internal - Ø D [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Adaptation anchor M16 to M10	11	0,047	50	1610019502/zn
CENTUM® Adaptation anchor M16 to M12	13	0,045	50	1610019503/zn

■ CENTUM® Adaptor

CENTUM® Adaptor
verticalCENTUM® Adaptor
horizontal**Specification:**

For profile type: XL 100, 45/90
Application: to connect C-profile rails 45/90
Needed accessory: threaded square plate
hexagon screw
t-lock head

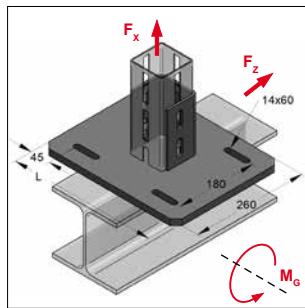
Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

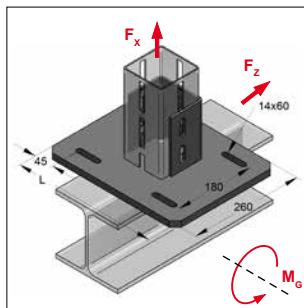
* loads referring to component, not to connection

Identification	max. load* F_{zul} [kN]	maximum torque M_G fbv [kNm]	maximum torque M_G fsv [kNm]	Length [mm]	Thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Adaptor vertical	12	0,80	0,35	130	6	2,32	1	1621005011
CENTUM® Adaptor horizontal	12	0,80	0,35	130	6	2,32	1	1621005021

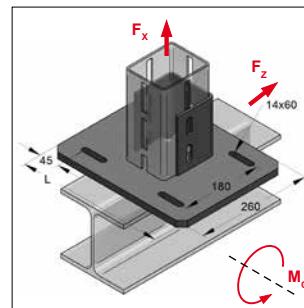
CENTUM® Girder fixation



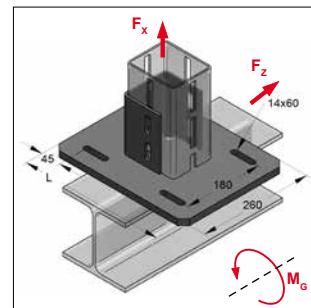
Girder fixation XL 80, vertical



Girder fixation XL 100, vertical



Girder fixation XL 120, vertical



Girder fixation XL 120, horizontal

Specification:

For profile type: XL 100
 On request: XL 80, XL 120
 Needed accessory: T-lock head, toothed, M12/40
 clamping claw AF/LR

Technical data:

Material: steel
 Material type: S235JR (profile holder)
 S355 JR (plate)
 Surface: hot-dip galvanized

* on request

Identification	Plate-width [mm]	Plate-length L [mm]	Plate-thickness [mm]	for min. girder width [mm]	for max. girder width [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Girder fixation XL 80, size 1, vertical*	260	240	15	46	120	8,59	1	162080201
Girder fixation XL 80, size 2, vertical*	260	332	15	140	220	11,62	1	162080202
Girder fixation XL 80, size 3, vertical*	260	424	15	240	320	14,65	1	162080203
Girder fixation XL 100, size 1, vertical	260	240	15	46	120	8,82	1	162100201
Girder fixation XL 100, size 2, vertical	260	332	15	140	220	11,85	1	162100202
Girder fixation XL 100, size 3, vertical	260	424	15	240	320	14,88	1	162100203
Girder fixation XL 120, size 1, vertical*	260	240	15	46	120	8,93	1	162120201
Girder fixation XL 120, size 2, vertical*	260	332	15	140	220	11,96	1	162120202
Girder fixation XL 120, size 3, vertical*	260	424	15	240	320	14,99	1	162120203
Girder fixation XL 120, size 1, horizontal*	260	240	15	46	120	8,93	1	162120301
Girder fixation XL 120, size 2, horizontal*	260	332	15	140	220	11,96	1	162120302
Girder fixation XL 120, size 3, horizontal*	260	424	15	240	320	14,99	1	162120303

Table: 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 page 14/24)

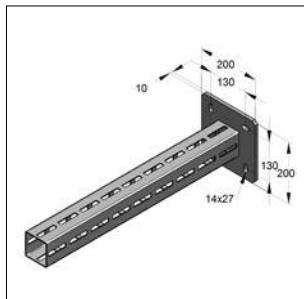
max. load	F _x , max (Pulling force) [kN]	F _z , max (Shear) [kN]	M _g ** [kNm]
CENTUM® Girder fixation XL 80	32	7,8	4,2
CENTUM® Girder fixation XL 100	34	7,8	4,2
CENTUM® Girder fixation XL 120	34	7,8	4,2

In combination with 4x clamping claw type LR, M12 (see page 14/29)

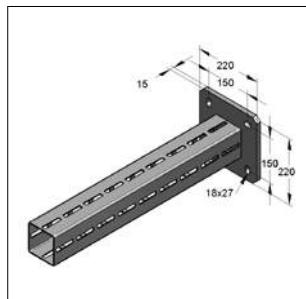
max. load	F _x , max (Pulling force) [kN]	F _z , max (Shear) [kN]	M _g ** [kNm]
CENTUM® Girder fixation XL 80	18	1,8	4,2
CENTUM® Girder fixation XL 100	18	1,8	4,2
CENTUM® Girder fixation XL 120	18	1,8	4,2

** at utilization of all bolt holes

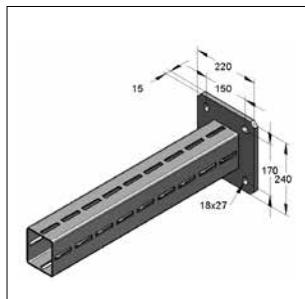
CENTUM® Console



CENTUM® Console XL 80



CENTUM® Console XL 100



CENTUM® Console XL 120

Specification:

For profile type: XL 80, 100 and 120

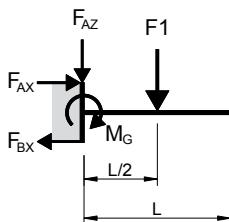
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,35

* Delivery time on request, variant demand possible

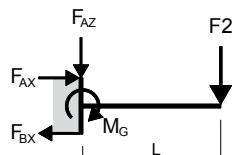
Identification	Length [mm]	max. load 1 F1 [kN]	max. load 2 F2 [kN]	max. load 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Console XL 80	720	8,38	4,19	11,64	7,26	1	1630800720
CENTUM® Console XL 80	960	6,29	2,94	6,55	8,58	1	1630800960
CENTUM® Console XL 80	1440	4,19	1,88	4,18	11,23	1	1630801440
CENTUM® Console XL 100	720	16,17	8,08	22,45	11,92	1	1631000720
CENTUM® Console XL 100	960	12,13	6,06	12,63	13,62	1	1631000960
CENTUM® Console XL 100	1440	8,08	4,58	5,61	18,02	1	1631001440
CENTUM® Console XL 120*	720	25,02	12,51	34,75	15,17	1	1631200720
CENTUM® Console XL 120*	960	18,77	9,38	19,55	18,10	1	1631200960
CENTUM® Console XL 120*	1440	12,51	6,26	8,69	23,96	1	1631201440

max. load 1 (LF1)



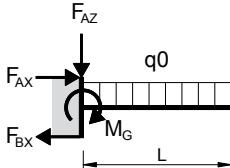
$$F_{AZ} = F1$$

max. load 2 (LF2)



$$F_{AZ} = F2$$

max. load 3 (LF3)



$$F_{AZ} = q0 * L$$

$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$
---------------	--------------------------

$F_{AZ} = F2$	$M_G = F2 * L$
---------------	----------------

$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$
-------------------	----------------------------

Limit moment XL 80

 $M_G: 3.017,28 \text{ Nm}$

Support reaction force XL 80

 $F_{AX}: 23,21 \text{ kN}$

Support reaction force XL 80

 $F_{BX}: 23,21 \text{ kN}$

Limit moment XL 100 und 120

 $M_G: 9.008,0 \text{ Nm}$

Support reaction force XL 100 und 120

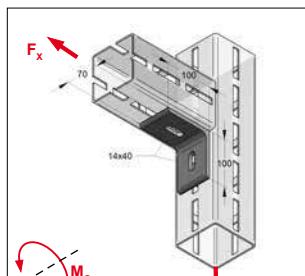
 $F_{AX}: 53,0 \text{ kN}$

Support reaction force XL 100 und 120

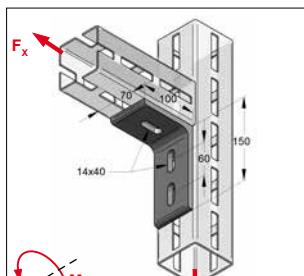
 $F_{BX}: 53,0 \text{ kN}$ Remark:

All load capacities excessive refer to static loads.

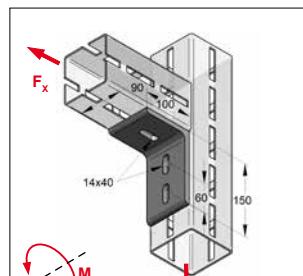
CENTUM® Angles - corner connector



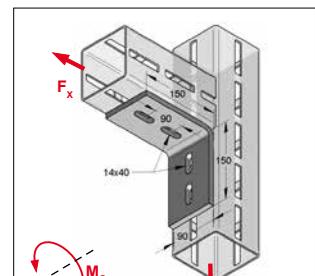
CENTUM® 2-hole angle
XL 80



CENTUM® 3-hole angle
XL 80



CENTUM® 3-hole angle
from XL 100



CENTUM® 4-hole angle
from XL 100

Specification:

For profile type: XL 80, XL 100, XL 120 und XL 200
Required accessory: T-lock head, toothed, M12/40

* by using of all screw holes

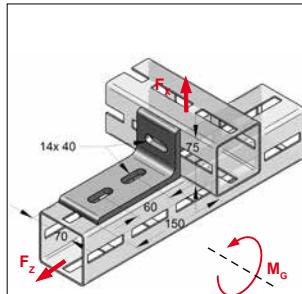
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

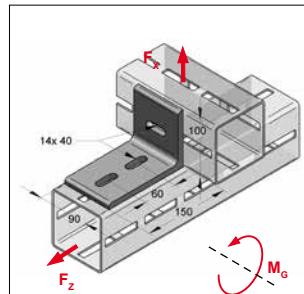
Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

Identification	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® 2-hole angle XL 80	5,2	8	0,40	0,87	1	1640081005
CENTUM® 3-hole angle XL 80	5,2	16	0,46	1,33	1	1640081010
CENTUM® 3-hole angle from XL 100	6,0	20	0,60	1,74	1	1640001010
CENTUM® 4-hole angle from XL 100	6,0	20	0,50	2,02	1	1640001020

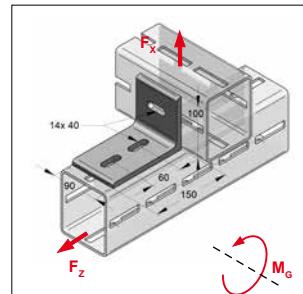
CENTUM® Angles horizontal - cross connector



CENTUM® 3-hole angle
horizontal XL 80



CENTUM® 3-hole angle
horizontal XL 100



CENTUM® 3-hole angle
horizontal XL 120

Specification:

For profile type: XL 80, XL 100, XL 120 und XL 200
Required accessory: T-lock head, toothed, M12/40

* by using of all screw holes

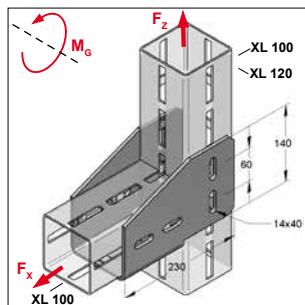
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

Identification	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® 3-hole angle horizontal XL 80	5,2	16	0,4	1,07	1	1640081012
CENTUM® 3-hole angle horizontal XL 100	6	20	0,6	1,74	1	1640001012
CENTUM® 3-hole angle horizontal XL 120	6	20	0,6	1,74	1	1641201012

CENTUM® Angle-shoe XL



CENTUM® Angle-shoe XL 100

Specification:

For profile type: XL 100
High-strength corner connection with profile support
Required accessory: T-lock head, toothed, M12/40

Technical data:

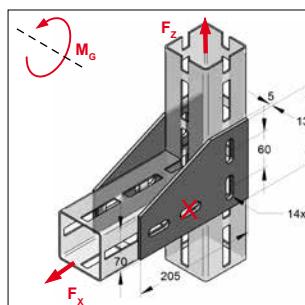
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

* by using of all screw holes

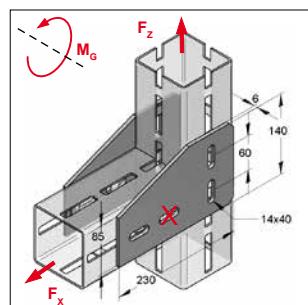
Identification

	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Angle-shoe XL 100	40	40	1,2	3,57	1	1641002010

CENTUM® Corner plate



CENTUM® Corner plate

CENTUM® Corner plate L
from XL 100**Specification:**

For profile type: XL 80, XL 100, XL 120 und XL 200
Required accessory: T-lock head, toothed, M12/40

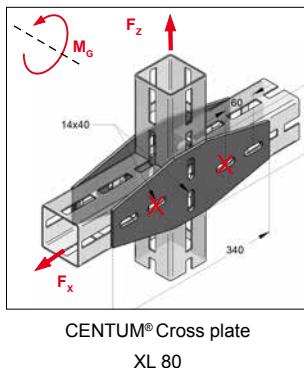
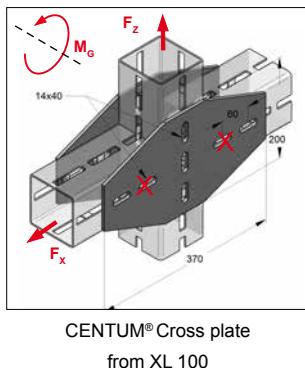
* by using of all screw holes

Remark: for $M_G = 0$ only one screw per side at X**Technical data:**

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification	profile type	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Corner plate XL 80 (use in pairs)	XL 80	32	32	0,95*	0,92	1	1640083010
CENTUM® Corner plate L (use in pairs)	from XL 100	40	40	1,20*	1,38	1	164003010

■ CENTUM® Cross plate

CENTUM® Cross plate
XL 80CENTUM® Cross plate
from XL 100**Specification:**

For profile type: XL 100, XL 120 and XL 200
Required accessory: T-lock head, toothed, M12/40

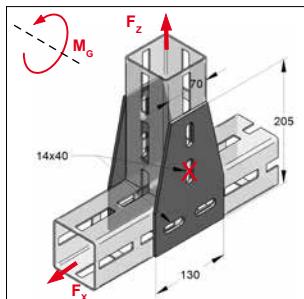
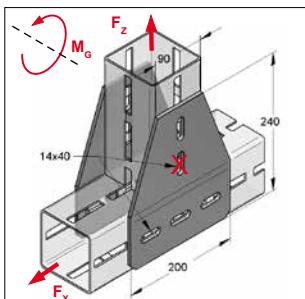
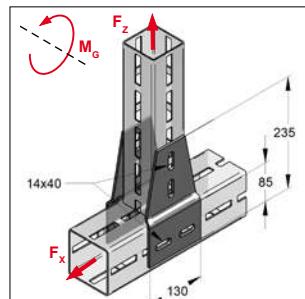
* by using of all screw holes

Remark: for $M_G = 0$ only one screw per side at X**Technical data:**

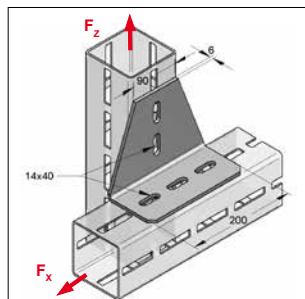
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification	profile type	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Cross plate XL 80 (use in pairs)	XL 80	32	32	0,95*	1,47	1	1640083020
CENTUM® Cross plate (use in pairs)	from XL 100	40	40	1,20*	2,89	1	1640003020

■ CENTUM® T-plate

CENTUM® T-plate
XL 80CENTUM® T-plate
ab XL 100

CENTUM® T-plate cranked sym.



