OBEN SEIN

experience the difference

PRODUCT CATALOGUE

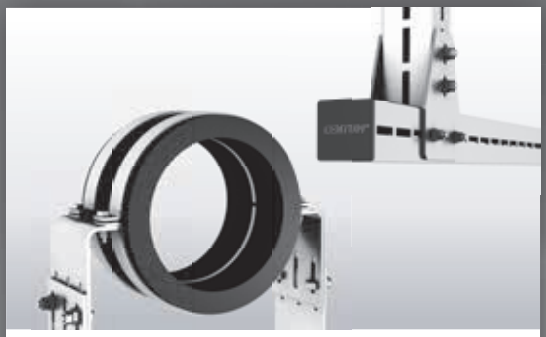
FIXING SYSTEMS

MEFA

OBEN SEIN with MEFA

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

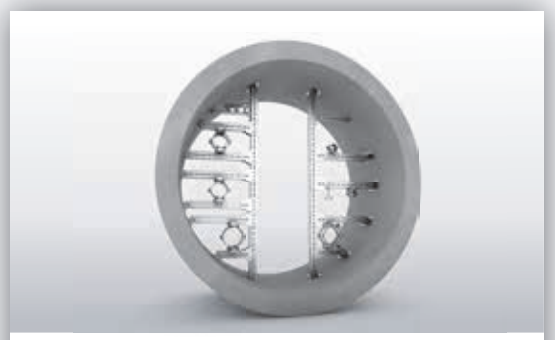
This promise we summarize in our claim „**OBEN** SEIN".



COMPLETE **PRODUCT RANGE**

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

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



UNIQUE **CUSTOMIZED SOLUTIONS**

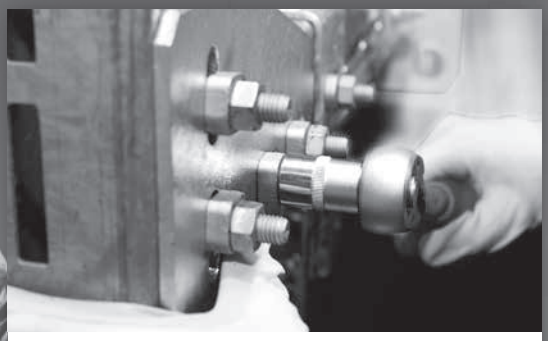
Design and realization of technical solutions out of norms – a characteristic of MEFA.

- Manufacturing of product and system solutions for all applications
- Development and production of customized products and solutions

SUPPORTIVE **PLANNING**

Our experienced specialists support the entire scope of planning. Also through existing calculation programmes and component libraries.

- Admission of data and generation of technical solutions, also on site
- Design of pipeline and air duct alignment, fixpoint calculation
- Static calculations with the calculation software MEFA StatiCal



TIME-SAVING
PREFABRICATION

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

- No oversizing
- Planning reliability due to coordinated in time logistics
- Reduction of set-up time
- Definite designation and separate packaging units

RELIABLE
LOGISTICS

Receipt of the goods at the right place and moment.

- Delivery of all goods including C-profile channels by truck, sea- or airfreight
- Express delivery by courier or MEFA logistic service

OUR CLAIM
GREENPLUS

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

- Sustainable from the ground up: MEFA products made of steel and insulation inserts made of TPE
- Recycability in packaging and optimised routes within the company and to the customer
- Sustainable heating and cooling in the own production and logistics centre

ENERGY SOURCES
FOR HEAT PUMPS

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

- Utilization of regenerative energy sources such as sun, wind, rain, ice, geothermal energy, groundwater and process heat
- Combination with heat pumps and low-temperature heating systems
- Cost-effective, environment-friendly, customized

OBEN SEIN

experience the difference

WELCOME ON TOP

OUTSTANDING PRODUCTS
AND UNIQUE SERVICE

MEFA

General Terms and Conditions of Sale (Status: April 2024)

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 Return of goods

(1) Goods ordered by the buyer and contractually delivered by MEFA being generally excluded from return. If, in extra-ordinary cases only, stock articles will be taken back upon prior agreement, at least 15% administrative costs, but no less than € 50.00, will be deducted from the credit note amount. Credits granted in this way will be offset against delivery of goods only. The reconsignment is generally on buyer' account. Necessary rework and/or re-packaging, if applicable, will be displayed to the buyer and deducted after release. Customized products are generally excluded from return.

§ 10 Limitation period

(1) In deviation from Section 438 (1) no. 3 BGB, the general limitation period for claims resulting from defects of quality and title shall be one year from delivery, when purchasing goods (without assembly). Insofar as an acceptance has been agreed upon, the period of limitation shall begin with the acceptance.
(2) However, if the goods relate to a building or an item that has been used for a building in accordance with its normal method of use and has caused this building to be defective (building materials), the period of limitation shall be five years from delivery in accordance with statutory regulation (Section 438 (1) no. 2 BGB). Any other special statutory regulations regarding the statute-of-limitations (in particular, Section 438 (1) no. 1 and (3), Sections 444, 479 BGB) shall also not be affected.
(3) The afore-mentioned periods of limitation of the law governing purchases shall also apply to contractual and non-contractual claims for damages of the Purchaser which are due to a defect in the goods, unless the application of the regular legal statute-of-limitations (Sections 195, 199 BGB) would lead to a shorter period of limitation in an individual case. However, the Purchaser's claims for damages pursuant to § 8 (2) sentences 1 and 2(a) of these GTCs and pursuant to the Product Liability Act shall be statute-barred exclusively pursuant to the statutory periods of limitation.

§ 11 Choice of law and place of jurisdiction

(1) These GTCs and the contractual relationship between us and the Purchaser shall be subject to the laws of the Federal Republic of Germany under exclusion of international uniform law, in particular the UN Convention on Contracts for the International Sale of Goods.
(2) If the Purchaser is a trader as defined in the German Commercial Code, a legal entity governed by public law or special assets of the Federal Government, the exclusive – including international – place of jurisdiction for all disputes arising directly or indirectly from the contractual relationship is our corporate seat in D-74635 Kupferzell. The same applies if the Purchaser is an entrepreneur as defined by Section 14 BGB. However, we are in all cases also entitled to file a suit at the place of performance of the delivery obligation pursuant to these GTCs or a higher-ranking individual agreement or at the general place of jurisdiction of the Purchaser. Any overriding statutory provisions, in particular, regarding exclusive places of jurisdiction, shall not be affected.

Explanation of terms

Flame-resistant (B1)	B1 = hardly inflammable building material - combustible building material Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102 “Fire behavior of building materials and components” or on a European level according to DIN EN 13501 Classification of building products and types of construction regarding their fire behavior. These building material classes are divided into non-flammable (A) and flammable building materials (B) according to DIN 4102; the EU classification DIN EN 13501 provides for seven Euro classes (A1, A2, B, C, D, E, F) as well as further classes for smoke development (s = smoke): classes s1, s2 and s3, burning droplets/fall off (d = droplets).
FWD 30,60,90	FWD = fire resistance duration The fire resistance or the fire resistance class of a building component stands for the time in which a component retains its function in a standard fire. Defined requirements are set depending on the tested component. FWD30 = fire resistance over 30 minutes FWD60 = fire resistance over 60 minutes FWD90 = fire resistance over 90 minutes
Global safety coefficient γ	The global safety coefficient indicates the factor by which the failure limit of a structure, component or material is designed higher than it would have to be by theoretical determination such as static calculation
Heat conductivity	The thermal conductivity λ indicates the heat flow that passes through a 1 m² large and 1 m thick layer of a fabric at a temperature difference of 1 Kelvin (K). The unit of thermal conductivity is W/(mK). The smaller λ is, the better is the insulating capacity of a building material.
Limit torque MG	Bending moment, which describes the maximum possible moment absorption. For brackets or other components, the limit moment is limited by the maximum permissible deflection.
Max. deforming f	The maximum deforming, e.g. for profile rails, is the deformation between the loaded and unloaded position, which occurs when bending loads are applied transversely to the longitudinal axis.
Modulus of elasticity	The modulus of elasticity is a material parameter from materials engineering. It describes the relationship between strain and stress during the deformation of materials in the linear elastic range. The modulus of elasticity is briefly referred to as the modulus of elasticity and is described with the symbol E, with the unit of mechanical stress.
multiple use for non-structural applications	In the case of multiple fixing, it is assumed that if one anchor or fixing point fails, the load is transferred to adjacent fixing points. This requires a sufficient number of fixing points (at least 3) and a design capable of transferring the loads to the adjacent fixing points (e.g. pipeline). This construction must continue to function even if one fastening point fails. For this purpose, the construction must have sufficient load-bearing capacity and no excessive deformations must occur even if one bearing fails. Classical examples of multiple fixings are pipelines, suspended ceilings or curtain walls.
Sound decoupling	Noise protection refers to measures that reduce the transmission of sound from a sound source to a receiver. The primary purpose of suitable measures (e.g. elastic surfaces, mass, separation of components) is to avoid or reduce the transmission of sound. Structure-borne sound decoupling from rubber materials is one such measure.
Static loads	In strength theory, a distinction is made between different types of stress that can act on a component. Loads are caused by forces acting on the component. Which type of load is applied depends on the direction of action of the force, its position, its distribution and its course over time. The temporal course of a load means whether a force acts permanently or possibly has a dynamic course and is variable over time. Static load: The acting force and its direction of action remain constant.
Support reaction force F_{AX}	Each component is usually fixed to a structure (support). The support reaction force is the load required to securely fix a component to the structure. For components such as brackets, a maximum support reaction force is specified which, if exceeded, would lead to deformation of the component.
Tightening torque	For screws and nuts, the term tightening torque refers to the torque with which a screw connection is tightened or may be tightened.
TX Drive TX 25	TX (from „torque“) is the registered word mark for a screwdriver whose standard designation is hexagon socket or hexagon socket. The key sizes are designated by „T“, „TX“ or „Tx“ (depending on the manufacturer), followed by a number. The available sizes range from T1 to T100.
Water vapor diffusion	Water vapor diffusion describes the passage of moisture through a component in the form of water vapor.
Yield strength σ_{zul}	The yield strength Re (σ) is a material parameter and describes the stress up to which a material does not show any permanent plastic deformation under e.g. bending load: - If the yield strength is undershot, the material returns elastically to its original shape after relief. - If the yield point is exceeded, a change in shape remains.

MEFA Pipe clamps


Ø 6 - 60 mm

Pipe clamp Sigma
Page 1/2


Ø 12 - 169 mm

Pipe clamp Talis
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Ø 12 - 168 mm

Pipe clamp Trabant, lined
Page 1/5


Ø 21 - 122 mm

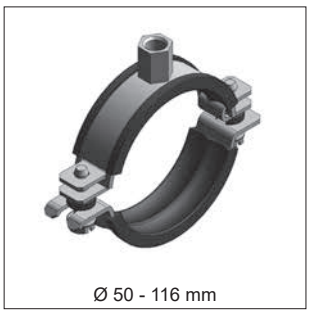
Pipe clamp Trabant, unlined
Page 1/6


Ø 15 - 168 mm

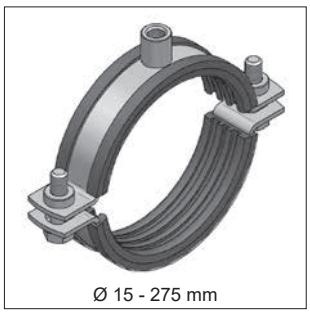
Pipe clamp Omnia MB
Page 1/7


Ø 12 - 46 mm

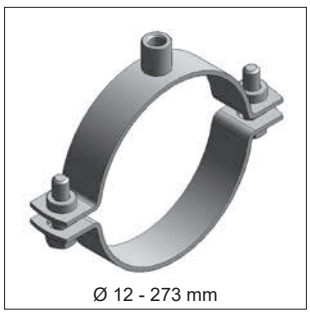
Sliding pipe clamp Sigma
Page 1/9


Ø 50 - 116 mm

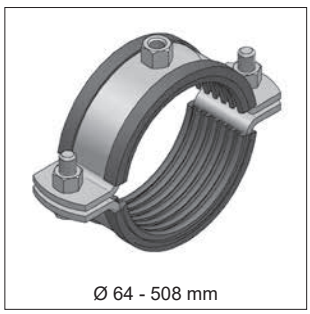
Sliding pipe clamp Omnia MB
Page 1/10


Ø 15 - 275 mm

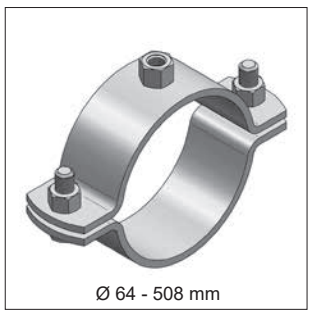
Pipe clamp
Maxima PSM, lined
Page 1/11


Ø 12 - 273 mm

Pipe clamp
Maxima PSM, unlined
Page 1/13


Ø 64 - 508 mm

Pipe clamp Titan HD,
lined
Page 1/15


Ø 64 - 508 mm

Pipe clamp Titan HD, unlined
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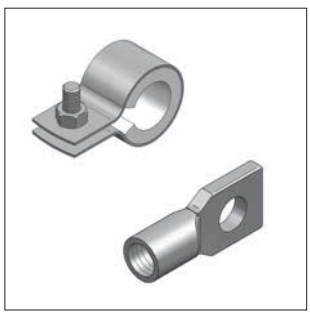
Ø 21 - 324 mm

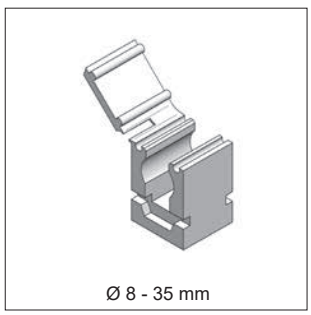
U-bolt
Page 1/23


Ø 10 - 42 mm

Pipe clamp Clipstar, lined
Page 1/24



Visible pipe clamp, lined
Page 1/25


Ø 8 - 35 mm

Pipe clip Clipmaster
Page 1/26

Connection adaptor /
Sound insulation lining
Page 1/27; 1/28

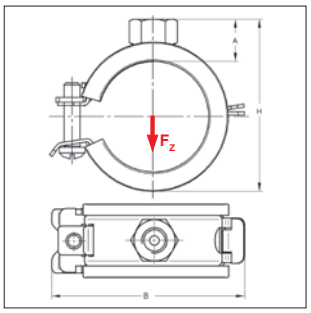
ⓘ Pipe clamps suitable for :

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

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

Pipe clamp Sigma, lined, rubber black

Pipe clamp Sigma
rubber black



RAL GÜTEZEICHEN ROHRBEFESTIGUNG RAL-GZ 655-B

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

TX 25

Specification

Closure:	safety quick-closure
Construction method:	one-part
OD:	6 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

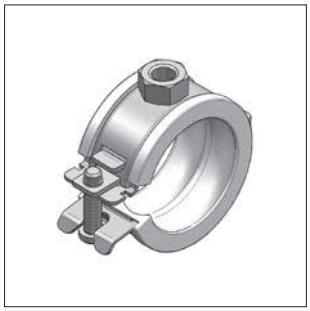
Connection: Thread M8 — **with sound insulation lining rubber** — **black**

Clamping range [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	$H_{(min-max)}$ [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
6 - 10		20x1,0	M5	0,45	23-27	12	33	0,022	100	14510150
12 - 15	1/4	20x1,0	M5	0,45	30-33	12	41	0,026	100	14510151
16 - 19	3/8	20x1,0	M5	0,45	34-37	12	45	0,029	100	14510191
20 - 23	1/2	20x1,0	M5	0,45	38-41	12	51	0,033	100	14510231
25 - 29	3/4	20x1,0	M5	0,45	43-47	12	56	0,036	100	14510291
32 - 35	1	20x1,0	M5	0,45	50-53	12	62	0,042	100	14510351
40 - 44	$1^{1/4}$	20x1,0	M5	0,45	58-62	12	71	0,058	50	14510441
48 - 52	$1^{1/2}$	20x1,5	M5	0,80	66-70	12	80	0,079	50	14510521
53 - 57		20x1,5	M5	0,80	71-75	12	85	0,086	50	14510571
58 - 60	2	20x1,5	M5	0,80	76-79	12	89	0,091	50	14510601

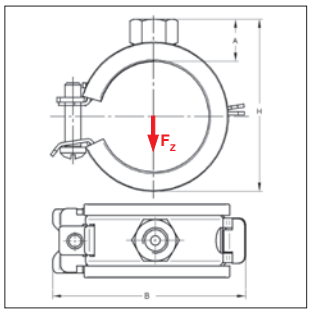
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

Pipe clamp Sigma, lined, rubber white



Pipe clamp Sigma
rubber white



RAL-GZ 655-B

SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Specification

Closure:	safety quick-closure
Construction method:	one-part
OD:	12 up to 35 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 — **with sound insulation lining rubber** — **white**

Clamping range [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	$H_{(min-max)}$ [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
12 - 15	1/4	20x1,0	M5	0,45	30-33	12	41	0,026	100	14590151
16 - 19	3/8	20x1,0	M5	0,45	34-37	12	45	0,029	100	14590191
20 - 23	1/2	20x1,0	M5	0,45	38-41	12	51	0,033	100	14590231
25 - 29	3/4	20x1,0	M5	0,45	43-47	12	56	0,036	100	14590291
32 - 35	1	20x1,0	M5	0,45	50-53	12	62	0,042	100	14590351

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

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

Pipe clamp Talis, lined

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Pipe clamp Talis, lined

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

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

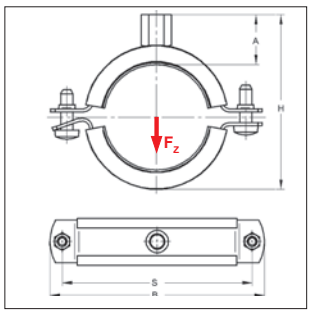
Technical data:

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

Clamping range [mm]	[inch]	Material [mm]	Closure-screw	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connection: Thread M8							**EPDM**
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

Pipe clamp Trabant



RAL-GZ 655-B RAL-GZ 656

Related fire loads see page 15/15

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:	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								with sound insulation lining		Rubber
Clamping range		Material	Closure-screw	Load F_z	$H_{(min-max)}$	A	B	Weight	Packing	Part-No.
[mm]	[Inch]	[mm]		[kN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
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	0,89	71-75	23	92	0,094	50	042646101
48 - 52	1 1/2	20x1,5	M6	0,89	76-81	23	98	0,101	50	042652101
54 - 58		20x1,5	M6	0,89	82-87	23	104	0,107	50	042658101
60 - 65	2	20x1,5	M6	0,89	88-94	23	111	0,114	50	042665101
70 - 76		25x1,5	M6	0,89	98-104	22	122	0,150	50	042672101
76 - 83	2 1/2	25x1,5	M6	0,89	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

* not certified acc. to RAL GZ-656

suitable connection adaptor see on page 1/27

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

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

Pipe clamp Trabant, unlined

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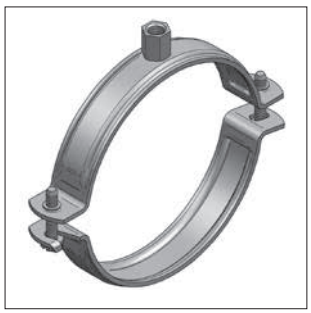
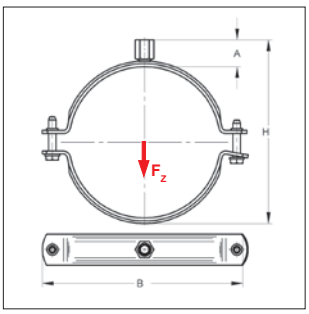




RAL-GZ 655-B RAL-GZ 656

Pipe clamp Trabant, unlined

Related fire loads see page 15/15

Specification:

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

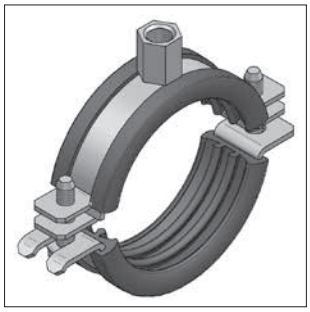
Technical data:

Material:	Steel
Material type:	DD11
Surface:	galvanized

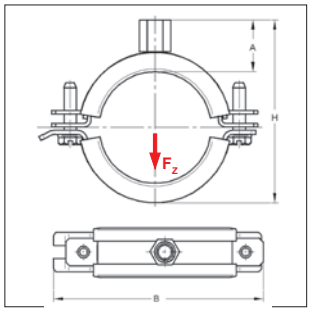
Connection: Thread M8/M10

Clamping range [mm]	Material [mm]	Closure-screw	Load F_z [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	0,89	71-75	18	92	0,08	50	042646201
57 - 61	20x1,5	M6	0,89	77-81	18	98	0,09	50	042652201
63 - 67	20x1,5	M6	0,89	83-87	18	104	0,09	50	042658201
69 - 74	20x1,5	M6	0,89	89-94	18	111	0,10	50	042665201
76 - 85	25x1,5	M6	0,89	95-104	18	122	0,13	50	042672201
84 - 90	25x1,5	M6	0,89	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



Pipe clamp Omnia MB



RAL-GZ 655-B

RAL-GZ 656

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

Related fire loads see page 15/15

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:	Silicone[1)]	rubber TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C
Insulation thickness:	6 mm	6 mm

[1)] 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		Material	Closure-screw	Load F_z [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	42-47	24	61	0,078	100	0398220	0398020
22 - 28	1/2-3/4	20x1,5	M6	1,00	49-56	24	68	0,086	100	0398228	0398028
30 - 35	1	20x1,5	M6	1,00	57-62	24	78	0,096	100	0398235	0398035
38 - 42	1 1/4	20x2,0	M6	1,60	66-70	24	89	0,117	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	0,137	50	0398254	0398054
56 - 60	2	20x2,0	M6	1,60	84-88	24	108	0,146	50	0398260	0398060
61 - 65		20x2,0	M6	1,60	91-92	24	113	0,154	50	0398264	0398064
70 - 73		20x2,0	M6	1,60	98-101	24	117	0,169	50	0398273	0398073
75 - 83	2 1/2	20x2,0	M6	1,60	103-108	24	124	0,177	50	0398278	0398078
84 - 90	3	25x2,5	M6	1,80	113-118	25	136	0,259	50	0398289	0398089
90 - 95		25x2,5	M6	1,80	119-124	25	143	0,270	50	0398295	0398095
100 - 105		25x2,5	M6	1,80	129-134	25	152	0,289	50	0398305	0398105
108 - 112		25x2,5	M6	1,80	137-141	25	158	0,304	50	0398312	0398112
114 - 116	4	25x2,5	M6	1,80	143-145	25	165	0,316	25	0398316	0398116
121 - 125		25x2,5	M6	1,80	150-154	25	175	0,329	25	0398325	0398125
Connection: Thread M10/M12					with sound insulation lining				Silicone	Rubber	
132 - 136*		25x3,0	M8	2,30	171-175	30	192	0,446	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	0,514	25	1418363	03981632
164 - 168*	6	25x3,0	M8	2,30	198-202	30	225	0,526	25	1418368	03981682

* not certified acc. to RAL-GZ 656

Pipe clamp Omnia MB, lined

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Connection: Thread M12								with sound insulation lining	Silicone	Rubber
Clamping range		Material	Closure-screw	Load F_z 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	0392014
22 - 28	1/2-3/4	20x1,5	M6	1,00	50-56	24	68	0,103	100	0392235	0392030
30 - 35	1	20x1,5	M6	1,00	58-63	24	78	0,113	100	0392243	0392049
38 - 42	$1^{1/4}$	20x2,0	M6	1,60	67-71	24	89	0,134	50	0392251	0392057
44 - 48	$1^{1/2}$	20x2,0	M6	1,60	73-77	24	92	0,144	50	0397448	0398448
50 - 54		20x2,0	M6	1,60	79-83	24	101	0,154	50	0397454	0398454
56 - 60	2	20x2,0	M6	1,60	85-89	24	108	0,163	50	0397460	0398460
61 - 65		20x2,0	M6	1,60	92-93	24	113	0,171	50	0397464	0398464
70 - 73		20x2,0	M6	1,60	99-102	24	117	0,186	50	0397473	0398473
75 - 83	$2^{1/2}$	20x2,0	M6	1,60	104-109	24	124	0,194	50	0397480	0398480
84 - 90	3	25x2,5	M6	1,80	114-119	25	136	0,276	50	0397489	0398489
90 - 95		25x2,5	M6	1,80	120-125	25	143	0,287	50	0397495	0398495
100 - 105		25x2,5	M6	1,80	130-135	25	152	0,306	50	0397505	0398505
108 - 112		25x2,5	M6	1,80	138-142	25	158	0,321	50	0392405	0392219
114 - 116	4	25x2,5	M6	1,80	144-146	25	165	0,333	25	0397516	0398516
121 - 125		25x2,5	M6	1,80	151-155	25	175	0,346	25	0397525	0398525

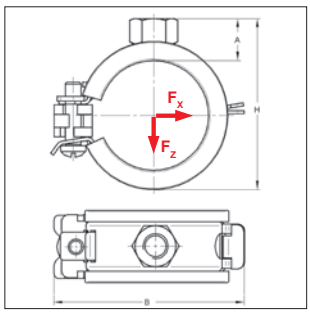
ⓘ suitable connection adaptor see on page 1/27

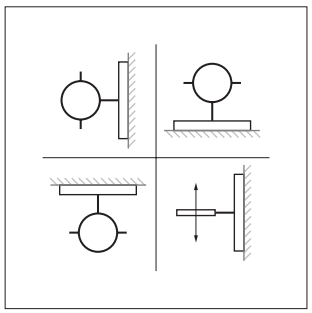
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

Sliding pipe clamp Sigma, lined

Sliding pipe clamp Sigma





Mounting recommendation

SCHALL-SCHUTZ DIN 4109

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 EPDM , flocked
Temperature resistance:	- 30 °C up to + 70 °C
Insulation thickness:	3 mm

Connection: Thread M8 — **with sound insulation lining** — **Rubber**

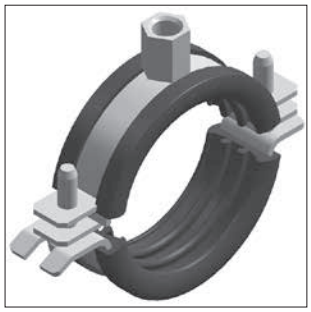
Dimension [mm]	Material [mm]	Closure-screw	Load F_x [kN]	Load F_z [kN]	H [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
12	20x1,0	M5	0,08	0,25	33	13	43	0,027	100	14520121
15	20x1,0	M5	0,08	0,25	35	13	45	0,031	100	14520151
16	20x1,0	M5	0,08	0,25	35	13	45	0,031	100	14520161
18	20x1,0	M5	0,11	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	0,054	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 allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

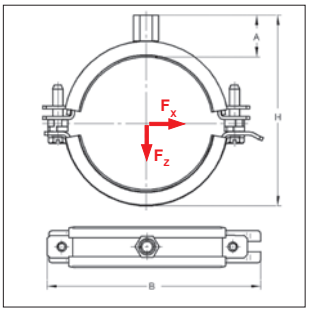
With larger dimensions an unopposed sliding can not be guaranteed.

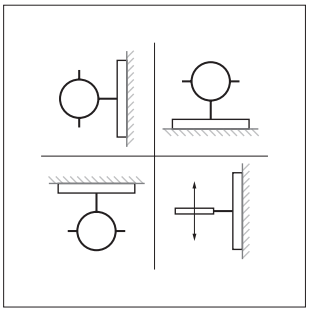
Sliding pipe clamp Omnia MB, lined

01



Sliding pipe clamp Omnia MB





Mounting recommendation

SCHALL-SCHUTZ DIN 4109

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 EPDM, flocked
Temperature resistance:	- 30 °C up to + 70 °C
Insulation thickness:	4 mm

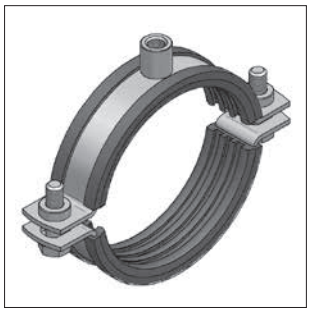
Connection: Thread M8/M10 — **with sound insulation lining** — **Rubber**

Dimension	Material	Closure-screw	Load F_x	Load F_z	H	A	B	Weight	Packing	Part-No.
[mm]	[mm]		[kN]	[kN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
50	20x2,0	M6	0,23	0,50	72-76	24	92	0,120	50	0387250
52	20x2,0	M6	0,23	0,50	78-82	24	101	0,125	50	0387252
54	20x2,0	M6	0,23	0,50	78-82	24	101	0,125	50	0387254
56	20x2,0	M6	0,23	0,50	78-82	24	101	0,126	50	0387256
63	20x2,0	M6	0,23	0,50	91-92	24	113	0,140	50	0387263
65	20x2,0	M6	0,23	0,50	91-92	24	113	0,141	50	0387265
69	20x2,0	M6	0,23	0,50	91-92	24	113	0,141	50	0387269
75	20x2,0	M6	0,23	0,50	98-101	24	117	0,156	50	0387275
77	20x2,0	M6	0,25	0,70	103-108	24	124	0,161	50	0387277
81	20x2,0	M6	0,25	0,70	103-108	24	124	0,163	50	0387281
90	25x2,5	M6	0,27	1,20	113-118	25	136	0,247	50	0387290
96	25x2,5	M6	0,30	1,20	119-124	25	143	0,258	50	0387296
110	25x2,5	M6	0,30	1,40	137-141	25	158	0,286	50	0387310
116	25x2,5	M6	0,30	1,60	143-145	25	165	0,300	50	0387316

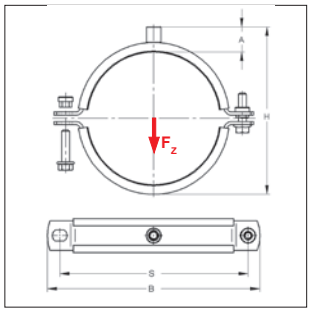
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

With larger dimensions an unopposed sliding can not be guaranteed.

Pipe clamp Maxima PSM, lined



Pipe clamp Maxima PSM



RAL-GZ 655-B RAL-GZ 656

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

Related fire loads see page 15/16

Delivery time:

Version with stepped-thread: 5 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	
Sound insulation lining:	Silicone[1)]	rubber TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C
Insulation thickness:	6 mm	6 mm

[1)] 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]	[Inch]	Material [mm]	Closure screw	Load F_z [2)] [kN]	$H_{(min-max)}$ [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]		Part-No.	Part-No.
15 - 19		25x3,0	M8	1,50	54-58	30	81	57	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	113	89	0,273	1		0069540	0068881
53 - 57		25x3,0	M8	1,50	92-96	30	119	95	0,288	1		0069541	0068941
58 - 64	2	25x3,0	M8	1,50	97-103	30	126	102	0,300	1		00695397	00688083
Connection: Thread M10/M12											with sound insulation lining	Silicone	Rubber
65 - 70		30x3,0	M8	1,70	104-109	30	142	116	0,377	1		008358001	008007501
72 - 78	2 1/2	30x3,0	M8	1,70	111-117	30	150	124	0,398	1		008358901	008010601
84 - 90	3	30x3,0	M8	1,70	123-129	30	162	136	0,434	1		008359601	008010701
94 - 100		30x3,0	M8	1,70	133-139	30	172	146	0,464	1		008361001	008010801
102 - 106		30x3,0	M8	1,70	141-145	30	178	152	0,488	1		008362601	008014801
108 - 112		30x3,0	M8	1,70	147-151	30	184	158	0,506	1		008363501	008015901
113 - 117	4	30x3,0	M8	1,70	152-156	30	189	163	0,521	1		008363601	008016701
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	190	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	210	0,952	1		0083694	0080198
158 - 163		35x4,0	M10	5,00	199-204	31	247	217	0,979	1		0083708	0088163
164 - 168	6	35x4,0	M10	5,00	205-209	31	252	222	1,005	1		0083711	0080222
190 - 194		35x4,0	M10	5,00	231-235	31	278	248	1,121	1		0083742	0080244
198 - 203		35x4,0	M10	5,00	239-244	31	287	257	1,156	1		0083750	0080270
207 - 213		35x4,0	M10	5,00	248-254	31	297	267	1,196	1		0083774	0080293
219 - 223	8	35x4,0	M10	5,00	260-264	31	307	277	1,250	1		0083804	0080309
225 - 230		35x4,0	M10	5,00	266-271	31	314	284	1,276	1		0083806	0088230
242 - 246		35x4,0	M10	5,00	283-287	31	330	300	1,352	1		0083839	0080331
250 - 255		35x4,0	M10	5,00	294-299	31,5	340	310	1,388	1		0083842	0080350
270 - 275	10	35x4,0	M10	5,00	311-316	31	359	329	1,477	1		0083878	0080374

Pipe clamp Maxima PSM, lined

01

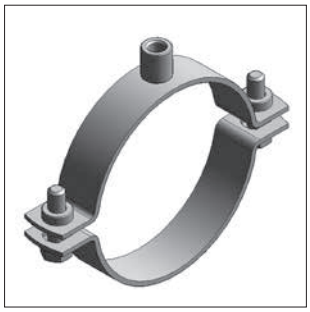
Connection: Thread M16										with sound insulation lining	Silicone	Rubber
Clamping range [mm]	[Inch]	Material [mm]	Closure-screw	Load F_Z [kN]	$H_{(min-max)}$ [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.
102 - 106		30x3,0	M8	1,70	140-144	29	178	152	0,504	1	008464601	008162001
108 - 112		30x3,0	M8	1,70	146-150	29	184	158	0,522	1	008465401	008163901
113 - 117	4	30x3,0	M8	1,70	151-155	29	189	163	0,537	1	008465901	008165201
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	190	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	210	0,968	1	0084703	0081674
158 - 163		35x4,0	M10	5,00	198-203	30	247	217	0,995	1	0084719	0081701
164 - 168	6	35x4,0	M10	5,00	204-208	30	252	222	1,021	1	0084723	0081710
190 - 194		35x4,0	M10	5,00	230-234	30	278	248	1,137	1	0084750	0081750
198 - 203		35x4,0	M10	5,00	238-243	30	287	257	1,172	1	0084754	0081756
207 - 213		35x4,0	M10	5,00	247-253	30	297	267	1,212	1	0084794	0081786
219 - 223	8	35x4,0	M10	5,00	259-263	30	307	277	1,266	1	0084811	0081797
225 - 230		35x4,0	M10	5,00	265-270	30	314	284	1,292	1	0084816	0081809
242 - 246		35x4,0	M10	5,00	282-286	30	330	300	1,368	1	0084832	0081826
250 - 255		35x4,0	M10	5,00	292-297	30	340	310	1,404	1	0084840	0081833
270 - 275	10	35x4,0	M10	5,00	310-315	30	359	329	1,492	1	0084870	0081867
Connection: Sleeve 1/2 "										with sound insulation lining	Silicone	Rubber
102 - 106		30x3,0	M8	1,70	135-139	24	178	152	0,482	1	008513201	008212001
108 - 112		30x3,0	M8	1,70	141-145	24	184	158	0,500	1	008515401	008213901
113 - 117	4	30x3,0	M8	1,70	146-150	24	189	163	0,515	1	008515801	008215101
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	190	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	210	0,946	1	0085208	0082197
158 - 163		35x4,0	M10	5,00	193-198	25	247	217	0,973	1	0085219	0082201
164 - 168	6	35x4,0	M10	5,00	199-203	25	252	222	0,999	1	0085223	0082210
190 - 194		35x4,0	M10	5,00	225-229	25	278	248	1,115	1	0085250	0082250
198 - 203		35x4,0	M10	5,00	233-238	25	287	257	1,150	1	0085254	0082254
207 - 213		35x4,0	M10	5,00	242-248	25	297	267	1,190	1	0085297	0082290
219 - 223	8	35x4,0	M10	5,00	254-258	25	307	277	1,244	1	0085311	0082297
225 - 230		35x4,0	M10	5,00	260-265	25	314	284	1,270	1	0085316	0082309
242 - 246		35x4,0	M10	5,00	277-281	25	330	300	1,346	1	0085335	0082327
250 - 255		35x4,0	M10	5,00	287-292	25	340	310	1,382	1	0085340	0082333
270 - 275	10	35x4,0	M10	5,00	305-310	25	359	329	1,470	1	0085370	0082370

suitable connection adaptor see on page 1/27

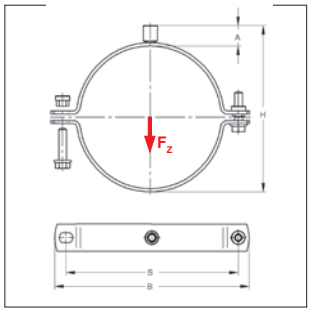
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

Pipe clamp Maxima PSM, unlined



Pipe clamp Maxima PSM, unlined



RAL-GZ 655-B RAL-GZ 656

Related fire loads see page 15/16

Delivery time:

Version with stepped-thread: 5 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‘ 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:	galvanized

Connection: Thread M8/M10 — without sound insulation lining

Clamping range [mm]	Clamping range [Inch]	Material [mm]	Closure-screw	Load F_z [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
12 - 16		25x3,0	M8	3,00	39-43	24	69	45	0,158	1	0068835
17 - 19		25x3,0	M8	3,00	44-46	24	72	48	0,168	1	00688612
20 - 23	1/2	25x3,0	M8	3,00	47-50	24	76	52	0,173	1	0068838
25 - 29	3/4	25x3,0	M8	3,00	52-56	24	82	58	0,182	1	0068837
30 - 35	1	25x3,0	M8	3,00	59-62	24	88	64	0,192	1	0068836
36 - 40		25x3,0	M8	3,00	63-67	24	93	69	0,203	1	0068841
41 - 46	$1^{1/4}$	25x3,0	M8	3,00	68-73	24	99	75	0,212	1	0068847
48 - 55	$1^{1/2}$	25x3,0	M8	3,00	75-82	24	108	84	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

84 - 90	3	30x3,0	M8	4,00	111-117	24	150	124	0,347	1	008809301
96 - 102		30x3,0	M8	4,00	123-129	24	162	136	0,374	1	008810501
106 - 112		30x3,0	M8	4,00	133-139	24	172	146	0,397	1	008811301
114 - 118	4	30x3,0	M8	4,00	141-145	24	178	152	0,415	1	008811901
120 - 124		30x3,0	M8	4,00	147-151	24	184	158	0,429	1	008812501
125 - 129		30x3,0	M8	4,00	152-156	24	189	163	0,440	1	008813001
132 - 137		35x4,0	M10	6,30	161-166	25	210	180	0,709	1	0088138
139 - 144	5	35x4,0	M10	6,30	168-173	25	217	187	0,734	1	0088145
149 - 154		35x4,0	M10	6,30	178-183	25	227	197	0,769	1	0088155
157 - 162		35x4,0	M10	6,30	186-191	25	235	205	0,798	1	0088164
164 - 168	6	35x4,0	M10	6,30	193-197	25	241	211	0,823	1	0088169
189 - 193		35x4,0	M10	6,30	218-222	25	266	236	0,912	1	0088194
195 - 200		35x4,0	M10	6,30	224-229	25	273	243	0,934	1	0088201
210 - 215		35x4,0	M10	6,30	239-244	25	288	258	0,987	1	0088216
219 - 225	8	35x4,0	M10	6,30	248-254	25	298	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

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Connection: Thread M16											without sound insulation lining
Clamping range [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	$H_{(min-max)}$ [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
106 - 112		30x3,0	M8	4,00	132-138	23	172	146	0,413	1	008160701
114 - 118	4	30x3,0	M8	4,00	140-144	23	178	152	0,431	1	008162101
120 - 124		30x3,0	M8	4,00	146-150	23	184	158	0,445	1	008164301
125 - 129		30x3,0	M8	4,00	151-155	23	189	163	0,456	1	008164501
132 - 137		35x4,0	M10	6,30	160-165	24	210	180	0,725	1	0081654
139 - 144	5	35x4,0	M10	6,30	167-172	24	217	187	0,750	1	0081657
149 - 154		35x4,0	M10	6,30	177-182	24	227	197	0,786	1	0081667
157 - 162		35x4,0	M10	6,30	185-190	24	235	205	0,814	1	0081675
164 - 168	6	35x4,0	M10	6,30	192-196	24	241	211	0,839	1	0081704
189 - 193		35x4,0	M10	6,30	217-221	24	266	236	0,928	1	0081739
195 - 200		35x4,0	M10	6,30	223-229	24	273	243	0,950	1	0081746
210 - 215		35x4,0	M10	6,30	238-243	24	288	258	1,004	1	0081762
219 - 225	8	35x4,0	M10	6,30	247-253	24	298	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

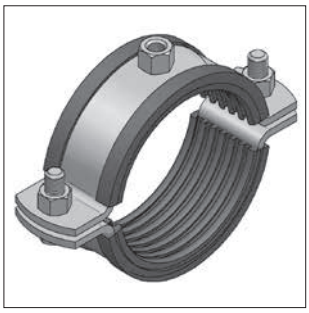
Connection: Sleeve 1/2"											without sound insulation lining
106 - 112		30x3,0	M8	4,00	127-133	18	172	146	0,391	1	008210901
114 - 118	4	30x3,0	M8	4,00	135-139	18	178	152	0,409	1	008212301
120 - 124		30x3,0	M8	4,00	141-145	18	184	158	0,423	1	008214401
125 - 129		30x3,0	M8	4,00	146-150	18	189	163	0,434	1	008215201
132 - 137		35x4,0	M10	6,30	155-160	19	210	180	0,703	1	0082153
139 - 144	5	35x4,0	M10	6,30	162-167	19	217	187	0,728	1	0082157
149 - 154		35x4,0	M10	6,30	172-177	19	227	197	0,763	1	0082173
157 - 162		35x4,0	M10	6,30	180-185	19	235	205	0,792	1	0082175
164 - 168	6	35x4,0	M10	6,30	187-191	19	241	211	0,817	1	0082196
189 - 193		35x4,0	M10	6,30	212-216	19	266	236	0,906	1	0082237
195 - 200		35x4,0	M10	6,30	218-223	19	273	243	0,928	1	0082247
210 - 215		35x4,0	M10	6,30	233-238	19	288	258	0,981	1	0082261
219 - 225	8	35x4,0	M10	6,30	242-248	19	298	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 1/27

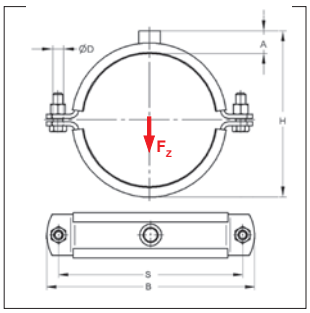
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

Pipe clamp Titan HD, lined



Pipe clamp Titan HD



RAL-GZ 655-B RAL-GZ 656

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

Related fire loads see page 15/16

Delivery time:
5 - 8 working days, ex works (pipe clamps Titan HD
are special designed on customer' 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	
Sound insulation lining:	Silicone[1)]	rubber TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C
Insulation thickness:	6 mm	6 mm

[1)] 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 [mm]	Closure-screw	Load F_z [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	311	282	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	337	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	Load F_Z [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	311	282	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	337	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

Connection: Sleeve 1/2"												with sound insulation lining	Silicone	Rubber
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN] 2)	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	199	170	13	1,261	1		0077518	0072516
110		50x5,0	M12	3,20	147	26	201	172	13	1,276	1		0077534	0072532
114	4	50x5,0	M12	3,20	151	26	205	176	13	1,306	1		0077550	0072559
125		50x5,0	M12	3,20	162	26	216	187	13	1,388	1		0077585	0072583
127		50x5,0	M12	3,20	164	26	218	189	13	1,403	1		0077593	0072591
133		50x5,0	M12	3,20	170	26	224	195	13	1,448	1		0077607	0072605
135		50x5,0	M12	3,20	172	26	226	197	13	1,463	1		0077615	0072613
140	5	50x5,0	M12	3,20	177	26	231	202	13	1,501	1		0077623	0072621
152		50x5,0	M12	3,20	189	26	243	214	13	1,591	1		0077631	0072648
160		50x5,0	M12	3,20	197	26	251	222	13	1,651	1		0077682	0072680
165	6	50x5,0	M12	3,20	202	26	256	227	13	1,688	1		0077690	0072699
168		50x5,0	M12	3,20	205	26	259	230	13	1,711	1		0077712	0072710
177		50x5,0	M12	11,50	214	26	268	239	13	1,778	1		0077739	0072737
180		50x5,0	M12	11,50	217	26	271	243	13	1,801	1		0077755	0072753
194		50x5,0	M12	11,50	231	26	286	257	13	1,906	1		0077771	0072761
200		50x5,0	M12	11,50	237	26	292	263	13	1,951	1		0077798	0072788
210		50x5,0	M12	11,50	247	26	302	273	13	2,026	1		0077801	0072818
219	8	50x5,0	M12	11,50	256	26	311	282	13	2,093	1		0077828	0072826
225		50x5,0	M12	11,50	262	26	317	288	13	2,138	1		0077844	0072842
245		50x5,0	M12	11,50	282	26	337	308	13	2,288	1		0077879	0072877
267		50x5,0	M12	11,50	304	26	359	330	13	2,453	1		0077895	0072893
273	10	50x5,0	M12	11,50	310	26	365	336	13	2,498	1		0077909	0072907
280		50x5,0	M12	11,50	317	26	372	343	13	2,551	1		0077925	0072923
298		50x5,0	M12	11,50	335	26	390	361	13	2,686	1		0077933	0072931
324	12	50x5,0	M12	11,50	361	26	416	387	13	2,880	1		0077941	0072958
356		50x5,0	M12	11,50	393	26	448	419	13	3,120	1		0077968	0072966
368		50x5,0	M12	11,50	405	26	460	431	13	3,210	1		0077984	0072982

Connection: Sleeve 1"												with sound insulation lining	Silicone	Rubber
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	199	170	13	1,309	1		0079510	0074519
110		50x5,0	M12	3,20	152	31	201	172	13	1,324	1		0079537	0074535
114	4	50x5,0	M12	3,20	156	31	205	176	13	1,354	1		0079553	0074551
125		50x5,0	M12	3,20	167	31	216	187	13	1,436	1		0079588	0074586
127		50x5,0	M12	3,20	169	31	218	189	13	1,451	1		0079596	0074594
133		50x5,0	M12	3,20	175	31	224	195	13	1,496	1		0079618	0074608
135		50x5,0	M12	3,20	177	31	226	197	13	1,511	1		0079626	0074616
140	5	50x5,0	M12	3,20	182	31	231	202	13	1,549	1		0079634	0074624
152		50x5,0	M12	3,20	194	31	243	214	13	1,639	1		0079642	0074640
160		50x5,0	M12	3,20	202	31	251	222	13	1,699	1		0079685	0074683

Pipe clamp Titan HD, lined

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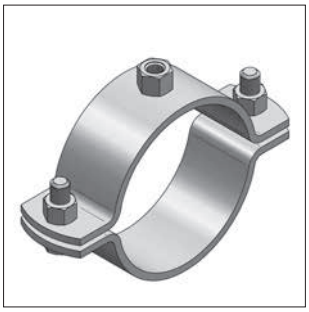
Connection: Sleeve 1"												with sound insulation lining	Silicone	Rubber
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_Z [2)] [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]		Part-No.	Part-No.
165	6	50x5,0	M12	3,20	207	31	256	227	13	1,736	1		0079693	0074691
168		50x5,0	M12	3,20	210	31	259	230	13	1,759	1		0079715	0074713
177		50x5,0	M12	11,50	219	31	268	239	13	1,826	1		0079731	0074748
180		50x5,0	M12	11,50	222	31	271	242	13	1,849	1		0079758	0074756
194		50x5,0	M12	11,50	236	31	286	257	13	1,954	1		0079774	0074772
200		50x5,0	M12	11,50	242	31	292	263	13	1,999	1		0079782	0074780
210		50x5,0	M12	11,50	252	31	302	273	13	2,074	1		0079804	0074802
219	8	50x5,0	M12	11,50	261	31	311	282	13	2,141	1		0079820	0074829
225		50x5,0	M12	11,50	267	31	317	288	13	2,186	1		0079847	0074845
245		50x5,0	M12	11,50	287	31	337	308	13	2,336	1		0079871	0074861
267		50x5,0	M12	11,50	309	31	359	330	13	2,501	1		0079898	0074896
273	10	50x5,0	M12	11,50	315	31	365	336	13	2,546	1		0079901	0074918
280		50x5,0	M12	11,50	322	31	372	343	13	2,599	1		0079928	0074926
298		50x5,0	M12	11,50	340	31	390	361	13	2,734	1		0079936	0074934
324	12	50x5,0	M12	11,50	366	31	416	387	13	2,928	1		0079944	0074942
356		50x5,0	M12	11,50	398	31	448	419	13	3,168	1		0079960	0074969
368		50x5,0	M12	11,50	410	31	460	431	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	286	257	13	1,979	1		0063845	0063941
200		50x5,0	M12	11,50	244	33	292	263	13	2,024	1		0063847	0063943
219	8	50x5,0	M12	11,50	263	33	311	282	13	2,166	1		0063853	0063951
245		50x5,0	M12	11,50	289	33	337	308	13	2,361	1		0063859	0063957
267		50x5,0	M12	11,50	311	33	359	330	13	2,526	1		0063863	0063961
273	10	50x5,0	M12	11,50	317	33	365	336	13	2,571	1		0063865	0063963
324	12	50x5,0	M12	11,50	368	33	416	387	13	2,953	1		0063881	0063978
356		50x5,0	M12	11,50	400	33	448	419	13	3,193	1		0063891	0063988
368		50x5,0	M12	11,50	412	33	460	431	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

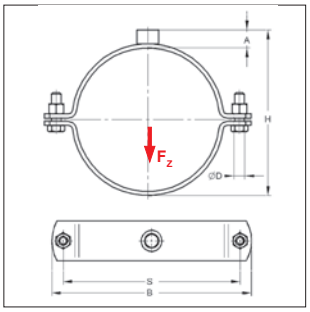
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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



Pipe clamp Titan HD



RAL-GZ 655-B RAL-GZ 656

Related fire loads see page 15/16

Delivery time:
5 - 8 working days, ex works Kupferzell (pipe clamps Titan HD are special designed on customer‘ 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

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

Dimension [mm]	Dimension [Inch]	Material [mm]	Closure-screw	Load F_z [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	153	124	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

01

Connection: Thread M16												without sound insulation lining
Dimension		Material	Closure-screw	Load F_z	H	A	B	S	D	Weight	Packing	Part-No.
[mm]	[Inch]	[mm]		[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
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	153	124	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	482	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	141	112	13	0,779	1	0072502
76	2 1/2	50x5,0	M12	6,00	101	20	153	124	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	212	183	13	1,218	1	0072584
135		50x5,0	M12	6,00	160	20	214	185	13	1,230	1	0072592
140	5	50x5,0	M12	6,00	165	20	219	190	13	1,262	1	0072606
160		50x5,0	M12	6,00	185	20	239	210	13	1,389	1	0072649
165	6	50x5,0	M12	6,00	190	20	244	215	13	1,421	1	0072681
168		50x5,0	M12	6,00	193	20	247	218	13	1,440	1	0072683
194	7	50x5,0	M12	16,00	219	20	273	244	13	1,605	1	0072754
200		50x5,0	M12	16,00	225	20	279	250	13	1,643	1	0072762
210		50x5,0	M12	16,00	235	20	290	261	13	1,707	1	0072791
219	8	50x5,0	M12	16,00	244	20	299	270	13	1,764	1	0072819
267		50x5,0	M12	16,00	292	20	347	318	13	2,069	1	0072892
273	10	50x5,0	M12	16,00	298	20	353	324	13	2,108	1	0072894
324	12	50x5,0	M12	16,00	349	20	404	375	13	2,432	1	0072955
356		50x5,0	M12	16,00	381	20	436	407	13	2,635	1	0072965
368	14	50x5,0	M12	16,00	393	20	448	419	13	2,711	1	0072967

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

Pipe clamp Titan HD, unlined

Connection: Sleeve 1"												without sound insulation lining
Dimension		Material	Closure-screw	Load F_z	H	A	B	S	D	Weight	Packing	Part-No.
[mm]	[Inch]	[mm]		[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
64		50x5,0	M12	6,00	94	25	141	112	13	0,827	1	0074505
76	$2^{1/2}$	50x5,0	M12	6,00	106	25	153	124	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	212	183	13	1,266	1	0074587
135		50x5,0	M12	6,00	165	25	214	185	13	1,278	1	0074595
140	5	50x5,0	M12	6,00	170	25	219	190	13	1,310	1	0074609
160		50x5,0	M12	6,00	190	25	239	210	13	1,437	1	0074641
165	6	50x5,0	M12	6,00	195	25	244	215	13	1,469	1	0074684
168		50x5,0	M12	6,00	198	25	247	218	13	1,488	1	0074686
194	7	50x5,0	M12	16,00	224	25	273	244	13	1,653	1	0074757
200		50x5,0	M12	16,00	230	25	279	250	13	1,691	1	0074773
210		50x5,0	M12	16,00	240	25	290	261	13	1,755	1	0074781
219	8	50x5,0	M12	16,00	249	25	299	270	13	1,812	1	0074803
267		50x5,0	M12	16,00	297	25	347	318	13	2,117	1	0074874
273	10	50x5,0	M12	16,00	303	25	353	324	13	2,156	1	0074897
324	12	50x5,0	M12	16,00	354	25	404	375	13	2,480	1	0074939
356		50x5,0	M12	16,00	386	25	436	407	13	2,683	1	0074968
368	14	50x5,0	M12	16,00	398	25	448	419	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	00749995
508*		50x5,0	M12	16,00	538	25	588	559	13	3,649	1	0075012

Connection: Sleeve 1 1/4"												without sound insulation lining
200		50x5,0	M12	16,00	232	27	279	250	13	1,716	1	0063942
210		50x5,0	M12	16,00	242	27	290	261	13	1,780	1	0063947
219	8	50x5,0	M12	16,00	252	27	299	270	13	1,837	1	0063949
267		50x5,0	M12	16,00	299	27	347	318	13	2,142	1	0063960
273	10	50x5,0	M12	16,00	305	27	353	324	13	2,181	1	0063962
324	12	50x5,0	M12	16,00	356	27	404	375	13	2,505	1	0063975
356		50x5,0	M12	16,00	388	27	436	407	13	2,708	1	0063987
368	14	50x5,0	M12	16,00	400	27	448	419	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

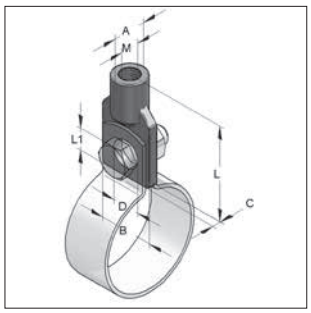
Without connection thread												without sound insulation lining
406*		50x5,0	-	16,00	416	-	486	457	13	2,783	1	0070978
457*		50x5,0	-	16,00	467	-	537	508	13	3,107	1	00709887
508*		50x5,0	-	16,00	518	-	588	559	13	3,431	1	0070995

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

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

Eye adaptor



Eye adaptor

Specification:

Application area: - for closing flange

Needed accessory: - required closure-screws M8 according to DIN EN ISO 4017,
- nuts according to DIN EN ISO 4032

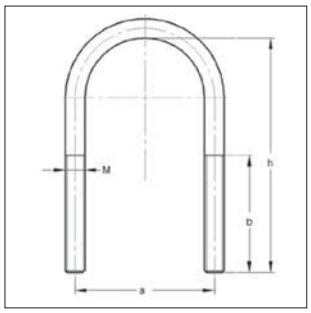
Technical data:

Material: malleable cast iron

Surface: galvanized

Identification	Female-thread [M]	Load F_Z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Eye adaptor BO 25-8	M8	2,0	0,027	50	0350152
Eye adaptor BO 25-10	M10	3,5	0,025	50	0350174

U-bolt



VdS
G 4940029*

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 4 nuts and 4 washers
- fixed bearing should be used with 2 nuts and 2 washers
- should not be used as fixpoint without required measures

Technical data:
Material: steel
Surface: galvanized[1)]

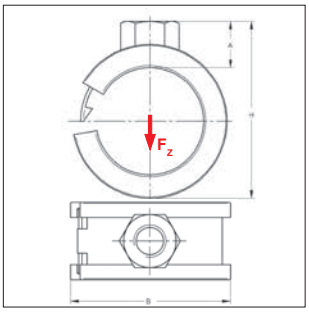
Admission:
VdS-approval No.: G 4940029
- other dimensions according to VdS-2092 guideline "planning and installation"

[1)] **U-bolts for outdoor application with zinc-nickel-coating see chapter 14**

U-bolt differing from DIN 3570								without nuts
OD		Thread M	Overall height h	Center distance a	Length of thread b	Weight	Packing	Part-No.
[mm]	[Inch]		[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
21,3	1/2	M8	85	30	65	0,051	100	050702201
26,9	3/4	M8	85	35	65	0,062	100	050702801
33,7	1	M8	95	42	65	0,070	100	050703501
42,4	1 1/4	M8	105	51	75	0,078	100	050704201
48,3	1 1/2	M8	110	57	75	0,082	100	050704801
60,3	2	M10	125	71	75	0,154	100	050706001
76,1	2 1/2	M10	140	87	75	0,169	100	050707601
88,9	3	M10	155	100	75	0,187	50	050708901
108,0		M12	190	121	90	0,325	50	0507108
114,3	4	M12	200	126	95	0,348	50	050711401
133,0		M12	215	146	90	0,370	25	0507133
139,7	5	M12	225	152	95	0,394	25	050714001
159,0		M12	240	172	90	0,416	25	0507159
168,3	6	M12	255	180	95	0,449	25	050716801
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



SCHALL-SCHUTZ DIN 4109

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

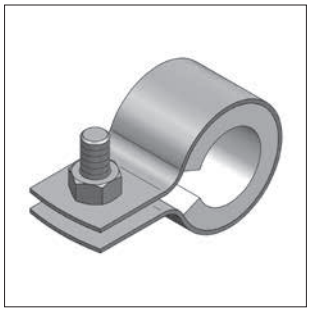
Technical data:

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

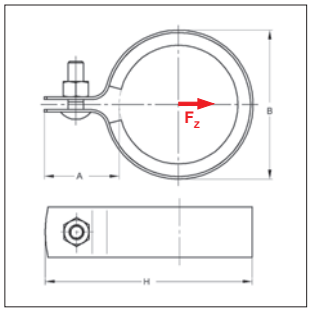
Connection: Thread M8						with sound insulation lining		Rubber
Dimension	Material	A	B	H	Load F_z	Weight	Packing	Part-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kg/pc.]	[pcs.]	
10	16x0,6	10	22	26	0,30	0,013	100	0290106
12	16x0,6	10	23	26	0,30	0,013	100	0290122
15	16x0,6	10	25	30	0,30	0,015	100	0290157
18	16x0,6	11	28	33	0,30	0,016	100	0290181
22	16x0,8	11	31	38	0,40	0,019	100	0290211
35	20x1,0	11	46	51	0,40	0,034	100	0290351
42	20x1,0	11	55	58	0,40	0,039	100	0290424

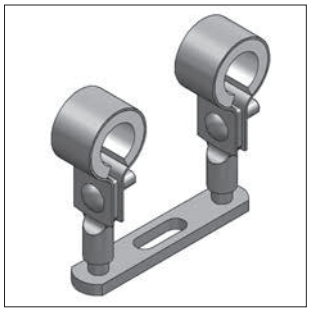
Remark: Determination of allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

Visible pipe clamp, lined



Visible pipe clamp, lined





Option for assembly with
Double holder + Eye nut

SCHALL-SCHUTZ DIN 4109

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:

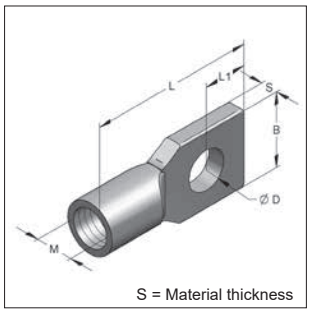
Material:	steel
Material type:	DC01-A, DD11
Surface:	galvanized
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	5 mm
Color:	white

Visible pipe clamp — **with sound insulation lining rubber** — **white**

Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	A [mm]	B [mm]	H [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
15		20x1,0	M6	0,65	33	31	56	0,035	100	0311150
18	3/8	20x1,0	M6	0,65	31	34	57	0,037	100	0311180
22	1/2	20x1,0	M6	0,65	31	38	61	0,041	100	0311220

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

Duplo eye nut with female thread

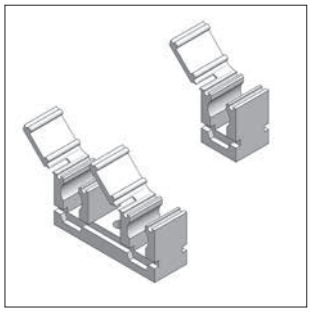


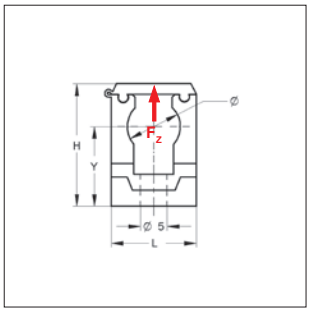
Duplo eye nut with
female thread

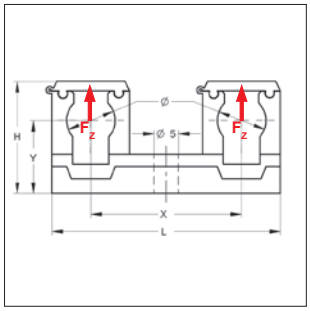
Material:	cast-zinc
Material type:	Z 410
Surface:	raw

Type	D [mm]	L [mm]	L1 [mm]	B [mm]	S [mm]	Load F_z [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







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

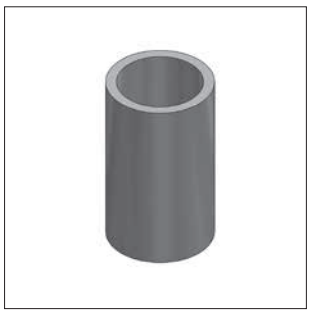
Single clip

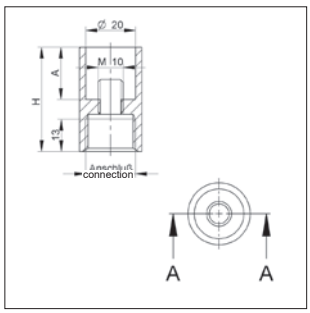
OD	Load	Measures			Weight	Packing	Part-No.
	F_z	H	B	Y			
[mm]	[kN]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
8	0,09	23	16	14	0,004	100	0401080
10	0,25	23	16	15	0,004	100	0401102
12	0,25	23	16	15	0,004	100	0401129
15	0,25	28	20	17	0,006	100	0401153
18	0,35	31	23	19	0,007	100	0401188
22	0,35	35	29	20	0,010	100	0401226
28	0,35	40	35	23	0,012	100	0401285
35	0,35	47	43	26	0,016	100	0401358

Double clip

OD	Load	Measures				Weight	Packing	Part-No.
	F_z	H	X	Y	L			
[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pcs.]	
10	0,25	23	31	15	47	0,010	100	0410101
12	0,25	23	32	15	47	0,009	100	0410128
15	0,25	28	36	17	55	0,012	50	0410152
18	0,35	31	39	19	60	0,015	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

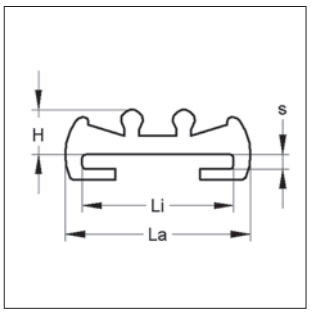
Technical data:

Material: steel
Surface: galvanized

Connection with female thread	Dimension H [mm]	Dimension A [mm]	Suitable for nut	Weight [kg/pc.]	Packing [pc.]	Part-No.
Suitable for pipe clamps: Trabant and Omnia MB with connection M8/M10						
Sleeve 1/2"	36	15	M8/M10	0,09	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 insulation lining

Sound insulation lining black (TPE)						
Dimension Li x H [mm]	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

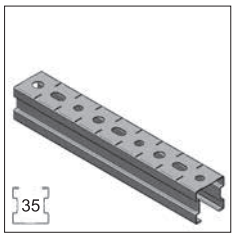
Technical data of MEFA sound insulation lining

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

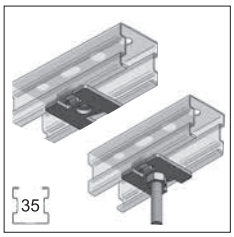
	Rubber	**Rubber**	**Silicone**
Material	Elastomer EPDM	Elastomer TPE	Silicone
Shore-hardness(DIN 53505)	50 ± 5° Shore	60 ± 5° Shore	60 ± 5° Shore
Tensile strength	-	-	800 N/cm²
Ageing, weather and ozone resistance	acc. to DIN 53509 and 53508	acc. to DIN 53509 and 53508	acc. to DIN 53509 and 53508
Temperature 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	Natural fats, glycerine, ethyl alcohol, alcoholic solutions
Chemical unstable	Hot oils and fats, fuels, hydrocarbons - further information on request -	Hot oils and fats, fuels, hydrocarbons - further information on request -	Hot oils and fats, highly concentrated acid and alkaline solutions, hydrocarbons
fire performance (DIN 4102) Building class	silicone-free B2 (not burning, dropping off)	silicone-free 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)

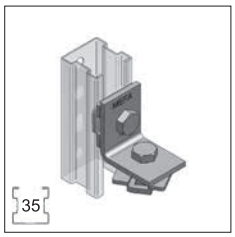
MEFA rail system



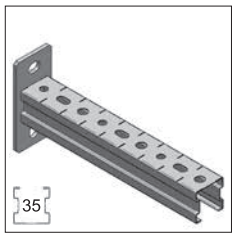
Profile rails Stex 35
Page 2/3



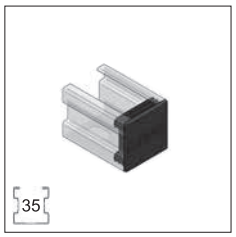
Stex 35 GP and GB
Page 2/4



Stex 35-angle
Page 2/5

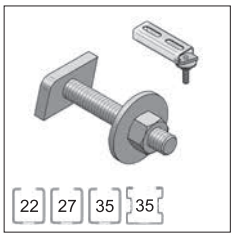


Stex 35-consoles
Page 2/6

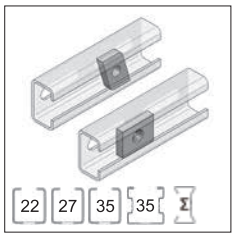


Stex 35 accessory
Page 2/8

Profile rails 22 - 35
Page 2/9

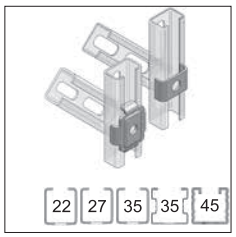


Hammer head screws
Page 2/10

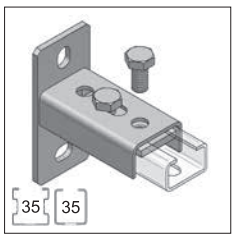


Threaded plate
Page 2/11

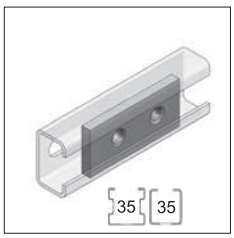
Protecting caps
Page 2/12



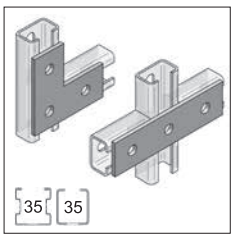
Profile holder
Page 2/12



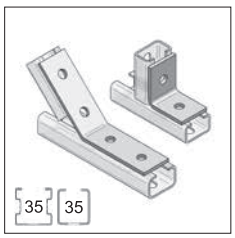
Holder 35
Page 2/14



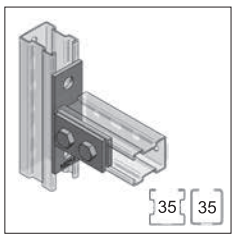
Threaded plate/ hole plate
Page 2/14



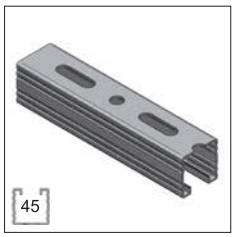
Flat connector
Page 2/15



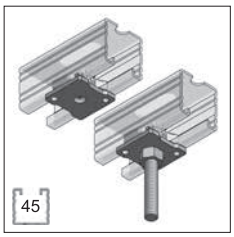
Angles
Page 2/15



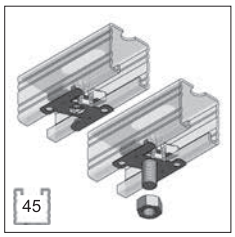
Connectors
Page 2/16



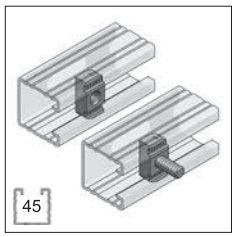
Profile rails 45
Page 2/20



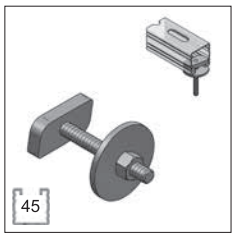
Stex 45 GP and GB
Page 2/22



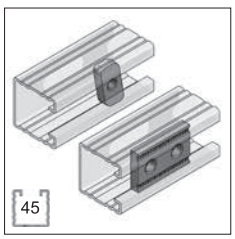
Stex 45 MP and MTB
Page 2/23



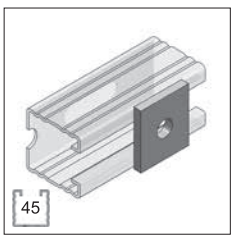
tooth plates / -bolts
Page 2/24



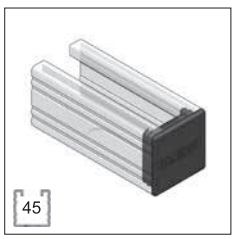
Hammer head screws
Page 2/25



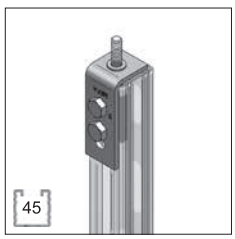
Threaded-/ tooth plates
Page 2/25 ff.



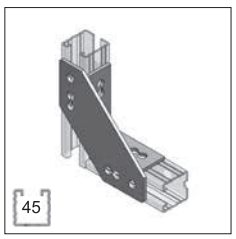
Perforated plates
Page 2/31



Protecting caps
Page 2/31

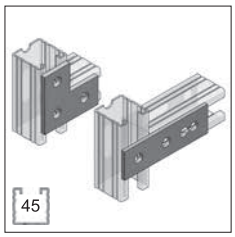


Head adapter
Page 2/31

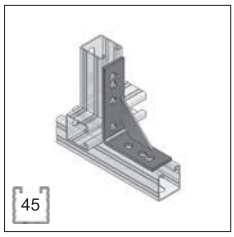


Universal knot
Page 2/32

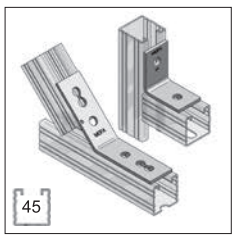
MEFA rail system



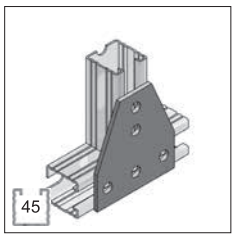
Flat connectors
Page 2/33



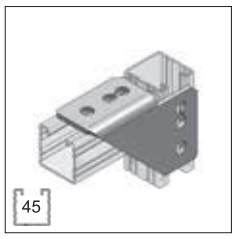
Knot triangles
Page 2/33



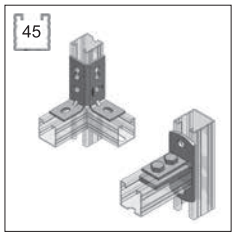
Angles
Page 2/34



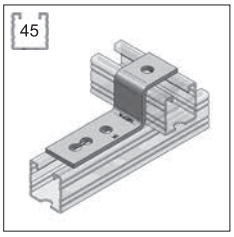
Lugs
Page 2/35



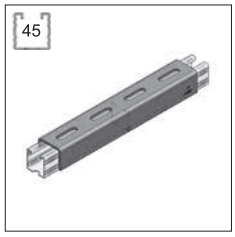
Corner angle
Page 2/35



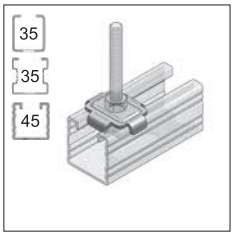
Connector
Page 2/36



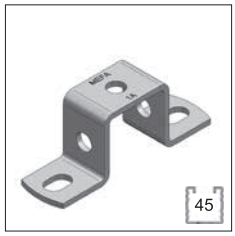
3-hole step angle
Page 2/37



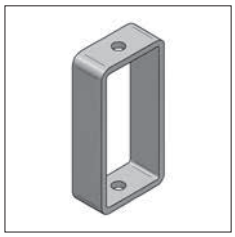
Connector 45
Page 2/37



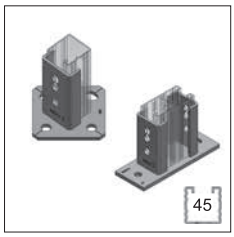
Profile holder
Page 2/38



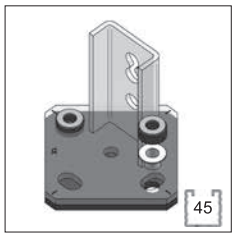
Head profile
Page 2/38



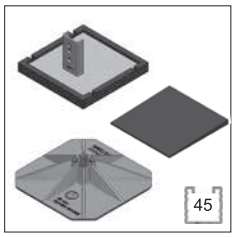
Suspending console
Page 2/39



Holder
Page 2/39

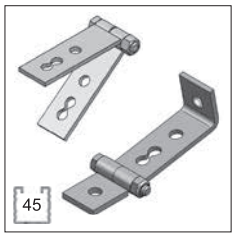


Sound-decoupling Set
Page 2/40

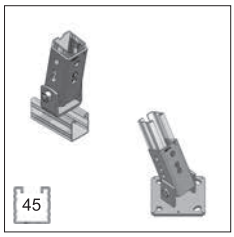


Rooftop holder/BIG FOOT®/Universal wedge
Page 2/41 f.

Support joint/Turnbuckle
Page 2/44



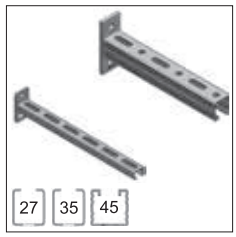
Joint connector
Page 2/46 f.



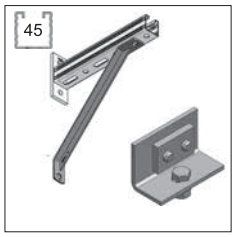
Joint holder
Page 2/48 f.

Consoles without and with braces
Page 2/50

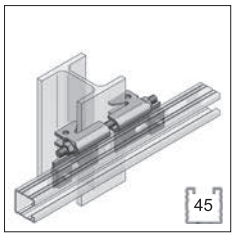
Carrier console
Page 2/51



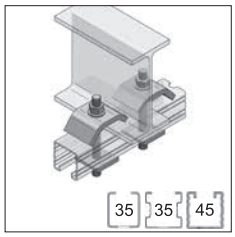
Consoles
Page 2/52 ff.



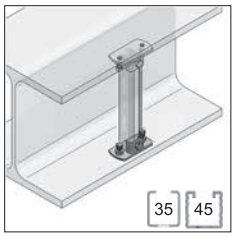
Brace 45°; Adapter angle
Page 2/60



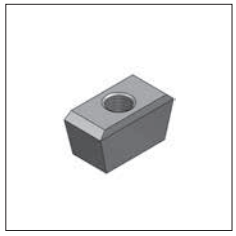
Girder connection vertical
Page 2/61



Girder connection horizontal
Page 2/61 ff.