CENTUM® T-plate, angled

Specification:

For profile type: XL 80, XL 100, XL 120 und XL 200
Required accessory: T-lock head, toothed, M12/40

Remark: for $M_G = 0$ only one screw per side at X**Technical data:**

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

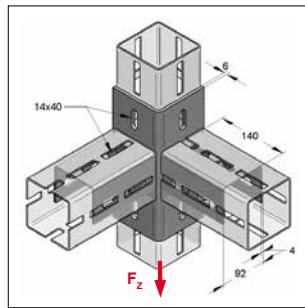
1) by using of all screw holes

2) use in pairs

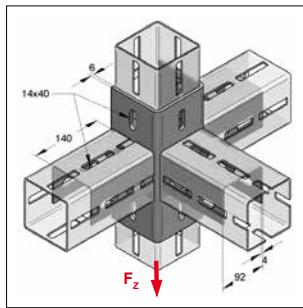
3) cross profile XL 100; any connecting profile

Identification	profile type	max. load F_x [kN]	max. load F_z [kN]	max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® T-plate XL 80 ²⁾	XL 80	32	32	0,95 ¹⁾	0,92	1	1640081030
CENTUM® T-plate ²⁾	frome XL 100	40	40	1,20 ¹⁾	1,97	1	1640001030
CENTUM® T-plate cranked sym. ²⁾	to connect XL 80 with XL 100 to connect XL 100 with XL 120	32 40	32 40	0,95 ¹⁾ 1,20 ¹⁾	1,08	1	1640003030
CENTUM® T-plate, angled	XL 80, XL 100, XL 120, XL 200 ³⁾	20	9	-	1,99	1	1640001040

■ CENTUM® Angle coupler



CENTUM® Angle coupler 90°



CENTUM® Angle coupler 180°

Specification:

For profile type: XL 100
Required accessory: T-lock head, toothed, M12/40

Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification

max. load
 F_z
[kN]

Weight
[kg/pc.]

Packing
[pc.]

Part-No.

CENTUM® Angle coupler 90°
CENTUM® Angle coupler 180°

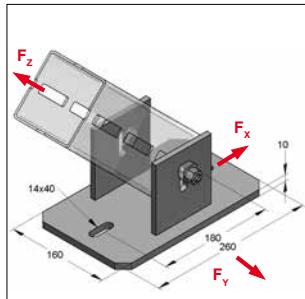
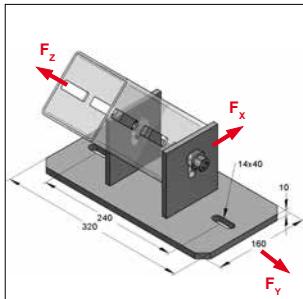
20
20

4,72
7,12

1
1

1641006010
1641006020

■ CENTUM® Joint holder

CENTUM® Joint holder
XL 100 verticalCENTUM® Joint holder
XL 100 horizontal**Specification:**

For profile type: XL 100 or XL 120
Required accessory: T-bolt, with steel disk, M12/40
Tightening torque: 60 Nm
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification

max. load
 F_x
[kN] F_z
[kN] F_y
[kN]

center hole
Plate

Dimension
Plate
L x B x S

Weight
[kg/pc.]

Packing
[pc.]

Part-No.

CENTUM® Joint holder XL 100 vertical

6,3 20 11

180

260 x 160 x 10

4,89

1

1641004010

CENTUM® Joint holder XL 100 horizontal

6,3 20 11

240

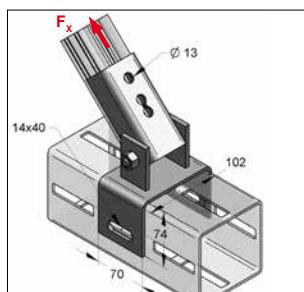
320 x 160 x 10

5,72

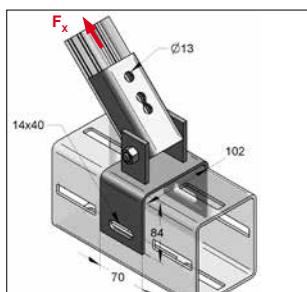
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1641004020

■ CENTUM® Joint connection



Joint connection XL 100



Joint connection XL 120

Specification:

For profile type: XL 100, XL 120 and XL 200
in combination with C-profile rails 45

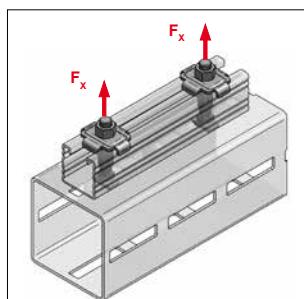
Technical data:

Material: steel
Material type: S235JR
Surface: zinc-nickel

¹⁾ loads referring to component, not to connection

Identification	max. load ¹⁾ F_x [kN]	Hole-Ø [mm]	Elongated hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Joint connection XL 100	7,0	13	14 x 40	1,26	1	1641014110
CENTUM® Joint connection XL 120	7,0	13	14 x 40	1,31	1	1641214110

■ CENTUM® C-profile connector



CENTUM® C-profile connector

Specification:

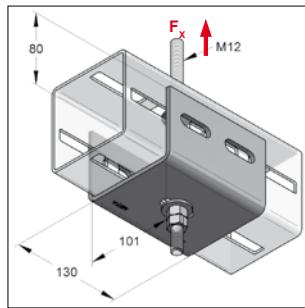
For profile type: XL 100, XL 120 and XL 200
Application: to connect profile rails

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	for profile-height [mm]	max. load F_x [kN]	tightening torque [Nm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® C-profile connector	40-45	2,0	10	0,160	50	1640017040
CENTUM® C-profile connector	60	2,0	10	0,170	50	1640017060

■ CENTUM® Hanger massive

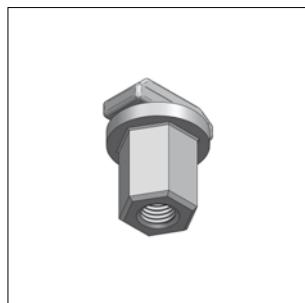


CENTUM® Hanger massive

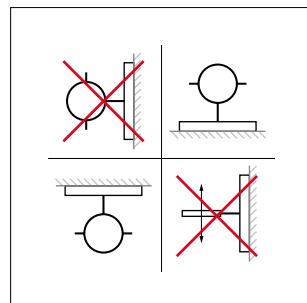
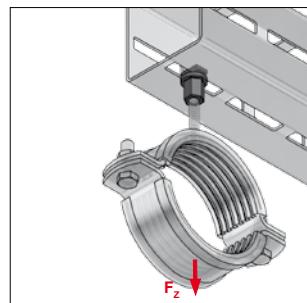
Specification:		Technical data:	
For profile type:	XL 100, XL 120 and XL 200	Material:	steel
Application:	Suspension of CENTUM® Profiles with threaded rods	Material type:	S235JR
Scope of supply:	CENTUM® retaining profile (for profile width 100 mm) 3x nut M12 2x Washer 13 x 30 x 2,5	Surface:	hot-dip galvanized
Required accessory: threaded rod M12			Safety factor: 1,54

Identification	Thread	max. load F_x [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Hanger massive	M12	10,0	1,50	1	1620003010

■ CENTUM® Direct connector



CENTUM® Direct connector

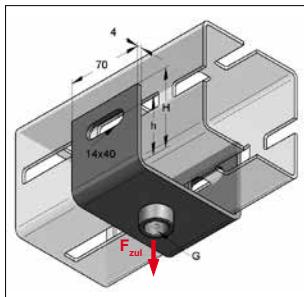


Mounting recommendation

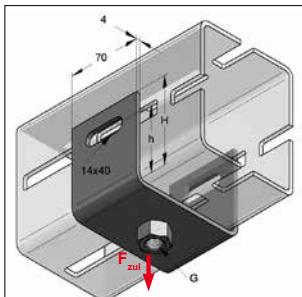
Specification:		Technical data:	
For profile type:	XL 80, XL 100, XL 120, XL 200	Material type:	steel
Application:	direct connection for M10 or M12 thread	Surface:	zinc-nickel
		Safety factor:	1,54

Identification	wrench size	height collar nut [mm]	recommended tightening torque [Nm]	max. load F [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Direct connector	SW 17	25	25	3,0	0,072	50	1640016010
CENTUM® Direct connector	SW 17	25	25	3,0	0,070	50	1640016012

■ CENTUM® Thread connector



CENTUM® Thread connector
XL 80/ XL 100 1/2"



CENTUM® Thread connector
XL 120 M16

Specification:

For profile type: XL 100, XL 120 and XL 200

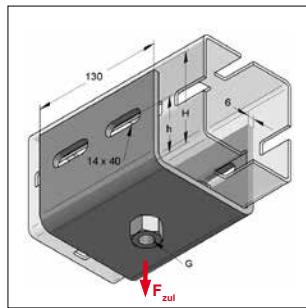
Required: 2 x T-lock head, toothed, M12/40

Technical data:

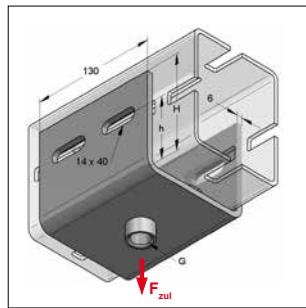
Material:	steel
Material type:	S235JR
Surface:	zinc-nickel
Safety factor:	1,54

Identification	Profile type	thread G	max. load F_{zul} [kN]	H [mm]	h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Thread connector	XL 80	M16	4,0	64	40	0,480	1	1640818007
CENTUM® Thread connector	XL 80	1/2"	4,0	64	40	0,470	1	1640818008
CENTUM® Thread connector	XL 80	1"	4,0	64	40	0,520	1	1640818010
CENTUM® Thread connector	XL 100 / XL 200	M12	5,0	74	50	0,550	1	1641018006
CENTUM® Thread connector	XL 100 / XL 200	M16	5,0	74	50	0,557	1	1641018007
CENTUM® Thread connector	XL 100 / XL 200	1/2"	5,0	74	50	0,557	1	1641018008
CENTUM® Thread connector	XL 100 / XL 200	1"	5,0	74	50	0,610	1	1641018010
CENTUM® Thread connector	XL 120	M16	5,0	84	60	0,620	1	1641218007
CENTUM® Thread connector	XL 120	1/2"	5,0	84	60	0,610	1	1641218008
CENTUM® Thread connector	XL 120	1"	5,0	84	60	0,660	1	1641218010

■ CENTUM® Massive connector



CENTUM® Massive connector
XL 100 M16



CENTUM® Massive connector
XL 120 1/2"

Specification:

For profile type: XL 100, XL 120 and XL 200

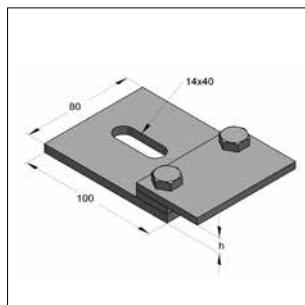
Required: 4 x T-lock head, toothed, M12/40

Technical data:

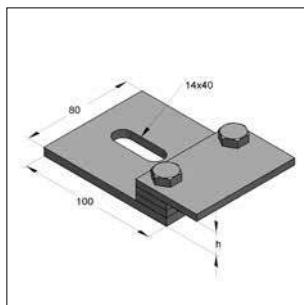
Material:	steel
Material type:	S235JR
Surface:	zinc-nickel
Safety factor:	1,54

Identification	Profile type	thread G	max. load F_{zul} [kN]	H [mm]	h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Massive connector	XL 100 / XL 200	M16	10,0	86	50	1,65	1	1641019007
CENTUM® Massive connector	XL 100 / XL 200	1/2"	10,0	86	50	1,64	1	1641019008
CENTUM® Massive connector	XL 100 / XL 200	1"	10,0	86	50	1,69	1	1641019010
CENTUM® Massive connector	XL 120	M16	10,0	96	60	1,78	1	1641219007
CENTUM® Massive connector	XL 120	1/2"	10,0	96	60	1,77	1	1641219008
CENTUM® Massive connector	XL 120	1"	10,0	96	60	1,82	1	1641219010

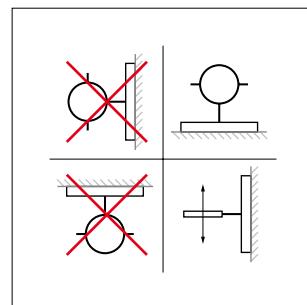
■ CENTUM® Z-pressure pad



CENTUM® Z-pressure pad
clamping strength 11 mm



CENTUM® Z-pressure pad
clamping strength 16 mm



Mounting recommendation

Specification:

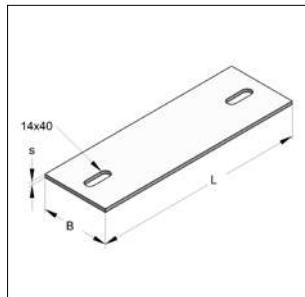
For profile type: XL100, XL120 and XL 200
set of 2 pcs.
Mounting instruction: suitable for standing assembly, only
Required accessory: sliding stripe PA 6 (see chapter 4)
T-bolt with steel disk, M12/40

Technical data:

Material: steel
Material type: S235JRG
Surface: zinc-nickel

Identification	Length [mm]	Width [mm]	clamping strength h [mm]	Thickness [mm]	elongated hole-Ø [mm]	Weight [kg/set]	Packing [set]	Part-No.
CENTUM® Z-pressure pad s11	100	80	11	6	14 x 40	1,31	1	1650015011
CENTUM® Z-pressure pad s16	100	80	16	6	14 x 40	1,48	1	1650015016

■ Sliding stripe PA 6



Sliding stripe

Specification:

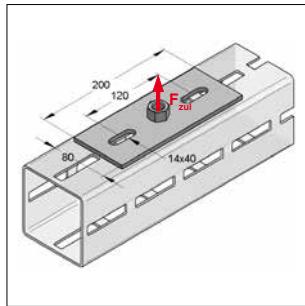
Product features: Improvement of the sliding property
Application area: sliding plates

Technical data:

Material: Polyamid 6
Static friction factor: 0,2 - 0,3
Sliding friction factor: 0,15 - 0,25
Thermal load: - 30 °C up to + 110 °C

Identification	Length L [mm]	Width B [mm]	Thickness s [mm]	elongated hole-Ø [mm]	sliding element width [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding stripe PA 310 2-hole	310	100	5	14 x 40	≤ 100	0,172	1	9992458
Sliding stripe PA 355 2-hole	355	100	5	14 x 40	≤ 150	0,198	1	9992200
Sliding stripe PA 410 2-hole	410	100	5	14 x 40	≤ 200	0,230	1	9992459

CENTUM® Base plate



CENTUM® Base plate M12

Specification:

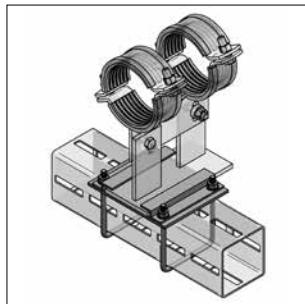
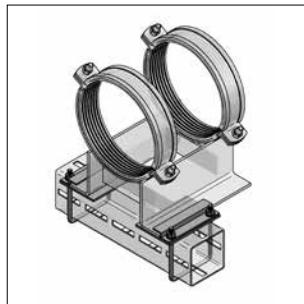
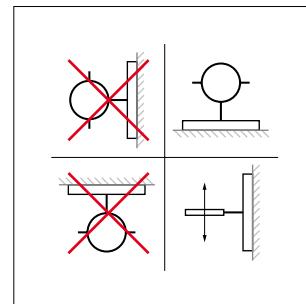
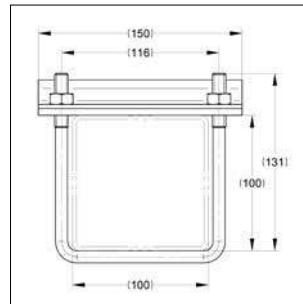
For profile type: XL100, XL120 and XL 200

Required accessory: T-lock head, toothed, M12/40 or
T-bolt with steel disk, M12/40**Technical data:**

Material:	steel
Material type:	S235JRG2
Surface:	zinc-nickel
Safety factor:	1,54

Identification	Length [mm]	Height [mm]	max. load F_{zul} [kN]	Thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Base plate M12	200	80	5,5	6	0,760	1	1640018106
CENTUM® Base plate M16	200	80	5,5	6	0,790	1	1640018107
CENTUM® Base plate 1/2"	200	80	5,5	6	0,780	1	1640018108
CENTUM® Base plate 1"	200	80	5,5	6	0,830	1	1640018110

CENTUM® Z-pressure pad Set with U-bolt

CENTUM® Z-pressure pad Set
for sliding sledge and sliding plate
with 100 mm widthCENTUM® Z-pressure pad Set
for sliding sledge and sliding plate
above 140 mm width

Mounting recommendation

Specification:

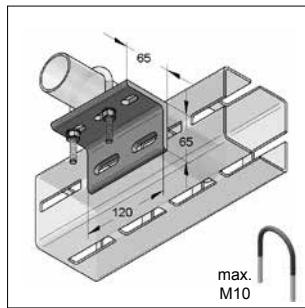
Application:	Fixing of sliding element on CENTUM XL 100 or square pipe 100
scope of delivery: (Set for 100 mm)	2 x U-bolt 116/131 M10 2 x Z-pressure pad 150 mm 2-hole 1 x sliding stripe PA6 4-hole (150 x 165 x 5) 4 x nut M10
scope of delivery: (Set above 140 mm)	2 x U-bolt 116/131 M10 2 x Z-pressure pad 150 mm 2-hole 2 x sliding stripe PA6 2-hole (150 x 100 x 5) 4 x nut M10

Technical data:

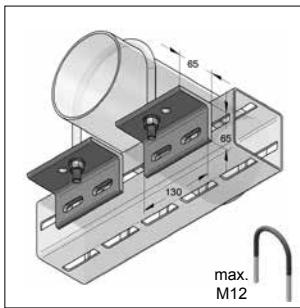
Material:	steel
Material type:	S235JR
Surface:	
- U-bolt, Z-pressure pad:	zinc-nickel
- nut:	hot-dip galvanized
Material sliding stripe:	PA6
static friction factor:	0,2 - 0,3
sliding friction factor:	0,15 - 0,25
Temperature resistance:	- 30° C up to + 110° C

Identification	for pipe / CENTUM	max. thickness sliding elemen	lifting stress / set	Weight [kg/set]	Packing [set]	Part-No.-Nr.
Z-pressure pad Set for sliding sledge with 100 mm width	100 x 100	16	4,5	1,060	1	14799100
Z-pressure pad Set for sliding sledge above 140 mm width	100 x 100	16	4,5	1,090	1	14799140

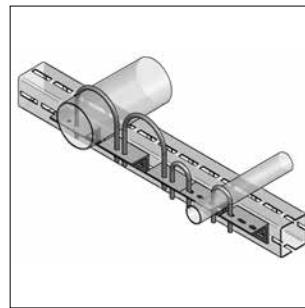
■ CENTUM® Pipe holder



CENTUM® Ø 21,3 - 76,1



CENTUM® Ø 88,9 - 219,1



combined exemplar

Specification:

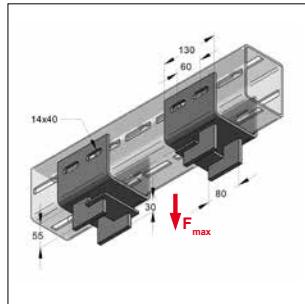
For pipe diameter: Ø 21,3 - 219,1 mm
 Mounting instruction: pipe must overlie
 Advantage: installation of different pipe diameter
 Required accessory: T-lock head and U-bolt
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JRG2
 Surface: hot-dip galvanized

Identification	for pipe-Ø	Length [mm]	Height [mm]	Thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Pipe holder	21,3 - 76,1	120	65	7	0,81	1	1640008200
CENTUM® Pipe holder	88,9 - 219,1	130	65	7	1,80	2	1640008210

■ CENTUM® Sliding base, hanging



CENTUM® Sliding base, hanging

Specification:

For profile type: XL 100, XL 120 or XL 200
 Required accessory: T-lock head, toothed, M12/40

Remark: shipment in pairs

sliding element: Base plates above 150 mm width Sliding sledge and Sliding support T above 100 mm width

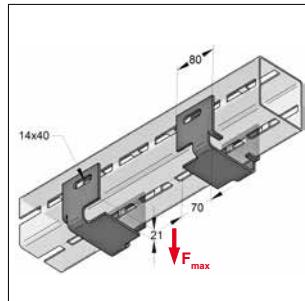
Technical data:

Material Sliding base: steel S235JR
 Surface: hot-dip galvanized
 max. sliding plate thickness: ≤ 16 mm
 Material sliding body: PE - UHMW
 static friction factor: 0,2
 slide friction factor: 0,15
 Temperature resistance: - 200 °C up to + 80 °C
 Safety factor: 1,54

* Loads refer to pair

Identification	Profile type	Alignment	max. load*	Weight	Packing	Part-No.
			F _{max} [kN]	[kg/set]	[set]	
CENTUM® Sliding base	XL 100 / XL 200	hanging	15,0	4,78	1	1651002001
CENTUM® Sliding base	XL 120	hanging, profile upright	15,0	5,05	1	1651202011

■ CENTUM® Sliding base, hanging light



CENTUM® Sliding base, hanging light

Specification:

For profile type: XL 80, XL 100
 Required accessory: T-lock head, toothed, M12/40

Remark: shipment in pairs

sliding element: - with glued Sliding stripes
 - Base plates, width Sliding sledge and Sliding support T above 100 mm width

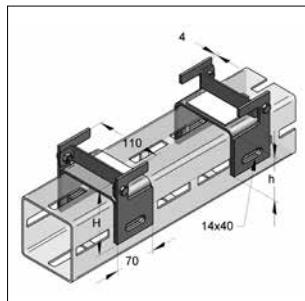
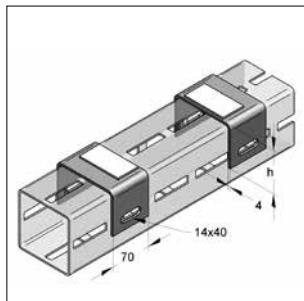
Technical data:

Material Sliding base: steel S235JR
 Surface: hot-dip galvanized
 max. sliding plate thickness: ≤ 16 mm
 Material sliding body: PE - UHMW
 static friction factor: 0,2
 slide friction factor: 0,15
 Temperature resistance: - 200 °C up to + 80 °C
 Safety factor: 1,54

* Loads refer to pair

Identification	Profile type	Alignment	max. load*	Weight	Packing	Part-No.
			F _{max} [kN]	[kg/set]	[set]	
CENTUM® Sliding base, light	XL 80	hanging	5,0	1,13	1	1650804000
CENTUM® Sliding base, light	XL 100	hanging	5,0	1,35	1	1651004000

■ CENTUM® Sliding base, standing

CENTUM® Sliding base, standing
with lift lockCENTUM® Sliding base, standing
without lift lock**Specification:**

For profile type: XL 100, XL 120 and XL 200
 Required accessory: T-lock head, toothed, M12/40 or
 T-bolt with steel disk, M12/40
 Remark: shipment in pairs

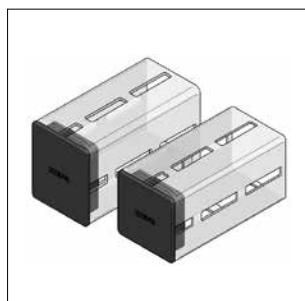
* Loads refer to pair

Technical data:

Material Sliding base:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
max. sliding plate thickness:	≤ 16 mm
Material sliding body:	PE - UHMW
static friction factor:	0,2
slide friction factor:	0,15
Temperature resistance:	- 200 °C up to + 80 °C
Safety factor:	1,54

Identification	Profile type	Alignment	max. load *	H	h	Weight	Packing	Part-No.
			F _{zul} [kN]	[mm]	[mm]	[kg/set]	[set]	
Sliding base with lift lock	XL 100 / XL 200	standing	40	110	74	2,13	1	1651001020
Sliding base without lift lock	XL 100 / XL 200	standing	40	-	74	1,07	1	1651001010
Sliding base with lift lock	XL 120	standing, profile upright	40	120	84	2,23	1	1651201050
Sliding base without lift lock	XL 120	standing, profile upright	40	-	84	1,28	1	1651201030

■ CENTUM® Protecting cap



CENTUM® Protecting cap

Specification:

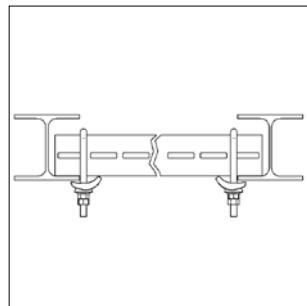
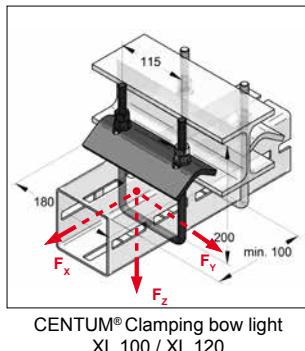
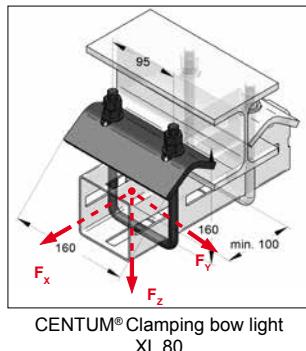
For profile type: XL 80, XL 100 or XL 120

Technical data:

Material:	plastic
Material type:	PE
Colour:	black

Identification	Weight [kg/pc.]	Packing [set]	Part-No.
CENTUM® Protecting cap XL 80	0,056	20	1670080
CENTUM® Protecting cap XL 100	0,092	20	1670100
CENTUM® Protecting cap XL 120	0,064	20	1670120

■ CENTUM® Clamping bow light

**Specification:**

For profile rail type: XL 80, XL 100 or XL 120

Application area: for mounting of steel profile rail on girder

Delivery time: on request

Set consisting of:

U-bolt	1 pc.
CENTUM® tensioning bracket	1 pc.
Nuts M12	4 pcs.
washer	2 pcs.

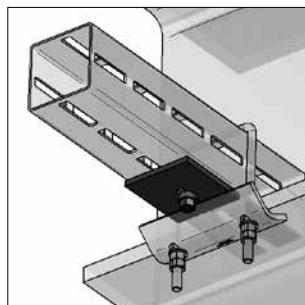
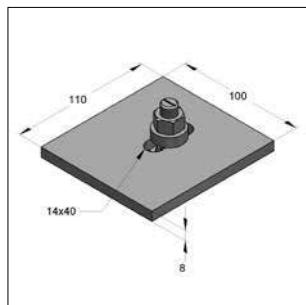
Technical data:

Material:	steel
Material type:	S235JR
Surface:	
U-bolt:	
CENTUM® tensioning bracket	
Nuts M12	
washer	
	zinc-nickel
	Galvanized
	Galvanized
	Galvanized

Remark: max. loads refer according to a clamping bow set. Please notice max. loads of CENTUM® profile rails

Identification	Thread U-bolt	max. load F _x [kN]	max. load F _y [kN]	max. load F _z [kN]	tightening torque [Nm]	max. clamping strength [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Clamping bow XL 80	M12	3,0	3,0	10,0	25	6 - 25	1,30	1	1660801011
CENTUM® Clamping bow XL 100 / 120	M12	3,0	3,0	10,0	25	6 - 25	1,46	1	1661001011

■ CENTUM® Spacer plate for clamping bows

**Specification:**

Application area: to raise clamping thickness of CENTUM clamping bow

Mounting instruction: with space plate clamping thickness can be increased by 8 mm

Required accessory: T-bolt, with steel disk, M12/40

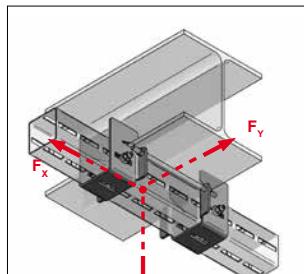
Delivery time: on request

Technical data:

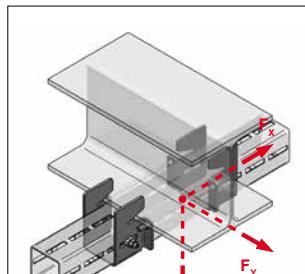
Material:	steel
Surface:	hot-dip galvanized

Identification	Width [mm]	Length [mm]	Thickness s [mm]	elongated hole [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Spacer plate	100	110	8	14x40	0,830	1	1660011030

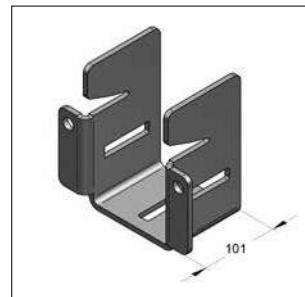
CENTUM® Clamping shoe



CENTUM® Clamping shoe mounted



CENTUM® Clamping shoe mounted



CENTUM® Clamping shoe single

Specification:

Application area: Attaching CENTUM® profiles to steel girder
 Installation advise: Evenly tightening of threaded rods with 15 Nm
 Torque for CENTUM® T-lock head 120 Nm
 Scope of delivery: Sold in pairs

Technical data:

Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Safety factor: 1,54

Identification	Profile type	Clamping thickness Flange [mm]	min. Clamping range Flange [mm]	max. web thickness Girder [mm]	max. load			Weight [kg/set]	Packing [set]	Part-No.
					F _x [kN]	F _y [kN]	F _z [kN]			
CENTUM® Clamping shoe S	XL 100	5-10	82*	10	20,0	4,2	22,5	4,24	1	1661002010
CENTUM® Clamping shoe M	XL 100	8-15	100	10	20,0	4,2	22,5	4,39	1	1661003010
CENTUM® Clamping shoe L	XL 100	13-20	140	20	20,0	4,2	22,5	4,56	1	1661004010
CENTUM® Clamping shoe XL	XL 100	19-30	180	40	20,0	4,2	22,5	5,20	1	1661005010
CENTUM® Clamping shoe S	XL 120	5-10	82*	10	20,0	4,2	22,5	4,77	1	1661202010
CENTUM® Clamping shoe M	XL 120	8-15	100	10	20,0	4,2	22,5	4,93	1	1661203010
CENTUM® Clamping shoe L	XL 120	13-20	140	20	20,0	4,2	22,5	5,08	1	1661204010
CENTUM® Clamping shoe XL	XL 120	19-30	180	40	20,0	4,2	22,5	5,80	1	1661205010
CENTUM® Clamping shoe L	XL 200	13-20	140	20	20,0	4,2	22,5	7,22	1	1662004010
CENTUM® Clamping shoe XL	XL 200	19-30	180	40	20,0	4,2	22,5	8,21	1	1662005010

*The min. clamping width of flange with 82mm only for IPE girder, with 91mm only for IPEa girder, for other types of girder the min. clamping width is 100mm.

CENTUM® clamping shoe accessory -set



CENTUM® clamping shoe accessory

Specification:

Application area: fixing accessories for Centum clamping shoe
 Content: 4 x T-lock head, toothed M12/40
 2 x profile rail M12
 4 x nut M12

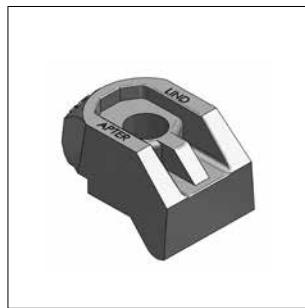
Technische Daten:

Material: Steel
 Surface:
 T-lock head: zinc-nickel
 Threaded rods & nuts: galvanized

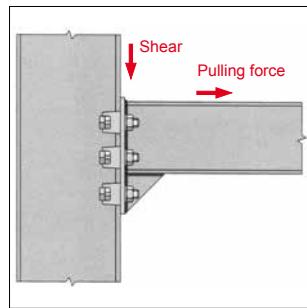
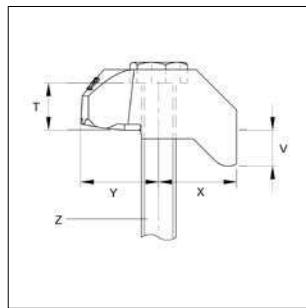
14

Identification	Threaded rod lenght [mm]	clamping range flange [mm]	Weight [kg/set]	Packing [set]	Artikel-Nr.
CENTUM® clamping shoe accessory 160	160	82 - 160	0,780	1	1660019160
CENTUM® clamping shoe accessory 300	300	160 - 300	0,986	1	1660019300

CENTUM® Clamping claw - type AF



Clamping Claw AF

**Specification:**

- Application:**
- flange up to inclination of 10°
 - absorption of high shearing forces by clamping girder fixation at vertical girder
- Mounting instruction:** cam height V = min./max. clamping thickness washers for height-adjustment of flange available on request
- Delivery time:** on request

Technical data:

Material:	cast iron
Surface:	hot-dip galvanized
Safety factor:	5:1 (tensile) 2:1 (shear)

Required accessory:

hexagon bolt h.-d. galv. FK 8.8 / threaded rod (see chapter 5.)
washers DIN EN ISO 7089 h.-d. galv.
hexagon nuts h.-d. galv.

* in conjunction with property class 8.8

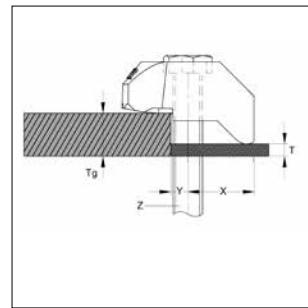
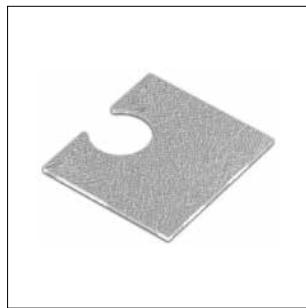
** for shear force value is valid for two screws couplings

*** on request

Type	Dimensions			Width V	Needed screw	Property class screw	Tighten- ing torque	Pulling force	max. load* Shear** Girder coated galvanized	Weight [kg/p.c.]	Packing [pc.]	Part-No.		
	Y [mm]	X [mm]	T [mm]											
AF M12	29	27	17	12,5 (medium)	39,0	M12x80	8.8	90	8,5	3,4	3,9	0,244	1	1660004012
AF M16	35	37	22	15,0 (medium)	48,5	M16x80	8.8	240	16,0	8,0	10,0	0,460	1	1660004016
AF M12 k***	29	27	17	5,0 (short)	39,0	M12	8.8	90	8,5	3,4	3,9	0,191	1	1660004012/k
AF M16 k***	35	37	22	8,0 (short)	48,5	M16	8.8	240	16,0	8,0	10,0	0,434	1	1660004016/k

(i) selection chart for clamping claw AF page 14/28.