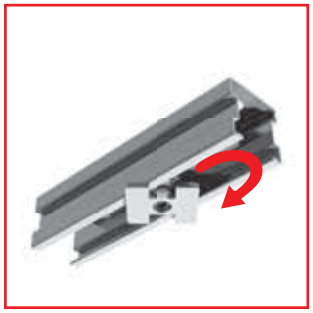
Girder clampings
Page 2/64



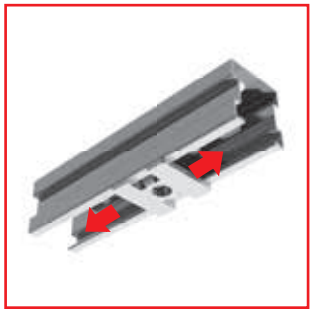
Wedge nut for ceiling
Page 2/64

Quick-fixing system Stex 35

Insert Stex



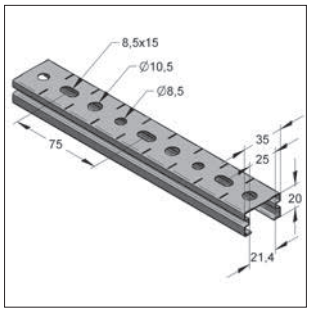
Turn Stex



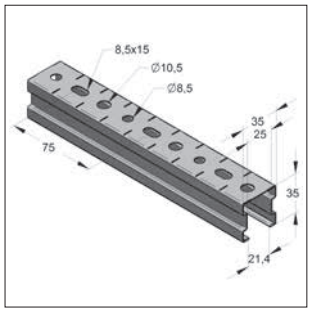
Position Stex

Counter with nut

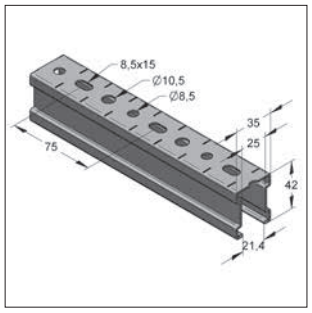
Stex 35 profile rail



Stex profile rail 35/20



Stex profile rail 35/35



Stex profile rail 35/42

RAL GÜTEZEICHEN RAL-GZ 655-C

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

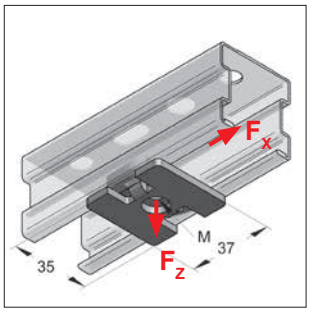
- Straight knurling against slipping of components
- Marking for fit-up aid and to cut rails

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	120	12735422
35/42/1,5	6	35	42	1,63	360	12735426

Technical overview of profile rails see on page 2/61

Stex 35 threaded plate GP



Stex-threaded plate

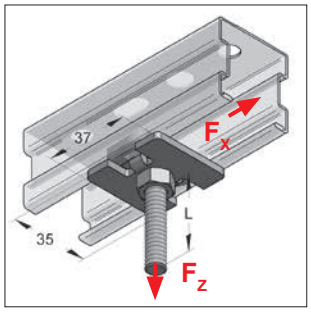
Specification:
Profile rail type: Stex
Profile rail type: 35 mm

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

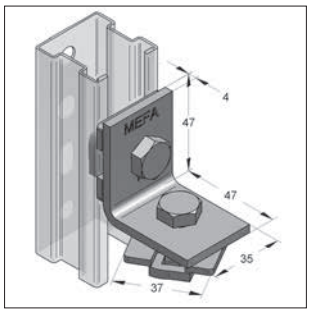
Specification:
For profile rail type: Stex
Profile rail type: 35 mm

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

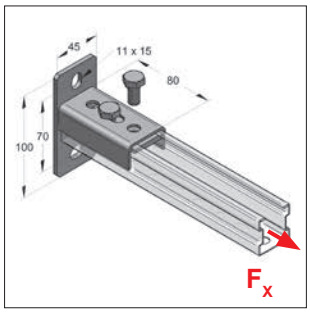
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

application loads see on page 2/13

Description	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 35 universal angle	0,216	25	127201801

Holder 35



Holder 35 vertical

Specification:

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

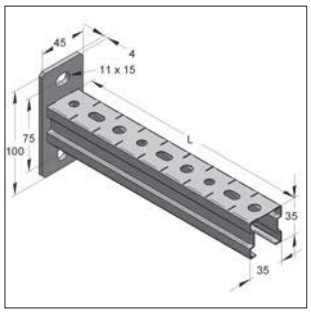
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

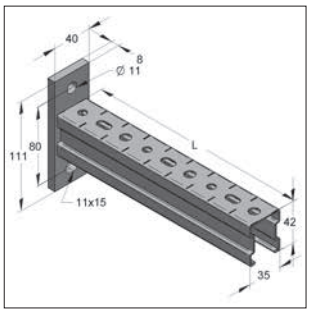
* Loads are based on component, not connection

Description	Dimension base plate	Tightening torque [Nm]	Load * F_x [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

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	F1:	up to L = 825,0 mm
	F2:	up to L = 525,0 mm
	q0:	up to L = 675,0 mm

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

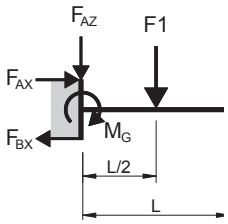
Stex console 35/35 - profile rails 35/35/1 - plate 100 x 45 x 4 mm

Description	Length	Load * F1	Load * F2	Load * q0	Weight	Packing	Part-No.
	[mm]	[kN]	[kN]	[kN/m]	[kg/pc.]	[pcs.]	
Stex 35 console	150	2,05	1,02	13,65	0,285	25	1274150
Stex 35 console	225	1,37	0,68	6,07	0,362	25	1274225
Stex 35 console	300	1,02	0,51	3,41	0,440	25	1274300
Stex 35 console	375	0,82	0,41	2,18	0,517	25	1274375
Stex 35 console	450	0,68	0,34	1,52	0,594	20	1274450
Stex 35 console	525	0,59	0,28	1,11	0,671	20	1274525

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

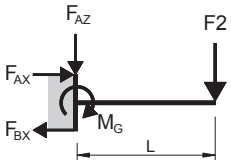
Stex 35 console	225	2,78	1,39	12,35	0,630	20	12760225
Stex 35 console	300	2,08	1,04	6,95	0,752	20	12760300
Stex 35 console	450	1,39	0,69	3,09	0,997	15	12760450
Stex 35 console	525	1,19	0,60	2,27	1,119	15	12760525
Stex 35 console	600	1,04	0,49	1,74	1,241	10	12760600

Loading condition F1



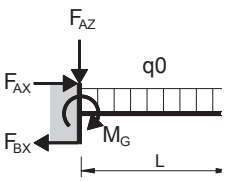
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

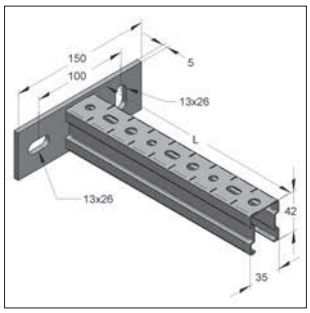
Loading condition q0



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

Notice:
all loads refering to static loads

Stex 35 console 35/42 plate horizontal



Stex console 35/42 horizontal
Profile opening on bottom side

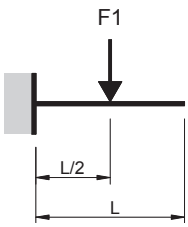
Technical data: galvanized

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

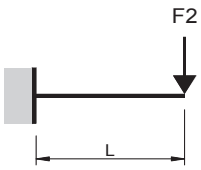
* load at elastic limit of $\sigma_{max.}$ = 160 N/mm² and max. bending of f = L/150

Description	Length	Load *			Weight	Packing	Part-No.
		F1	F2	q0			
	[mm]	[kN]	[kN]	[kN/m]	[kg/pc.]	[pcs.]	
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

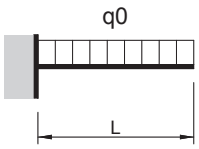
Loading condition F1



Loading condition F2

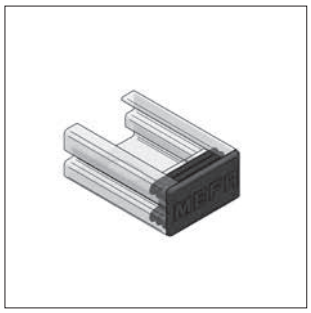


Loading condition q0

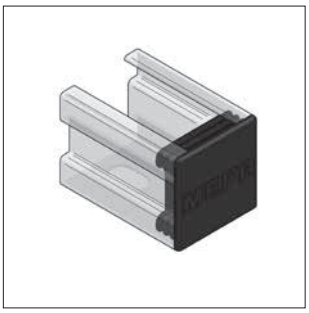


Remark:
all loads refering to static loads

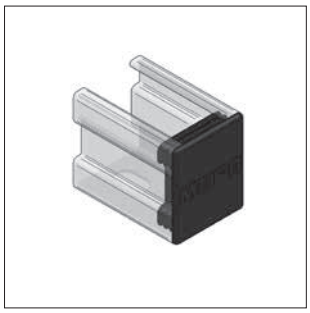
Stex 35 protecting cap



Stex protecting cap 35/20



Stex protecting cap 35/35



Stex protecting cap 35/42

Specification:

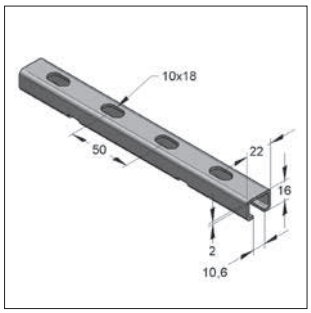
Profile rail type:	Stex 35
Profile rail type:	35 mm

Technical data:

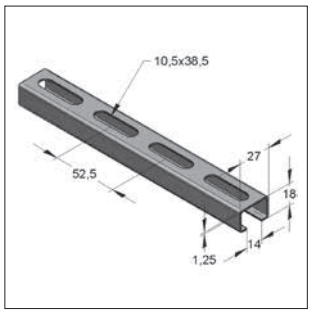
Material:	plastic PE
Material color:	black

Description	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 35 protecting cap 35/20	0,003	50	1272017
Stex 35 protecting cap 35/35	0,005	50	1272016
Stex 35 protecting cap 35/42	0,005	50	1272024

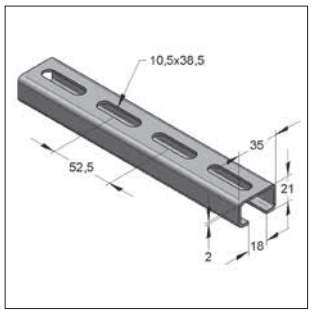
Profile rails, pre-galvanized, C-profile rail, perforated



Type 22/16



Type 27/18



Type 35/21

Specification:

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

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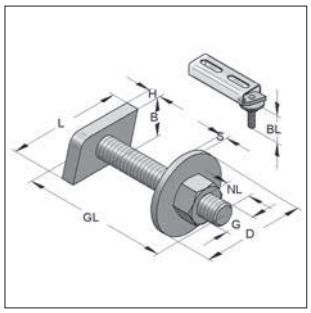
Description	Corrosion protection	Weight [kg/m]	Length [m]	Packing [m]	Bundle [m]	Part-No.
Type 22/16						
22/16/2,0 fbv	pre-galvanized	0,78	2	20	640	0800013
Type 27/18						
27/18/1,25 fbv	pre-galvanized	0,60	2	20	800	1240013
Type 35/21						
35/21/2,0 fbv	pre-galvanized	1,16	2	12	192	0800022
35/21/2,0 fbv	pre-galvanized	1,16	6	36	576	0800026

technical overview of profile rails see on page 2/61
profile rails in stainless steel V2A or V4A see chapter 13
profile rails with coating on request

Hammer head screw 35



Hammer head screw

Specification:

Mounting method: for non-slip connections and shear hole haunch connections with MEFA profile rails

Application area: should preferably be used for pipe clamp mounting

application loads see on page 2/13

[1] not suitable for thread M8/M10

[2] not suitable for thread M10/M12

Technical data:

Material: steel

Material type: S235JR

Surface: galvanized

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	**M8x25**[1]		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

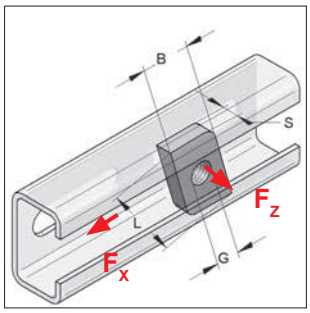
For profile rails 27/18

Hammer head screw	**M8x20**[1]		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, Stex 35/20, Stex 35/35, Stex 35/42

Hammer head screw	**M8x30**[1]		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	**M10x30**[2]		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

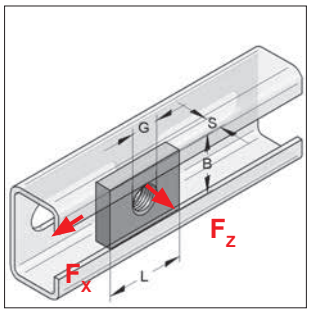
Specification:
Mounting method: for non-slip connections and shear hole haunch connections with MEFA profile rails in combination with hexagon screws, threaded bolts or- rods (property class 4.6), washers and hexagon nuts
Application area: for direct mounting of pipe clamps or bearing support

application loads see on page 2/13

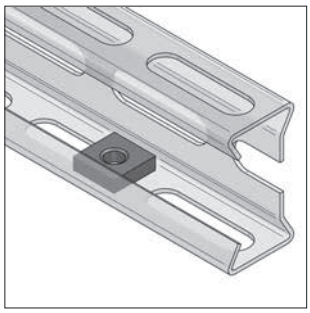
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

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, 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


Threaded square plate
used with SIGNUM LP50

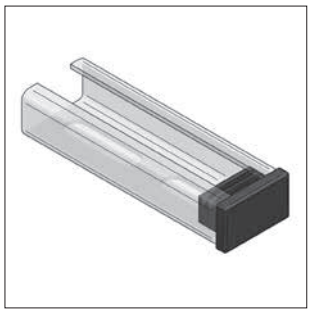
Specification:
Application area: For additional fastenings (e.g. pipe clamps) to the profile.

application loads see on page 2/13

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

For profile rail 22 mm and SIGNUM LP50					
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 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 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*	0,056	50	0816146

Protecting cap



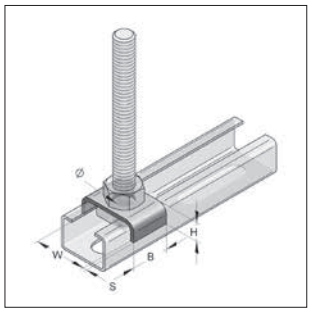
Protecting cap

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

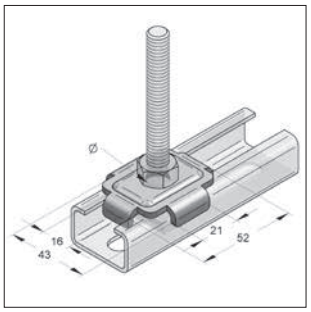
Technical data:
Material: plastic PE
Material color: black

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

Profile holder



Profile holder



Profile holder combi

Specification:
Profile rail type: C-Profile 27, 35, Stex 35
C-Profile 45

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

Description	W [mm]	B [mm]	Dimension hole-Ø [mm]	H [mm]	S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
For profile rail 27								
Profile holder 27	28,0	20	10,5	8	2	0,013	100	0809504
For profile rail 35, 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 γ = 2

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

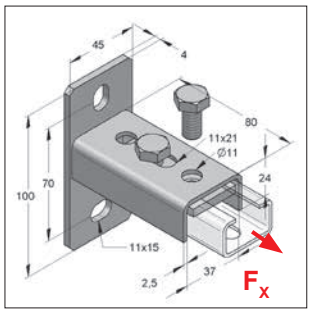
Profile rail pre-galvanized	Threaded plate 28 x 15 (24 x 13 x 4)		
	F_z	F_x	
	F_z [kN]	F_x [kN]	M8 4.6 [Nm]
27/18/1,25	1,4	0,5	10

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

Profile rail pre-galvanized	Threaded square plate 17 x 17 (17 x 17 x 5)				
	F_z	F_x			
	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	F_x			
	F_z [kN]	F_x [kN]	M12 4.6 [Nm]	M10 4.6 [Nm]	M8 4.6 [Nm]
27/18/1,25	2,7	0,5	30	25	20
35/21/2,0	4,3				

Holder 35



Holder 35 vertical

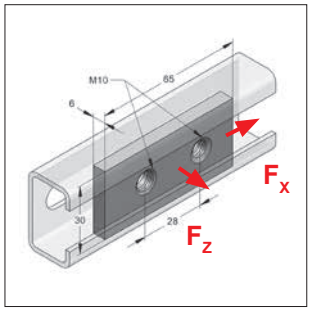
Specification:
Profile rail type: 35 and Stex 35/20, 35/35, 35/42
Scope of delivery: completely pre-assembled with 2-hole-threaded plate M10 and hexagon screws M10

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

* Loads refering to component, not to connection

Description	Dimension base plate	Tightening torque [Nm]	Load * F_x [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



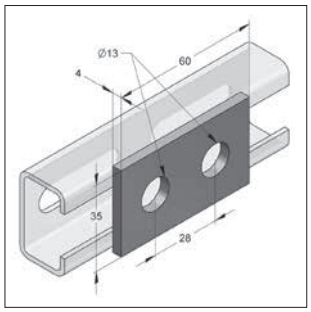
2-hole threaded plate 35/4

Specification:
Profile rail type: 35 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]	Load F_x [kN]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole threaded plate	65 x 30 x 6	M10	25	1,1	5,0	0,088	50	0816092

2-hole plate 35/4



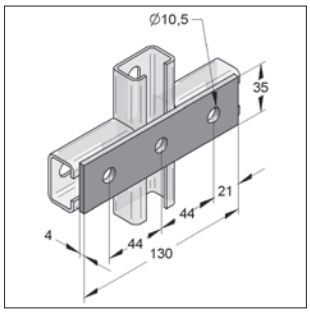
2-hole plate 35/4

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

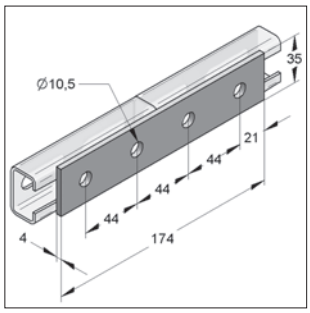
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

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

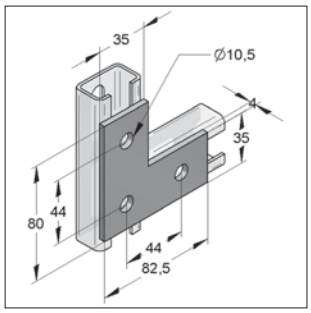
Flat connector 35/4



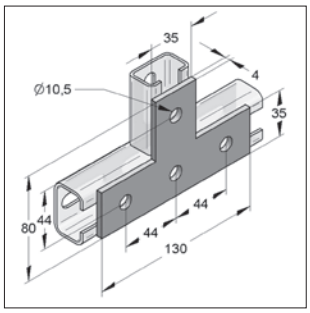
3-hole flat connector 35/4



4-hole flat connector 35/4



Flat connector 35/4 L-shape



Flat connector 35/4 T-shape

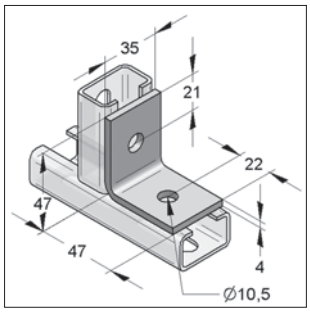
Specification:
Profile rail type: 35 and Stex 35/20, 35/35, 35/42

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

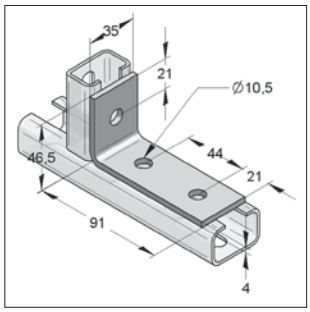
Remark: admissible loads are depending on connection.

Description	Dimension [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
3-hole flat connector 35/4	130 x 35 x 4	0,137	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

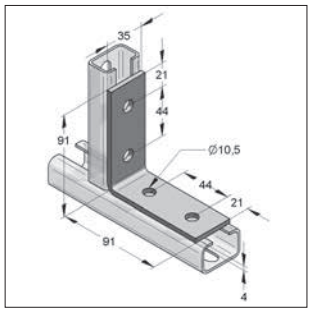
Angle 35/4



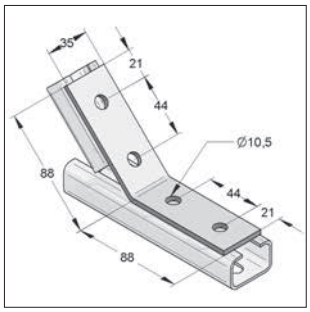
2-hole angle 35/4



3-hole angle 35/4



4-hole angle 35/4 90°



4-hole angle 35/4 135°

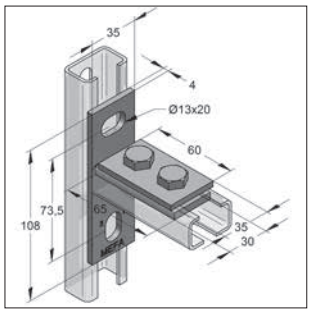
Specification:
Profile rail type: 35 and Stex 35/20, 35/35, 35/42

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

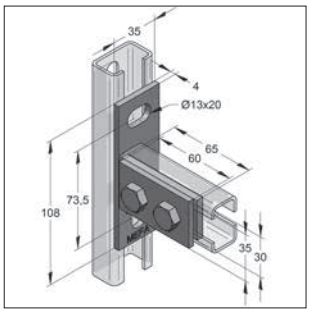
Remark: admissible loads are depending on connection.

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	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 and Stex 35/20, 35/35, 35/42
Scope of supply:	2-hole plate 13 mm hexagon screw M10
Remark:	- not applicable as ceiling support or vertical use (hanging) - no use as console connection

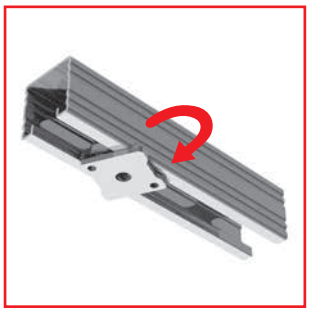
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

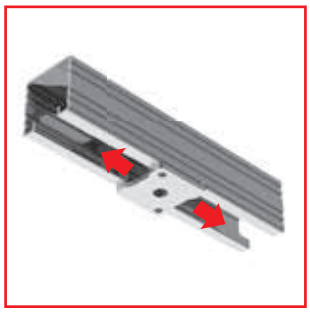
Description	Screws	Plate L x B x S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 35 horizontal	M10	108 x 35 x 4	0,283	20	081645302
Connector 35 vertical	M10	108 x 35 x 4	0,283	20	081655802

Quick-fixing system Stex 45

Insert Stex

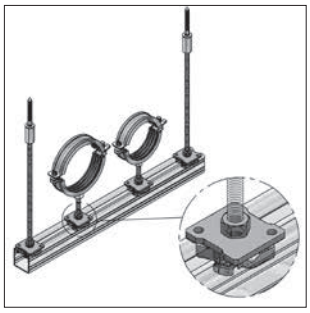


Turn Stex



Position Stex

Counter Stex with nut



Stex 45 threaded plate GP

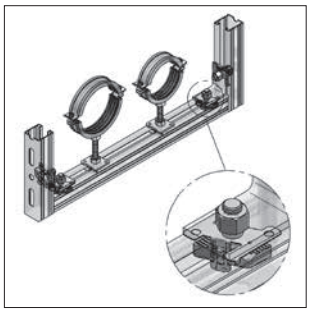
optional with connection M8, M10 or M12

Your advantages:
- tooth and counter plate can be replaced by one-part Stex 45 threaded plate
- insert Stex 45 threaded plate into profile rail, rotate it 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

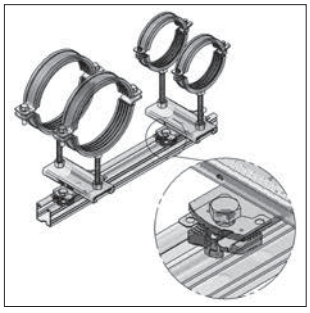
Your advantages:
- tooth and counter plate, as well as threaded pin can be replaced by one-part Stex 45 threaded bolt
- insert Stex 45 threaded bolt into profile rail, rotate it 45°, plug threaded pin and counter nut in and screw pipe clamp onto profile rail
- length- and height differences up to 30 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 rail constructions

Your advantages:
- insert mounting bolt into profile rail, rotate it 45°, position component and counter nut
- circumstantial insertion of tooth bolts and tooth plates is not necessary
- holds itself in the mounting rail
- simplifies mounting of connection parts in rail constructions



Stex 45 mounting plate MP

for mounting the rail constructions or add-on-part

Your advantages:
- insert mounting bolt into profile rail, rotate it 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

02

System components

Identification - catalogue page	Part-No.	Profile type 45/26	45/45	45/60	45/75	45/90	45/120	45/150	Recommended connecting parts: Mounting plate M12	Mounting bolt	Tooth plate M12	Threaded square plate M12	2-hole tooth plate M12
									1280012	1280001	0818103	081613801	0818110
 2-hole angle 40/5 **Page 2/34**	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	
 3-hole angle 40/5									○	●	○	□▲○	▲○
L	08140300	■	■	■	■	■	■	■	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1+ 1 MP 3 hex. screws M12x25
K	08140400	■	■	■	■	■	■	■					
Page 2/34													
 4-hole angle 40/5									○	●	○	□▲○	○
45°	08141000	■	■	■	■	■	■	■	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
90°	08140500	■	■	■	■	■	■	■					
135°	08140600	■	■	■	■	■	■	■					
Page 2/34													
 4-hole knot triangle **Page 2/33**	08140701	■	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	□▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	○ Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
4-hole Universal knot **Page 2/32**	08141600	□	■	□	□	□	□	□					
 5-hole knot triangle **Page 2/33**	08141701	■	■	■	■	■	■	■	○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	● Quantity: 5 scope of delivery with nut	○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	□▲○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	○ Quantity: 2+ 1 MP Accessory: 5 hex. screws M12x25
 3-hole flat connector **Page 2/33**	0814331	■	■	■	■	■	■	■	○ 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 **Page 2/33**	0814349	■	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
 Flat connector 40/6 L-shape **Page 2/33**	0814307	■	■	■	■	■	■	■	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	● Quantity: 3 scope of delivery with nut	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	▲○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
 Flat connector 40/6 T-shape **Page 2/33**	0814315	■	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
 2-hole Universal knot **Page 2/32**	08141601	□	■	□	□	□	□	□	○ Quantity: 2 Accessory: 2 6 hex. screws 8.8 M12x25 *	● Quantity: 2 scope of delivery with nut *	○ Quantity: 2 scope of delivery with nut *	○ Quantity: 2 Accessory: 2 6 hex. screws 8.8 M12x25*	
 4-hole corner angle									○	●	○	▲○	▲○
left	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 **Page 2/35**	0816582	■	■	■	■	■	■	■	□ ○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	□ ○ Quantity: 5 scope of delivery with nut	● Quantity: 6 Accessory: 6 hex. screws 8.8 M12x25	▲○ □ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	▲● Quantity: 2+ 2 MP + 6 hex. screws M12x25

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

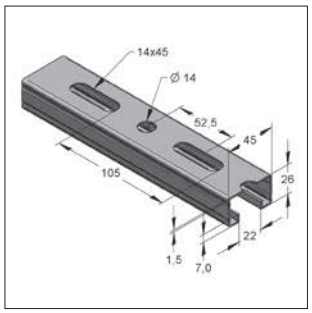
System components

Identification - catalogue page	Part-No.	Profile type 45/26	45/45	45/60	45/75	45/90	45/120	45/150	Recommended connecting parts: Mounting plate M12 (1280012)	Mounting bolt (1280001)	Tooth plate M12 (0818103)	Threaded square plate M12 (081613801)	2-hole tooth plate M12 (0818110)
 T-lug									□ ○	□ ○	●	□▲○	▲●
not angled	0816574	■	■	■	■	■	■	■	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 1 2 threaded plate 4 hex. screws M12x25
90° angled	0816870	■	■	■	■	■	■	■					
Page 2/35													
 4-hole corner plate	08165900	■	■	■	■	■	■	■	○	●	○	▲○	▲○
Page 2/35									Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 4 hex. screws M12x25
 Angle connector	08123000	■	□	■	■	■	■	■	○	●	○	▲○	▲○
Angle connector 90°	08123200	■	□	■	■	■	■	■	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 1 Accessory: 2 hex. screws M12x25
Angle connector 180°	08123100	■	□	■	■	■	■	■					
Page 2/36													
 Head profile 26	08162326	■							○	●	○	▲○	
45	08162445		■						Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
60	0816253			■									
75	08162875				■								
90	08162690					■							
120	0816274						■						
150	081628150							■					
Page 2/38													
 3-hole step angle 45	08141245		■						○	●	○	▲○	▲○
3-hole step angle 60	08141300			■					Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1 1 MP 3 hex. screws M12x25
Page 2/37													
Profile holder combi									○		●	○	
 13 mm - hole Ø	08162945	■	■	■	■	■	■	■	Quantity: 1 Accessory: 1 hex. screw 8.8 M12x30 + H		Quantity: 1 Accessory: 1 hex. screw M12x30 + H	Quantity: 1 Accessory: 1 hex. screw M12/16x30+H	
17 mm - hole Ø	08163365	■	■	■	■	■	■	■					
Page 2/38													
 Connector									○	●	○	□○▲	▲○
45	08162002	□	■	■	■	■	■	■	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
Page 2/37													
Holder									●	□ ○	○	▲○	●
 45/26-52 v/h	0812001	■	■	□	□	□	□	□	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory: 2 hex. screws 8.8 M12x25
45/26-52 v/h	0812002	■	■	□	□	□	□	□					
45/60-75 vertical	08121802		□	■	■								
Page 2/39													
Holder									●		○	○	○●
 45/90	08120952					■			Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25		Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
45/120	08121002						■						
45/150	08121452							■					
Page 2/39													
 Joint holder									○	●	○	▲○	▲○
vertical / horizontal	08120601	■	■	■	■	□	□	□	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity:1+ 1 MP Acc.:3 hex. screws M12x25
Page 2/49													
 Joint holder with plate									○	●		▲○	▲○
vertical / horizontal	08122601	■	■	■	■	□	□	□	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory:2 hex. screws 8.8 M12x25
Page 2/48													
 Connector	Page 2/36												
Joint holder	Page 2/49												
Joint connector	Page 2/46												

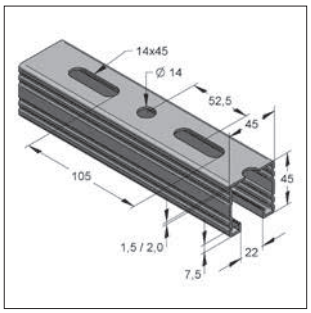
■ **standard** □ conditional ● optimal ○ alternative ▲ suitable for bolting in profile

02

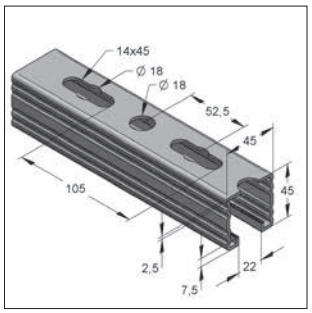
Profile rail 45, galvanized, C-profile rail, perforated, toothed



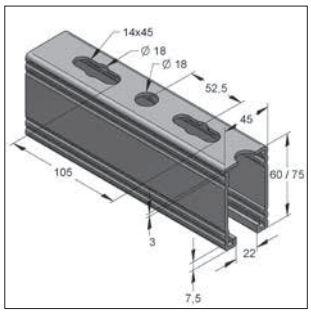
Type 45/26/1,5



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

RAL-GZ 655-C

3)

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)

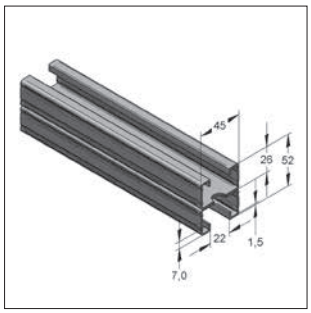
Identification	Surface	Weight [kg/m]	Length [m]	Bundle [m]	Part-No.
Type 45/26					
45/26/1,5 fbv	pre-galv.	1,34	2	200	08202622
45/26/1,5 fbv	pre-galv.	1,34	6	600	08202662
Type 45/45					
45/45/1,5 fbv	pre-galv.	1,89	2	120	082045215
45/45/1,5 fbv	pre-galv.	1,89	6	360	082045615
45/45/2,0 fbv[3)]	pre-galv.	2,45	2	120	082045220
45/45/2,0 fbv[3)]	pre-galv.	2,45	6	360	082045620
45/45/2,5 fbv[3)]	pre-galv.	2,96	3	180	0820453251
45/45/2,5 fbv[3)]	pre-galv.	2,96	6	360	0820456251
45/45/2,5 fsv[1) 3)]	hot-dip galv.	3,21	3	180	0820453252
45/45/2,5 fsv[1) 3)]	hot-dip galv.	3,21	6	360	0820456252
Type 45/60					
45/60/3,0 fbv[3)]	pre-galv.	4,06	6	240	0810762
45/60/3,0 fsv[1) 3)]	hot-dip galv.	4,35	6	240	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

technical overview of profile rails see on page 2/65

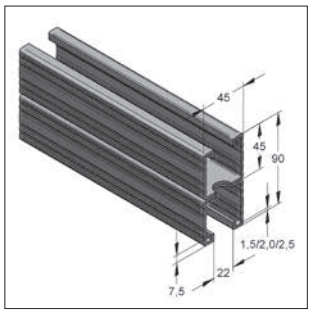
profile rails made of stainless steel V2A or V4A see in chapter 13

profile rails with various coatings on request

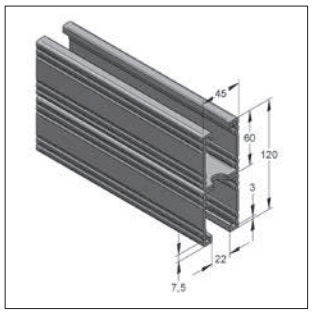
Profile rail 45, galvanized, C-profile rail, perforated, toothed



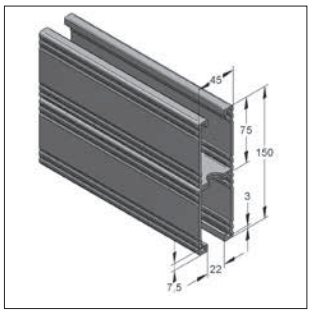
Type 45/52



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

RAL-GZ 655-C

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

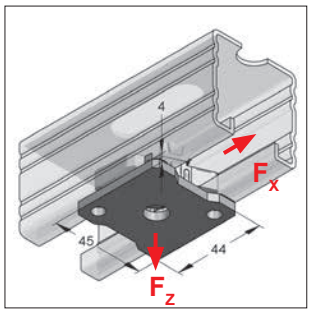
[2] not certified acc. RAL

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

Identification	Surface	Weight [kg/m]	Length [m]	Bundle [m]	Part-No.
Type 45/52					
45/52/1,5 D fbv[3]	pre-galv	2,69	6	240	08215262
Type 45/90					
45/90/1,5 D fbv[3]	pre-galv	3,78	6	180	0821901615
45/90/2,0 D fbv[3]	pre-galv	4,90	6	180	0821901620
45/90/2,5 D fbv[3]	pre-galv	5,92	6	180	0821901625
45/90/2,5 D fsv[1] [3]	hot-dip galv	6,35	6	180	0821902625
Type 45/120					
45/120/3,0 D fbv[3]	pre-galv	8,12	6	120	0810825
45/120/3,0 D fsv[1] [3]	hot-dip galv	8,63	6	120	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

technical overview of profile rails see on page 2/65

Stex 45 threaded plate GP



Stex 45 threaded plate GP

RAL GÜTEZEICHEN RAL-GZ 655-D

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

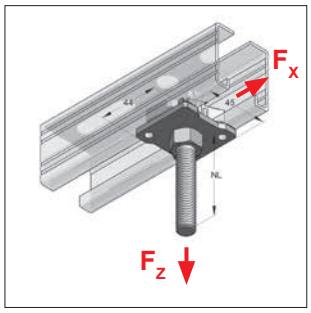
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

application loads see on page 2/27

* not certified acc. to RAL

Identification	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	0,103	30	1280512

Stex 45 threaded bolt GB



Stex 45 threaded bolt GB

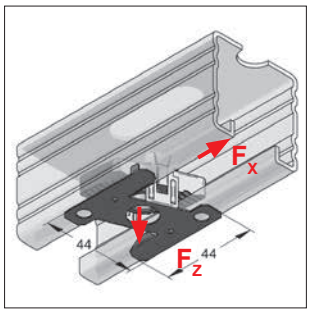
Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-locking connections and shear hole haunch connections
Application area: pipe clamp fixation

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

application loads see on page 2/29

Identification	Usable length NL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 threaded bolt GB M8/50	11	0,134	40	1281050
Stex 45 threaded bolt GB M8/70	31	0,141	20	1281070
Stex 45 threaded bolt GB M8/90	51	0,147	20	1281090
Stex 45 threaded bolt GB M8/110	71	0,154	20	1281110
Stex 45 threaded bolt GB M8/130	91	0,160	20	1281130
Stex 45 threaded bolt GB M10/50	10	0,147	40	1282050
Stex 45 threaded bolt GB M10/70	30	0,157	20	1282070
Stex 45 threaded bolt GB M10/90	50	0,166	20	1282090
Stex 45 threaded bolt GB M10/110	70	0,178	20	1282110
Stex 45 threaded bolt GB M10/130	90	0,188	20	1282130
Stex 45 threaded bolt GB M12/50	7	0,159	40	1283050
Stex 45 threaded bolt GB M12/70	27	0,174	20	1283070
Stex 45 threaded bolt GB M12/90	47	0,189	20	1283090
Stex 45 threaded bolt GB M12/110	67	0,203	20	1283110
Stex 45 threaded bolt GB M12/130	87	0,218	20	1283130

Stex 45 mounting plate MP



Stex 45 mounting plate MP

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

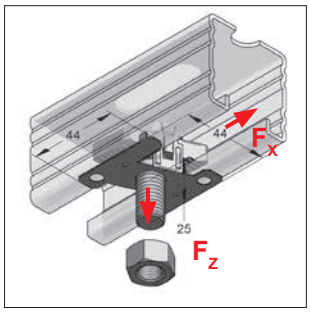
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

application loads see on page 2/27

* not certified acc. to RAL

Identification	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



Stex 45 mounting bolt MTB
incl. nut M12

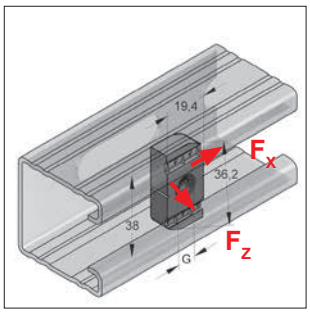
Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-lock connections and shear hole haunch connections
Application area: connecting parts

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

application loads see on page 2/27

Identification	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
Application area: connecting parts, pipe clamp fixation
Required accessory: hexagon screw, threaded pin or -rod, washer and hexagon nut

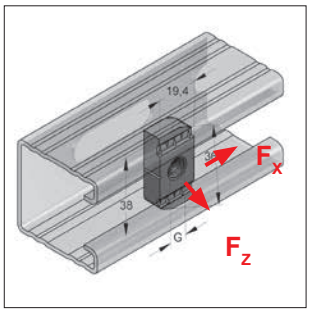
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

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*	0,044	100	081810102
Tooth plate S	36 x 20	M10*	0,044	100	081810202
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
Application 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

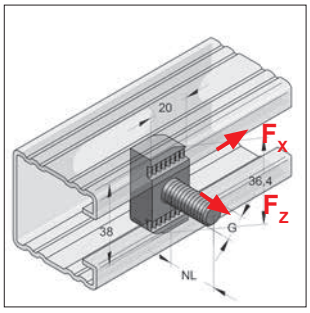
Technical data:
Material: steel
Material type: S235JR
Surface: zinc-nickel

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	36 x 20	M8*	0,045	100	081810102/zn
Tooth plate S zinc-nickel	36 x 20	M10*	0,044	100	081810202/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
Application area: connecting parts, pipe clamp fixation
Required accessory: washer and hexagon nut

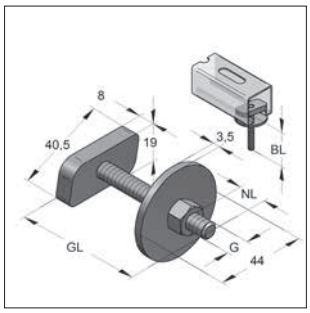
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized
Tooth bolt: property class 8.8

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*	0,076	100	0816944
Tooth bolt	22,5	M12	0,085	100	0816952

Hammer head screw 45



Hammer head screw

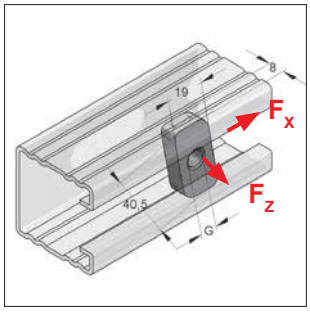
Specification:
Profile rail type: rail system 45
Mounting method: non-slip connections and shear hole haunch connections
Application area: pipe clamp fixations

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

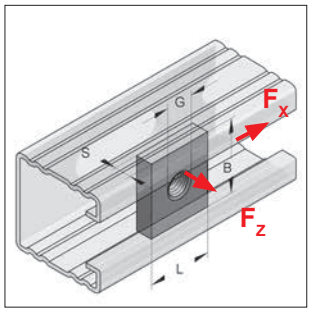
Specification:
Profile rail type: rail system 45
Mounting method: non-slip connections and shear hole haunch connections
Application area: pipe clamp fixation
Required accessory: hexagon screw, threaded bolt or -rod, washer and hexagon nut

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



Threaded square plate

Specification:

Profile rail type:	rail system 45
Mounting method:	non-slip connections and shear hole haunch connections
Application 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:

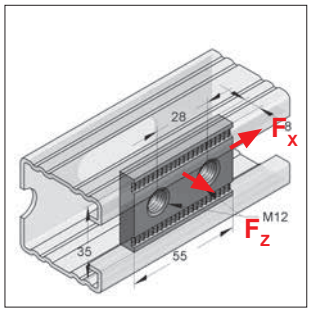
Material:	steel
Material type:	S235JR
Surface:	galvanized

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	0,056	50	0816146

2-hole tooth plate



2-hole tooth plate

RAL GÜTEZEICHEN RUNDBEFESTIGUNG RAL-GZ 655-D

Specification:

Profile rail type:	rail system 45
Mounting method:	form-lock connections and shear hole haunch connections
Application 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:	galvanized

application loads see on page 2/27

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 γ = 2

Profile rail pre-galvanized	Stex 45 threaded bolt, Stex 45 mounting plate, Stex 45 mounting bolt			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5	**4,11**	**3,86**	**50**	**45**
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	**10,94**	**4,41**		
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0				
45/150/3,0 D				

Profile rail pre-galvanized	2-hole tooth plate		
			M12 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/26/1,5	**5,57**	**10,00**	**60**
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	**13,97**	**12,81**	
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)			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/26/1,5	**4,50**	**3,91**	**45**	**40**
45/52/1,5 D				
45/45/1,5				
45/90/1,5 D				
45/45/2,0				
45/90/2,0 D				
45/45/2,5	**13,86**	**4,32**		
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 γ = 2

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	**10,94**	**2,95**	**50**	**45**
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	**13,97**	**4,38**	**60**
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)			
			M12 8.8	M10 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/45/2,5	**13,86**	**2,90**	**45**	**40**
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0*				
45/150/3,0 D*				

* without approval according to RAL-GZ 655-D

Admissible loading capacity

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

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

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

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

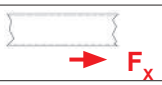
* Values in brackets only for M16 35 x 30 x 8

Admissible loading capacity

in combination with Stex45, threaded bolt GB, threaded plate, threaded square plate
global safety coefficient γ = 2

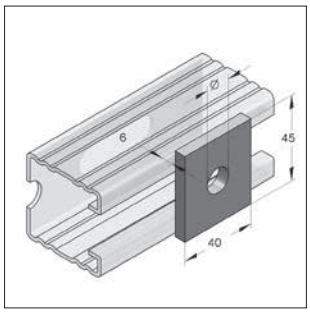
Profile rail hot-dip galvanized	Stex 45 GB, threaded bolt GB		
			M12 4.6
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/45/2,5	**9,54**	**2,36**	**29**
45/90/2,5 D			
45/60/3,0			
45/120/3,0 D			
45/75/3,0*			
45/150/3,0 D*			

Profile rail hot-dip galvanized	Threaded plate 40 x 22		
			M12 8.8
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/45/2,5	**10,00**	**1,74**	**60**
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	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	**8,60 (8,80)****	**1,60 (1,90)****	**40 (60)****	**35**
45/90/2,5 D				
45/60/3,0				
45/120/3,0 D				
45/75/3,0*				
45/150/3,0 D*				

* without approval according to RAL-GZ 655-D
** Values in brackets only for M16 35 x 30 x 8

Perforated plate



Perforated plate

Specification:
Profile rail type: rail system 45

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

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

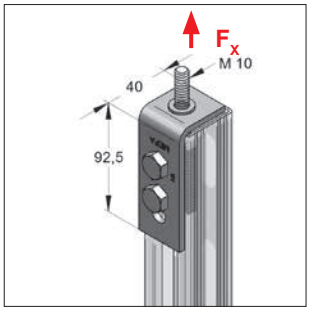

Protecting cap

Specification:
Profile rail type: rail system 45

Technical data:
Material: plastic PE
Material color: black

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Protecting cap 45 / 26	0,007	50	0819005
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



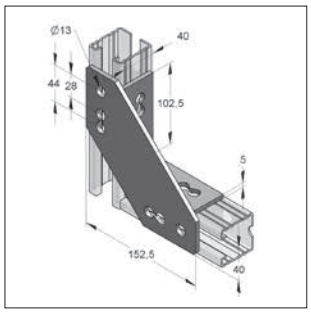
Head adapter K

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

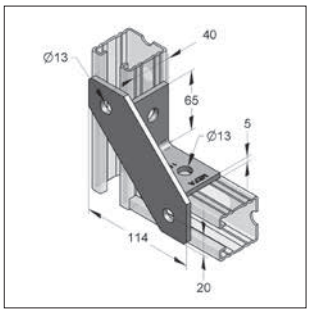
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

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

Universal knot



Universal knot
4-hole



Universal knot
2-hole

Specification:

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

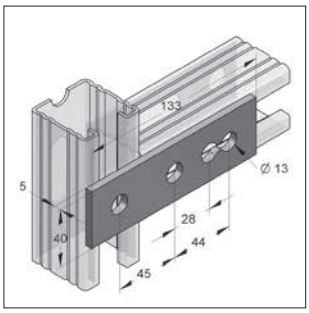
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

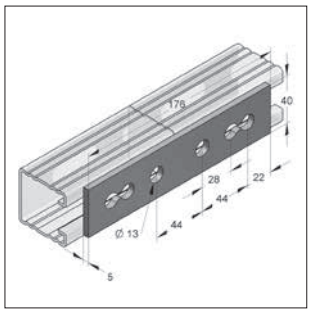
Remark: admissible loads are depending on connection.
[1)] Remark: torque free rail connection.

Identification	Specification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Universal knot	4-hole	0,802	10	08141600
Universal knot[1)]	2-hole	0,445	25	08141601

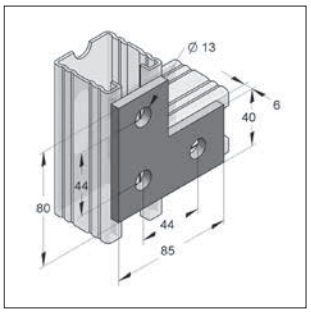
Flat connector



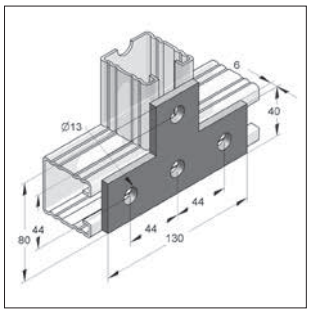
3-hole flat connector 40/5



4-hole flat connector 40/5



L-shaped flat connector 40/6



T-shaped flat connector 40/6

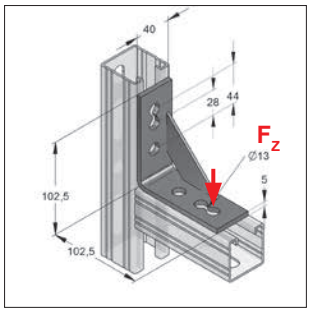
Specification:
Profile rail type: rail system 45

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

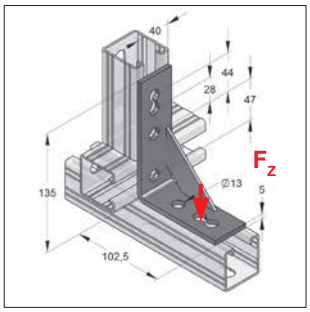
Remark: torque free rail connection

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

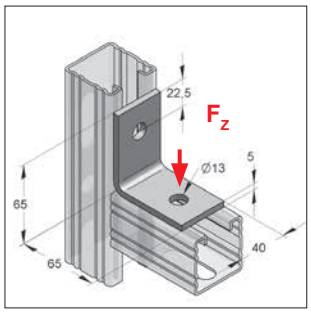
Specification:
Profile rail type: rail system 45

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

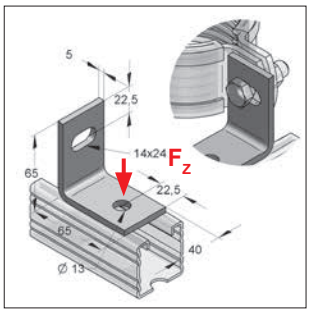
[1] loads referring to component, not to connection
[2] loads referring to component, double-sided fixed on profile

Identification	Dimension L x W [mm]	Load F_z [1] without profile rail [kN]	Load F_z [2] with profile rail [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

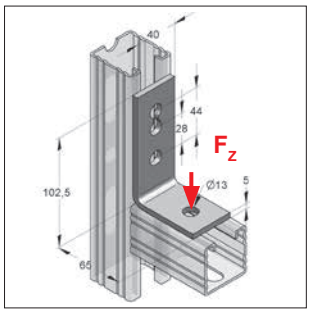
Angle 40/5



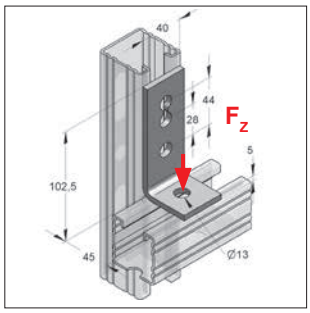
2-hole angle 40/5



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



3-hole angle 40/5 L



3-hole angle 40/5 K

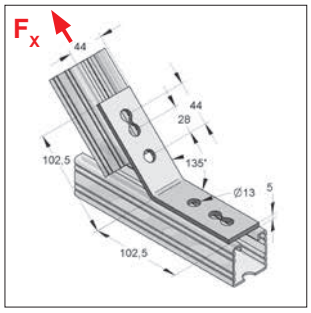
Specification:
Profile rail type: rail system 45

[1] loads referring to component, not to connection
[2] loads referring to component, double-sided fixed on profile

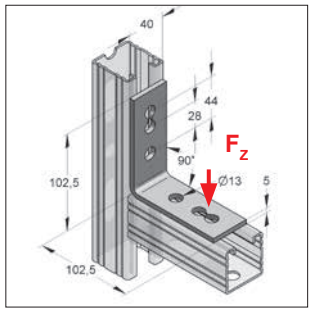
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Dimension	Load		Weight	Packing	Part-No.
		F_z [1] without profile rail	F_z [2] with profile rail			
	[mm]	[kN]	[kN]	[kg/pc.]	[pcs.]	
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

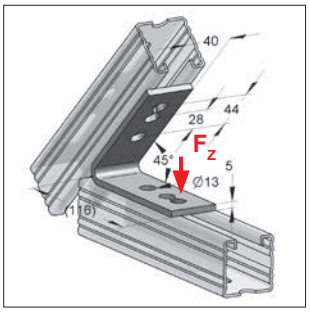
Angle 40/5



4-hole angle 40/5 135°



4-hole angle 40/5 90°



4-hole angle 40/5 45°

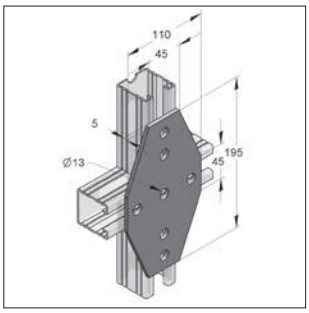
Specification:
Profile rail type: rail system 45

[1], [3] loads referring to component, not to connection
[2] loads referring to component, double-sided fixed on profile

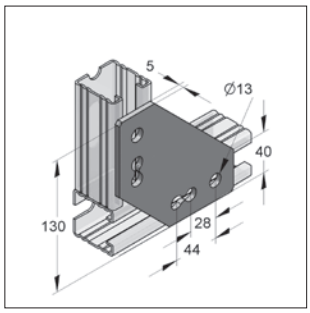
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Dimension	Load			Weight	Packing	Part-No.
		F_z [1] without profile rail	F_z [2] with profile rail	F_x [3]			
	[mm]	[kN]	[kN]	[kN]	[kg/pc.]	[pcs.]	
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

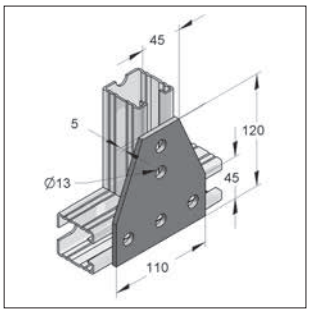
Lug



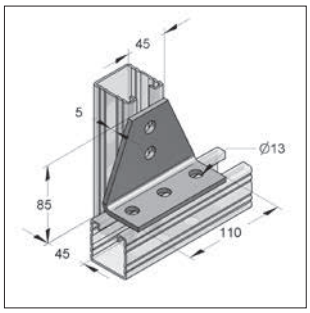
Cross strap



4-hole corner plate



T-lug, not angled



T-lug, angled

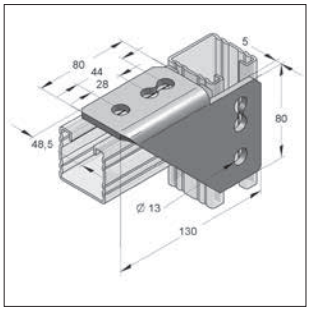
Specification:
Profile rail type: rail system 45

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

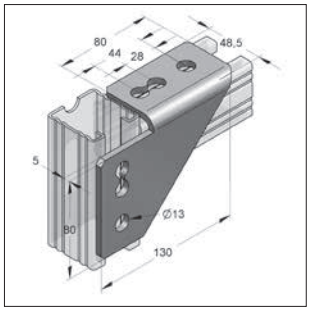
Remark: admissible loads are depending on connection.

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

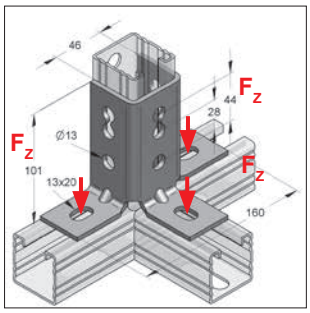
Specification:
Profile rail type: rail system 45

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

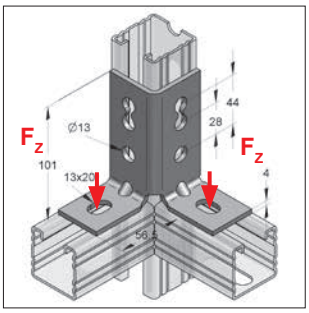
Remark: admissible loads are depending on connection.

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

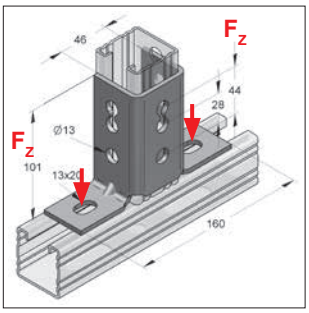
Angle connector



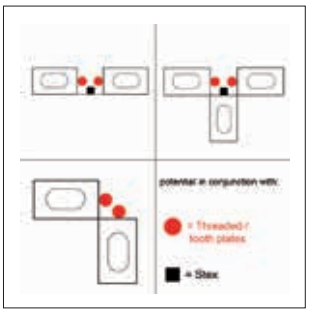
Angle connector C 45



Angle connector C 45 90°



Angle connector C 45 180°



Installation recommendation

Specification:

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

Technical data:

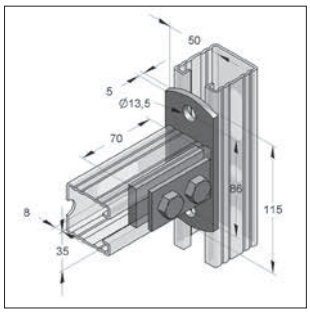
Material:	steel
Material type:	S235JR
Surface:	galvanized

[1] loads referring to component, not to connection
[2] loads referring to component, double-sided fixed on profile

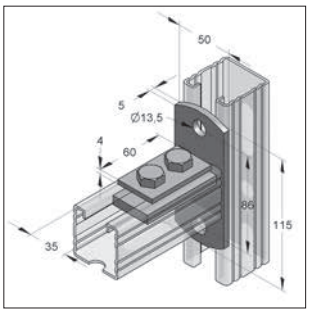
Remark: With lateral screw connection , 2-hole tooth plates have to be used

Identification	Tightening tourque (M12) [Nm]	Load F_z [1] without profile rail [kN]	Load F_z [2] with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Angle connector C45 90° + 180°	50	2,5	4,0	0,548	15	08123000
Angle connector C45 90°	50	2,5	4,0	0,367	15	08123200
Angle connector C45 180°	50	2,5	4,0	0,481	15	08123100

Connector 45



Connector 45 lengthways



Connector 45 horizontal

Specification:

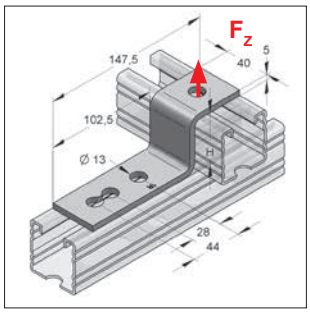
Profile rail type:	rail system 45
Application area:	connection of profile rails, moment-free connections only (not for connection of consoles)
Scope of supply::	2-hole plate 13 mm hexagon screw M12

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 step angle 40/5



Step angle 40/5

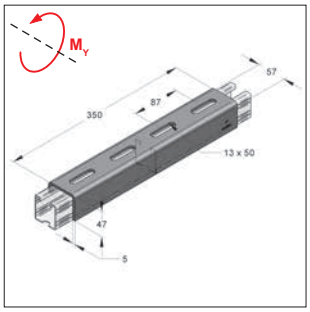
Specification:
Profile rail type: rail system 45

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

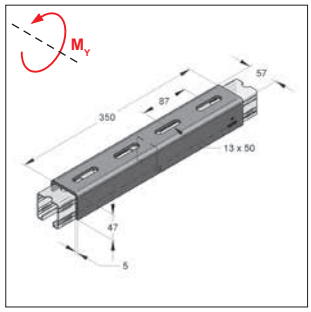
* loads referring to component, not to connection

Identification	Dimension H [mm]	Load * F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Step angle 45	45	1,0	0,277	25	08141245
Step angle 60	60	1,0	0,301	25	08141300

Connector 45



Connector 45
rail slot at top



Connector 45
rail slot at bottom

Specification:
Profile rail type: rail system 45
Application area: for static load connection and extension of C-profile rails of the rail system 45

Recommended accessory:
4 x tooth plate S M12
4 x hexagon screw M12 x 25
4 x washer 13 x 24 x 2,5 (DIN 7089-12)

Remark: For double profile rails and single rails from size 45/60 two connectors shall be taken.

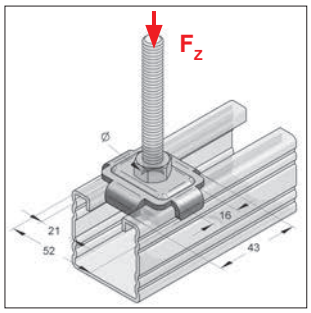
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

For profile rail width 45

Identification	Limit Moment M_Y [Nm]	Height [mm]	Width [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 45	675	47	57	1,47	10	08162002

mounting recommendation see chapter 15

Profile holder combi



Profile holder combi

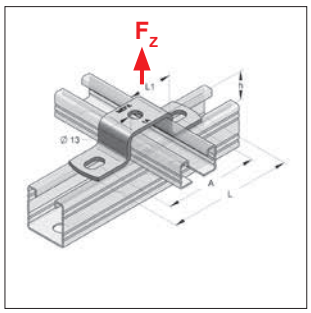
Specification:
Profile rail type: rail system 35, 45, Stex 35
Application area: suitable for connection of profile rails

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

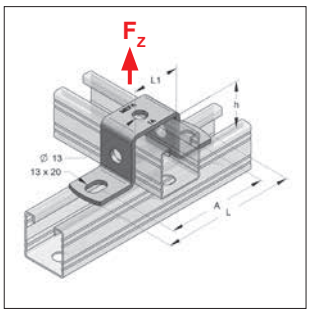
For profile rail 35, 45 and Stex 35

Identification	Tightening torque [Nm]	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

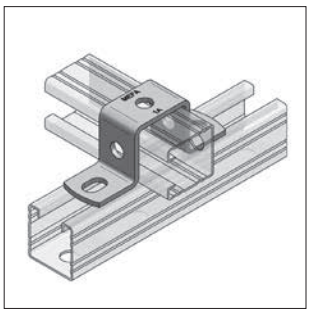
Head profile



Head profile



Head profile 45/45



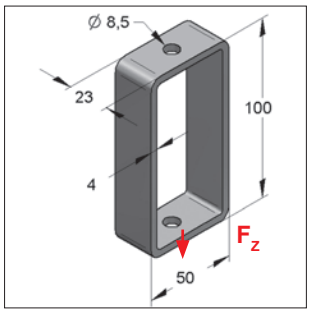
Rail turned 90°

Specification:
Profile rail type: rail system 45
Application 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]	Load F_z [kN]	Material thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Head profile 26	45/26	130	105	46	26	3,5	4	0,176	25	08162326
Head profile 45	45/45	130	105	46	45	3,5	4	0,208	25	08162445
Head profile 52	45/52-D	130	105	46	52	3,5	4	0,235	25	08162452
Head profile 60	45/60	130	105	46	60	3,5	4	0,253	25	0816253
Head profile 75	45/75	130	105	46	75	3,5	4	0,286	25	08162875
Head profile 90	45/90-D	130	105	46	90	3,5	4	0,313	25	08162690
Head profile 120	45/120-D	130	105	46	120	3,5	4	0,387	25	0816274
Head profile 150	45/150-D	130	105	46	150	3,5	4	0,454	1	081628150

2-hole suspending console



2-hole suspending console
100/50/4

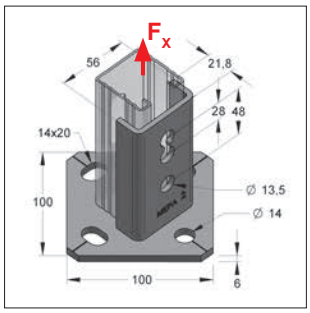
Specification:
Application area: universal fixation e.g.
suitable for ceiling suspension

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

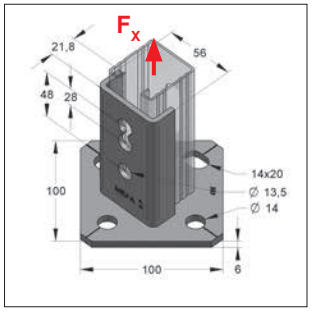
[1] loads referring to component, not to connection

Identification	Dimension H x B x S [mm]	Hole-Ø [mm]	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

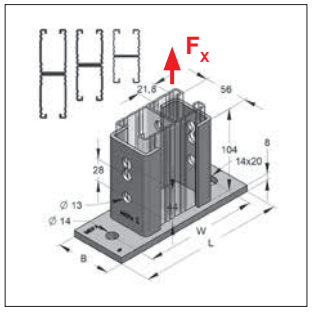
Holder



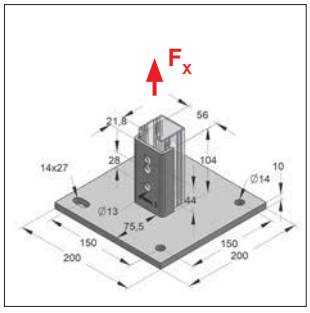
Holder 45 v/h for rail vertical
Necessary dowel holes at X



Holder 45 v/h for rail horizontal
Necessary dowel holes at X



Holder for double
C-profile rail



Holder square
for C-profile rail

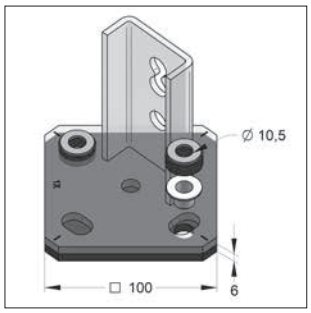
Specification:
Profile rail type: rail system 45
Application area: for fixation of profile rails on construction

Technical data:
Material: steel
Material type: S235JR
Surface: hot-dip galv[1]
galvanized[2]

[1] variations in dimension up to 1 mm possible
[3] loads referring to component, not to connection

Identification	Plate L x W [mm]	Hole distance W [mm]	Max. profile height [mm]	Suitable for C-profile 45/... 26	45	60	75	52D	90D	120D	150D	Load F_x [3] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Holder 45/26-52 v/h[2]	100 x 100	88	52	•	•			•				15,0	0,72	10	0812001
Holder 45/26-52 v/h[1]	100 x 100	88	52	•	•			•				15,0	0,75	10	0812002
Holder 45/60-75 vertical[1]	160 x 70	118	75			•	•					7,3	1,01	10	08121802
Holder 45/90[1]	186 x 70	144	90						•			13,7	1,40	10	08120952
Holder 45/120[1]	216 x 70	174	120							•		13,7	1,54	5	08121002
Holder 45/150[1]	246 x 70	204	150								•	13,5	1,68	5	08121452
Holder „Holorib“[1]	200 x 200	150		•	•	•	•	•	•	•	•	10,0	3,48	5	08197000

Sound-decoupling Set with rubber plate 100x100



Sound-decoupling Set

Specification:

Mounting instruction: For pressure loading only.

Sound insulation: according to DIN 4109

Panes with integrated insulation ring.

Note: Suitable for Holder 45 v/h

Technical data:

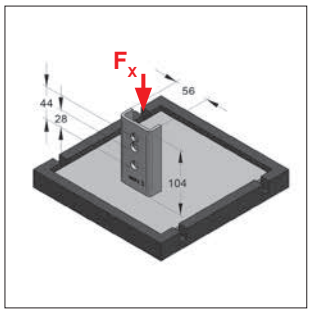
Material

Insulation lining: rubber EPDM

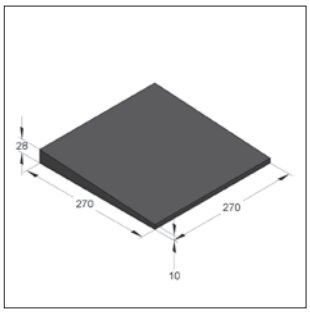
Temperature resistance: - 35 °C up to + 100 °C

Identification	Rubber plate	Strength rubber plate	Insulating sleeve for srew connection	Weight	Packing	Part-No.
	[mm]	[mm]		[kg/set]	[set]	
Sound-decoupling Set Holder 45 v/h	100 x 100	6	M10	0,087	1	0812003

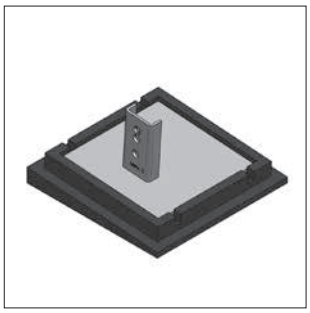
Rooftop holder for rooftop constructions



Rooftop holder complete



Rubber wedge 4°



Rooftop holder complete with rubber wedge underneath

Specification:

Profile rail type:	45/26, 45/45, 45/52, 45/60, 45/75, 45/90, 45/120
Application area:	for profile channel constructions onto rooftop
Installation advise:	position rooftop holder on rubber pad. For compensation of possible roof pitch place rubber wedge (up to 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

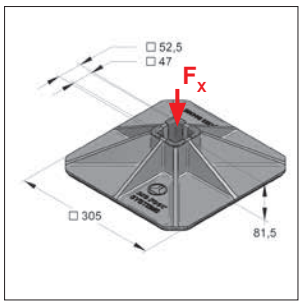
Technical data:

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

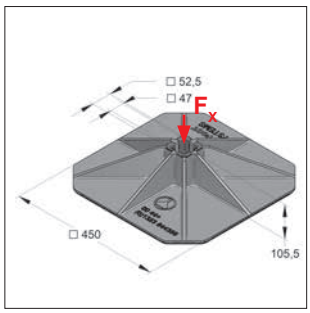
* Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Identification	Dimension steel plate	Dimension rubber pad / seperation fleece	Load F_x	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	-	0,03	1	0819759701

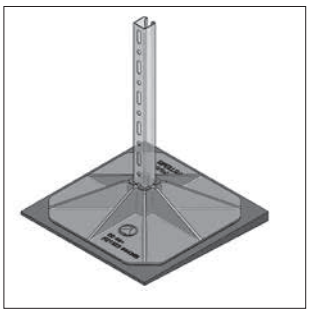
Rooftop holder BIG FOOT®



Rooftop holder BIG FOOT®
305 mm
complete



Rooftop holder BIG FOOT®
450 mm
complete



Rooftop holder BIG FOOT®
with rubber wedge

Specification:

Profile rail type:	45/45
Application area:	for profile channel constructions on rooftops e.g. for ventilation ducts, roof racks
Specification:	BIG FOOT® with bonded EPDM underlay
Recommended accessories:	Separating fleece as additional protection for the roof cladding. Wedges are available to equalise roof pitches.
Rooftop holder complete consists of:	1 x feet 1 x adapter for rail system 45

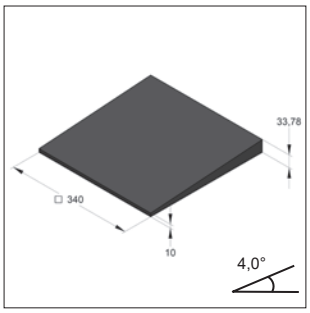
Technical data:

Material holder feet:	polyamide 6
Underlay:	EPDM
separation fleece:	polyester
temperature-resistance:	-40°C up to +80°C

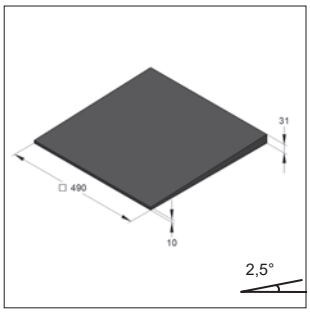
* Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Identification	Dimension holder feet [mm]	Dimension rubber pad L x B [mm]	Load* F_x [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
BIG FOOT® 305						
BIG FOOT® complete 305	305 x 305	330 x 330	3,0	1,44	2	08197606
BIG FOOT® fleece 305	-	345 x 345	-	0,03	1	08197603
BIG FOOT® 450						
BIG FOOT® complete 450	450 x 450	486 x 486	5,0	3,51	2	08197609
BIG FOOT® fleece 450	-	492 x 492	-	0,06	1	08197613

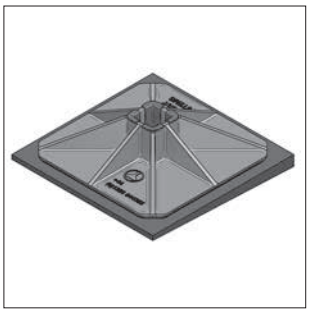
Universal wedge



Universal wedge 340x 340 4,0°



Universal wedge 490x 490 2,5°



Mounting example

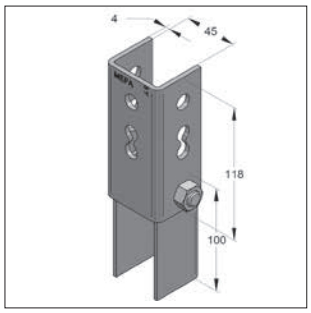
Specification:
Application area: To equalise roof pitches.

Technical data:

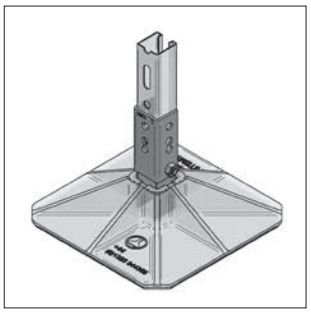
Material	EPDM
temperature resistance:	-40°C up to +80°C

Identification	Dimension L x B	suitable for	Inclination	Weight [kg/pc.]	VPE [pcs.]	Part-No.
Universal wedge 340x 340 4,0°	340 x 340	BIG FOOT® 305	4°	2,25	1	08197604
Universal wedge 490x 490 2,5°	490 x 490	BIG FOOT® 450	2,5°	4,47	1	08197617

Joint adapter for BIG FOOT® 305



Joint adapter for BIG FOOT® 305



Assembly

Specification:

Profile rail type: 45

Installation advise: For compensating the roof pitch.
Joint adapter is inserted into the rooftop holder for installation.

Technical data:

Material steel

Material name: S235JR

Surface screw: zinc-nickel

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint adapter for BIG FOOT® 305	0,83	1	08197619/zn

Rooftop Multi Support

Rooftop Multi Support

Specification:

Application area: For easy fixing of devices and ventilation lines and -ducts on flat roofs or direct fixing of devices.
Recessed aluminum rail (40 x 20 mm) allows easy assembly while at the same time damping structure-borne noise.

Installation advise: The Rooftop Multi Support can be screwed on as a base for rail holders or ventilation devices. To prevent larger devices from tipping over, two Rooftop Multi Supporter can be used on each side.

Separation fleece: recommended for use on PVC membrane roof surfaces to prevent migration of plasticizer.
The BIG FOOT® Separation fleece 450 (Part-No. 08197613) is sufficient for two Rooftop Multi Supporter.

Technical data:

Material
holder: recycled, UV-resistant rubber SBR
rail: aluminum

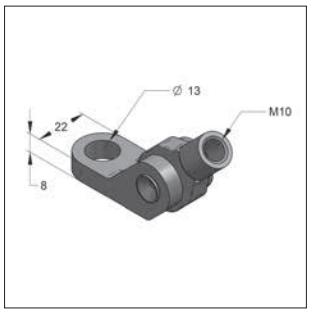
temperature-resistance: -40°C up to +80°C

Recommended accessories: Tooth plate S with zinc-nickel coating

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

Identification	Dimension [mm]	Load* F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Rooftop Multi Support	400 x 180 x 95	1,28	3,50	1	08197620

Support joint



Support joint

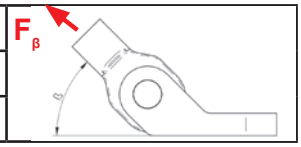
Support joint with bracing

Specification:
Application area: Support joint foot with eye nut M10
for bracing of threaded rod M10 with arbitrary angularity.
for bracing of pipe clamps (Titan) or profile rails,
on connection thread or closing flange from pipe clamps.