■ CENTUM® Washer component AF



Washer component AF

Specification:

Application: should only be used in combination with clamping claw - type AF

Product feature: for raising clamping thickness, allows assembly at different flange thickness

Delivery time: on request

Installation advise: T = thickness of the washer component

V = cam lift of clamping claw - type AF (see page clamping claw - type AF)

tg = flange thickness

Thickness of washer component is calculated with help of formula: T = tg - V

Technical Data:

Material: steel
Surface: hot-dip galvanized

Identification	Needed screw	Dimension				Width	Weight	Packing	Part-No.
		Z	Y [mm]	X [mm]	T [mm]				
AF 12 CW	M12	7		33	2	40	0,023	1	0576012
AF 12 P1	M12	7		33	5	40	0,062	1	0576082
AF 12 P2	M12	7		33	10	40	0,111	1	0576112
AF 16 CW	M16	8		40	2	50	0,035	1	0576016
AF 16 P1	M16	8		42	5	52	0,097	1	0576114
AF 16 P2	M16	8		42	10	52	0,172	1	0576116

(i) selection chart for clamping claw AF page 14/28.

Selection chart for clamping claw Typ AF with different flange thicknesses in parallel flange Straps:

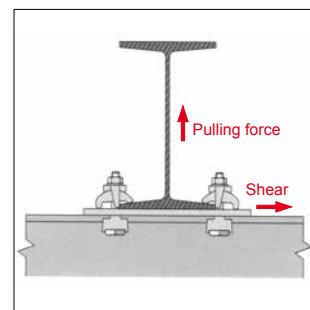
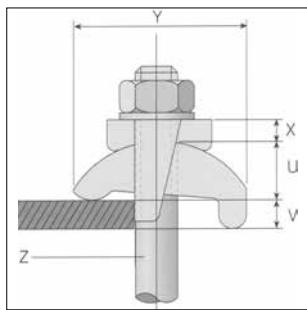
flange thickness	M12				M16			
	clamping claw Typ AF	Washer AF CW	Washer AF P1	Washer AF P2	clamping claw Typ AF	Washer AF CW	Washer AF P1	Washer AF P2
[mm]	[cam height V]	[pc.]	[pc.]	[pc.]	[cam height V]	[pc.]	[pc.]	[pc.]
5	short*	-	-	-	-	-	-	-
6	short*	-	-	-	-	-	-	-
7	short*	1	-	-	short*	-	-	-
8	short*	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 cam height on request available.

CENTUM® Clamping claw - type LR



Clamping claw LR

**Specification:**

Application:
 - girder with parallel and up to
 15° inclined flanges.
 - Horizontal connection of girder
 fixation at girder.

Delivery time: on request

¹⁾ checked for dynamic loads

³⁾ in conjunction with property class 8.8

⁴⁾ for shear force value is valid for two screws couplings

²⁾ larger flange thickness can be clamped with washer components (P1 and P2 on request)

Technical data:

Material: spherulitic cast iron
 Surface: galvanized
 Safety factor: 5:1

Required accessory:

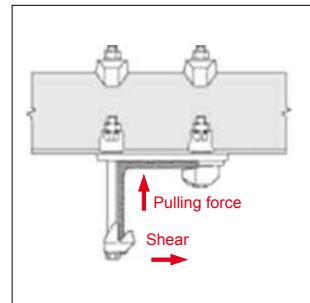
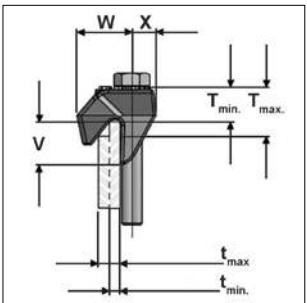
1 x hexagon bolt h.-d. galv. FK 8.8 / threaded rod
 1 x washer DIN EN ISO 7089 h.-d. galv.
 1 x hexagon nut h.-d. galv.

Type	Dimensions				needed Screw Z	Tightening torque [Nm]	max. load ³⁾		Weight [kg/pc.]	Packing [pc.]	Part-No.
	Y [mm]	U [mm]	X [mm]	V ²⁾ [mm]	Width [mm]		Pulling force [kN]	Shear ⁴⁾ [kN]			
LR M12	56,0	18,5	7,0	3-12	39,0	M12	69	4,5	0,9	0,172	1
LR M16 ¹⁾	67,0	22,5	8,0	3-16	46,0	M16	147	8,5	1,7	0,310	1

CENTUM® Clamping claw - type CF



Clamping claw CF

**Specification:**

Application:
 - flange-edges of girder,
 U-profiles, angle-profiles
 - absorption of high shearing forces
 by clamping at the vertical girder

Delivery time: on request

* in conjunction with property class 8.8

** for shear force value is valid for two screws couplings

Technical data:

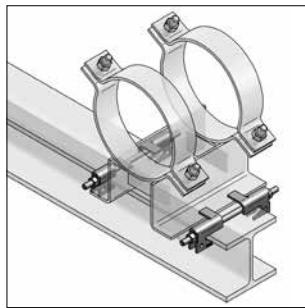
Material: cast iron
 Surface: hot-dip galvanized
 Safety factor: 2,0

Required accessory:

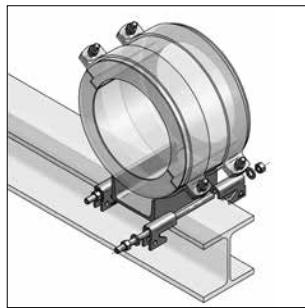
1 x hexagon bolt h.-d. galv. FK 8.8 / threaded rod
 1 x washer DIN EN ISO 7089 h.-d. galv.
 1 x hexagon nut h.-d. galv.

Type	Dimensions				min.-max. clamping size t	min.-max. projection T	Tightening torque	max. load		Weight [kg/pc.]	Packing [pc.]	Part-No.
	X [mm]	V [mm]	W [mm]	Width [mm]	[mm]	[mm]	[Nm]	Pulling force*	Shear**			
CF M12	14	25	32	46	6-13	21-29	90	8,5	3,9	0,222	1	1660002012
CF M16	18	32	44	56	8-16	25-33	240	16,0	10,0	0,428	1	1660002016

■ Guiding Clamp-Set



Guiding Clamp-Set Typ A
(assembled)



Guiding Clamp-Set Typ B
(assembled)

Specification:

Application: for lateral guidance of sliding sledges
and sliding supports on girder

Type A with lift lock for guide bearing

Type B without lift lock for floating bearing

Technical data:

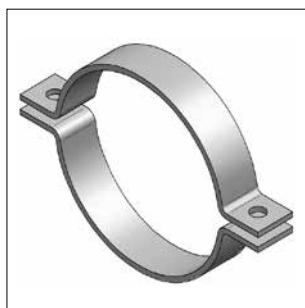
Material: steel
Material type: S235JR

Surface:

- guiding clamps: hot-dip galvanized
- screwing: zinc-nickel

Assembly instructions see chapter 15

■ Pipe clamp Form A, DIN 3567



Pipe clamp Form A, DIN 3567

Specification:

Closure: Hexagon nut/ closure-screw
Model: 2-parts
OD: 25 up to 521 mm
Connection: without connection
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: raw, galvanized,
hot-dip galvanized

■ Pipe clamp Form C, DIN 3567



Pipe clamp Form C, DIN 3567

Specification:

Closure: Hexagon nut/ closure screw
Model: 2-parts
OD: 115 up to 356 mm
Connection: without connection
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: raw, galvanized,
hot-dip galvanized

■ Pipe clamp Form A, type Maxima / Titan HD clamp



Pipe clamp Form A
type Maxima / Titan HD
clamp

Specification:

Closure: Hexagon nut/ closure screw
Model: 2-parts
OD: 20 up to 368 mm
Connection: without connection
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

■ Pipe clamp Form A, type Maxima / Titan HD clamp



Pipe clamp Form A
type Maxima / Titan HD
clamp



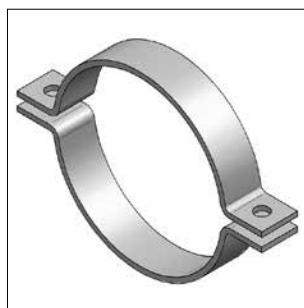
Specification:

Closure: Hexagon nut/ closure screw
Model: 2-parts
OD: 22 up to 368 mm
Connection: without connection
Sound insulation: according to DIN 4109
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Sound insulation lining: EPDM (ceramic lining on request)
Temperature resistance: - 35 °C up to + 100 °C
Insulation thickness: 6 mm

■ Pipe clamp Form A, type TGA



Pipe clamp Form A, type TGA

Specification:

Closure: Hexagon nut/ closure screw
Model: 2-parts
OD: 219 up to 1220 mm
Connection: without connection
Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: raw,
galvanized
hot-dip galvanized

■ Pipe clamp Form A, type TGA



Pipe clamp Form A, type TGA

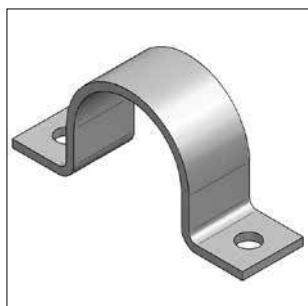
Specification:

Closure: Hexagon nut/ closure screw
 Model: 2-parts
 OD: 219 up to 1220 mm
 Connection: without connection
 Sound insulation: according to DIN 4109
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 Sound insulation lining: EPDM (ceramic lining on request)
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 6 mm

■ Stirrup clamp according to DIN 1593

Stirrup clamp according to
DIN 1593**Specification:**

Closure: Hexagon nut / closure screw
 Model: one-piece
 OD: 20 up to 219 mm
 Connection: without connection
 Delivery time: on request

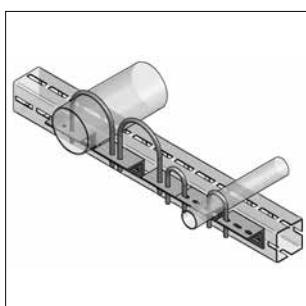
Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 hot-dip galvanized

■ U-bolt pipe hanger



U-bolt pipe hanger



Pipe holder see page 14/16

Remark:
 U-bolts galvanized
 see catalogue
 chapter 1

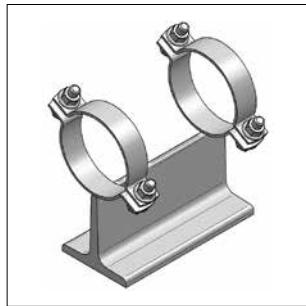
Specification:

OD: 60,3 up to 324 mm
 Connection: M10, M12, M20
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: zinc-nickel

■ Sliding support T



Sliding support T

Specification:

Closure: Hexagon nut / closure screw
 Model: T-support
 OD: 20 up to 219 mm
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 hot-dip galvanized

■ Sliding support T, sound insulated



Sliding support T, sound insulated

**Specification:**

Closure: Hexagon nut / closure screw
 Model: T-support
 OD: 20 up to 219 mm
 Sound insulation: according to DIN 4109

Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 hot-dip galvanized

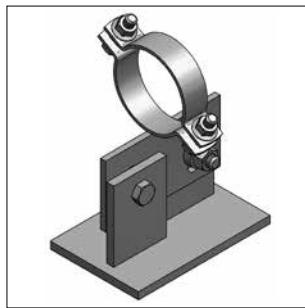
Sound insulation lining: EPDM

(ceramic lining on request)

- 35 °C up to + 100 °C

Insulation thickness: 6 mm

■ Sliding support T 100/150, height-adjustable, with 1 pipe clamp



Sliding support T 100/150

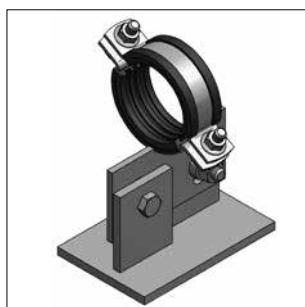
Specification:

Closure:	Hexagon nut / closure screw
Model:	T-support
Support width:	100
Support length:	150
OD:	20 up to 219 mm
Height, adjustable:	100 up to 125 mm 125 up to 150 mm
Delivery time:	on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized hot-dip galvanized

■ Sliding support T 100/150, height-adjustable, with 1 pipe clamp, sound insulated



Sliding support T 100/150

**Specification:**

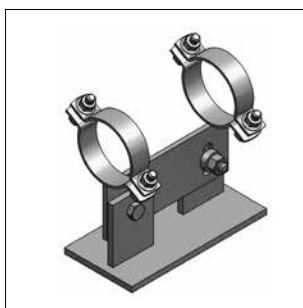
Closure:	Hexagon nut / closure screw
Model:	T-support
Support width:	100
Support length:	150
OD:	20 up to 219 mm
Sound insulation:	according to DIN 4109
Height, adjustable:	100 up to 125 mm 125 up to 150 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized, hot-dip galvanized
Sound insulation lining:	EPDM (ceramic lining on request)
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm

Delivery time: on request

■ Sliding support T 100/200 and T 100/300, height-adjustable, with 2 pipe clamps



Sliding support T 100/200

Specification:

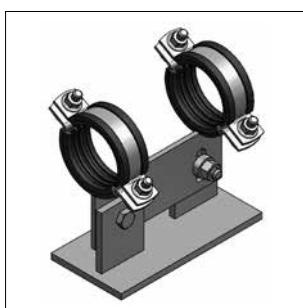
Closure:	Hexagon nut / closure screw
Model:	T-support
Support width:	100
Support length:	200/300
OD:	20 up to 219 mm
Height, adjustable:	100 up to 125 mm 125 up to 150 mm 150 up to 175 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized hot-dip galvanized

Delivery time: on request

■ Sliding support T 100/200 and T 100/300, height-adjustable, with 2 pipe clamps, sound insulated



Sliding support T 100/200

**Specification:**

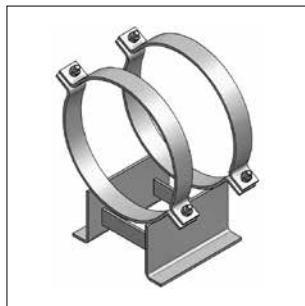
Closure:	Hexagon nut / closure screw
Model:	T-support
Support width:	100
Support length:	200/300
OD:	20 up to 219 mm
Sound insulation:	according to DIN 4109
Height, adjustable:	100 up to 125 mm 125 up to 150 mm 150 up to 175 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized hot-dip galvanized
Sound insulation lining:	EPDM (ceramic lining on request)
Temperature resistance:	- 35 °C up to + 100 °C

Delivery time: on request

■ Sliding sledge



Sliding sledge

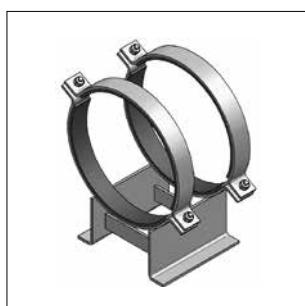
Specification:

Closure: Hexagon nut / closure screw
 Model: Double-L-support
 OD: 219 up to 813 mm
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: raw, galvanized
 hot-dip galvanized

■ Sliding sledge, sound insulated



Sliding sledge, sound insulated

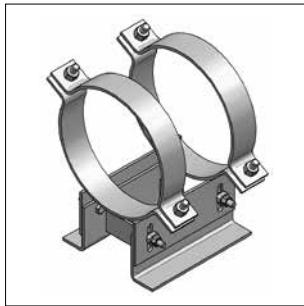
**Specification:**

Closure: Hexagon nut / closure screw
 Model: Double-L-support
 OD: 219 up to 813 mm
 Sound insulation: according to DIN 4109
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized
 hot-dip galvanized
 Sound insulation lining: EPDM
 (ceramic lining on request)
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 6 mm

■ Sliding sledge, height adjustable



Sliding sledge, height adjustable

Specification:

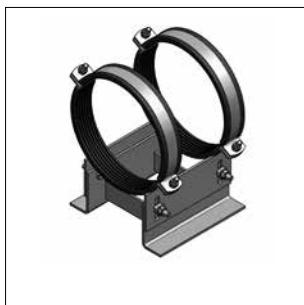
Closure:	Hexagon nut / closure screw
Model:	Double-L-support
OD:	219 up to 813 mm
Height, adjustable:	100 up to 150 mm 150 up to 200 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	raw, galvanized hot-dip galvanized

Delivery time: on request

■ Sliding sledge, height adjustable, sound insulated



Sliding sledge, sound insulated

Specification:

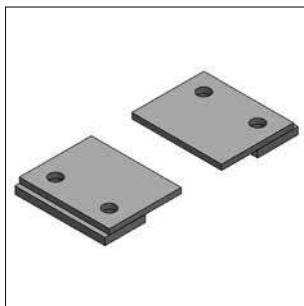
Closure:	Hexagon nut / closure screw
Model:	Double-L-support
OD:	219 up to 813 mm
Sound insulation:	according to DIN 4109
Height, adjustable:	100 up to 150 mm 150 up to 200 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized hot-dip galvanized
Sound insulation lining:	EPDM (ceramic lining on request)
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm

Delivery time: on request

■ Fixation plate for Sliding sledge

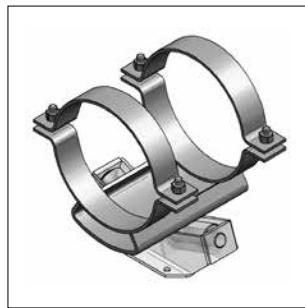


Fixation plate for Sliding sledge

Technical data:

Material:	steel
Material type:	S235JR
Surface:	raw, galvanized hot-dip galvanized
Delivery time:	on request

■ Insulation-saddle for roller-bearing



Insulation-saddle for roller-bearing

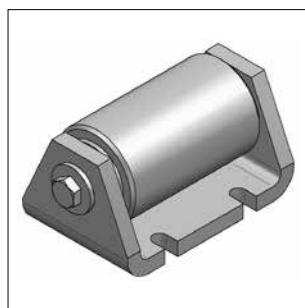
Specification:

Closure: Hexagon nut / closure screw
 OD: 219 up to 813 mm
 Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: raw, galvanized
 hot-dip galvanized

■ Single-roller-bearing



Single-roller-bearing

Specification:

Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: raw, galvanized, hot-dip galvanized
 Material axle: stainless steel, polished
 Material bush: bronze

■ Double-roller-bearing, axial

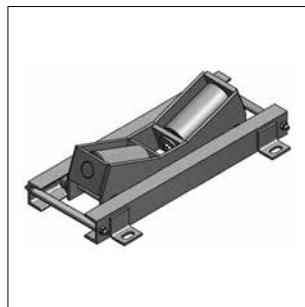


Double-roller-bearing, axial

Technical data:

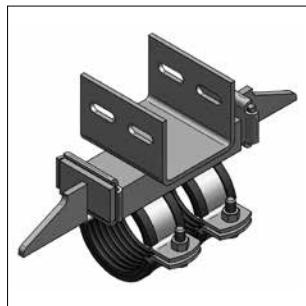
Material: steel
 Material type: S235JR
 Surface: raw, galvanized, hot-dip galvanized
 Material axle: stainless steel, polished
 Material bush: bronze

■ Double-roller-bearing, radial-axial

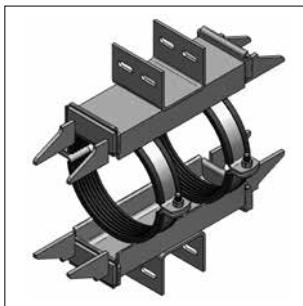
Double-roller-bearing
radial-axial**Technical data:**

Material: Steel
 Material type: S235JR
 Surface: raw, galvanized, hot-dip galvanized
 Material axle: stainless steel, polished
 Material bush: bronze

■ Fixpoint with CENTUM® Massive connector



Fixpoint type A with CENTUM®
Massive connector



Fixpoint type B with CENTUM®
Massive connector



Specification:

Application: established MEFA fixpoint for high power transmission while sound insulation. Due to welded Massive connector it's possible to mount this fixpoint directly at CENTUM square profile.

Sound insulation: according to DIN 4109

Accessory: T-lock head, toothed, M12x40

Technical data:

Material: Steel
Material type: S235JR

Surface: galvanized
Pressure piece: raw

Sound insulation lining: EPDM/ Silicon

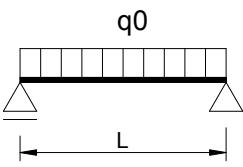
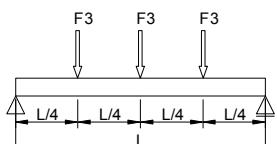
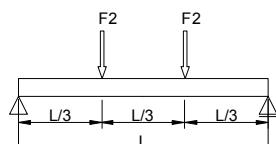
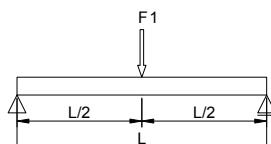
Temperature resistance: -35°C up to +100°C/ -50°C up to +250°C

Remark: for further informations regarding dimensions, loads and assembly please contact our application engineering.

■ Load values CENTUM® profile rails XL 80 / XL 100 / XL 120

bearing spacing [mm]	XL 80						XL 100						XL 120					
	single load 1xF1		double load 2xF2		three loads 3xF3		single load 1xF1		double load 2xF2		three loads 3xF3		single load 1xF1		double load 2xF2		three loads 3xF3	
	[kN]	[kN]	[kN]	[kN]	[kN/m]	[kN/m]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[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	24,63	131,34	-	-	-	-	254,41
750	15,35	11,51	7,68	40,91	29,91	22,43	14,96	79,74	49,26	36,94	27,69	18,46	73,83	-	-	-	-	-
1000	11,50	8,63	5,75	22,99	22,41	16,81	11,21	44,82	36,92	28,66	29,51	22,13	14,76	47,21	-	-	-	-
1250	9,19	6,89	4,60	14,70	17,91	13,44	8,96	-	-	-	-	-	-	-	-	-	-	-
1500	7,64	5,73	3,82	10,19	14,91	11,18	7,46	19,88	24,56	18,42	12,28	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

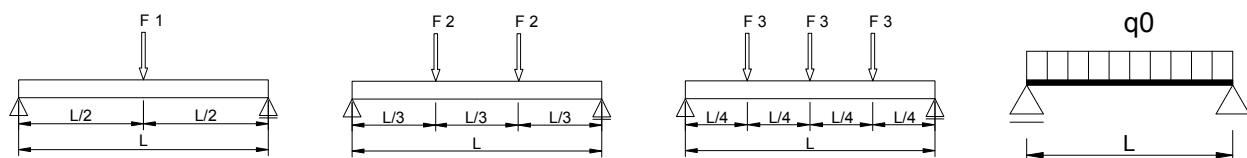
max. bending $f_{zul} = L/200$ $\gamma = 1,54$ Safety Elastic limit $f_y = 275 \text{ N/mm}^2$, E-Modul 210.000 N/mm 2



■ Load values CENTUM® profile rails XL 120s / XL 200

bearing spacing [mm]	XL 120s			XL 200		
	single load 1xF1	double load 2xF2	three loads 3xF3	single load 1xF1	double load 2xF2	three loads 3xF3
	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN/m]
500	88,71	66,53	44,36	268,32	179,33	129,69
750	59,11	44,34	29,56	157,62	119,51	89,63
1000	44,30	33,23	22,15	88,60	89,59	67,19
1250	35,41	26,56	17,71	56,65	71,63	53,72
1500	29,48	22,11	14,74	39,30	59,64	44,73
1750	25,23	18,93	12,62	28,84	51,08	38,31
2000	22,05	16,54	11,03	22,05	44,65	33,49
2250	19,56	14,67	9,78	17,39	39,64	29,73
2500	17,57	13,18	8,79	14,06	35,63	26,72
2750	15,94	11,96	7,97	11,59	32,34	24,26
3000	14,58	10,93	7,29	9,72	29,60	22,20
3250	13,42	10,07	6,71	8,26	27,27	20,46
3500	12,43	8,82	6,22	6,87	25,28	18,96
3750	11,56	7,65	5,49	5,56	23,54	17,66
4000	10,81	6,68	4,80	4,56	22,03	16,52
4250	10,02	5,88	4,22	3,78	20,68	15,51
4500	8,87	5,21	3,74	3,16	19,48	14,61
4750	7,90	4,64	3,33	2,66	18,41	13,81
5000	7,07	4,15	2,98	2,26	17,44	13,08
5250	6,34	3,73	2,67	1,94	16,56	12,42
5500	5,72	3,36	2,41	1,67	15,76	11,82
5750	5,16	3,03	2,18	1,44	15,03	10,82
6000	4,68	2,75	1,97	1,25	14,35	9,88
6250	-	-	-	-	13,73	9,05
6500	-	-	-	-	13,15	8,32
6750	-	-	-	-	12,61	7,66
7000	-	-	-	-	12,04	7,07
7250	-	-	-	-	11,14	6,54
7500	-	-	-	-	10,32	6,06
7750	-	-	-	-	9,57	5,62
8000	-	-	-	-	8,89	5,22

max. bending $f_{zul.} = L/200$ $\gamma = 1,54$ Safety Elastic limit $f_y = 275 \text{ N/mm}^2$; 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 64-0
Fax +49 7944 64-38
technik@mefa.de

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■ 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 [mm]	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%
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
	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
	42,4	2,30	2,27	3,40	4,98	6,00	30	70	100
32	44,5	2,30	2,39	3,64	5,60	7,08	40	90	130
	48,3	2,30	2,61	4,11	6,16	7,67	40	90	130
40	51,0	2,30	2,76	4,45	6,57	8,10	40	90	130
	57,0	2,30	3,10	5,26	7,89	10,00	50	110	160
50	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
65	70,0	2,60	4,32	7,62	11,01	13,85	60	130	190
	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
100	108,0	2,90	7,52	15,72	22,30	28,89	100	210	310
	114,3	3,20	8,77	17,91	24,72	31,43	100	210	310
125	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
150	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
200	159,0	4,00	15,29	33,20	41,62	49,17	100	260	360
	168,3	4,00	16,21	36,39	45,15	52,87	100	270	370
225	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
250	219,1	4,50	23,82	58,48	69,08	77,76	100	320	420
	244,5	5,00	29,53	72,72	84,23	93,39	100	340	440
300	273,0	5,00	33,05	87,37	99,91	109,61	100	370	470
	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
	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
	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
	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%		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

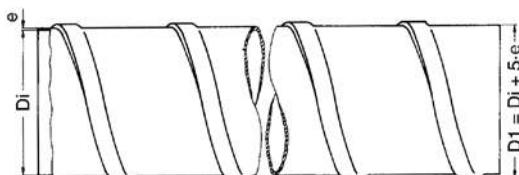
- weights can differ

- 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 [mm]	Wall- thickness [mm]	Pipe weight empty [kg/m]	Pipe weight waterfilled [kg/m]	Fastening distances [m]
Type drainpipe cast iron - acc. to DIN EN 877 (DIN 19522)					
40	48	3,0	3,10	4,50	
50	58	3,5	4,30	6,40	approx. 1,50
70	78	3,5	5,90	9,90	According to the
80	83	3,5	6,30	10,90	statements of the
100	110	3,5	8,50	16,80	manufacturer, every
125	135	4,0	11,90	24,60	pipe should be
150	160	4,0	14,20	32,40	supported twice at
200	210	5,0	23,40	54,80	least; additionally
250	274	5,5	33,60	88,00	every shaped piece
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 empty [kg/m]	Pipe weight waterfilled [kg/m]	Fastening distances [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 $a = 0,026\text{mm}/(\text{mK})$)					
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

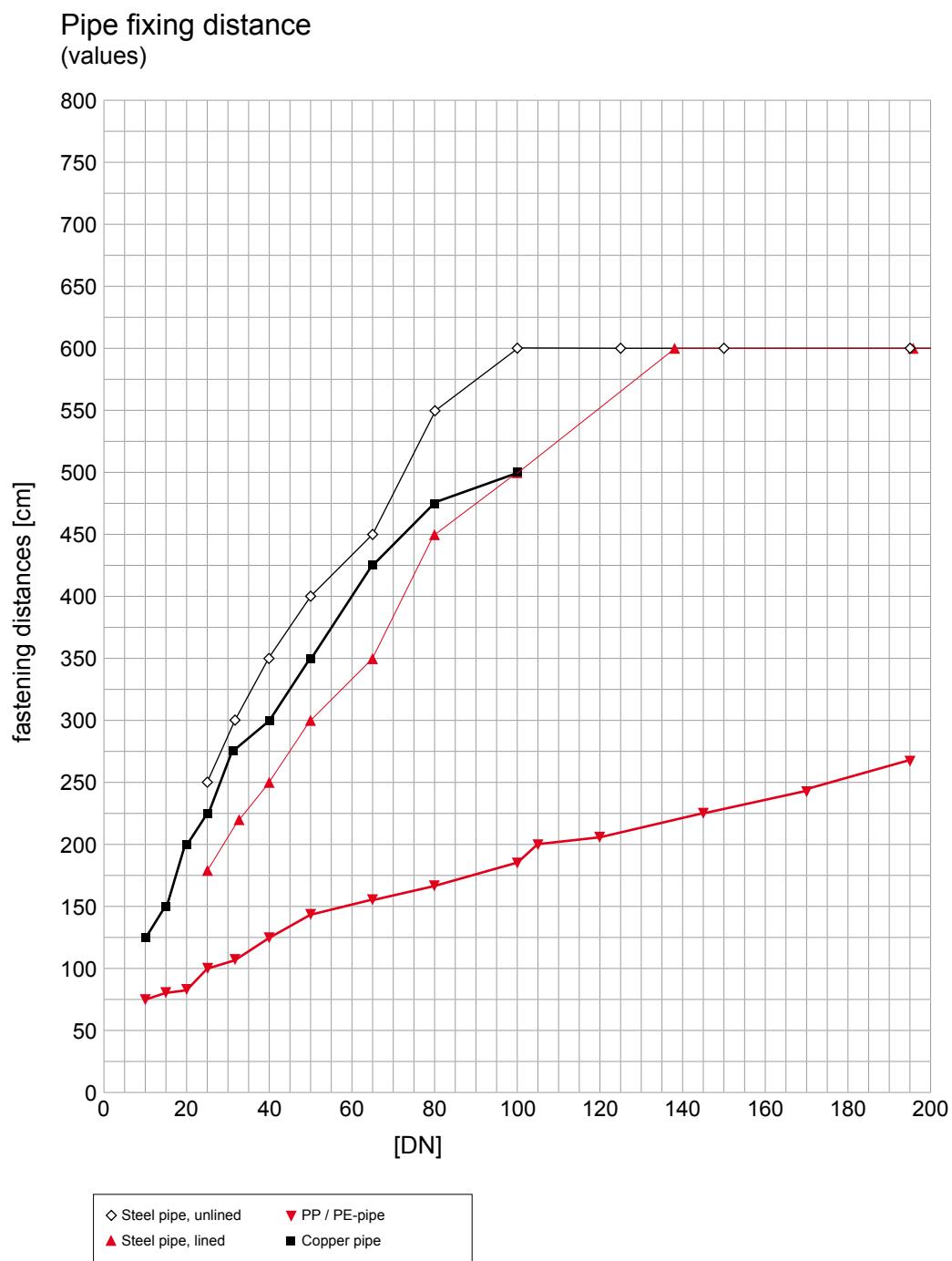
■ Fastening distance

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:

$$\Delta L = \text{elongations mm}$$

L = length of calculated pipe m

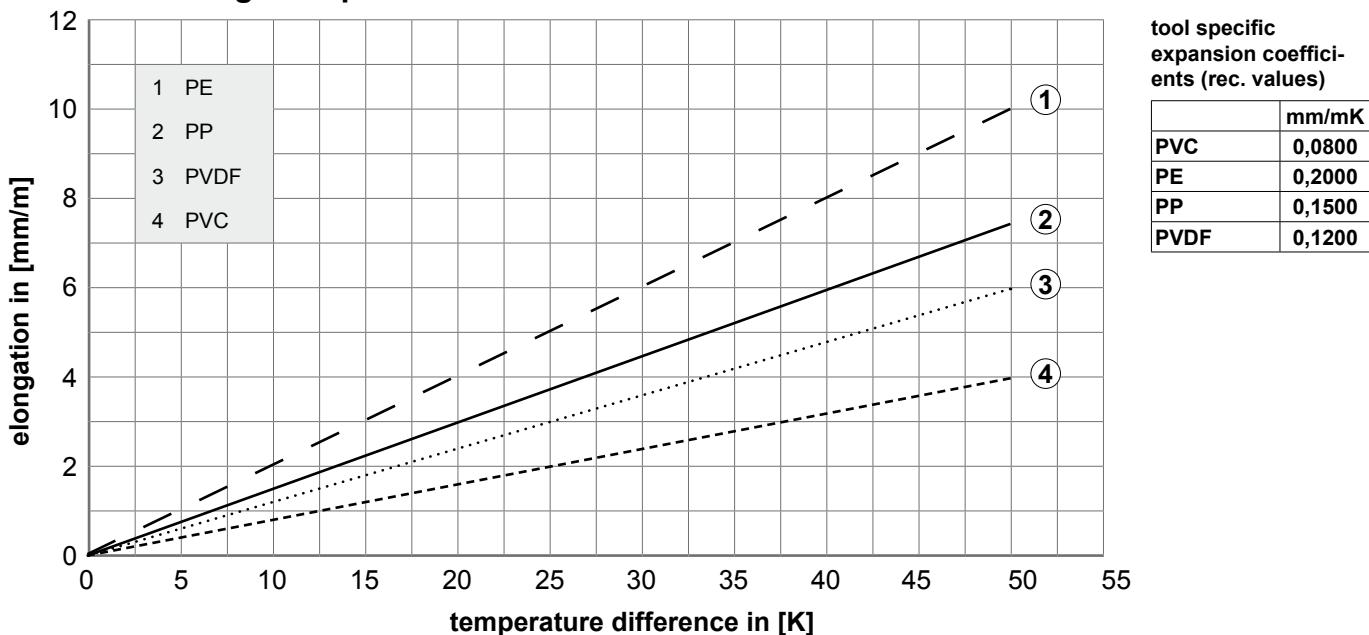
ΔT = temperature difference between medium- and installation temperature K