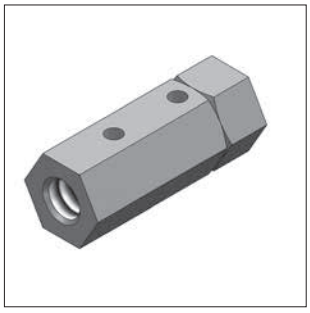
Technical data:
Material: steel
Surface: zinc-nickel

* Loads referring to component, not to connection

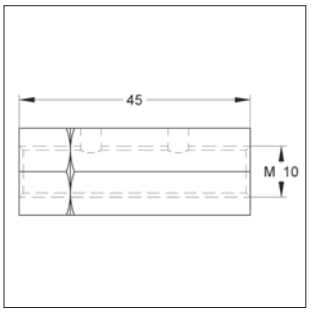
Identification	Hole-ø [mm]	Thread	Angle β	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Support joint	13	M10	0 - 60°	0,138	20	08120750

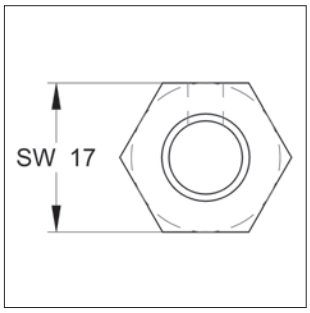
Admissible load at angle β			
Angle β	0 - 45°	45 - 60°	
F_{β}* [kN]	10	4	

Hexagonal turnbuckle DIN 1479



Hexagonal turnbuckle



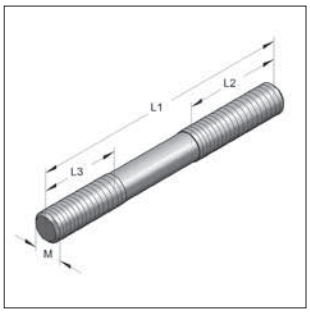


Specification:
Application area: Adjustment of tensioning
Accessory: Support joint, threaded rods and bolts left right

Technical data:
Material: steel
Surface: galvanized

Identification	Thread	Dimension L [mm]	Adjustability [mm]	Tensile load [kN]	Width across nut SW	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagonal turnbuckle	M10	45	21	11	17	0,058	20	08120760

Threaded rod left / right

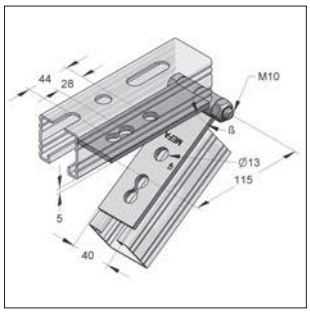


Threaded rod left / right

Specification:		**Technical data:**	
Application area:	Adjustment of tensioning	Material:	steel
		Surface:	galvanized
Accessory:	Support joint, threaded rods and Hexagonal turnbuckle	FK:	4.6

Identification	Dimension L1 [mm]	L2 [mm]	L3 [mm]	M [mm]	Tensile load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded rod left / right M10	60	25	25	M10	14,20	0,0212	10	08120770

Joint connector for C-profile rails



Joint connector
for C-profile rails

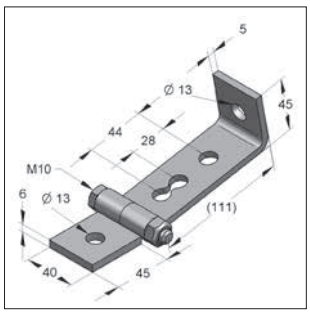
Specification:
Profile rail type: rail system 45
Application area: mounting of two profile rails of various angularity

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

Loads see Profile joint connector page 2/43

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

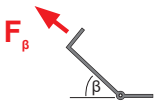
Joint angle



Joint angle

Mounting example
Joint angle with bracing

Admissible load at angle β



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

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

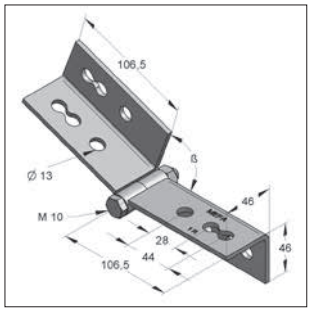
Remark: for upright mounting consider shear forces in radial tubular axle

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

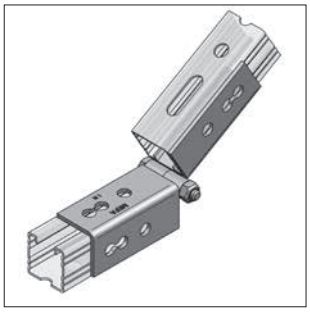
* loads referring to component, not to connection

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

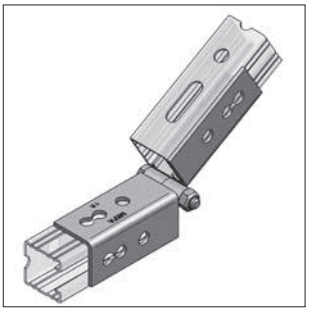
Profile joint connector

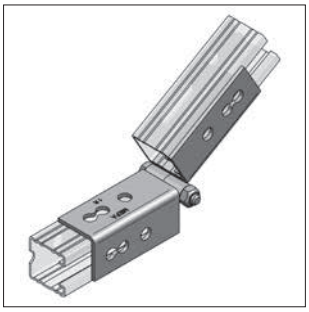


Profile joint connector



Position of channel arbitrary





Specification:

Profile rail type:	rail system 45
Application area:	connection of C-profiles 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

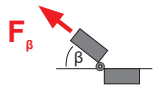
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

* loads referring to component, not to connection

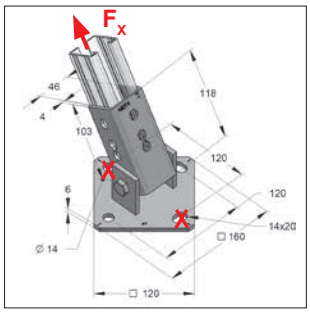
Identification	Hole-Ø [mm]	Angle β	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile joint connector	13	30° - 90°	0,662	10	08122700

Admissible load at angle β

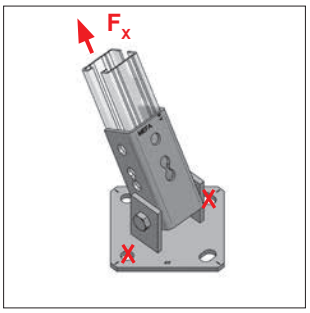


Angle β	30°	45°	60°	90°
F_β* [kN]	**6,0**	**4,24**	**3,45**	**3,0**

Joint holder with plate v/h



Joint holder horizontal
Necessary dowel holes at X



Joint holder vertical
Necessary dowel holes at X

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

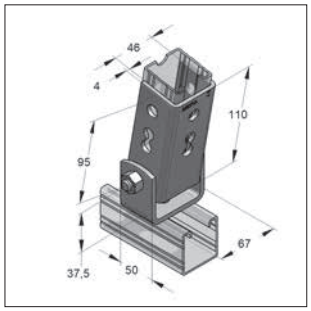
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

[1] loads referring to component, not to connection

Identification	Dimension plate [mm]	Tightening torque (M12) [Nm]	Load F_x [1] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with plate v/h	120 x 120 x 6,0	50	10,0	1,43	10	08122601

Joint holder



Joint holder
vertical / horizontal

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

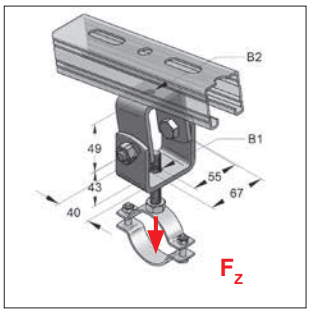
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

[1] loads referring to component, not to connection

Identification	For profile rail width [mm]	Hole-Ø [mm]	Tightening torque (M12) [Nm]	Load F_x [1] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder vertical / horizontal	45	13	50	10,0	0,816	15	08120601

Joint holder with terminal hole



Joint holder with terminal hole

Specification:

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

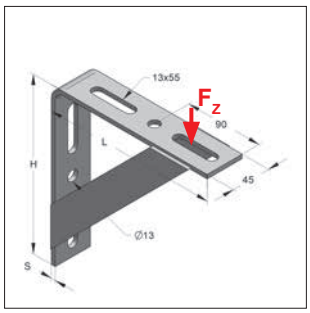
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

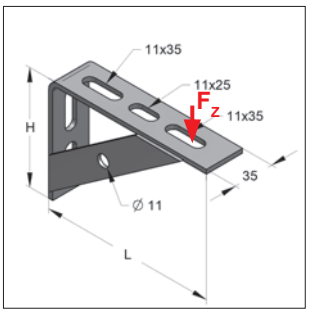
[1] loads refer to component, not to connection

Identification	For threaded rods B1 / B2	B1 [mm]	B2 [mm]	Load F_z [1] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with terminal hole	M8-M12 / M8-M12	13	13	10,0	0,604	25	081207201
Joint holder with terminal hole	M8-M12 / M16	13	17	10,0	0,595	15	081208001
Joint holder with terminal hole	M16 / M16	17	17	10,0	0,591	15	081217701

Angle bracket



Angle bracket



Knot bracket 100/150/4 L

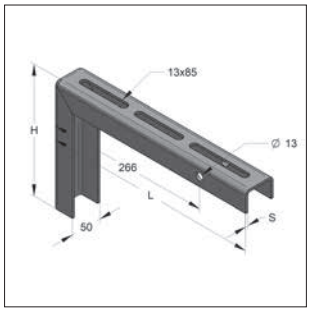
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

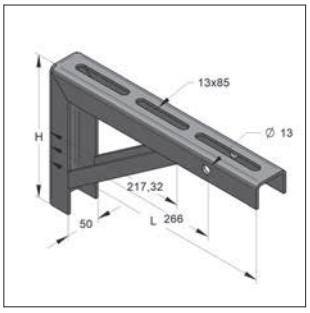
[1] loads referring to component, not to connection

Identification	Dimension H x L x S [mm]	Load [1] F_z [kN]	Length [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Angle bracket with 2 braces	**200 x 200 x 5**	5,0	150	1,06	15	0814083
Angle bracket with 2 braces	**300 x 300 x 5**	5,0	250	1,68	10	0814091
Knot bracket L	**100 x 152 x 4**	2,5	120	0,30	25	0803100

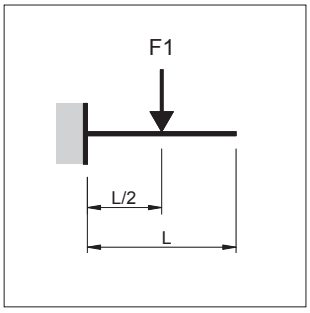
Universal console



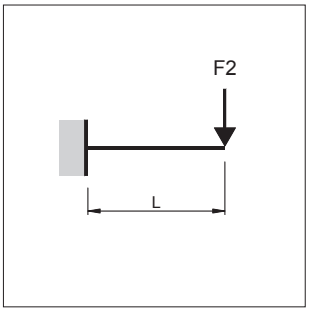
Universal console



Universal console with knot



Loading condition F1



Loading condition F2

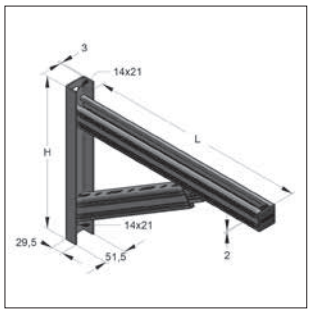
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

[1] loads referring to component, not to connection

Identification	Dimension H x L x S [mm]	Load [1] F_1 [kN]	Load [1] F_2 [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Universal console	**200 x 200 x 4,0**	6,5	4,0	1,01	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 45/45/2,0



Carrier console
with brace

Specification:

Dimension u-steel:	51,5 x 29,5 x 3,0 mm
Dimension profile rails:	45 x 45 x 2,0 mm
With enclosed protecting caps	

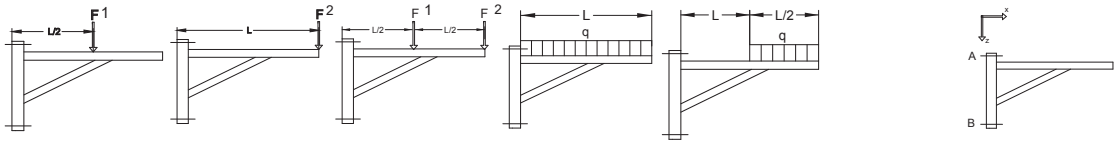
Technical data:

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

Remark: Loads referring to component, not to connection

Identification	Length L [mm]	Height H [mm]	Hole distance [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Carrier console 45/45/2,0	420	330	284,5	2,66	6	180470421/fvz
Carrier console 45/45/2,0	525	365	319,5	3,29	6	180470526/fvz
Carrier console 45/45/2,0	630	395	349,5	3,94	6	180470631/fvz
Carrier console 45/45/2,0	735	485	439,5	4,73	6	180470736/fvz
Carrier console 45/45/2,0	840	485	439,5	5,01	6	180470841/fvz

Load and permissible loads:

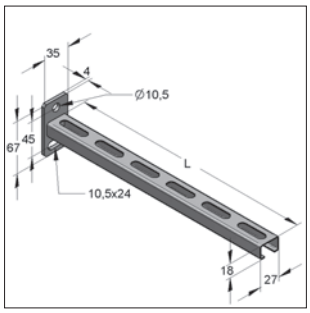


bearing reaction forces

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

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

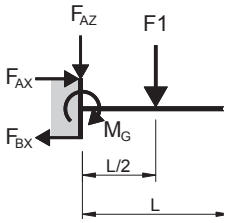
Technical data:

Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	67 x 35 x 4,0 mm
Material type profile rail:	DC01, fy = 160 N/mm²	Dimension profile rail:	27 x 18 x 1,25 mm
Surface:	galvanized		
Material:	steel		
global safety coefficient γ:	1,35		

limitation torque	M_G:	36,74 Nm
Reaction force	F_{AX}:	0,82 kN
Reaction force	F_{BX}:	0,82 kN
M_G, F_{AX}, F_{BX} on	F1: up to L	= 630,5 mm
	F2: up to L	= 315,5 mm
	q0: up to L	= 420,5 mm

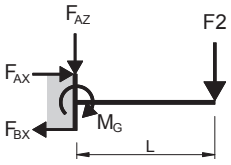
Identification	Length L [mm]	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-27/18	**157,5**	0,47	0,23	2,94	0,159	25	18010158
Console C-27/18	**210,0**	0,35	0,17	1,66	0,190	25	18010210
Console C-27/18	**262,5**	0,28	0,14	1,06	0,222	25	18010263
Console C-27/18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

Loading condition F1



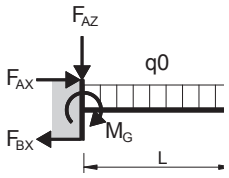
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

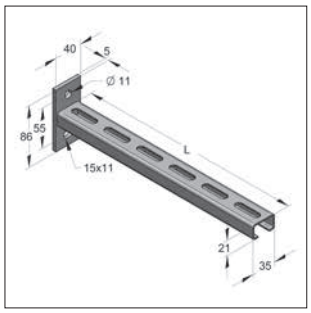
Loading condition q0



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

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:

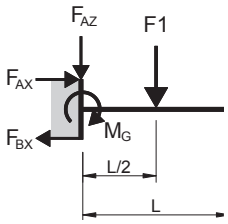
Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	86 x 40 x 5,0 mm
Material type profile rail:	S235JR, fy = 235 N/mm²	Dimension profile rail:	35 x 21 x 2,0 mm
Surface:	galvanized		
Material:	steel		
global safety coefficient γ:	1,35		

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	F1: up to L	= 630,0 mm
	F2: up to L	= 315,0 mm
	q0: up to L	= 472,5 mm

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

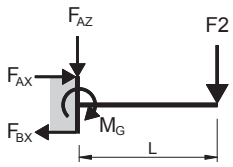
Identification	Length L [mm]	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-35/21	**157,5**	1,19	0,60	7,57	0,307	25	18020158
Console C-35/21	**210,0**	0,89	0,45	4,26	0,368	25	18020210
Console C-35/21	**262,5**	0,72	0,36	2,72	0,429	25	18020263
Console C-35/21	**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 F1



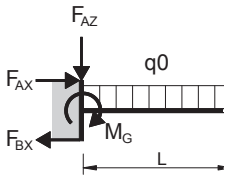
F_{AZ} = F1	$M_G = \frac{F1 * L}{2}$

Loading condition F2



F_{AZ} = F2	M_G = F2 * L

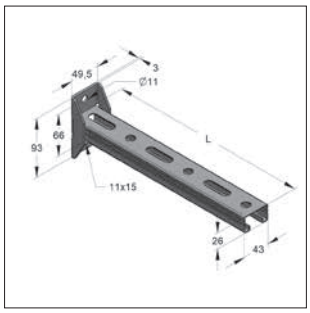
Loading condition q0



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

Notice:
all loads referring to static loads

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



Console C 45/26/1,5 mm S
Profile slot at bottom side

Technical data:

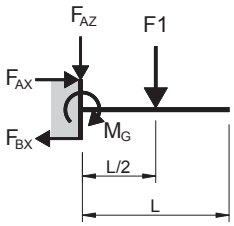
Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	93 x 50 x 5,0 mm
Material type profile rail:	S235JRG2, fy = 235 N/mm²	Dimension profile rail:	45 x 26 x 1,5 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ:	1,35		

Limitation torque	M_G:		123,50 Nm
Reaction force	F_{AX}:		1,96 kN
Reaction force	F_{BX}:		1,96 kN
M_G, F_{AX}, F_{BX} on	F1:	up to L	= 945,0 mm
	F2:	up to L	= 420,0 mm
	q0:	up to L	= 630,0 mm

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

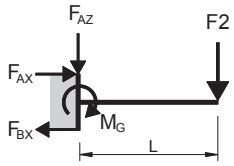
Identification	Length L [mm]	F1 [kN]	Load F2 [kN]	q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/26 S	210,0	1,18	0,59	5,60	0,419	25	18035021001
Console C-45/26 S	315,0	0,78	0,39	2,49	0,560	25	18035031501
Console C-45/26 S	420,0	0,59	0,29	1,40	0,701	20	18035042001
Console C-45/26 S	525,0	0,47	0,22[1)]	0,90	0,841	15	18035052501

Loading condition F1



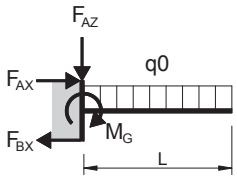
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

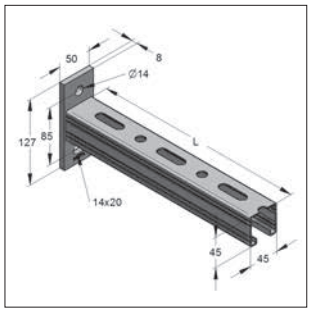
Loading condition q0



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

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

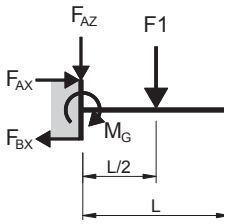
Limitation torque	M_G:	522	Nm
Reaction force	F_{AX}:	6,15	kN
Reaction force	F_{BX}:	6,15	kN
M_G, F_{AX}, F_{BX} on	F1:	up to = 1155	mm
	F2:	up to = 525	mm
	q0:	up to = 735	mm

[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

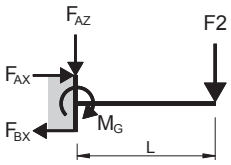
Console C-45/45 - profile rail 45/45/2,0							galvanized
Identification	Length L [mm]	F1 [kN]	Load F2 [kN]	q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/45	210,0	4,98	2,49	23,70	0,89	15	180450210
Console C-45/45	315,0	3,32	1,66	10,53	1,14	15	180450315
Console C-45/45	420,0	2,49	1,24	5,92	1,40	10	180450420
Console C-45/45	525,0	1,99	1,00	3,79	1,66	10	180450525
Console C-45/45	630,0	1,66	0,82[2)]	2,63[2)]	1,92	5	180450630
Console C-45/45	735,0	1,42	0,61[2)]	1,93[2)]	2,18	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	1,23	15	180450315/fvz
Console C-45/45	525,0	1,99	1,00	3,79	1,80	10	180450525/fvz

Loading condition F1



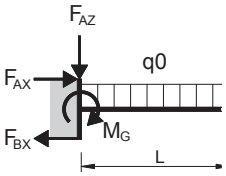
F_{AZ} = F1	$M_G = \frac{F1 * L}{2}$

Loading condition F2



F_{AZ} = F2	M_G = F2 * L

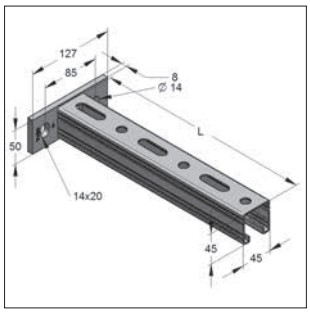
Loading condition q0



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

Remark:
all loads refer to static loads

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



Console C 45/45/2,0 horizontal

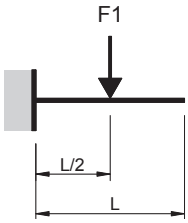
Technical data: galvanized

Material type profile rail:	S355J2, fy = 355 N/mm²	Dimension plate:	127 x 50 x 8,0 mm
Material type plate:	S235JR, fy = 235 N/mm²	Dimension profile rail:	45 x 45 x 2,0 mm[1)]
Material:	steel		
Surface:	galvanized		
Global safety coefficient γ:	1,35		

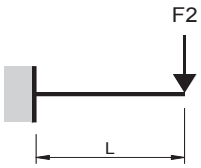
[1)] Console with dimension profile rail: 45 x 45 x 2,5 mm see page 12/9

Identification	Length L [mm]	F1 [kN]	Load F2 [kN]	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	1,14	15	180460315
Console C-45/45	420,0	1,84	0,92	4,38	1,40	10	180460420
Console C-45/45	525,0	1,47	0,74	2,80	1,66	10	180460525

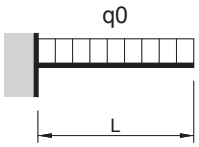
Loading condition F1



Loading condition F2

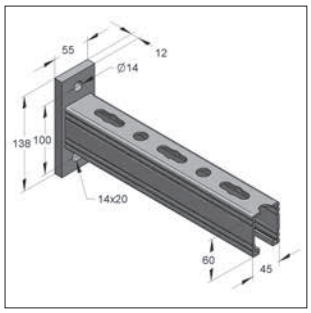


Loading condition q0



Remark:
all loads refer to static loads

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



Console C 45/60/3,0 mm

Technical data:

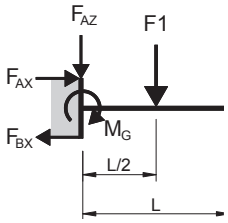
Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	138 x 55 x 12,0 mm
Material type profile rail:	S235JR, fy = 235 N/mm²	Dimension profile rail:	45 x 60 x 3,0 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ:	1,35		

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

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

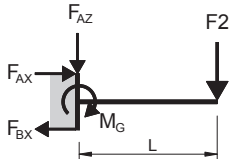
Identification	Length L [mm]	Load F1 [kN]	Load F2 [kN]	Load q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/60	525,0	4,36	2,18	8,30	2,80	5	18050525
Console C-45/60	630,0	3,63	1,82	5,77	3,23	5	18050630
Console C-45/60	735,0	3,11	1,45[1]	4,24	3,65	5	18050735
Console C-45/60	840,0	2,72	1,11[1]	3,24	4,08	5	18050840

Loading condition F1



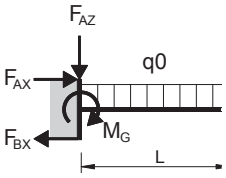
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

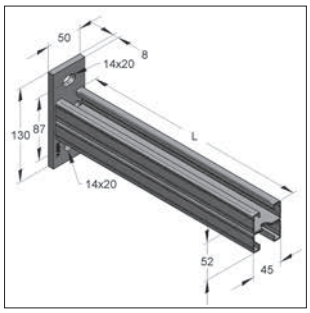
Loading condition q0



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

Remark:
all loads refer to static loads

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



Double console C 45/52/1,5

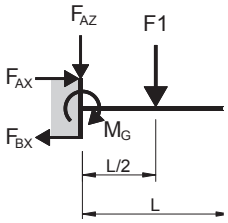
Technical data:

Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	130 x 50 x 8,0 mm
Material type profile rail:	S235JR, fy = 235 N/mm²	Dimension profile rail:	45 x 52 x 1,5 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ:	1,35		

Limitation torquet	M_G:		461,54 Nm
Reaction force	F_{AX}:		5,31 kN
Reaction force	F_{BX}:		5,31 kN
M_G, F_{AX}, F_{BX} on	F1:	up to L =	1155 mm
	F2:	up to L =	735 mm
	q0:	up to L =	945 mm

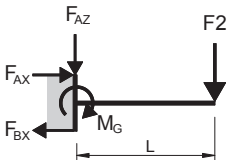
Identification	Length L [mm]	F1 [kN]	Load F2 [kN]	q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/52 D	315,0	2,93	1,47	9,30	1,21	15	18070315
Console C-45/52 D	420,0	2,20	1,10	5,23	1,50	10	18070420
Console C-45/52 D	525,0	1,76	0,88	3,35	1,78	10	18070525
Console C-45/52 D	630,0	1,47	0,73	2,33	2,06	5	18070630

Loading condition F1



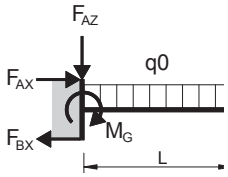
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

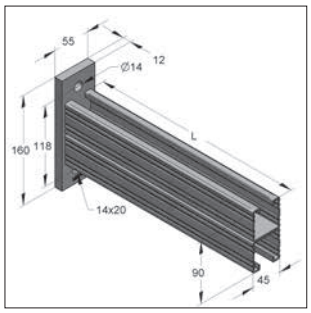
Loading condition q0



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

Remark:
all loads refer to static loads

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



Double console C 45/90/2,0

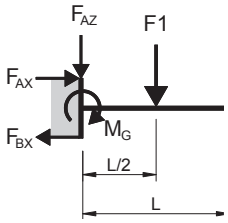
Technical data: galvanized / hot-dip galv

Material type plate:	S235JR	Dimension plate:	160 x 55 x 12,0 mm
Material type profile rail:	S235JR	Dimension profile rail:	45 x 90 x 2,0 mm
Surface:	galvanized / hot-dip galvanized		
Material:	steel		
Global safety coefficient γ:	1,54		

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

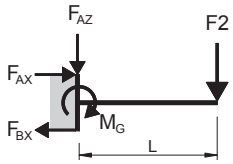
Console D-45/90 - profile rail 45/90/2,0 D - plate 160 x 55 x 12,0 mm							galvanized
Identification	Length L [mm]	Load F1 [kN]	F2 [kN]	q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/90 D	630,0	4,97	2,48	7,88	3,90	5	180900630
Console C-45/90 D	735,0	4,26	2,13	5,79	4,42	5	180900735
Console 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	5,45	5	180900945
Console C-45/90 D	1050,0	2,98	1,49	2,84	5,97	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	5,31	5	180900840/fvz

Loading condition F1



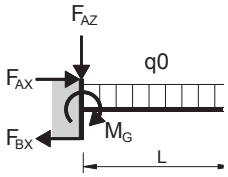
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

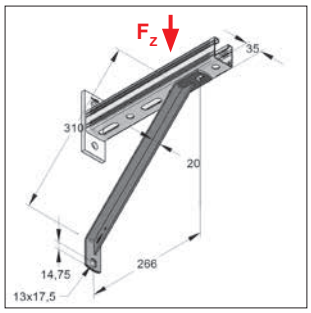
Loading condition q0



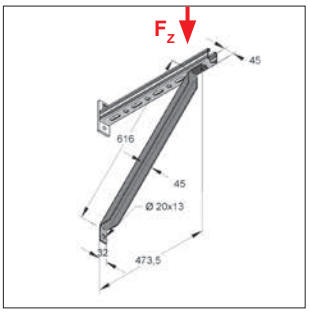
$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$

Remark:
all loads refer to static loads

Brace 45°



Brace 45° short



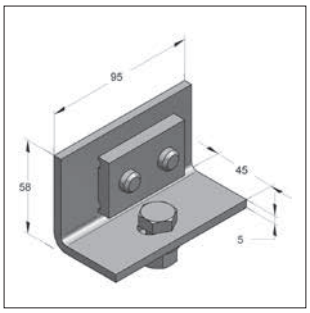
Brace 45° long

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

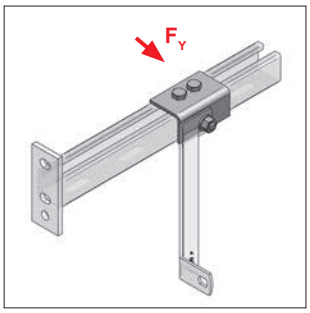
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Length [mm]	Load F_Z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Brace 45° short	310	11,5	0,673	25	0815101
Brace 45° long	616	10,0	2,07	10	0815102

Adapter angle



Adapter angle



Mounting example

Specification:
Application area: angle for lateral bracing of consoles

scope of delivery 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

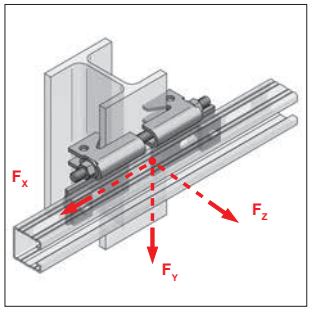
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

* Loads referring to components, not to connections

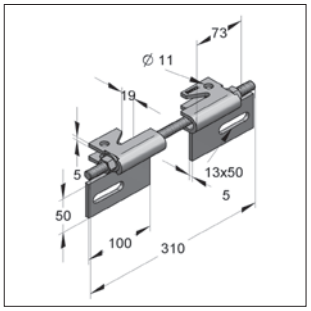
Adapter angle for braces 45°

Identification	Load* F_Y [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Adapter angle	10,0	0,583	5	08151500

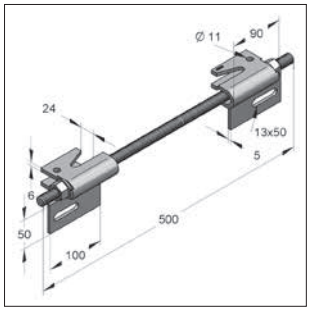
Beam connection vertical



Beam connection vertical



Typ D III



Typ D IV

Specification:

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

Recommended accessory: 2 x guiding clamp, 1 x threaded rod, 2 x nut, 2 x washer

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

Technical data:

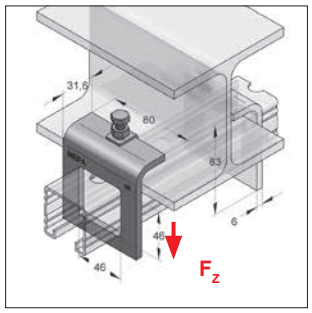
Material: steel
Material type: S235JR (clamps)

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

Identification	Clamping-thickness Flange [mm]	Clamping-range Flange [mm]	Threaded rod [mm]	Tightening torque [Nm]	Load F_X [kN]	Load F_Y [kN]	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	1,13	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

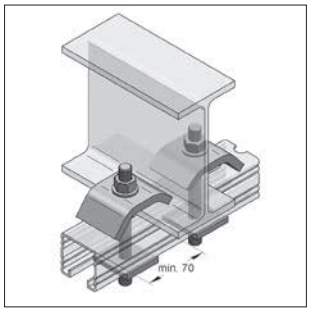
* Load specification refers to 2 clamping claws

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Load* 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, 45, Stex 35
Application area: for mounting of C-profile rail on steel girder

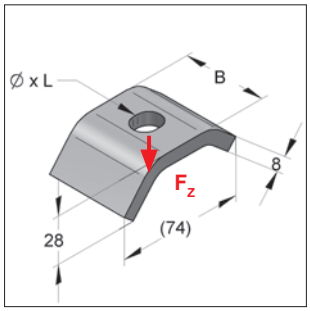
Assembly kit consisting of:
2 clamping claws
2 threaded bolts
4 hexagon nuts
2 perforated plates
2 washers DIN 7089

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

02

Identification	Threaded pin [mm]	Max. profile height [mm]	Max. clamping thickness [mm]	Weight [kg/set]	Packing [sets]	Part-No.
Clamping claw (set) steel 35	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

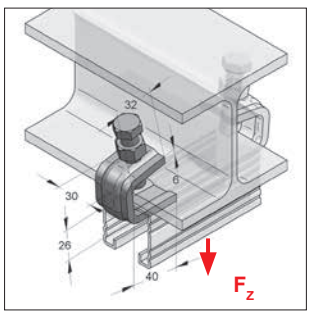
Specification:
without accessories

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

[1] loads referring to component, not to connection

Identification	Dimension Ø x L [mm]	Suitable for threaded rod	Tightening torque [Nm]	Load F_z [1] [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



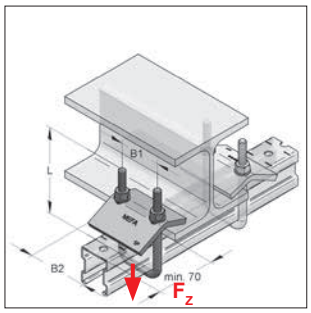
Rail clamp

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

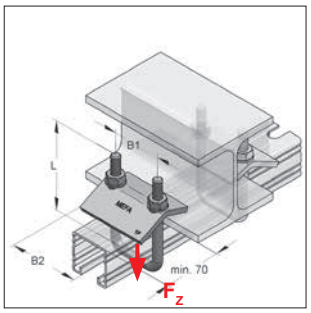
Technical data:
Material type: St 44-2
Surface: galvanized
hexagonal nut: M12, SW19
hexagonal screw: M12x50, SW19 with cup point

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

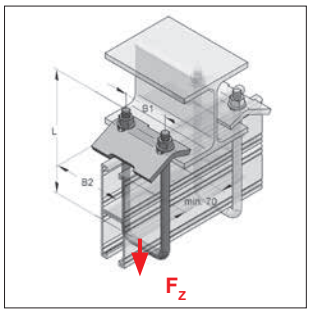
Clamping bow



Clamping bow M8 35



Clamping bow M10 45/60



Clamping bow M12 45/150

Specification:

Profile rail type: rail system 35, 45, Stex 35
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

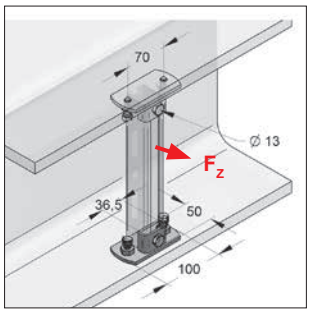
Technical data:

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

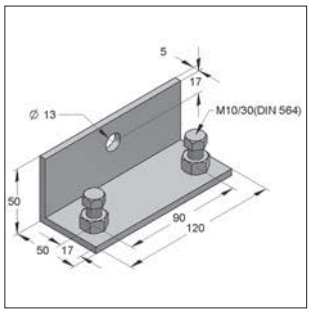
Remark: - in case of horizontal mounting of pipes, the loads of the clamping bow can differ to quoted loads due to torque of lever arm
- per anchorage point two clamping bows should be plugged in
- application loads refer to one single clamping bow
- application loads of C-profile rail should be noticed

Identification	L [mm]	B1 [mm]	Recommended tightening torque [Nm]	Max. B2 [mm]	Recommended clamping thickness [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suitable for profile rail 35 and Stex 35									
Clamping bow M8 35	100	48	8	70	26	3,5	0,307	20	0816710
Suitable for profile rail 45/26, 45/45, 45/52, 45/60									
Clamping bow M10 45/60	100	56	15	80	26	4,0	0,401	20	0816720
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	150	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

Beam clamping



Girder clamping 35



Girder clamping L 45

Load on girders at a length of ≤ 400 mm

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

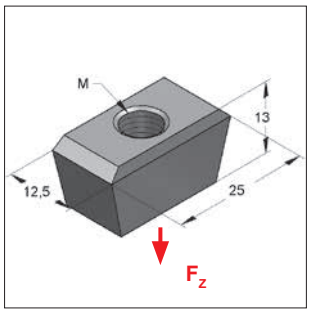
02

Specification:
Profile rail type: 35/21, 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 clampings are required.
Recommended accessory: threaded square plate 35x30 (Beam clamping device L 45)
threaded square plate 30x22 (Beam clamping device 35)

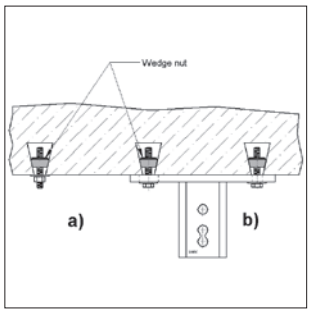
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	For profile rail	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Beam clamping 35	35/21, Stex 35/35, Stex 35/42	0,301	20	9999695
Beam 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)
4 washer DIN 7089 (8,4 or 10,5)

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

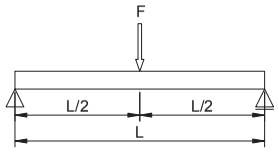
Technical data:
Material: GTW
Surface: galvanized

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

Identification	Load F_z* [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Wedge nut, female thread M8	1,50	0,0213	100	0819715
Wedge nut, female thread M10	2,25	0,0194	100	0819722

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

			System 35				System 45 (toothed)																	
	22/16/2,0	27/18/1,25	35/20/0,8	35/21/2,0	35/35/1,0	35/42/1,5	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																								
250	0,26	0,81	1,02	1,85	2,71	4,86	2,76	7,04	8,96	9,87	9,28	16,05	15,09	24,26	22,8	7,94	8,79	14,8	15,92	17,33	15,25	15,25	16,22	16,22
500	0,13	0,41	0,51	0,92	1,35	2,43	1,38	3,52	4,48	4,93	4,64	8,02	7,54	12,12	11,39	4,09	8,79	13,3	15,92	15,07	15,25	15,25	16,22	16,22
750		0,26	0,34	0,62	0,9	1,62	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	10,03	15,25	15,25	16,22	16,22
1000		0,15	0,2	0,4	0,68	1,21	0,69	1,76	2,23	2,46	2,31	4	3,76	6,05	5,68	2,04	5,17	6,64	8	7,51	12,93	12,15	16,22	16,22
1250			0,13	0,25	0,54	0,97	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	10,32	9,7	16,1	15,13
1500				0,17	0,41	0,8	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	8,06	13,4	12,59
1750				0,12	0,3	0,67	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	6,89	11,46	10,76
2000					0,23	0,51	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	6,41	6,01	10,01	9,4
2250					0,18	0,4	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	8,87	8,33
2500					0,14	0,32	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	5,09	4,77	7,96	7,47
2750					0,11	0,26		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	4,61	4,32	7,22	6,77
3000						0,21		0,31	0,4	0,44	0,44	0,98	0,97	1,9	1,83	0,41	1,68	2,15	2,59	2,42	4,21	3,94	6,59	6,18
3250						0,17		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	6,07	5,68
3500						0,14		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	5,61	5,25
3750						0,12		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	5,21	4,88
4000						0,10		0,15	0,19	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	4,55
4250								0,13	0,16	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	4,26
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	4,28	4
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	3,76
5000												0,26	0,25	0,57	0,56		0,61	0,78	0,94	0,93	2,17	2,15	3,81	3,55
5250												0,22	0,21	0,5	0,49		0,54	0,69	0,83	0,82	1,93	1,92	3,6	3,36
5500												0,18	0,17	0,43	0,42		0,48	0,61	0,73	0,72	1,73	1,71	3,42	3,18
5750												0,15	0,14	0,37	0,36		0,42	0,54	0,64	0,63	1,54	1,53	3,22	3,02
6000												0,12	0,11	0,32	0,31		0,37	0,47	0,57	0,55	1,38	1,36	2,91	2,87



Calculation according to RAL-GZ 655-C

Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galvanized
fsv: hot-dip galvanized

Phone +49 7944 64 0

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MEFA

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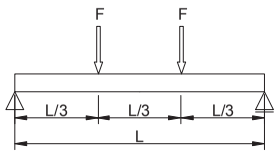
Loads of profile rails, galvanized: loads for 1 x F

	System 35						System 45 (toothed)																	
	22/16/2,0	27/18/1,25	35/20/0,8	35/21/2,0	35/35/1,0	35/42/1,5	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																								
250	0,2	0,61	0,76	1,39	2,03	3,65	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
500	0,10	0,31	0,38	0,69	1,02	1,82	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
750		0,16	0,21	0,42	0,68	1,21	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
1000			0,12	0,24	0,51	0,91	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
1250				0,15	0,35	0,73	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
1500				0,10	0,24	0,54	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
1750					0,18	0,4	0,13	0,59	0,74	0,84	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	0,1	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		0,35	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		0,28	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		0,23	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		0,19	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		0,15	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	2,41	2,32	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	0,28	0,33	0,32	0,81	0,80	1,71	1,70



Calculation according to RAL-GZ 655-C

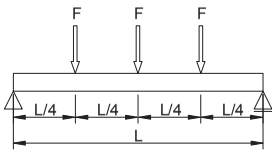
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galvanized
fsv: hot-dip galvanized

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

			System 35				System 45 (toothed)																	
	22/16/2,0	27/18/1,25	35/20/0,8	35/21/2,0	35/35/1,0	35/42/1,5	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																								
250	0,13	0,41	0,51	0,93	1,36	2,43	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	5,09	5,09	5,41	5,41
500		0,21	0,26	0,46	0,68	1,22	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	5,09	5,41	5,41
750		0,11	0,15	0,3	0,45	0,81	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	5,09	5,41	5,41
1000				0,17	0,34	0,61	0,3	0,88	1,12	1,23	1,16	2	1,88	3,03	2,84	1,02	2,59	3,32	4	3,76	5,09	5,09	5,41	5,41
1250				0,11	0,25	0,49	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	3	5,09	4,85	5,41	5,41
1500					0,18	0,39	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	4,3	4,03	5,41	5,41
1750					0,13	0,29	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	3,67	3,45	5,41	5,38
2000					0,10	0,22		0,32	0,41	0,46	0,46	0,97	0,93	1,5	1,4	0,43	1,28	1,64	1,98	1,86	3,21	3,01	5,01	4,7
2250						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	2,84	2,66	4,44	4,17
2500						0,14		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	2,55	2,39	3,98	3,74
2750						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	2,31	2,16	3,61	3,39
3000								0,13	0,17	0,19	0,19	0,41	0,41	0,8	0,8	0,18	0,82	1,05	1,27	1,21	2,11	1,97	3,3	3,09
3250								0,11	0,14	0,16	0,16	0,35	0,34	0,67	0,67	0,15	0,69	0,89	1,07	1,07	1,93	1,81	3,04	2,84
3500									0,12	0,13	0,13	0,29	0,29	0,57	0,57	0,12	0,59	0,76	0,91	0,91	1,79	1,67	2,81	2,63
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	1,55	2,61	2,44
4000												0,21	0,21	0,42	0,42		0,44	0,57	0,68	0,68	1,51	1,44	2,43	2,28
4250												0,18	0,18	0,37	0,36		0,39	0,49	0,59	0,59	1,32	1,32	2,28	2,13
4500												0,15	0,15	0,32	0,32		0,34	0,43	0,52	0,51	1,17	1,16	2,14	2
4750												0,13	0,13	0,28	0,27		0,3	0,38	0,46	0,45	1,03	1,03	2,02	1,88
5000												0,11	0,11	0,24	0,24		0,26	0,33	0,4	0,4	0,92	0,91	1,86	1,78
5250														0,21	0,21		0,23	0,29	0,35	0,35	0,82	0,81	1,67	1,66
5500														0,18	0,18		0,2	0,26	0,31	0,3	0,73	0,72	1,5	1,49
5750														0,16	0,16		0,18	0,23	0,27	0,27	0,65	0,65	1,36	1,35
6000														0,14	0,13		0,16	0,20	0,24	0,23	0,59	0,58	1,23	1,22



Calculation according to RAL-GZ 655-C

Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galvanized
fsv: hot-dip galvanized

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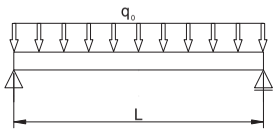
Loads of profile rails, galvanized: loads for distributed load

			System 35				SIGNUM LP50	System 45 (toothed)																	
	22/16/2,0	27/18/1,25	35/20/0,8	35/21/2,0	35/35/1,0	35/42/1,5	27/50/1,5	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv
F / L	[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]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
[mm]																									
250	2,08	6,44	8,1	14,75	21,61	38,85	41,76	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	60,97	64,88	64,88
500	0,52	1,61	2,02	3,68	5,4	9,7	10,44	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	30,49	32,44	32,44
750	0,21	0,55	0,76	1,52	2,4	4,31	4,64	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	20,33	21,63	21,63
1000		0,23	0,32	0,64	1,35	2,42	2,60	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	15,25	16,22	16,22
1250		0,12	0,16	0,32	0,76	1,54	1,67	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	12,98
1500				0,18	0,44	0,99	1,15	0,33	1,45	1,84	2,08	2,04	3,53	3,32	5,35	5,02	1,8	4,57	5,87	7,08	6,64	10,17	10,17	10,82	10,82
1750				0,11	0,27	0,62	0,75	0,21	0,91	1,15	1,3	1,3	2,59	2,43	3,92	3,68	1,21	3,35	4,3	5,18	4,87	8,39	7,88	9,27	9,27
2000					0,18	0,41	0,50	0,13	0,6	0,77	0,86	0,86	1,85	1,84	2,99	2,8	0,8	2,56	3,28	3,96	3,71	6,41	6,01	8,11	8,11
2250					0,13	0,28	0,35		0,42	0,53	0,6	0,6	1,29	1,28	2,35	2,21	0,56	2,02	2,59	3,12	2,92	5,05	4,73	7,21	7,21
2500						0,2	0,25		0,3	0,38	0,43	0,43	0,93	0,93	1,78	1,78	0,4	1,63	2,09	2,51	2,35	4,07	3,82	6,37	5,98
2750						0,15	0,19		0,22	0,28	0,32	0,32	0,69	0,69	1,33	1,33	0,3	1,34	1,72	2,07	1,94	3,35	3,14	5,25	4,92
3000						0,11	0,14		0,17	0,21	0,24	0,24	0,52	0,52	1,01	1,01	0,22	1,04	1,33	1,61	1,6	2,81	2,63	4,4	4,12
3250							0,11		0,13	0,16	0,18	0,18	0,4	0,4	0,79	0,79	0,17	0,81	1,04	1,25	1,25	2,38	2,23	3,73	3,5
3500									0,10	0,13	0,14	0,14	0,32	0,31	0,62	0,62	0,13	0,64	0,82	0,99	0,99	2,04	1,91	3,21	3
3750										0,10	0,11	0,11	0,25	0,25	0,5	0,5	0,10	0,52	0,66	0,8	0,79	1,76	1,65	2,78	2,6
4000													0,2	0,2	0,4	0,4		0,42	0,54	0,65	0,64	1,43	1,43	2,43	2,28
4250													0,16	0,16	0,33	0,33		0,35	0,44	0,53	0,53	1,18	1,18	2,15	2,01
4500													0,13	0,13	0,27	0,27		0,29	0,37	0,44	0,43	0,99	0,98	1,9	1,78
4750													0,11	0,10	0,22	0,22		0,24	0,3	0,37	0,36	0,83	0,82	1,66	1,59
5000															0,19	0,18		0,2	0,25	0,31	0,3	0,7	0,69	1,41	1,41
5250															0,15	0,15		0,17	0,21	0,26	0,25	0,59	0,59	1,21	1,2
5500															0,13	0,13		0,14	0,18	0,22	0,21	0,51	0,5	1,04	1,03
5750															0,11	0,10		0,12	0,15	0,18	0,18	0,43	0,43	0,9	0,89
6000																		0,10	0,13	0,15	0,15	0,37	0,37	0,78	0,77



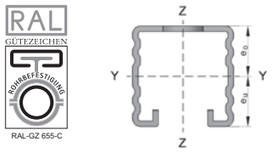
Calculation according to RAL-GZ 655-C

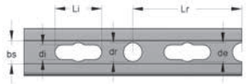
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

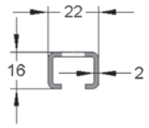
Surface property

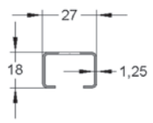
fbv: pre-galvanized
fsv: hot-dip galvanized

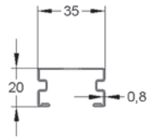
Profile rail overview, pre- and hot-dip galvanized

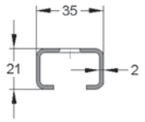


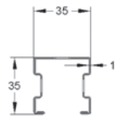


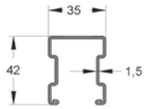


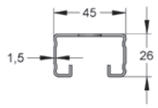


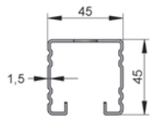


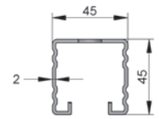






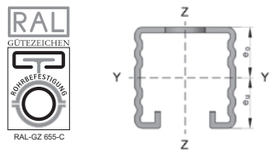


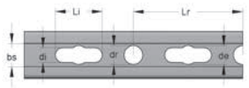


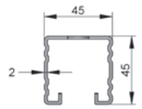


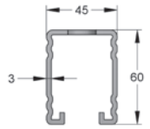
Profile rail			System 35						System 45 (toothed)		
			22/16/2,0	**27/18/1,25**	**35/20/0,8**	**35/21/2,0**	**35/35/1,0**	**35/42/1,5**	**45/26/1,5**	**45/45/1,5**	**45/45/2,0**
Surface pre-galvanized											
Material according to DIN EN 10346			S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z150-N-A	S250GD-Z275-N-A	S250GD-Z150-N-A	S250GD-Z150-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A
Elastic limit	f_y	N/mm²	250	250	250	250	250	250	250	250	250
Weight/ meter	G/m	kg/m	0,78	0,60	0,64	1,16	1,03	1,63	1,34	1,89	2,45
Surface hot-dip galvanized according to DIN EN ISO 1461											
Material according to DIN EN 10025-2			-	-	-	-	-	-	-	-	-
Elastic limit	f_y	N/mm²	-	-	-	-	-	-	-	-	-
Weight/meter	G/m	kg/m	-	-	-	-	-	-	-	-	-
Delivery length 1	l_1	m	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Delivery length 2	l_2	m	-	-	3,0	6,0	3,0	6,0	6,0	6,0	6,0
Area (least cross section of the profile rail)	A_k	cm²	0,78	0,68	0,74	1,40	1,03	1,99	1,49	2,29	2,98
Slot width	b_s	mm	10,5	14,0	21,0	17,0	21,0	22,0	22,0	22,0	22,0
Grid dimension	l_r	mm	50,0	52,5	25,0	52,5	25,0	25,0	105,0	105,0	105,0
Diameter round hole	d_r	mm	-	-	8,5+10,5	-	8,5+10,5	8,5+10,5	14,0	14,0	14,0
Diameter elongated hole x length	d_l x l_l	mm x mm	10,0 x 18,0	10,5 x 38,5	8,5 x 15,0	10,5 x 38,5	8,5 x 15,0	8,5 x 15,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0
Extension diameter elongated hole	d_e	mm	-	-	-	-	-	-	-	-	-
Characteristic values YY-axis											
Axial angular impulse	I_y	cm⁴	0,11	0,29	0,40	0,80	1,86	4,17	1,42	6,14	7,79
Section modulus	W_y	cm³	0,10	0,31	0,39	0,71	1,04	1,87	1,06	2,71	3,45
Centroid distance	e_o	cm	0,41	0,85	0,97	0,96	1,72	1,97	1,34	2,23	2,24
Centroid distance	e_u	cm	1,19	0,95	1,03	1,14	1,78	2,23	1,26	2,27	2,26
Radius of inertia	i_y	cm	0,38	0,65	0,74	0,76	1,34	1,44	0,98	1,64	1,62
Characteristic values ZZ-axis											
Axial angular impulse	I_z	cm⁴	0,55	0,90	1,53	2,83	2,21	4,05	5,15	8,35	10,65
Section modulus z-axis	W_z	cm³	0,50	0,67	0,87	1,61	1,26	2,31	2,29	3,71	4,73
Centroid distance	e_z	cm	1,10	1,35	1,75	1,75	1,75	1,75	2,25	2,25	2,25
Radius of inertia	i_z	cm	0,84	1,15	1,44	1,42	1,46	1,43	1,86	1,91	1,89
Approvals/qualitiy marks											
RAL quality mark	RAL-GZ 655-C		x	x	x	x	x	x	x	x	x

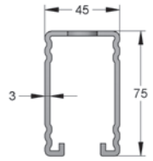
Profile rail overview, pre- and hot-dip galvanized

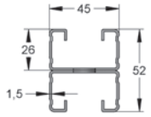


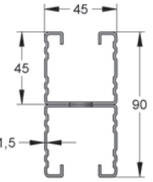


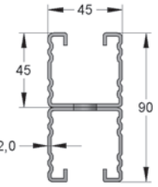


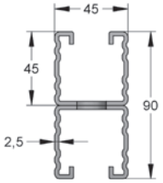


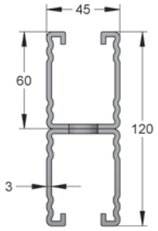


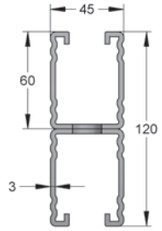












Profile rail			System 45 (toothed)								
			45/45/2,5	**45/60/3,0**	**45/75/3,0**	**45/52/1,5 D**	**45/90/1,5 D**	**45/90/2,0 D**	**45/90/2,5 D**	**45/120/3,0 D**	**45/150/3,0 D**
Surface pre-galvanized											
Material according to DIN EN 10346			S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A
Elastic limit	f_y	N/mm²	250	250	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	8,12	9,46
Surface hot-dip galvanized according to DIN EN ISO 1461											
Material according to DIN EN 10025-2			S235JR	S235JR	S235JR	-	-	-	S235JR	S235JR	S235JR
Elastic limit	f_y	N/mm²	235	235	235	-	-	-	235	235	235
Weight/meter	G/m	kg/m	3,21	4,35	5,15	-	-	-	6,35	8,63	10,24
Delivery length 1	l_1	m	3,0	6,0	6,0	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	cm²	3,53	4,52	5,66	2,99	4,59	5,96	7,05	9,04	11,33
Slot width	b_s	mm	22,0	22,0	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	105,0	105,0
Diameter round hole	d_r	mm	18,0	18,0	18,0	14,0	14,0	14,0	18,0	18,0	18,0
Diameter elongated hole x length	d_l x l_l	mm x mm	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14,0 x 45,0	14x45
Extension diameter elongated hole	d_e	mm	18,0	18,0	18,0	-	-	-	18,0	18,0	18,0
Characteristic values YY-axis											
Axial angular impulse	I_y	cm⁴	8,81	18,67	35,36	8,19	35,91	46,13	55,61	119,76	233,12
Section modulus	W_y	cm³	3,80	6,18	9,34	3,15	7,98	10,25	12,35	19,96	31,10
Centroid distance	e_o	cm	2,19	3,02	3,71	2,60	4,50	4,50	4,50	6,00	7,50
Centroid distance	e_u	cm	2,31	2,98	3,79	2,60	4,50	4,50	4,50	6,00	7,50
Radius of inertia	i_y	cm	1,58	2,03	2,50	1,66	2,80	2,78	2,81	3,64	4,53
Characteristic values ZZ-axis											
Axial angular impulse	I_z	cm⁴	12,69	17,15	21,90	10,30	16,74	21,32	25,37	34,31	43,81
Section modulus z-axis	W_z	cm³	5,64	7,62	9,74	4,58	7,44	9,47	11,27	15,25	19,47
Centroid distance	e_z	cm	2,25	2,25	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	1,95	3,85
Approvals/qualitiy marks											
RAL quality mark	RAL-GZ 655-C		x	x	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.

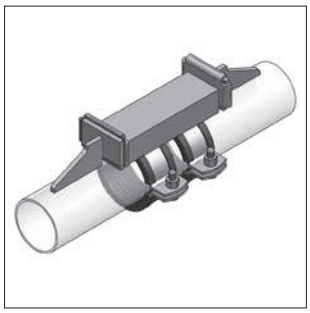
The total load of a fixpoint in connection with a compensator is independent of pressure, temperature differences and pipe lengths between the compensator and fixpoints, as well as the value balgen cross-section and axial value resistance. Pipelines fixed on building constructions have to be mounted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

Specification:

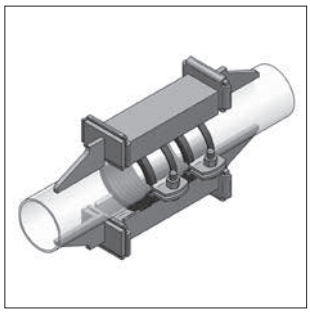
The body material of the fixpoint is galvanized. Raw parts e.g. the welding lug for fixpoints should also be coated after welding.
We recommend to protect all raw parts and weldings by zinc-rich primer or zinc-spray.

Operation/Installation advice:

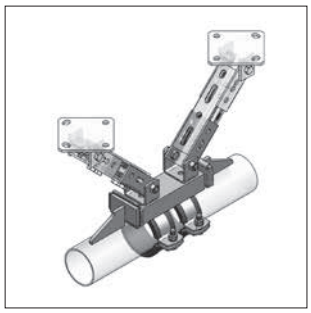
- suitable for straight, unramified pipeline alignment with axial compensator or U-expansion bend
- forced guide bearing within spitting distance of the compensator is obligatory



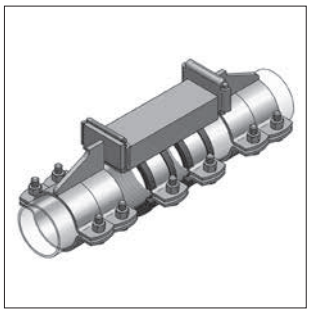
Fixpoint type A
Page 3a/2



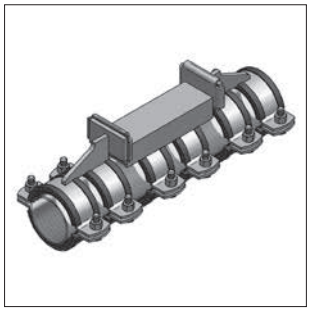
Fixpoint type B
Page 3a/3



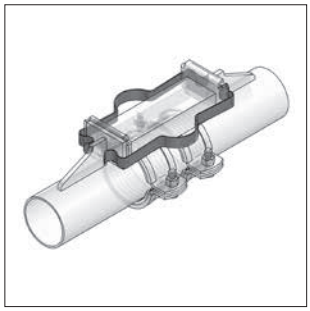
Fixpoint type A with joint holder
Page 3a/4



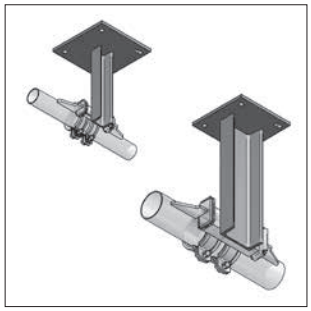
Fixpoint type A/K
Page 3a/5



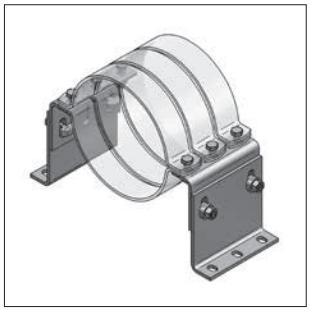
Fixpoint type A/K-MD
Page 3a/6



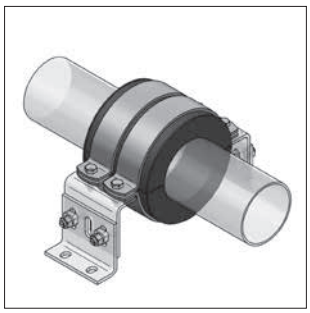
Mounting clamps for fixpoints
Page 3a/7



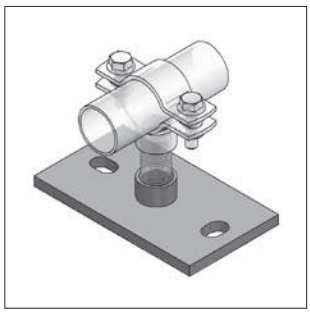
Fixpoint consoles
Page 3a/8



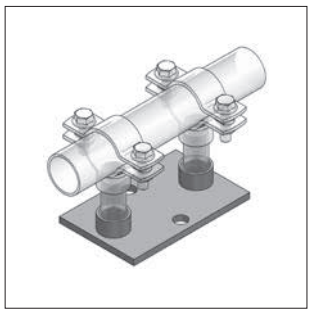
Fixpoint bracket HV
Page 3a/9



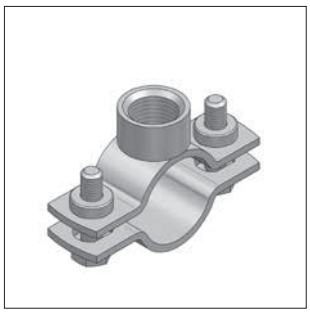
Insulated fixpoint
Page 3a/10



Clamping fixpoint
Page 3a/11



Fixpoint type FGL
Page 3a/12

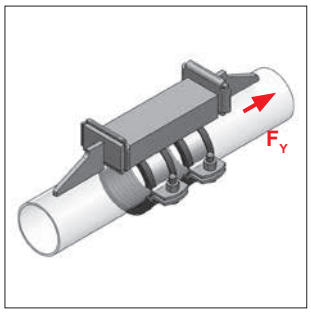


Pipe clamp FGL
Page 3a/12

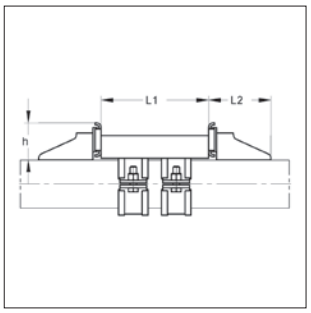
ⓘ Fixpoints (welded) for stainless steel pipes see chapter 13

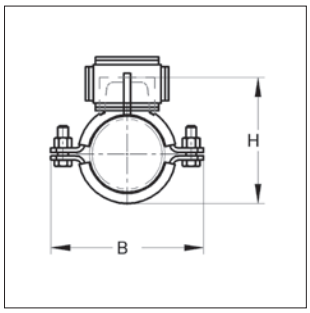
Remarks to fixpoints see chapter 15

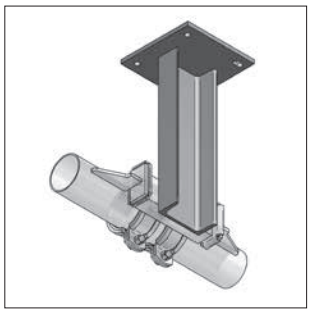
Fixpoint type A (for welding)



Fixpoint type A (mounted)







Fixpoint type A
with fixpoint console

Specification:

Application area:	ferritic steel pipes
Number of sectional steels:	1 piece
Number of pressure pads:	2 pieces
OD:	15 up to 159 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:	Silicone	Rubber TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

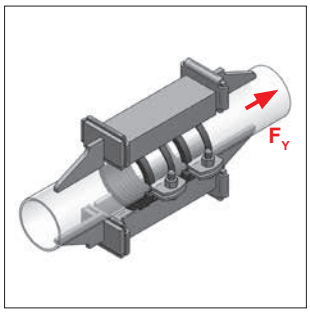
[1] bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).
The quality of weld seam has to be proofed.

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel [mm]	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	Load[1] F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	Silicone Part-No.	Rubber Part-No.
Fixpoint size I, T-steel (accessory: mounting clamp 1a / Part-No. 9000310)											Silicone	Rubber
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	0,943	1	0030221	0020221
26 - 30	25 x 3	30 x 30 x 100	81	47		72 - 76	92	8,5	0,973	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	1,03	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	4,94	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	5,97	1	0031331	0021331
139,7	50 x 5	80 x 45 x 200	116	69		198,5	231	20	6,08	1	0031401	0021401
159,0	50 x 5	80 x 45 x 200	116	69		218,0	251	20	6,36	1	0031591	0021591

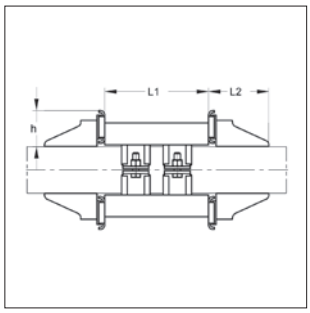
mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

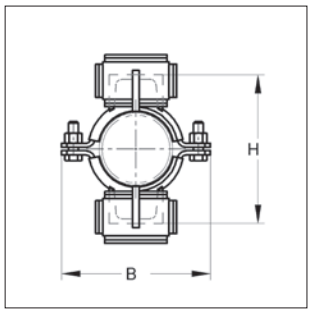
mounting recommendation see chapter 15

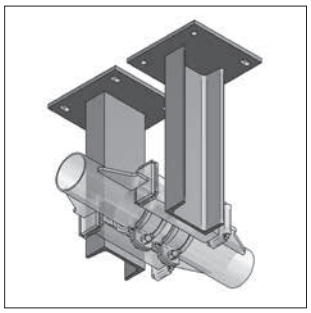
Fixpoint type B (for welding)



Fixpoint type B (mounted)







Fixpoint type B
with two fixpoint consoles

Specification:

Application area:	ferritic steel pipes
Number of sectional steels:	2 pieces
Number of Pressure pads:	4 pieces
OD:	20 up to 355,6 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:	Silicone	Rubber TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

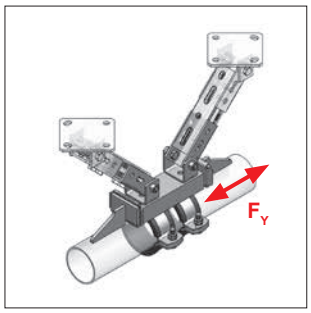
[1] bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left).
The qualitiy of weld seam has to be proofed.

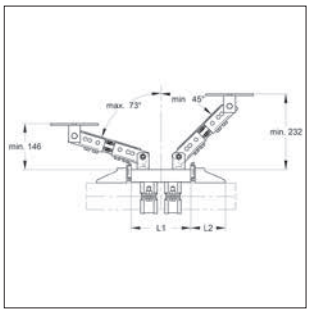
Clamping-range [mm]	Material pipe-clamp [mm]	Sectional steel [mm]	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	Load[1) F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	Silicone Part-No.	Rubber Part-No.
Fixpoint size I, T-steel (accessory: mounting clamp 1a /Part-No. 9000310)												
20 - 25	25 x 3	30 x 30 x 100	81	47	96 - 101	87	17	1,53	1	0030222	0020222
26 - 30	25 x 3	30 x 30 x 100	81	47	102 - 106	92	17	1,56	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	1,66	1	0030482	0020482
53 - 57	25 x 3	30 x 30 x 100	81	47	129 - 133	120	17	1,69	1	0030572	0020572
Fixpoint size II, U-steel (accessory: mounting clamp 2 /Part-No. 9000312)												
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	7,53	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	8,91	1	0031082	0021082
114,3	50 x 5	65 x 42 x 200	116	69	207	205	40	8,10	1	0031142	0021142
133,0	50 x 5	80 x 45 x 200	116	69	227	224	40	9,12	1	0031332	0021332
139,7	50 x 5	80 x 45 x 200	116	69	235	231	40	9,23	1	0031402	0021402
159,0	50 x 5	80 x 45 x 200	116	69	256	251	40	9,51	1	0031592	0021592
Fixpoint size III, U-steel												
168,3	50 x 5	120 x 55 x 330	116	79	263	258	60	16,94	1	0031682	0021682
193,7	50 x 5	120 x 55 x 330	116	79	294	284	60	17,33	1	0031942	0021942
219,1	50 x 5	120 x 55 x 330	116	79	322	309	60	17,70	1	0032192	0022192
273,0	50 x 5	120 x 55 x 330	116	79	382	363	60	18,51	1	0032732	0022732
323,9	50 x 5	120 x 55 x 330	116	79	437	414	60	19,28	1	0033242	0023242
355,6	50 x 5	120 x 55 x 330	116	79	470	446	60	19,76	1	0033562	0023562

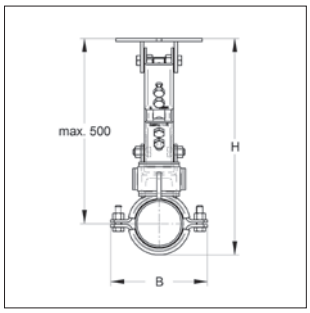
mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

mounting recommendation see chapter 15

Fixpoint type A with joint holder (for welding)







SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

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 159 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

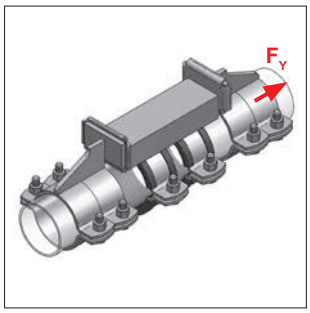
[1] bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left), also on the angle, the length and type of selected profile rail.
The qualitiy of weld seam has to be proofed.

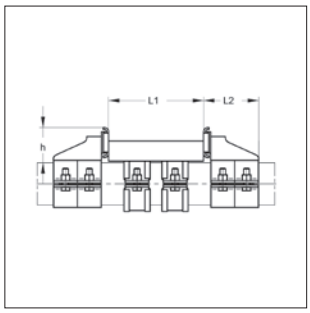
Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel [mm]	L1 [mm]	L2 [mm]	$H_{max.}$ [mm]	$H_{min.}$ [mm]	B [mm]	Load[1] F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	Rubber Part-No.
Fixpoint size I, T-steel (accessory: mounting clamp 1b /Part-No. 9000311)											**Rubber**
20 - 25	25 x 3	30 x 30	140	81	521	186	87	8,5	2,65	1	9999671
26 - 30	25 x 3	30 x 30	140	81	523	192	92	8,5	2,68	1	9999932
31 - 36	25 x 3	30 x 30	140	81	526	197	98	8,5	2,71	1	9999835
38 - 45	25 x 3	30 x 30	140	81	531	204	107	8,5	2,75	1	9999868
47 - 51	25 x 3	30 x 30	140	81	534	213	114	8,5	2,79	1	9999869
53 - 57	25 x 3	30 x 30	140	81	537	219	120	8,5	2,82	1	9999864
Fixpoint size II, U-steel (accessory: mounting clamp 2 /Part-No. 9000312)											**Rubber**
60,3	50 x 5	65 x 42	200	116	541	232,5	149	15	6,15	1	9999672
76,1	50 x 5	65 x 42	200	116	549	251,5	166	15	6,39	1	9999933
88,9	50 x 5	65 x 42	200	116	556	266	179	15	6,58	1	9999865
108,0	50 x 5	65 x 42	200	116	565	285	199	15	6,87	1	9999866
114,3	50 x 5	65 x 42	200	116	568	291,5	205	15	6,96	1	9999773
133,0	50 x 5	80 x 45	200	116	578	311	224	15	7,61	1	9999772
139,7	50 x 5	80 x 45	200	116	581	318,5	231	15	7,72	1	9999673
159,0	50 x 5	80 x 45	200	116	591	339	251	15	8,00	1	9999674

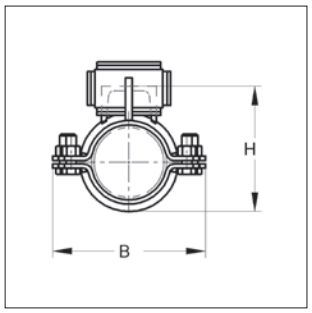
mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

mounting recommendation see chapter 15

Fixpoint type A/K (for clamping)







SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Fixpoint type A/K (mounted)

Specification:

Application area:	galvanized steel pipes, ferritic steel pipes
Number of sectional steels:	1 piece
OD:	15 up to 159 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

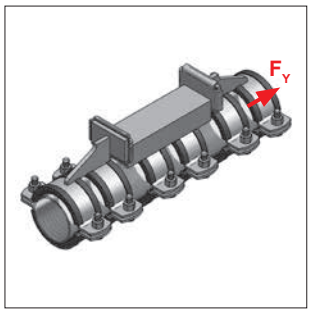
Technical data:

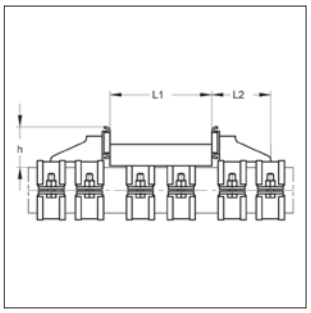
Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation lining:	Rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C

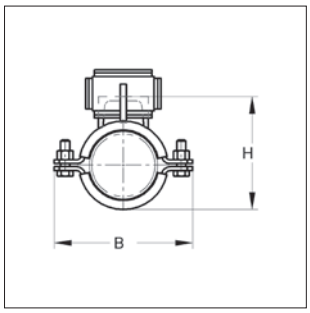
Remark: Change of pipe diameter due to thermal loads. In this case, sleeves has to be fixed in front of and behind the fixpoint.

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel [mm]	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	Tightening torque [Nm]	Load F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No. Rubber
Fixpoint size I, T-steel												
15,0	25 x 3	30 x 30	x 100	81	50	61,0	80	6	8,50	1,43	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	1,58	1	0020273
30,0	25 x 3	30 x 30	x 100	81	50	76,0	92	6	8,50	1,62	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	1,72	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	1,97	1	0020583
Fixpoint size II, U-steel												
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	7,53	1	0020633
70,0	50 x 5	65 x 42	x 200	127	70	124	158	60	20,0	7,77	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	8,54	1	0020893
108,0	50 x 5	65 x 42	x 200	127	70	165	198	60	20,0	9,31	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	9,55	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	10,69	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	10,97	1	0021403
159,0	50 x 5	80 x 45	x 200	127	70	219	250	60	20,0	11,75	1	0021603

Fixpoint type A/K-MD (for clamping)







SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

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

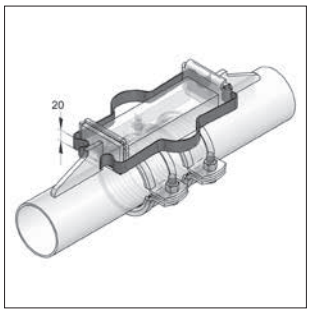
Technical data:

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												Rubber
Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel [mm]	[mm]	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	Tightening torque [Nm]	Load F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	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

Specification:

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

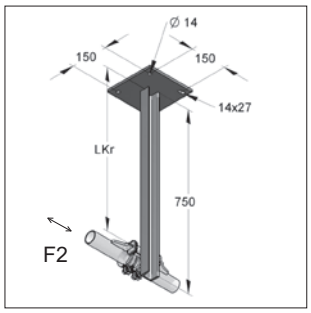
Remark: clamps are re-usable

Technical data:

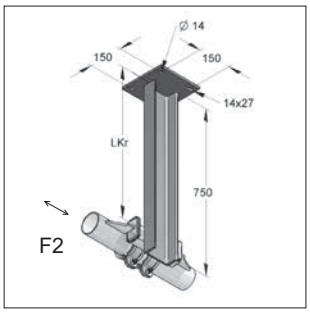
Material:	steel
Material type:	S235JR
Surface:	galvanized

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

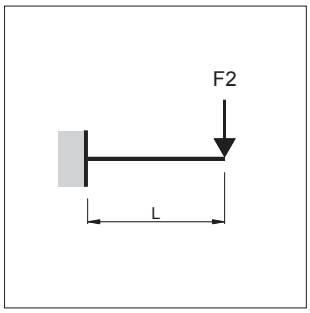
Fixpoint consoles



Fixpoint console 50/38/750



Fixpoint console 120/55/750



Loading condition F2

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 ≥ 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 reccomendation:		foundation concrete ≥ 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

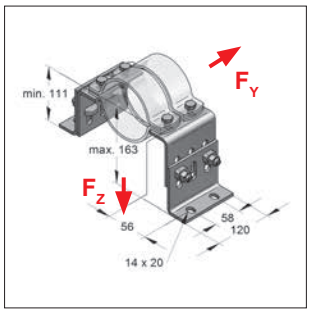
Fixpoint console 50/38/750

Description	Length [mm]	Length LKr [mm]	Load F2 [kN]	Anchor plate [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Fixpoint console 50/38 raw	**750**	100	16,18	200 x 200 x 10	7,26	1	9997799
		200	8,09				
		300	5,39				
		400	4,04				
		500	3,24				
		600	2,70				
		700	2,27				

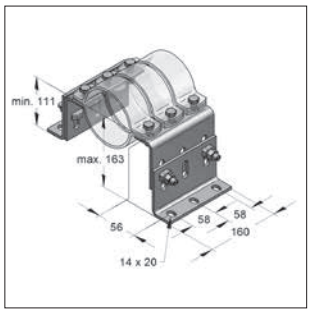
Fixpoint console 120/55/750

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				

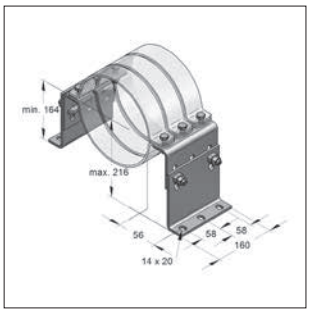
Fixpoint bracket HV



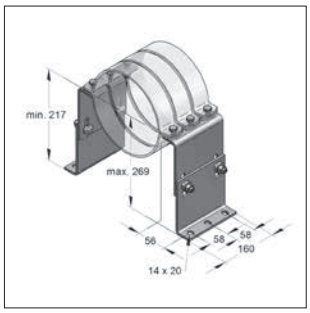
Fixpoint bracket HV1



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 connection can be fixed on any substructure (C-profile rail, CENTUM, steel beams)

Scope of delivery:
2 x angle (stilt)
2 x angle (side part)
4 x T-lock 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:	120 Nm

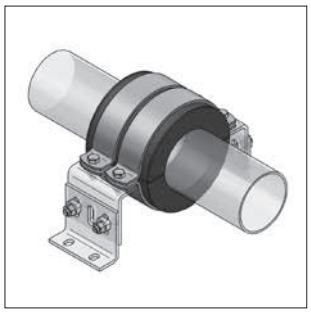
* OD > 168 mm = 40 kN (limited by T-lock connection) The tightening torque of the pipe clamp and axial forces only apply to steel pipes with a standard wall thickness.

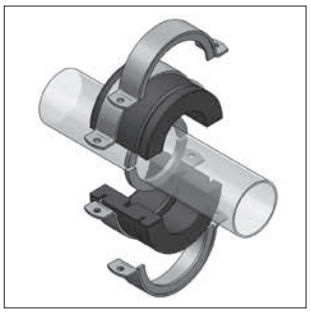
Type	Length L [mm]	Axis height min.-max. [mm]	Number of fixpoint clamps [pcs.]	Reco-mmended pipe OD [mm]	Angle stilt [pair]	Angle side part [pair]	Load F_Y [kN]	Load F_Z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
HV1	120	111-163	2	64-273	120/6/100	120/6/100	20	12	3,58	1	00200405/fvz
HV2	160	111-163	3	64-273	160/6/100	160/6/100	30	18*	4,74	1	00200406/fvz
HV3	160	164-216	3	64-406	160/6/153	160/6/100	30	18*	5,68	1	00200407/fvz
HV4	160	217-269	3	64-508	160/6/153	160/6/153	30	18*	6,52	1	00200408/fvz

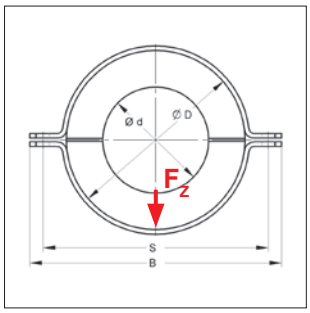
Suitable Titan HD clamps without connection thread see on chapter 1 (also available in hot-dip galvanized coating)

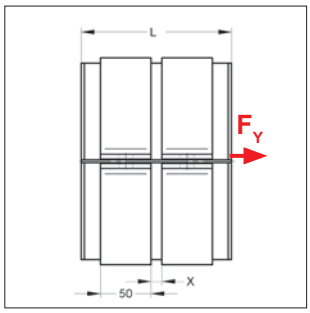
mounting recommendation see chapter 15

Insulated fixpoint









Insulated fixpoint

Specification:

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

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

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

Delivery time: **on demand.

Technical data:

Insulating material: PUR (with natural rubber on front ends)

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

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

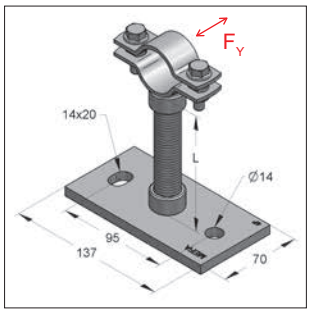
*Required accessory: Fixpoint bracket HV

OD [mm]	Insulation thickness [mm]	Recom. fixpoint bracket* [type]	Length of shell L [mm]	Dimension B [mm]	Dimension S [mm]	Load F_Y [kN]	Load F_Z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
76,1	40	HV1	148	235	206	2,7	5,4	3,75	1	698400076
88,9	40	HV1	148	246	217	2,8	6,3	4,02	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	11,30	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	13,67	1	698400406

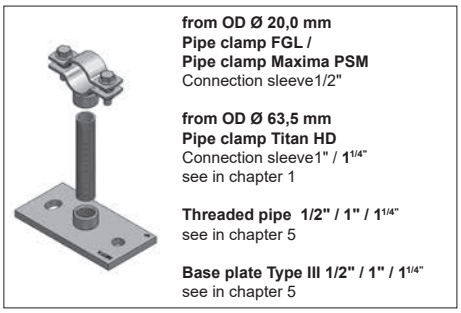
Suitable Fixpoint brackets as substructure see page 3a/9

mounting recommendation see chapter 15

Clamping fixpoint



Clamping fixpoint



from OD Ø 20,0 mm
Pipe clamp FGL /
Pipe clamp Maxima PSM
Connection sleeve1/2"

from OD Ø 63,5 mm
Pipe clamp Titan HD
Connection sleeve1" / 1 1/4"
see in chapter 1

Threaded pipe 1/2" / 1" / 1 1/4"
see in chapter 5

Base plate Type III 1/2" / 1" / 1 1/4"
see in chapter 5

Elements of the clamping fixpoint

load* Fy Distance L [mm]	1/2" Fy [kN]	1" Fy [kN]	1 1/4" 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 N/mm², 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

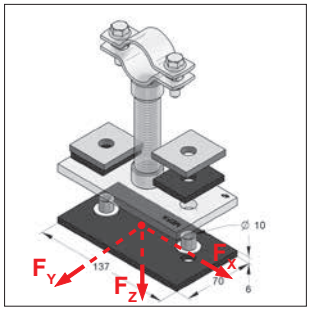
Remark: use only threaded pipes with straight thread. The tightening torque of the pipe clamp and axial forces only apply to steel pipes with a standard wall thickness.

Recommended axial load of pipe clamp type:

Description	Tightening torque [Nm]	Load F_Y [kN]
Pipe clamp Maxima PSM unlined 1/2"	5	0,7
Pipe clamp Titan HD unlined 1" or 1 1/4"	60	5,0

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

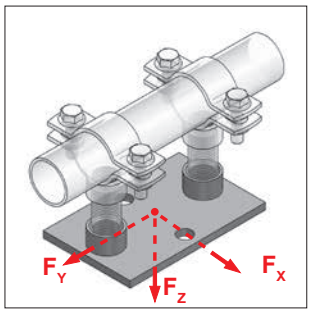
Recommended torque: 15 Nm

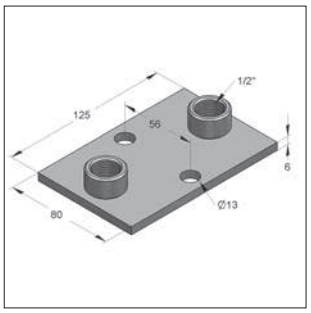
Notice: suitable for Base plate type III

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

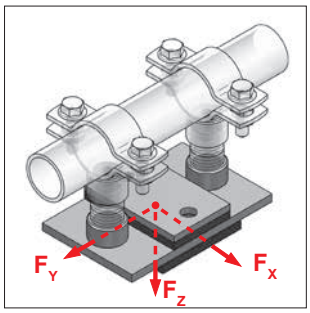
Description	F_X	Load F_Y [kN]	F_Z	Insulating sleeve for bolting	Weight [kg/set]	Packing [set]	Part-No.
Sound-decoupling set K	8	8	16	M10	0,257	1	077034002

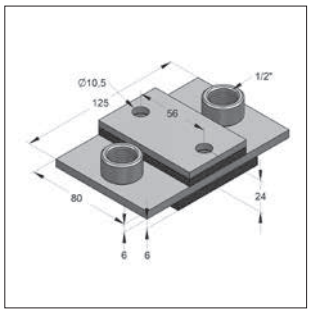
Fixpoint type FGL (for clamping)





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





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

Specification:

Application area:	ferritic steel pipes, plastic pipes
Mounting:	screw fastening
OD:	20 up to 46 mm
Recommended torque:	15 Nm

Specification with sound-decoupling set:

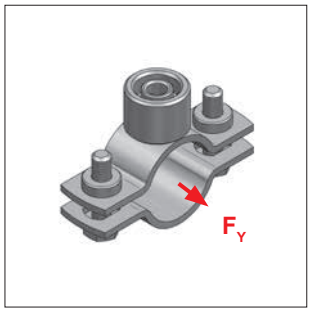
Sound insulation:	according to DIN 4109
Required accessory:	2 x pipe clamp FGL 2 x double nipple 1/2" threaded pipe, max. length 100 mm

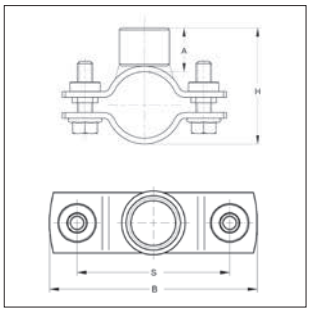
Technical data:

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

Description	Connection	Load F_X	F_Y	F_Z	F_{-Z} [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Fixpoint FGL	2 x sleeve1/2"	8	8	4	10	0,531	1	0770335
Fixpoint FGL, lined	2 x sleeve1/2"	8	8	4	10	0,735	1	999770001

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

Remark: The tightening torque of the pipe clamp and axial forces only apply to steel pipes with a standard wall thickness.