α = coefficient of linear expansion mm/m * K

Formula:

$$\Delta L = L \times \Delta \times \alpha$$

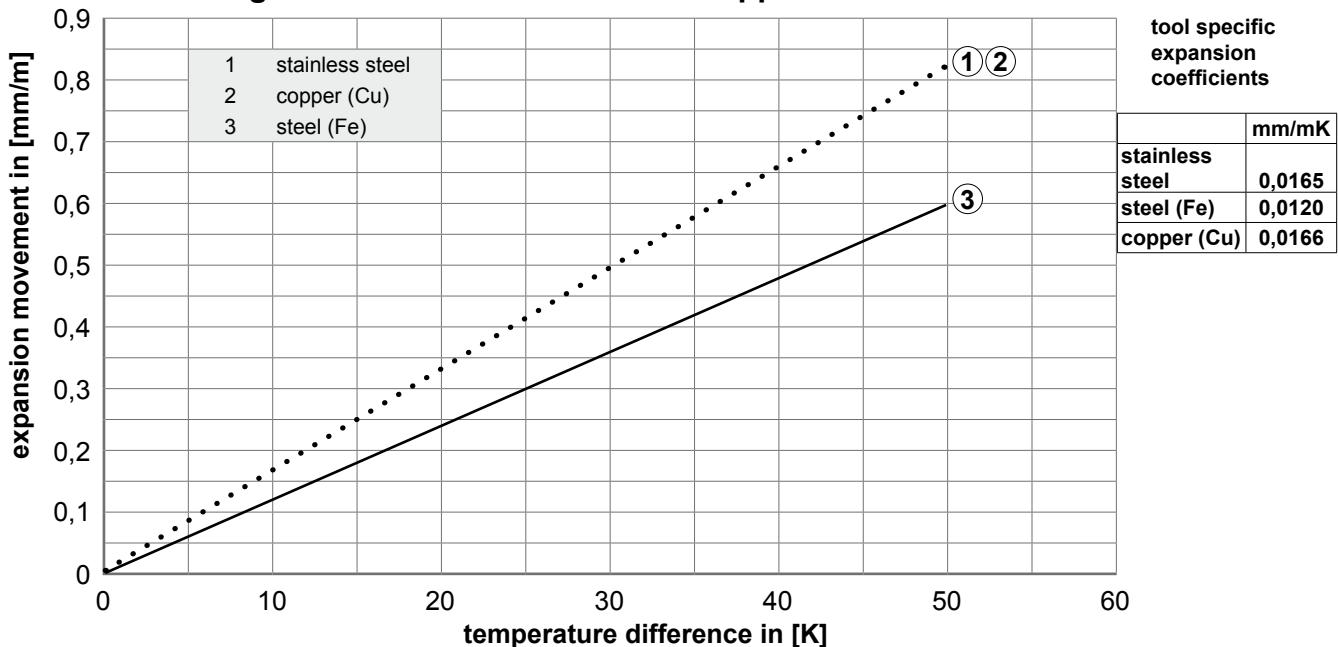
Strain diagram - plastics



tool specific
expansion coefficients (rec. values)

	mm/mK
PVC	0,0800
PE	0,2000
PP	0,1500
PVDF	0,1200

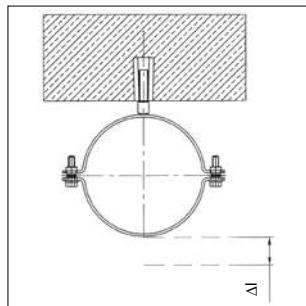
Strain diagram - stainless steel / steel / copper



tool specific
expansion
coefficients

	mm/mK
stainless steel	0,0165
steel (Fe)	0,0120
copper (Cu)	0,0166

■ Maximum fire load for pipe clamps Omnia MB



Identification	Diameter range [mm]
Pipe clamp Omnia MB, lined	15 - 125

Δl = elongation

Summary: Admissible fire loads (RAL GZ 656)

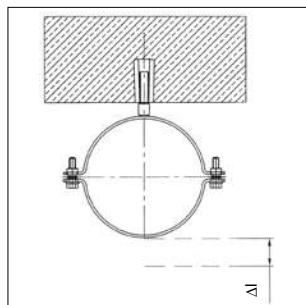
Admissible loads $F_{zul, Rd}$ and elongation Δl for Omnia MB pipe clamp (ceiling-mounted)

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]
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 centrical tensile load on Omnia MB pipe clamp

Δl = vertical elongation of Omnia MB 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

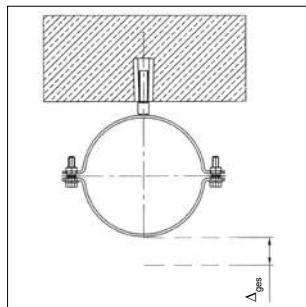
Δl = elongation

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

■ Maximum fire load for pipe clamps Maxima PSM



Identification	Diameter range [mm]
Pipe clamp Maxima PSM, lined	15 - 275
Pipe clamp Maxima PSM, unlined	15 - 275

Δl_{ges} = elongation of system (pipe clamp and hanger)

Summary: Admissible loads (as per MPA test report 901 1118 000 /La/PK)

Table 1 Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (ceiling-mounted)

Diameter range pipe [mm]	fire resistance period 30 min	
	F_{zul} [kN]	Δl_s [mm]
15 up to 64	1,25	50
65 up to 117	1,25	50
120 up to 223	2,60	55
225 up to 275	2,60	70

Table 4 Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (suspended with threaded rod)

Diameter range pipe [mm]	thread rod-length [mm]	fire resistance period 30 min	
		F_{zul} [kN]	Δl_s [mm]
65 up to 117	≤ 500	1,25	57
	> 500/ ≤ 1000		64
120 up to 223	≤ 500	1,80	62
	> 500/ ≤ 1000		69
225 up to 275	≤ 500	1,80	77
	> 500/ ≤ 1000		84

Table 2 Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (suspended with threaded rod)

Diameter range pipe [mm]	thread rod-length [mm]	fire resistance period 30 min	
		F_{zul} [kN]	Δl_s [mm]
15 up to 64	≤ 500	0,80	57
	> 500/ ≤ 1000		64

Table 3 Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (suspended with threaded rod)

Diameter range pipe [mm]	thread rod-length [mm]	fire resistance period 30 min	
		F_{zul} [kN]	Δl_s [mm]
15 up to 64	≤ 500	1,20	57
	> 500/ ≤ 1000		64
65 up to 117	≤ 500	1,20	57
	> 500/ ≤ 1000		64
120 up to 223	≤ 500	1,20	62
	> 500/ ≤ 1000		69
225 up to 275	≤ 500	1,20	77
	> 500/ ≤ 1000		84

Table 5 Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (suspended with threaded rod)

Diameter range pipe [mm]	thread rod-length [mm]	fire resistance period 30 min	
		F_{zul} [kN]	Δl_s [mm]
102 up to 117	≤ 500	1,25	57
	> 500/ ≤ 1000		64
120 up to 223	≤ 500	2,60	62
	> 500/ ≤ 1000		69
225 up to 275	≤ 500	2,60	77
	> 500/ ≤ 1000		84

F_{zul} = max. admissible centrical tensile load on Maxima PSM pipe clamp

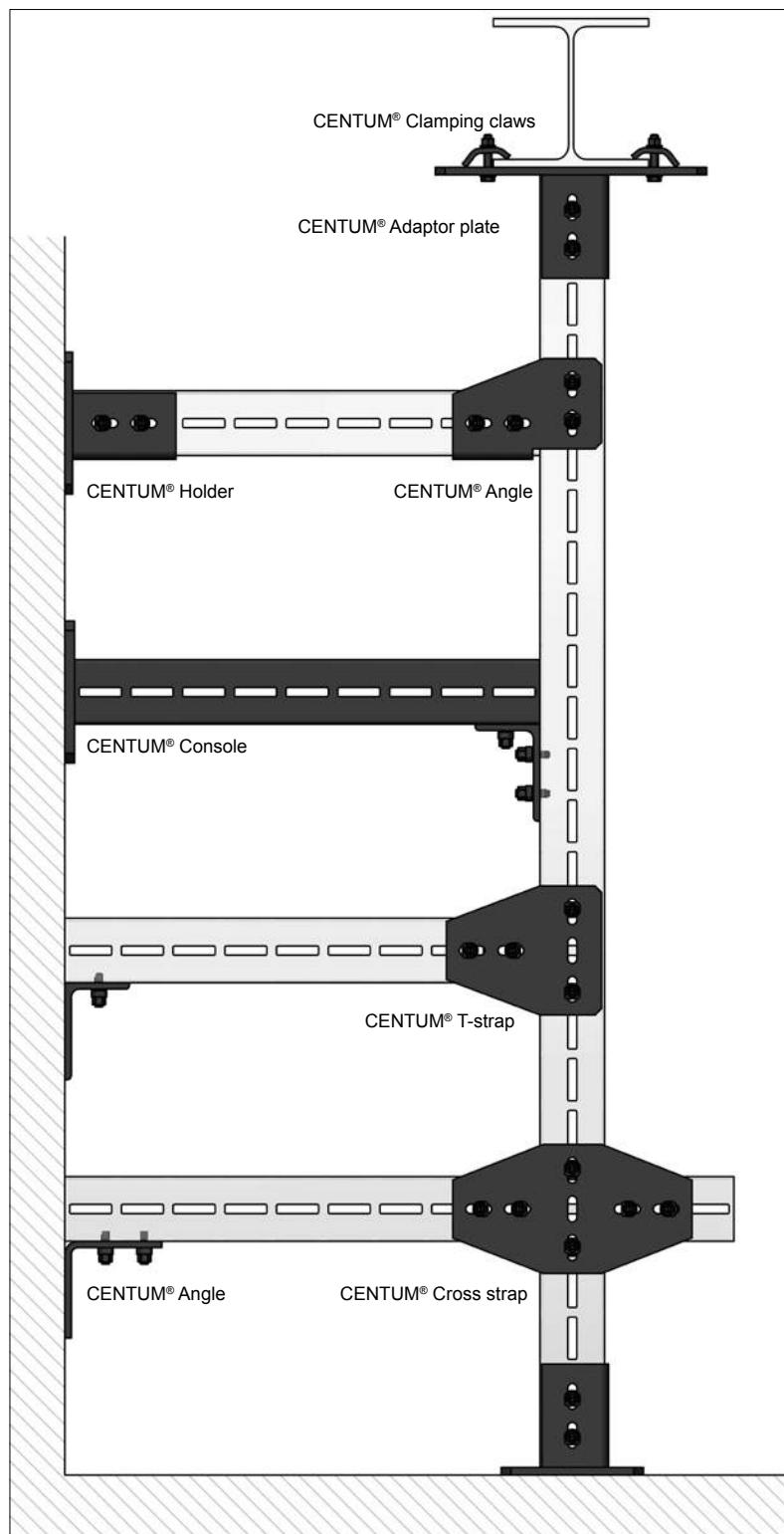
Δl_s = vertical elongation of Maxima PSM pipe clamp

Δl_{ges} = vertical elongation of Maxima PSM pipe clamp incl. Suspension

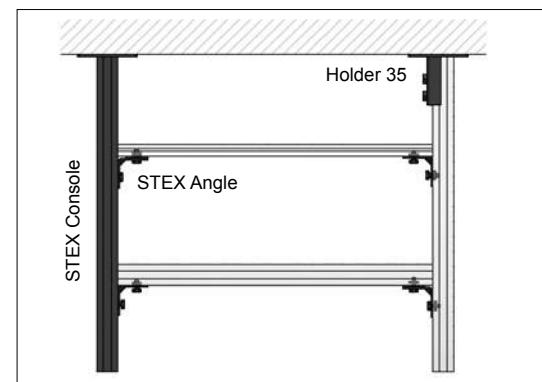
■ Construction examples for pipe installations

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.

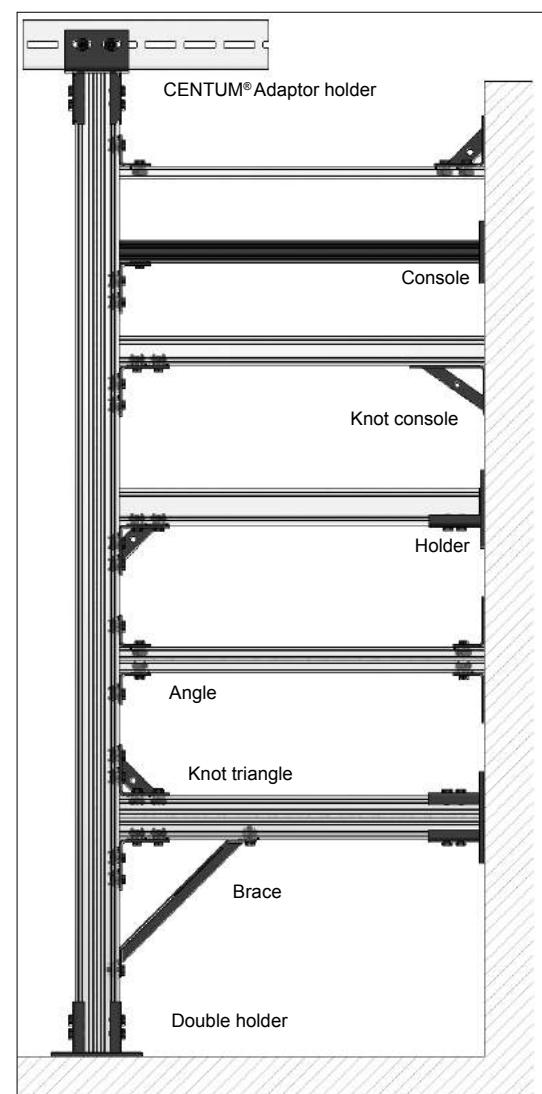
If there are any problems, MEFA guarantees to find the best solution to resolve and present suitable suggestions for occurred problem.