Clamping range [mm]	Material [mm]	Closure screws	Tightening torque [Nm]	Load F_Y [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	23	73	49	0,216	1	0069047
25 - 29	25 x 3,0	M8	5	0,7	46-50	23	80	56	0,225	1	0069049
30 - 35	25 x 3,0	M8	5	0,7	51-56	23	87	63	0,235	1	0069053
36 - 40	25 x 3,0	M8	5	0,7	57-61	23	92	68	0,246	1	0069081
41 - 46	25 x 3,0	M8	5	0,7	62-67	23	98	74	0,258	1	0069097

MEFA connectors for waste water piping

DN 80

SIMA >G< one screw
Page 3b/2

DN 125

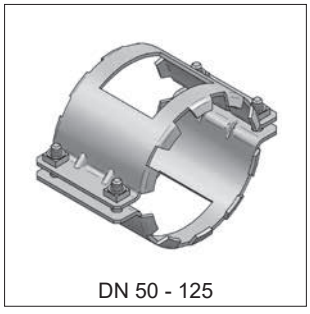
SIMA >G< two screws
Page 3b/2

DN 200

SIMA >CV<
Page 3b/2

DN 50 - 150

SIMA RAPID
Page 3b/3

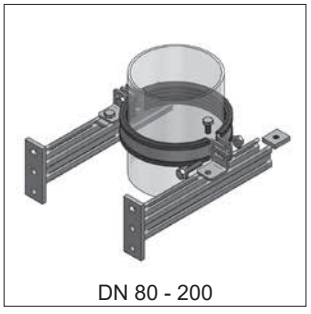


DN 50 - 125

SIMA-Cramp grip connector
Page 3b/4

DN 150 - 250

SIMA-Cramp grip connector
Page 3b/4



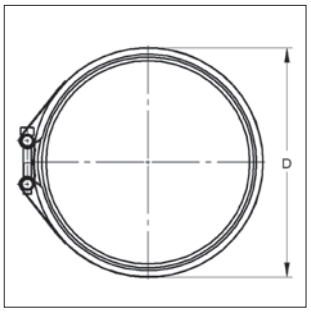
DN 80 - 200

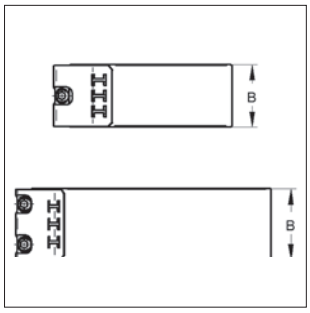
Downstream support
Page 3b/5

DN 50 - 125

SIMA-CON reducing connector
Page 3b/6

SIMA >G< connector





SIMA >G< one screw
SIMA >G< two screws

SIMA >G< one screw
SIMA >G< two screws

Plug connector suitable for cast iron pipe and fittings

Entspricht DIN EN 877

350 h Salzsprühnebeltest nach ISO 7253

Specification:		**Technical data:**	
Connector type:	plug connector	Material pipe clamp strap:	steel
Closure part connection:	seamed joint	Material type:	S 320 GD
Nominal width:	DN 50 up to 150	Surface:	Zinc-Aluminium casting
OD:	58 up to 160 mm	Material turnbuckle:	steel
Pressure load:	tested up to 0,5 bar	Material type:	9 S 20
Tightening torque:	6 Nm	Surface:	Zinc-Aluminium casting
Type of screw (DIN 912):	hexagon socket, M6 (SW 5)		
Property class of screw:	8.8	Rubber cuff:	EPDM lining
Number of seals in rubber cuff:	4	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

Identification	Nominal width [DN]	OD [mm]	Width clamp strap B [mm]	Overall width D [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Nominal width DN 50 up to 100 (connector with one screw)							
SIMA >G<	**80**	83	46	95	0,201	50	4470080
Nominal width DN 125 up to 150 (connector with two screws)							
SIMA >G<	**125**	135	51	150	0,313	25	4470125

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

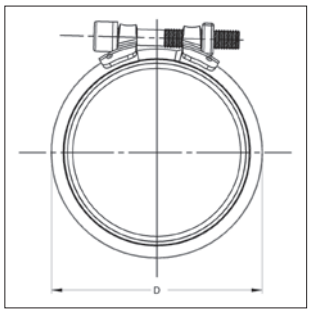
SIMA >CV< connector

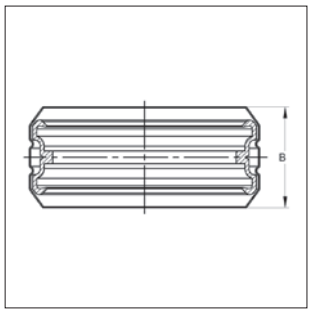
SIMA >CV<

Specification:		**Technical data:**	
Connector type:	plug connector	Material pipe clamp strap:	stainless steel
Closure part connection:	welded connection	Materials:	1.4510/11
Nominal width:	DN 200	Material clamp strap:	steel
OD:	210 mm	Surface:	galvanized
Pressure load:	tested up to 0,5 bar		
Number of seals in rubber cuff:	4	Rubber cuff:	EPDM lining
		Temperature resistance:	- 35 °C up to + 100 °C

Identification	Nominal width [DN]	OD [mm]	Width clamp strap [mm]	Overall width [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIMA >CV<	**200**	210	78	220	0,745	10	4472002

SIMA RAPID connector





SIMA RAPID

Plug connector for cast iron pipe and fittings

according to DIN EN 877

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:	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

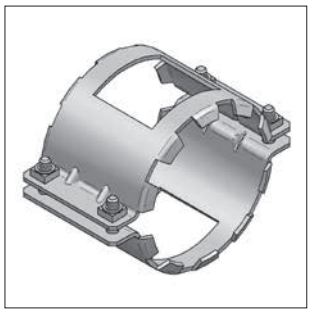
Technical data:

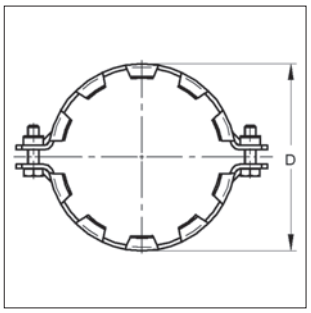
Material pipe clamp strap:	ferritic chromium steel
Material type:	1.4520
Material clamp lock:	stainless steel
Material type:	1.4301, 1.4510
Rubber cuff:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C
Shore-hardness:	50 ± 5° shore
PWIS free:	approved

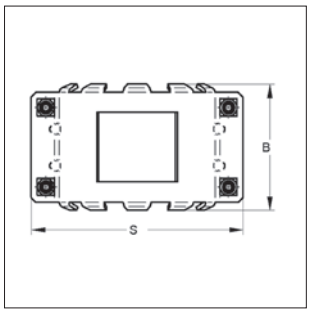
Remark: For pressure loads > 0,5 bar the SIMA-Cramp grip connector should be used

Identification	Nominal width [DN]	OD [mm]	Width clamp strap B [mm]	Overall width D [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
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

3b

Specification:

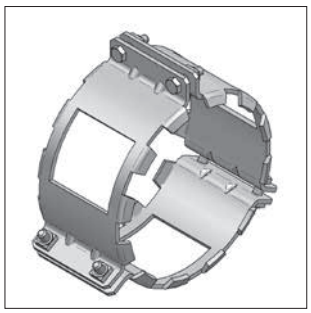
Application area:	grip connector without sleeves, drain pipes in connection with connector SIMA >G<
Nominal width:	DN 50 up to 250
OD:	58 up to 274 mm
Pressure load:	tested up to 5 bar

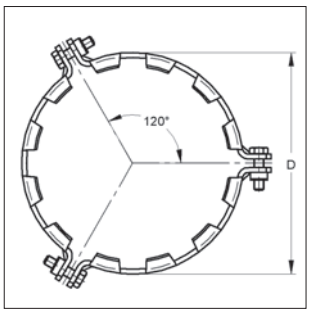
Technical data:

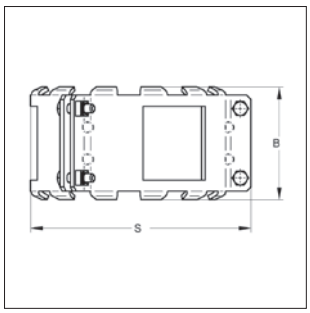
Material pipe clamp strap:	steel
Material type:	S235JR
Surface:	galvanized

[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	**80**[1]	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	1,110	10	44732561



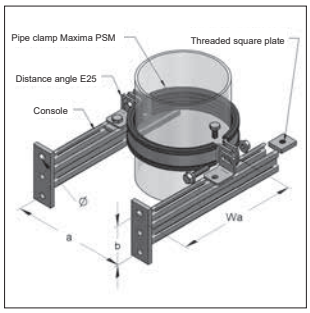




SIMA-Cramp grip connector
DN 150 up to 250

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	1,726	10	44735071
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)

Specification:

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

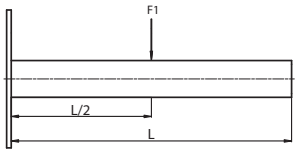
Technical data:

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

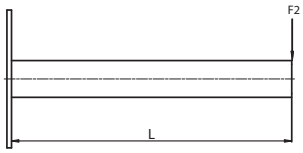
Remark: To prevent slippage of the pipe a flange or similar should be placed above the clamp

Identification	Nominal width	OD	a	b	$WA_{min.}$	$WA_{max.}$	Console hole Ø	Load F1	Load F2	Weight	Packing	Part-No.
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[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	1,61	1	4501000
Set	**DN 125**	135	200	80	85	300	15 x 11	4,16	2,08	2,68	1	4501250
Set	**DN 150**	160	230	80	100	300	15 x 11	4,16	2,08	2,79	1	4501500
Set	**DN 200**	210	280	85	125	315	20 x 14	6,64	3,32	4,08	1	45020045

Loading condition 1 (F1)



Loading condition 2 (F2)



Set-content

Identification	Nominal width	Pipe clamp Identification [1 pc.]	Pipe clamp Clamping range [mm]	Consoles Identification [2 pcs.]	Consoles Length [mm]	Distance-angle [2 pcs.]	Hexagon-screws [2 pcs.]	Threaded-square plates [2 pcs.]
Set	**DN 80**	Maxima PSM	84 - 90	C-profile 35/21/2,0	263	E25	M10 x 20	35 x 30, M10
Set	**DN 100**	Maxima PSM	108 - 112	C-profile 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-profile 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:	reducing connector
Application area:	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
Nominal width:	DN 50 up to 125
OD:	40 up to 125 mm
Pressure load:	tested up to 0,5 bar
Sound insulation lining according to:	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	0,138	50	4475050
SIMA-CON	**70**	56-75	55	77	0,180	50	4475070
SIMA-CON	**80**	75-90	60	83	0,215	20	4475080
SIMA-CON	**100**	104-110	65	95	0,350	20	4475100
SIMA-CON	**125**	125	75	103	0,430	10	4475125

assembly instruction see chapter 15

MEFA Spring hanger

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

Application:

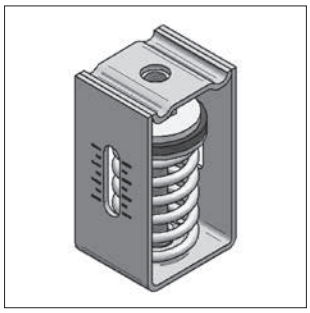
a) Applicable as a compensating element for thermal pipeline expansions
b) Suitable for sound- and vibrance insulation
c) Applicable as shock-absorbing element

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.

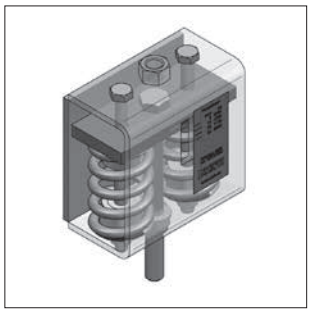
An important advantage of the MEFA spring hanger and bearings is, that there is no metallic contact between the construction and the pipeline. In combination with a sound absorbing decoupling element, the transfer of the structure-born-sound via the steel spring can be avoided.

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

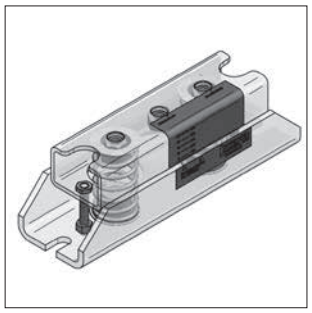
For an optimum dimensioning of the spring bearings/ -hanger please contact our technical department.



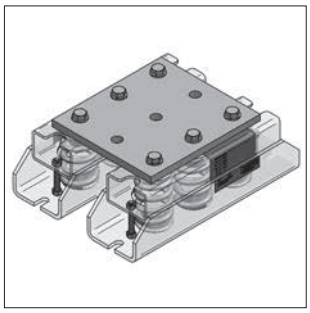
Spring insulator FH1
Page 3c/2



Spring insulator FH2
Page 3c/2

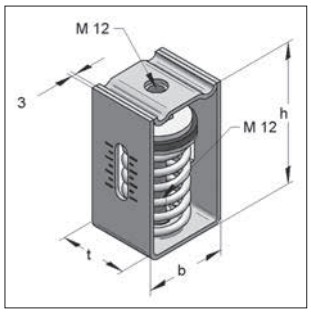


Spring bearing FL
Page 3c/3



Spring bearing FLD
Page 3c/3

Spring insulator FH 1 with one spring



Spring insulator FH1
Load range: up to 3000 N

Specification:

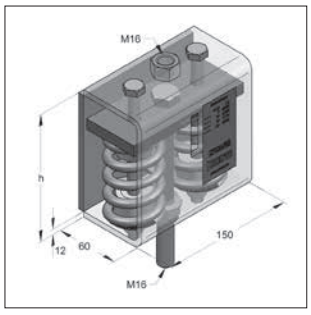
Number of springs:	1 piece
Load range:	up to 3000 N
Spring deflection:	up to 32 mm

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	0,591	1	0794040
FH 1 - 600	0 - 619	0 - 30,0	M12	105	60	50	0,551	1	0794060
FH 1 - 1000	0 - 1006	0 - 32,0	M12	105	60	50	0,575	1	0794100
FH 1 - 1300	0 - 1289	0 - 31,0	M12	130	80	60	0,950	1	0794130
FH 1 - 2100	0 - 2113	0 - 28,0	M12	130	80	60	1,150	1	0794210
FH 1 - 3000	0 - 3084	0 - 23,0	M12	130	80	60	1,190	1	0794300

Spring insulator FH 2 with two springs



Spring insulator FH2
Load range: up to 9300 N

Specification:

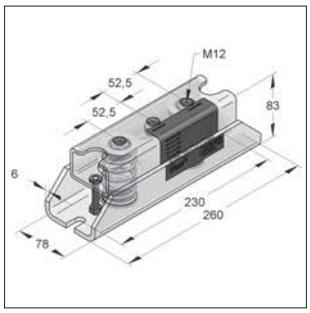
Number of springs:	2 pieces
Load range:	up to 9545 N
Spring deflection:	up to 28,5 mm

Technical data:

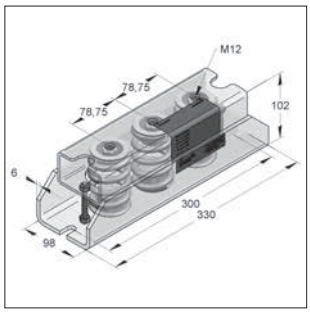
Material:	steel
Material type:	S235JR
Surface:	galvanized

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	5,09	1	079170430
FH 2 - 6000 plus	0 - 6044	0 - 22,5	M16	140	80	140	5,11	1	079170600
FH 2 - 9300 plus	2386 - 9545	0 - 15,0	M16	140	80	140	5,13	1	079180930

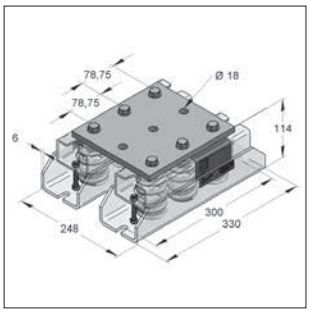
Spring bearing FL



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

Identification	Casing	Load range [N]	Number of springs	Spring Deflection [mm]	Weight [kg/pc.]	VPE [pc.]	Part-No.
Spring bearing FL							
FL-700	**Type 1**	0 - 682	2	0 - 26,5	3,05	1	07919007
FL-1000	**Type 1**	0 - 1023	3	0 - 26,5	3,12	1	07919010
FL-2300	**Type 2**	0 - 2204	2	0 - 26,5	5,72	1	07919023
FL-3800	**Type 2**	0 - 3999	2	0 - 26,5	5,72	1	07919038
FL-5700	**Type 2**	0 - 5999	3	0 - 26,5	6,10	1	07919057
FL-7200	**Type 2**	0 - 7118	2	0 - 26,5	5,72	1	07919072
FL-10500	**Type 2**	0 - 10677	3	0 - 26,5	6,10	1	07919105
Spring bearing FLD							
FLD-21000		0 - 21354	2 x 3	0 - 26,5	16,60	1	07929210

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 **(Δs ≥ 10mm)** mounting the spring hanger is necessary
3. The static load should be detected on the point of support **(→operation load $F_{V, operation}$)**
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

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

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

Example: Expansion compensation
Expansion movement of a heating installation pipe of a defined fixpoint line

Known data:	- detected expansion movement	Δs = 16 mm
	- load on the mounting bracket	F_V = 1.300 N
Solution method (see shedule):		
	ⓐ Outlet spring deflection	Δs = 16 mm
	ⓑ Load allocation	F_V = 1.300 N
Result:	ⓒ 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:

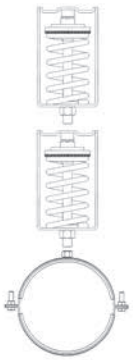
$R_{compl} = (R_1 + R_2)/2$

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

Series connection with 2 different spring hanger:

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

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

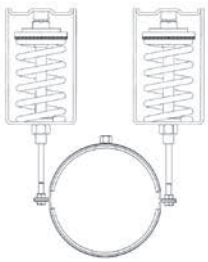


Parallel connection
e.g for the increasing of bearing pressure

F_V = vertical operation load
Δs = spring deflection / vertical forming
R = spring rate

$R_{compl} = R_1 + R_2$

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

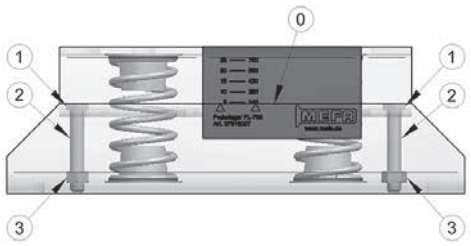


Spring insulator selection table

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

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

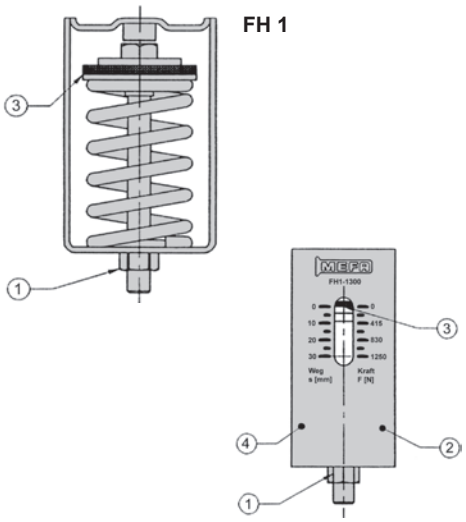
Assembly instruction for Spring bearing FL



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:
   3.1 pipe clamp and suitable threaded rod or
   3.2 supporting elements or compressor
4. After achieving operation load at stationary handling the prestressed nut M8 has to be screwed out (SW 13 mm) [1]. Equalisation of springload, bearing sets automatically
5. After balancing spring pot, threaded pins [2] can be removed. Remove counter nuts [3] and screw out threaded pins [2]

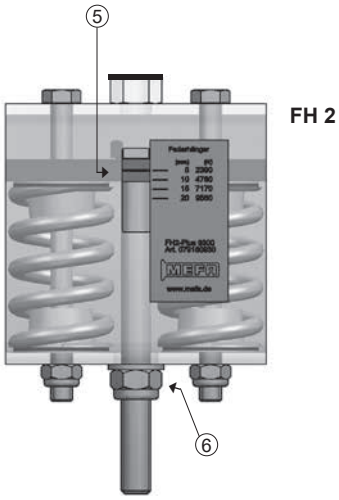
Assembly instruction for spring insulator FH 1 and FH 2



Target: Vibration isolation

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

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



Target: Compensation of expansion movement

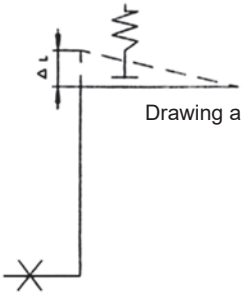
1. In a defined, vertical fixpoint pipeline (see drawing a and b) the spring pot can be...

   - pestressed 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

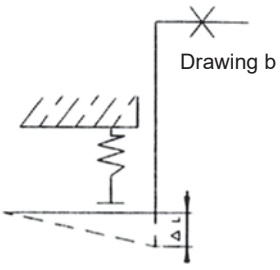
   The pipeline load of this bracket has to be noticed when choosing the spring bearing. The load and the spring deflection have to be regarded. The load of the pipeline increases, in the stationary section, about the amount of the equivalent spring rate to the spring deflection
2. The spring insulator 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, treaded coupling and counter nut or adapted traverse mountings)



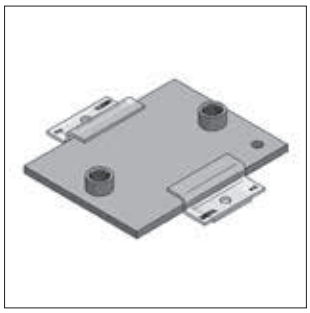
4. Releasing the springs:

   4.1 After successful mounting of the pipeline according to the **drawing a**, should the hex. screw M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut, before using the pipeline

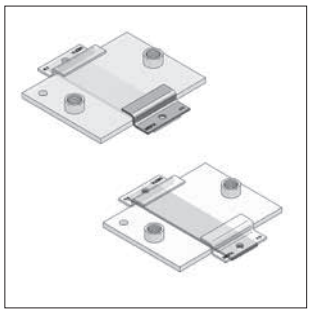
   4.2 After succesful mounting of the pipeline according to the **drawing b**, should the hex. screw M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut, before using the pipeline
5. The equalisation of load of the spring pot sets automatically



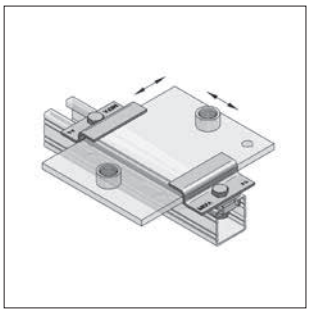
MEFA sliding elements



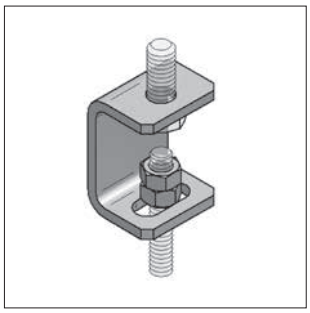
Sliding plates
Page 4/2



Z-pressure pads, sliding stripes
Page 4/3

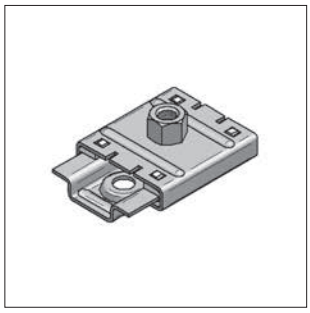


Sliding element radial-axial
Page 4/4

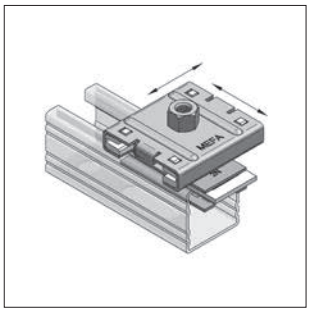


Suspended bracket
Page 4/5

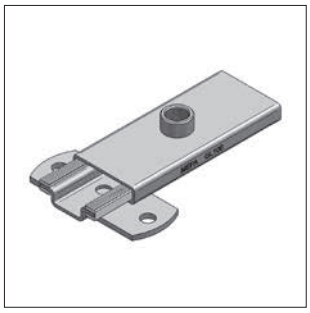
Ceiling hanger TF
Page 4/5



Slider GL 37
Page 4/6

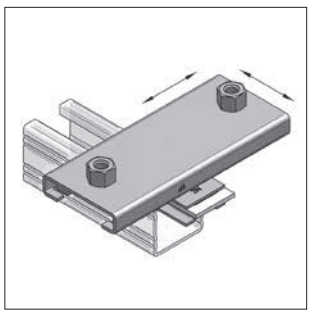


Sliding element radial-axial 37
Page 4/7

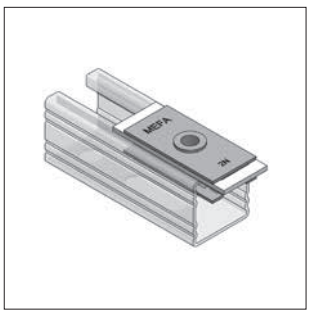


Slider GL 100
Page 4/8

Slider GL 200
Page 4/8



Sliding element radial-axial
Page 4/9



Profile rail slider 45
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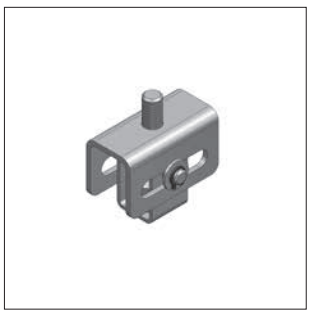
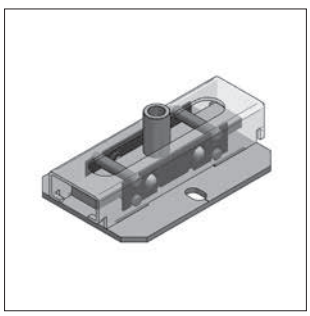
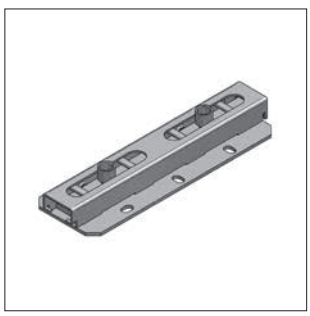


Suspended bracket 35 mm
Page 4/11



Roller bearing
Page 4/11



Roller bearing Duo
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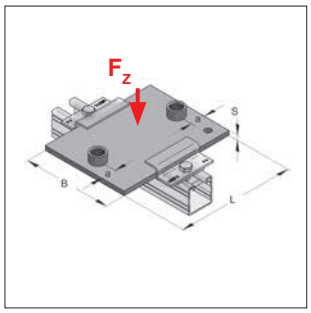
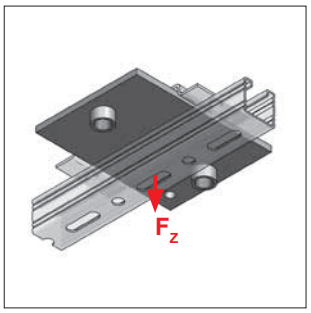
ⓘ sliding elements of stainless steel see chapter 13

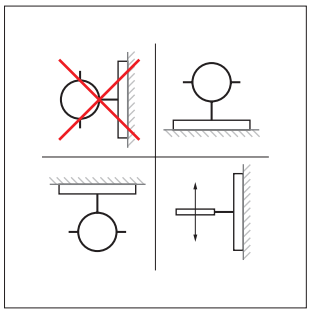
Sliding plates



Sliding plate
standing installation



Sliding plate
hanging installation



Assembly instruction

Specification:

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

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

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

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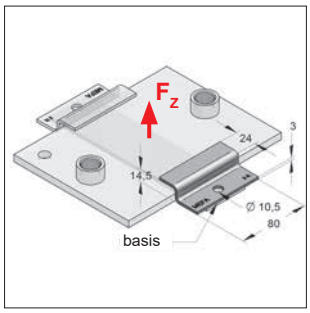
* Delivery times on request

Identification	Dimension L x B x S [mm]	Connection		A [mm]	Sliding distance standing [mm]	Sliding distance hanging [mm]	Load F_z [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	1,993	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	1,02	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	1,37	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	1,67	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	1,68	1	0771511
Sliding plate 250 x 100 x 8	2x	sleeve	1"	25	200	120	2,2	077955501	1,75	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	250	160	5,6	077956001	4,95	1	0771811
Sliding plate 300 x 200 x 12*	2x	sleeve	1"	25	250	160	8,1	077956001	5,91	1	0771814
Sliding plate 300 x 250 x 12*	2x	sleeve	1"	25	250	160	10,2	077957001	7,35	1	0771817
Sliding plate 350 x 200 x 12*	2x	sleeve	1 1/4"	35	300	200	6,0	077956001	6,93	1	0771902
Sliding plate 350 x 250 x 12*	2x	sleeve	1"	25	300	200	7,4	077957001	8,55	1	0771911
Sliding plate 400 x 250 x 12*	2x	sleeve	1 1/4"	35	350	250	5,4	077957001	9,81	1	0771973

Z-pressure pad



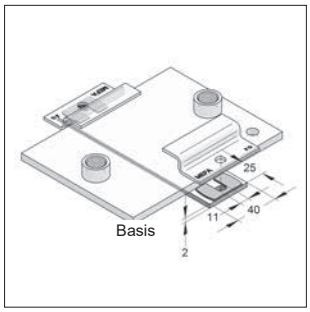
Z-pressure pad with basis

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: galvanized[1)]
Hole OD: 10,5 mm

Identification	L [mm]	Load F_z [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



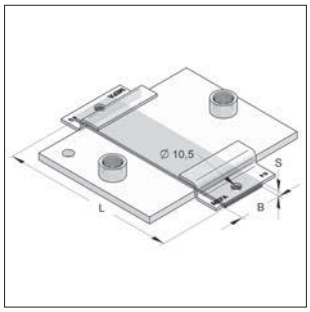
Z-pressure pad with basis

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



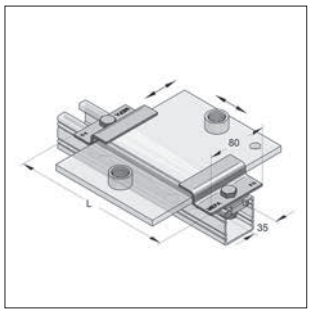
Sliding stripe

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

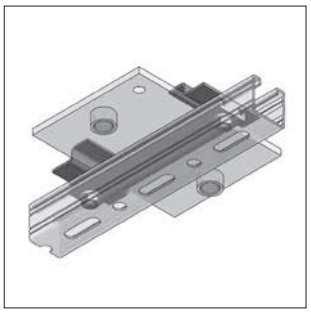
Technical data:
Material: polyamide 6
Static friction factor: 0,2 - 0,3
Thermal load: - 30 °C up to + 110 °C
Hole OD: 10,5 mm

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

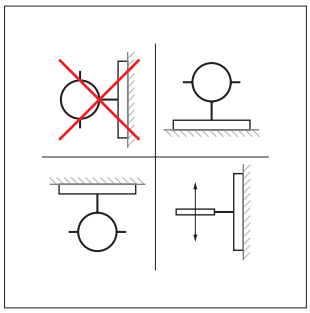
Sliding element radial-axial



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
Thermal load:	-30 °C up to + 110 °C

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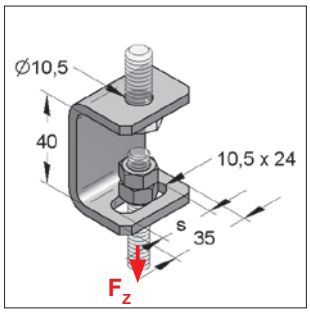
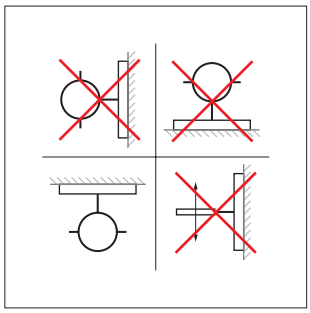
Identification	Size	Type	L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial	**I**	for sliding plates 100 mm wide	163	0,294	1	077997101
Sliding element radial-axial	**II**	for sliding plates 150 mm wide	213	0,312	1	077997201
Sliding element radial-axial	**III**	for sliding plates 200 mm wide	263	0,331	1	077997301

Suspended bracket type L



Suspended bracket type L


Assembly instruction

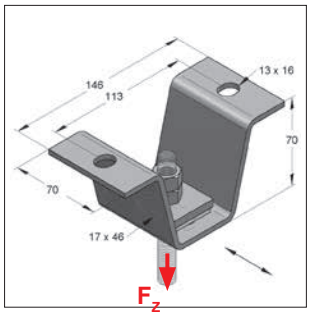
Specification:
Application area: for single fixation with threaded rod under ceiling
Scope of delivery: suspended bracket, cone- and counter nut
Note: Secure the suspended pipe clamps with lock nuts.

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

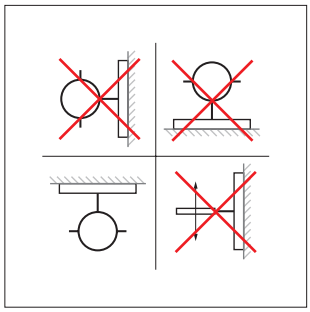
Identification	Thread	Adjustable height [mm]	Sliding distance s [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket type L	**M8**	30	16	1,6	0,104	100	0781010
Suspended bracket type L	**M10**	30	14	1,6	0,119	100	0781029

04

Ceiling hanger TF



Ceiling hanger TF


Assembly instruction

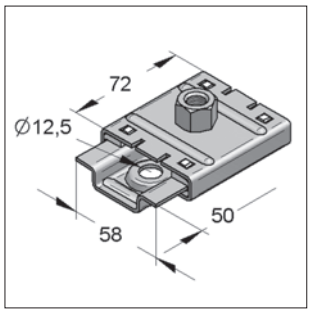
Specification:
Application area: ceiling- and rail suspension
Scope of delivery: sliding plate, perforated plate and two nuts
Note: Secure the suspended pipe clamps with lock nuts.

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

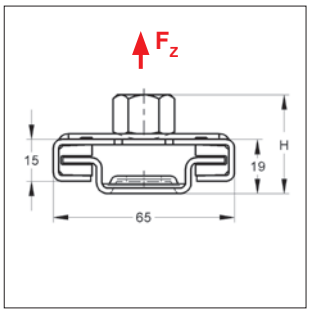
Material sliding stripe: polyamide 6
Static friction factor: 0,2 - 0,3
Thermal load: -30 °C up to + 110 °C

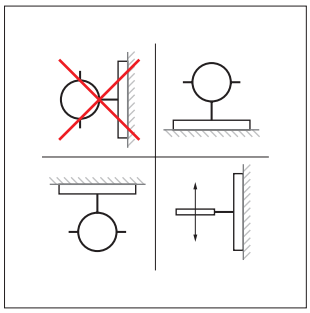
Identification	Thread	Max. sliding piece [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Ceiling hanger TF	**M10**	36	12,0	0,619	1	0816604
Ceiling hanger TF	**M12**	34	12,0	0,630	1	0816612
Ceiling hanger TF	**M16**	30	12,0	0,670	1	0816639

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 installed 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
Thermal load:	-30 °C up to + 110 °C

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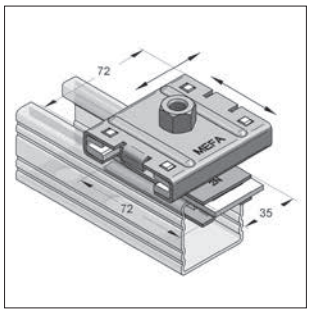
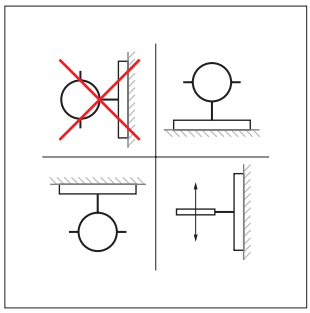
Identification	Connection	H [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Slider GL 37	1 x M8	32	1,3	0,204	25	0770515
Slider GL 37	1 x M10	34	1,3	0,214	25	0770523
Slider GL 37	1 x M12	36	1,3	0,223	25	0770531
Slider GL 37	1 x M16	34	1,3	0,232	25	0770558
Slider GL 37	1 x 1/2"	35	1,3	0,225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

Sliding element radial-axial GL 37



Sliding element radial-axial GL 37



Assembly instruction

Specification:

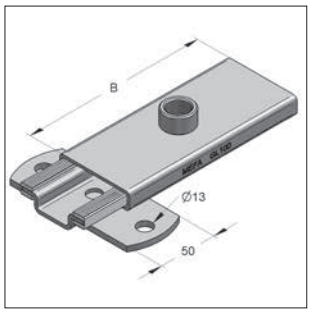
For profile rail type:	C-profile 45 mm
Application area:	absorption of radial and axial length expansion for standing, hanging or vertical installed pipes
Constitution:	slider GL 37 and profile rail slider; pre-assembled (without C-profile)
Remark:	after mounting protection lugs should be turned up,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

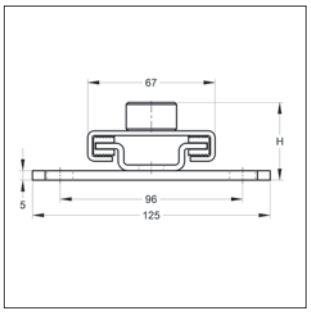
Technical data:

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
Thermal load:	-30 °C up to + 110 °C

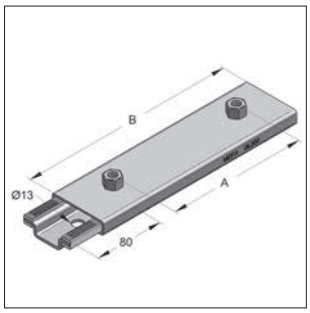
Identification	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial GL 37 M8	1,3	0,357	1	077046801
Sliding element radial-axial GL 37 M10	1,3	0,367	1	077046001
Sliding element radial-axial GL 37 M12	1,3	0,376	1	077046201
Sliding element radial-axial GL 37 M16	1,3	0,385	1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

Slider GL 100 and GL 200

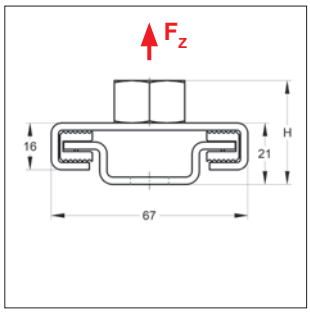




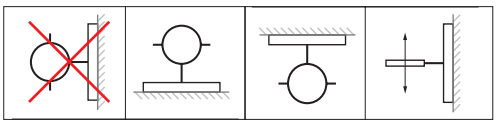
Slider GL 100
(Illustration with lug)



Slider GL 200



Specification:

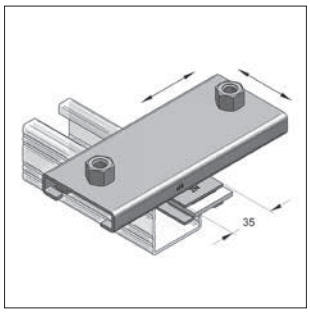
For profile rail type:	C-profile 45 mm
Application area:	absorption of axial length expansion for standing, hanging or vertical installed pipes
Recommended pipe sizes: (for double connection)	A 120 = to Rohr-Ø 219 mm A 160 = to Rohr-Ø 324 mm
Remark:	after mounting protection lugs should be turned up, thereby slipping can be avoided
Assembly instruction:	

Technical data:

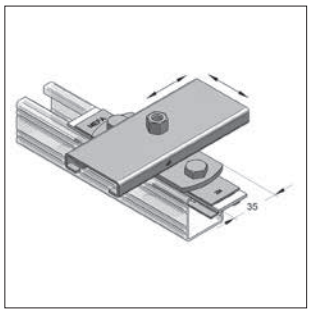
Material slider:	steel
Material type slider:	S235JR
Surface slider:	galvanized
Sliding distance GL 100	approx. 68 mm
Sliding distance GL 200	approx. 158 mm
Material sliding plate:	polyamide 6
Static friction factor:	0,2 - 0,3
Thermal load:	-30 °C up to + 110 °C

Identification	Connection		A [mm]	H [mm]	B [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Slider GL 100	1x nut	M10	-	35	160	3,0	0,517	20	0770524
	1x nut	M12	-	37	160	3,0	0,526	20	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	20	0770528
	1x nut	M12	-	42	160	3,0	0,757	20	0770536
	1x nut	M16	-	41	160	3,0	0,766	20	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	20	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	20	0770530
	2x nut	M12	120	42	160	3,0	0,793	20	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	160	35	250	3,0	0,746	1	0770527
	2x nut	M12	160	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	160	40	250	3,0	0,977	1	0770638
	2x nut	M12	160	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	10	0770615

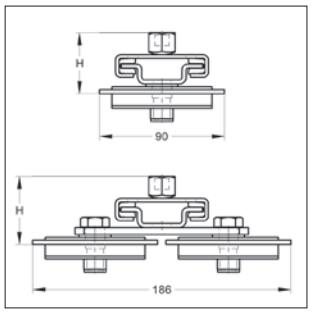
Sliding element radial-axial GL 100 and GL 200

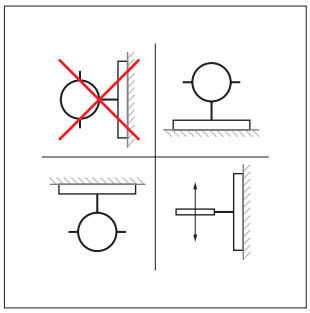


Sliding element radial-axial without lug



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 installed 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. 68 mm

Sliding distance GL 200: approx. 158 mm

Material sliding plate: polyamide 6

Static friction factor: 0,2 - 0,3

Thermal load: -30 °C up to + 110 °C

04

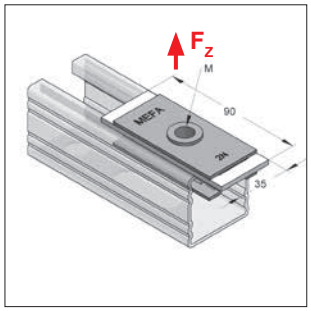
Identification	Connection	H [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sliding element radial-axial GL 100	1x nut M10	42	2,0	0,670	1	077048401
	1x nut M12	44	2,0	0,679	1	077048301
	1x nut M16	43	2,0	0,688	1	077048501
	1x sleeve 1/2"	43	2,0	0,681	1	077048601
Sliding element radial-axial 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	1,085	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	0,930	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

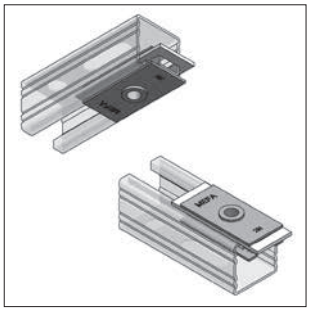
The quoted data is valid for standing and hanging mounting and point out limit values for the system function of the mounting combination.

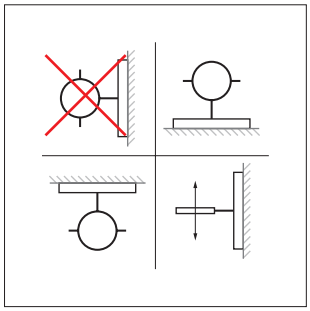
Slider	Pipe clamps	max. recommended length threaded pin/ pipe nipple [mm]
GL 37 M8	Omnia MB	50
GL 37 M10	Omnia MB	70
GL 37 M12	Omnia MB	90
GL 37 M16	Omnia MB	110
GL 37 1/2"	Maxima PSM	150
GL 100 1 x M10	Omnia MB	90
GL 100 1 x M12	Omnia MB	110
GL 100 2 x M10	Omnia MB	90
GL 100 2 x M12	Omnia MB	110
GL 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 installed pipes. Release of lateral shear force.

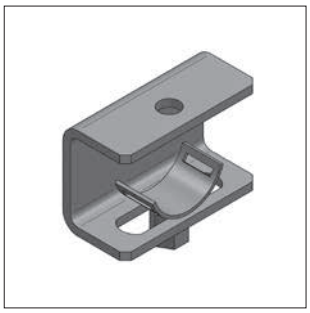
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

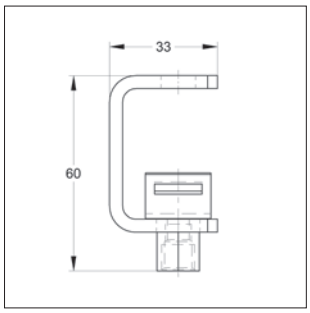
Material sliding plate: polyamide 6
Static friction factor: 0,2 - 0,3
Thermal load: -30 °C up to + 110 °C

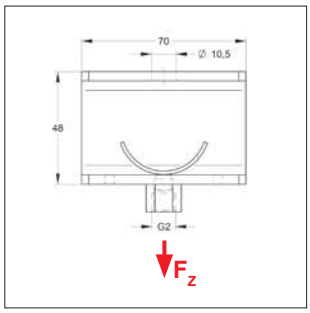
Identification	Max. recom. distances sliding body - pipe clamp [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Profile rail slider 45 M8	45	2,0	0,115	1	077002801
Profile rail slider 45 M10	55	2,0	0,120	1	077003001
Profile rail slider 45 M12	55	2,0	0,126	1	077003201

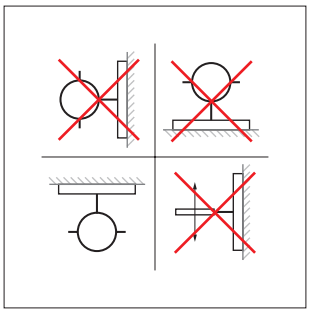
Suspended bracket 35 mm M8/M10



Suspended bracket 35 mm hanging







Assembly instruction

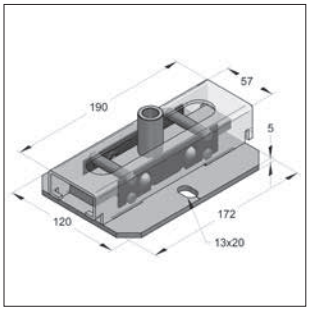
Specification:
Application area: absorption of axial expansion for hanging assembly
Recommended accessories: M10 screw for fastening to ceiling / rail construction

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

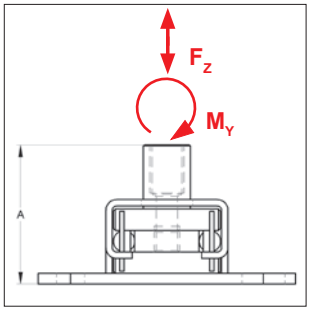
Identification	Thread	Sliding distance s [mm]	Load F_Z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket 35 mm M8/10	M8/M10	35	2,5	0,2341	50	07709903

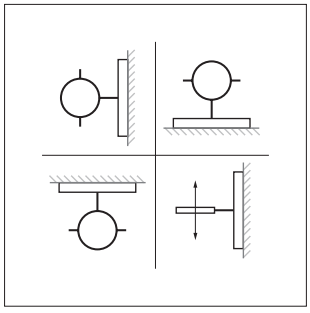
04

Roller bearing



Roller bearing





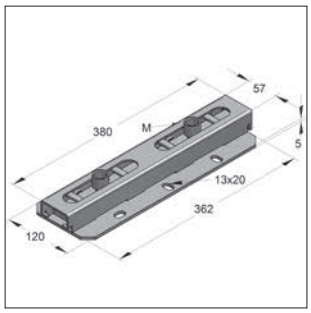
Assembly instruction

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

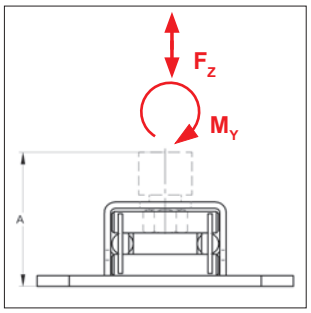
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized
Rolling resistance: 0,004 - 0,02
Sliding distance: 120 mm
max. temperature: up to + 300 °C

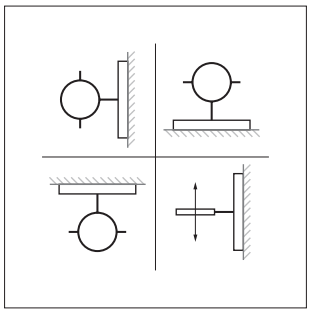
Identification	A [mm]	Load F_Z [kN]	Limited torque M_Y [Nm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roller bearing thread M10	65	4,0	150	1,93	1	175811811
Roller bearing thread M12	65	4,0	150	1,91	1	175811813
Roller bearing thread M16	65	4,0	150	1,97	1	175811816
Roller bearing sleeve 1/2"	45	4,0	150	1,92	1	175811839
Roller bearing sleeve 3/4"	86	4,0	150	2,09	1	175811840

Roller bearing Duo

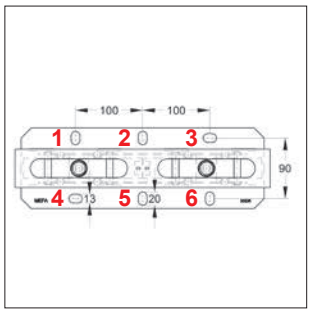


Roller bearing Duo





Assembly instruction



Mounting points

Specification:

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

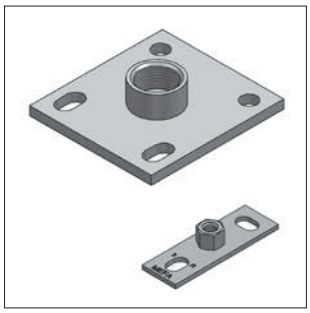
Material:	steel
Material type:	S235
Surface:	galvanized
Rolling resistance:	0,004 - 0,02
Sliding distance:	120 mm
max. temperature:	up to +300°C

04

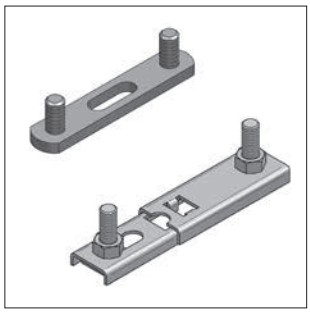
Identification	Connection	A [mm]	Load F_Z* [kN]	limited torque M_Y [Nm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roller bearing Duo M10	2 x M10	65	8,0	300	4,05	1	175911811
Roller bearing Duo M12	2 x M12	65	8,0	300	4,02	1	175911813
Roller bearing Duo M16	2 x M16	65	8,0	300	4,13	1	175911816
Roller bearing Duo 1/2"	2 x 1/2“	45	8,0	300	4,03	1	175911839
Roller bearing Duo 3/4"	2 x 3/4“	86	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.

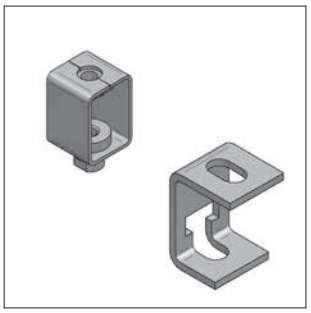
MEFA mounting accessories



Base plates
Page 5/2

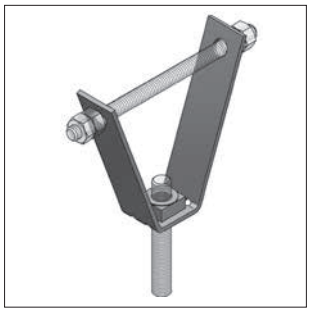


Double holder
Page 5/4



Height-adjustable suspensions
Page 5/5

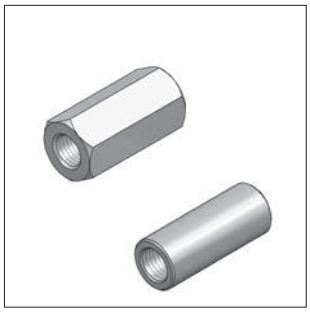
Pendular bolt joints
Page 5/6



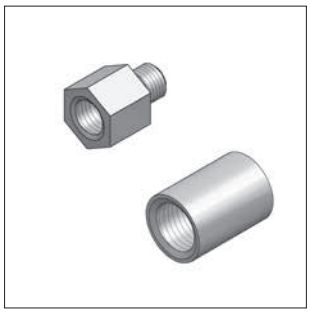
Trapeze hanger
Page 5/7

Threaded hooks, distance angles
Page 5/8

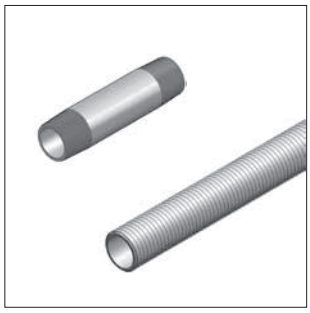
Threaded rods and bolts, protecting caps
Page 5/9



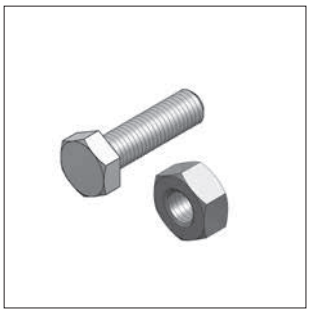
Threaded couplings, reducer
Page 5/11



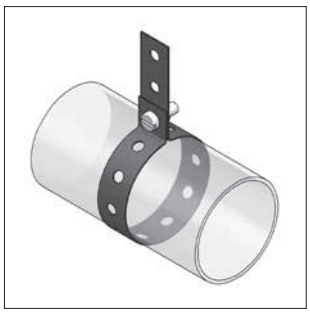
Reducer hexagon, reducing adaptors
Page 5/12



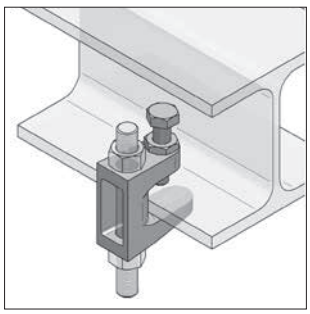
Double nipples, threaded pipes
Page 5/13



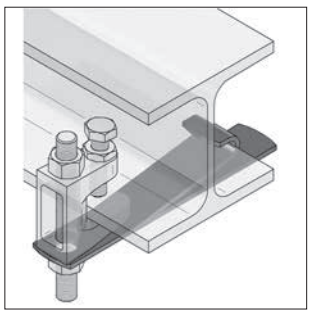
Screws, nuts and washers
Page 5/14



MEFA Plastahl
Page 5/20

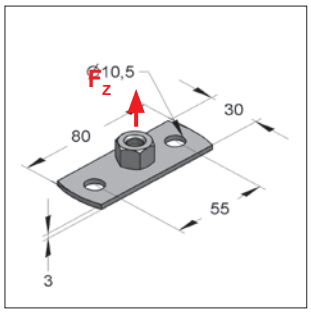


Beam clamps
Page 5/20

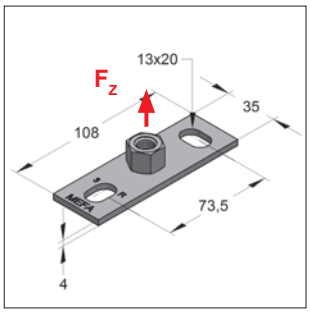


Safety lug
Page 5/21

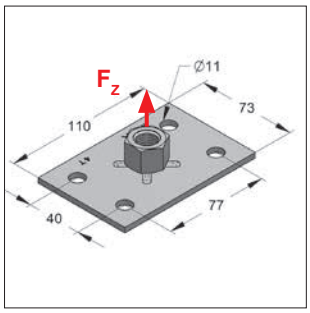
Base plates



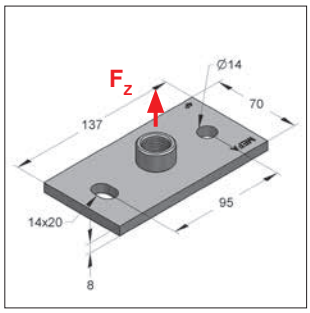
Base plate type 0



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 threaded pipe.

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

Technical data:

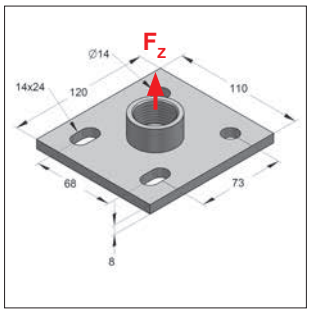
Material: steel
Material type: S235JR
Surface: galvanized

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

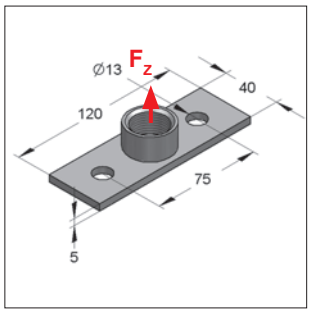
05

Identification	Thread	Dimension plate length x width x thickness [mm]	Perforation [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Type 0							
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	11,0	3,40	0,255	50	059050701
Base plate type II	**M10**	110 x 73 x 4,0	11,0	3,40	0,266	50	059054101
Base plate type II	**M12**	110 x 73 x 4,0	11,0	3,40	0,274	50	059052501
Base plate type II	**M16**	110 x 73 x 4,0	11,0	3,40	0,301	50	059053301
Base plate type II	**1/2"**	110 x 73 x 4,0	11,0	3,40	0,277	50	059050901
Base plate type II	**3/4"**	110 x 73 x 4,0	11,0	3,40	0,290	50	059051701
Base plate type II	**1"**	110 x 73 x 4,0	11,0	3,40	0,324	50	059056801
Type III[1)]							
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 threaded pipe.

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

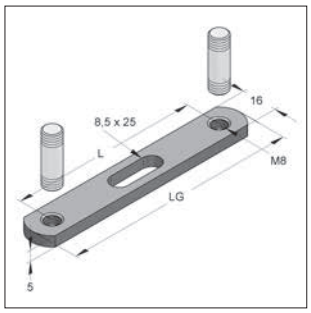
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

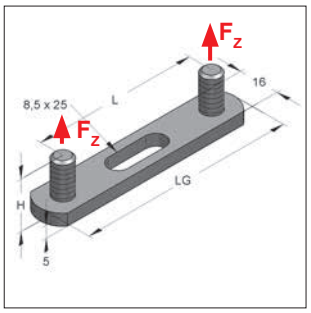
05

Identification	Thread	Dimension plate length x width x thickness [mm]	Perforation [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Type IV							
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

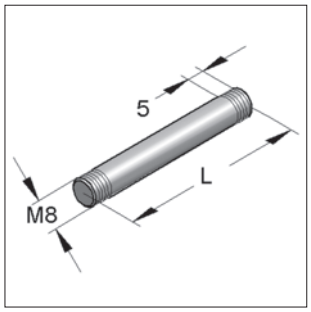
Technical data:

Material: steel

Surface: galvanized

Double holder								
Identification	L	Female thread	Dimension		Load	Weight	Packing	Part-No.
			LG	H	F_z			
	[mm]	[mm]	[mm]	[mm]	[kN]	[kg/pc.]	[pcs.]	
Double holder	**65**	M8	87,0	-	0,2	0,041	100	0763071
Double holder	**85**	M8	105,5	-	0,2	0,054	100	0763098
Double holder	**105**	M8	125,5	-	0,2	0,066	100	0763128
Double holder	**160**	M8	181,0	-	0,2	0,102	100	0763160
Double holder MD								
Double holder MD	**65**	M8	85,0	20,0	0,2	0,069	50	0760048
Double holder MD	**105**	M8	125,0	20,0	0,2	0,094	50	0760056

Threaded bolt



Threaded bolt

Specification:

Application area: suitable for double holder with female thread

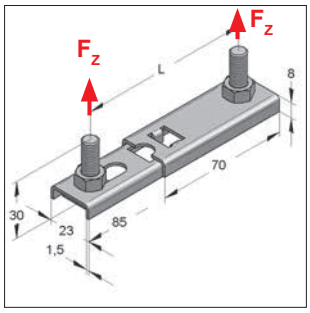
Technical data:

Material: steel

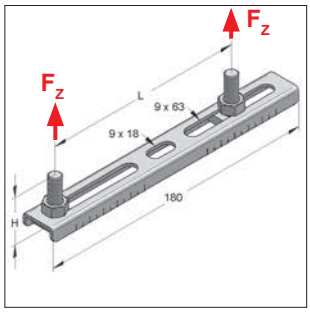
Surface: galvanized

Identification	L	Male thread	Thread length	Weight	Packing	Part-No.
	[mm]		[mm]	[kg/pc.]	[pcs.]	
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 telescopical adjusted, with threaded bolts and nuts

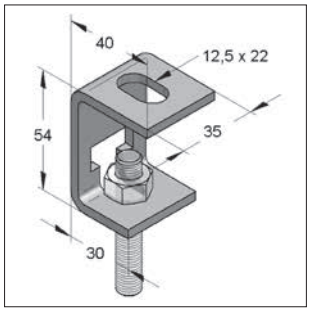
Double holder VSG: adjustable distance of the threaded bolts, with threaded bolts and nuts

Technical data:

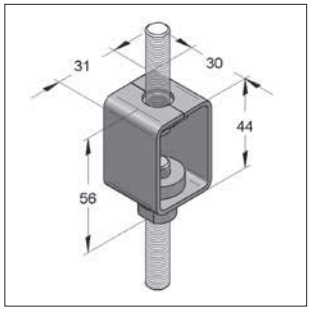
Material: steel
Material type: S235JR
Surface: galvanized

Identification	L [mm]	Threaded bolt	H [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Double holder VS							
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

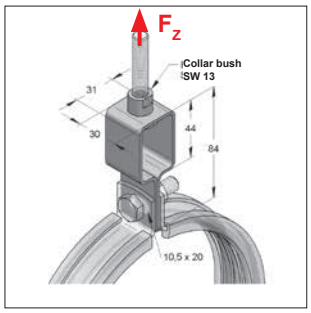
Note: Secure the suspended pipe clamps with lock nuts.

Technical data:

Material: steel
Surface: galvanized

Identification	Load F_z [kN]	Adjustable height [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Suspended bracket					
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



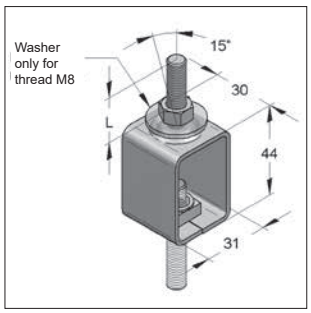
Height regulator

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

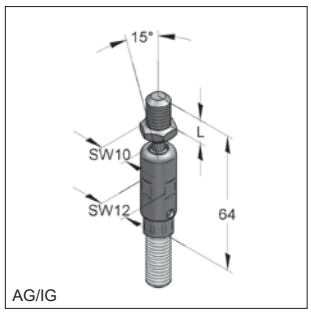
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

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

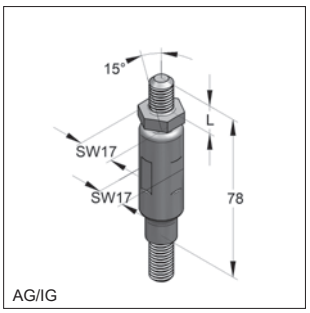
Pendular bolt joints



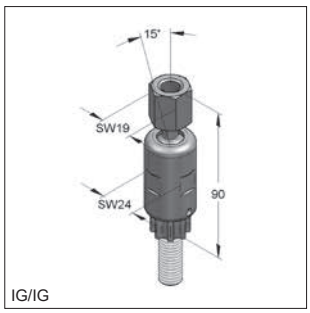
Pendulum hanger



Pendular bolt joint M8/M8



Pendular bolt joint M10/M10



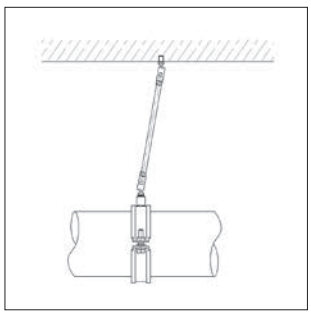
Pendular bolt joint M12/M12

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

Pendulum hanger: height adjustment and pendulum function

Technical data:
Material: steel
Surface: galvanized

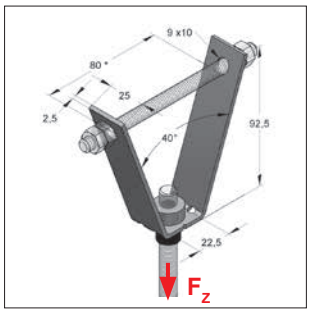
Identification	Connection	Thread length L [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Pendulum hanger M8/M8	-	22	2,5	0,106	50	0784031
Pendulum hanger M10/M10	-	22	3,0	0,119	50	0784136
Pendulum hanger M12/M12	-	20	3,6	0,137	50	0784250
Pendular bolt joint M8/M8	AG / IG	15	2,5	0,030	50	0788088
Pendular bolt joint M10/M10	AG / IG	13	2,5	0,037	50	0788108
Pendular bolt joint M12/M12	IG / IG	-	5,0	0,125	50	0788128



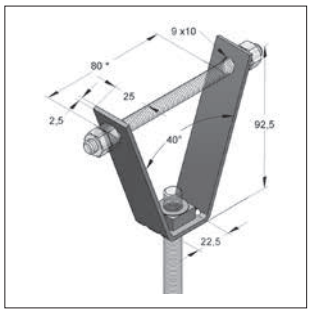
Remark:
For strainless pipe mounting always two pendulum joints are required

max. absortional 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

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

Remark: Trapeze hanger, soundproofed see chapter 8.

Technical data:

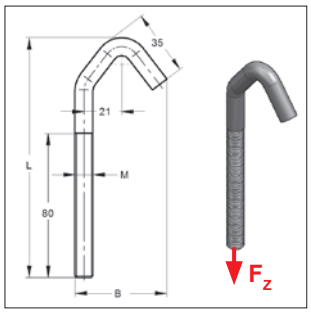
Material: steel
Material type: S235JR/DD11
Surface: galvanized

* not approved according to VdS

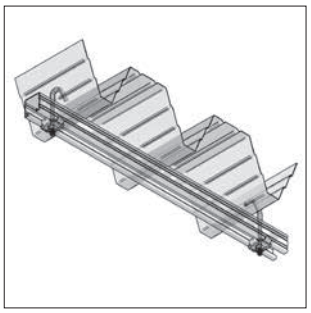
05

Identification	Threaded connection	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
With mounted height-adjustment nut					
Trapeze hanger MU-B	M8	2,0	0,116	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

Threaded hook



Threaded hook


Mounting example

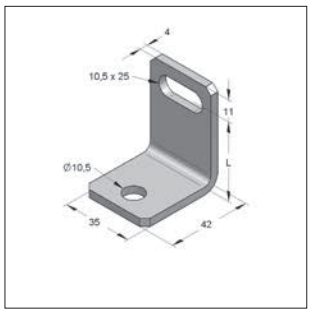
Specification:
Application area: for mounting the pipelines and ventilation ducts directly under trapeze sheeting
*Load specifications refer only to component

Technical data:
Material: steel
Surface: galvanized

Identification	Dimension M x L [mm]	B [mm]	Load F_z* [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded hook	**M8 x 130**	48	0,7	0,060	50	0592131
Threaded hook	**M10 x 130**	50	1,3	0,092	50	0592132

05

Distance angle



Distance angle E

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

Identification	L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Distance angle E	25	0,069	50	0630268
Distance angle E	30	0,075	50	0630306
Distance angle E	35	0,080	50	0630357
Distance angle E	40	0,086	25	0630403
Distance angle E	50	0,097	25	0630500
Distance angle E	60	0,108	25	0630608
Distance angle E	70	0,120	25	0630705
Distance angle E	90	0,142	25	0630918
Distance angle E	100	0,153	25	0631000

Protection cap, round

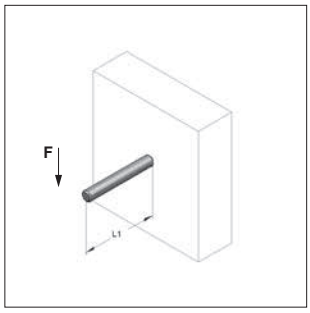
Protection cap, round

Technical data:
Material: plastic
Color: 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**	0,0013	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	0,21	0,34	0,89
100	0,04	0,10	0,17	0,45
150	0,02	0,05	0,10	0,30
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			0,02	0,05

* f_y = 235 N/mm², safety factor = 1,5, E-module=210.000 N/mm²
max. bending f = L/150 related to tensile stress area

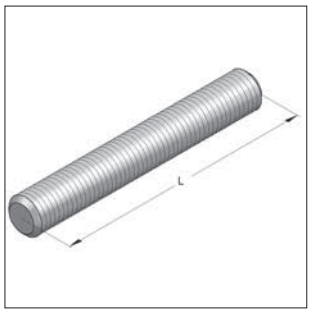
Specification:
according to DIN 976-1
Thread: M8, M10, M12, M16
Length: 1000 up to 3000 mm

Technical data:
Material: steel
Surface: galvanized
Property class: 4.6

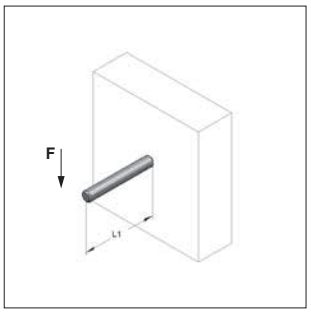
[1] FWD = fire endurance

Identification	Thread	L [mm]	Tensile load [kN]	FWD[1] 30 [kN]	FWD[1] 60 [kN]	FWD[1] 90 [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded rod	**M8**	1000	8,96	0,80	0,46	0,35	0,326	50	0730084
Threaded rod	**M8**	2000	8,96	0,80	0,46	0,35	0,653	25	0730289
Threaded rod	**M8**	3000	8,96	0,80	0,46	0,35	0,980	50	0730483
Threaded rod	**M10**	1000	14,20	1,27	0,72	0,55	0,510	25	0730106
Threaded rod	**M10**	2000	14,20	1,27	0,72	0,55	1,021	20	0730300
Threaded rod	**M10**	3000	14,20	1,27	0,72	0,55	1,531	25	0730505
Threaded rod	**M12**	1000	20,64	1,84	1,05	0,8	0,735	25	0730122
Threaded rod	**M12**	2000	20,64	1,84	1,05	0,8	1,470	20	0730327
Threaded rod	**M12**	3000	20,64	1,84	1,05	0,8	2,205	25	0730521
Threaded rod	**M16**	1000	38,43	3,42	1,96	1,49	1,306	10	0730165
Threaded rod	**M16**	2000	38,43	3,42	1,96	1,49	2,613	10	0730378
Threaded rod	**M16**	3000	38,43	3,42	1,96	1,49	3,920	20	0730564

Threaded bolts



Threaded bolt



Admissible load* on bending				
Distance L	**M8**	**M10**	**M12**	**M16**
[mm]	**F [kN]**	**F [kN]**	**F [kN]**	**F [kN]**
50	0,10	0,21	0,34	0,89
100	0,04	0,10	0,17	0,45
150	0,02	0,05	0,10	0,30
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			0,02	0,05

* f_y = 235 N/mm², safety factor = 1,5, E-module=210.000 N/mm²
max. deflection f = L/150 related to tensile stress area

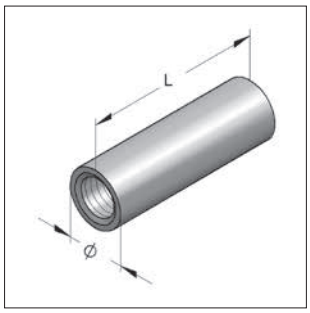
Specification:
according to DIN 976-1
Thread: M8, M10, M12, M16
Length: 20 up to 160 mm

Technical data:
Material: steel
Surface: galvanized
Property class: 4.6

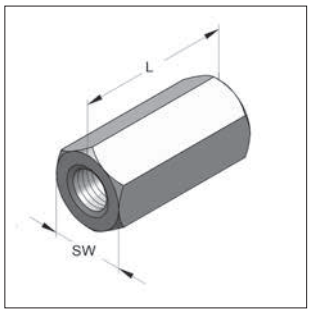
05

Identification	Thread	L	Tensile load	FWD 30	FWD 60	FWD 90	Weight	Packing	Part-No.
		[mm]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pcs.]	
Threaded bolt	**M8**	20	8,96	0,80	0,46	0,35	0,0064	100	0730815
Threaded bolt	**M8**	30	8,96	0,80	0,46	0,35	0,010	100	0730823
Threaded bolt	**M8**	35	8,96	0,80	0,46	0,35	0,0113	100	0731358
Threaded bolt	**M8**	40	8,96	0,80	0,46	0,35	0,013	100	0730831
Threaded bolt	**M8**	50	8,96	0,80	0,46	0,35	0,0162	100	0730858
Threaded bolt	**M8**	70	8,96	0,80	0,46	0,35	0,023	100	0730874
Threaded bolt	**M8**	90	8,96	0,80	0,46	0,35	0,0293	100	0730890
Threaded bolt	**M8**	110	8,96	0,80	0,46	0,35	0,036	100	0730912
Threaded bolt	**M8**	140	8,96	0,80	0,46	0,35	0,046	100	0730940
Threaded bolt	**M8**	160	8,96	0,80	0,46	0,35	0,0521	100	0730963
Threaded bolt	**M10**	20	14,20	1,27	0,72	0,55	0,010	100	0731021
Threaded bolt	**M10**	25	14,20	1,27	0,72	0,55	0,013	100	0731032
Threaded bolt	**M10**	30	14,20	1,27	0,72	0,55	0,0151	100	0731048
Threaded bolt	**M10**	35	14,20	1,27	0,72	0,55	0,018	100	0733350
Threaded bolt	**M10**	40	14,20	1,27	0,72	0,55	0,0202	100	0731056
Threaded bolt	**M10**	50	14,20	1,27	0,72	0,55	0,0253	100	0731064
Threaded bolt	**M10**	70	14,20	1,27	0,72	0,55	0,036	100	0731072
Threaded bolt	**M10**	90	14,20	1,27	0,72	0,55	0,046	100	0731099
Threaded bolt	**M10**	110	14,20	1,27	0,72	0,55	0,056	50	0731110
Threaded bolt	**M12**	35	20,64	1,84	1,05	0,8	0,026	50	0731234
Threaded bolt	**M12**	50	20,64	1,84	1,05	0,8	0,037	50	0731250
Threaded bolt	**M12**	70	20,64	1,84	1,05	0,8	0,0512	50	0731269
Threaded bolt	**M12**	90	20,64	1,84	1,05	0,8	0,066	50	0731293
Threaded bolt	**M12**	110	20,64	1,84	1,05	0,8	0,081	50	0731315
Threaded bolt	**M16**	70	38,43	3,42	1,96	1,49	0,091	25	0731672
Threaded bolt	**M16**	110	38,43	3,42	1,96	1,49	0,143	25	0731715
Threaded bolt	**M16**	160	38,43	3,42	1,96	1,49	0,208	25	0731763

Threaded coupling



Threaded coupling, round



Threaded coupling, hexagon

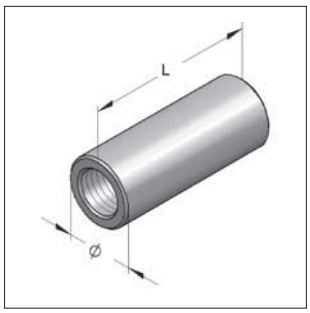
Specification:
Application area: For extension of threaded rods.

Remark: Fire loads on demand

Technical data:
Material: steel
Surface: galvanized

Identification	Female thread	L [mm]	OD [mm]	SW [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded coupling, round							
Threaded coupling, round	**M6**	**25**	10	-	0,012	100	0700010
Threaded coupling, round	**M8**	**30**	11	-	0,0142	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**	-	11	0,014	100	0700085
Threaded coupling, hexagon	**M10**	**40**	-	13	0,029	50	0700105
Threaded coupling, hexagon	**M12**	**40**	-	17	0,0533	50	0700123
Threaded coupling, hexagon	**M16**	**50**	-	24	0,136	25	0700167

Reducing socket



Reducing socket, round

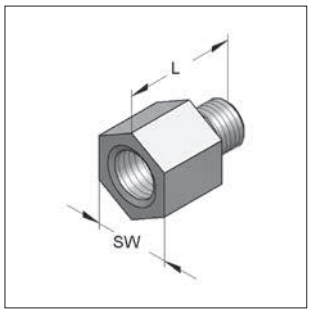
Specification:
Version: round

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	0,0482	100	0710016
Reducing socket	**M8 / M12**	40	16	0,0432	100	0710024
Reducing socket	**M10 / M12**	40	16	0,041	100	0710032
Reducing socket	**M12 / M16**	40	22	0,081	25	0710105

Reducer hexagon



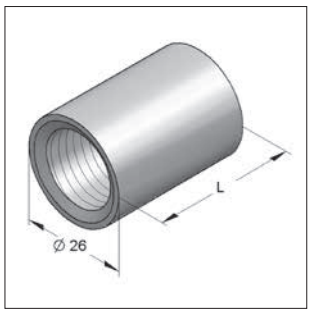
Reducer hexagon

Specification:
Version: hexagon
Female- and male thread

Technical data:
Material: steel
Surface: galvanized

Identification	Thread female/male	Wrench size	L [mm]	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	0,0138	100	0720518
Reducer, hexagon	**M10 / M12**	13	23	10,0	10	0,0184	100	0720496
Reducer, hexagon	**M12 / M10**	17	25	10,0	10	0,028	100	0720011
Reducer, hexagon	**M16 / M12**	24	32	10,0	15	0,0713	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

Reducing adaptor



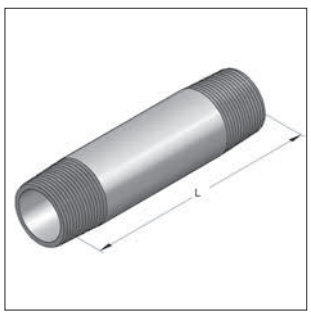
Reducing adaptor

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



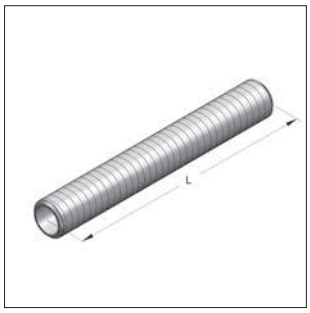
Double nipple

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	0,045	10	0700403
Double nipple	**1/2"**	60	0,071	10	0700603
Double nipple	**1/2"**	80	0,096	10	0700803
Double nipple	**1/2"**	120	0,148	25	0701203

Threaded pipe - section



Threaded pipe - section

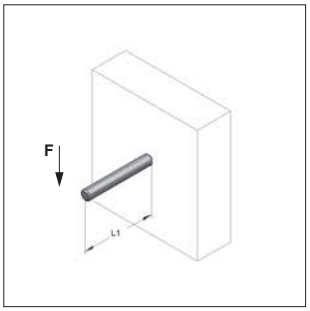
Specification:
Version: Pipe section with continuous male thread
Thread: according to DIN EN ISO 228 G 1/2 B

Technical data:
Material: steel
Surface: galvanized

Identification	Thread	L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Threaded pipe - section	**1/2"**	100	0,112	10	07070100
Threaded pipe - section	**1/2"**	150	0,168	25	07070150

Threaded pipe

Threaded pipe



Admissible load* on bending				
Distance L1	**1/2"**	**3/4"**	**1"**	**1 1/4"**
[mm]	**F [kN]**	**F [kN]**	**F [kN]**	**F [kN]**
50	1,482	2,940	5,350	10,362
100	0,741	1,470	2,675	5,181
150	0,494	0,980	1,783	3,454
200	0,371	0,735	1,337	2,591
250	0,290	0,588	1,070	2,072
300	0,201	0,490	0,892	1,727
350	0,148	0,380	0,764	1,480
400	0,113	0,291	0,665	1,295
450	0,089	0,230	0,525	1,151
500	0,072	0,186	0,425	1,036

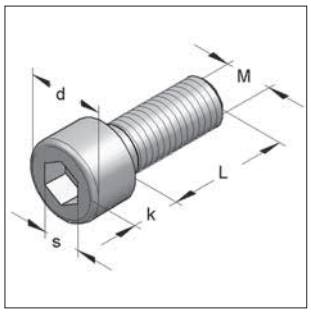
* at $\sigma_{max.}$ = 160 N/mm², max. bending f = L/150

Specification:
Version: tube with male thread
Thread: according to DIN EN ISO 228 G 1/2 - 1 1/4 B

Technical data:
Material: steel
Surface: galvanized

Identification	Thread	Length [mm]	Outer diameter [mm]	Weight [kg/m]	Packing [m]	Part-No.
Threaded pipe	**1/2"**	2000	21,0	1,13	20	0737002
Threaded pipe	**3/4"**	2000	26,4	1,43	10	0737003
Threaded pipe	**1"**	2000	33,2	2,25	10	0737004
Threaded pipe	**1 1/4"**	2000	41,9	2,88	6	0737005

Allen screw



Allen screw

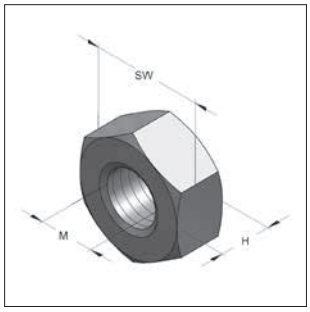
Specification:
according to DIN EN ISO 4762
Version: Allen head with metric thread
Application area: for mounting of C-profile rail in profile back

Needed accessory: washer according to DIN EN ISO 7089

Technical data:
Material: steel
Surface: galvanized

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	0,0121	200	3443167
Allen screw	**M8**	20	6	13	8	0,0134	200	3443205
Allen screw	**M10**	20	8	16	10	0,0229	100	3444200
Allen screw	**M10**	25	8	16	10	0,0259	100	3444252
Allen screw	**M12**	25	10	18	12	0,0356	100	3445259

Hexagon nut



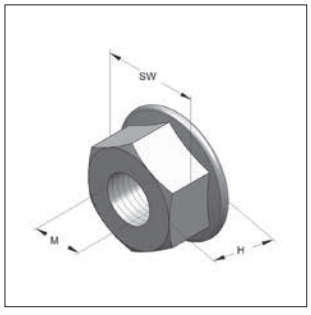
Hexagon nut

Specification:
according to DIN EN ISO 4032

Technical data:
Material: steel
Surface: galvanized

Identification	Thread M	Height H [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagon nut	**M6**	5,0	10	0,0023	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



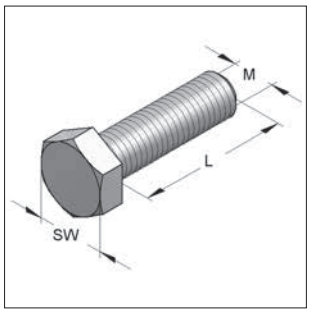
Flange nut

Specification:
according to DIN 6923

Technical data:
Material: steel
Surface: galvanized

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



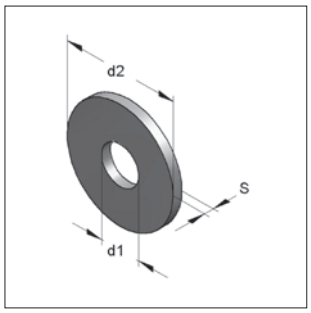
Hexagon screw

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

Technical data:
Material: steel
Surface: galvanized
Property class: 8.8

Identification	Thread M	Wrench size SW	Length L [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagon screw	**M8**	**13**	16	0,0121	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	0,0261	100	3205251
			30	0,0292	100	3205301
			35	0,0322	100	3205302
			40	0,0354	100	3205401
			45	0,0384	100	3206508
			50	0,042	100	3205501
			60	0,048	100	3206602
Hexagon screw	**M12**	**19**	20	0,034	100	3206205
			25	0,0381	100	3206591
			30	0,043	100	3206305
			35	0,047	100	3206306
			40	0,0514	100	3206606
			45	0,056	100	32066064
			50	0,0602	100	32066065
			55	0,065	100	320660655
			60	0,0692	100	32066066

Washer



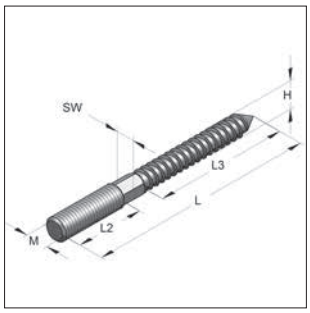
Washer
(according to DIN EN-ISO 7089)

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

Technical data:
Material: steel
Surface: galvanized

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	0,0064	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	0,0064	100	4330250
Reinforced washer	**10,5 x 30,0 x 2,5**	7093-1	0,0124	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

Hanger bolt



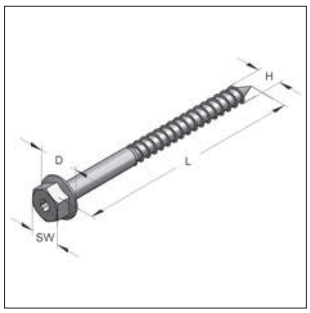
Hanger bolt
multi-tooth TX 25

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	Thread 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	0,009	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	0,022	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	0,0368	50	3609103
Hanger bolt	**M10**	**120**	8,8	40	57	8	12 x 60	0,0466	50	3609138
Hanger bolt	**M10**	**140**	8,8	40	57	8	12 x 60	0,0564	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	0,057	50	3609510

Wood screw with washer



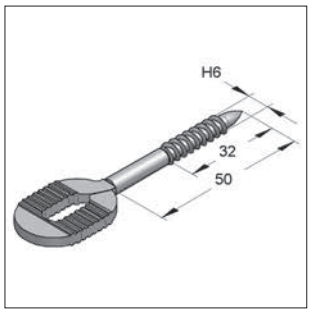
Wood screw with washer

Specification:
Version: with contact pressed washer

Technical data:
Material: steel
Surface: galvanized

Identification	Thread H	Thread L [mm]	Wrench size SW	TX drive	D x t [mm]	Recommended anchor K2	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Wood screw with washer	**8**	**50**	13	30	18 x 2,0	10 x 44	0,020	100	350001218
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	0,028	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	0,032	100	350005518
Wood screw with washer	**8**	**100**	13	30	18 x 2,0	10 x 60	0,036	100	350006318

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

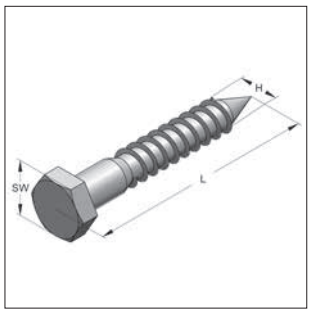
Countersunk woodscrew

Specification:
Version: Countersunk woodscrew with TX-drive

Technical data:
Material: steel
Surface: galvanized

Identification	Dimension H [mm]	Dimension L [mm]	TX-drive	Head Ø [mm]	Recommended anchor	Weight [kg/pcs.]	Packing [pcs.]	Part-No.
Countersunk woodscrew	**4,0**	**40**	20	8,0	K2 5x25 K2 6x33	0,0022	1000	372040040
Countersunk woodscrew	**4,5**	**45**	20	9,0	K2 6x33 K2 8x44	0,0032	500	372045045
Countersunk woodscrew	**5,0**	**50**	25	10,0	K2 8x44	0,0044	500	372050050
Countersunk woodscrew	**6,0**	**60**	30	12,0	K2 10x44 K2 10x60	0,0075	200	372060060

Hexagon-woodscrew



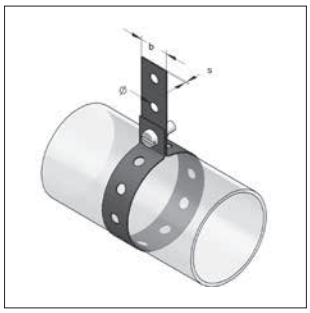
Hexagon-woodscrew

Specification:
according to DIN EN ISO 571
Version: With wood thread.

Technical data:
Material: steel
Surface: galvanized

Identification	Thread H	Length L [mm]	Wrench size SW	Suitable anchor K2	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hexagon-woodscrew	6	60	10	8x44	0,0112	200	3100104
Hexagon-woodscrew	8	50	13	10x44	0,018	100	3100228
Hexagon-woodscrew	8	70	13	10x60	0,024	100	3100279

MEFA Plastahl



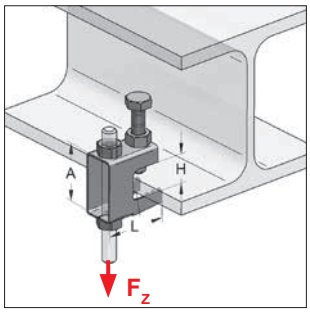
Mounting steel belt - PLASTAHL

Specification:
Application: suspension of round and squared channel ducts

Technical data:
load against breaking: determined safety factor 3

Identification	Dimension width	Steel band	OD	Tensile load	Delivery length	Weight	Packing	Part-No.
		[mm]	[mm]	[kN]	[m]	[kg/m]	[m]	
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	0,16	10	1110020

Beam clamp PK / PKB



Beam clamp PK / PKB

VdS FM APPROVED from M10

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: Eurofix Jiangmen

Technical data:
Material: steel
Surface: galvanized

* only VdS approved

With hole

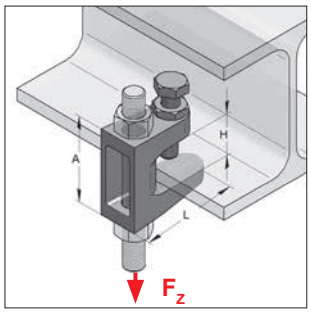
Identification	Thread	Borehole [mm]	L [mm]	A [mm]	H [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Beam clamp PKB 8*	for M8	9	38	37	2 - 20	1,2	0,050	50	0576801
Beam clamp PKB 10	for M10	11	44	44	0 - 22	2,5	0,134	50	0576805
Beam clamp PK 12	for M12	13	58	61	8 -26	3,5	0,236	50	0576807

With thread

Beam clamp PKB 8*	M8	-	32	37	2 - 20	1,2	0,051	50	0576802
Beam clamp PKB 10	M10	-	44	44	0 - 22	2,5	0,134	50	0576806
Beam clamp PK 12	M12	-	58	61	8 -26	3,5	0,236	50	0576808

mounting example see chapter 15

Beam clamp, cast iron



Beam clamp, cast iron

VdS
G 400 0005
G 403 0026
G 491 0044

FM APPROVED from M10

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

05

With hole

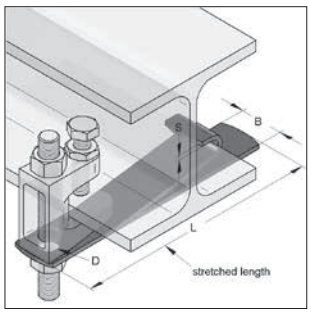
Identification	Thread	Borehole [mm]	L [mm]	A [mm]	H [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Beam clamp TKN 8 [1]	for M8	9	38	35	18	1,2	0,089	50	0579458
Beam clamp TKN 10 [1]	for M10	11	44	42	20	2,5	0,155	50	0579460
Beam clamp TK 12 [2]	for M12	13	58	54	26	3,5	0,235	50	0579462
Beam clamp TK 16 [3]	for M16	17	58	58	28	5,5	0,395	50	0579448

With thread

Beam clamp TKN 8 [1]	M8	-	32	37	18	1,2	0,092	50	0579558
Beam clamp TKN 10 [1]	M10	-	44	42	20	2,5	0,162	50	0579560
Beam clamp TK 12 [2]	M12	-	58	54	26	3,5	0,240	50	0579562
Beam clamp TK 16 [3]	M16	-	58	58	26	5,5	0,399	50	0579548

mounting example see chapter 15

Safety lug



Safety lug

Specification:

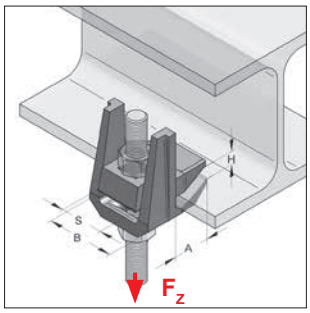
Application:	for stationary sprinkler plant constructions according to VdS codes. Recommended for pipes above DN 65.

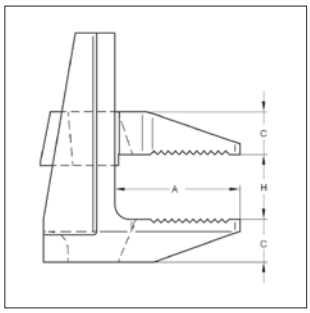
Technical data:

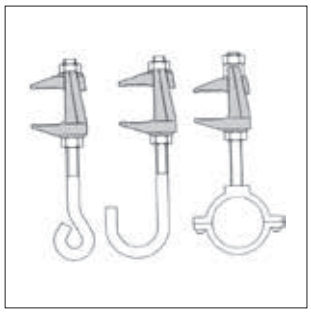
Material:	steel
Material type:	S235JR
Surface:	galvanized

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

Beam clamp F3, two-part







FM APPROVED from M10

Beam clamp F3
two-part

Specification:

Application area: mounting of suspensions on steel girder up to 55 mm flange thickness

Mounting: mounting can be combinated with hexagon screws, threaded rods or carriage bolt (not included)

Brand: Lindapter

* safety factor 4:1 against breaking

Technical data:

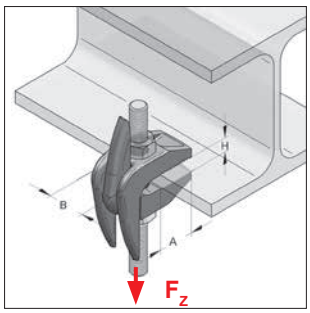
Material: malleable cast iron

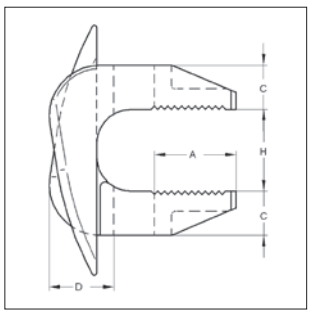
Surface: hot-dip galvanized

Remark: Not suitabe for disposed flanges

Identification	Type	Suited thread	Load F_Z* [kN]	Tightening torque [Nm]	Dimension A [mm]	H [mm]	C [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Beam clamp	**F3/M8**	M8	0,90	6	20	0-25	8	33	19	0,0963	1	0579613
Beam clamp	**F3/M10**	M10	1,20	20	25	0-30	10	38	22	0,190	1	0579625
Beam clamp	**F3/M12**	M12	2,00	39	35	0-40	12	49	29	0,350	1	0579637
Beam clamp	**F3/M16**	M16	4,00	93	46	0-55	16	60	36	0,810	1	0579649

Beam clamp F9





Beam clamp F9

Specification:

Application area: mounting of strong walled steel girder up to 82 mm flange thickness.

Remark: Not suitabe for disposed flanges

* safety factor 5:1 against breaking

Technical data:

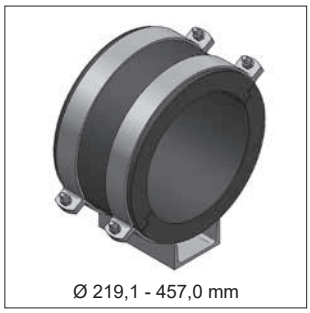
Material: malleable cast iron

Surface: galvanized

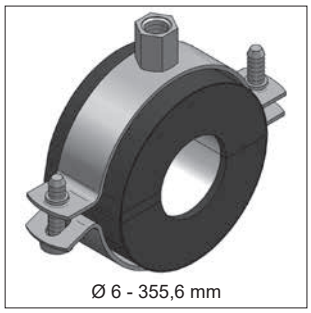
Identification	Type	Load F_Z* [kN]	Tightening torque [Nm]	Dimension A [mm]	H [mm]	C [mm]	D [mm]	B [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Beam clamp	**F9/M10**	1,96	20,0	25	19-42	13	19	24	0,260	1	0579702
Beam clamp	**F9/M12**	2,80	39,0	35	26-60	17	24	30	0,520	1	0579703
Beam clamp	**F9/M16**	5,60	93,0	43	29-69	21	28	35	0,680	1	0579704
Beam clamp	**F9/M20**	8,40	177,0	51	32-82	25	35	44	1,280	1	0579705

MEFA insulated pipe clamps

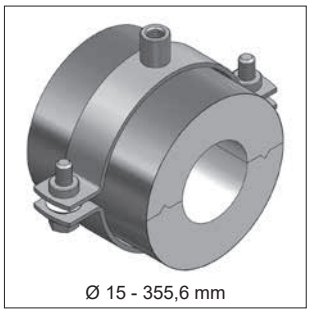
Polar plus
insulated pipe clamp
Page 6/2



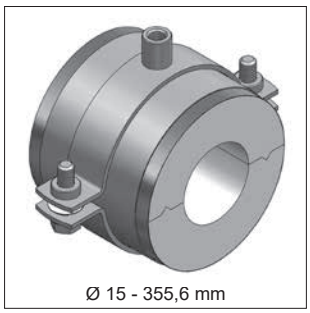
Polar plus sliding sledge
U120 / U140
Page 6/5



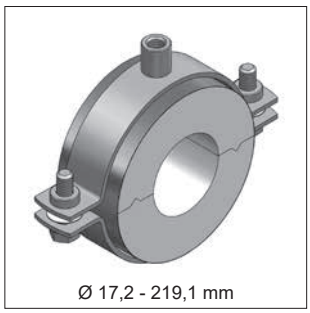
Husky
insulated pipe clamp
Page 6/6



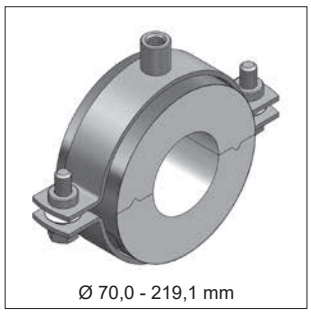
ALU/PU >80<
insulated pipe clamp
Page 6/9



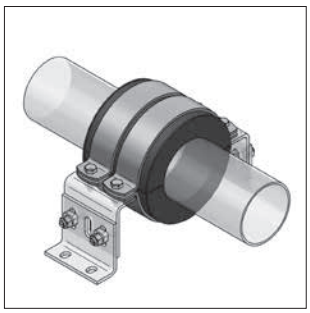
ALU/PU >80< insulated
pipe clamp with sheet jacket
Page 6/9



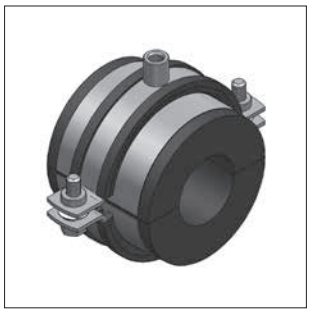
ALU/PU >80< s
insulated pipe clamp
Page 6/12



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



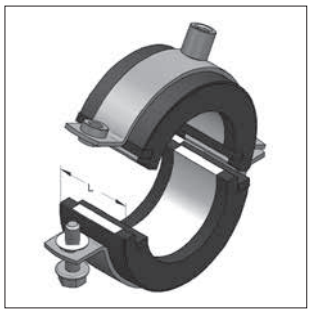
Insulated fixpoint
Page 6/14



Foamglas©
insulated pipe clamp
Page 6/14

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

Polar plus insulated pipe clamp



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

- 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

Application range

OD [mm]	Insulation thickness [mm]	Shell lenght [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
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

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

06

Materials

Polyurethane rigid foam (PU):

Density: 145 kg/m³
Static load: 0,38 N/mm²
(according to AGI Q 03 only 20 % of average nominal compressive strength)
Average nominal compressive strength: 1,9 N/mm²

Synthetic rubber (elastomer): μ ≥ 7000

Bracket-system: Pipe clamp
Material: steel
Material type: DD11 (Omnia MB), DD11 / S235JRG2 (Maxima PSM) S235JRG2 (Titan HD) S235JR (Pipe clamp form A, type TGA)
Surface: galvanized

Coating: acrylic dispersion (vapour barrier) μ ≥ 36000

Technical data

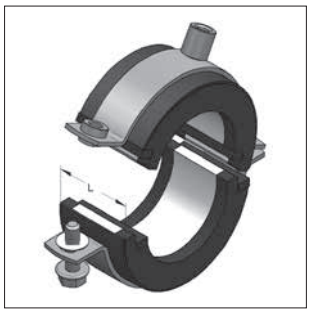
Fire-performance: Building material class B2
(according to DIN 4102 D,E Euro-class)

SCHALL-SCHUTZ DIN 4109

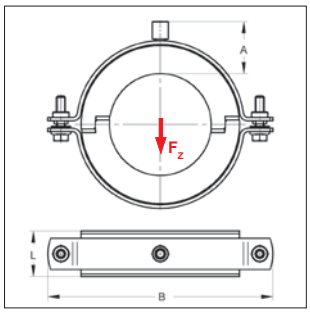
Temperature range: - 50 °C up to + 105 °C

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 are special designed on customer´request, no exchange or return.

Customized demand on request!

* Delivery time on request

Insulation thickness 20 mm

Steel [mm]	OD Copper [mm]	Plastic [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
	10		Omnia MB	M8/M10	37	89	0,10	0,111	20	74620100
	12		Omnia MB	M8/M10	37	89	0,11	0,111	20	74620120
	15		Omnia MB	M8/M10	37	89	0,14	0,110	20	74620150
17,2			Omnia MB	M8/M10	38	92	0,16	0,118	20	74620170
	18		Omnia MB	M8/M10	38	92	0,17	0,118	20	74620180
21,3			Omnia MB	M8/M10	37	92	0,20	0,118	20	74620210
	22		Omnia MB	M8/M10	37	92	0,21	0,118	20	74620220
26,9			Omnia MB	M8/M10	37	101	0,26	0,126	20	74620270
	28		Omnia MB	M8/M10	37	101	0,27	0,125	20	74620280
		32*	Omnia MB	M8/M10	40	113	0,31	0,142	20	74620320
33,7			Omnia MB	M8/M10	38	113	0,32	0,141	20	74620340
	35		Omnia MB	M8/M10	38	113	0,33	0,141	20	74620350
		40*	Omnia MB	M8/M10	40	117	0,38	0,153	20	74620400
42,4	42		Omnia MB	M8/M10	38	117	0,40	0,152	20	74620430
48,3			Omnia MB	M8/M10	39	124	0,46	0,164	20	74620480
		50*	Omnia MB	M8/M10	39	124	0,48	0,163	20	74620500
	54		Omnia MB	M8/M10	37	124	0,52	0,162	20	74620540
57,0			Omnia MB	M8/M10	40	136	0,66	0,241	20	74620570
60,3			Omnia MB	M8/M10	38	136	0,70	0,239	15	74620600
63,5	64		Omnia MB	M8/M10	39	143	0,74	0,250	15	74620640
		75*	Omnia MB	M8/M10	39	152	0,87	0,281	15	74620750
76,1			Omnia MB	M8/M10	38	152	0,88	0,284	15	74620760
88,9			Omnia MB	M8/M10	39	165	1,03	0,295	15	74620890
108,0			Maxima PSM	M10/M12	45	226	1,68	0,837	10	74621080
114,3			Maxima PSM	M10/M12	45	226	1,77	0,832	10	74621140

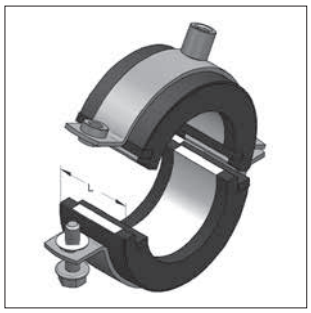
Insulation thickness 30 mm

42,4*			Omnia MB	M8/M10	48	136	0,49	0,249	20	74630430
48,3			Omnia MB	M8/M10	48	143	0,56	0,262	20	74630480
		50*	Omnia MB	M8/M10	51	152	0,58	0,281	20	74630500
	54*		Omnia MB	M8/M10	49	152	0,62	0,280	20	74630540
57,0*			Omnia MB	M8/M10	47	152	0,66	0,280	20	74630570
60,3			Omnia MB	M8/M10	49	158	0,70	0,298	15	74630600
63,5*	64*		Omnia MB	M8/M10	48	158	0,74	0,296	15	74630640
		75*	Omnia MB	M8/M10	49	175	0,87	0,326	15	74630750
76,1			Omnia MB	M8/M10	48	175	0,88	0,326	15	74630760
88,9			Omnia MB	M10/M12	59	206	1,03	0,459	15	74630890
108,0*			Maxima PSM	M10/M12	55	240	1,68	0,921	10	74631080
		110*	Maxima PSM	M10/M12	54	240	1,71	0,918	10	74631100
114,3			Maxima PSM	M10/M12	57	252	1,77	0,977	10	74631140
		125*	Maxima PSM	M10/M12	55	258	1,94	0,992	1	74631250
133,0*			Maxima PSM	M10/M12	55	265	2,06	1,028	1	74631330
139,7			Maxima PSM	M10/M12	55	272	2,17	1,055	1	74631400
159,0*			Maxima PSM	M10/M12	57	297	2,47	1,164	1	74631590
		160*	Maxima PSM	M10/M12	57	297	2,48	1,162	1	74631600
168,3			Maxima PSM	M10/M12	45	307	3,22	1,256	1	746316802
219,1			Titan HD	M16	45	358	4,71	2,382	1	746321902

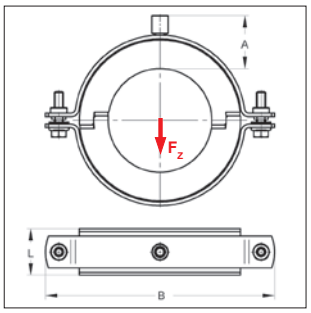
assembly instruction see chapter 15

** Allowable loads may be increased by 5 times without AGI requirements (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 are special designed on customer´request, no exchange or return.

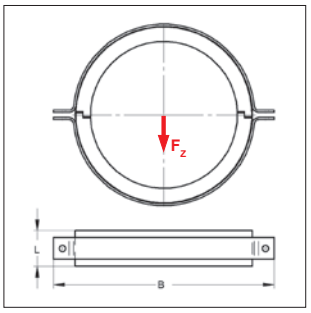
Customized demand on request!

* Delivery time on request

Insulation thickness 40 mm

Steel [mm]	OD Copper [mm]	Plastic [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
108,0*			Maxima PSM	M10/M12	67	265	1,68	1,059	10	74641080
		110*	Maxima PSM	M10/M12	66	265	1,71	1,056	10	74641100
114,3			Maxima PSM	M10/M12	64	265	1,77	1,055	1	74641140
		125*	Maxima PSM	M10/M12	66	278	1,94	1,117	1	74641250
133,0*			Maxima PSM	M10/M12	66	287	2,06	1,153	1	74641330
139,7			Maxima PSM	M10/M12	67	297	2,17	1,198	1	74641400
159,0*			Maxima PSM	M10/M12	67	315	2,47	1,277	1	74641590
		160*	Maxima PSM	M10/M12	66	315	2,48	1,275	1	74641600
168,3*			Titan HD	M16	56	330	3,62	2,225	1	746416802
219,1			Titan HD	M16	55	380	4,71	2,603	1	746421903
273,0			Titan HD	M16	56	428	5,87	3,025	1	746427302
323,9			Titan HD	M16	56	486	6,96	3,413	1	746432404

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



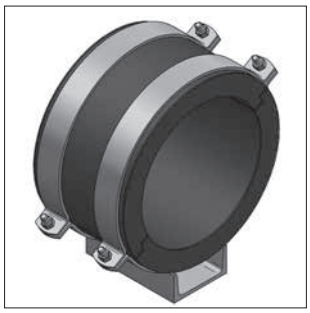
Insulation thickness 40 mm

OD Steel [mm]	Pipe clamp type	Ø Flange punch hole [mm]	Connection	Dimension L [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
355,6*	TGA	17	-	86	560	10,46	5,000	1	74643560
406,4*	TGA	17	-	86	610	11,65	5,516	1	74644060
457,0*	TGA	17	-	86	660	12,85	6,041	1	74644570

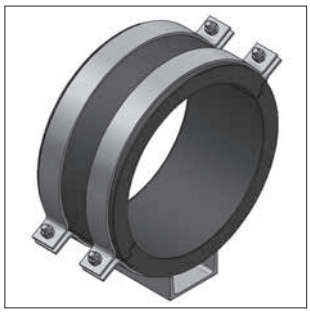
assembly instruction see chapter 15

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

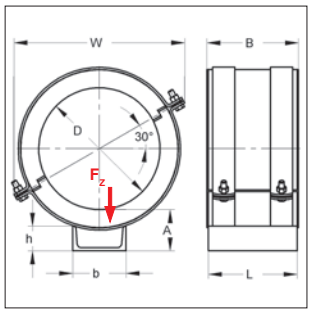
Polar plus sliding sledge U120 / U140



Polar plus sliding sledge 120



Polar plus sliding sledge 140



The insulated pipe clamps of MEFA are special designed on customer 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: see Polar Plus page 6/2
Material pipe bracket: steel / S235JR
Surface: galvanized

Insulation thickness 40 mm

OD Steel [mm]	Shell length B [mm]	Material pipe clamp	U-Steel b x h x L [mm]	Dimension A [mm]	Dimension W [mm]	Load F_z [kN]	Weight [kg/Pc.]	Packing [Pc.]	Part-No.
219,1	181	50 x 5,0	120 x 55 x 175	90	336	8,9	7,79	1	74742219
273,0	206	50 x 5,0	120 x 55 x 200	93	384	10,5	9,18	1	74742273
323,9	226	50 x 5,0	140 x 60 x 220	96	427	12,0	11,05	1	74742324
355,6	226	50 x 5,0	140 x 60 x 220	98	498	15,6	12,29	1	74742356
406,4	226	50 x 5,0	140 x 60 x 220	99	538	17,4	13,20	1	74742406
457,0	226	50 x 5,0	140 x 60 x 220	99	585	19,2	14,11	1	74742457

Sliding stripe see page 14/20

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
10,0 - 33,7	Typ IV-19	36
35,0 - 114,3	Typ IV-19	42
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

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.

06

Materials

Polyurethane rigid foam (PU):

Density:	120 kg/m³
Static load:	0,27 N/mm² (according to AGI Q 03 only 20 % of average nominal compressive strength)
Average nominal compressive strength:	1,35 N/mm²

Synthetic rubber: μ ≥ 7000

Bracket-system: pipe clamp

Material:	steel
Material type::	DC01-A/DD11 (Sigma) DC01-A/DD11 (Trabant) DD11/S235JRG2 (Maxima PSM) S235JRG2 (Titan HD)
Surface:	galvanized

Jacket: self-adhesive (vapour barrier) μ ≥ 20000

Technical data

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

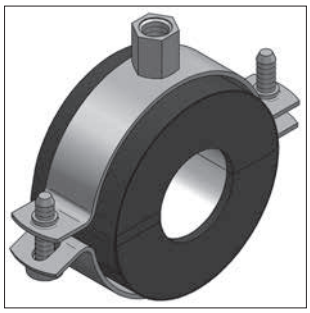
SCHALL-SCHUTZ DIN 4109

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

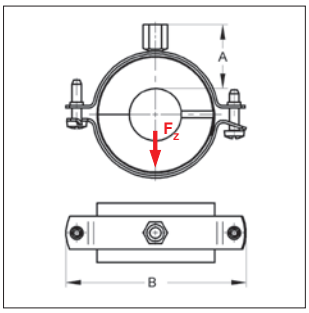
Thermal conductivity according to DIN EN 12667

Thermal conductivity: 0,029 W/mk

HUSKY insulated pipe clamp



HUSKY insulated pipe clamp



The insulated pipe clamps of MEFA are special designed on customer´request, no exchange or return.

customized demand on request!

* Delivery time on request

Assembly instruction see chapter 15

Type II-13

Steel [mm]	OD Copper [mm]	Plastic [mm]	Insulation thickness [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
	6		12,0	Sigma	M8	22	56	0,04	0,0344	24	6830060
	10		12,0	Trabant	M8/M10	30	69	0,07	0,059	24	6830100
	12	12	13,0	Trabant	M8/M10	31	77	0,08	0,0663	24	6830120
	15	15	12,5	Trabant	M8/M10	31	77	0,10	0,067	24	6830150
17,2	18	18	12,9	Trabant	M8/M10	31	77	0,12	0,068	24	6830180
		20	13,5	Trabant	M8/M10	33	88	0,14	0,0913	24	6830200
21,3	22		12,9	Trabant	M8/M10	32	88	0,15	0,091	24	6830220
		25	12,5	Trabant	M8/M10	32	88	0,17	0,092	12	6830250
26,9			12,6	Trabant	M8/M10	32	88	0,18	0,0923	12	6830270
	28		12,0	Trabant	M8/M10	32	88	0,19	0,093	12	6830280
31,8		32	12,5	Trabant	M8/M10	32	94	0,22	0,0981	12	6830320
33,7			13,7	Trabant	M8/M10	33	102	0,23	0,105	12	6830340
	35		13,0	Trabant	M8/M10	32	102	0,24	0,104	12	6830350
		40*	13,5	Trabant	M8/M10	33	109	0,27	0,111	12	6830400
42,4	42		13,3	Trabant	M8/M10	32	109	0,29	0,111	12	6830420
48,3			14,4	Trabant	M8/M10	33	121	0,41	0,143	10	6830480
		50	14,0	Trabant	M8/M10	33	121	0,42	0,143	10	6830500
	54		14,0	Trabant	M8/M10	33	124	0,46	0,148	10	6830540
57,0*			14,0	Trabant	M8/M10	33	124	0,48	0,149	10	6830570
60,3			16,4	Trabant	M8/M10	35	134	0,51	0,200	10	6830600
63,5	64		14,5	Trabant	M8/M10	34	134	0,54	0,198	10	6830640
70,0*			13,0	Trabant	M8/M10	32	134	0,59	0,197	8	6830700
76,1			15,5	Trabant	M8/M10	34	153	0,65	0,265	8	6830761
88,9			15,6	Trabant	M8/M10	35	165	0,75	0,281	8	6830891
108,0			17,0	Trabant	M10/M12	42	187	0,92	0,350	8	6831081
		110*	17,0	Trabant	M10/M12	42	187	0,93	0,351	4	6831101
114,3			15,9	Trabant	M10/M12	40	192	0,97	0,358	4	6831141
		125*	21,0	Trabant	M10/M12	45	215	1,06	0,410	4	6831251
133,0*			17,0	Trabant	M10/M12	42	215	1,13	0,401	4	6831331
139,7			17,2	Trabant	M10/M12	42	220	1,18	0,413	4	6831401
		160	16,0	Maxima PSM	M10/M12	42	265	1,76	0,993	4	6831600
168,3			15,4	Maxima PSM	M10/M12	41	272	1,86	1,015	2	6831680

Type IV-19

	10	10	20,0	Trabant	M8/M10	39	88	0,07	0,094	24	6840100
	12	12	19,0	Trabant	M8/M10	38	88	0,08	0,094	24	6840120
	15	15	17,5	Trabant	M8/M10	37	88	0,10	0,0934	24	6840150
17,2	18	18	18,9	Trabant	M8/M10	38	94	0,12	0,100	12	6840180
21,3	22		19,9	Trabant	M8/M10	39	102	0,15	0,107	12	6840220
26,9			20,0	Trabant	M8/M10	39	109	0,18	0,114	12	6840270
	28		19,5	Trabant	M8/M10	39	109	0,19	0,114	12	6840280
31,8*		32*	19,0	Trabant	M8/M10	38	109	0,22	0,115	12	6840320
33,7			19,2	Trabant	M8/M10	38	109	0,23	0,116	12	6840340
	35		20,5	Trabant	M8/M10	40	121	0,30	0,148	12	6840350
		40*	20,5	Trabant	M8/M10	40	124	0,34	0,153	12	6840400
42,4	42		21,3	Trabant	M8/M10	40	124	0,36	0,156	12	6840420
48,3			22,9	Trabant	M8/M10	42	134	0,41	0,207	10	6840480
		50*	22,0	Trabant	M8/M10	41	134	0,42	0,206	10	6840500
	54		21,5	Trabant	M8/M10	40	134	0,46	0,206	10	6840540
57,0*			26,0	Trabant	M8/M10	42	153	0,48	0,278	8	6840571
60,3			23,4	Trabant	M8/M10	42	153	0,51	0,275	8	6840601

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

Type IV-19

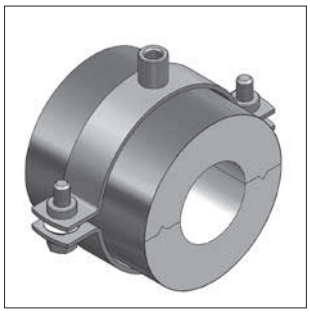
OD Steel [mm]	OD Copper [mm]	OD Plastic [mm]	Insulation thickness [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
63,5	64		22,5	Trabant	M8/M10	44	153	0,54	0,275	8	6840641
70,0*			23,0	Trabant	M8/M10	43	165	0,59	0,290	8	6840701
76,1			23,0	Trabant	M8/M10	42	165	0,65	0,293	8	6840761
88,9			26,1	Trabant	M10/M12	43	187	0,75	0,365	8	6840891
108,0			28,5	Trabant	M10/M12	53	215	0,92	0,424	4	6841081
		110*	27,5	Trabant	M10/M12	52	215	0,93	0,423	4	6841101
114,3			25,4	Trabant	M10/M12	50	215	0,97	0,418	4	6841141
133,0*			28,5	Maxima PSM	M10/M12	54	265	1,47	1,030	4	6841330
139,7			25,2	Maxima PSM	M10/M12	51	265	1,54	1,021	4	6841400
		160	25,5	Maxima PSM	M10/M12	51	287	1,76	1,110	2	6841600
168,3			25,9	Maxima PSM	M10/M12	51	297	1,86	1,149	2	6841680
219,1			25,5	Maxima PSM	M10/M12	51	346	2,42	1,358	1	6842190
273,0			25,0	Titan HD	M16	42	402	4,17	2,679	1	68427304
323,9*			26,0	Titan HD	M16	43	457	4,95	3,069	1	68432404
355,6*			24,5	Titan HD	M16	41	486	5,44	3,264	1	68435604

Type VI-32

OD Steel [mm]	OD Copper [mm]	OD Plastic [mm]	Insulation thickness [mm]	Pipe clamp type	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
17,2*	18*	18*	29,5	Trabant	M8/M10	49	121	0,15	0,152	12	6850180
21,3	22		29,5	Trabant	M8/M10	49	121	0,19	0,155	12	6850220
26,9			29,1	Trabant	M8/M10	48	124	0,23	0,158	12	6850270
33,7			31,7	Trabant	M8/M10	50	134	0,29	0,215	12	6850340
42,4			35,8	Trabant	M8/M10	56	165	0,36	0,301	12	6850420
48,3			35,9	Trabant	M8/M10	56	165	0,41	0,306	10	6850480
60,3			34,4	Trabant	M10/M12	57	176	0,51	0,352	8	6850601
76,1			36,0	Trabant	M10/M12	62	192	0,65	0,391	8	6850761
88,9			39,6	Trabant	M10/M12	64	215	0,75	0,444	8	6850891
114,3			40,9	Maxima PSM	M10/M12	67	272	1,26	1,089	4	6851140
139,7			41,7	Maxima PSM	M10/M12	67	297	1,54	1,202	4	6851400
168,3			44,4	Maxima PSM	M10/M12	70	331	1,86	1,364	2	6851680
219,1*			52,0	Titan HD	M16	68	402	3,35	2,855	1	68521904
273,0*			53,0	Titan HD	M16	70	460	4,17	3,303	1	68527304
323,9*			50,0	Titan HD	M16	67	505	4,95	3,636	1	68532404
355,6*			50,0	Titan HD	M16	67	537	5,44	3,885	1	68535604

** Allowable loads may be increased by 5 times without AGI requirements (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/m³	Material:	steel
Thickness:	0,08 mm	Material type:	S235JR
		Surface:	galvanized
Polyurethane (PU) rigid foam:	Insulating insert		
Density:	80 kg/m³		
Static load:	0,1 N/mm² (according to AGI Q 03 at least 20 % of average nominal compressive strength)		
Average nominal compressive strength:	0,5 N/mm²		

Technical data

Steam diffusion resistance number

μ = 18.750 average value (vapour leak-proof according to DIN 4108)

Fire-performance: Building class B2 according to DIN 4102 D,E euro-class)

SCHALL-SCHUTZ DIN 4109

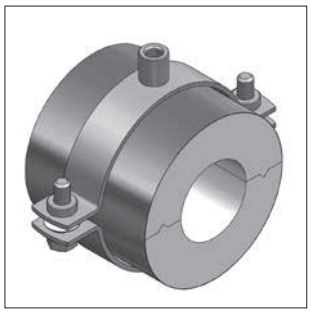
Temperature range: - 80 °C up to + 120 °C

Thermal conductivity according to DIN 52612

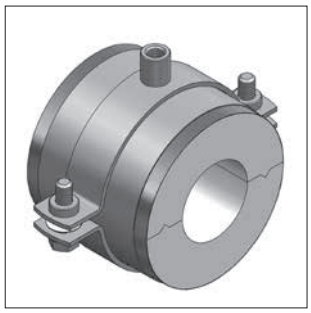
Average Temperature:	21 °C
Thermal conductivity:	0,025 W/mk

06

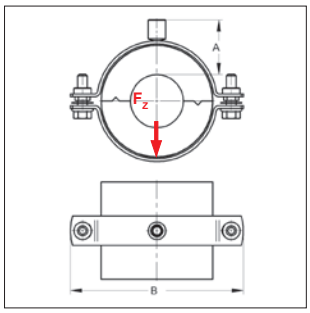
ALU/PU >80< insulated pipe clamp



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 length100 mm:
sheet jacket width 80 mm

Insulation thickness 20 mm shell length 100 mm[1]

OD Steel [mm]	OD Copper [mm]	Material pipe clamp [mm]	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** without sheet jacket [kN]	Load F_z** with sheet jacket [kN]	Weight without sheet jacket [kg/pc.]	Packing [pc.]	Part-No. Ins. pipe clamp without sheet jacket	Part-No. Ins. pipe clamp with sheet jacket [1]
	15	25x3,0	M8/M10	46	114	0,2	0,3	0,261	1	75601545	75601545/B
17,2	**18**	25x3,0	M8/M10	45	114	0,2	0,3	0,261	1	7560172	75601745/B
21,3	**22**	25x3,0	M8/M10	46	120	0,2	0,3	0,275	1	75602145	75602145/B
26,9	**28**	25x3,0	M8/M10	46	129	0,3	0,4	0,292	1	7560275	75602745/B
33,7	**35**	25x3,0	M8/M10	44	129	0,3	0,5	0,292	1	75603445	75603445/B
42,4	**42**	30x3,0	M10/M12	46	151	0,4	0,6	0,424	1	7560426	7560426/B
48,3		30x3,0	M10/M12	44	151	0,4	0,7	0,423	1	7560486	7560486/B
	54	30x3,0	M10/M12	46	162	0,4	0,7	0,458	1	75605432	7560543/B
57,0		30x3,0	M10/M12	45	162	0,4	0,8	0,456	1	75605742	75605742/B
60,3		30x3,0	M10/M12	44	162	0,4	0,9	0,456	1	7560606	7560606/B
63,5		30x3,0	M10/M12	46	172	0,5	0,9	0,486	1	75606442	75606442/B
70,0		30x3,0	M10/M12	44	172	0,5	1,0	0,484	1	75607042	75607042/B
76,1		30x3,0	M10/M12	47	184	0,5	1,1	0,527	1	7560766	75607642/B
88,9		35x4,0	M10/M12	47	209	0,7	1,3	0,770	1	7560896	7560896/B
108,0		35x4,0	M10/M12	46	226	0,8	1,6	0,837	1	75610844	75610844/B
114,3		35x4,0	M10/M12	47	234	0,8	1,7	0,871	1	75611444	75611444/B
133,0		35x4,0	M10/M12	47	252	0,9	1,9	0,950	1	75613344	75613344/B
139,7		35x4,0	M10/M12	45	252	0,9	2,0	0,940	1	75614044	75614044/B
159,0		35x4,0	M10/M12	47	278	1,0	2,3	1,056	1	75615944	75615944/B
168,3		35x4,0	M10/M12	46	287	1,1	2,5	1,086	1	75616844	75616844/B
219,1		50x5,0	M16	46	342	1,9	3,1	2,181	1	7562197	7562197/B
273,0		50x5,0	M16	45	396	2,3	3,7	2,553	1	7562733	7562733/B

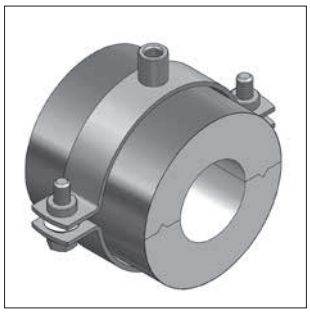
Insulation thickness 30 mm shell length 100 mm[1]

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	0,053	1	75905442	75905442/B
57,0		30x3,0	M10/M12	54	178	0,5	0,8	0,521	1	75905742	75905742/B
60,3		30x3,0	M10/M12	55	184	0,5	0,9	0,541	1	75906042	75906042/B
63,5		30x3,0	M10/M12	56	189	0,6	0,9	0,557	1	75906442	75906442/B
70,0		35x4,0	M10/M12	57	209	0,7	1,0	0,789	1	75907042	75907042/B
76,1		35x4,0	M10/M12	57	216	0,7	1,1	0,818	1	75907644	75907644/B
88,9		35x4,0	M10/M12	56	226	0,8	1,3	0,861	1	75908944	75908944/B
108,0		35x4,0	M10/M12	57	247	0,9	1,6	0,954	1	75910844	75910844/B
114,3		35x4,0	M10/M12	57	252	0,9	1,7	0,979	1	75911444	75911444/B
133,0		35x4,0	M10/M12	57	272	1,0	1,9	1,062	1	75913344	75913344/B
139,7		35x4,0	M10/M12	57	278	1,0	2,0	1,093	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	1,220	1	75916844	75916844/B
219,1		50x5,0	M16	55	364	2,1	3,2	2,377	1	7592193	7592193/B
273,0		50x5,0	M16	55	416	2,5	3,9	2,742	1	7592733	7592733/B
323,9		50x5,0	M16	55	467	2,8	4,5	3,114	1	7593243	7593243/B
355,6		50x5,0	M16	55	495	3,1	4,9	3,328	1	7593563	7593563/B

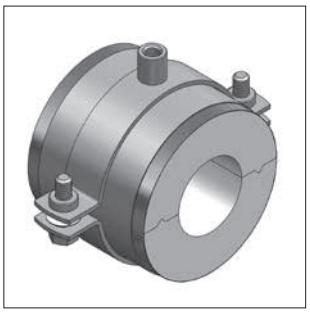
assembly instruction see chapter 15

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

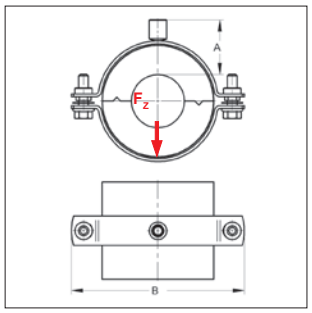
ALU/PU >80< insulated pipe clamp



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 length100 mm:
sheet jacket width 80 mm

Insulation thickness 40 mm shell length 100 mm[1]

OD Steel [mm]	OD Copper [mm]	Material pipe clamp [mm]	Connection	Dimension A [mm]	Dimension B [mm]	Load F_z** without sheet jacket [kN]	Load F_z** with sheet jacket [kN]	Weight without sheet jacket [kg/pc.]	Packing [pc.]	Part-No. Ins. pipe clamp without sheet jacket	Part-No. Ins. pipe clamp with sheet jacket [1]
17,2	**18**	30x3,0	M10/M12	65	162	0,3	0,3	0,475	1	76201742	76201742/B
21,3	**22**	30x3,0	M10/M12	67	172	0,3	0,3	0,509	1	76202142	76202142/B
26,9	**28**	30x3,0	M10/M12	65	172	0,4	0,4	0,508	1	76202742	76202742/B
33,7	**35**	30x3,0	M10/M12	65	178	0,5	0,5	0,534	1	7620348	76203442/B
42,4	**42**	30x3,0	M10/M12	64	184	0,5	0,6	0,553	1	7620428	7620428/B
48,3		35x4,0	M10/M12	66	209	0,7	0,7	0,805	1	7620488	76204842/B
	54	35x4,0	M10/M12	66	209	0,7	0,7	0,804	1	7620548	76205444/B
57,0		35x4,0	M10/M12	67	216	0,7	0,8	0,836	1	76205744	76205744/B
60,3		35x4,0	M10/M12	66	216	0,7	0,9	0,835	1	76206044	7620608/B
63,5		35x4,0	M10/M12	67	220	0,7	0,9	0,863	1	76206444	76206444/B
70,0		35x4,0	M10/M12	66	226	0,8	1,0	0,881	1	7620708	76207044/B
76,1		35x4,0	M10/M12	66	234	0,8	1,1	0,918	1	76207644	7620768/B
88,9		35x4,0	M10/M12	66	247	0,9	1,3	0,978	1	7620898	76208944/B
108,0		35x4,0	M10/M12	67	265	1,0	1,6	1,063	1	76210844	76210844/B
114,3		35x4,0	M10/M12	66	272	1,0	1,7	1,090	1	7621148	76211444/B
133,0		35x4,0	M10/M12	65	287	1,1	1,9	1,157	1	76213344	76213344/B
139,7		35x4,0	M10/M12	66	297	1,1	2,0	1,200	1	7621408	7621408/B
159,0		35x4,0	M10/M12	65	315	1,2	2,3	1,282	1	76215944	76215944/B
168,3		35x4,0	M10/M12	68	331	1,3	2,5	1,372	1	7621688	7621688/B
219,1		50x5,0	M16	65	382	2,2	3,2	2,568	1	7622196	7622196/B
273,0		50x5,0	M16	65	436	2,6	4,0	2,976	1	7622736	7622736/B
323,9		50x5,0	M16	65	486	3,0	4,7	3,341	1	7623247	7623247/B
355,6		50x5,0	M16	65	519	3,2	5,1	3,563	1	7623565	7623565/B

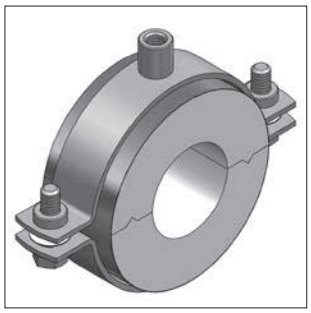
Insulation thickness 50 mm shell length 100 mm[1]

17,2	**18**	30x3,0	M10/M12	76	184	0,3	0,3	0,519	1	76501742	76501742/B
21,3	**22**	30x3,0	M10/M12	75	184	0,3	0,3	0,519	1	76502142	76502142/B
26,9	**28**	30x3,0	M10/M12	74	189	0,4	0,4	0,535	1	76502742	76502742/B
33,7	**35**	35x4,0	M10/M12	76	209	0,5	0,5	0,815	1	76503444	76503444/B
42,4	**42**	35x4,0	M10/M12	75	216	0,6	0,6	0,848	1	76504244	76504244/B
48,3		35x4,0	M10/M12	76	226	0,7	0,7	0,896	1	76504844	76504844/B
	54	35x4,0	M10/M12	75	234	0,7	0,7	0,936	1	76505444	76505444/B
57,0		35x4,0	M10/M12	76	234	0,8	0,8	0,934	1	76505744	76505744/B
60,3		35x4,0	M10/M12	75	234	0,8	0,9	0,935	1	76506044	76506044/B
63,5		35x4,0	M10/M12	76	240	0,8	0,9	0,968	1	76506444	76506444/B
70,0		35x4,0	M10/M12	76	247	0,9	1,0	0,997	1	76507044	76507044/B
76,1		35x4,0	M10/M12	76	252	0,9	1,1	1,026	1	76507644	76507644/B
88,9		35x4,0	M10/M12	76	265	1,0	1,3	1,089	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	7651146	76511444/B
133,0		35x4,0	M10/M12	75	308	1,2	1,9	1,289	1	76513344	76513344/B
139,7		35x4,0	M10/M12	75	315	1,2	2,0	1,319	1	76514044	76514044/B
159,0		35x4,0	M10/M12	77	340	1,3	2,3	1,447	1	76515944	76515944/B
168,3		35x4,0	M10/M12	76	346	1,4	2,5	1,475	1	76516844	76516844/B
219,1		50x5,0	M16	75	404	2,4	3,2	2,794	1	7652195	7652195/B
273,0		50x5,0	M16	75	456	2,8	4,0	3,195	1	7652734	7652734/B
323,9		50x5,0	M16	75	507	3,1	4,7	3,573	1	7653245	7653245/B
355,6		50x5,0	M16	75	539	3,4	5,2	3,796	1	7653567	7653567/B

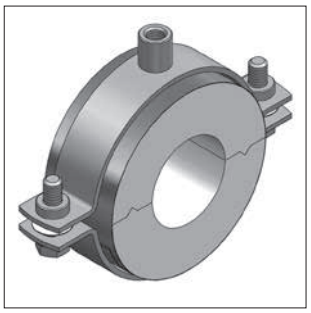
assembly instruction see chapter 15

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

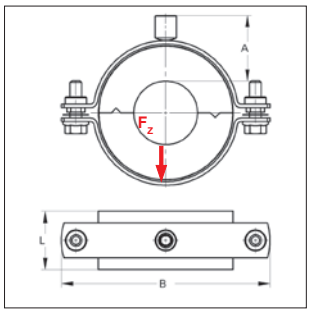
ALU/PU >80< short insulated pipe clamp



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 length100 mm: sheet jacket width 80 mm

Insulation thickness 20 mm

OD Steel [mm]	OD Copper [mm]	Material pipe clamp [mm]	Connection	Dimension A [mm]	Dimension L [mm]	Dimension B [mm]	Load F_z** without sheet jacket [kN]	Load F_z** with sheet jacket [kN]	Weight without half jacket [kg/pc.]	Packing [pc.]	Part-No. Ins. pipe clamp without half jacket	Part-No. Ins. pipe clamp with half jacket
17,2	**18**	20x1,5	M8/M10	38	40	104	0,1	-	0,093	1	70401848	-
21,3	**22**	20x1,5	M8/M10	40	40	111	0,1	-	0,097	1	70402248	-
26,9	**28**	20x1,5	M8/M10	40	40	119	0,2	-	0,105	1	70402848	-
33,7	**35**	20x2,0	M8/M10	39	40	113	0,2	-	0,133	1	70403449	-
42,4	**42**	25x1,5	M8/M10	39	40	128	0,2	-	0,137	1	70404248	-
48,3		20x2,0	M8/M10	39	50	124	0,3	-	0,154	1	70504849	-
54,0		25x2,0	M8/M10	43	50	141	0,3	-	0,190	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	-	0,237	1	70506049	-
63,5		25x2,5	M8/M10	41	50	143	0,4	-	0,248	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	0,315	1	75208949	75208949/T
108,0		25x3,0	M10/M12	45	83	197	0,5	1,3	0,450	1	75210850	75210850/T
114,3		30x3,0	M10/M12	46	83	234	0,7	1,4	0,617	1	75211442	75211442/T
133,0		25x3,0	M10/M12	46	100	225	0,7	1,9	0,525	1	75613350	75613350/T
139,7		30x3,0	M10/M12	45	100	252	0,8	2,0	0,673	1	75614042	75614042/T
159,0		30x3,0	M10/M12	46	100	278	0,9	2,3	0,755	1	75615942	75615942/T
168,3		30x3,0	M10/M12	45	100	288	1,1	2,5	0,774	1	75616842	75616842/T
219,1		35x4,0	M16	45	100	340	1,9	3,1	1,317	1	75621927	75621927/T

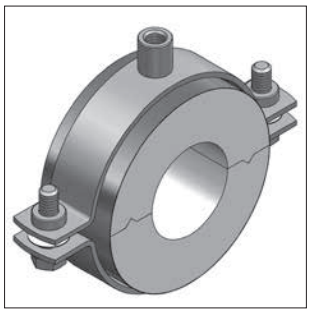
Insulation thickness 30 mm

17,2	**18**	25x1,5	M8/M10	48	40	123	0,1	-	0,135	1	71101848	-
21,3	**22**	25x1,5	M8/M10	49	40	128	0,1	-	0,141	1	71102248	-
26,9	**28**	20x2,0	M8/M10	49	40	124	0,2	-	0,155	1	71102849	-
33,7	**35**	25x2,0	M8/M10	50	40	141	0,2	-	0,190	1	71103448	-
42,4	**42**	25x2,5	M8/M10	52	40	143	0,2	-	0,241	1	71104249	-
48,3		25x2,5	M8/M10	50	50	152	0,4	-	0,254	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	-	0,269	1	71205749	-
60,3		25x2,5	M8/M10	50	50	158	0,4	-	0,281	1	71206049	-
63,5		25x2,5	M8/M10	51	50	158	0,5	-	0,289	1	71206449	-
70,0		25x2,5	M8/M10	51	66	165	0,5	0,7	0,303	1	71307049	71307049/T
76,1		25x2,5	M8/M10	51	66	175	0,5	0,7	0,316	1	71307649	71307649/T
88,9		25x3,0	M10/M12	55	83	197	0,5	1,1	0,462	1	75308950	75308950/T
108,0		25x3,0	M10/M12	56	83	219	0,6	1,3	0,525	1	75310850	75310850/T
114,3		25x3,0	M10/M12	56	83	225	0,7	1,4	0,535	1	75311450	75311450/T
133,0		30x3,0	M10/M12	56	100	272	0,9	1,9	0,770	1	75913342	75913342/T
139,7		30x3,0	M10/M12	56	100	278	0,9	2,0	0,792	1	75914042	75914042/T
159,0		30x3,0	M10/M12	55	100	297	1,0	2,3	0,840	1	75915942	75915942/T
168,3		35x4,0	M10/M12	57	100	308	1,2	2,5	1,220	1	75916844	75916844/T
219,1		35x4,0	M16	55	100	360	2,1	3,2	1,457	1	75921927	75921927/T

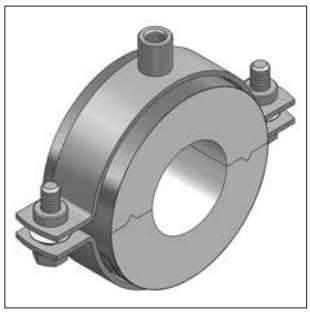
assembly instruction see chapter 15

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

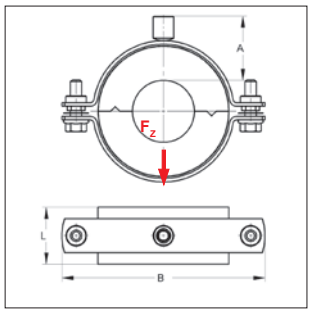
ALU/PU >80< Short insulated pipe clamp



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 length100 mm:
sheet jacket width 80 mm

Insulation thickness 40 mm

OD Steel [mm]	OD Copper [mm]	Material pipe clamp [mm]	Connection	Dimension A [mm]	Dimension L [mm]	Dimension B [mm]	Load F_z** without sheet jacket [kN]	Load F_z** with sheet jacket [kN]	Weight without half jacket [kg/pc.]	Packing [pc.]	Part-No. Ins. pipe clamp without half jacket	Part-No. Ins. pipe clamp with half jacket
17,2	**18**	25x2,0	M8/M10	58	40	141	0,1	-	0,193	1	71401848	-
21,3	**22**	25x2,5	M8/M10	62	40	143	0,1	-	0,252	1	71402249	-
26,9	**28**	25x2,5	M8/M10	60	40	152	0,2	-	0,252	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	-	0,275	1	71404249	-
48,3		25x2,5	M8/M10	62	50	165	0,4	-	0,308	1	71504849	-
54,0		25x2,5	M8/M10	61	50	175	0,4	-	0,308	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	-	0,573	1	71506042	-
63,5		25x3,0	M10/M12	66	50	192	0,5	-	0,423	1	71506450	-
70,0		25x3,0	M10/M12	65	66	197	0,5	0,7	0,456	1	71607050	71607050/T
76,1		30x3,0	M10/M12	65	66	219	0,6	0,7	0,592	1	71607642	71607642/T
88,9		25x3,0	M10/M12	65	83	219	0,6	1,1	0,544	1	75408950	75408950/T
108,0		30x3,0	M10/M12	65	83	265	0,8	1,3	0,754	1	75410842	75410842/T
114,3		30x3,0	M10/M12	65	83	271	0,9	1,4	0,773	1	75411442	75411442/T
133,0		30x3,0	M10/M12	64	100	288	1,1	1,9	0,847	1	76213342	76213342/T
139,7		30x3,0	M10/M12	65	100	297	1,1	2,0	0,878	1	76214042	76214042/T
159,0		35x4,0	M10/M12	65	100	315	1,2	2,3	1,282	1	76215944	76215944/T
168,3		35x4,0	M10/M12	68	100	323	1,3	2,5	1,372	1	7621688	7621688/T
219,1		35x4,0	M16	65	100	380	2,2	3,2	1,595	1	7622195	7622195/T

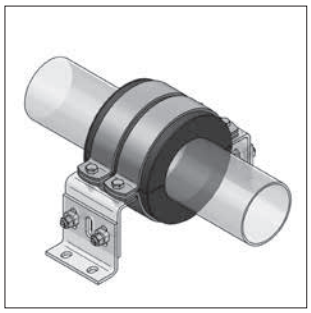
Insulation thickness 50 mm

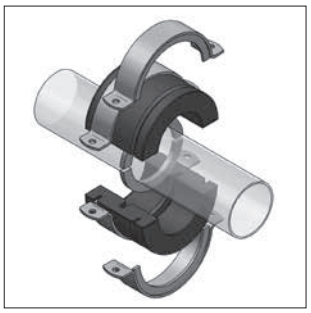
17,2	**18**	25x2,5	M8/M10	71	40	158	0,1	-	0,279	1	71701849	-
21,3	**22**	25x2,5	M8/M10	70	40	158	0,1	-	0,278	1	71702249	-
26,9	**28**	25x2,5	M8/M10	69	40	165	0,2	-	0,288	1	71702849	-
33,7	**35**	25x2,5	M8/M10	70	40	175	0,2	-	0,302	1	71703449	-
42,4	**42**	25x3,0	M10/M12	74	40	192	0,2	-	0,418	1	71704250	-
48,3		25x3,0	M10/M12	75	50	197	0,4	-	0,449	1	71804850	-
54,0		30x3,0	M10/M12	75	50	234	0,4	-	0,582	1	71805442	-
57,0		30x3,0	M10/M12	75	50	220	0,4	-	0,581	1	71805742	-
60,3		30x3,0	M10/M12	74	50	223	0,4	-	0,581	1	71806042	-
63,5		30x3,0	M10/M12	75	50	226	0,5	-	0,602	1	71806442	-
70,0		25x3,0	M10/M12	75	66	219	0,6	0,7	0,528	1	71907050	71907050/T
76,1		25x3,0	M10/M12	75	66	225	0,6	0,7	0,542	1	71907650	71907650/T
88,9		30x3,0	M10/M12	75	83	252	0,8	1,1	0,774	1	75508942	75508942/T
108,0		30x3,0	M10/M12	76	83	272	0,9	1,3	0,846	1	75510842	75510842/T
114,3		30x3,0	M10/M12	77	83	290	1,0	1,4	0,879	1	75511442	75511442/T
133,0		35x4,0	M10/M12	75	100	308	1,2	1,9	1,289	1	76513344	76513344/T
139,7		35x4,0	M10/M12	75	100	323	1,2	2,0	1,319	1	76514044	76514044/T
159,0		35x4,0	M10/M12	77	100	332	1,3	2,3	1,447	1	76515944	76515944/T
168,3		35x4,0	M10/M12	76	100	342	1,4	2,5	1,475	1	76516844	76516844/T
219,1		35x4,0	M16	77	100	400	2,4	3,2	1,760	1	76521927	76521927/T

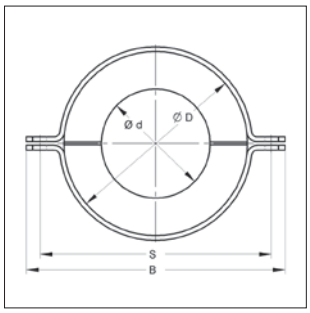
assembly instruction see chapter 15

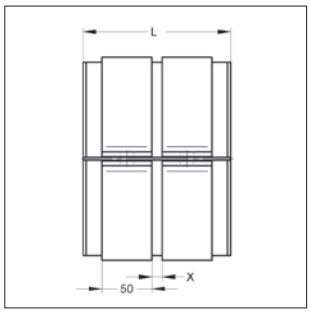
** Allowable loads may be increased by 5 times without AGI requirements (load of clamps are to be considered, see chapter 1)

Insulated fixpoint









Insulated fixpoint mounted
with fixpoint bracket HV1

Specification:

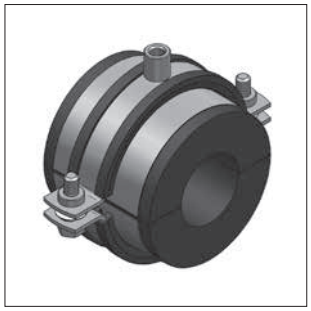
Application area:	Insulated fixpoint for mounting of chilled water steel pipes
Characteristic:	Can be mounted to any substructures (C-profile rails, CENTUM©, steel beams). Height adjustable in combination with Fixpoint brackets HV. High water vapor diffusion resistance and low thermal conductivity. Acc. 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	
Material:	steel
Surface:	raw / galvanized

For detailed information about Insulated fixpoint see chapter 3a

Foamglas® insulated pipe clamp



Foamglas© insulated pipe clamp
with sheet jacket

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 80 € will apply.

When ordering, please consider the following:
Quantity and length of shells must be divisible through 600 mm (max. shell length).

No exchange or return.

SCHALL-SCHUTZ DIN 4109

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:	PITTSEAL® CW sealant
Part-No.:	5919003
Temperature range:	-59°C - +104°C
Color:	grey-white

Technical data:

Identification:	Foamglas© shell
Compounding:	aluminium-silicate-glass, inorganic, without binding material
Deformation resistance:	dimension-stable, no swelling, no shrinking, no distortion and no dishing
Fire-performance:	noncombustible acc. DIN 4102, T1, reaction to fire classification A1, Euro class A
Temperature range:	-260°C - +430°C
Steam diffusion resistance number:	vapour leak-proof according DIN 52615
Thermal conductivity:	0,041 W/mK
Density:	120 kg/m³
Maximum pressure load:	0,7 N/mm²

Anchor Overview

Identification		Page	Approval			Stainless steel	Anchorage											
			Pressure area proofed (uncracked concrete)	Tensile area, (cracked concrete)	With approval ETA or DIBt		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																		
TSM concrete screw		7/6	●	●	●	x	■	□	□	□								
Bolt anchor BZ plus		7/10	●	●	●	x	■	□										
Nail anchor N		7/13		●	●[2]	x	■	□										
Zykon hammerset anchor FZEA II		7/15	●	●	●	x	■	□	□	□								
Drop-in Anchor E / ES		7/17	●	●	●[2]	x	■	□										
Cavity fixing																		
Hollow core anchor Easy		7/21	●	●	●[1]		■											
Toggle bolt		7/23												□	□	□	■	■
Toggle bolt BIG M		7/23												□	□	□	■	■

■ **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: Galvanized steel	Execution: Stainless steel	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 standadised axial distance of MEFA-components: 150 mm [kN]	100 mm [kN]	80 mm [kN]	Reduced tensile loads N_{zul} single anchor with [kN]	Possible min. axial distance S_{min} [mm]	Needed anchorage-concrete (tensile area)	Min. component thickness [mm]
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	≥ C20/25 or ≥B25	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		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	≥ C20/25 or ≥ B25	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		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		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		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		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- ≥C45/55 or ≥B55	thickness ≥ 25mm
Easy M10	12	M10	x		16	60		150	300	1,20	2,13	2,04	2,00	1,00	80		≥ 30mm
Drop-in 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	≥ C20/25 or ≥ B25	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		100
E M10	12	M10	x	x	12	40		85	170	2,1	2,2	2,2	-	1,1	100		120
E M12	14	M12	x	x	15	50		85	170	2,5	2,2	-	-	1,1	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	≥ C20/25 or ≥ B25	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		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		120
TSM 10x90		-	x	-	10	95	5	102	204	2,5	5,1	5,1	5,1	2,5	70		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; 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

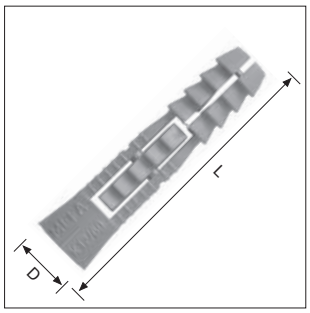
Color: yellow

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/pcs.]	Packing [pcs.]	Part-no.
5	25	5	30	2,5 - 4,0	0,0004	100	2010011
6	33	6	40	3,5 - 5,0	0,0008	100	2010038
8	44	8	64	4,5 - 6,0	0,0016	100	2010046
10	44	10	64	6,0 - 8,0	0,0025	50	2010054
10	60	10	80	6,0 - 8,0	0,0030	50	2010062
12	60	12	80	8,0 - 10,0	0,0047	25	2010070
14	80	14	100	8,0 - 12,0	0,0080	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

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.

Size	Length [mm]	Drill diameter [mm]	Drilling depth [mm]	Depth of anchoring [mm]	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
M8	27,5	11,0	34	30	0,0069	100	2060043
M10	32,0	13,0	38	34	0,0108	100	2060051
M12	40,0	18,0	44	40	0,0236	50	2060078

TSM concrete screws

Concrete screw TSM sleeve

Concrete screw TSM hex. SW13

ETA-16/0123

ETA-15/0055

ETA-15/0514

Brandschutz-geprüft

Specification

Application area:	Concrete
Suitable for:	Profile rails, consoles, pipe clamps, duct holder
Brand:	Toge

Technical data:

Material TSM:	steel
Surface:	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 **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 screwdriver 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 screwdriver.

07

Concrete screw TSM sleeve M8/10, galvanized

Type / thread	Length L [mm]	Drill-Ø d [mm]	SW	Min. drill hole t [mm]	Min. anchoring-depth [mm]	Inside thread	Head-Ø [mm]	Seismic C1/C2	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
TSM 6x 35 sleeve M8/10	35	6	13	40	35	M8/M10	-	no	0,034	50	2230000
TSM 6x 55 sleeve M8/10	55	6	13	60	55	M8/M10	-	C1	0,038	50	2230001

Concrete screw TSM hex. SW13, 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]	Seismic C1/C2	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
TSM 6x 60 hex.	60	6	13	60	55	5	15	C1	0,0160	100	2230663
TSM 8x 60 hex.	60	8	13	65	55	5	16	no	0,0345	50	2230866
TSM 8x100 hex.	100	8	13	75	65	35	16	C1/C2	0,0500	50	2230901
TSM 10x 90 hex.	90	10	15	95	85	5	20	C1/C2	0,0669	50	22310090

Loads see from page Seite 7/6

TSM concrete screws

Concrete screw TSM pan head

Concrete screw TSM countersunk

Concrete screw TSM shoulder screw

Concrete screw TSM fill.head, galvanized

Type / thread	Length L [mm]	Drill-Ø d [mm]	TX	Min. drill hole t [mm]	Min. anchoring-depth [mm]	Clamping-thickness $d_{a)}$ t_{fix} [mm]	Head-Ø [mm]	Seismic C1/C2	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
TSM 6x 28 pan head	28	6	30	30	25	3	14,3	no	0,0076	100	2230628
TSM 6x 40 pan head	40	6	30	40	35	5	14,4	no	0,0117	100	2230640

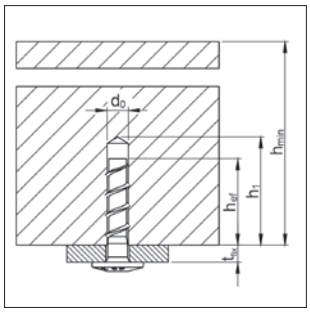
Concrete screw TSM countersunk, galvanized

Type / thread	Length L [mm]	Drill-Ø d [mm]	TX	Min. drill hole t [mm]	Min. anchoring-depth [mm]	Clamping-thickness $d_{a)}$ t_{fix} [mm]	Head-Ø [mm]	Seismic C1/C2	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
TSM 6x 80 countersunk	80	6	30	60	55	25	13	C1	0,0180	100	2230681

Concrete screw TSM shoulder screw, galvanized

Type / thread	Length L [mm]	Drill-Ø d [mm]	TX	Min. drill hole t [mm]	Min. anchoring-depth [mm]	Clamping-thickness $d_{a)}$ t_{fix} [mm]	Head-Ø [mm]	Seismic C1/C2	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
TSM 6x 55 shoulder screw	55	6	10	60	55	M8x16	-	C1	0,0185	100	2230002

Load values TSM L 6 concrete screws



Europäische Technische Zulassung nach ETAG 001-06
ETA-15/0055

Brandschutz-geprüft

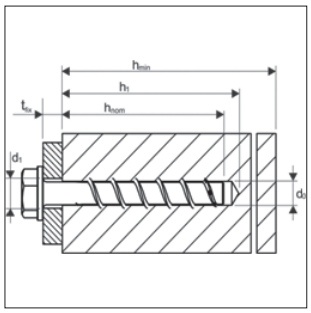
Technical characteristics without fire request			
Drill diameter	d_0	[mm]	6
Drilling hole depth	h_1	[mm]	28
Depth of anchoring	h_{ef}	[mm]	25
Min. thickness of the component	h_{min}	[mm]	80
Edge distance	c	[mm]	150
Center distance	s	[mm]	200
Allowable load in cracked and uncracked concrete C 20/25 to C 50/60[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 $F_{fi,\,zul,\,30}$ [1)]	[kN]	0,23
R 60	Allowable load $F_{fi,\,zul,\,60}$ [1)]	[kN]	0,23
R 90	Allowable load $F_{fi,\,zul,\,90}$ [1)]	[kN]	0,22
R 120	Allowable load $F_{fi,\,zul,\,120}$ [1)]	[kN]	0,17
R 30 to R 120	Center distance S_{fi}	[mm]	200
	Edge distance C_{fi}		150

[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



ETA-15/0514

Technical characteristics without fire request for single fixation TSM / TSM A4 / TSM HCR											
Screw size TSM high performance				TSM 6		TSM 8			TSM 10		
Nominal screw-in depth	h_{nom}		[mm]	hnom,1	hnom,2	hnom,1	hnom,2	hnom,3	hnom,1	hnom,2	hnom,3
				40	55	45	55	65	55	75	85
Nominal borehole diameter	d_0		[mm]	6		8			10		
Borehole depth	h_1	≥	[mm]	45	60	55	65	75	65	85	95
Effective anchorage depth	h_{ef}		[mm]	31	44	35	43	52	43	60	68
Round hole in the mounting part	$d_{f\,max}$	≤	[mm]	8		12			14		
Admissible tensile loading in cracked concrete [1);2)]	N_{zul}		[kN]	0,95	1,9	2,4	4,3	5,7	4,3	7,6	9,2
Admissible shear load in cracked concrete [1);2)]	V_{zul}		[kN]	2,8	4	3,4	4,6	6,2	4,6	15,2	18,4
Minimum edge distance	C_{min}		[mm]	40		40	50		50		
Minimum center distance	S_{min}		[mm]	40		40	50		50		
Minimum component thickness	h_{min}		[mm]	100		100		120	100	130	
installation torque	T_{inst}		[Nm]	10		20			40		
Max. torque	impact driver		[Nm]	160		300			400		
ETA seismic C1 + C2 [3)]	C1/C2			C1		-		C1/C2	C1	-	C1/C2

[1)] The partial safety factor for material resistance from the approval 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.
[3)] C2 only for the galvanised steel version.

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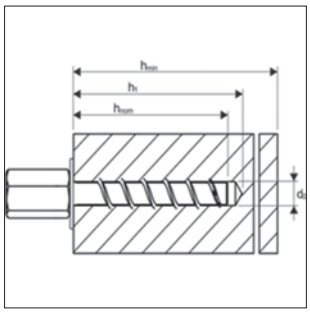
Technical characteristics under fire request for single fixation TSM (steel, A4 and HCR)											
Screw size TSM high performance				TSM 6		TSM 8			TSM 10		
Nominal screw-in depth		h_{nom}	[mm]	hnom,1	hnom,2	hnom,1	hnom,2	hnom,3	hnom,1	hnom,2	hnom,3
				40	55	45	55	65	55	75	85
Admissible tensile and shear load ($F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$)											
R 30	approved load	$F_{fi,\,zul,\,30}$ [1)]	[kN]	0,5		1,2	2,3	2,4	2,1	4,0	4,4
R 60		$F_{fi,\,zul,\,60}$ [1)]	[kN]	0,5		1,3	1,7	1,7	2,1	3,3	3,3
R 90		$F_{fi,\,zul,\,90}$ [1)]	[kN]	0,5		1,1			2,1	2,3	2,3
R 120		$F_{fi,\,zul,\,120}$ [1)]	[kN]	0,4		0,7			1,7		
R 30		$M^0_{zul,fi\,30}$	[Nm]	0,7		2,4			5,9		
R 60		$M^0_{zul,fi\,60}$	[Nm]	0,6		1,8			4,5		
R 90		$M^0_{zul,fi\,90}$	[Nm]	0,5		1,2			3		
R 120		$M^0_{zul,fi\,120}$	[Nm]	0,3		0,9			2,3		
Randabstand											
R 30 bis R 120		$C_{cr,fi}$	[mm]	2 x h_{ef}							
Edge distance must be ≥ 300 mm under fire exposure from more than one side.											
Center distance											
R 30 bis R 120		$S_{cr,fi}$	[mm]	4 x h_{ef}							
For wet concrete the depth of anchoring must be increased by at least 30 mm.											

[1)] The partial safety factor for material resistance from the approval 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



Europäische Technische Zulassung nach ETAG 001-06
ETA-16/0123

Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR					
Screw size TSM high performance			TSM 6		
Nominal screw-in depth	h_{nom}	[mm]	35	55	
Nominal borehole diameter	d_0	[mm]	6		
Borehole depth	h_1 ≥	[mm]	40	60	
Effective anchorage depth	h_{ef}	[mm]	27	44	
Round hole in the mounting part	$d_{f\,max}$ ≤	[mm]	8		
Admissible tensile loading in cracked concrete [1]	N_{zul}	[kN]	1,4	3,6	
Admissible tensile loading in uncracked concrete [1]	V_{zul}	[kN]	2,4	4,0	
Minimum edge distance	C_{min}	[mm]	35	40	
Minimum center distance	S_{min}	[mm]	35	40	
Minimum component thickness	h_{min}	[mm]	80	100	
installation torque	T_{inst}	[Nm]	10		
Max. torque	impact driver	[Nm]	160		

[1] The partial safety factor for material resistance from the approval Y_M = 1.5 as well a partial safety factor for load actions Y_F = 1.4 were considered for determining the load.

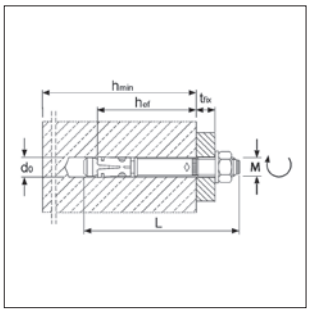
Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR							
Screw size TSM high performance				TSM 6		TSM 6 A4 / HCR	
Nominal screw-in depth		h_{nom}	[mm]	35	55	35	55
Admissible tensile and shear load ($F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$)							
R 30	approved load	$F_{fi,\,zul,\,30}$ [1]	[kN]	0,75	0,9	0,75	1,2
R 60		$F_{fi,\,zul,\,60}$ [1]	[kN]	0,75	0,8	0,75	1,2
R 90		$F_{fi,\,zul,\,90}$ [1]	[kN]	0,6		0,75	1,2
R 120		$F_{fi,\,zul,\,120}$ [1]	[kN]	0,4		0,6	0,8
R 30		$M^0_{zul,fi\,30}$	[Nm]	0,7		0,9	
R 60		$M^0_{zul,fi\,60}$	[Nm]	0,6		0,9	
R 90		$M^0_{zul,fi\,90}$	[Nm]	0,5		0,9	
R 120		$M^0_{zul,fi\,120}$	[Nm]	0,3		0,6	
Edge distance							
R 30 to R 120		$C_{cr,fi}$	[mm]	2 x h_{ef}			
Edge distance must be ≥ 300 mm under fire exposure from more than one side.							
Center distance							
R 30 to R 120		$S_{cr,fi}$	[mm]	4 x h_{ef}			
If the soil is damp, the anchoring depth should 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..

Values do not apply for use in prestressed cavity ceiling tiles.