Construction example CENTUM



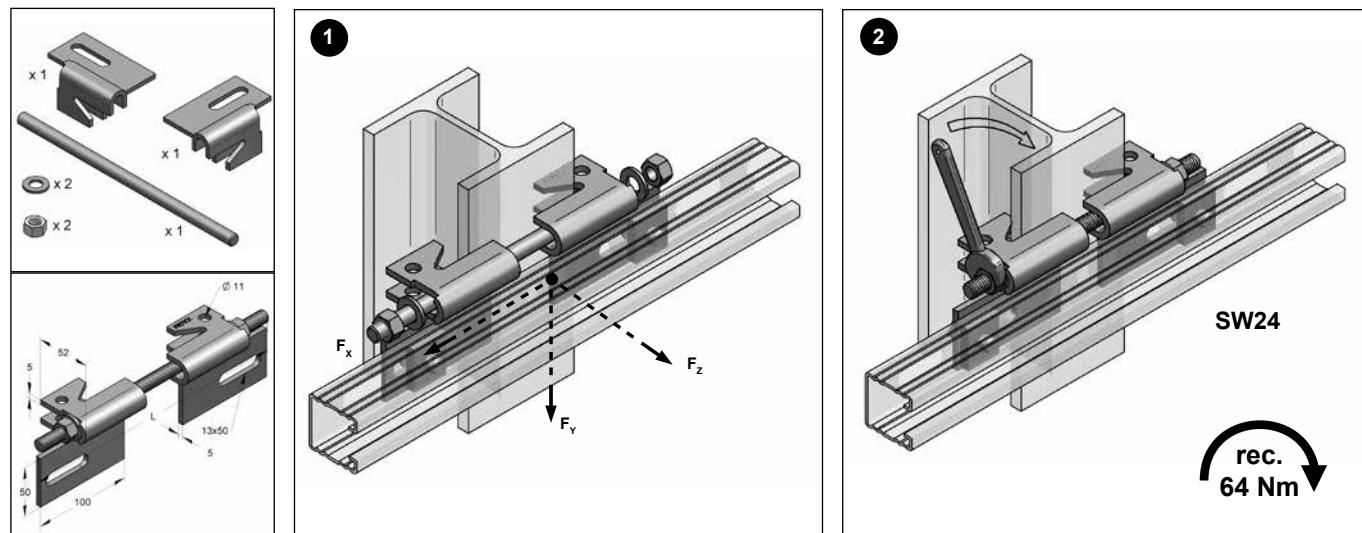
Construction example STEX 35



Construction example STEX 45

■ Assembly instructions Girder connection vertical

Resilient, vertical clamping connection of c-profile rails to steel girder



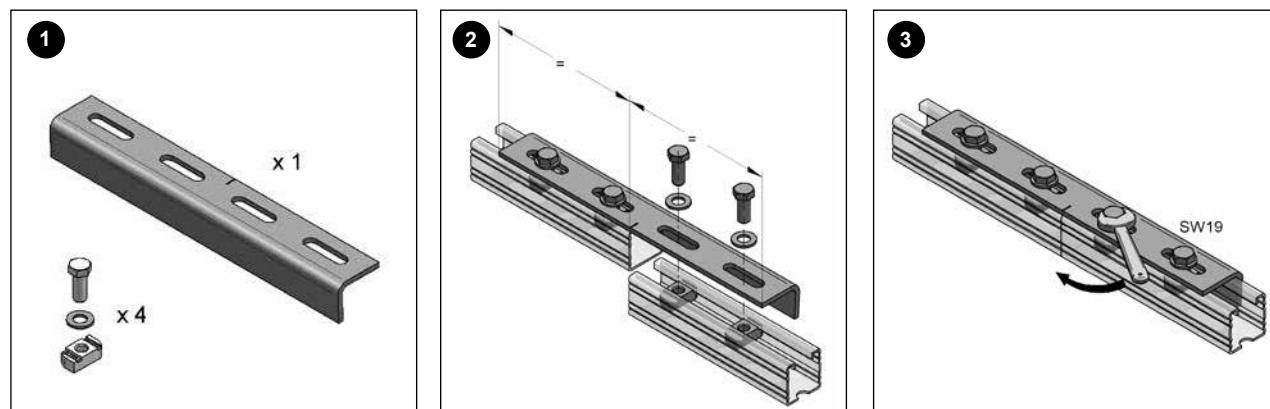
Identification	max. load for girder			Weight	Part-No.		
	F _x [kN]	F _y [kN]	F _z [kN]				
Girder connection vertical type D III	4,0	4,0	4,0	100-220	100-200	1,10	08146103
Girder connection vertical type D IV	4,0	4,0	4,0	280-360	160-300	1,99	08146104

Important:

Please note recommended torques!

■ Assembly instructions connector 45

Element to connect profile rails system 45



Accessory:
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 DIN 7089-12

Center connector element between both ends of profile rails (consider central mark).

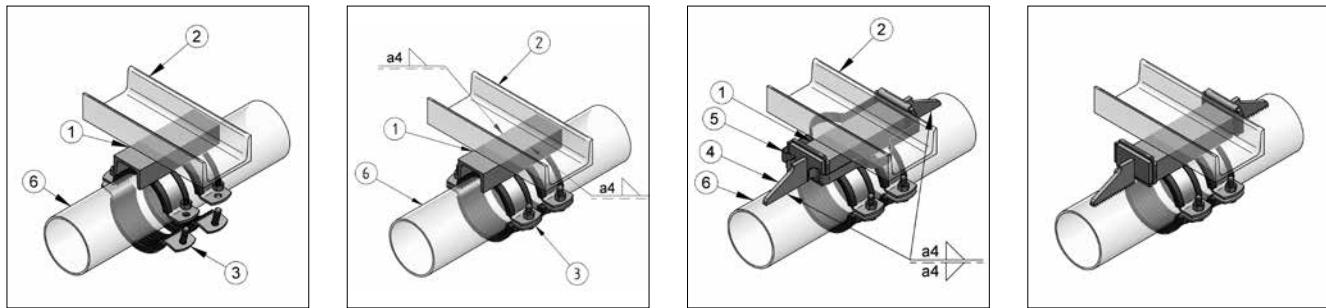
To reach similar load capacity like a complete rail, mount connector on top of rail (equal if slot is on top or bottom side). For double profile rails two connectors shall be taken.

Please consider recommended torques of tooth plates / stex elements (see MEFA catalogue).

No gap may exist between rails.

Identification	H [mm]	B [mm]	L [mm]	Weight [kg/Set]	Part-No.
Connector 45	39,7	50	350	1,05	08162001
Connector 45	39,7	50	350	1,05	08162001/zn

■ Assembly instructions of fixpoints



Version I: Pipe not installed yet

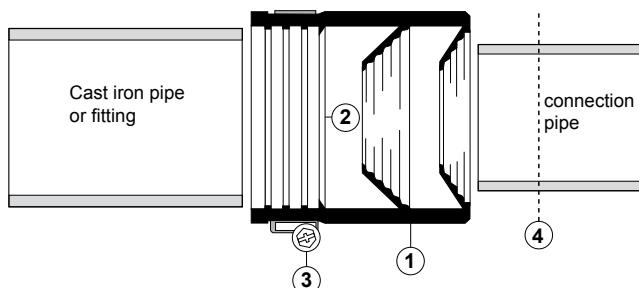
1. Mount body material of fixpoint (1) on supporting structure (2) (e.g. by welding)
2. When installing pipe, fix pipe (6) in fixpoint clamps (3).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

Version II: Pipe is installed yet

1. Screw fixpoint clamps (3) of fixpoint structure (1) on pipe (6).
2. Straight body material 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.

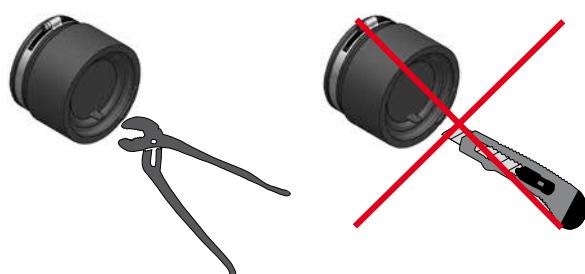
mounting clamps for fixing pressure pads have to be ordered separately

■ Assembly instructions SIMA-CON



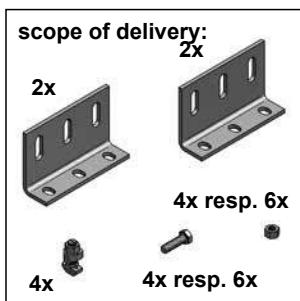
1. Put completely delivered SIMA-CON (1) onto tube end or fitting up to distance ring (2). Fix with tensioning strap (3) (cross slot, SW 7, rec. torque 2 Nm).
2. Sign connecting pipe for required plug-in module depth (4), if necessary use lubricant for insertion.

Attention: Do not use sharp-edged items. To pull out opening pin just use gripper.

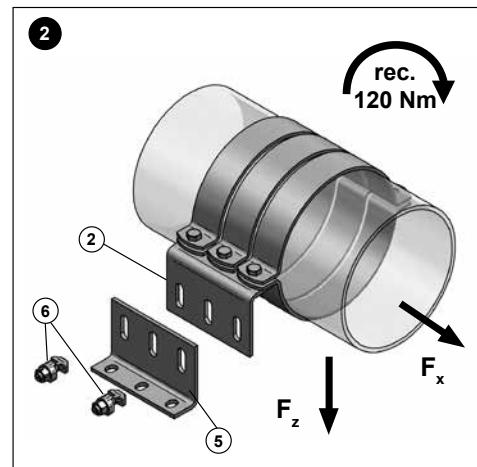
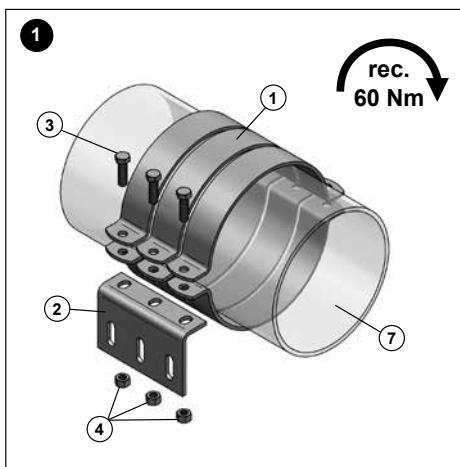


Assembly instructions fixpoint bracket HV

for height adjustable bracket of pipes, without sound insulation



Technical data see catalogue chapter 3a.



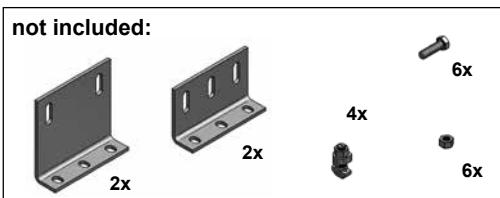
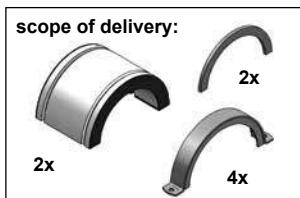
- 1.) Fix suitable MEFA fixpoint clamp (1) on pipe (7). Mount side part (2) under straps of pipe clamp. Attract screws (3) and nuts (4) with torque of 60 Nm.

- 2.) Install stilt (5) using T-lock heads (6) on side panel (2). Adjust desired height and attract with torque of 120 Nm. Fix entire construction on any suitable substructure (e.g. C-profile rail, CENTUM, steel girder).

Important:

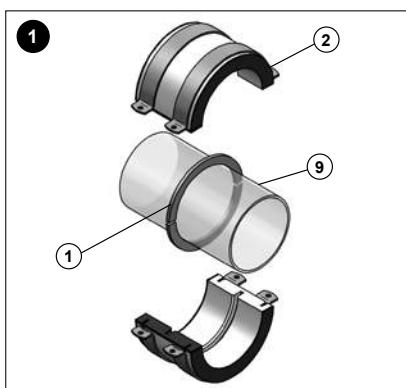
Please note recommended torque!

Assembly instructions insulated fixpoint



Important:

Please note recommended torque!



- 1.) Weld inner split rings (1) of insulated fixpoint to steel pipe (9).

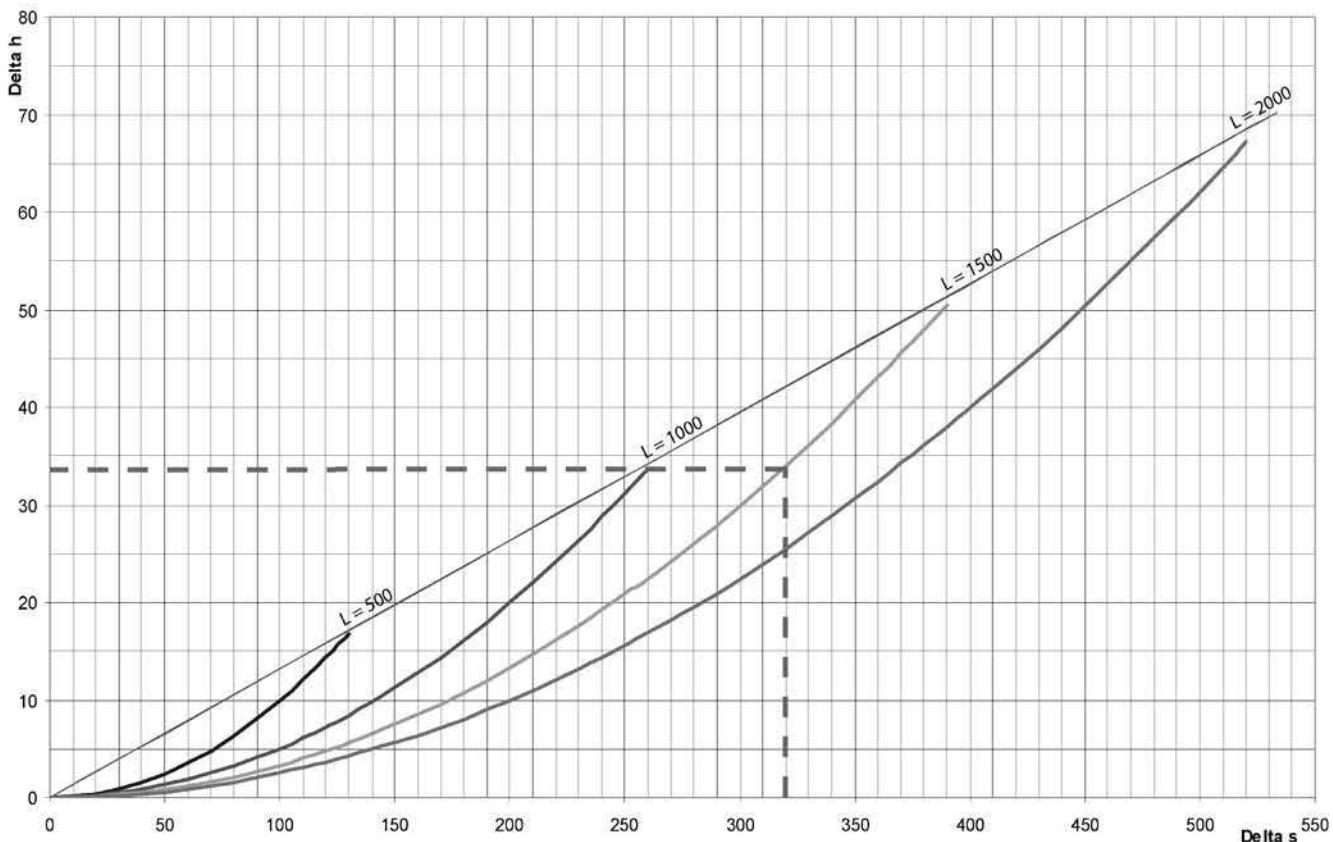
- Ø 76,1 to Ø 114,3 per split ring with 3 segments a3 60 mm alternated weld
- Ø 139,7 to Ø 406,4 per split ring with 4 segments a3 60 mm alternated weld

Raw parts e.g. inner split rings, should be coated after welding. Stick PU-halfshell (2) across inner split ring (1).

- 2.) Mount Side part (3) of recommended Fixpoint bracket HV under straps of outer split ring (4). Attract screws (5) and nuts (6) with torque of 10 Nm.

- 3.) Install stilt (7) using T-lock heads (8) on side panel (3). Adjust desired height and attract with torque of 120 Nm. Fix entire construction on any suitable substructure (e.g. C-profile rail, CENTUM, steel girder).

■ Max. absorptional pipe expansion of pendular pin joint



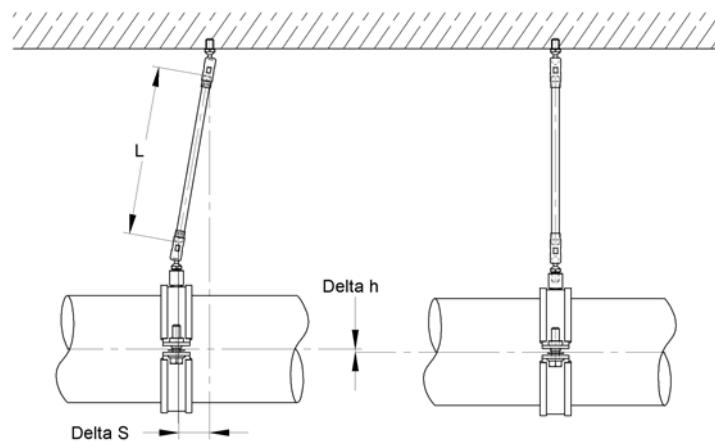
Example:

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 $\geq 15^\circ$.