Bolt anchor BZ plus

Bolt anchor BZ plus
Bolt anchor BZ plus A4



ETA-99/0010

ZIVILSCHUTZ 1)

FM approved M10-M16 1)

M 8 - M 20

SEISMIC 1)

Brandschutz-geprüft 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
Brand:	MKT

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 beams, 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: Clamping thickness t_{fix} [mm]		Drill-Ø x Drillhole depth [mm]		Setting-depth [mm]		Anchoring depth [mm]		Seismic 1) C1 / C2	Anchor-length [mm]	Thread [mm]	Weight [kg/pcs.]	Packing [pcs.]	Part no.
BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	yes	75	M8x32	0,0299	100	221108010
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	yes	95	M8x52	0,0360	100	221108030
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	yes	90	M10x42	0,0588	50	221110010
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	yes	110	M10x62	0,0688	50	221110030
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	yes	130	M10x82	0,0790	50	221110050
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	yes	110	M12x51	0,102	25	221112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	yes	125	M12x66	0,114	25	22111203001
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	yes	145	M12x86	0,129	25	221112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	yes	200	M12x141	0,168	25	221112105
BZ 16 -15-35/135	15	35	16x110	16x90	97	77	85	65	yes	135	M16x56	0,216	20	221116015
BZ 16 -25-45/145	25	45	16x110	16x90	97	77	85	65	yes	145	M16x66	0,230	20	221116025
BZ 16 -80-100/200	80	100	16x110	16x90	97	77	85	65	yes	200	M16x121	0,320	10	221116080

Bolt anchor BZ plus A4, stainless steel

BZ 8 -10-21/75	10	21	8x60	8x49	52	41	46	35	yes	75	M8x32	0,0302	100	222108010
BZ 8 -30-41/95	30	41	8x60	8x49	52	41	46	35	yes	95	M8x52	0,0368	100	222108030
BZ 10 -10-30/90	10	30	10x75	10x55	68	48	60	40	yes	90	M10x42	0,0594	50	222110010
BZ 10 -30-50/110	30	50	10x75	10x55	68	48	60	40	yes	110	M10x62	0,0696	50	222110030
BZ 10 -50-70/130	50	70	10x75	10x55	68	48	60	40	yes	130	M10x82	0,0804	50	222110050
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	yes	110	M12x51	0,102	25	222112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	yes	125	M12x66	0,114	25	222112030
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	yes	145	M12x86	0,129	25	222112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	yes	200	M12x141	0,168	25	222112105
BZ 16-25-45/145	25	45	16x110	16x90	97	77	85	65	yes	145	M16x66	0,234	20	222116025

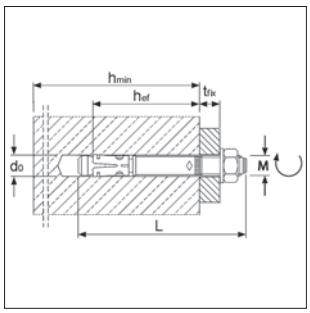
Rost frei

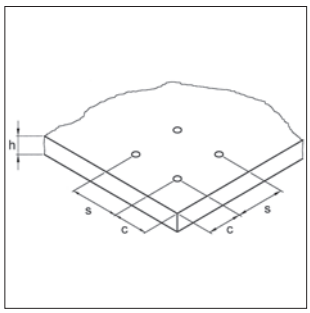
Delivery time: 3 working days

Loads see on pageSeite 7/10

assembly instruction see chapter 15

Load values Bolt anchor BZ plus





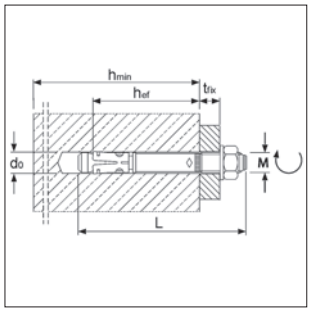
ETA-99/0010

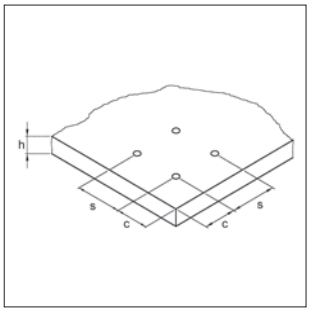
Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance.
Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data	Bolt anchor BZ plus		M 8		M 10		M 12		M 16	
Standard anchorage depth	h_{ef}	[mm]	46	-	60	-	70	-	85	-
Reduced anchorage depth	$h_{ef,\ red}$	[mm]	-	35	-	40	-	50	-	65
			cracked concrete							
Mean ultimate loads, tension	C20/25 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
	≥ 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_{min2} / h_{min3}	[mm]	80	80	100	80	120	100	140	140
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	50/60	45 / 90	50/100	60 / 100	50/160	70 / 160	65/170
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40 / 80	40/185	50 / 115	65/180	60 / 140	65/250	80 / 180	100/250
			non-cracked concrete							
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 80	50/60	60 / 140	50/100	60 / 120	50/160	80 / 180	65/170
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	40/185	90 / 140	65/180	75 / 150	100/185	90 / 200	170/65
Installation parameters										
Drill hole diameter	d_o	[mm]	8	8	10	10	12	12	16	16
Diameter of clearance hole in the fixture	d_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	90	90
Width across nut	SW	[mm]	13	13	17	17	19	19	24	24

Load values Bolt anchor BZ plus A4





ETA-99/0010

Extract from Permissible Service Conditions of ETA-99/0010

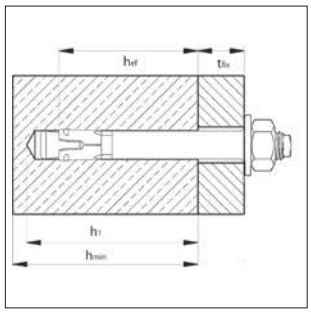
Approved loads for single anchor without influence of spacing and edge distance.
Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data	Bolt anchor BZ plus A4		M 8		M 10		M 12		M 16	
Standard anchorage depth	h_{ef}	[mm]	46	-	60	-	70	-	85	-
Reduced anchorage depth	$h_{ef,\ red}$	[mm]	-	35	-	40	-	50	-	65
			cracked concrete							
Mean ultimate loads, tension	C20/25 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
	≥ 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



ETA-11/0240

Brandschutz-geprüft

N - M

Specification:

Application area:	Cracked concrete with redundant fastening C12/15 - C50/60
installation advise:	Hammer Nail anchor N trought fixture into concrete. When load is applied Nail anchor expands automatically
Brand:	MKT
Application example:	Ceiling constructions, piping, cladding etc.

Technical data:

Material:	steel/ stainless steel
Surface:	galvanized / A4
Approval:	ETA-11/0240

[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]	$h_{1, red}$ [1)] [mm]	h_{ef} [mm]	$h_{ef, red}$ [1)] [mm]	t_{fix} [mm]	$t_{fix, red}$ [1)] [mm]	[mm]	L [mm]	[kg/pcs.]	[pcs.]	
N 6-5-10/49	6	40	35	30	25	5	10	18	49	0,0140	200	221861010701

Nail anchor N A4, stainless steel

N 6-5/49 A4	6	40	40	30	30	5	5	18	49	0,0140	200	222861010541

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/pcs.]	[pcs.]	
N-M 6-25 M8/M10	6	35	25	13	M8/M10	58	0,0275	100	221860310101
N-M 6-30 M8/M10	6	40	30	13	M8/M10	63	0,0285	100	221860315101

Rostfrei

Delivery time: 3 working days

Loads see on page Seite 7/13

assembly instruction see chapter 15

Load values Nail anchor N

ETA-11/0240

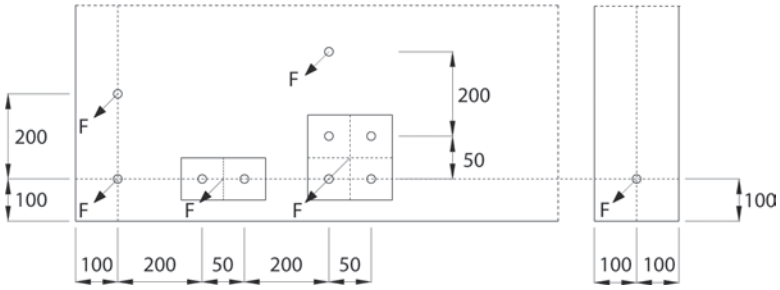
Extract from Permissible Service Conditions of ETA-11/0240

Multiple use for non-structural systems.
Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data	Nail Anchor steel galvanized, stainless steel A4		N		N-M	
Effective anchorage depth	h_{ef}	[mm]	25	30	25	30
Approved loads (picture 1)	C12/15 appr. F	[kN]	1,43	1,90	1,43 [1)]	1,90 [1)]
	C20/25 - C50/60 appr. F	[kN]	2,14	2,81	2,14 [1)]	2,81 [1)]
Approved loads (picture 2)	C12/15 appr. F	[kN]	0,71	0,95	0,71 [1)]	0,95 [1)]
	C20/25 - C50/60 appr. F	[kN]	0,95	1,19	0,95 [1)]	1,19 [1)]
Approved bending moments	appr. M	[Nm]	5,3	5,3	7,3	7,3
Minimum thickness of concrete slab	h_{min}	[mm]	80	80	80	80
Installation parameters						
Drill hole diameter	d_o	[mm]	6	6	6	6
Diameter of clearance hole in the fixture	d_f	[mm]	7	7	7	7
Diameter nailhead		[mm]	-	-	-	-
Depth of drill hole	h_1	[mm]	35	40	35	40
Installation torque	$\geq T_{inst}$	[Nm]	4	4	-	-

[1)] When applying a shear load to anchor version N-M, shear load with lever arm must be proven.

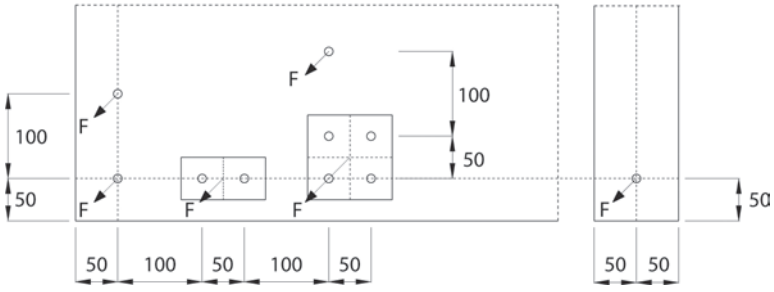
Picture 1: maximum loads



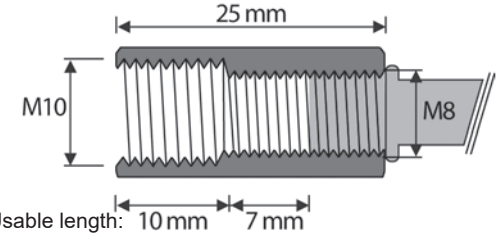
The approved load F is for one fixing point.
One fixing point can be:
- **Single anchor,**
- **Pair of anchors** with spacing s ≥ 50 mm or
- **Group of four anchors** with s ≥ 50 mm

If spacing in fixing point is above or equal to respective spacing between fixing points, characteristic resistances apply to every single anchor.

Picture 2: minimum spacing and edge distance



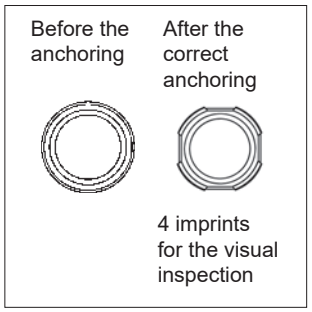
Dimensions threaded sleeve N-M:



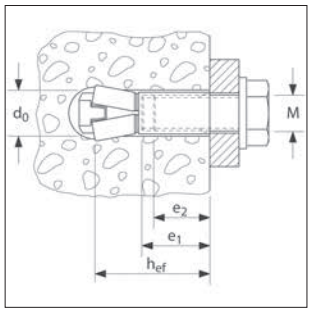
Assembly instruction see chapter 15

Zykon hammerset anchor FZEA II and FZEA II A4

Zykon hammerset anchor FZEA II
Zykon hammerset anchor FZEA II A4



FZEA II-imprint



ETA-11/0240

Feuerwiderstandsklasse R 120
Dübelgrößen siehe Prüfbericht

M 8 - M 20

FM approved up to M10

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
Brand:	Fischer
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.

Technical data:

Material FZEA II:	steel
Surface:	galvanized
Material FZEA II A4:	stainless steel V4A
Approval:	ETA-06/0271

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/pcs.]	Packing [pcs.]	Part no.
FZEA II 10 x 40	10	40	11	17	M8	0,0153	100	21721040
FZEA II 12 x 40	12	40	13	19	M10	0,0206	100	21721240
FZEA II 14 x 40	14	40	15	21	M12	0,0278	50	21721440

Stainless steel, V4A

FZEA II 10 x 40 A4	10	40	11	17	M8	0,0150	100	2176042
FZEA II 12 x 40 A4	12	40	13	19	M10	0,0206	100	2176242
FZEA II 14 x 40 A4	14	40	15	21	M12	0,0278	50	2176442

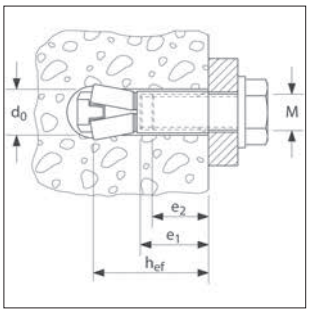
Edelstahl Rostfrei

Delivery time: 3 working days

Loads see on page Seite 7/15

assembly instruction see chapter 15

Load values Zykon hammerset anchor FZEA II and FZEA II A4



Europäische Technische Zulassung – Option 1 für gerissenen Beton

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]
			[Nm]	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 x h_{ef}			= 3 x h_{ef}		
Characteristic edge distance		$S_{cr,N}$	[mm]		= 1,5 x h_{ef}			= 1,5 x 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

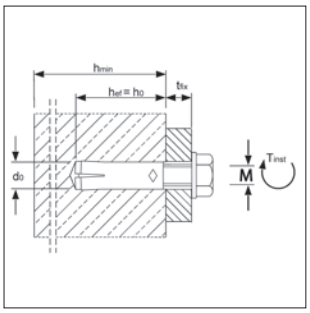
* Steel failure value.
1) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class A50.
2) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class 5.6.
3) For minimum spacing and minimum edge distance the above 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 γM are included. Material safety factor γM depends on type of anchor.
Permissible loads: material safety factors γM and safety factor for load γL = 1,4 are included.

Source: Fischer

Drop-in Anchor E / ES and E / ES A4

Drop-in Anchor E
Drop-in Anchor E A4

Drop-in Anchor ES
Drop-in Anchor ES A4



ETA-05/0116

FM approved * M10-M16

M 8 - M 12*

Brandschutz-geprüft

Specification:
Application area: Cracked concrete (multiple fastening), non-cracked concrete C20/25 up to C50/60

Brand: MKT

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 ≥ 30 mm

Steel, galvanized

Identification	Drill hole Ø x depth [mm]	Thread x length [mm]	Minimum screwing depth L_{sd} [mm]	Maximum screwing depth L_{th} [mm]	Weight [kg/pcs.]	Packing [pcs.]	Part no.
E M6x30	8 x 30	M6 x 13	7	13	0,103	100	210805005101
ES M8x25	10 x 25	M8 x 12	8	12	0,0105	100	210805125101
ES M8x30	10 x 30	M8 x 13	9	13	0,0115	100	210805130101
ES M8x40	10 x 40	M8 x 20	9	20	0,0153	100	210805155101
ES M10x25	12 x 25	M10 x 12	10	12	0,0220	50	210805225101
ES M10x40	12 x 40	M10 x 15	11	15	0,0220	50	210805240101
ES M12x50	15 x 50	M12 x 18	13	18	0,0430	50	210805330101
E M16x65	20 x 65	M16 x 23	18	23	0,102	25	210805500101

Stainless steel V4A

ES M8x30 A4	10 x 30	M8 x 13	9	13	0,0115	100	211805150501
ES M10x40 A4	12 x 40	M10 x 15	11	15	0,0220	50	211805250501
ES M12x50 A4	15 x 50	M12 x 18	13	18	0,0430	50	211805350501
E M16x65 A4	20 x 65	M16 x 23	18	23	0,103	25	211805500501

Rost frei

Delivery time: 2 working days

Loads see on page Seite 7/17

assembly instruction see chapter 15

Load values Drop-in 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, are below the approved load of the anchor. The approved loads per fixing point are regulated for their respective countries in the ETAG 001, Part 6.

Loads and performance data	Drop-in Anchor E		M6x25	M6x30	M8x25	M8x30	M8x40	M10x25	M10x30	M10x40	M12x25	M12x50	M16x65
			cracked and non-cracked concrete										
Approved loads (C12/15 up to C16/20)	zul. F	[kN]	1,2	-	1,2	-	-	1,7	-	-	1,7	-	-
Approved loads (C20/25 up to C50/60)	zul. F	[kN]	1,7	1,2	1,9	1,7	2,0	2,1	2,0	2,0	2,1	2,4	6,3
Approved bending moments (Screw 4.6)	zul. M	[Nm]	2,6	2,6	6,4	6,4	6,4	12,8	12,8	12,8	22,2	22,2	56,9
Approved bending moments (Screw 5.6)	zul. M	[Nm]	3,3	3,3	8,1	8,1	8,1	15,8	15,8	15,8	27,8	27,8	71,0
Approved bending moments (Screw 5.8)	zul. M	[Nm]	4,3	4,3	10,9	10,9	10,9	21,1	21,1	21,1	37,1	37,1	94,9
Approved bending moments (Screw 8.8)	zul. M	[Nm]	6,9	6,9	17,1	17,1	17,1	34,3	33,7	34,3	60,0	60,0	152,0
Spacing and edge distance													
Effective anchorage depth	hef	[mm]	25	30	25	30	40	25	30	40	25	50	65
Characteristic spacing	scr	[mm]	75	130	75	180	210	75	230	170	75	170	400
Characteristic edge distance	ccr	[mm]	38	65	38	90	105	38	115	85	38	85	200
Minimum 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
(for screw ≥ 4.8) 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
(for screw ≥ 4.8) 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
(for screw ≥ 4.8) Approved loads R120	zul. F	[kN]	0,25	0,3	0,5	0,5	0,5	0,5	0,7	0,9	0,5	1,2	2,4
(for screw ≥ 5.6) Approved loads R30	zul. F	[kN]	0,4	0,8	0,6	0,9	1,5	0,6	0,9	1,5	0,6	1,5	4,0
(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
(for screw ≥ 5.6) 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
(for screw ≥ 5.6) 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	Drop-in 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

ETA-05/0116

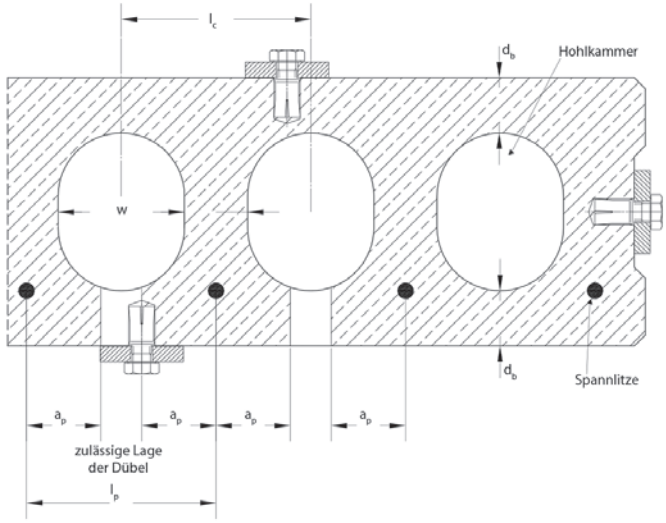
Extract from Permissible Service Conditions of ETA-05/0116

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, are below the approved load of the anchor. The approved loads per fixing point are regulated for their respective countries in the ETAG 001, Part 6.

Loads and performance data		Drop-in Anchor ES		M6x25	M8x25	M10x25	M12x25
				Pre-stressed hollow concrete slabs C30/37 to C50/60			
Web thickness		db ≥	[mm]		35 (30)[1]		
Approved loads		Fzul.	[kN]	1,7	1,9	2,1	2,1
Approved bending moments (Steel 4.6)		zul. M	[Nm]	2,6	6,4	12,8	22,2
Approved bending moments (Steel 4.8)		zul. M	[Nm]	3,5	8,6	17,1	29,7
Approved bending moments (Steel 5.6)		zul. M	[Nm]	3,3	8,1	15,8	28,8
Approved bending moments (Steel 5.8)		zul. M	[Nm]	4,3	10,9	21,1	37,1
Approved bending moments (Steel 8.8)		zul. M	[Nm]	6,9	17,1	34,3	60,0
Spacing and edge distance							
Spacing distance	scr = smin		[mm]		200		
Edge distance	ccr = cmin		[mm]		150		
Installation parameters							
Drill hole diameter	do		[mm]	8	10	12	15
Diameter of clearance hole in the xture	df		[mm]	7	9	12	14
Depth of drill hole	ho ≥		[mm]	25	25	25	25
Installation torque	Tinst ≤		[Nm]	4	8	15	35

[1] Drill hole must not cut hollow core.

Admissible anchor positions in precast pre-stressed hollow core slabs

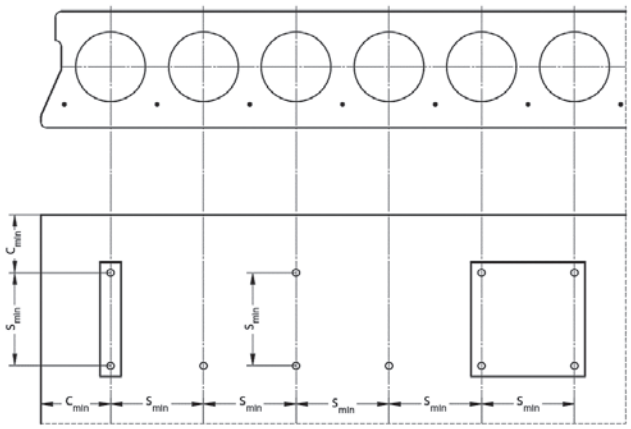


w / e ≤ 4,2

w = hollow core width
e = web thickness

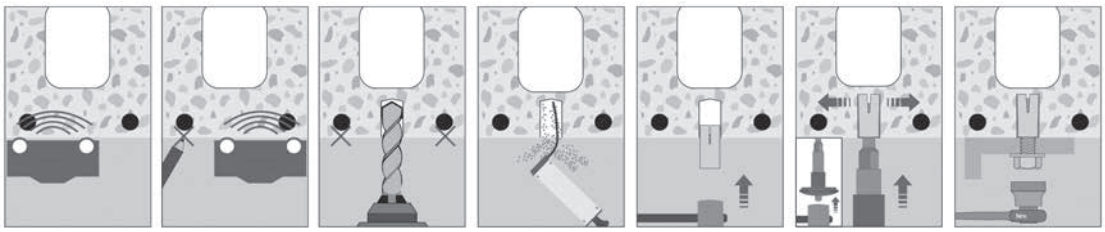
Core distance	l_c ≥ 100 mm
Pre-stressing steel distance	l_p ≥ 100 mm
Distance between anchor position and pre-stressing steel	a_p ≥ 50 mm

Minimum spacing and edge distance in precast pre-stressed hollow core slabs



Minimum edge distance	c_{min} ≥ 150 mm
Minimum spacing	s_{min} ≥ 200 mm

Mounting



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	0,13	1	531809005150
E MSH 8x25	ES M8 x 25	0,42	1	531809125801
E MSH 8x30	ES M8 / ES M8 A4	0,43	1	531809100180
E MSH 8x40	ES M8 x 40	0,44	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	0,51	1	531809500180

* without placing mark

Plug-on setting tool for E / ES

Plug-on setting tool
with stop drill bit

Plug-on setting tool E-ASW

Identification	Fits Anchor	Included 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

Stop drill bit for E / ES

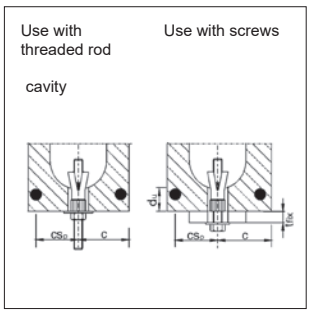
Stop drill bit BB

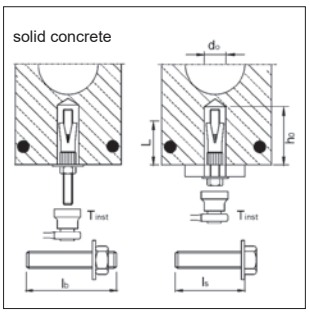
Identification	Drill hole Ø x depth [mm]	Fits Drop-in Anchor	Fits Plug-on setting tool	Weight [kg/pc.]	Packing [pc.]	Part no.
BB 10x25*	10 x 25	ES M8 x 25	E ASW 8x25	0,11	1	531850041001
BB 10x30*	10 x 30	ES M8 x 30	E ASW 8x30	0,11	1	531850041501
BB 10x40*	10 x 40	ES M8 x 40	E ASW 8x40	0,12	1	531850042001
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





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 ins´t located in a hollow chamber !!

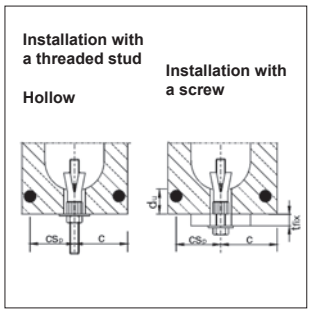
Brand: MKT

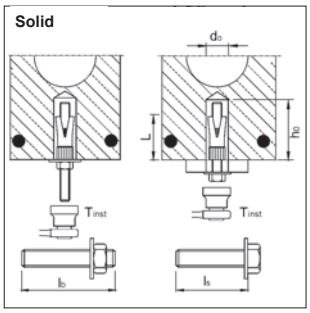
Application example: Suspension of ventilation, sprinkler system, false ceilings, brackets with threaded studs or screws, ducts, anchoring prefabricated panelson hollow concrete floors/ceilings.

Identification	Drill-Ø [mm]	Thread Ø [mm]	Drill hole-depth h_0 [mm]	Sleeve length (without cone) L [mm]	Min. screw length l_s	Tightening torque T_{inst} [Nm]	Weight [kg/pcs.]	Packing [pcs.]	Part-no.
Easy M8	12	M8	55	35	47 + t_{fix}	20	0,0144	50	221851100101
Easy M10	16	M10	60	40	55 + t_{fix}	30	0,0332	50	221851200101

Loads see on page Seite 7/21
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 and 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			
			Pre-stressed hollow concrete slabs ≥ C45/55															
Web thickness	d_u	[mm]	≥ 25	30	40	50	25	30	40	50	25	30	40	50	25	30	40	50
Single anchor																		
approved loads[1] (for $c \geq c_{cr}$)	F[1]	[kN]	0,7	0,9	2,0	2,9	0,7	0,9	2,0	3,6	0,9	1,2	3,0	3,6	1,0	1,2	3,0	4,3
edge distance	c_{cr}	[mm]	150				150				150				150			
approved loads[1] (for c_{min})	F[1]	[kN]	0,35	0,8	1,8	2,4	0,35	0,8	1,8	3,0	0,8	1,0	2,7	3,0	0,8	1,0	2,7	3,6
minimum edge distance	c_{min}	[mm]	100				100				100				100			
spacing	scr	[mm]	300				300				300				300			
Pair of anchors[2]																		
approved loads[1] (for $c \geq c_{cr}$)	F[1]	[kN]	0,7	1,4	2,6	3,9	0,7	1,4	2,6	4,8	1,1	2,0	4,8	4,8	1,2	2,0	4,8	5,7
minimum spacing	s_{min}	[mm]	70	80	100	100	70	80	100	100	70	80	100	100	70	80	100	100
edge distance	c_{cr}	[mm]	150				150				150				150			
approved loads[1] (for c_{min})	F[1]	[kN]	0,35	1,25	2,35	3,2	0,35	1,25	2,35	4,0	0,9	1,8	4,3	4,3	1,0	1,8	4,3	4,8
minimum spacing	s_{min}	[mm]	70	80	100	100	70	80	100	100	70	80	100	100	70	80	100	100
minimum edge distance	c_{min}	[mm]	100				100				100				100			
Approved bending moments																		
stud / screw, steel 5.8		[Nm]	-				10,7				21,4				37,4			
stud / screw, steel 8.8		[Nm]	4,4				17,1				34,2				59,8			
Installation parameters																		
length of sleeve (without cone)	L	[mm]	30				35				40				45			
minimum length of screw	min l_s	[mm]	42 + tfix				47 + tfix				55 + tfix				61 +tfix			
minimum length of stud	min l_b	[mm]	47 + tfix				53 + tfix				63 + tfix				71 +tfix			
minimum strength of stud / screw			8.8				5.8				5.8				5.8			
drill hole diameter	d_o	[mm]	10				12				16				18			
clearance hole in the fixture	d_f	[mm]	7				9				12				14			
depth of drill hole	h_o	[mm]	50				55				60				70			
installation torque	T_{inst}	[Nm]	10				20				30				40			

[1] For edge distance cmin < c ≤ 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 smin < s < s_{cr} the recommended load my 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

VdS G 489 0027

FM APPROVED

BIG M Heavy-duty-toggle bolt

Specification:
Application area: Cavity walls, ceilings, suspended ceilings

Brand: SMK Meister

Mounting: The required cavity depth and hollow depth must be observed.
Min. hollow depth = Length of the anchor

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.

Technical Data:
Material: steel
Surface: galvanized, chromated

Approval: 1) VdS G 4890027
2) FM

Type	Threaded rod	Drill-Ø [mm]	Min. Hollow depth [mm]	Breaking load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-no.
Toggle bolt KV 8							
100 Toggle bolt x KV 8[1)]	**M8 x 100**	22	90	20	0,113	50	2120081
200 Toggle bolt x KV 8[1)]	**M8 x 200**	22	90	20	0,146	25	2120082
300 Toggle bolt x KV 8[1)]	**M8 x 300**	22	90	20	0,177	25	2120083
500 Toggle bolt x KV 8[1)]	**M8 x 500**	22	90	20	0,240	25	2120085
Toggle bolt KV 10							
100 Toggle bolt x KV 10[1), 2)]	**M10 x 100**	25	90	20	0,137	25	212010100
Toggle bolt K 8							
Toggle bolt K 8	**M8 x 100**	20	75	13	0,082	100	2128306
Toggle bolt K 10 - Heavy-duty							
Toggle bolt K 10	**M10 x 180**	30	140	12	0,210	25	2120518
Toggle bolt BIG M - Heavy-duty							
Toggle bolt BIG M	**M10 x 180**	30	90	11	0,217	20	2123517

MEFA mounting systems for ventilation

DN 80 - 630

Ventilation pipe clamp VENTUS
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DN 71 - 1250

Ventilation pipe clamp lined
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DN 71 - 1250

Ventilation pipe clamp
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SIGNUM LP50

Ventilation rail and accessories
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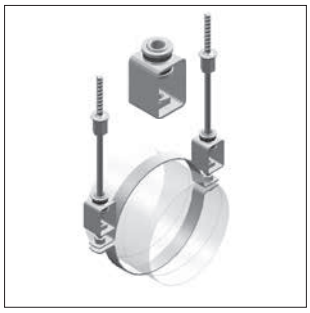

Sound absorption element DHL
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Ducting strap
Page 8/10

Wire rope L-Fix
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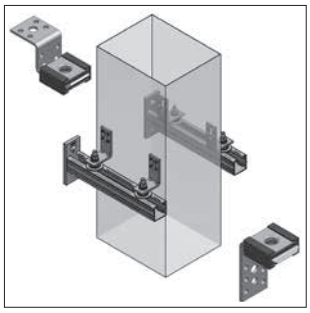

Duct holder
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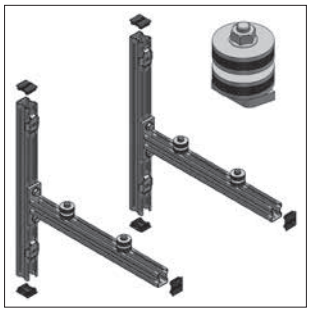

Console-set, Sound absorption element
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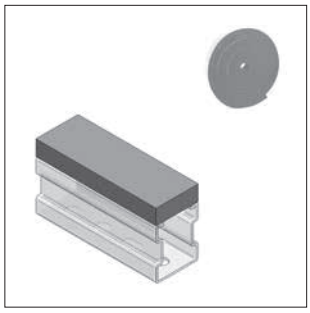

Dämmauflagen
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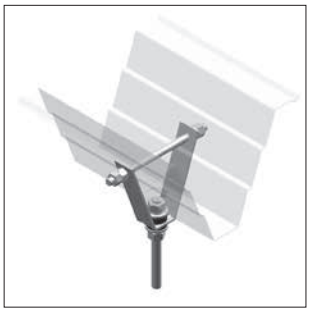

Trapeze hanger
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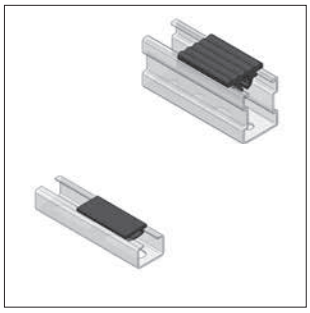

C-profile linings
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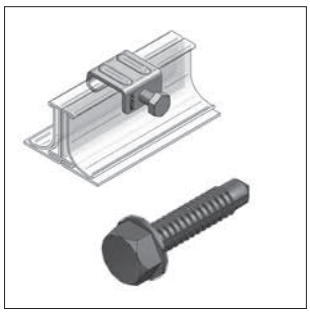

Duct clamp, Self-drilling screw
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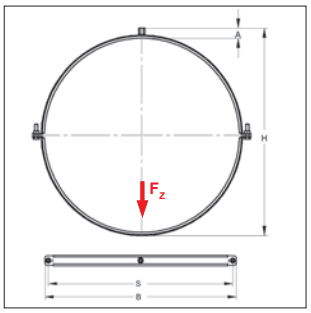
Duct sealing tape, Cold shrink tape
Page 8/21

Duct sealing compound
Page 8/21

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

VENTUS, ventilation pipe clamp



SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

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:

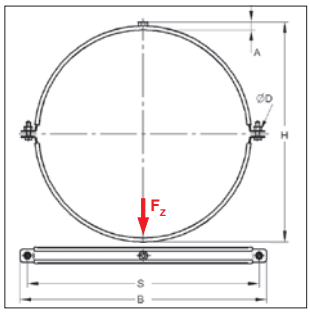
Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	3,0 mm

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]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
80	81	20 x 1,5	M8	102	15	127	109	0,75	0,12	50	0449931080
100	101	20 x 1,5	M8	122	15	147	130	0,75	0,14	50	0449931100
125	126	20 x 1,5	M8	147	15	173	155	0,75	0,16	50	0449931125
140	141	20 x 1,5	M8	162	15	188	170	0,75	0,18	25	0449931140
150	151	20 x 1,5	M8	172	15	198	180	0,75	0,19	25	0449931150
160	161	20 x 1,5	M8	182	15	208	190	0,75	0,20	25	0449931160
180	181	20 x 1,5	M8	202	15	228	210	0,75	0,22	25	0449931180
200	201	20 x 1,5	M8	222	15	248	230	1,00	0,24	25	0449931200
224	225	25 x 1,5	M8	248	16	281	263	1,00	0,36	10	0449931224
250	251	25 x 1,5	M8	274	16	307	289	1,00	0,39	10	0449931250
280	281	25 x 1,5	M8	304	16	337	319	1,00	0,43	10	0449931280
300	302	25 x 1,5	M8	325	16	358	340	1,00	0,45	10	0449931300
315	317	25 x 1,5	M8	340	16	373	355	1,00	0,47	10	0449931315
355	357	25 x 1,5	M8	380	16	413	395	1,00	0,52	10	0449931355
400	402	25 x 1,5	M8/M10	433	24	458	440	1,00	0,59	10	0449932400
450	452	25 x 1,5	M8/M10	483	24	508	490	1,00	0,65	10	0449932450
500	502	25 x 2,5	M8/M10	535	25	560	542	1,50	1,09	10	0449932500
560	562	25 x 2,5	M8/M10	595	25	620	602	1,50	1,21	10	0449932560
600	602	25 x 2,5	M8/M10	635	25	660	642	1,50	1,28	10	0449932600
630	632	25 x 2,5	M8/M10	665	25	690	672	1,50	1,35	10	0449932630

Ventilation pipe clamp, lined

Ventilation pipe clamp, lined



SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

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**

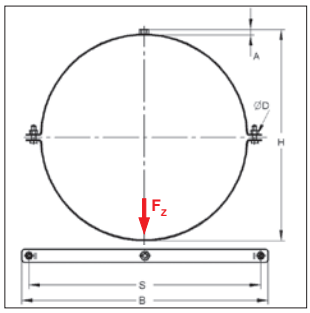
Dimension [DN]	Material [mm]	Closure-screw	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Ø D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
71	20x2,0	M8	0,8	103	22	145	120	8,5	0,205	1	0430711
80	20x2,0	M8	0,8	112	22	154	129	8,5	0,215	1	0430801
90	20x2,0	M8	0,8	122	22	164	139	8,5	0,231	1	0430901
100	20x2,0	M8	0,8	133	22	175	150	8,5	0,245	1	0431001
112	20x2,0	M8	0,8	145	22	187	162	8,5	0,262	1	0431121
125	20x2,0	M8	0,8	158	22	200	175	8,5	0,282	1	0431251
140	20x2,0	M8	0,8	173	22	215	190	8,5	0,304	1	0431401
150	20x2,0	M8	0,8	183	22	225	200	8,5	0,318	1	0431501
160	20x2,0	M8	0,8	193	22	235	210	8,5	0,334	1	0431601
180	20x2,5	M8	1,5	214	23	255	230	8,5	0,417	1	0431801
200	20x2,5	M8	1,5	233	23	275	250	8,5	0,452	1	0432001
224	20x2,5	M8	1,5	258	23	299	274	8,5	0,493	1	0432241
250	20x2,5	M8	1,5	283	23	325	300	8,5	0,539	1	0432501
280	25x2,5	M8	2,0	315	23	357	332	8,5	0,708	1	0432801
300	25x2,5	M8	2,0	337	23	378	353	8,5	0,751	1	0433001
315	25x2,5	M8	2,0	352	23	393	368	8,5	0,780	1	0433151
355	25x2,5	M8	2,0	392	23	433	408	8,5	0,865	1	0433551
400	25x2,5	M8	2,0	437	23	478	453	8,5	0,959	1	0434001
450	25x2,5	M8	2,0	487	23	528	503	8,5	1,065	1	0434501
500	25x2,5	M8	2,0	537	23	578	553	8,5	1,169	1	0435001
560	25x2,5	M8	2,0	597	23	638	613	8,5	1,294	1	0435601

Ventilation pipe clamp, lined

Connection: Thread M10											With sound insulation lining rubber
Dimension [DN]	Material [mm]	Closure-screw	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Ø D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
71	20x2,0	M8	0,8	105	24	145	120	8,5	0,215	1	0430712
80	20x2,0	M8	0,8	114	24	154	129	8,5	0,226	1	0430802
90	20x2,0	M8	0,8	124	24	164	139	8,5	0,242	1	0430902
100	20x2,0	M8	0,8	135	24	175	150	8,5	0,255	1	0431002
112	20x2,0	M8	0,8	147	24	187	162	8,5	0,273	1	0431122
125	20x2,0	M8	0,8	160	24	200	175	8,5	0,292	1	0431252
140	20x2,0	M8	0,8	175	24	215	190	8,5	0,315	1	0431402
150	20x2,0	M8	0,8	185	24	225	200	8,5	0,329	1	0431502
160	20x2,0	M8	0,8	195	24	235	210	8,5	0,346	1	0431602
180	20x2,5	M8	1,5	215	25	255	230	8,5	0,428	1	0431802
200	20x2,5	M8	1,5	235	25	275	250	8,5	0,463	1	0432002
224	20x2,5	M8	1,5	259	25	299	274	8,5	0,504	1	0432242
250	20x2,5	M8	1,5	285	25	325	300	8,5	0,550	1	0432502
280	25x2,5	M8	2,0	317	25	357	332	8,5	0,719	1	0432802
300	25x2,5	M8	2,0	337	25	378	353	8,5	0,761	1	0433002
315	25x2,5	M8	2,0	354	25	393	368	8,5	0,791	1	0433152
355	25x2,5	M8	2,0	394	25	433	408	8,5	0,876	1	0433552
400	25x2,5	M8	2,0	439	25	478	453	8,5	0,970	1	0434002
450	25x2,5	M8	2,0	489	25	528	503	8,5	1,075	1	0434502
500	25x2,5	M8	2,0	539	25	578	553	8,5	1,180	1	0435002
560	25x2,5	M8	2,0	599	25	638	613	8,5	1,305	1	0435602

Without connection, without closure-screws											With sound insulation lining rubber
224	20x2,5	for M8	1,5	245	-	299	274	8,5	0,437	1	0432240
250	20x2,5	for M8	1,5	271	-	325	300	8,5	0,484	1	0432500
280	25x2,5	for M8	2,0	303	-	356	331	8,5	0,652	1	0432800
300	25x2,5	for M8	2,0	325	-	378	353	8,5	0,696	1	0433000
315	25x2,5	for M8	2,0	340	-	393	368	8,5	0,725	1	0433150
355	25x2,5	for M8	2,0	380	-	433	408	8,5	0,810	1	0433550
400	25x2,5	for M8	2,0	425	-	478	453	8,5	0,903	1	0434000
450	25x2,5	for M8	2,0	475	-	528	503	8,5	1,009	1	0434500
500	25x2,5	for M8	2,0	525	-	578	553	8,5	1,113	1	0435000
560	25x2,5	for M8	2,0	585	-	638	613	8,5	1,238	1	0435600
600	25x2,5	for M8	2,0	625	-	678	653	8,5	1,323	1	0436000
630	25x3,0	for M10	2,0	657	-	711	686	10,5	1,602	1	0436300
710	25x3,0	for M10	2,0	737	-	791	766	10,5	1,794	1	0437100
800	25x3,0	for M10	2,0	828	-	882	857	10,5	2,006	1	0438000
900	30x3,0	for M10	2,0	928	-	982	957	10,5	2,745	1	0439000
1000	30x3,0	for M10	2,0	1030	-	1084	1059	10,5	3,039	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	3,774	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**

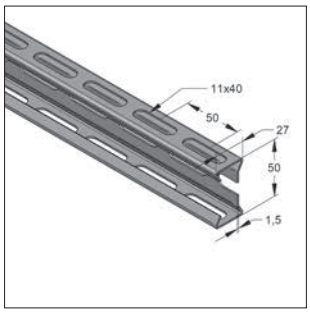
Dimension [DN]	Material [mm]	Closure-screw	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Ø D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
71	20x2,0	M8	1,5	91	16	133	108	8,5	0,155	1	0430721
80	20x2,0	M8	1,5	100	16	142	117	8,5	0,164	1	0430811
90	20x2,0	M8	1,5	110	16	152	127	8,5	0,174	1	0430911
100	20x2,0	M8	1,5	121	16	163	138	8,5	0,185	1	0431011
112	20x2,0	M8	1,5	133	16	175	150	8,5	0,197	1	0431131
125	20x2,0	M8	1,5	146	16	188	163	8,5	0,210	1	0431261
140	20x2,0	M8	1,5	161	16	203	178	8,5	0,225	1	0431411
150	20x2,0	M8	1,5	171	16	213	188	8,5	0,235	1	0431511
160	20x2,0	M8	1,5	181	16	223	198	8,5	0,245	1	0431611
180	20x2,5	M8	2,0	202	17	243	218	8,5	0,318	1	0431811
200	20x2,5	M8	2,0	222	17	263	238	8,5	0,344	1	0432011
224	20x2,5	M8	2,0	246	17	287	262	8,5	0,374	1	0432251
250	20x2,5	M8	2,0	272	17	313	288	8,5	0,406	1	0432511
280	25x2,5	M8	2,0	302	17	343	318	8,5	0,542	1	0432811
300	25x2,5	M8	2,0	323	17	367	342	8,5	0,572	1	0433011
315	25x2,5	M8	2,0	338	17	382	357	8,5	0,596	1	0433161
355	25x2,5	M8	2,0	378	17	422	397	8,5	0,658	1	0433561
400	25x2,5	M8	2,0	423	17	467	442	8,5	0,730	1	0434011
450	25x2,5	M8	2,0	473	17	517	492	8,5	0,811	1	0434511
500	25x2,5	M8	2,0	523	17	567	542	8,5	0,888	1	0435011
560	25x2,5	M8	2,0	583	17	627	602	8,5	0,982	1	0435611

Ventilation pipe clamp

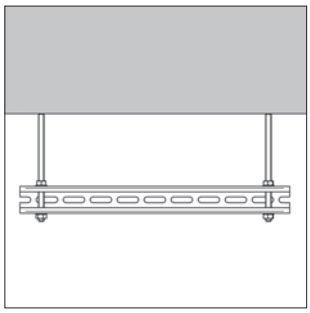
Connection: Thread M10											Without sound insulation
Dimension [DN]	Material [mm]	Closure-screw	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Ø D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
71	20x2,0	M8	1,5	93	18	133	108	8,5	0,166	1	0430722
80	20x2,0	M8	1,5	102	18	142	117	8,5	0,175	1	0430812
90	20x2,0	M8	1,5	112	18	152	127	8,5	0,185	1	0430912
100	20x2,0	M8	1,5	123	18	163	138	8,5	0,195	1	0431012
112	20x2,0	M8	1,5	135	18	175	150	8,5	0,207	1	0431132
125	20x2,0	M8	1,5	148	18	188	163	8,5	0,220	1	0431262
140	20x2,0	M8	1,5	163	18	203	178	8,5	0,236	1	0431412
150	20x2,0	M8	1,5	173	18	213	188	8,5	0,245	1	0431512
160	20x2,0	M8	1,5	183	18	223	198	8,5	0,255	1	0431612
180	20x2,5	M8	2,0	204	19	243	218	8,5	0,328	1	0431812
200	20x2,5	M8	2,0	224	19	263	238	8,5	0,354	1	0432012
224	20x2,5	M8	2,0	248	19	287	262	8,5	0,384	1	0432252
250	20x2,5	M8	2,0	274	19	313	288	8,5	0,416	1	0432512
280	25x2,5	M8	2,0	306	19	343	318	8,5	0,552	1	0432812
300	25x2,5	M8	2,0	327	19	367	342	8,5	0,582	1	0433012
315	25x2,5	M8	2,0	342	19	382	357	8,5	0,606	1	0433162
355	25x2,5	M8	2,0	382	19	422	397	8,5	0,668	1	0433562
400	25x2,5	M8	2,0	427	19	467	442	8,5	0,740	1	0434012
450	25x2,5	M8	2,0	477	19	517	492	8,5	0,820	1	0434512
500	25x2,5	M8	2,0	527	19	567	542	8,5	0,898	1	0435012
560	25x2,5	M8	2,0	587	19	627	602	8,5	0,992	1	0435612

Without connection, without closure-screws											Without sound insulation
71	20x2,0	für M8	1,5	79	-	133	108	8,5	0,099	1	0430720
80	20x2,0	für M8	1,5	88	-	142	117	8,5	0,108	1	0430810
90	20x2,0	für M8	1,5	98	-	152	127	8,5	0,119	1	0430910
100	20x2,0	für M8	1,5	109	-	163	138	8,5	0,129	1	0431010
112	20x2,0	für M8	1,5	121	-	175	150	8,5	0,141	1	0431130
125	20x2,0	für M8	1,5	134	-	188	163	8,5	0,154	1	0431260
140	20x2,0	für M8	1,5	149	-	203	178	8,5	0,169	1	0431410
150	20x2,0	für M8	1,5	159	-	213	188	8,5	0,179	1	0431510
160	20x2,0	für M8	1,5	169	-	223	198	8,5	0,189	1	0431610
180	20x2,5	für M8	2,0	189	-	243	218	8,5	0,262	1	0431810
200	20x2,5	für M8	2,0	209	-	263	238	8,5	0,288	1	0432010
224	20x2,5	für M8	2,0	233	-	287	262	8,5	0,318	1	0432250
250	20x2,5	für M8	2,0	259	-	313	288	8,5	0,350	1	0432510
280	25x2,5	für M8	2,0	291	-	345	320	8,5	0,486	1	0432810
300	25x2,5	für M8	2,0	313	-	367	342	8,5	0,524	1	0433010
315	25x2,5	für M8	2,0	328	-	382	357	8,5	0,540	1	0433160
355	25x2,5	für M8	2,0	368	-	422	397	8,5	0,602	1	0433560
400	25x2,5	für M8	2,0	413	-	467	442	8,5	0,674	1	0434010
450	25x2,5	für M8	2,0	463	-	517	492	8,5	0,754	1	0434510
500	25x2,5	für M8	2,0	513	-	567	542	8,5	0,832	1	0435010
560	25x2,5	für M8	2,0	573	-	627	602	8,5	0,926	1	0435610
600	25x2,5	für M8	2,0	610	-	665	640	8,5	0,988	1	0436010
630	25x3,0	für M10	2,0	645	-	699	674	10,5	1,244	1	0436310
710	25x3,0	für M10	2,0	725	-	779	754	10,5	1,398	1	0437110
800	25x3,0	für M10	2,0	816	-	870	845	10,5	1,564	1	0438010
900	30x3,0	für M10	2,0	916	-	970	945	10,5	2,104	1	0439010
1000	30x3,0	für M10	2,0	1018	-	1072	1047	10,5	2,344	1	0440010
1120	30x3,0	für M10	2,0	1138	-	1192	1167	10,5	2,616	1	0441210
1250	30x3,0	für M10	2,0	1322	-	1292	1297	10,5	2,910	1	0442510

SIGNUM LP50



SIGNUM LP50



Threaded rod suspension

technical overview of profile rails see on page 2/65

Specification:

Profile rail type:	C-profile rail
Application area:	Upright installation only.
	The support surface for ventilation ducts is the narrow side.

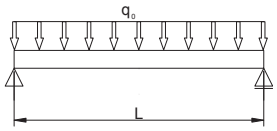
Technical data:

Material:	steel
Material type:	S250
Surface:	pre-galvanized

Identification	Corrosion protection	Length [m]	Width [mm]	Height [mm]	Weight [kg/m]	Bundle [m]	Part-No.
27/50/1,5	pre-galvanized	2,0	27	50	1,07	216	0800201
27/50/1,5	pre-galvanized	6,0	27	50	1,07	576	0800202

Load values for mounting rail SIGNUM LP50 galvanized: Permissible loads for line load

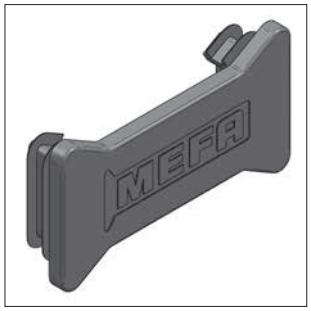
L	q0
[mm]	[kN/m]
250	41,76
500	10,44
750	4,64
1000	2,60
1250	1,67
1500	1,15
1750	0,75
2000	0,50
2250	0,35
2500	0,25
2750	0,19
3000	0,14
3250	0,11
3500	-
3750	-
4000	-



Calculation according to		RAL-GZ 655-C
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Notice:
All load specifications refer exclusively to static loads.

SIGNUM protecting cap LP50



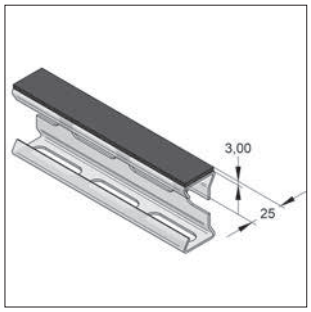
SIGNUM protecting cap LP50

Specification:
Profile rail type: SIGNUM LP50

Technical data:
Material type: plastic PE
Material color: black

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIGNUM protecting cap LP50	0,004	50	0809055

SIGNUM insulation rubber LP50, self-adhesive



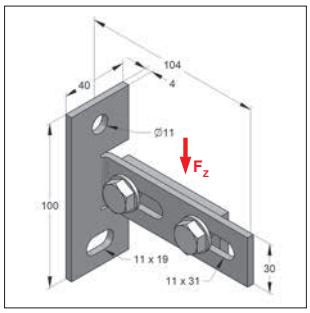
SIGNUM insulation rubber LP50
self-adhesive

Specification:
Profile rail type: SIGNUM LP50
Application area: Sound insulation between profile and duct.
Notice: The surface must be cleaned before application.

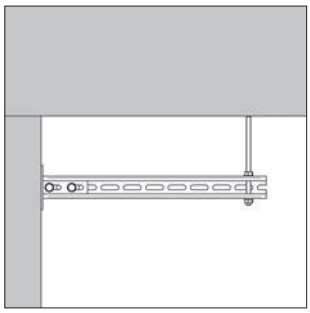
Technical data:
Material type: rubber EPDM
Material color: black
Temperature resistance: - 35 °C up to + 100 °C

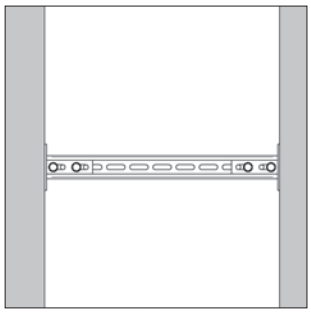
Identification	Length [m]	Dimension width x thickness [mm]	Weight [kg/m]	Packing [m]	Part-No.
SIGNUM insulation rubber LP50, self-adhesive	10	25 x 3	0,119	10	72102032

SIGNUM holder LP50 set



SIGNUM holder LP50 set


One-sided wall connection


Wall-to-wall connection

Specification:

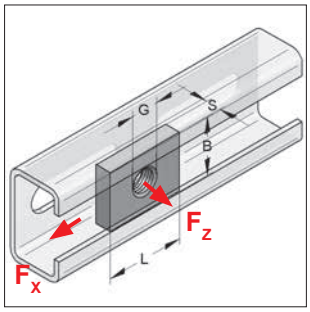
Profile rail type:	SIGNUM LP50
Scope of delivery	Completely pre-assembled with 2-hole threaded plate M10, M10 hexagon head screws and washers.

Technical data:

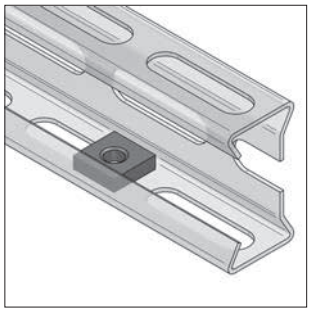
Material:	steel
Material type:	S235JR
Surface:	galvanized

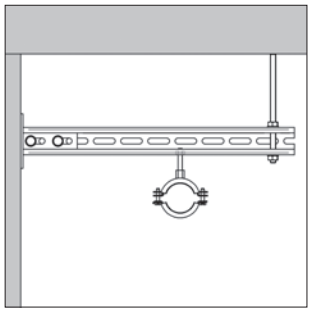
Identification	Plate L x W [mm]	tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SIGNUM holder LP50 set	100 x 40	20	3,0	0,312	25	0812037

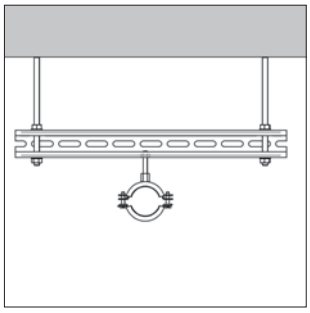
Threaded square plate



Threaded square plate


Threaded square plate used with SIGNUM LP50


Wall connection on one side with SIGNUM LP50


Threaded bar suspension with SIGNUM LP50

Specification:

Application area:	For additional fastenings (e.g. pipe clamps) to the profile.

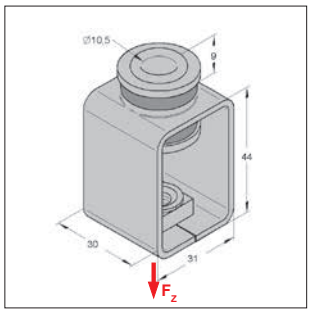
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

Identification	Dimension L x W x T [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

Sound absorption element DHL

Ventilation pipe clamp with sound absorption element DHL



Sound absorption element DHL

SCHALL-SCHUTZ DIN 4109

Specification:

Connection:	for M8, M10
Sound insulation:	according to DIN 4109

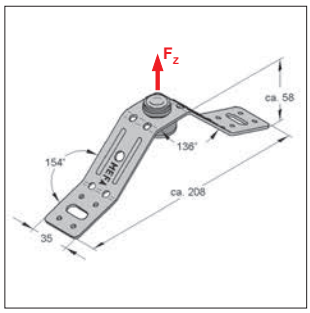
Technical data:

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

Identification	Thread	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Sound absorption element DHL	**M8**	1,0	0,089	50	0783301
Sound absorption element DHL	**M10**	1,0	0,095	50	0783302

Ducting strap with sound absorption

Ducting strap with sound absorption with ventilation pipe



Ducting strap with sound absorption

SCHALL-SCHUTZ DIN 4109

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]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Ducting strap with sound absorption	35 x 2,0	0,9	0,145	50	9998349

Wire rope L-Fix thread

Wire rope L-Fix thread
set incl. wire rope and lock

Specification:
for fixing in Drop-in 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
Surface wire rope: galvanized
Material lock: aluminium

Identification	Thread	Wire-Ø [mm]	Length Thread [mm]	Length* [m]	Tensile load [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
Surface wire rope: galvanized
Material lock: aluminium

Identification	Wire-Ø [mm]	Length [m]	Tensile load [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 toggle

Wire rope L-Fix toggle
set incl. wire rope and lock

Specification:
for fixing in trapeze sheets

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
Surface wire rope: galvanized
Material lock: aluminium

Identification	Wire-Ø	Length*	Tensile load	Drill hole-Ø	Weight	Packing	Part-No.
	[mm]	[m]	[kN]	[mm]	[kg/pc.]	[pcs.]	
L-Fix toggle	1,5	3	0,32	6	0,042	10	05985759
L-Fix toggle	1,5	5	0,32	6	0,062	10	05985758

Wire rope L-Fix trapeze hook

Wire rope L-Fix trapeze hook
set incl. wire rope and lock

Specification:
For hooking into the side of trapezoidal sheets. Due to the double bent hooks, this is secured in the trapezoidal sheet against slipping out.

Scope of supply: Set incl. wire rope trapeze hook and lock

Remark: Loading data with safety factor 5:1

* other wire rope lengths on demand

Technical data:
Material wire rope: steel
Surface wire rope: galvanized
Material lock: aluminium

Identification	Wire-Ø	Hook-Ø	Length*	Tensile load	Weight	Packing	Part-No.
	[mm]	[mm]	[m]	[kN]	[kg/pc.]	[pcs.]	
L-Fix trapeze hook	2,5	5	3	0,82	0,088	10	05985784

Remark:
Wire rope L-Fix only for static loads.
Do not use for lifting equipment!

Wire rope L-Fix connector axial

Wire rope L-Fix connector axial

With Stex GP

Specification:
Continuously adjustable M8 connector for thread or through holes such as: Mounting rails with Stex GP, threaded and toothed plates, duct holder or device connections.

Ideal in combination with L-Fix thread this results in an "adjustable threaded rod".

Technical data:
Material wire rope: steel
Surface: galvanized

* only for 2,5 mm rope / for 1,5 mm rope = 0,32kN

Identification	Wire-Ø	Thread	Thread length	Tensile load	Weight	Packing	Part-No.
	[mm]		[mm]	[kN]	[kg/pc.]	[pcs.]	
L-Fix connector axial	1,5 - 2,5	M8	20	0,82*	0,026	10	05985785

Wire rope L-Fix connector tangential

Wire rope L-Fix connector tangential

with Omnia MB

Specification:
For fastening in products with M8 connection such as M8 drop-in anchors, pipe clamps with step thread.

Compared to the connector with axial rope guide enables the connector tangential also then a variable height adjustment, when the rope cannot be passed "through" the product.

Technical data:
Material wire rope: steel
Surface: galvanized

* only for 2,5 mm rope / for 1,5 mm rope = 0,32kN

Identification	Wire-Ø	Thread	Thread length	Tensile load	Weight	Packing	Part-No.
	[mm]		[mm]	[kN]	[kg/pc.]	[pcs.]	
L-Fix connector tangential	1,5 - 2,5	M8	20	0,82*	0,039	10	05985786

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	Tensile load	Weight	Packing	Part-No.
	[kN]	[kg/pc.]	[pcs.]	
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	Length	Tensile load	Weight	Packing	Part-No.
	[mm]	[m]	[kN]	[kg/roll]	[pc.]	
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

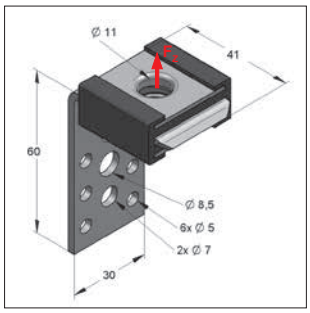
Specification:
for easy separation of steel galvanized wire ropes or stainless steel up to Ø 3 mm

- no splitting of wire ends when cutting
- minimal effort due to large leverage
- ergonomic handle and opening spring for easy work
- look hook for safe transport

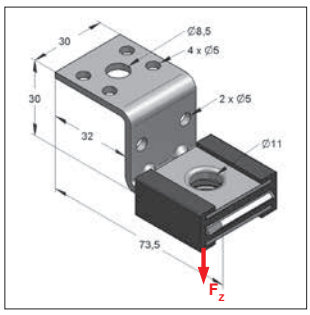
Technical data:
Material: steel
Surface: the handle is rubber lined

Identification	Weight	Packing	Part-No.
	[kg/pc.]	[pc.]	
L-Fix cutter	0,275	1	05985767

Duct holder soundproofed



Duct holder L



Duct holder Z

SCHALL-SCHUTZ DIN 4109

Specification:

Application area:	Mounting of ventilation ducts
Connection:	Threaded rod M8, M10
Sound insulation:	According to DIN 4109

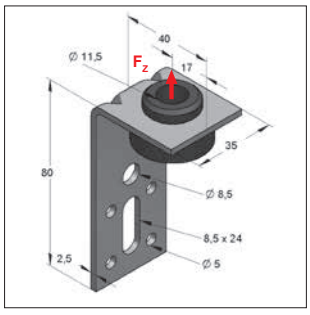
Technical data:

Material:	steel
Material type:	DC01
Surface:	galvanized
Sound insulation:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C

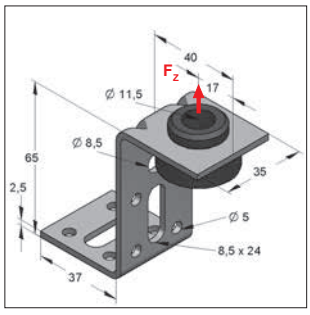
Duct holder L

Identification	Length [mm]	Height [mm]	Sound absorption elements	Material [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Duct holder L	**41,0**	**60,0**	stuck	30 x 2,5	0,7	0,079	50	05900200
Duct holder Z								
Duct holder Z	**73,5**	**30,0**	stuck	30 x 2,5	0,7	0,081	50	05900280

Duct holder plugged, soundproofed



L-duct holder



Z-duct holder

SCHALL-SCHUTZ DIN 4109

Specification:

Application area:	Mounting of ventilation ducts
Connection:	Threaded rod M8, M10
Sound insulation:	According to DIN 4109

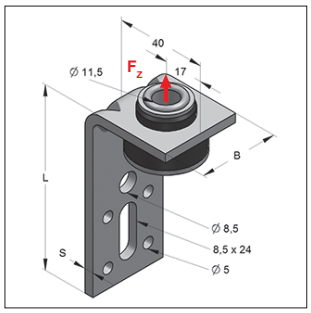
Technical data:

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

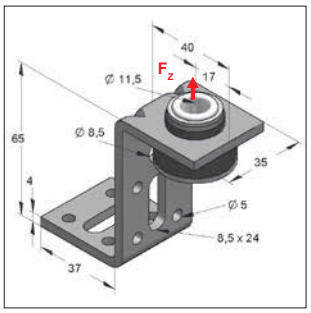
L-duct holder

Identification	Length [mm]	Material [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SD-LL	**80**	35 x 2,5	0,3	0,084	50	0590022
Z-duct holder						
SD-ZL	**65**	35 x 2,5	0,3	0,093	50	0590027

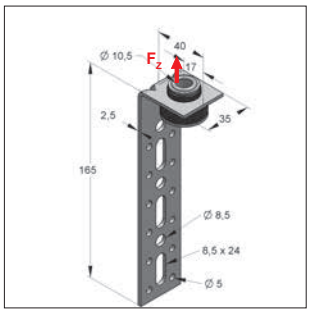
Duct holder riveted, soundproofed



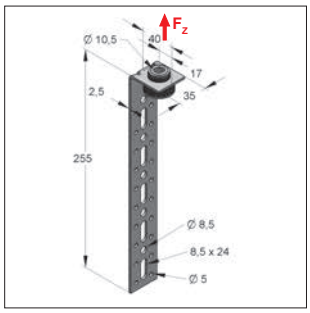
duct holder SD-LLN



duct holder SD-ZSN



duct holder SD-LLN 165



duct holder SD-LLN 255

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

SCHALL-SCHUTZ DIN 4109

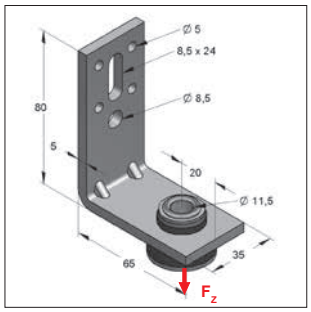
L-duct holder

Identification	Length L [mm]	Sound absorption element	Material B x S [mm]	Load F_z [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	0,140	50	9998373
SD-LLN	**255**	riveted	35 x 2,5	0,9	0,188	50	9998372

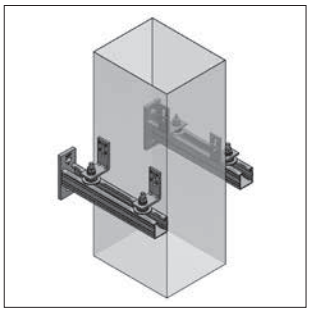
Z-duct holder

SD-ZSN	**65**	riveted	35 x 4,0	1,8	0,150	50	9998370

Duct holder for riser



L-duct holder for riser



Ventilation duct with duct holder

SCHALL-SCHUTZ DIN 4109

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

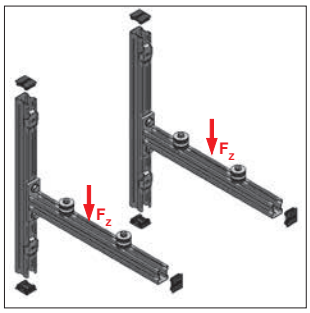
Technical data:

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

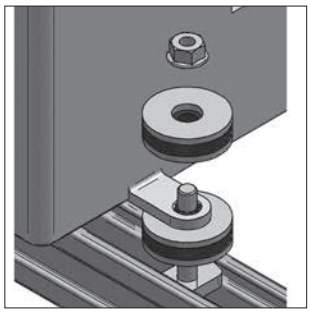
L-duct holder for riser

Identification	Length L [mm]	Sound absorption element	Material B x S [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
SD-LSK	**80**	riveted	35 x 5,0	0,8	0,191	50	9998376

Console-set, soundproofed



Console-set soundproofed


Insulation element, mounted

SCHALL-SCHUTZ DIN 4109

Specification:

Application area:	Mounting of air air conditioning units
Sound insulation:	According to DIN 4109

Scope of delivery:

Stex consoles 35/42/1,5	2 pieces
sound absorption elements**	4 pieces
rail sections each 525 mm profile 35/42	2 pieces
profile holders	4 pieces
protecting caps 35/42	6 pieces
threaded plates	4 pieces
washers DIN EN ISO 7089	4 pieces
hexagon screws DIN EN ISO 4017	4 pieces

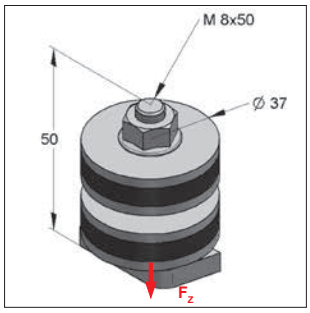
Technical data:

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

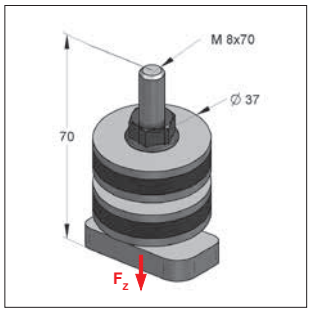
Remark: * allowable load per cantilever. Differing load situation see on page 2/7
** Console-set without insulating elements available on demand.

Identification	Length [mm]	Load* F_z [kN]	Total load [kN]	Stex	Weight [kg/set]	Packing [set]	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

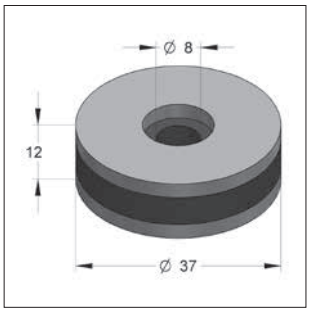
Sound absorption element



Sound absorption element 35



Sound absorption element 45



Insulation element, single

SCHALL-SCHUTZ DIN 4109

Specification:

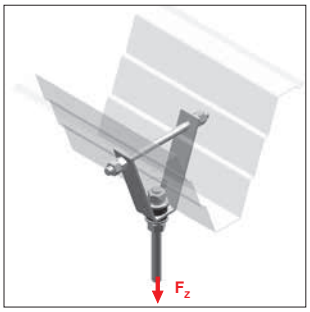
Application area:	Sound absorption element for direct mounting on consoles C for noise decoupled mounting
Load F_z:	1,3 kN (at deformation 1 mm)
Sound insulation:	According to DIN 4109

Technical data:

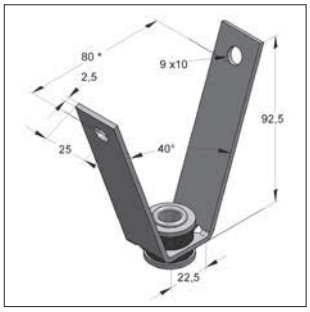
Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation:	SBR lining
Shore hardness (DIN 53505):	60 ± 5° Shore
Temperature resistance:	- 35 °C up to + 100 °C

Identification	For C-Profile	Hammer head	Weight [kg/pc.]	Packing [pc.]	Part-No.
Sound absorption element 35	35/21, Stex 35	M8x50 - 38x17	0,152	1	0783395
Sound absorption element 45	45/26, 45/45, 45/60, 45/75	M8x70 - 40x22	0,169	1	0783396
Insulation element, single			0,052	1	07833908

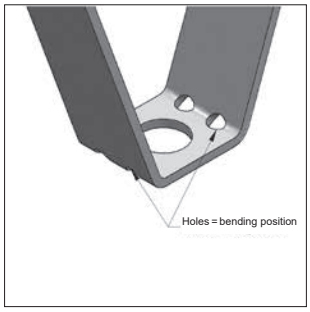
Trapeze hanger, soundproofed



Trapeze hanger
(mounting example)



Trapeze hanger
soundproofed



can bend open
up to 120 mm approx.

SCHALL-SCHUTZ DIN 4109

Specification:

Connection:	Thread M8, M10
Sound insulation:	According to DIN 4109

Remark: Trapeze hanger without soundproofing see chapter 5.
Punching pliers for trapeze on demand.

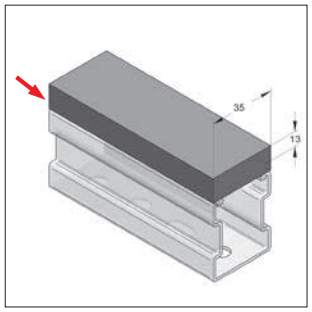
Technical data:

Material:	steel
Material type:	S235JR/DD11
Surface:	galvanized
Sound insulation:	SBR lining
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm

Identification	Material	Load F_z	Weight	Packing	Part-No.
	[mm]	[kN]	[kg/pc.]	[pcs.]	
Trapeze hanger LL A	25 x 2,5	0,8	0,123	100	0783840

Insulating coat LK, self-adhesive

Insulating coat LK



lateral insulation

Specification:

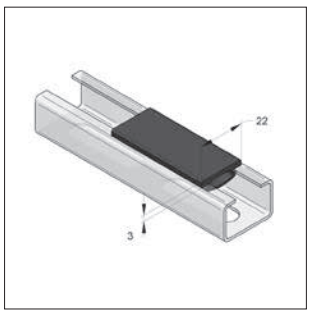
Application area:	For lateral insulation of synthetic rubber under ventilation duct Sound insulation for suspensions of ventilation ducts
Building material class according to DIN 4102:	B2
ÖNORM 8 3800/T1:	B1

Technical data:

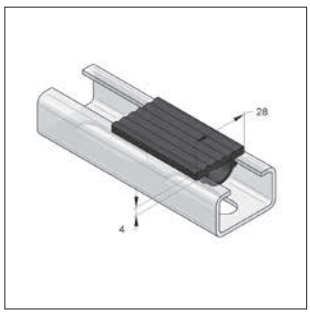
Material:	closed-cell, synthetic rubber
Temperature resistance:	- 40 °C up to + 105 °C
Insulation thickness:	13 mm
Thermal conductivity according to 52613:	0,040 W/mk

Identification	Length	Dimension width x thickness	Weight	Packing	Part-No.
	[m]	[m]	[kg/bag]	[roll]	
Insulating coat LK	**7**	**25 x 13**	0,130	1	7250025
Insulating coat LK	**7**	**35 x 13**	0,203	1	7250035
Insulating coat LK	**7**	**45 x 13**	0,240	1	7250045

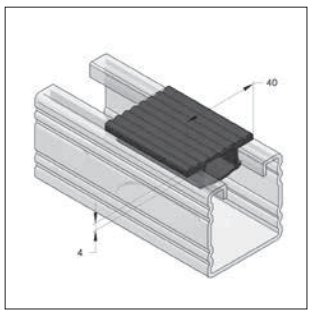
C-profile lining



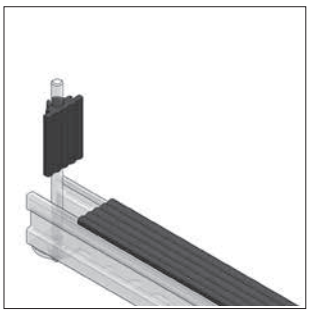
C-profile lining 27/18



C-profile lining 35



C-profile lining 45


Lining for threaded rod

Specification:
Sound insulation: According to DIN 4109

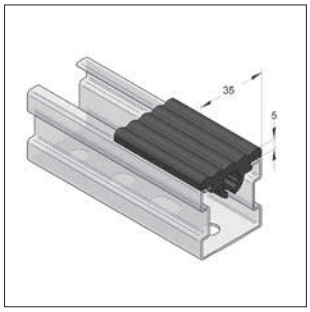
Technical data:
Material: TPE
Temperature resistance: - 35 °C up to + 100 °C

SCHALL-SCHUTZ DIN 4109

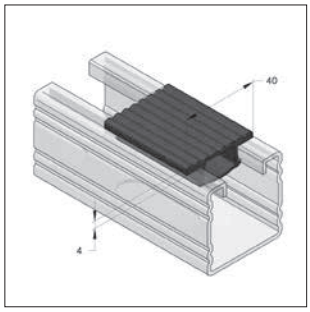
Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Identification	Length [m]	Suitable for threaded rod	Allocation for profile rails	Weight [kg/m]	Packing [m]	Part-No.
C-profile lining KG 27/18	20	M8	27/18	0,099	20	710001901
C-profile lining KG 35	20	M8	35/21	0,165	20	710003502
C-profile lining KG 45	10	M10	45er system	0,224	10	710004502
C-profile lining 35, roll	20	M8	Stex 35 system	0,328	20	1272019

C-profile lining - section



C-profile lining 35



C-profile lining 45

SCHALL-SCHUTZ DIN 4109

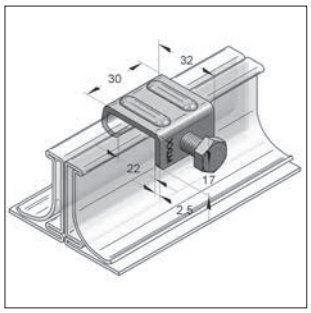
Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

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 color: black
Temperature-resistance: - 35 °C up to + 100 °C

Identification	Length [m]	Suitable for threaded rod	Allocation for profile rails	Weight [kg/pc.]	Packing [pc.]	Part-No.
C-profile lining 35, section 50 mm	0,05	M8	Stex 35 system	0,016	50	1272020
C-profile lining 45, section 100 mm	0,10	M10	Stex 45 system	0,022	50	710004502/0100

Duct clamp



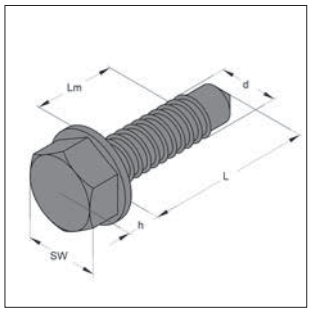
Duct clamp

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



Drilling screw

Technical data:

Material:	steel
Surface:	galvanized

Identification	Dimension d x L [mm]	h [mm]	Wrench size SW	Clamp length Lm [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Form K	**4,2 x 13**	4	7	4,3	0,0018	500	3700413
Form K	**4,2 x 16**	4	7	7,3	0,0019	500	3700416
Form K	**4,2 x 19**	4	7	10,3	0,0020	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]	Weight [kg/roll]	Packing [rolls]	Part-No.
Duct sealing tape 9x4	**9**	**4**	20	0,0570	5	725110904
Duct sealing tape 12x4	**12**	**4**	20	0,0747	5	725111204
Duct sealing tape 15x4	**15**	**4**	20	0,0932	5	725111504
Duct sealing tape 12x6	**12**	**6**	10		5	725111206

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:

Color:	silver gray
Processing temperature:	+ 5 °C up to + 50 °C
Temperature resistance:	- 20 °C up to + 80 °C
Shelf life, unopened: at an stock temperature:	approx. 18 months + 5 °C up to + 25 °C

Identification	Capacity [ml]	Packaging	Weight [kg/pcs.]	Packing [pcs.]	Part-No.
Duct sealing compound	310	cartridge	0,555	20	725100310

Cold shrink tape

Cold shrink tape

Specification:

Application area: sealing of ventilation ducts and folded spiral-seam pipe

Color: 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]	Weight [kg/roll]	Packing [rolls]	Part-No.
Cold shrink tape	**50**	15	0,763	1	725120050
Cold shrink tape	**75**	15	1,14	1	725120070
Cold shrink tape	**100**	15	1,47	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	7,3	7,8	8,4	9,1	9,8	10,5	12,9	14,1	15,4	16,9	18,5	20,2	25,0	27,5	30,3	34,0	37,7	41,4	50,8	56,1	62,3	69,5	224
		6,2	7,7	8,2	8,8	9,4	10,2	10,9	13,4	14,5	15,8	17,3	19,0	20,6	25,5	27,9	30,7	34,5	38,2	41,9	51,3	56,7	62,8	70,1	250
			8,1	8,6	9,2	9,9	10,6	11,3	13,8	15,0	16,3	17,8	19,5	21,1	26,1	28,5	31,3	35,0	38,7	42,5	51,9	57,3	63,5	70,7	280
				9,1	9,7	10,4	11,1	11,8	14,4	15,6	16,9	18,4	20,0	21,7	26,7	29,2	31,9	35,7	39,4	43,1	52,6	58,0	64,2	71,4	315
					10,3	11,0	11,7	12,4	15,1	16,2	17,6	19,0	20,7	22,3	27,5	29,9	32,7	36,4	40,1	43,9	53,5	58,8	65,0	72,2	355
						11,6	12,3	13,1	15,8	17,0	18,3	19,8	21,4	23,1	28,3	30,7	33,5	37,3	41,0	44,7	54,4	59,8	65,9	73,2	400
							13,1	13,8	16,6	17,8	19,1	20,6	22,3	23,9	29,2	31,7	34,5	38,2	41,9	45,6	55,4	60,8	67,0	74,2	450
								14,5	17,5	18,6	19,9	21,4	23,1	24,7	30,2	32,6	35,4	39,1	42,8	46,6	56,5	61,8	68,0	75,2	500
									18,5	19,6	20,9	22,4	24,1	25,7	31,3	33,7	36,5	40,2	44,0	47,7	57,7	63,1	69,2	76,4	560
										20,8	22,1	23,6	25,2	26,9	32,6	35,0	37,8	41,5	45,3	49,0	59,1	64,5	70,7	77,9	630
											23,4	24,9	26,5	28,2	34,1	36,5	39,3	43,0	46,8	50,5	60,8	66,1	72,3	79,5	710
												26,4	28,0	29,7	35,8	38,2	41,0	44,7	48,4	52,2	62,6	68,0	74,2	81,4	800
													29,7	31,3	37,6	40,1	42,8	46,6	50,3	54,0	64,7	70,1	76,2	83,5	900
														33,0	39,5	41,9	44,7	48,4	52,2	55,9	66,8	72,1	78,3	85,5	1000
															41,7	44,1	46,9	50,7	54,4	58,1	69,2	74,6	80,8	88,0	1120
																46,6	49,4	53,1	56,8	60,5	71,9	77,3	83,5	90,7	1250
																	52,2	55,9	59,6	63,3	75,0	80,4	86,5	93,8	1400
																		59,6	63,3	67,1	79,1	84,5	90,7	97,9	1600
																			67,1	70,8	83,2	88,6	94,8	102,0	1800
																				74,5	87,4	92,7	98,9	106,1	2000
																					92,3	97,7	103,9	111,1	2240
																						103,0	109,2	116,4	2500
																							115,4	122,6	2800
																								129,8	3150

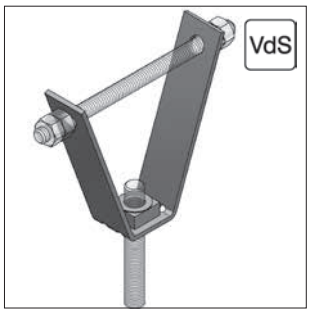
MEFA mounting systems for Sprinkler

Approved products for water extinguishing systems

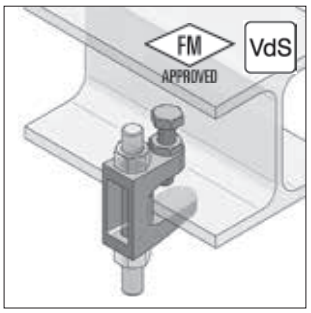
Sprinkler pipe loop SLH
Page 12/3

Sprinkler pipe clamp HDC
Page 12/4

U-bolt
See chapter 1

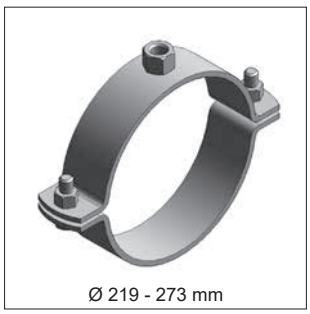


Trapeze hanger
See chapter 5



Beam clamps
See chapter 5

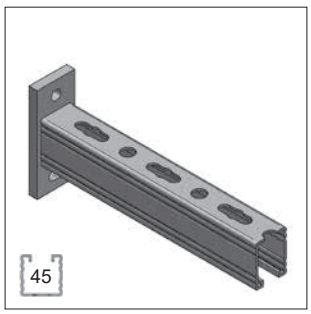
Pipe supports and components acc. to VdS CEA-guidelines for sprinkler systems VdS CEA 4001 "planning and installation"



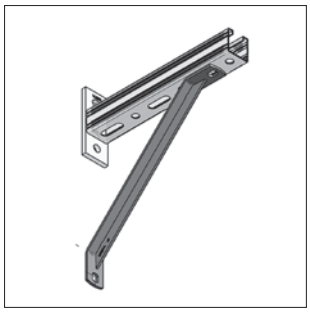
Sprinkler pipe clamp "SP"
Page 12/6

U-bolt
See chapter 1

Consoles with brace
See chapter 2



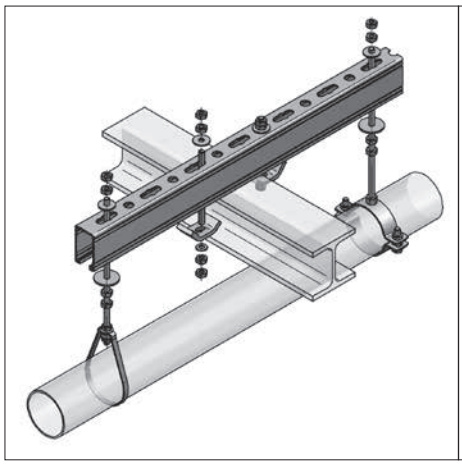
Consoles
Page 12/6



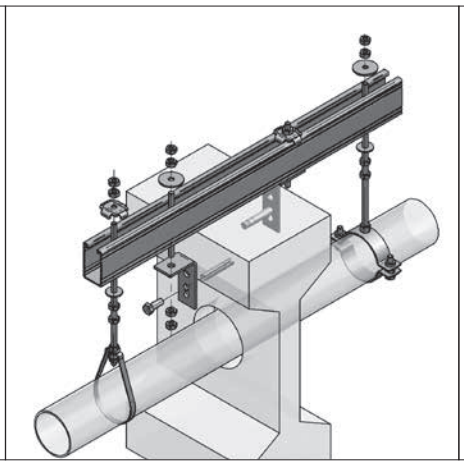
Brace 45° T-profile
See chapter 2

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

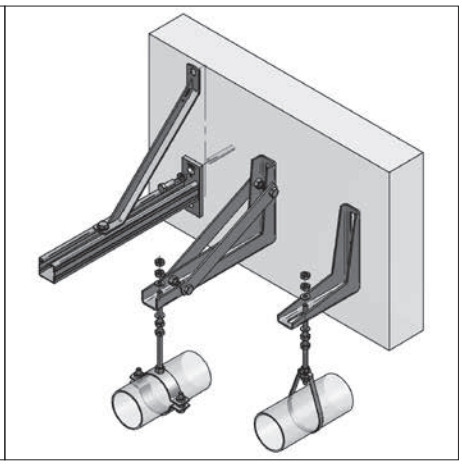
Assembly examples



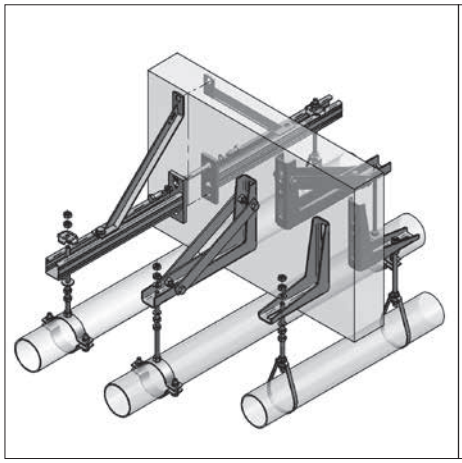
With steel beam



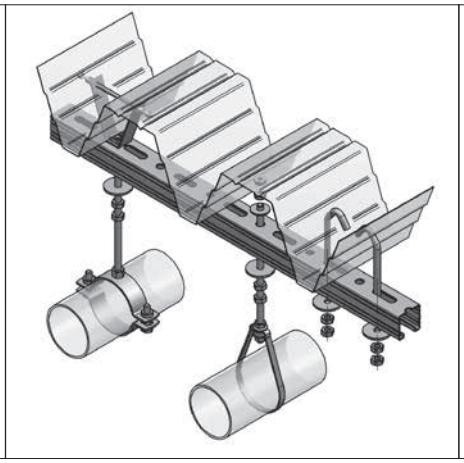
With reinforced concrete beam



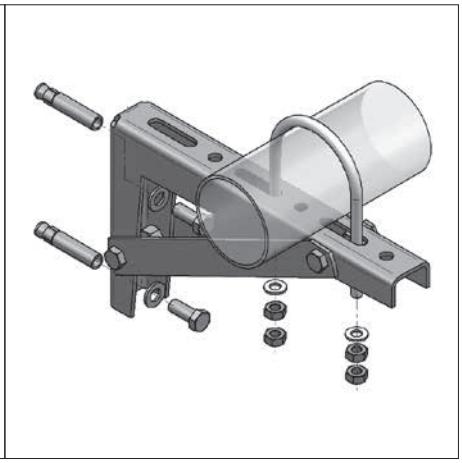
One-way projecting



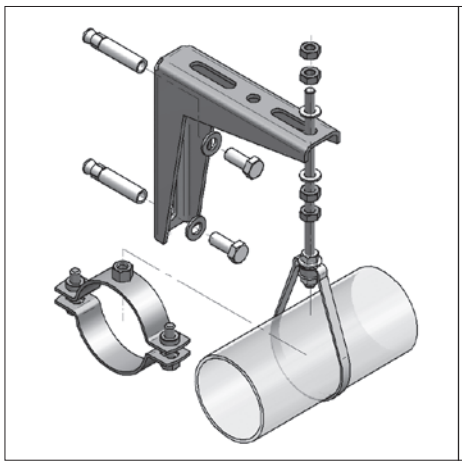
Two-way projecting



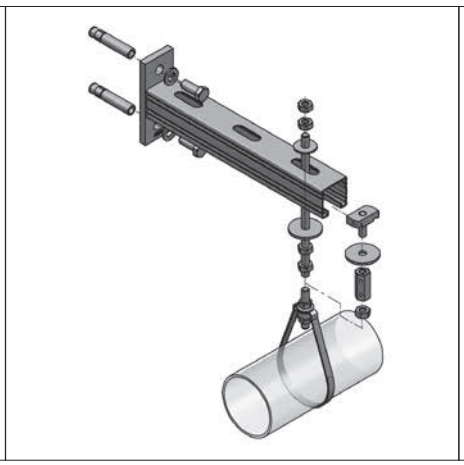
On trapeze sheet



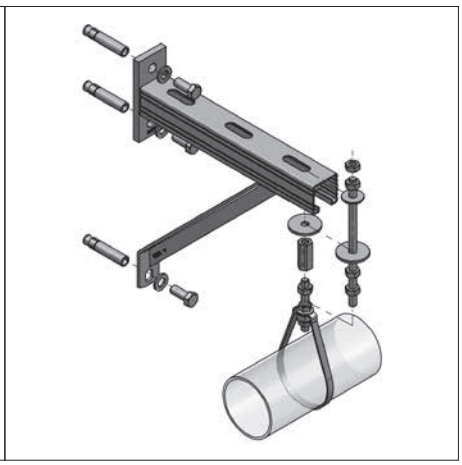
U-bolt on console



Universal console

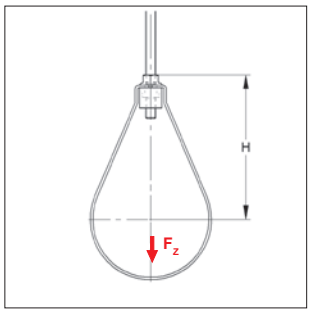


Console C-Profile



Console C-Profile with brace

Sprinkler pipe loop SLH



FM APPROVED from M10

VdS G416006

Sprinkler pipe loop SLH

Specification:

Application area:
- for stationary fire-protection in fixed water-extinguishing-systems
- sprinkler plant engineering
- deluge installation
- CO_2 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 / VdS specifications

Technical data:

Material: steel

Material type: DX51D-Z275

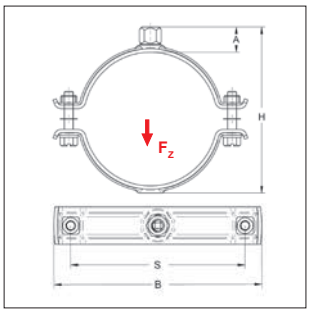
Surface: pre-galvanized

Construction according to FM / VdS guidelines

Identification	Pipe [Inch]	Classification according to	Load F_z [kN]	Connection thread	Pipe-OD	H [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Sprinkler pipe loop SLH	**1**	VdS	2,0	M8	33,7	61	0,064	100	47072033
Sprinkler pipe loop SLH	**1 1/4**	VdS	2,0	M8	42,4	66	0,066	100	47072041
Sprinkler pipe loop SLH	**1 1/2**	VdS	2,0	M8	48,3	71	0,069	50	47072047
Sprinkler pipe loop SLH	**2**	VdS	2,0	M8	60,3	80	0,074	50	47072059
Sprinkler pipe loop SLH	**1**	FM / VdS	2,0	M10	33,7	63	0,077	100	47072034
Sprinkler pipe loop SLH	**1 1/4**	FM / VdS	2,0	M10	42,4	68	0,079	100	47072042
Sprinkler pipe loop SLH	**1 1/2**	FM / VdS	2,0	M10	48,3	73	0,082	50	47072048
Sprinkler pipe loop SLH	**2**	FM / VdS	2,0	M10	60,3	82	0,087	50	47072060
Sprinkler pipe loop SLH	**2 1/2**	FM / VdS	3,5	M10	76,1	99	0,147	50	47072076
Sprinkler pipe loop SLH	**3**	FM / VdS	3,5	M10	88,9	114	0,162	25	47072089
Sprinkler pipe loop SLH	**4**	FM / VdS	3,5	M10	114,3	144	0,191	25	47072114
Sprinkler pipe loop SLH	**5**	FM / VdS	5,0	M12	139,7	161	0,247	20	47073140
Sprinkler pipe loop SLH	**6**	FM / VdS	5,0	M12	168,3	189	0,278	20	47073168
Sprinkler pipe loop SLH	**8**	FM / VdS	8,5	M16	219,1	241	0,608	10	47073219

ⓘ Single flange nuts see page 5/15

Sprinkler pipe clamp HDC



Sprinkler pipe clamp HDC

Specification:

Application area:	For Sprinkler systems according to VdS and FM guidelines
Brand:	Eurofix Jiangmen
Version:	Pipe clamp with connection thread according to sprinkler guidelines. Locking screws are secured by a plastic washer.

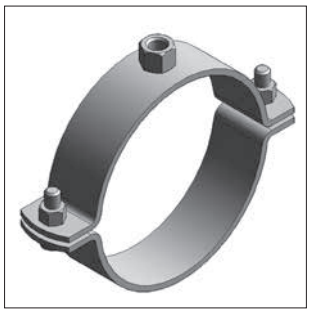
Technical data:

Material:	steel
Surface:	galvanized

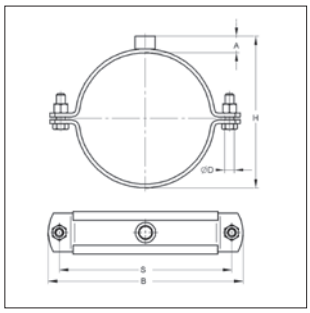
*** Correspond guidelines for Sprinkler systems "VdS CEA 4001 planning and installation"**

Clamping range [mm]	[Inch]	Classification according to	Material [mm]	Closure-screws	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connection: Thread M8												
20-24	1/2"	VdS	30x2,5	M8	2,5	42	15	66	44	0,141	50	47300020
25-30	3/4"	VdS	30x2,5	M8	2,5	50	17	71	50	0,148	50	47300025
31-35	1"	VdS	30x2,5	M8	2,5	55	16	77	55	0,155	50	47300031
40-45	1 1/4"	VdS	30x2,5	M8	2,5	65	16	88	66	0,174	50	47300040
48-53	1 1/2"	VdS	30x2,5	M8	2,5	73	16	96	74	0,192	50	47300048
60-65	2"	VdS	30x2,5	M8	2,5	85	16	108	87	0,217	25	47300061
Connection: Thread M10												
20-24	1/2"	VdS	30x2,5	M8	2,5	44	17	66	44	0,141	50	47300022
25-30	3/4"	VdS/FM	30x2,5	M8	2,5	52	19	71	50	0,148	50	47300027
31-35	1"	VdS/FM	30x2,5	M8	2,5	57	18	77	55	0,155	50	47300034
40-45	1 1/4"	VdS/FM	30x2,5	M8	2,5	67	18	88	66	0,174	50	47300043
48-53	1 1/2"	VdS/FM	30x2,5	M8	2,5	75	18	96	74	0,192	50	47300050
60-65	2"	VdS/FM	30x2,5	M8	2,5	87	18	108	87	0,217	25	47300060
76-81	2 1/2"	VdS/FM	30x3,0	M8	3,5	105	20	135	108	0,292	25	47300076
88-93	3"	VdS/FM	30x3,0	M8	3,5	117	20	147	120	0,319	25	47300088
110-116	4"	FM*	30x3,0	M8	3,5	140	20	171	144	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"



Load **according to VdS**

Nominal width of pipe	**Cross section**	Load
≤ DN 50	30 mm² (M8)	2,0 kN
> DN 50 ≤ DN 100	50 mm² (M10)	3,5 kN
> DN 100 ≤ DN 150	70 mm² (M12)	5,0 kN
> DN 150 ≤ DN 200	125 mm² (M16)	8,5 kN
> DN 200 ≤ DN 250	150 mm² (M20)	10,0 kN
> DN 250 ≤ DN 300	180 mm² (M20)	12,5 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

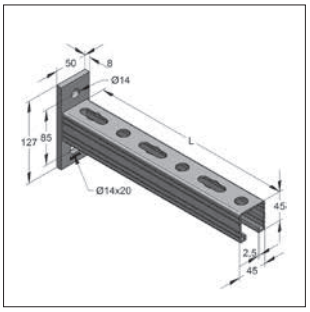
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

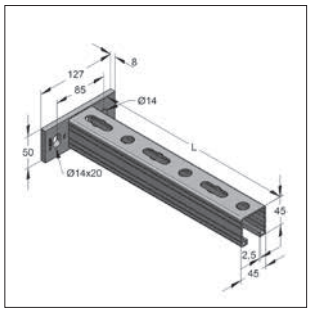
Meeting VdS guidelines for Sprinkler systems VdS CEA 4001, planning and installation

Connection: Thread M16	**DN > 150 ≤ 200**										
Identification	Clamping-range		Material	Closure-screw	H	A	B_{max}	S_{max}	Weight	Packing	Part-No
	[mm]	[Inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
Type "SP"	219	8	50x5,0	M12	249	25	297	268	1,751	1	0477219
Connection: Thread M20	**DN > 200 ≤ 300**										
Type "SP"	273	10	50x5,0	M16	300	22	351	322	2,254	1	0478273
Type "SP"	324	12	50x5,0	M16	351	22	404	375	2,459	1	0478324

Console C-profile 45/45/2,5 mm



Sprinkler- Console 45/45//2,5 vertical



Sprinkler- Console 45/45//2,5 horizontal

Technical data: galvanized

Material type plate:	S355J2, fy = 355 N/mm²	dimensions plate:	127 x 50 x 8,0 mm
Material type profile rails:	S235JR, fy = 235 N/mm²	dimensions profile rails:	45 x 45 x 2,5 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient	1,54		

* on request

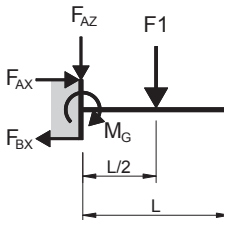
Console 45/45//2,5 vertical

Identification	Length L [mm]	F1 [kN]	Load F2 [kN]	q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No
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	2,23	5	9992309
Console 45/45/2,5	735	1,42	0,68	1,93	2,54	5	9992310

Console 45/45//2,5 horizontal

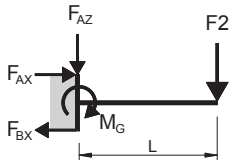
Console 45/45/2,5	210*	3,68	1,84	17,52	0,99	1	9992218
Console 45/45/2,5	315	2,45	1,23	7,78	1,30	15	9992219
Console 45/45/2,5	420	1,84	0,92	4,38	1,61	10	9992220
Console 45/45/2,5	525*	1,48	0,74	2,80	1,92	10	9992221

Loading condition F1



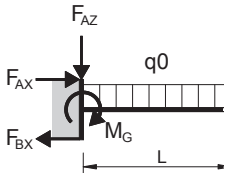
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition F2



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

Loading condition q0

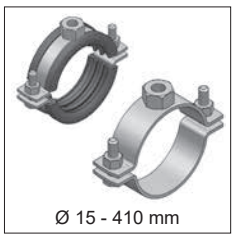


$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$

Notice:
All load capacities excessive refer to static loads

Stainless steel

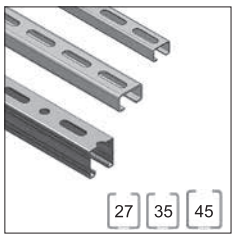
Pipe clamp Trabant Inox
Page 13/2



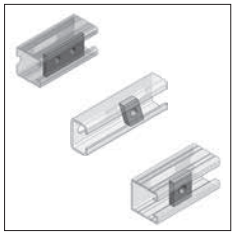
Pipe clamp stainless steel
Page 13/4

Ventilation pipe clamp
Page 13/8

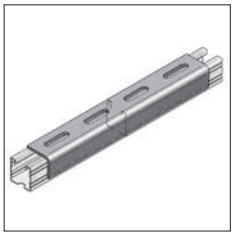
U-bolt
Page 13/9



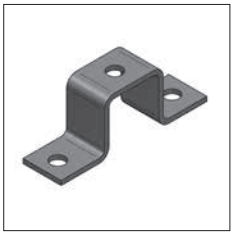
Profile rails
Page 13/10



Threaded plate
Page 13/11

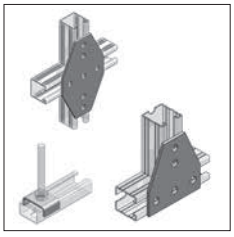


Connector 45/45
Page 13/13

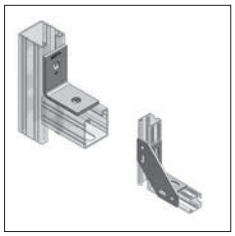


Head profile
Page 13/14

Perforated plate
Page 13/14



Profile holder, Lugs
Page 13/16



Angle 40/5
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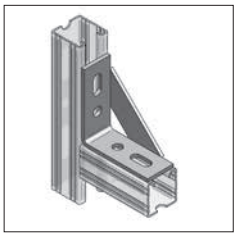
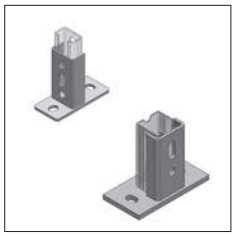


Knot triangle
Page 13/18



Holder
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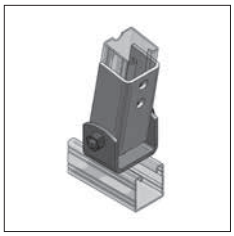
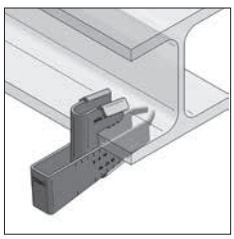
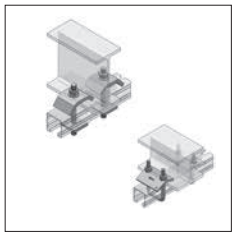


Joint holder
Page 13/19

Consoles and braces
Page 13/20 f.



Beam clamp
Page 13/22



Clamping claws
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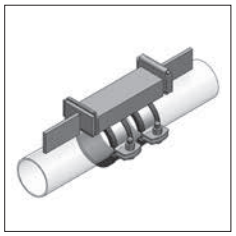

Fixpoint
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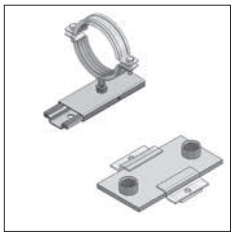
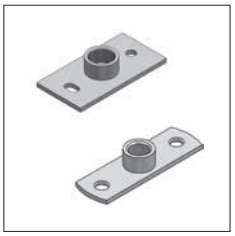
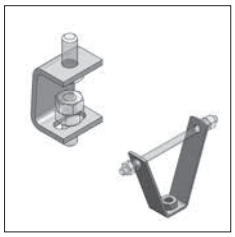


Sliding element
Page 13/25



Base plates
Page 13/27



Suspended bracket
Trapeze hanger
Page 13/28

Threaded rods and pins
Page 13/29

Threaded couplings,
reducers
Page 13/30

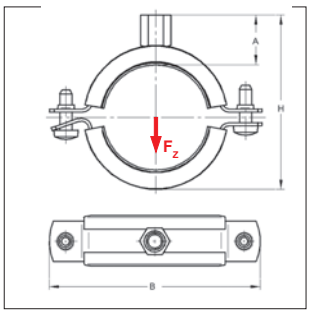
Screws, nuts and washers
Page 13/31 ff.

Duct holder
Page 13/33

ⓘ Stainless steel anchors see chapter 07

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

Pipe clamp Trabant Inox, lined



SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Pipe clamp Trabant Inox, lined

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:	stainless steel
Material type:	V4A
Sound insulation lining:	rubber TPE
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	4,5 mm

Connection: Thread M8/M10 — **With sound insulation lining rubber**

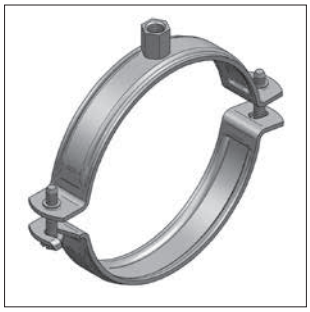
Clamping range [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	H (min-max) [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
12 - 15		20x1,0	M6	0,40	40-43	22,0	59	0,051	100	051003015
16 - 20	3/8	20x1,0	M6	0,40	43-48	22,0	64	0,054	100	051003020
21 - 25	1/2	20x1,0	M6	0,40	48-53	22,0	69	0,059	100	051003025
26 - 30	3/4	20x1,0	M6	0,40	53-58	22,0	74	0,063	100	051003030
32 - 37	1	20x1,0	M6	0,40	60-65	22,0	81	0,068	100	051003037
42 - 46	1 1/4	20x1,5	M6	0,60	71-75	22,5	92	0,096	50	051003046
48 - 52	1 1/2	20x1,5	M6	0,60	76-81	22,5	98	0,103	50	051003052
54 - 58		20x1,5	M6	0,60	82-87	22,5	104	0,110	50	051003058
60 - 65	2	20x1,5	M6	0,60	88-94	22,5	111	0,117	50	051003065
70 - 76		25x1,5	M6	0,70	99-105	22,5	121	0,151	50	051003076
85 - 90	3	25x2,0	M6	1,00	116-121	23,5	138	0,206	50	051003090

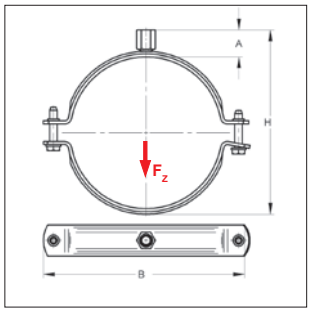
Connection: Thread M10/M12 — **With sound insulation lining rubber**

98 - 102		25x2,5	M6	2,50	132-136	27,0	154	0,264	50	051003102
108 - 114	4	25x2,5	M6	2,50	142-148	27,0	166	0,289	50	051003114
132 - 136		25x2,5	M6	2,50	168-172	27,0	188	0,347	25	051003136
137 - 141	5	25x2,5	M6	2,50	173-177	27,0	193	0,356	25	051003141
159 - 163		25x2,5	M6	2,50	195-199	27,0	215	0,401	25	051003163
164 - 168	6	25x2,5	M6	2,50	200-204	27,0	220	0,416	25	051003168

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

Pipe clamp Trabant Inox, unlined





Pipe clamp Trabant Inox, unlined

Specification:

Closure:	Snap-in closure
Construction method:	Two-part
OD:	21 up to 171 mm
Connection:	M8/M10, M10/M12

Technical data:

Material:	stainless steel
Material type:	V4A

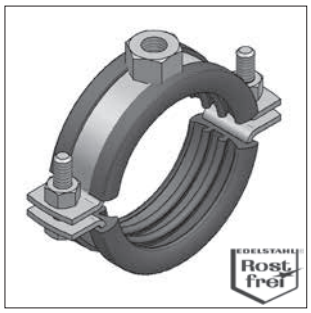
Connection: Thread M8/M10

Clamping range [mm]		Material [mm]	Closure-screw	Load F_z [kN]	H (min-max) [mm]	A [mm]	B [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
21 - 24	1/2	20x1,0	M6	0,40	40-43	17,5	59	0,045	100	051005024
25 - 29	3/4	20x1,0	M6	0,40	44-48	17,5	64	0,047	100	051005029
30 - 34	1	20x1,0	M6	0,40	49-53	17,5	69	0,050	100	051005034
35 - 39		20x1,0	M6	0,40	54-58	17,5	74	0,053	100	051005039
41 - 48	1 1/4	20x1,0	M6	0,40	60-67	17,5	81	0,055	100	051005048
51 - 55	1 1/2	20x1,5	M6	0,60	71-75	18,0	92	0,080	50	051005055
57 - 61	2	20x1,5	M6	0,60	77-81	18,0	98	0,086	50	051005061
63 - 67		20x1,5	M6	0,60	83-87	18,0	104	0,090	50	051005067
69 - 74		20x1,5	M6	0,60	89-94	18,0	111	0,095	50	051005074
76 - 85	2 1/2	25x1,5	M6	0,70	99-105	18,0	121	0,122	50	051005085
84 - 90	3	25x1,5	M6	0,70	104-110	18,0	126	0,126	50	051005090

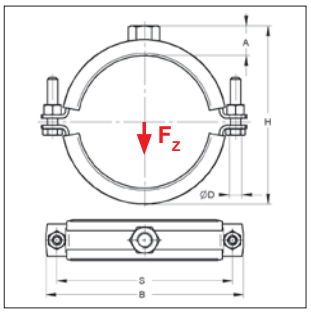
Connection: Thread M10/M12

106 - 110		25x2,5	M6	2,50	132-136	22,5	154	0,225	50	051005110
114 - 122	4	25x2,5	M6	2,50	140-148	22,5	166	0,246	50	051005122
129 - 133		25x2,5	M6	2,50	156-160	22,5	177	0,276	25	051005133
139 - 144	5	25x2,5	M6	2,50	166-171	22,5	188	0,294	25	051005144
167 - 171		25x2,5	M6	2,50	194-198	22,5	215	0,337	25	051005171

Pipe clamp stainless steel, lined



Pipe clamp stainless steel lined



SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

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:	Silicone (on request)	TPE
Temperature resistance:	-50 °C up to +250 °C	-35 °C up to +100 °C
Insulation thickness:		
Clamp OD ≤ 45 mm		3,5 mm
Clamp OD ≥ 47 mm		6,0 mm

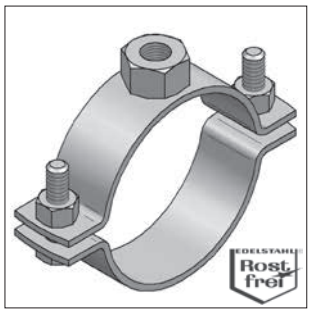
- other sizes and connection threads on request -

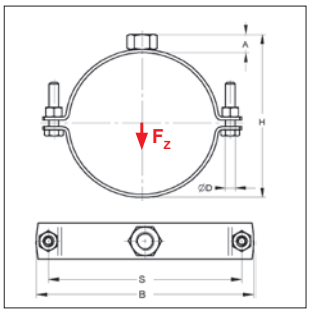
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Connection: Thread M8					**With sound insulation lining rubber**								
15 - 20	3/8	20x1,5	M6	0,75	31 - 35	11	56	43	6,5	0,060	50	0498174	0468174
21 - 25	1/2	20x1,5	M6	0,75	36 - 40	11	61	48	6,5	0,064	50	0498175	0468175
26 - 30	3/4	20x1,5	M6	0,75	41 - 45	11	66	53	6,5	0,069	50	0498176	0468176
31 - 34	1	20x1,5	M6	0,75	46 - 50	11	72	59	6,5	0,072	50	0498177	0468177
35 - 40		20x1,5	M6	0,75	51 - 56	11	78	65	6,5	0,077	50	0498178	0468178
41 - 45	1 1/4	20x1,5	M6	0,75	58 - 65	11	86	73	6,5	0,084	50	0498179	0468179
Connection: Thread M10					**With sound insulation lining rubber**								
47 - 52	1 1/2	20x2,0	M6	0,95	69 - 74	16	96	82	6,5	0,126	50	0498210	0468210
53 - 57		20x2,0	M6	0,95	75 - 79	16	101	88	6,5	0,134	50	0498211	0468211
58 - 64	2	20x2,0	M6	0,95	80 - 86	16	108	94	6,5	0,144	50	0498212	0468212
65 - 70		20x2,0	M6	0,95	87 - 92	16	114	101	6,5	0,152	50	0498213	0468213
72 - 80	2 1/2	20x2,0	M6	0,95	94 -102	16	123	110	6,5	0,162	50	0498214	0468214
82 - 90	3	20x2,0	M6	0,95	104-112	16	134	120	6,5	0,175	50	0498215	0468215
93 - 100		20x3,0	M6	0,95	115-122	16	144	130	6,5	0,189	50	0498216	0468216
102 - 107		20x3,0	M6	0,95	124-129	16	152	138	6,5	0,199	50	0498217	0468217
108 - 116	4	20x3,0	M6	0,95	130-138	16	160	147	6,5	0,210	50	0498218	0468218

Pipe clamp stainless steel, lined

Connection: Thread M12						With sound insulation lining rubber						V4A	V2A
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [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	1,75	129-134	20	171	150	9	0,368	50	0490317	0460317
108 - 116	4	25x3,0	M8	1,75	135-143	20	179	158	9	0,383	50	0490318	0460318
119 - 127		25x3,0	M8	1,75	146-154	20	190	169	9	0,408	50	0496319	0466319
128 - 132		25x3,0	M8	1,75	155-159	20	197	176	9	0,425	50	0496320	0466320
133 - 141	5	25x3,0	M8	1,75	160-168	20	205	184	9	0,438	50	0496321	0466321
142 - 149		25x3,0	M8	1,75	169-176	20	213	192	9	0,459	50	0496322	0466322
150 - 158		25x3,0	M8	1,75	177-185	20	222	201	9	0,476	50	0496323	0466323
159 - 163		25x3,0	M8	1,75	186-190	20	228	207	9	0,499	50	0496324	04663241
164 - 168	6	25x3,0	M8	1,75	191-195	20	233	212	9	0,504	50	0496325	04663242
Connection: Thread M16						**With sound insulation lining rubber**							
174 - 182		35x4,0	M10	4,00	204-212	24	265	236	11	1,015	1	0490426	0462426
192 - 200		35x4,0	M10	4,00	222-230	24	285	255	11	1,087	1	0490428	0462428
201 - 205		35x4,0	M10	4,00	231-235	24	290	261	11	1,123	1	0490429	0462429
206 - 214		35x4,0	M10	4,00	236-244	24	298	269	11	1,142	1	0490430	0462430
215 - 225	8	35x4,0	M10	4,00	255-265	24	309	280	11	1,178	1	0490431	0462431
241 - 248		35x4,0	M10	4,00	281-288	24	332	303	11	1,289	1	0492434	0462434
250 - 257		35x4,0	M10	4,00	280-287	24	341	312	11	1,322	1	0492435	0462435
272 - 277	10	35x4,0	M10	4,00	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	2,782	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 -

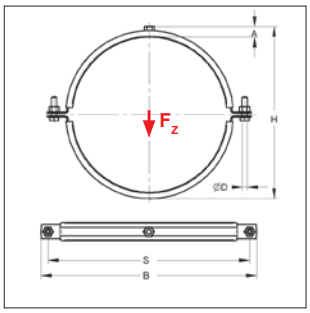
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_Z [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Connection: Thread M8													
15 - 20	3/8	20x1,5	M6	0,80	25 - 30	8	49	36	6,5	0,051	50	0499175	0469175
21 - 25	1/2	20x1,5	M6	0,80	31 - 35	8	56	43	6,5	0,054	50	0499176	0469176
26 - 30	3/4	20x1,5	M6	0,80	36 - 40	8	61	48	6,5	0,058	50	0499177	0469177
31 - 35	1	20x1,5	M6	0,80	41 - 45	8	66	53	6,5	0,060	50	0499178	0469178
36 - 40		20x1,5	M6	0,80	46 - 50	8	72	59	6,5	0,064	50	0499171	0469171
41 - 46	1 1/4	20x1,5	M6	0,80	51 - 56	8	78	65	6,5	0,066	50	0499179	0469170
Connection: Thread M10													
48 - 55	1 1/2	20x2,0	M6	1,50	60 - 67	10	87	74	6,5	0,097	50	0499210	0469210
57 - 62	2	20x2,0	M6	1,50	69 - 74	10	96	82	6,5	0,103	50	0499212	0469212
63 - 67		20x2,0	M6	1,50	75 - 79	10	101	88	6,5	0,110	50	0499211	0469211
68 - 74		20x2,0	M6	1,50	80 - 86	10	108	94	6,5	0,115	50	0499213	0469213
75 - 80	2 1/2	20x2,0	M6	1,50	87 - 92	10	114	101	6,5	0,118	50	0499214	0469214
82 - 90	3	20x2,0	M6	1,50	94 -102	10	113	110	6,5	0,127	50	0499215	0469215
92 - 100		20x2,0	M6	1,50	104 -112	10	134	120	6,5	0,135	50	0499216	0469216
103 - 110		20x2,0	M6	1,50	115 -122	10	144	131	6,5	0,144	50	0499217	0469217
112 - 117	4	20x2,0	M6	1,50	124 -129	10	152	138	6,5	0,151	50	0499218	0469218
Connection: Thread M12													
103 - 110		25x3,0	M8	3,20	120-127	14	163	142	9,0	0,295	50	0491317	0461317
112 - 117	4	25x3,0	M8	3,20	129-134	14	171	150	9,0	0,313	50	0491318	0461318
118 - 126		25x3,0	M8	3,20	135-143	14	179	158	9,0	0,321	50	0497319	0467319
129 - 137		25x3,0	M8	3,20	146-154	14	190	169	9,0	0,339	50	0497320	0467320
138 - 142	5	25x3,0	M8	3,20	155-159	14	197	176	9,0	0,356	50	0497321	0467321
143 - 151		25x3,0	M8	3,20	160-168	14	205	184	9,0	0,367	50	0497322	0467322
152 - 159		25x3,0	M8	3,20	169-176	14	213	192	9,0	0,379	50	0497323	0467323
160 - 168	6	25x3,0	M8	3,20	177-185	14	222	201	9,0	0,397	50	0497324	0467324

Pipe clamp stainless steel

Connection: Thread M16												V4A	V2A
Dimension [mm]	[Inch]	Material [mm]	Closure-screw	Load F_z [kN]	H (min-max) [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.	Part-No.
169 - 173		35x4,0	M10	7,20	192-196	19	247	218	11,0	0,825	1	04934251	04634251
174 - 178		35x4,0	M10	7,20	197-201	19	252	223	11,0	0,843	1	04934252	04634252
193 - 200		35x4,0	M10	7,20	216-223	19	274	245	11,0	0,905	1	0493428	0463428
202 - 210		35x4,0	M10	7,20	225-233	19	284	255	11,0	0,933	1	0493429	0463429
211 - 215		35x4,0	M10	7,20	234-238	19	290	261	11,0	0,955	1	0493430	0463430
216 - 224	8	35x4,0	M10	7,20	239-247	19	298	269	11,0	0,972	1	0493431	0463431
244 - 250		35x4,0	M10	7,20	267-273	19	324	295	11,0	1,068	1	0493434	0463434
251 - 258		35x4,0	M10	7,20	274-281	19	332	303	11,0	1,093	1	0493435	0463435
272 - 280	10	35x4,0	M10	7,20	295-303	19	354	325	11,0	1,160	1	0493438	0463438
Without connection, closurescrew													
321 - 325	12	50x5,0	-	13,00	331-335	-	404	372	17,0	2,100	1	0495046	0465046
356 - 360	14	50x5,0	-	13,00	366-370	-	439	407	17,0	2,300	1	0495051	0465051
361 - 370		50x5,0	-	13,00	371-380	-	448	416	17,0	2,327	1	0495052	0465052
401 - 410	16	50x5,0	-	13,00	411-420	-	488	456	17,0	2,556	1	0495056	0465056

Pipe clamp stainless steel for ventilation

Pipe clamp stainless steel
for ventilation



SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

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:	Silicone (on request)	TPE
Temperature resistance:	- 50 °C up to + 250 °C	-35 °C up to +100 °C
Insulation thickness:	6 mm	6 mm

- other sizes and connection threads on request -

Connection: Thread M8 — **With sound insulation lining rubber** — **V2A**

Type [DN]	OD [mm]	Material [mm]	Closure-screw	Load F_z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	ØD [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
63	66	20x2,0	M6	1,0	91	16,0	118	105	6,5	0,145	50	0468113
71	74	20x2,0	M6	1,0	99	16,0	126	113	6,5	0,155	50	0468114
80	83	20x2,0	M6	1,0	108	16,0	135	122	6,5	0,168	50	0468115
90	93	20x2,0	M6	1,0	118	16,0	147	134	6,5	0,185	50	0468116
100	104	20x2,0	M6	1,0	129	16,0	156	143	6,5	0,192	50	0468117
112	116	20x2,0	M6	1,0	141	16,0	168	155	6,5	0,200	50	0468118
125	129	20x2,0	M6	1,0	154	16,0	201	181	8,4	0,226	50	0468120
140	144	20x2,0	M8	1,0	169	16,0	216	196	8,4	0,265	50	0468122
150	154	20x2,0	M8	1,0	179	16,0	226	206	8,4	0,305	50	0468123
160	164	20x2,0	M8	1,0	189	16,0	236	216	8,4	0,316	50	0468124
180	184	20x2,0	M8	1,0	209	16,0	256	236	8,4	0,359	1	0468127
200	204	20x2,0	M8	1,0	229	16,0	278	258	8,4	0,387	1	0468129
224	228	20x2,0	M8	1,0	253	16,0	302	282	8,4	0,423	1	0468132
250	254	20x2,0	M8	1,0	279	16,0	328	308	8,4	0,458	1	0468135
280	284	20x2,0	M8	1,0	309	16,0	358	338	8,4	0,498	1	0468140
300	305	20x2,0	M8	1,0	331	16,0	380	360	8,4	0,513	1	0468143
315	320	20x2,0	M8	1,0	346	16,0	395	375	8,4	0,556	1	0468146
355	360	20x2,0	M8	1,0	386	16,0	435	415	8,4	0,613	1	0468152
400	405	20x2,0	M8	1,0	431	16,0	482	462	8,4	0,680	1	0468156

U-bolt, without nuts

U-bolt

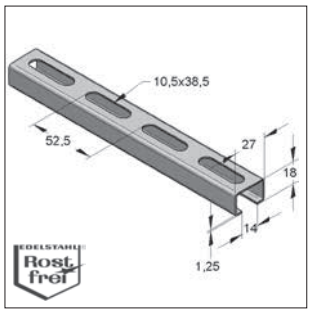
Specification:
- for direct installation of piping onto steel girder
- suitable for sprinkler and VdS-systems
- suitable for the push-through-assembling into profile rails
- bearing should be used with 4 nuts and 4 washers
- fixed bearing should be used with 2 nuts and 2 washers

Required accessories: washers and nuts

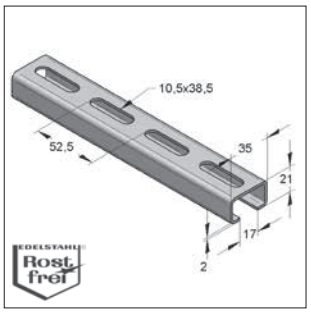
Technical data:
Material: stainless steel
Material type: V4A

For max. profile rail height 45 mm											V4A
Description	Nominal width [DN]	Thread M	OD [mm]	OD [Inch]	a [mm]	h [mm]	b [mm]	OD [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
U-bolt	**15**	M8	21,3	1/2	30	80	65	22	0,060	1	0506022
U-bolt	**20**	M8	25,0		35	80	65	27	0,061	1	0506027
			26,9	3/4							
U-bolt	**25**	M8	30,0		42	90	65	34	0,068	1	0506034
			33,7	1							
U-bolt	**32**	M8	38,0		51	100	70	43	0,076	1	0506042
			42,4	$1^{1/4}$							
U-bolt	**40**	M8	44,5		57	105	70	49	0,081	1	0506048
			48,3	$1^{1/2}$							
U-bolt	**50**	M10	57,0		71	120	70	61	0,147	1	0506060
			60,3	2							
U-bolt	**65**	M10	76,1	$2^{1/2}$	87	135	70	77	0,167	1	0506076
U-bolt	**80**	M10	88,9	3	100	155	75	90	0,193	1	050608901
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

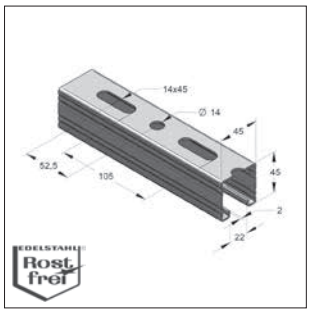
Profile rails, perforated



Profile rails 27/18



Profile rails 35/21



Profile rails 45/45

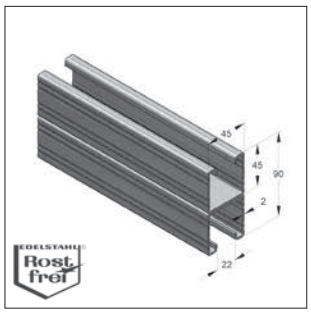
Specification:
- double rails are perforated and welded

Protecting cap see chapter 2

Technical data:
Material: stainless steel
Material type: V4A
V2A

Type 27/18					V4A	V2A
Identification	Weight [kg/m]	Lenght [m]	Bundle [m]	Packing [m]	Part-No.	Part-No.
27/18/1,25	0,61	2	800	20	0800150	0800050
Type 35/21						
35/21/2,0	1,21	3	1080	18	0800151	0800051
Type 45/45						
45/45/2,0	2,50	6	240	30	080015501	080005501

Profile rails, double, perforated



Profile rails, double 45/90

Specification:
- double rails are perforated and welded

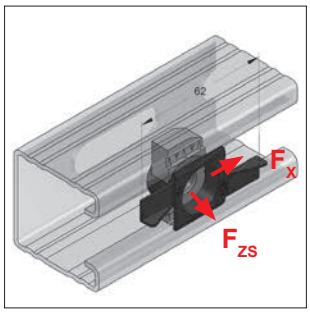
Protecting cap see chapter 2

Technical data:
Material: stainless steel
Material type: V4A
V2A

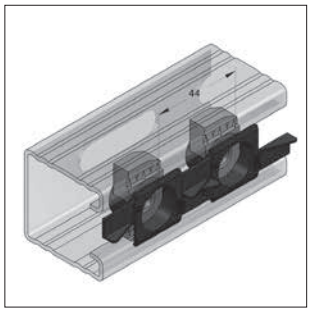
Type 45/90					V4A	V2A
Identification	Weight [kg/m]	Lenght [m]	Bundle [m]	Packing [m]	Part-No.	Part-No.
D 45/90/2,0	4,99	6	120	24	080017001	080007001

technical overview for profile rails stainless steel see on page 13/34

Stex 45 mounting plate MP-X



Stex 45 mounting plate MP-X



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

Specification:

Profile rail type:	45/45, 45/90
Mounting method:	Press connections and shear hole haunch connections
Application area:	connecting parts.
Required accessory:	Hexagon screw

Technical data:

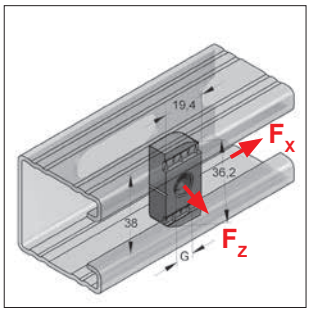
Material:	stainless steel
Material type:	V4A

Notice: **Available from 2nd quarter 2022.**

Application loads see on page 13/15

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 mounting plate MP-X M8	0,049	30	0481600
Stex 45 mounting plate MP-X M10	0,047	30	0481601
Stex 45 mounting plate MP-X M12	0,045	30	0481602

Tooth plate S



Tooth plate S

Specification:

Profile rail type:	45/45, 45/90
Mounting method:	Press connections and shear hole haunch connections.
Application area:	Connecting parts, pipe clamp fixation.
Required accessory:	Hexagon screw, threaded pin or -rod, washer and hexagon nut

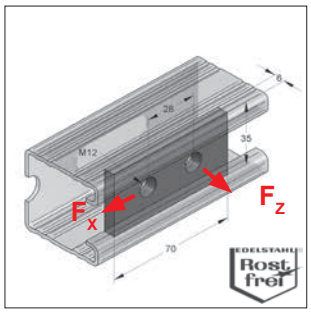
Technical data:

Material:	stainless steel
Material type:	V4A

Application loads see on page 13/15

Identification	Thread G	Dimension L x W x T [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth plate S	M8	36 x 20 x 8	0,047	50	0481615
Tooth plate S	M10	36 x 20 x 8	0,045	50	0481616
Tooth plate S	M12	36 x 20 x 8	0,043	50	0481617

2-hole threaded plate



2-hole threaded plate

Specification:

Profile rail type:	Rail system 45
Mounting method:	Non-slip 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.

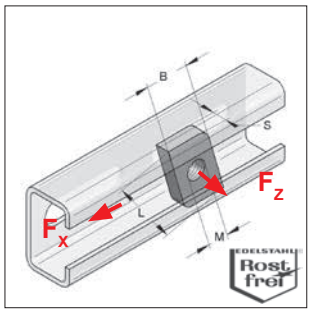
Application loads see on page 13/15

Technical data:

Material:	stainless steel
Material type:	V2A V4A

Identification	Dimension LxBxS [mm]	Thread	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
2-hole threaded plate	**35x70x6,0**	M12	0,112	1	0481610	0480610

Threaded plate



Threaded plate

Specification:

Profile rail type:	27/18, 35/21, 45/45, 45/90
Mounting method:	Non-slip connections and shear hole haunch connections.
Required accessories:	Hexagon screw, threaded pin or- rod, washer and hexagon nut.

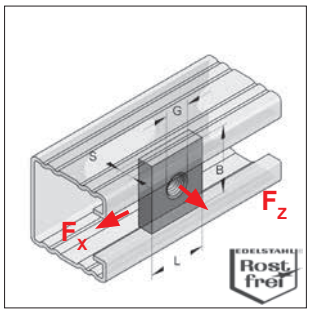
*** Application loads see on page 13/15**

Technical data:

Material:	stainless steel
Material type:	V4A

Identification		Thread M	Dimension LxBxS [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.
For profile rail 27/18						
Threaded plate	**28x15**	**M8**	24x13x4	0,007	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

Threaded square plate



4-Kt-Threadplatte

Specification:

Profile rail type:	27/18, 35/21, rail system 45
Mounting method:	Non-slip 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.

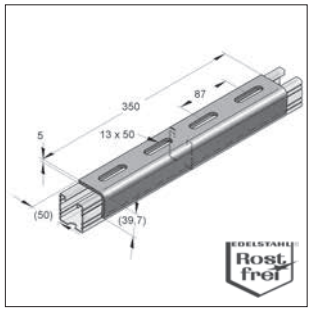
Technical data:

Material:	stainless steel
Material type:	V4A V2A

*** Application loads see on page 13/15**

For profile rail width 27 and 35 mm					V4A	V2A
Identification	Dimension LxBxS [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.	Part-No.
Threaded square plate	**30x22x5,0**	M8	0,025	100	0750838	0750818
Threaded square plate	**30x22x5,0**	M10	0,024	100	0750840	0750820
Threaded square plate	**30x22x5,0**	M12	0,231	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	0,046	50	0481613	0480613
Threaded square plate	**35x30x6,0**	M16	0,044	50	0481614	0480614

Connector 45/45



Connector
for stainless steel profile rails

Specification:

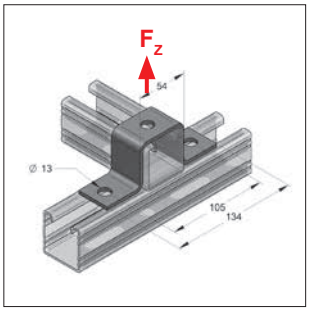
Profile rail type:	Rail system 45
Application area:	Suitable for connection of profile rails
Required accessories:	4 x threaded plate M12 4 x hexagon screw M12 x 25 4 x washer 13 x 24 x 2,5

Technical data:

Material:	stainless steel
Material type:	V4A

Identification	Height [mm]	Width [mm]	Length [mm]	Material thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Connector 45	39,7	50	350	5	1,04	1	048162001

Head profile



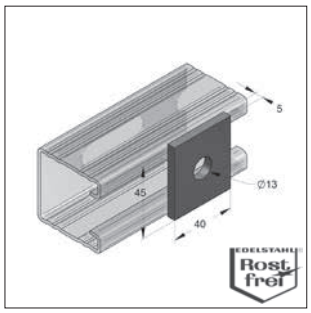
Head profile

Specification:
Profile rail type: Rail system 45
Application area: Suitable for connection of profile rails

Technical data:
Material: stainless steel
Material type: V4A

Identification	Suitable for profile rail	L [mm]	A [mm]	L1 [mm]	h [mm]	Load F_z [kN]	Material thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.
Head profile 45	45/45	134	105	46	45	3,5	4	0,229	1	0481626

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.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
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 $\gamma = 2$

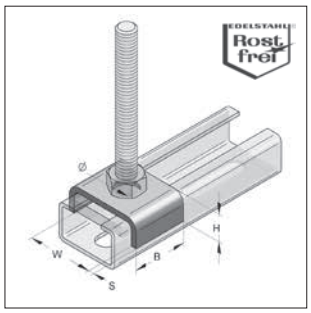
Profile rail V2A/V4A	Stex mounting plate MP-X V4A			
			M10	M12
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/45/2,0	**8,00**	**2,00**	**50**	**60**
45/90/2,0 D				

Profile rail V2A/V4A	Tooth plate V4A			
			M10	M12
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/45/2,0	**8,00**	**2,63**	**50**	**60**
45/90/2,0 D				

Profile rail V2A/V4A	2-hole threaded plate V2A/V4A		
			M12
	F_z [kN]	F_x [kN]	tightening torque [Nm]
45/45/2,0	**8,00**	**1,90**	**60**
45/90/2,0 D			

Profile rail V2A/V4A	Threaded square plate 35x30x6 V2A/V4A			
			M10	M12
	F_z [kN]	F_x [kN]	tightening torque [Nm]	tightening torque [Nm]
45/45/2,0	**5,00**	**1,20**	**50**	**60**
45/90/2,0 D				

Profile holder



Profile holder

Specification:

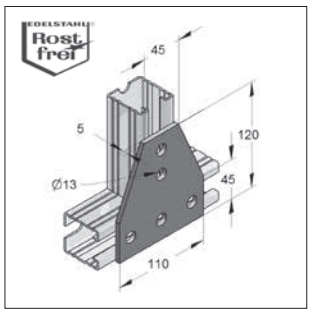
For profile rail type: Rail system 27, 35 and 45
Application area: Suitable for connection of profile rails

Technical data:

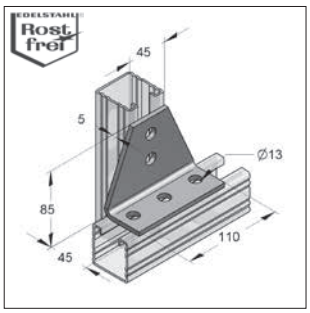
Material: stainless steel
Material type: V4A
V2A

Identification	Profile rail width [mm]	W [mm]	B [mm]	Ø D [mm]	H [mm]	S [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A 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

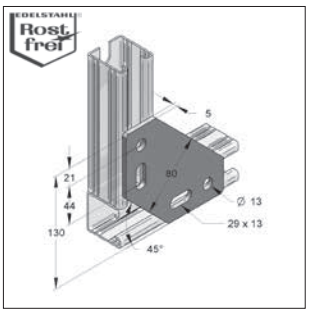
Lug



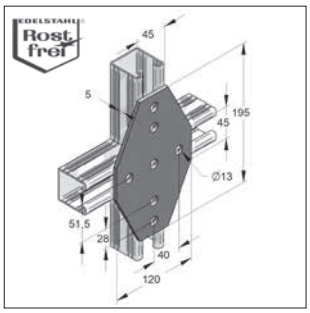
T-lug



T-lug 90°, angled



Corner plate



Cross strap

13

Specification:

For profile rail type: Rail system 45

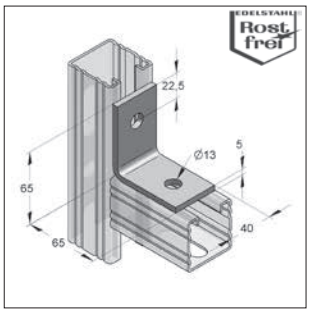
Remark: Admissible loads are depending on connection (see table page 13/15)

Technical data:

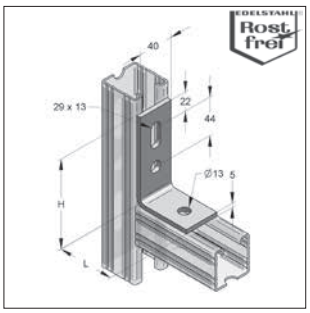
Material: stainless steel
Material type: V4A
V2A

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
T-Lug	13	0,412	1	0481657	0480657
T-Lug 90° angled	13	0,418	1	0481687	0480687
Corner plate	13	0,419	1	048165901	-
Cross strap	13	0,687	1	-	0480658

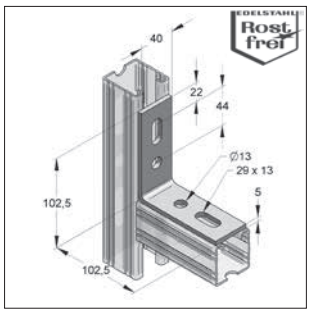
Angle 40/5



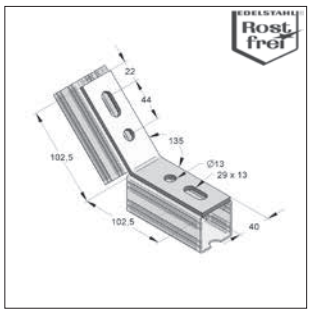
Angle 40/5 2-hole



Angle 40/5 3-hole L and K



Angle 40/5 4-hole 90°



Angle 40/5 4-hole 135°

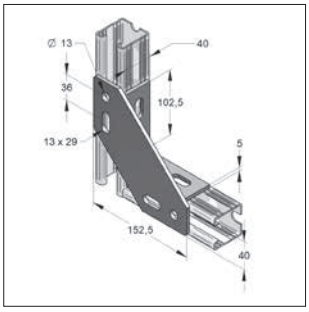
Specification:
For profile rail type: Rail system 45

Remark: Admissible loads are depending on connection (see table page 13/15)

Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Dimension LxHxS [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Angle 40/5 2-hole	65 x 65 x 5,0	0,188	1	0481402	0480402
Angle 40/5 3-hole L	65 x 102,5 x 5,0	0,235	1	048140301	048040301
Angle 40/5 3-hole K	45 x 102,5 x 5,0	0,203	1	048140401	048040401
Angle 40/5 4-hole 90°	102,5 x 102,5 x 5,0	0,286	1	048140501	048040501
Angle 40/5 4-hole 135°	102,5 x 102,5 x 5,0	0,292	1	048140601	048040601

Universal knot



Universal knot

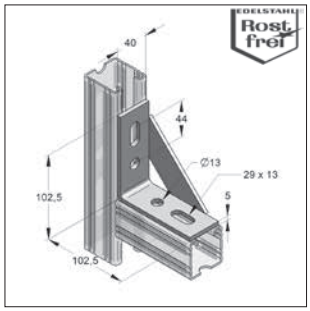
Specification:
Profile rail type: Rail system 45
Application area: Rail position can be chosen freely

Remark: Admissible loads are depending on connection.

Technical data:
Material: stainless steel
Material type: V4A

Identification	Specification	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.
Universal knot	4-hole	0,84	1	0481409

Knot triangle 40/5 4-hole



Knot triangle 40/5 4-hole

Specification:

For profile rail type: Rail system 45

Remark: Admissible loads are depending on connection (see table page 13/15)

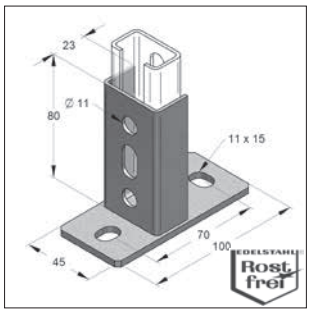
Technical data:

Material: stainless steel

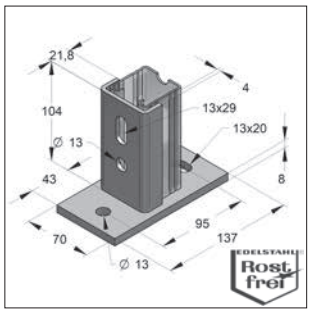
Material type: V4A
V2A

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Knot triangle 40/5 4-hole	13	0,375	1	048140701	048040701

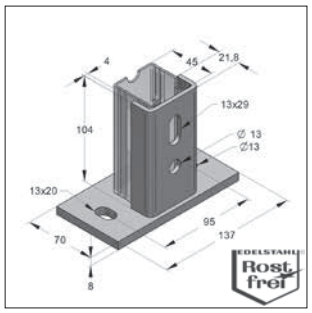
Holder



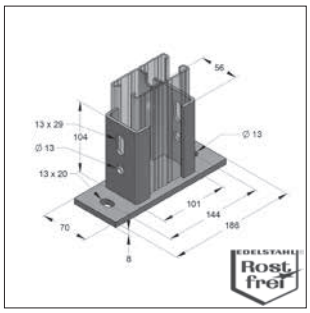
Holder 35
with base plate vertical



Holder 45
with base plate vertical



Holder 45
with base plate horizontal



Holder for
double C-profile rail 45/90

Specification:

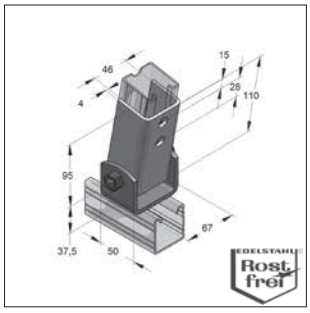
Profile rail type:	Rail system 35, 45
Required accessories holder 35:	2-hole-thread plate 38x17
	hexagon screw M10x25
Required accessories holder 45:	2-hole-thread plate M12
	hexagon screw M12x25
Remark:	Admissible loads are depending on connection (see table page 13/15)

Technical data:

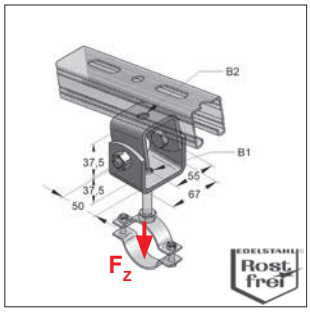
Material:	stainless steel
Material type:	V4A
	V2A

Identification	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Holder C-profile rail 35 vertical	0,238	1	9993300	-
Holder C-profile rail 45 vertical	0,826	1	048120101	048020101
Holder C-profile rail 45 horizontal	0,826	1	048120401	048020401
Holder C-profile rail 45/90	1,273	1	048120901	048020901

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

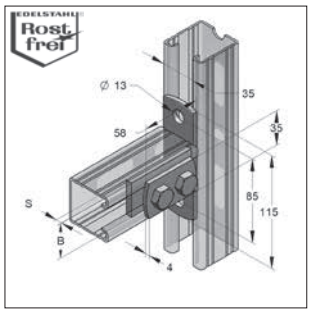
Technical data:

Material:	stainless steel
Material type:	V4A
	V2A

* Loads refering to component, not to connection

Identification	For threaded rods B1 / B2	B1 [mm]	B2 [mm]	Load* F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Joint holder		-	-	-	0,856	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:

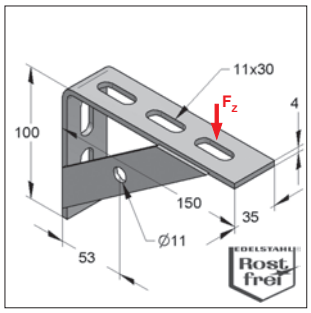
Profile rail type:	Rail system 35 and 45
Application area:	Suitable for connection of profile rails
Scope of delivery:	2-hole plate hexagon screw

Technical data:

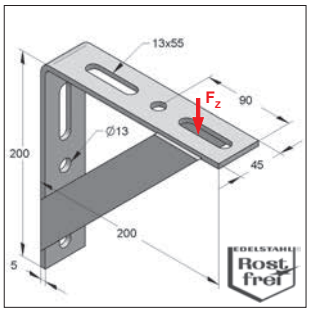
Material:	stainless steel
Material type:	V4A V2A

Identification	s [mm]	B [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Connector 35/21	5	30	0,301	1	---	0480660
Connector 45/45	6	35	0,363	1	0481656	0480656

Angle bracket



Knot console L
with a brace



Angle console
with two braces

Specification:

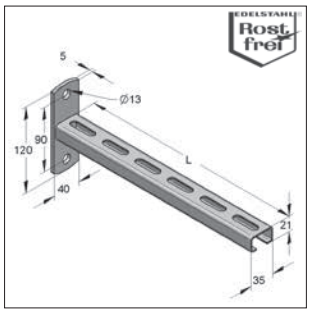
Profile rail type:	Rail system 45 hole distance 105 mm

Technical data:

Material:	stainless steel
Material type:	V4A V2A

Identification	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A 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



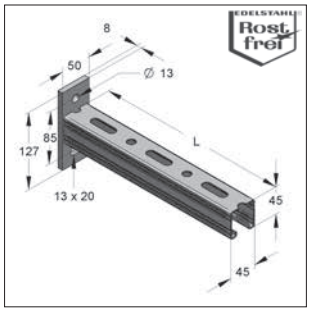
Console 35/21/2,0

Specification:
Plate: 120 x 40 x 5 mm
Holes: Ø 13,0 mm

Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Length	Load						Weight	Packing	V4A	V2A
		V4A			V2A					Part-No.	Part-No.
	L [mm]	q0 [kN/m]	F1 [kN]	F2 [kN]	q0 [kN/m]	F1 [kN]	F2 [kN]	[kg/pc.]	[pc.]		
Console 35/21	**262,5**	2,24	0,59	0,29	1,87	0,49	0,25	0,51	1	0582021	0582020
Console 35/21	**315,0**	1,56	0,49	0,25	1,30	0,41	0,20	0,562	1	0583021	0583020
Console 35/21	**420,0**	0,88	0,37	0,18	0,73	0,31	0,15	0,69	1	0584021	0584020

Console 45/45/2,0



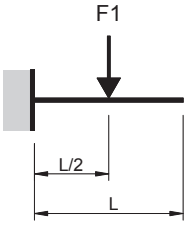
Console 45/45/2,0

Specification:
Plate: 127 x 50 x 8 mm

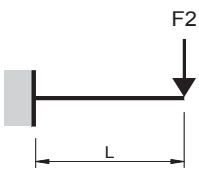
Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Length	Load						Weight	Packing	V4A	V2A
		V4A			V2A					Part-No.	Part-No.
	L [mm]	q0 [kN/m]	F1 [kN]	F2 [kN]	q0 [kN/m]	F1 [kN]	F2 [kN]	[kg/pc.]	[pc.]		
Console 45/45	**210,0**	16,02	3,36	1,68	13,35	2,80	1,40	0,916	1	0481661	0480661
Console 45/45	**315,0**	7,12	2,24	1,12	5,93	1,87	0,93	1,180	1	0481662	0480662
Console 45/45	**420,0**	4,01	1,68	0,84	3,34	1,40	0,70	1,440	1	0481663	0480663
Console 45/45	**525,0**	2,56	1,35	0,67	2,14	1,12	0,56	1,700	1	0481664	0480664

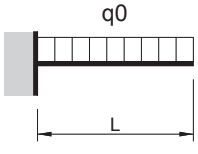
Loading condition F1



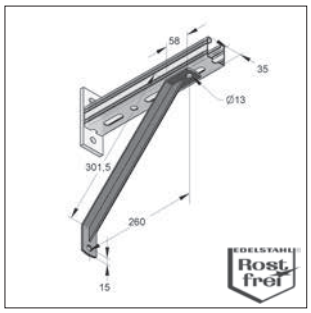
Loading condition F2



Loading condition q0



Brace 45°-T-profile



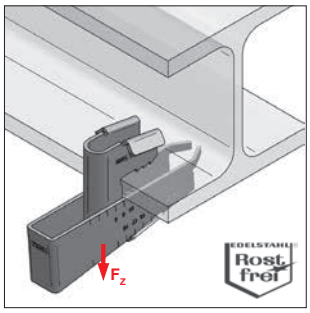
Brace 45° T-profile

Specification:
Holes: Ø 13,0 mm

Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Brace 45° T-profile	0,679	1	0481510	0480510

Beam clamp TKM 2



Beam clamp TKM

VdS G 413 001

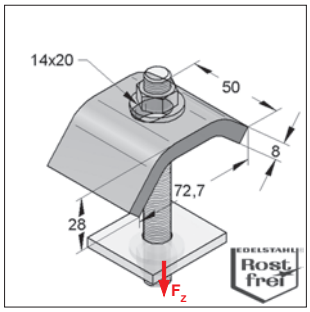
FM APPROVED

Specification:
Application area: Fast and simple mounting at steel structures and profiles
Mounting: Beam 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	Clamping range [mm]	For threaded	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.
Beam clamp TKM 2 M10	**8 - 20**	M10	3,5	0,161	25	0481711

Clamping claw



Clamping claw

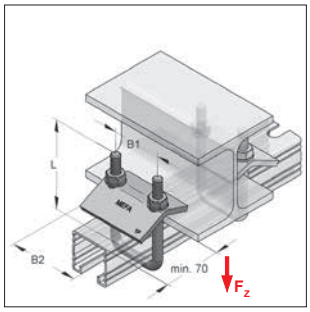
Specification:
Without accessories

Technical data:
Material: stainless steel
Material type: V2A

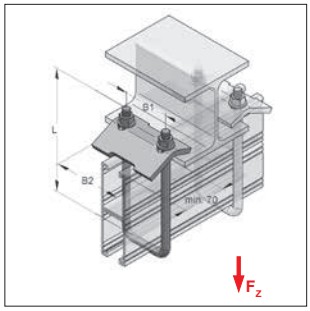
* Loads are based on component, not connection

Identification	For threaded rod	Tightening torque [Nm]	Load F_z* [kN]	Weight [kg/pc.]	Packing [pc.]	V2A Part-No.
Clamping claw	M12	5	8,2	0,247	1	0480651

Clamping bow



Clamping bow M10 45/45



Clamping bow M10 45/90

Specification:
Profile rail type: Rail system 45
Application area: For mounting of C-profile rail on steel girder

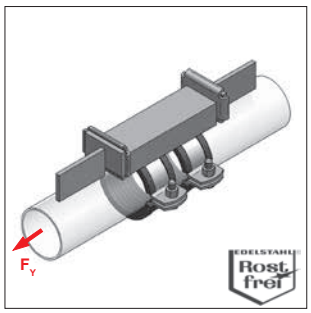
Clamping bow consisting of:
1 U-bolt pipe hanger
1 tensioning bracket
2 nuts
2 washer

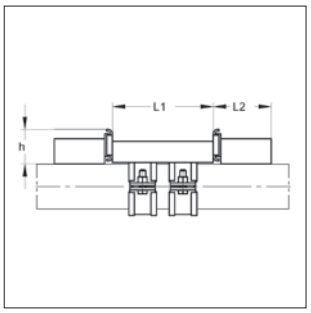
Technical data:
Material: stainless steel
Material type: V4A

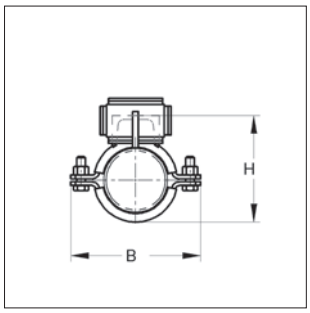
Remark: - in case of horizontal mounting of pipes, the maximum loads of the clamping bow can differ to quoted loads due to torque of lever arm
- per anchorage point two clamping bows should be plugged in
- application loads refer to clamping bow
- application loads of C-profile rail should be noticed

Identification	L [mm]	B1 [mm]	Recommended tightening torque [Nm]	Max. B2 [mm]	Recommended clamping thickness [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.
Suitable for profile rail 45/45									
Clamping bow M10 45/45	90	56	15	80	26	4,0	0,401	1	0481690
Suitable for profile rail 45/90									
Clamping bow M10 45/90	135	56	15	80	26	4,0	0,447	1	0481692

Fixpoint type A (for welding)







SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Fixpoint type A
(specification stainless steel)

Specification:

Insulated fixpoint for high pressure loads, designed to avoid any metal connection of pipe and building.

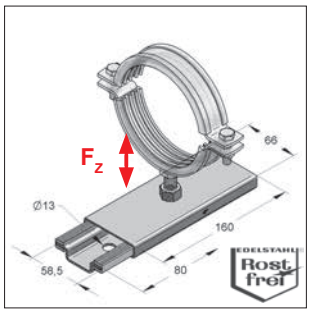
Material Fixpoint:	steel (S235JR)	
Material Pressure pads:	stainless steel V4A / V2A	
Surface Fixpoint:	galvanized	
Sound insulation lining:	Silicone	TPE
Temperature resistance:	- 50 °C up to + 250 °C	- 35 °C up to + 100 °C

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).

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel [mm]	L1 [mm]	L2 [mm]	h [mm]	H [mm]	B [mm]	Load[1] F_Y [kN]	Weight [kg/pc.]	Packing [pc.]	Silicone Part-No.	Rubber Part-No.
Fixpoint size I, T-steel (accessory: mounting clamp 1a)								**Pressure pads V4A**				
20 - 25	25 x 3	30 x 30 x	100	81	43	66 - 71	87	8,5	1,06	1	9999384	9999370
26 - 30	25 x 3	30 x 30 x	100	81	43	72 - 76	92	8,5	1,09	1	9999385	9999371
31 - 36	25 x 3	30 x 30 x	100	81	43	77 - 82	98	8,5	1,12	1	9999386	9999372
38 - 45	25 x 3	30 x 30 x	100	81	43	84 - 91	107	8,5	1,15	1	9999387	9999373
47 - 51	25 x 3	30 x 30 x	100	81	43	93 - 97	114	8,5	1,20	1	9999388	9999374
53 - 57	25 x 3	30 x 30 x	100	81	43	99 - 102	120	8,5	1,23	1	9999389	9999375
Fixpoint size II, U-steel (accessory: mounting clamp 2)								**Pressure pads V4A**				
60,3	50 x 5	65 x 42 x	200	115	43	112,5	148	20	4,75	1	9999390	9999376
76,1	50 x 5	65 x 42 x	200	115	63	131,5	166	20	4,99	1	9999391	9999377
88,9	50 x 5	65 x 42 x	200	115	63	146,0	179	20	5,20	1	9999392	9999378
108,0	50 x 5	65 x 42 x	200	115	63	165,0	198	20	5,47	1	9999393	9999379
114,3	50 x 5	65 x 42 x	200	115	63	171,5	204	20	5,56	1	9999394	9999380
133,0	50 x 5	80 x 45 x	200	115	63	191,0	223	20	6,21	1	9999395	9999381
139,7	50 x 5	80 x 45 x	200	115	63	198,5	230	20	6,32	1	9999396	9999382
159,0	50 x 5	80 x 45 x	200	115	63	218,0	250	20	6,60	1	9999397	9999383
Fixpoint size I, T-steel (accessory: mounting clamp 1a)								**Pressure pads V2A**				
20 - 25	25 x 3	30 x 30 x	100	81	43	66 - 71	87	8,5	1,06	1	9999746	9999530
26 - 30	25 x 3	30 x 30 x	100	81	43	72 - 76	92	8,5	1,09	1	9999745	9999350
31 - 36	25 x 3	30 x 30 x	100	81	43	77 - 82	98	8,5	1,12	1	9999524	9999351
38 - 45	25 x 3	30 x 30 x	100	81	43	84 - 91	107	8,5	1,15	1	9999361	9999352
47 - 51	25 x 3	30 x 30 x	100	81	43	93 - 97	114	8,5	1,20	1	9999744	9999353
53 - 57	25 x 3	30 x 30 x	100	81	43	99 - 103	120	8,5	1,23	1	9999362	9999354
Fixpoint size II, U-steel (accessory: mounting clamp 2)								**Pressure pads V2A**				
60,3	50 x 5	65 x 42 x	200	115	43	112,5	148	20	4,75	1	9999525	9999419
76,1	50 x 5	65 x 42 x	200	115	63	113,5	166	20	4,99	1	9999363	9999355
88,9	50 x 5	65 x 42 x	200	115	63	146,0	179	20	5,20	1	9999364	9999356
108,0	50 x 5	65 x 42 x	200	115	63	165,0	198	20	5,47	1	9999365	9999357
114,3	50 x 5	65 x 42 x	200	115	63	171,5	204	20	5,56	1	9999366	9999358
133,0	50 x 5	80 x 45 x	200	115	63	191,0	223	20	6,21	1	9999367	9999359
139,7	50 x 5	80 x 45 x	200	115	63	198,5	230	20	6,32	1	9999368	9999429
159,0	50 x 5	80 x 45 x	200	115	63	218,0	250	20	6,60	1	9999369	9999360

Slider GL 100



Slider GL 100

Specification:

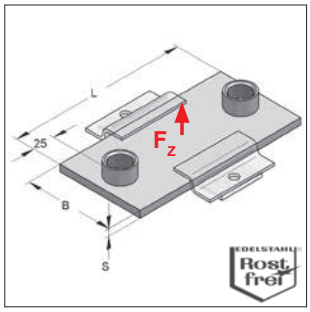
Max. sliding way:	68 mm	
Max. pipe clamp size:	1 x M10:	88,9 mm
	1 x M12:	114,3 mm
	2 x M12:	139,7 mm
	2 x sleeve 1/2":	219,1 mm
Delivery time:	5 working days, ex works	

Technical data:

Material:	stainless steel
Material type:	V4A

Identification	Connection	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.
Slider GL 100	1 x M10	2,5	0,431	1	0770550
Slider GL 100	1 x M12	2,5	0,436	1	0770552
Slider GL 100	2 x M12	2,5	0,453	1	0770553
Slider GL 100	2 x 1/2"	2,5	0,487	1	0770554

Sliding plates



Sliding plate

Specification:

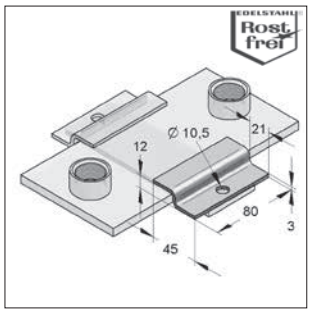
Application area:	Absorption of axial length extensions
Required accessories:	Sliding stripe Z-pressure pad
Recommended pipe diameters:	L 150 = up to OD 193,0 mm L 200 = up to OD 299,5 mm L 250 = up to OD 419,0 mm

Technical data:

Material:	stainless steel
Material type:	V4A V2A

Identification	Dimension LxBxS [mm]	Connection	max. sliding piece hanging [mm]	max. sliding piece standing [mm]	Load F_z [kN]	Accessory sliding stripe [Part-No.]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Sliding plates	**150x100x8**	2 x M16	20	100	6,8	077955501	1,06	1	0772831	0772808
Sliding plates	**200x100x8**	2 x M16	70	150	4,5	077955501	1,39	1	0772832	0772805
Sliding plates	**200x150x8**	2 x 1/2"	70	150	6,8	077956701	2,03	1	0772824	0772804
Sliding plates	**250x100x8**	2 x 1/2"	120	200	3,4	077955501	1,70	1	0772823	0772803

Z-pressure pad



Z-pressure pad

Specification:

Application area: For mounting of MEFA sliding plates on on-site supports

Required accessories: Hexagon screw M10x25, threaded plate (related to profile rail)

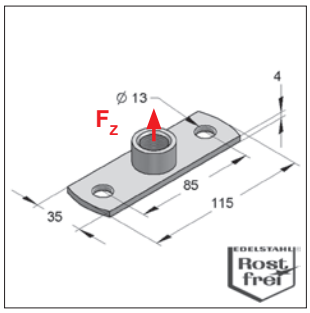
Technical data:

Material: stainless steel

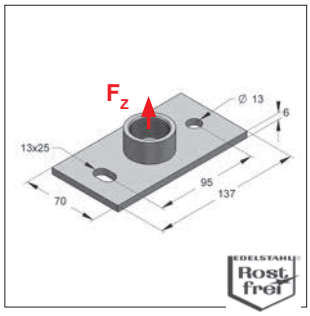
Material type: V4A, V2A

Identification	Length [mm]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Z-pressure pad	**80**	0,102	1	0779516	0779511

Base plates



Base plate type I



Base plate type III

Specification:

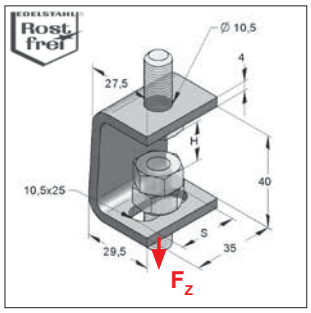
Application area: Plates with threaded connection suitable for mounting on structure or profile rails.
Applicable for pipe clamp connections via threaded pin/- rod or threaded pipe

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	Dimension plate length [mm]	width [mm]	thickness [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A 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 / 1/2"	137	70	6	5,90	0,485	1	0598702	0599702
Base plate type III / 3/4"	137	70	6	5,90	0,498	1	0598703	0599703
Base plate type III / 1"	137	70	6	5,90	0,532	1	0598700	0599700

Suspended bracket type L



Suspended bracket type L

Specification:

Application area: For single fixation with threaded rods.