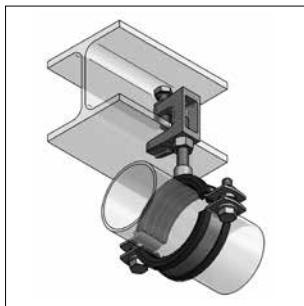
Length threaded rod	L= 500 mm
Length threaded rod	L= 1000 mm
Length threaded rod	L= 1500 mm
Length threaded rod	L= 2000 mm
max. amplitude	= 15°

Example

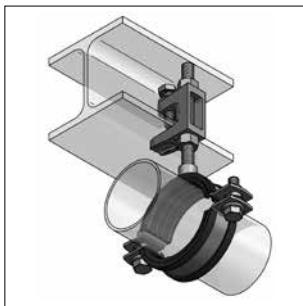
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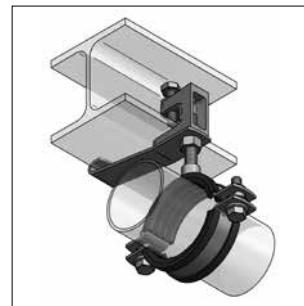
■ Construction examples girder clamps



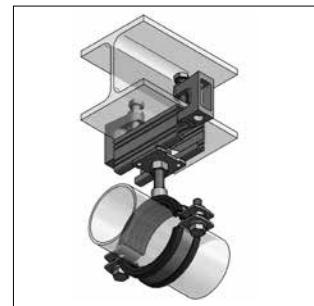
Single fixation of girder clamp underneath



Single fixation of girder clamp underneath with pass hole



girder clamp with safety lug



girder clamps combined with profile channel

Notice for mounting of girder clamp on girder:

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 girder clamp for fixation on pipes > DN 50 mm. It should be noticed that girder clamps, suitable for pipes above DN 65 only can be mounted on girder with a bearing area, differing less than 10° of horizontal.

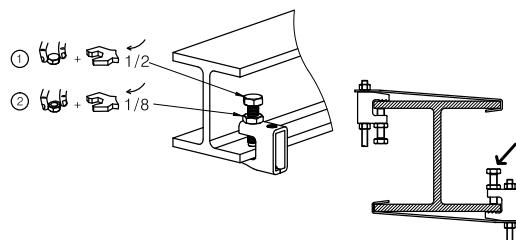
Clamps may only be loaded by vertical tension.

Clamping screws have to grip on inclined surface of girder.

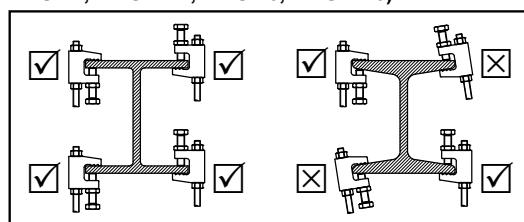
Nominal pipe diameter (mm)	Safety lug
≤ DN 50	-
> DN 50 ≤ 100	S 3
> DN 100 ≤ 150	S 5

Construction examples are valid for girder clamps of cast iron and steel

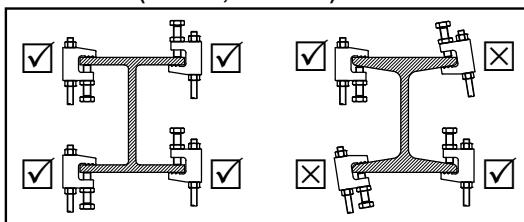
■ Construction examples beam clamps MKS



For VdS (MKS 8, MKS M8, MKS 10, MKS M10, MKS 12, MKS M12, MKS 16, MKS M16):



For FM & UL (MKS 10, MKS M10):



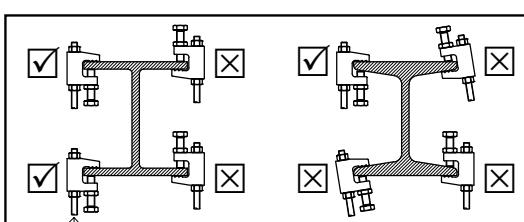
Pipe width	Beam clamp	Threaded rod	Safety lug	Safe working load (kN)
≤ DN 50	MKS 8 / MKS M8	M8	-	1,2
> DN 50 ≤ 100	MKS 10 / MKS M10	M10	S 3	2,5
> DN 100 ≤ 150	MKS 12 / MKS M12	M12	S 5	3,5
> DN 150 ≤ 200	MKS 16 / MKS M16	M16	S 8	5,0

Installation Tips:

Slide MKS 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 MKS 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 50 (see table). Dimensions and material meet the VdS CEA-guideline for sprinkler systems.



For FM & UL (MKS 12, MKS M12, MKS 16, MKS M16):

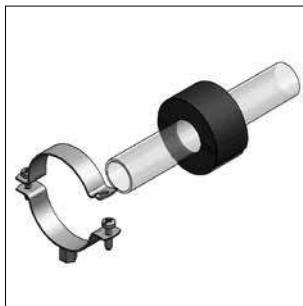
■ Assembly instructions HUSKY



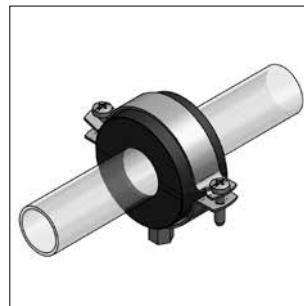
Position insulation body on pipe



Close insulation body and press overlap*



Position insulation body on pipe to pipe

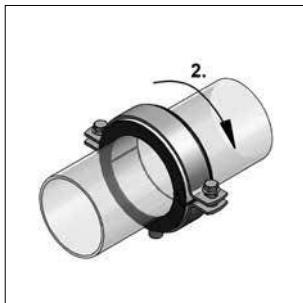


Close clamp and adjust closings in parallel

■ Assembly instructions POLAR plus insulated pipe clamp



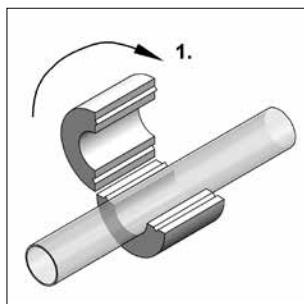
Position pipe in insulated pipe clamp



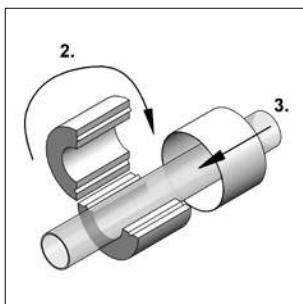
Close insulated pipe clamp*

* Bonding of shell and pipe is not necessary

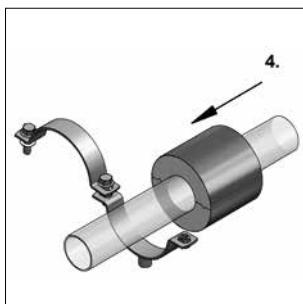
■ Assembly instructions ALU/PU >80< insulated pipe clamp



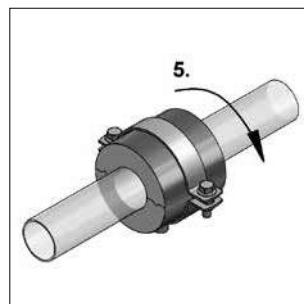
Enclose insulation body on pipe and close



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

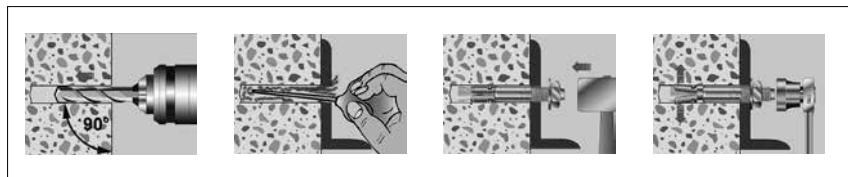
Gluing of insulated pipe clamps with sound proofing, made of synthetic rubber or closed cell PE material can be executed easily with usual glue of the insulation manufacturers (for example Armaflex 520 / Kaiflex „Spezial Kleber“).

Notice:

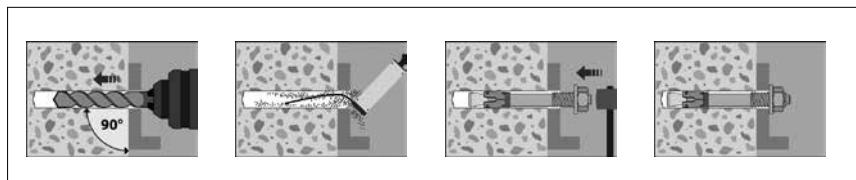
- Insulated pipe clamp ALU/PU 80:** less insulation thickness is recommended for glueing with insulated connection interface
 a) sealing via applying frontsides completely with insulating glue or
 b) buildup insulation at connection field with fitted insulation strips to insulation thickness of PUR-field.

■ Assembly instructions anchor

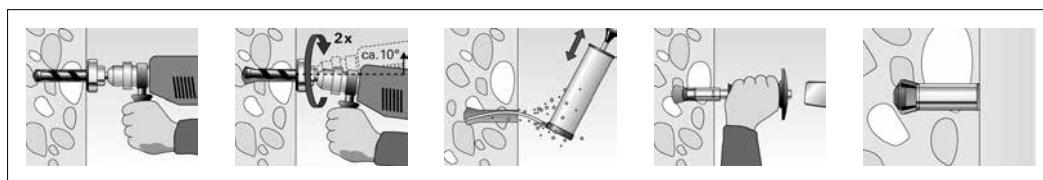
Bolt anchor BZ plus and BZ plus A4



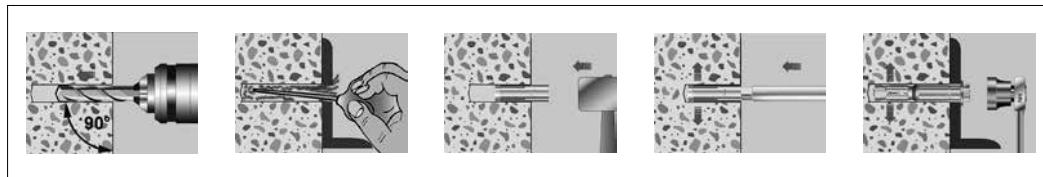
Nail anchor N and N-M



Zykon hammerset anchor FZEA II

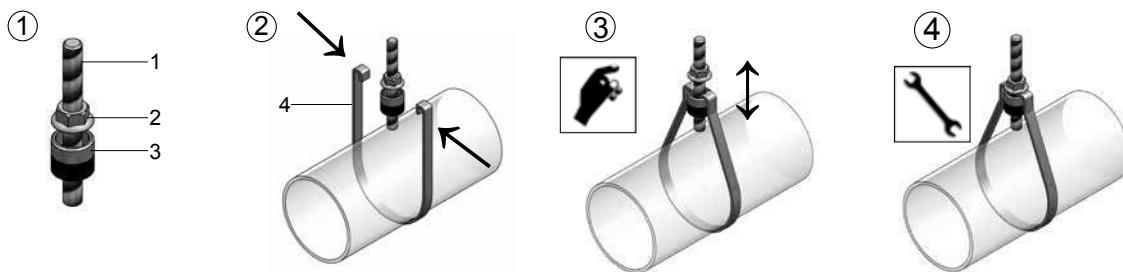


Impact anchor E and E A4



■ Assembly instructions Pipe Loop Hanger „S“

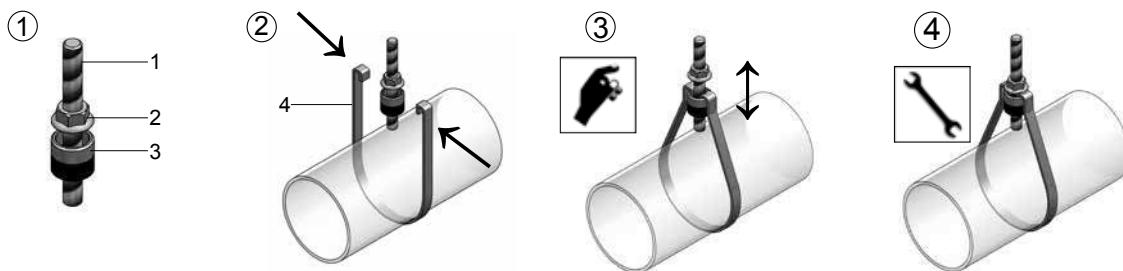
[VdS-Zulassung Nr. G 404 0051]



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 nut	cup nut - Ø [mm]	Only for Thread	Only for Pipes DN
Size 1	19,0	M8	≤ DN 50
Size 2	22,0	M10	> DN 50 ≤ DN100
Size 3	26,0	M12	> DN100 ≤ DN150
Size 4	34,0	M16	> DN150 ≤ DN200

■ Assembly instructions Pipe Loop Hanger „FM“ SLH

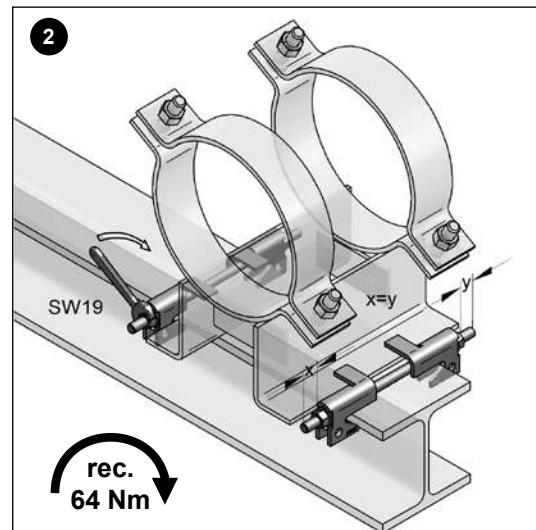
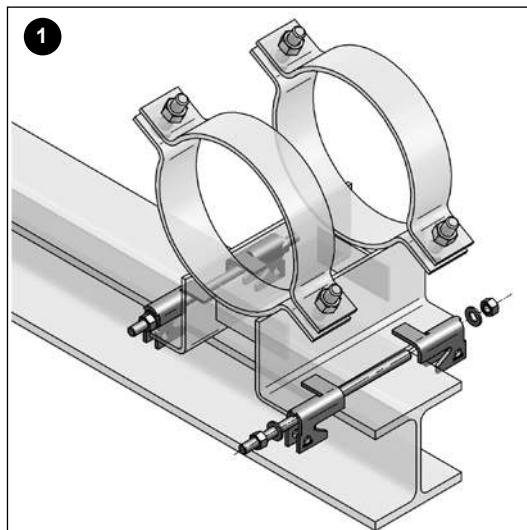


1. Mount threaded rod (1) into dowel/anchor. Fix flange nut (2) onto threaded rod (1). Allocation as per margined table. Push cup nut (3) from down across threaded rod (1).
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4. Finally screw pipe loop together with flange nut (2).

cup nut	cup nut - Ø [mm]	Only for Thread	Only for Pipes DN
Size 1	19,0	M8	≤ DN 50
Size 2	22,0	M10	> DN 50 ≤ DN100
Size 3	26,0	M12	> DN100 ≤ DN150
Size 4	34,0	M16	> DN150 ≤ DN200

■ Assembly instructions Guiding Clamp Type A

For lateral guidance of sliding supports and sliding sledges on steel girder

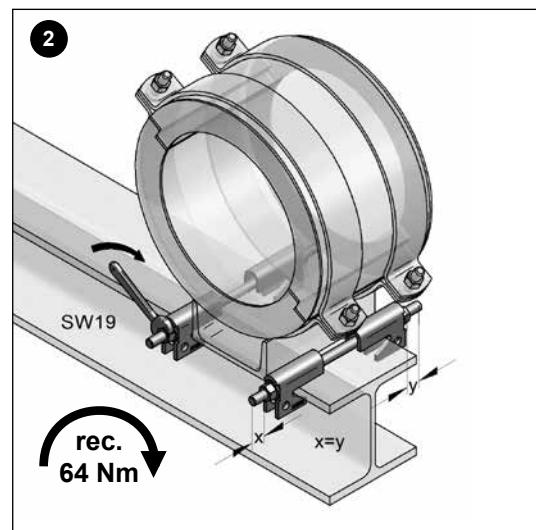
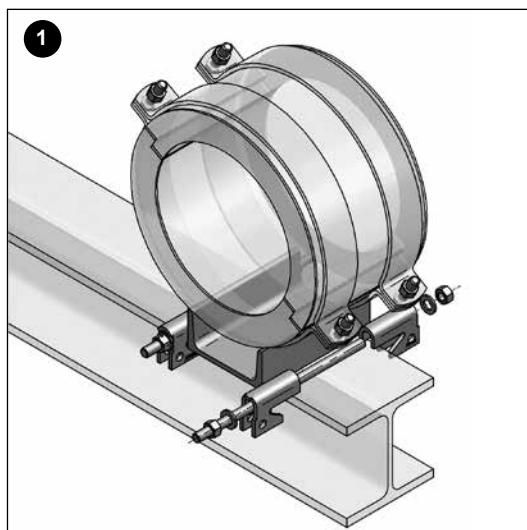


Important:

Please note the recommended tightening torques!

■ Assembly instructions Guiding Clamp Type B

For lateral guidance of sliding supports and sliding sledges (U-form) on steel girder



Important:

Please note the recommended tightening torques!