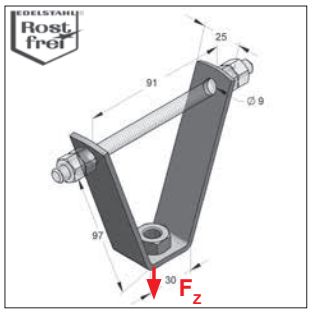
Required accessories: 1 threaded bolt M8/M10
2 hexagon nuts M8/M10

Technical data:

Material: stainless steel
Material type: V4A
V2A

Identification	Thread	Adjustable height H [mm]	Sliding piece S [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Suspended bracket type L	**M8 and M10**	30	15-17	2,0	0,095	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	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Trapeze hanger	**M8**	2,0	0,133	1	0783971	0783961
Trapeze hanger	**M10**	2,0	0,139	1	0783972	0783962

Threaded rods

Threaded rod

Admissible load* on bending

Distance L [mm]	V4A M8 F [kN]	V2A M8 F [kN]	V4A M10 F [kN]	V2A M10 F [kN]	V4A M12 F [kN]	V2A M12 F [kN]	V4A M16 F [kN]	V2A M16 F [kN]
50	0,17	0,17	0,34	0,34	0,64	0,64	1,67	1,67
100	0,04	0,04	0,11	0,11	0,22	0,22	0,79	0,79
150	0,02	0,02	0,05	0,05	0,10	0,10	0,35	0,35
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

* V4A
f_y=240 N/mm²
safety factor=1,5
E-module=200.000 N/mm²

* V2A
f_y=220 N/mm²
safety factor=1,5
E-module=200.000 N/mm²

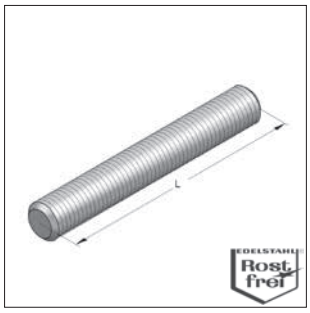
max. deflection
f = L/150 related to tensile stress area

Specification:
According to DIN 976-1
Thread: M8, M10, M12, M16
Length: 1000 mm

Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Thread	Tension load [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A Part-No.
Threaded rod	**M8**	15,68	0,333	50	0738508	0738006
Threaded rod	**M10**	24,85	0,520	25	0738510	0738009
Threaded rod	**M12**	36,11	0,749	25	0738512	0738012
Threaded rod	**M16**	67,26	1,331	10	0738516	0738016

Threaded bolts



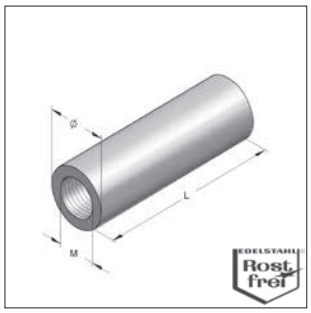
Threaded pin

Specification:
According to DIN 976-1
Thread: M8, M10, M12
Length: 30 up to 110 mm

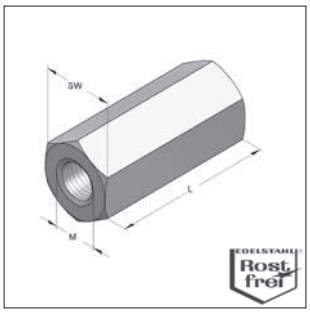
Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Thread	Length L [mm]	Tension load [kN]	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Threaded bolt	**M8**	30	15,68	0,010	100	---	0732130
Threaded bolt	**M8**	50	15,68	0,017	100	---	0732150
Threaded bolt	**M8**	70	15,68	0,023	100	---	0732170
Threaded bolt	**M8**	110	15,68	0,037	100	---	0732210
Threaded bolt	**M10**	50	24,85	0,026	100	---	0732350
Threaded bolt	**M10**	70	24,85	0,036	100	---	0732370
Threaded bolt	**M10**	110	24,85	0,057	50	---	0732410
Threaded bolt	**M12**	50	36,11	0,037	50	0734550	0732550
Threaded bolt	**M12**	110	36,11	0,082	50	0734610	0732610

Threaded coupling



Threaded coupling



Threaded coupling hexagon

Specification:

Thread: M8, M10, M12, M16

Length: 30 up to 50 mm

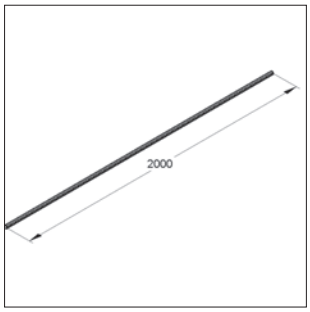
Technical data:

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	0,026	100	0702880	0702830
Threaded coupling	**M10**	**30**	**40**	**---**	17	0,046	50	0702883	0702835
Threaded coupling	**M12**	**30**	**40**	**---**	19	0,074	50	0702888	0702840
Threaded coupling	**M16**	**40**	**40**	**---**	24	0,110	25	0702894	0702844

Threaded pipe



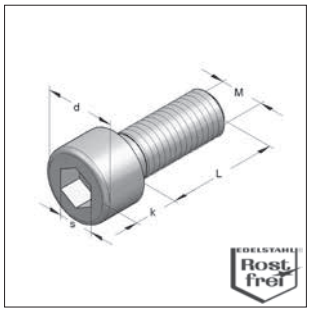
Threaded pipe

Specification:
Version: Tube with male thread

Technical data:
Material: stainless steel
Material type: V4A

Identification	Thread	Length [mm]	Weight [kg/m]	Packing [m]	V4A Part-No.
Threaded pipe	**1/2"**	2000	1,15	20	0737002A4
Threaded pipe	**1"**	2000	2,30	10	0737004A4

Allen head cap screw, DIN EN ISO 4762



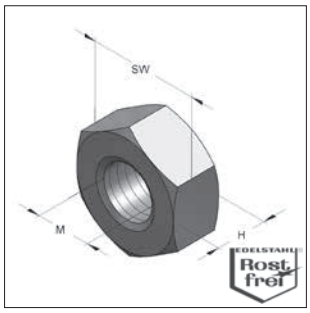
Allen head screw

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 Part-No.	V2A Part-No.
Allen head screw	**M8**	**20**	13	8	6	0,0134	200	3445220	3445201
Allen head screw	**M10**	**30**	16	10	8	0,0279	50	3445230	3445231
Allen head screw	**M12**	**25**	18	12	10	0,0356	50	3445225	3445226

Hexagon nut, DIN EN ISO 4032



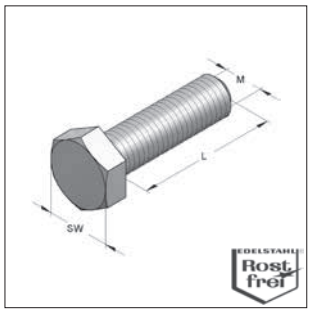
Hexagon nut

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 Part-No.	V2A Part-No.
Hexagon nut	**M6**	5,0	10	0,0024	100	4128006	4128106
Hexagon nut	**M8**	6,5	13	0,005	100	4128108	4128008
Hexagon nut	**M10**	8,0	17	0,0122	100	4128110	4128010
Hexagon nut	**M12**	10,0	19	0,017	100	4128112	4128012
Hexagon nut	**M16**	13,0	24	0,0394	100	4128116	4128016

Hexagon screw, DIN EN ISO 4017



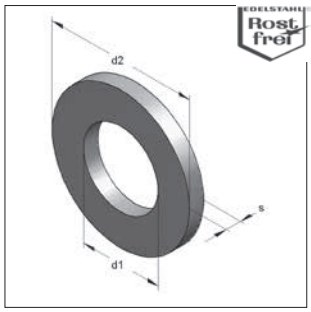
Hexagon screw

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 [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Hexagon screw	**M8**	**20**	13	0,014	100	-	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	0,036	50	3206741	3206740
Hexagon screw	**M10**	**60**	17	0,049	50	3206761	3206760
Hexagon screw	**M12**	**25**	19	0,039	50	3206802	3206801
Hexagon screw	**M12**	**40**	19	0,0524	50	3206826	3206825
Hexagon screw	**M12**	**60**	19	0,071	50	3206836	3206835

Washer



Washer

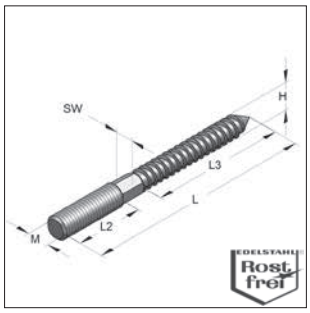
Specification:
According to DIN EN ISO 7089 and DIN EN ISO 7093-1

Reinforced washer with enlarged outer diameter, enlarged surface and improved pressure distribution.

Technical data:
Material: stainless steel
Material type: V4A
V2A

Identification	Dimension d1 [mm]	x	d2 [mm]	x	s [mm]	DIN EN ISO	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Washer	8,4	x	16	x	1,6	7089	0,002	100	4338118	4338108
Washer	10,5	x	20	x	2,0	7089	0,004	100	4338120	4338110
Washer	13,0	x	24	x	2,5	7089	0,007	100	4338123	4338113
Washer	8,4	x	25	x	2,0	7093-1	0,007	100	4338208	4338008
Washer	10,5	x	30	x	2,5	7093-1	0,013	100	4338210	4338010
Washer	13,0	x	37	x	3,0	7093-1	0,023	100	4338213	4338013
Washer	17,0	x	50	x	3,0	7093-1	0,043	50	4338217	4338017
Washer	11,0	x	34	x	3,0	440	0,016	100	4338411	-

Hanger bolt



Hanger bolt

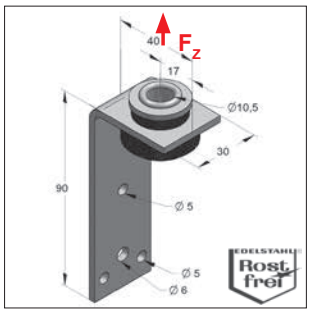
Specification:
With wood- and metric thread

Technical data:

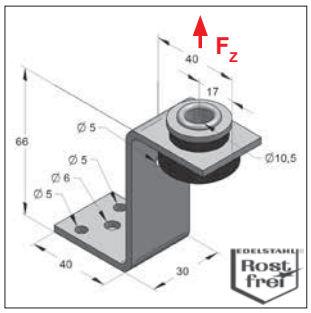
Material:	stainless steel
Material type:	V4A
	V2A

Identification	Thread M	L [mm]	H [mm]	L2 [mm]	L3 [mm]	SW	Suited anchor K2	Weight [kg/pc.]	Packing [pcs.]	V4A Part-No.	V2A Part-No.
Hanger bolt	**M8**	**60**	7,0	20	30	6	10 x 44	0,014	100	3600037	3600035
Hanger bolt	**M8**	**80**	7,0	30	37	6	10 x 44	0,019	100	3600045	3600043
Hanger bolt	**M8**	**100**	7,0	40	47	6	10 x 44	0,024	100	3600072	3600070
Hanger bolt	**M10**	**80**	8,9	20	47	8	12 x 60	0,029	50	---	3609083
Hanger bolt	**M10**	**100**	8,9	30	57	8	12 x 60	0,037	50	---	3609105

Duct holder sound proofed



Duct holder LLN



Duct holder ZLN

SCHALL-SCHUTZ DIN 4109

Specification:

Application area:	For mounting of air ducts, suitable for M8 and M10.
Product features:	Guiding rivet in sound insulation element integrated washer in sound insulation element for type L.

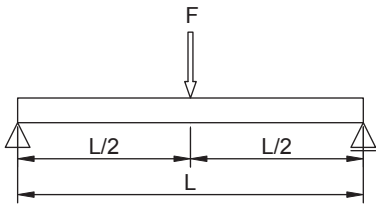
Technical data:

Material:	stainless steel
Material type:	V4A
	V2A
Sound insulation:	SBR lining
Temperature resistance:	- 35 °C up to + 100 °C

Identification	Length	Material [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	V4A Part-No.	V2A 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

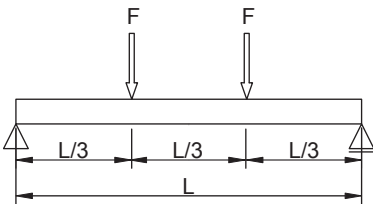


Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,75	0,78	1,77	1,85	7,84	8,18	9,28	9,28
500	0,37	0,39	0,89	0,92	3,92	4,09	9,28	9,28
750	0,25	0,25	0,59	0,62	2,61	2,72	7,64	7,98
1000	0,15	0,14	0,4	0,4	1,95	2,04	5,72	5,97
1250			0,25	0,25	1,56	1,63	4,57	4,77
1500			0,17	0,17	1,29	1,35	3,80	3,96
1750			0,12	0,12	1,10	1,15	3,24	3,39
2000					0,87	0,87	2,83	2,95
2250					0,68	0,68	2,50	2,61
2500					0,54	0,54	2,24	2,34
2750					0,44	0,44	2,03	2,12
3000					0,36	0,36	1,85	1,93
3250					0,29	0,29	1,69	1,77
3500					0,24	0,24	1,56	1,59
3750					0,20	0,20	1,37	1,37
4000					0,17	0,17	1,18	1,18
4250					0,14	0,14	1,02	1,02
4500					0,11	0,11	0,89	0,89
4750							0,78	0,78
5000							0,68	0,68
5250							0,60	0,60
5500							0,52	0,52
5750							0,46	0,46
6000							0,40	0,40

Calculation according		
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 200.000 N/mm²

Loads profile rails, stainless steel

maximum loads for 2xF

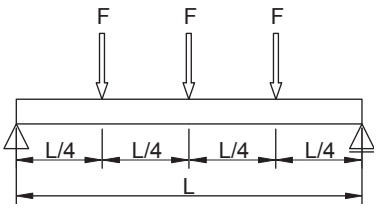


Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,56	0,58	1,33	1,39	4,01	4,18	4,64	4,64
500	0,28	0,29	0,67	0,69	2,94	3,07	4,64	4,64
750	0,16	0,15	0,42	0,42	1,96	2,04	4,64	4,64
1000			0,24	0,24	1,47	1,53	4,29	4,48
1250			0,15	0,15	1,17	1,22	3,43	3,58
1500			0,1	0,1	0,93	0,93	2,85	2,97
1750					0,68	0,68	2,43	2,54
2000					0,51	0,51	2,12	2,22
2250					0,40	0,40	1,88	1,96
2500					0,32	0,32	1,68	1,76
2750					0,26	0,26	1,52	1,57
3000					0,21	0,21	1,31	1,31
3250					0,17	0,17	1,10	1,10
3500					0,15	0,15	0,94	0,94
3750					0,12	0,12	0,80	0,80
4000					0,10	0,10	0,69	0,69
4250							0,60	0,60
4500							0,53	0,53
4750							0,46	0,46
5000							0,40	0,40
5250							0,35	0,35
5500							0,31	0,31
5750							0,27	0,27
6000							0,24	0,24

Calculation according		
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 200.000 N/mm²

Loads profile rails, stainless steel

maximum loads for 3xF

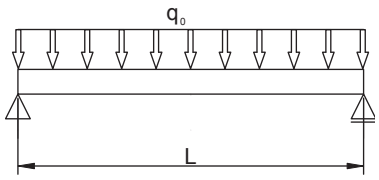


Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]	load F							
250	0,38	0,39	0,89	0,93	2,67	2,79	3,10	3,10
500	0,19	0,2	0,45	0,46	1,96	2,05	3,10	3,10
750	0,11	0,11	0,3	0,3	1,31	1,36	3,10	3,10
1000			0,17	0,17	0,98	1,02	2,86	2,99
1250			0,11	0,11	0,78	0,82	2,29	2,39
1500					0,65	0,67	1,90	1,98
1750					0,49	0,49	1,62	1,70
2000					0,37	0,37	1,42	1,48
2250					0,29	0,29	1,25	1,31
2500					0,23	0,23	1,12	1,17
2750					0,19	0,19	1,02	1,06
3000					0,15	0,15	0,93	0,94
3250					0,13	0,13	0,79	0,79
3500					0,11	0,11	0,67	0,67
3750							0,58	0,58
4000							0,50	0,50
4250							0,43	0,43
4500							0,38	0,38
4750							0,33	0,33
5000							0,29	0,29
5250							0,25	0,25
5500							0,22	0,22
5750							0,20	0,20
6000							0,17	0,17

Calculation according		
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 200.000 N/mm²

Loads profile rails, stainless steel

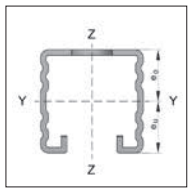
maximum loads for distributed load

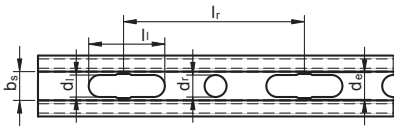


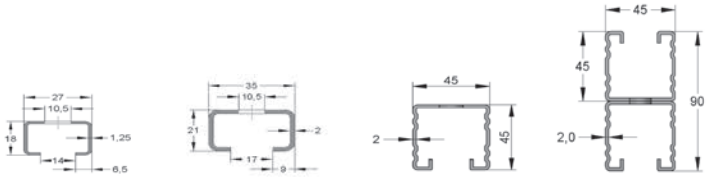
Profile rails stainless steel								
	27/18/1,25	27/18/1,25	35/21/2,0	35/21/2,0	45/45/2,0	45/45/2,0	45/90/2,0	45/90/2,0
Surface	V2A	V4A	V2A	V4A	V2A	V4A	V2A	V4A
q_0 / L	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
[mm]	load F							
250	5,93	6,18	14,14	14,75	49,33	51,47	57,14	57,14
500	1,48	1,54	3,53	3,68	15,66	16,34	28,57	28,57
750	0,55	0,53	1,52	1,52	6,95	7,25	19,05	19,05
1000	0,23	0,22	0,64	0,64	3,90	4,07	11,44	11,94
1250	0,12	0,11	0,32	0,32	2,49	2,60	7,31	7,63
1500			0,18	0,18	1,68	1,68	5,06	5,28
1750			0,11	0,11	1,05	1,05	3,71	3,87
2000					0,70	0,70	2,83	2,95
2250					0,48	0,48	2,22	2,32
2500					0,35	0,35	1,79	1,87
2750					0,26	0,26	1,47	1,54
3000					0,19	0,19	1,19	1,19
3250					0,15	0,15	0,92	0,92
3500					0,11	0,11	0,73	0,73
3750							0,59	0,59
4000							0,48	0,48
4250							0,39	0,39
4500							0,32	0,32
4750							0,27	0,27
5000							0,22	0,22
5250							0,19	0,19
5500							0,16	0,16
5750							0,13	0,13
6000							0,11	0,11

Calculation according		
Safety	χ	= 1,54
max. bending	δ_{zul}	= L/200
module of elasticity	E	= 200.000 N/mm²

Profile rail overview stainless steel

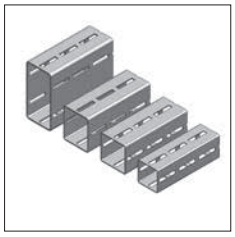






Profile rail			Stainless steel			
			27/18/1,25	**35/21/2,0**	**45/45/2,0**	**45/90/2,0**
V2A						
Material			1.4301	1.4301	1.4301	1.4301
Elastic limit	f_y	N/mm²	230	230	230	230
Weight/ meter	G/m	kg/m	0,61	1,21	2,50	5,00
V4A						
Material			1.4571	1.4571	1.4571	1.4571
Elastic limit	f_y	N/mm²	240	240	240	240
Weight/ meter	G/m	kg/m	0,61	1,21	2,50	5,0
Delivery length	l	m	2,00	3,00	6,00	6,00
Area (least cross section of the profile rail)	A_k	cm²	0,67	1,44	2,86	5,70
Slot width	b_s	mm	14,0	17,0	22	22
Grid dimension	l_r	mm	52,5	52,5	105,0	105,0
Diameter round hole	d_r	mm	-	-	14	14
Diameter elongated hole x length	d_l x l_l	mm x mm	10,5x38,5	10,5x38,5	14x45	14x45
Extension diameter elongated hole	d_e	mm	-	-	-	-
Characteristic values YY-axis						
Axial angular impulse	I_y	cm⁴	0,29	0,84	7,46	43,27
Section modulus	W_y	cm³	0,31	0,74	3,28	9,61
Centroid distance	e_o	cm	0,85	0,97	2,27	4,50
Centroid distance	e_u	cm	0,95	1,13	2,22	4,50
Radius of inertia	i_y	cm	0,66	0,76	1,62	2,75
Characteristic values ZZ-axis						
Axial angular impulse	I_z	cm⁴	0,89	2,94	10,38	20,77
Section modulus z-axis	W_z	cm³	0,66	1,68	4,61	9,23
Centroid distance	e_z	cm	1,35	1,75	2,25	2,25
Radius of inertia	i_z	cm	1,15	1,43	1,91	1,91

CENTUM® - components list



CENTUM Square profile
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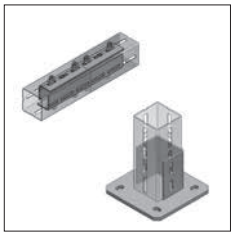
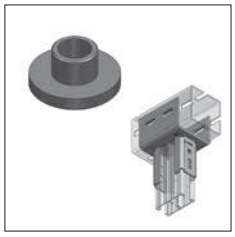
CENTUM T-lock plus,
CENTUM T-lock
Page 14/5

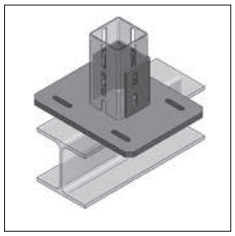
CENTUM FixBob
Page 14/7



CENTUM Connector-set,
CENTUM Holder
Page 14/8



CENTUM Adaptation anchor
CENTUM Adaptor
Page 14/10



CENTUM Girder fixation
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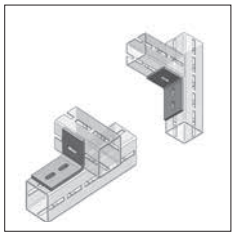
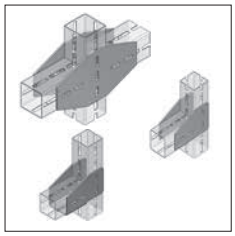
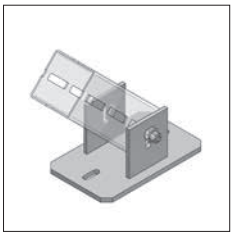
CENTUM Consoles
Page 14/12



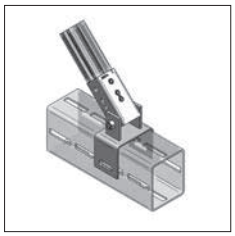
CENTUM Angles
Page 14/13



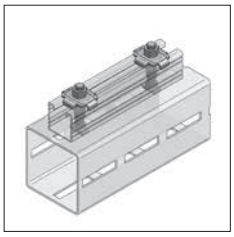
CENTUM Angle-shoe
CENTUM Plates
Page 14/14



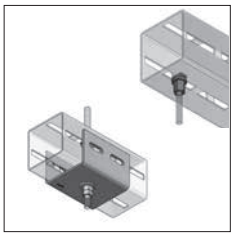
CENTUM Joint holder
Page 14/16



CENTUM Joint connection
Page 14/17



CENTUM C-profile
connector
Page 14/17



CENTUM hanger massive
Direct connector
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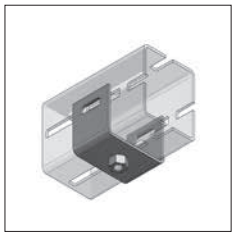
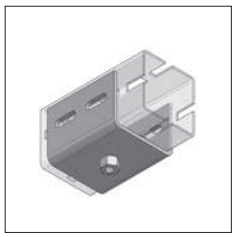
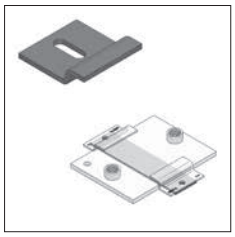


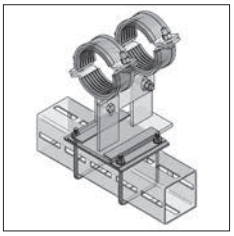
CENTUM Thread
connector
Page 14/19



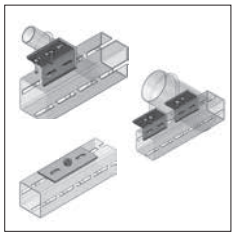
CENTUM Massive
connector
Page 14/



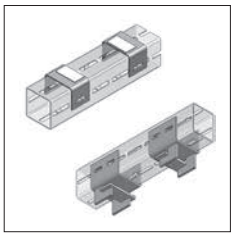
CENTUM Z-guide,
CENTUM® Sliding stripe
Page 14/22



CENTUM Z-guides Set
with U-bolt
Page 14/22



CENTUM Pipe holder
CENTUM Base plate
Page 14/23



CENTUM Sliding base
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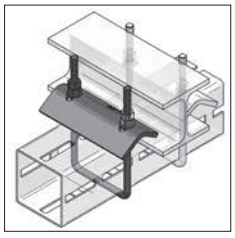
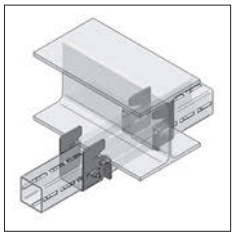
CENTUM Protecting cap
Page 14/25



CENTUM Clamping bow
Page 14/26



CENTUM Clamping shoe
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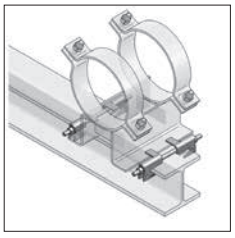
CENTUM Clamping claws
Page 14/28



CENTUM Guiding
Clamp-Set
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Pipe clamp Form A/C
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CENTUM® - components list

Pipe clamp Form A
Maxima/Titan HD
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Pipe clamp Form A
type TGA
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Stirrup clamp
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U-Bolt
Page 14/34

Sliding support T
Page 14/34

Sliding support T HV,
2 Pipe clamps
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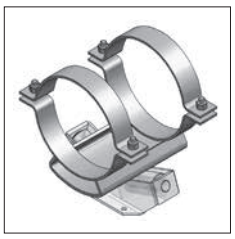
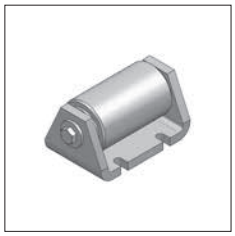
Sliding sledge
Page 14/37

Sliding sledge HV
Page 14/38

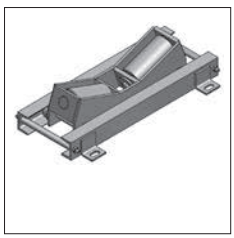


Isolation saddle for roller
bearings
Page 14/40

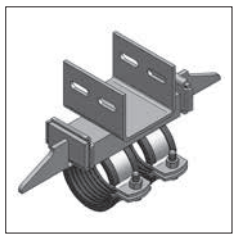


Single-roller-bearing
Page 14/40

Double roller bearing, axial
Page 14/40



Double roller bearing,
radial-axial
Page 14/40



Fixpoint with CENTUM
Massive connector
Page 14/41

ⓘ 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.

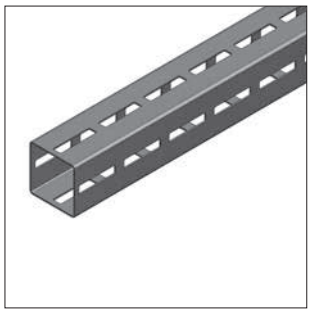
Especially designed to admit high loads, reliable and economically. Thanks to a minimum of system components, a clear and simple screw connection system, CENTUM® offers decisive advantages compared to common welded steel constructions.

The major advantages of CENTUM®:

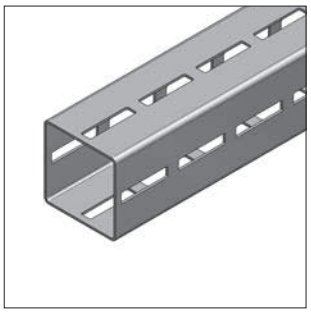
- Saving time and labour costs
- Stepless positioning of system components
- Unique, shape-fitting screw connection system with a load capacity up to 10 kN per connection
- Dismantlement at any time
- Compatible interface for MEFA-profile channels
- All parts are hot-dip galvanized or zinc-nickel coated
- 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

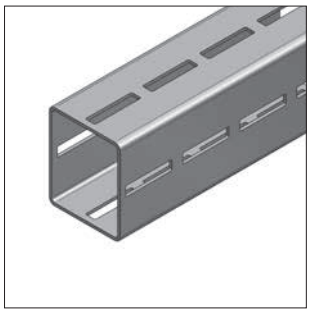
CENTUM® Square profile



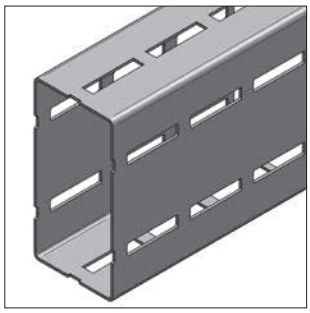
CENTUM® profile XL 80



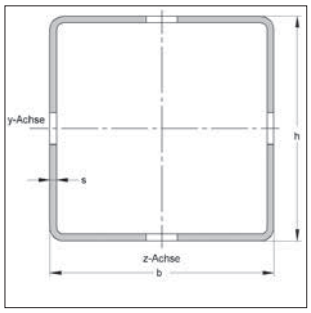
CENTUM® profile XL 100



CENTUM® profile XL 120



CENTUM® profile XL 200



RAL GÜTEZEICHEN RUNDBEFESTIGUNG RAL-GZ 655-C

Description of system:
- modular system
- 4-sided without raster in connection with mounting parts
- torsion stiffness
- high load capacity

** At 8 m delivery length special delivery conditions

Technical data:

Material:	steel
Material type:	
XL 80 - X L 120s:	S275
Material type XL 200:	S235
Surface:	hot-dip galvanized according to DIN EN ISO 1461

* not certified acc. to RAL

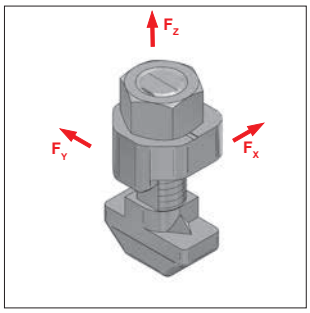
Identification	Dimensions h x b [mm]	Profile thickness s [mm]	Perforation	Length L [m]	Weight [kg/m]	Bundle [m]	Packing [m]	Part-No.
CENTUM® profile XL 80	80 x 80	2,5	4-sided	6	5,51	150	6	16008060
CENTUM® profile XL 100	100 x 100	3	4-sided	6	8,46	96	6	16010060
CENTUM® profile XL 120	120 x 100	4	4-sided	6	12,20	72	6	16012060
CENTUM® profile XL 120s*	120 x 100	5	4-sided	6	14,83	72	6	16012061
CENTUM® profile XL 200*	200 x 100	5	4-sided	6	20,46	24	6	16020060
CENTUM® profile XL 200 WST*	200 x 100	5	4-sided	8**	20,46	32	8	16020080

CENTUM® overview technical values

Identification	Cross-section area A_k cm²	Section modulus of torsion W_t cm³	Geometrical moment of inertia I_Y cm⁴	I_Z cm⁴	Section modulus W_Y cm³	W_Z cm³	Gyration radius i_Y cm	i_Z cm
Profile XL 80	6,19	36,04	64,51	64,51	16,13	16,13	3,23	3,23
Profile XL 100	9,73	56,40	157,14	157,14	31,43	31,43	4,02	4,02
Profile XL 120	14,45	89,10	310,55	237,23	51,76	47,44	4,64	4,05
Profile XL 120s	17,55	109,25	372,76	284,42	62,12	56,88	4,61	4,03
Profile XL 200	24,15	185,25	1255,68	433,47	125,56	86,69	7,21	4,24

Load values for CENTUM® profile rails can be found at the end of the chapter.

CENTUM® T-lock plus



CENTUM® T-lock plus

Specification:

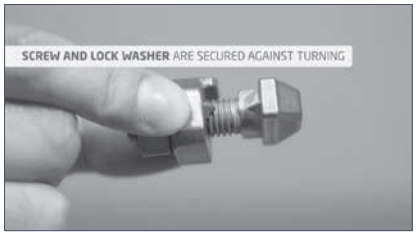
For profile type:	XL 80, XL 100, XL 120 and XL 200			
Features:	Immovable and form-locking connection			
Load:		F_x	F_Y	F_Z
	XL 80:	8 kN	8kN	3kN
	from XL 100:	10 kN	10kN	3kN
Safety γ:	2			
Application:	C-profile connector (at hole Ø ≥ 14 mm)			

Technical data:

Material:	steel
Surface:	zinc-nickel

Identification	Property class	Tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
		XL 80	from XL 100			
CENTUM® T-lock plus M12 x 40	10.9	90	120	0,113	50	1610011001

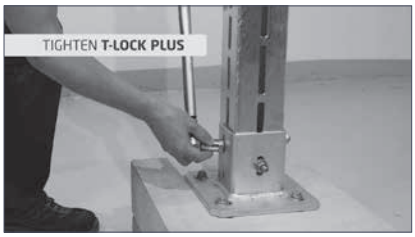
CENTUM® T-lock plus



Insert T-lock plus through component and profile, position as required.

Tilt T-lock plus forward, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).

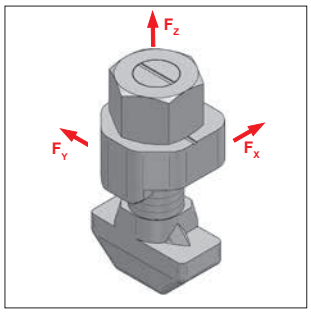
Fixation:



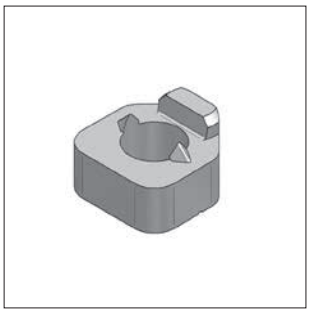
Wrench size 19 mm.
Recommended torque XL 80: 90 Nm.
Recommended torque XL 100: 120 Nm.

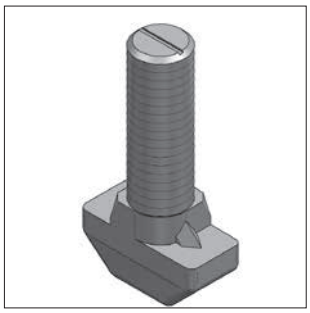
T-lock plus must not be used again after dismantling.

CENTUM® T-lock



CENTUM® T-lock


CENTUM® Lock washer


CENTUM® T-lock bolt

RAL GÜTEZEICHEN RAL-GZ 655-D

Specification:

For profile type:	XL 80, XL 100, XL 120 and XL 200		
Features:	Immovable and form-locking connection		
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 (at hole Ø ≥ 14 mm)		

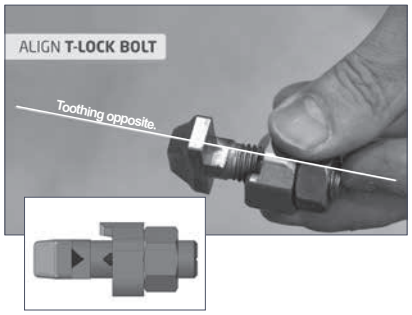
Technical data:

Material:	steel
Surface:	zinc-nickel

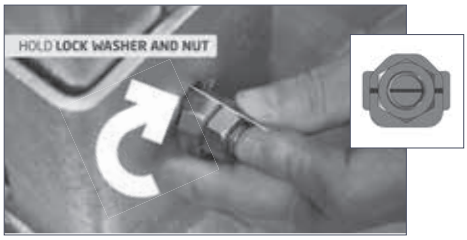
Identification	Property class	Tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
		XL 80	from XL 100			
CENTUM® T-lock M12x40	10.9	90	120	0,120	50	1610011000
consisting of:						
CENTUM® Lock washer	10	--	--	0,031	100	1610019000/zn
CENTUM® T-lock bolt	10.9	90	120	0,064	50	1610012100/zn
CENTUM® hex nut M12 FK10, DIN EN ISO 4032	10	--	--	0,017	100	8989995/zn

Assembly instruction for CENTUM® T-lock

Positioning:

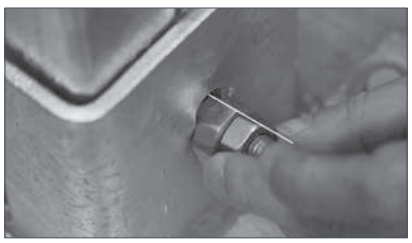


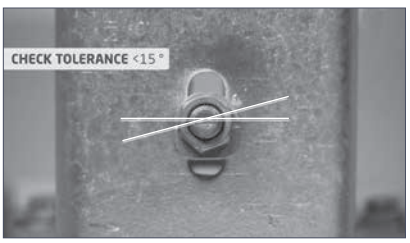
Insert T-lock through component and profile, position as required.



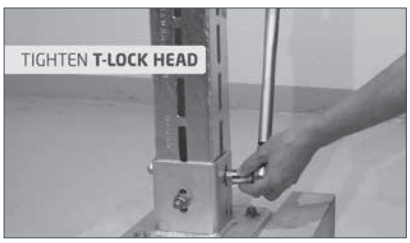
Turn T-lock 90° (marking notch stands diagonally to the elongated hole).

Adjustment:


Tilt forward T-lock, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).

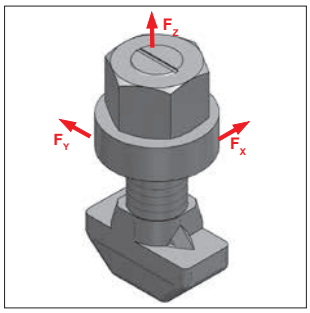


Fixation:

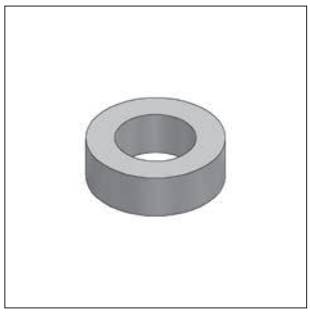


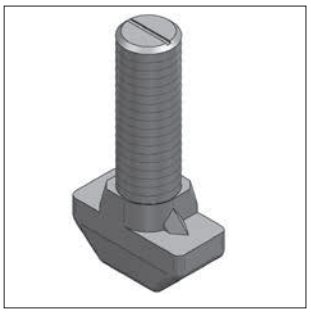
Wrench size 19 mm.
Recommended torque XL 80: 90 Nm.
Recommended torque XL 100: 120 Nm.
T-lock must not be used again after dismantling.

CENTUM® T-bolt, with steel disk



CENTUM® T-bolt


CENTUM® steel disk


CENTUM® T-lock

Specification:

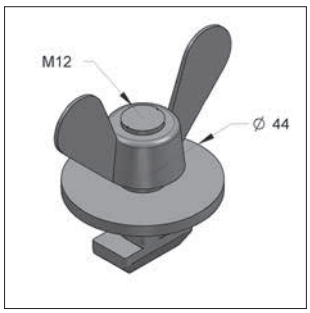
For profile type:	XL 80, XL 100, XL 120 and XL 200		
Features:	Frictional connection		
Load:	F_x	F_y	F_z
XL 80:	3 kN	8kN	3kN
from XL 100:	3 kN	10kN	3kN
Safety γ:	2		
Application:	C-profile connector		

Technical data:

Material:	steel
Surface:	zinc-nickel

Identification	Property class	Tightening torque [Nm] XL 80	Tightening torque [Nm] from XL 100	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® T-bolt M12x40	10.9	90	120	0,100	50	1610012000
consisting of:						
CENTUM® steel disk	4.6	--	--	0,019	100	1610019100/zn
CENTUM® T-lock bolt	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® FixBOB



CENTUM® FixBOB

Specification:

Application area:	Adjustment aid for CENTUM® assembly parts
Features:	Wing nut with hammer head **only for fixing** CENTUM® components

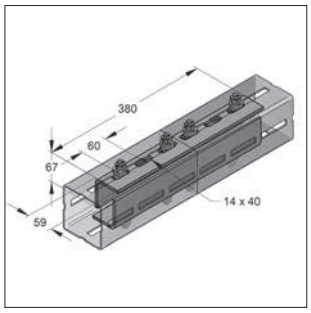
Technical data:

Material:	steel
Surface:	galvanized / painted red

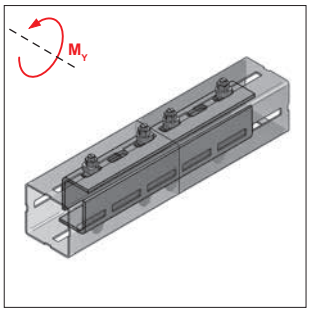
Identification	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® FixBOB	M12	0,139	10	1610013000

For assembly instructions, see Chapter 15.

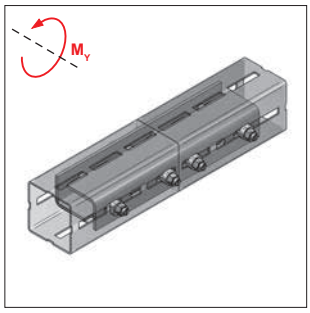
CENTUM® Connector



CENTUM® Connector



screw plant top/bottom



screw plant left/right

Specification:

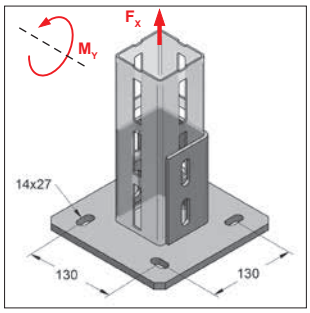
Scope of supply: 2 x L-steel, 8x CENTUM T-lock
Function: Connection of XL 80, XL 100, XL 120 or XL 200

Technical data:

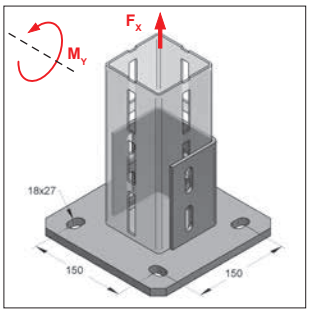
Material: steel
Surface L-profile: hot-dip galvanized
Surface screws: zinc-nickel

Identification	Limit moment M_Y at screw plant XL 80 top/bottom [kNm]	XL 80 left/right [kNm]	from XL 100 top/bottom [kNm]	from XL 100 left/right [kNm]	Length [mm]	Width b [mm]	Hight h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Connector-Set	1,25	0,85	2,50	1,35	380	67	59	5,28	1	1640005011

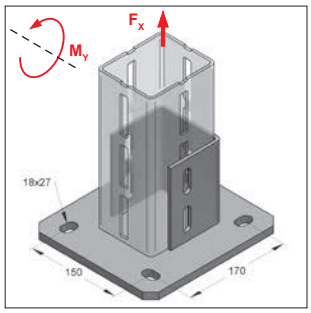
CENTUM® Holder



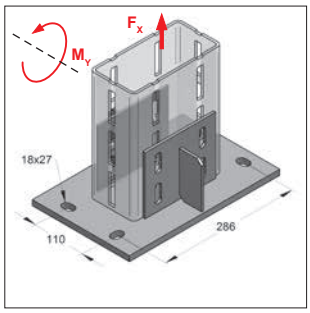
CENTUM® Holder XL 80



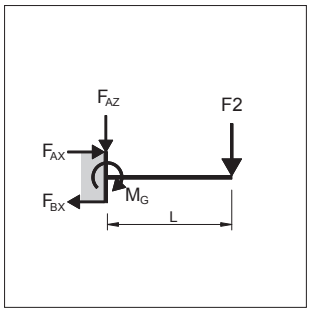
CENTUM® Holder XL 100



CENTUM® Holder XL 120



CENTUM® Holder XL 200



$M_G = F2 \times L$

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200

Scope of supply: CENTUM® T-lock plus M12 x 40

* At least one screw per profile side / With XL 200 two screws per profile side

Technical data:

Material: steel

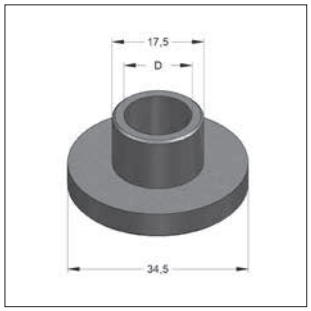
Material type: S235JR

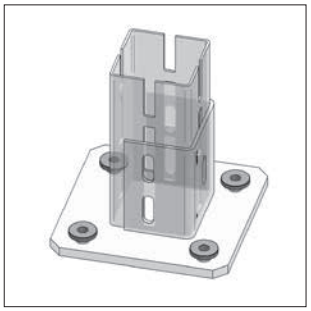
Surface: hot-dip galvanized

Safety factor: 1,54

Identification	Load* F_x* [kN]	Limited torque M_Y* [kNm]	Plate-width [mm]	Plate-length [mm]	Plate-thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Holder XL 80	24	4,2	200	200	10	4,48	1	1620801000
CENTUM® Holder XL 100	30	5,2	220	220	12	6,15	1	1621001000
CENTUM® Holder XL 120	30	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





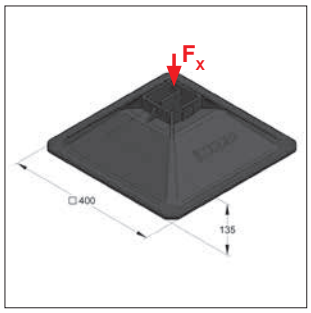
CENTUM® Adaptation

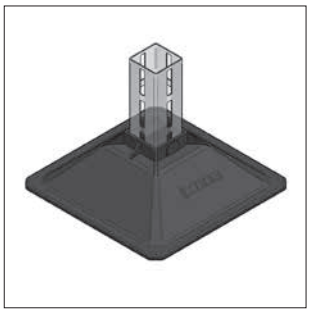
Specification:
For rail holder: XL 100, XL 120 and XL 200
Application area: Reduction of mounting holes from M16 to M12 or M10

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	0,044	50	1610019503/zn

Rooftop holder CENTUM XL 80





Rooftop holder Centum XL80

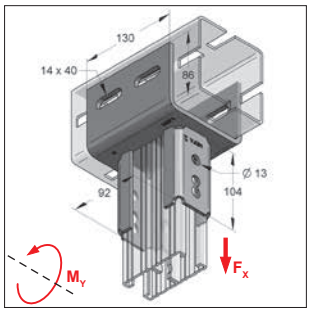
Specification:
Profile rail type: XL 80
Application area: For profile constructions on rooftop
Installation advise: The pre-mounted rooftop holder prevents damage to the migration of plasticizer.
XL 80 profile will be inserted into the rooftop holder.

Technical data:
Material holder: Polyethylene (HDPE)
Anti-vibration-pad: Rubber
temperature resistance: -40°C up to +80°C

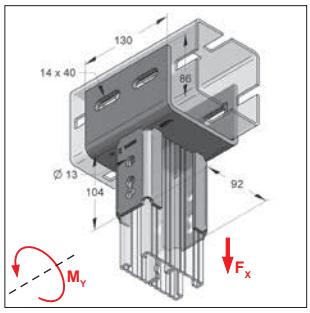
* Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Identification	Dimension holder [mm]	Load * F_x [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM XL 80	400 x 400	10	3,01	2	166201001

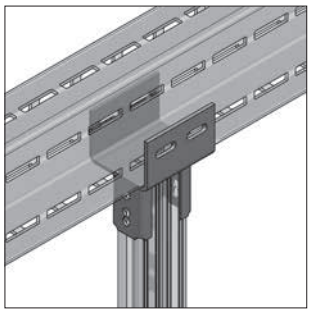
CENTUM® Adaptor



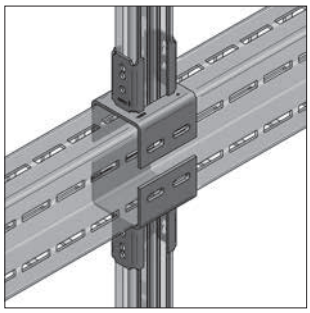
CENTUM® Adaptor
vertical



CENTUM® Adaptor
horizontal



CENTUM® Adaptor 45-90
with XL200



CENTUM® Adaptor 45-90
double

Specification:

For profile type:	XL 100, 45/90
Application:	To connect C-profile rails 45/90
Needed accessory:	Threaded square plate
	Hexagon screw
	CENTUM® T-lock plus M12 x 40

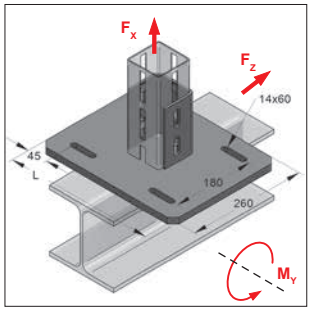
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

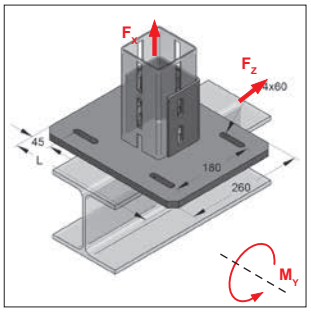
* Loads referring to component, not to connection

Identification	Load* F_x [kN]	Limited torque M_Y [kNm] fbv	[kNm] fsv	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

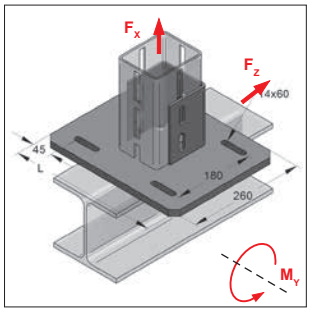
CENTUM® Girder fixation



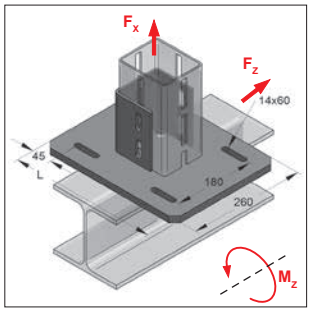
Girder fixation XL 80, vertical



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:	CENTUM® T-lock plus M12 x 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

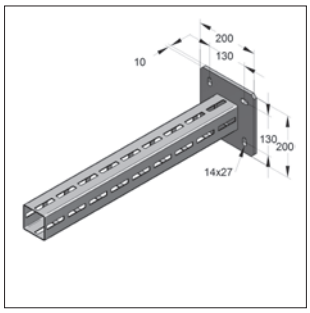
Table: Loads are related to clamping claws for adaption to steel girder, galvanized incl. screws class 8.8 and washer.

In combination with 4x clamping claw type AF, M12 (see page 14/27)			
Load	Load F_X [kN]	Load F_Z [kN]	$M_{Y/Z}$** [kNm]
CENTUM® Girder fixation XL 80	32	7,8	4,2
CENTUM® Girder fixation XL 100	34	7,8	4,2
CENTUM® Girder fixation XL 120	34	7,8	4,2

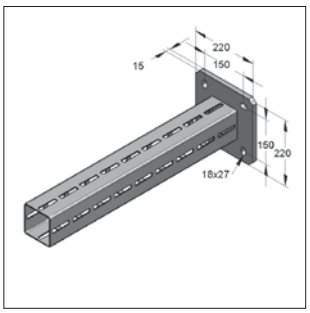
In combination with 4x clamping claw type LR, M12 (see page 14/30)			
Load	Load F_X [kN]	Load F_Z [kN]	$M_{Y/Z}$** [kNm]
CENTUM® Girder fixation XL 80	18	1,8	4,2
CENTUM® Girder fixation XL 100	18	1,8	4,2
CENTUM® Girder fixation XL 120	18	1,8	4,2

** At ulitization of all bolt holes

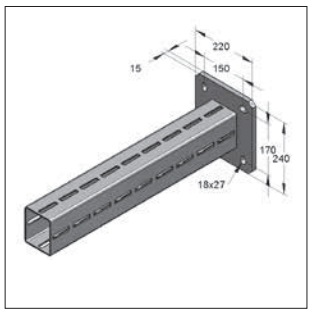
CENTUM® Console



CENTUM® Console XL 80



CENTUM® Console XL 100



CENTUM® Console XL 120

Specification:

For profile type: XL 80, 100 and 120

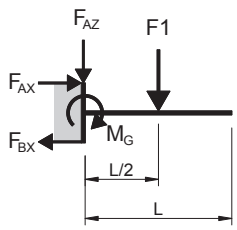
* Delivery time on request, variant demand possible

Technical data:

Material:	steel
Material type (plate):	S235JR
Material type (rail):	S275JR
Surface:	hot-dip galvanized
Safety factor:	1,35

Identification	Length [mm]	load F1 [kN]	Load F2 [kN]	Load 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	1,31	2,42	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

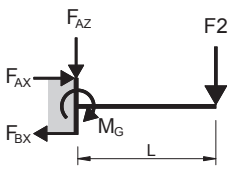
Loading conditon F1



$F_{AZ} = F1$

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

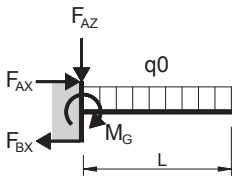
Loading conditon F2



$F_{AZ} = F2$

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

Loading conditon q0



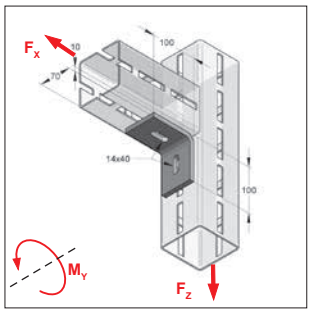
$F_{AZ} = qo * L$

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

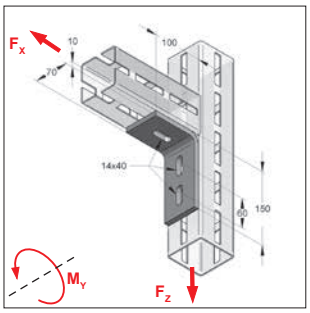
Limit moment XL 80	M_G:	3.017,28 Nm
Support reaction force XL 80	F_{AX}:	23,21 kN
Support reaction force XL 80	F_{BX}:	23,21 kN
Limit moment XL 100 and 120	M_G:	9.008,0 Nm
Support reaction force XL 100 and 120	F_{AX}:	53,0 kN
Support reaction force XL 100 and 120	F_{BX}:	53,0 kN

Remark:
All load capacities excessive refer to static loads.

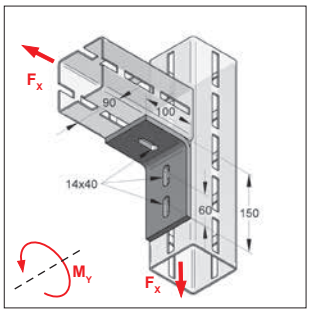
CENTUM® Angles - corner connector



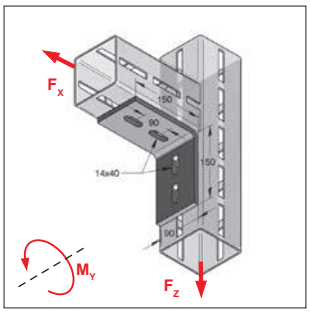
CENTUM® 2-hole angle
XL 80



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 and XL 200
Required accessory:	CENTUM® T-lock plus M12 x 40

* By using of all screw holes

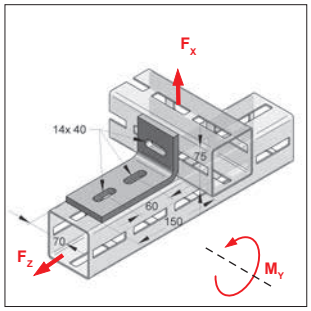
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

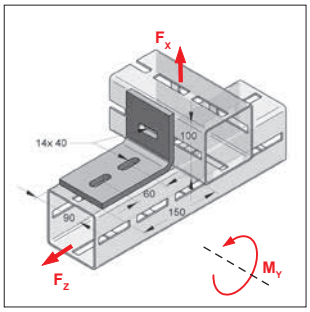
Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

Identification	Load F_X [kN]	Load F_Z [kN]	Limited torque M_Y* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® 2-hole angle XL 80	3,0	8	0,40	1,02	1	1640081005
CENTUM® 3-hole angle XL 80	5,2	16	0,40	1,28	1	1640081010
CENTUM® 3-hole angle from XL 100	6,0	20	0,50	1,68	1	1640001010
CENTUM® 4-hole angle from XL 100	6,0	20	0,50	2,02	1	1640001020

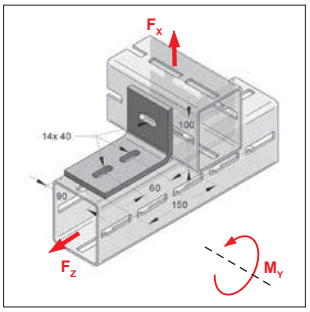
CENTUM® Angles horizontal - cross connector



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 and XL 200
Required accessory:	CENTUM® T-lock plus M12 x 40

* By using of all screw holes

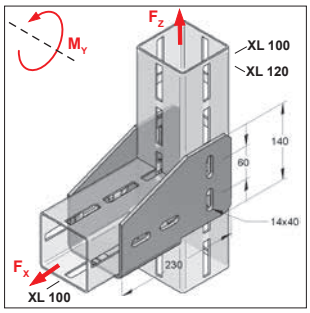
Technical data:

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	Load F_X [kN]	Load F_Z [kN]	Limited torque M_G* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® 3-hole angle horizontal XL 80	5,2	16	0,4	1,13	1	1640081012
CENTUM® 3-hole angle horizontal XL 100	6	20	0,5	1,68	1	1640001012
CENTUM® 3-hole angle horizontal XL 120	6	20	0,5	1,68	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: CENTUM® T-lock plus M12 x 40

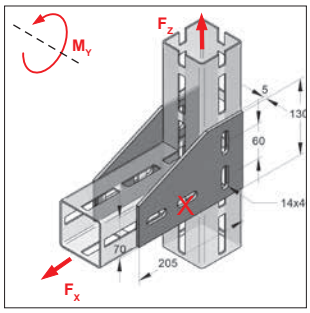
Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

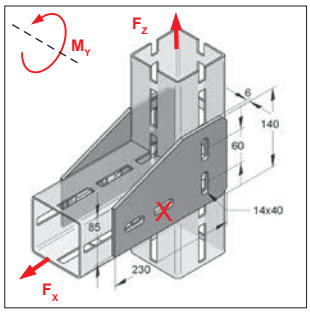
* By using of all screw holes

Identification	Load F_X [kN]	Load F_Z [kN]	Limited torque M_Y* [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 and XL 200
Required accessory: CENTUM® T-lock M12/40 or CENTUM® T-lock plus M12 x 40

Technical data:

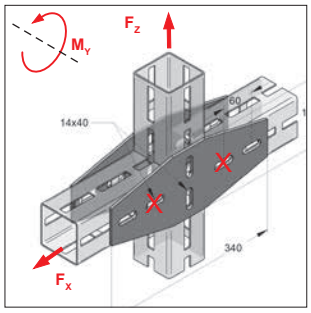
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

* By using of all screw holes

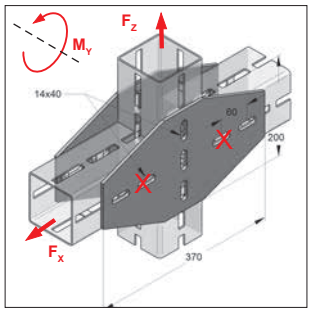
Remark: For M_G = 0 only one screw per side at X

Identification	Profile type	Load F_X [kN]	Load F_Z [kN]	Limited torque M_Y* [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	1640003010

CENTUM® Cross plate



CENTUM® Cross plate
XL 80



CENTUM® Cross plate
from XL 100

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200
Required accessory: CENTUM® T-lock M12/40 or
CENTUM® T-lock plus M12 x 40

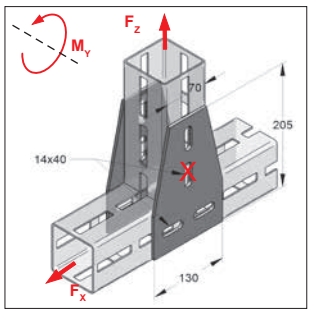
* By using of all screw holes
Remark: For $M_G = 0$ only one screw per side at X

Technical data:

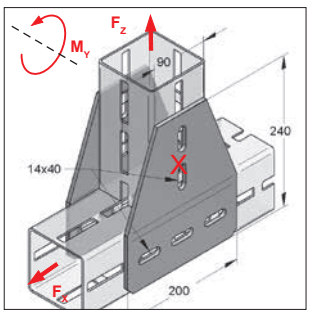
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification	Profile type	Load F_X [kN]	Load F_Z [kN]	Limited torque M_Y* [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

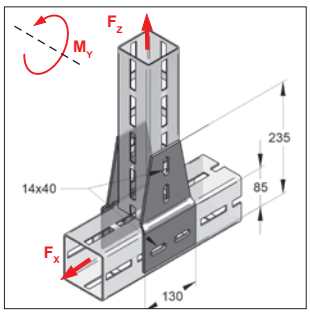
CENTUM® T-plate



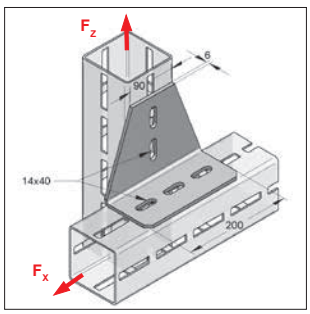
CENTUM® T-plate
XL 80



CENTUM® T-plate
ab XL 100



CENTUM® T-plate cranked sym.



CENTUM® T-plate, angled

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200
Required accessory: CENTUM® T-lock M12/40 or
CENTUM® T-lock plus M12 x 40

Remark: For $M_G = 0$ only one screw per side at X

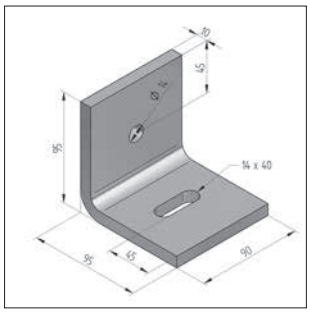
Technical data:

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	Load F_X [kN]	Load F_Z [kN]	Limited torque M_Y* [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]	from XL 100	40	40	1,20[1]	1,97	1	1640001030
CENTUM® T-plate cranked sym.[2]	to connect XL 80 with XL 100	32	32	0,95[1]	1,08	1	1640003030
	to connect XL 100 with XL 120	40	40	1,20[1]			
CENTUM® T-plate, angled	XL 100, XL 120, XL 200[3]	20	9	-	1,97	1	1640001040

CENTUM® wall angle XL100 horizontal



CENTUM® wall angle
XL100 horizontal

CENTUM® wall angle
XL100 horizontal with rail

Specification:

For profile type:	XL 100 or XL 120 upright
Area of application:	With round hole for wall attachment.
Required accessory:	CENTUM® T-lock plus M12 x 40

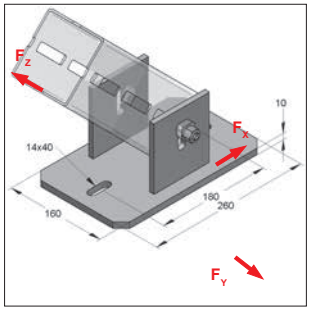
Technical data:

Material:	steel
Material type:	S235
Surface:	hot-dip galvanized

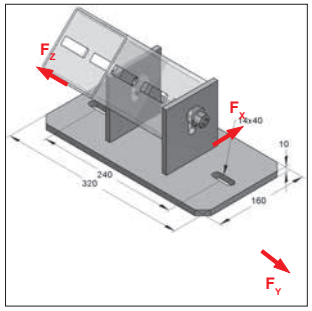
Note: Always align the slotted holes of the components in the direction of the slotted holes of the CENTUM® profile.

Identification	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® wall angle XL 100 horizontal	1,29	1	1640101005

CENTUM® Joint holder



CENTUM® Joint holder
XL 100 vertical



CENTUM® Joint holder
XL 100 horizontal

Specification:

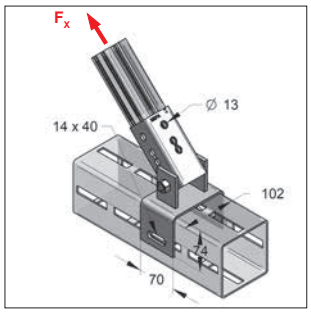
For profile type:	XL 100 or XL 120
Required accessory:	CENTUM® T-lock M12 x 40
Tightening torque:	60 Nm
Delivery time:	On request

Technical data:

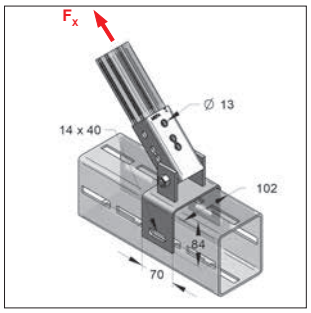
Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

Identification	Load F_X [kN]	Load F_Z [kN]	Load 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	11	20	11	180	260 x 160 x 10	4,89	1	1641004010
CENTUM® Joint holder XL 100 horizontal	11	20	11	240	320 x 160 x 10	5,72	1	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

Needed accessory: 2x CENTUM® T-lock plus M12 x 40

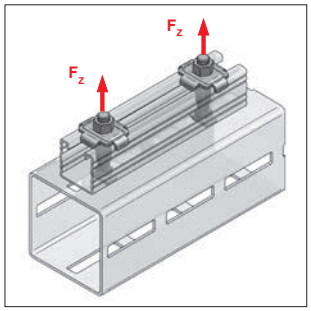
Technical data:

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

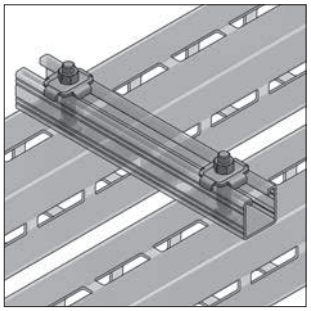
[1] Loads refering to component, not to connection

Identification	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	1,28	1	1641014110
CENTUM® Joint connection XL 120	7,0	13	14 x 40	1,32	1	1641214110

CENTUM® C-profile connector



CENTUM® C-profile connector



CENTUM® C-profile connector cross

Specification:

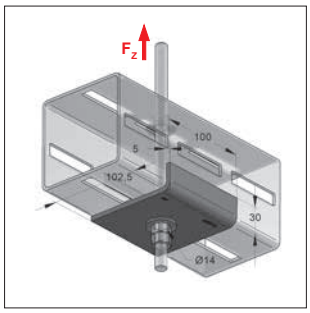
For profile type: XL 80, XL 100, XL 120 and XL 200
Application: To connect profile rails

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	For profile-height [mm]	Load F_z [kN]	Tightening torque [Nm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® C-profile connector	40-45	2,0	10	0,17	50	1640017040
CENTUM® C-profile connector	60	2,0	10	0,17	50	1640017060

CENTUM® Profile gusset



CENTUM® Profile gusset

Specification:

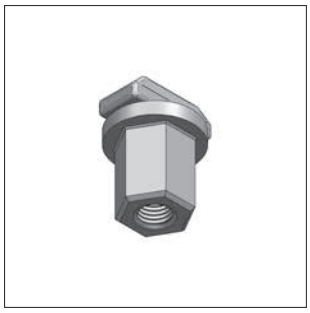
For profile type:	XL 100, XL 120 and XL 200
Application:	Suspension of CENTUM® Profiles with threaded rods
Required accessory:	3x nut M12 2x Washer 13 x 30 x 2,5 Threaded rod M12

Technical data:

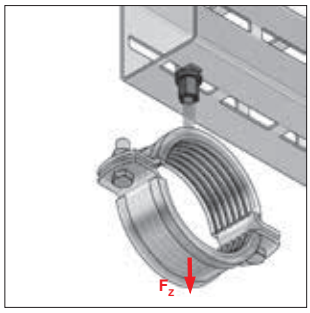
Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Safety factor:	1,54

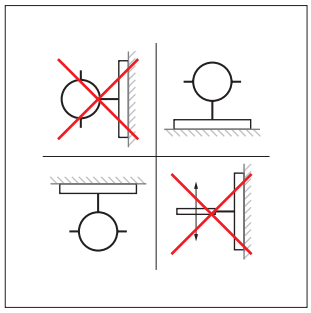
Identification	Thread	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Profile gusset	M12	10,0	0,49	1	1620005010

CENTUM® Direct connector



CENTUM® Direct connector





Mounting recommendation

Specification:

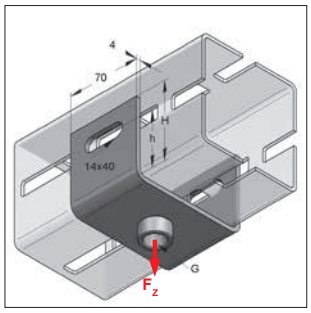
For profile type:	XL 80, XL 100, XL 120, XL 200
Application:	Direct connection for M10 or M12 thread

Technical data:

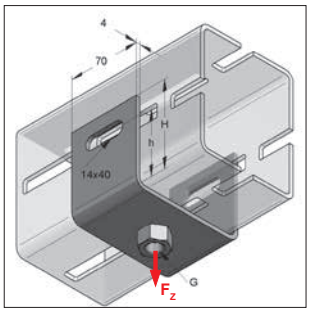
Material type:	steel
Surface:	zinc-nickel
Safety factor:	1,54

Identification	Wrench size	Height collar nut [mm]	Recommended tightening torque [Nm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Direct connector	SW 17	25	25	3,0	0,071	50	1640016010
CENTUM® Direct connector	SW 17	25	25	3,0	0,069	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 80, XL 100, XL 120 and XL 200

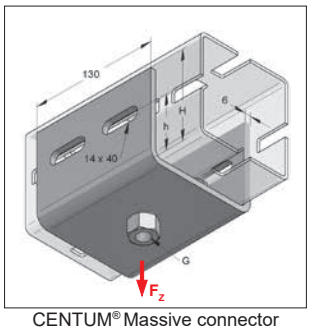
Needed accessory: 2 x CENTUM® T-lock plus M12 x 40

Technical data:

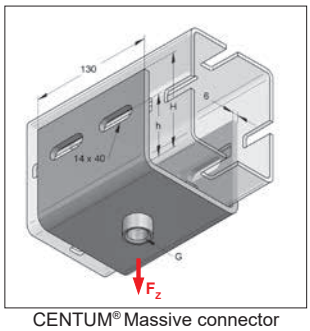
Material: steel
Material type: S235JR
Surface: zinc-nickel
Safety factor: 1,54

Identification	Profile type	Thread G	Load F_z [kN]	H [mm]	h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Thread connector	XL 80	M16	5,0	64	40	0,480	1	1640818007
CENTUM® Thread connector	XL 80	1/2"	5,0	64	40	0,470	1	1640818008
CENTUM® Thread connector	XL 80	1"	5,0	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

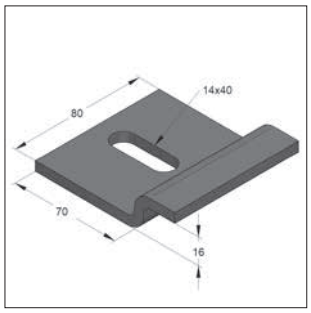
Needed accessory: 4 x CENTUM® T-lock plus M12 x 40

Technical data:

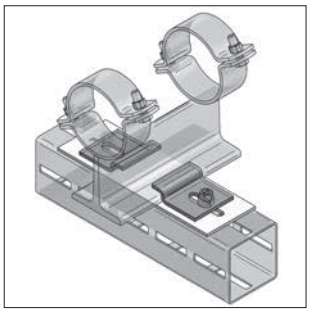
Material:	steel
Material type:	S235JR
Surface:	zinc-nickel
Safety factor:	1,54

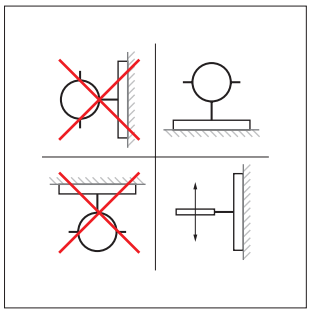
Identification	Profile type	Thread G	Load F_z [kN]	H [mm]	h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Massive connector	XL 100 / XL 200	M16	10,0	86	50	1,65	1	1641019007
CENTUM® Massive connector	XL 100 / XL 200	1/2"	10,0	86	50	1,64	1	1641019008
CENTUM® Massive connector	XL 100 / XL 200	1"	10,0	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-guides



CENTUM® Z-guide


Z-guide installation example


Mounting recommendation

Specification:

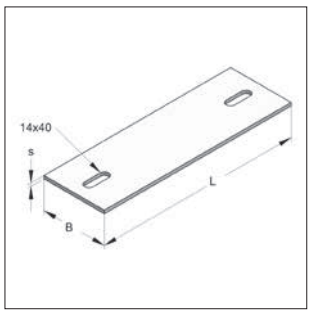
For profile type:	XL100, XL120 and XL 200
	Set of 2 pcs.
Mounting instruction:	Suitable for standing assembly, only
Required accessory:	Sliding stripe PA 6
	T-bolt with steel disk, M12/40

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Identification	Length [mm]	Width [mm]	Slide gap h [mm]	Thickness [mm]	Elongated hole-Ø [mm]	Weight [kg/set]	Packing [set]	Part-No.
CENTUM® Z-guides s11	70	80	16	6	14 x 40	0,80	1	1650015017

CENTUM® Sliding stripe



CENTUM® Sliding stripe

Specification:

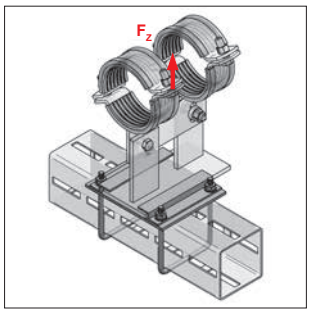
Product attributes:	Improvement of sliding characteristic
Application area:	Sliding support T or sliding plates to 200 mm width

Technical data:

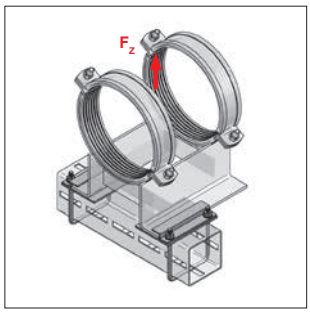
Material:	polyamide 6
Static friction factor:	0,2 - 0,3
Thermal load:	- 30 °C up to + 110 °C

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 100/5 2-hole	250	100	5	14 x 40	≤ 100	0,138	1	9991508
Sliding stripe PA 100/5 2-hole	300	100	5	14 x 40	≤ 150	0,167	1	9991507
Sliding stripe PA 100/5 2-hole	350	100	5	14 x 40	≤ 200	0,195	1	9991506

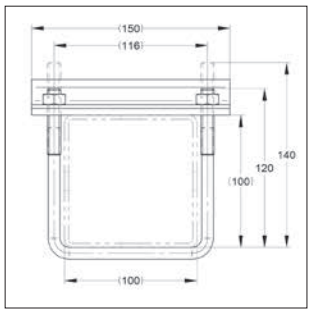
CENTUM® Z-guides Set with U-bolt



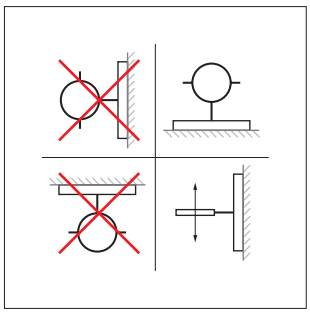
CENTUM® Z-guides Set
for sliding sledge and sliding plate
with 100 mm width



CENTUM® Z-guides Set
for sliding sledge and sliding plate
above 140 mm width



U-bolt 120 / 140 M10



Mounting recommendation

Specification:

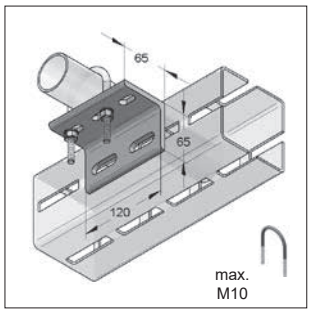
Application:	Fixing of sliding element on CENTUM XL 100 or square pipe 100 or CENTUM XL 120 upright
scope of delivery: (Set for 100 mm)	2 x U-bolt 116/120 M10 2 x Z-guides 150 mm 2-hole 1 x sliding stripe PA6 4-hole (150 x 165 x 5) 4 x nut M10
scope of delivery: (Set for 140 mm)	2 x U-bolt 116/120 M10 2 x Z-guides 150 mm 2-hole 1 x sliding stripe PA6 2-hole (150 x 100 x 5) 4 x nut M10
scope of delivery: (Set for 100 mm) XL 120 upright	2 x U-bolt 116/140 M10 2 x Z-guides 150 mm 2-hole 1 x sliding stripe PA6 2-hole (150 x 165 x 5) 4 x nut M10
scope of delivery: (Set for 140 mm) XL 120 upright	2 x U-bolt 116/140 M10 2 x Z-guides 150 mm 2-hole 1 x sliding stripe PA6 2-hole (150 x 100 x 5) 4 x nut M10

Technical data:

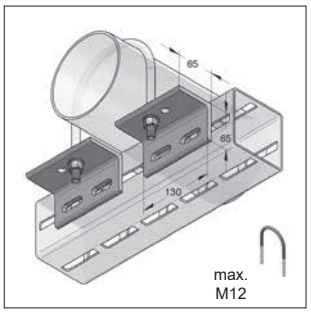
Material:	steel
Material type:	S235JR
Surface:	
- U-bolt, Z-guide:	zinc-nickel
- nut:	hot-dip galvanized
Material sliding stripe:	PA6
static friction factor:	0,2 - 0,3
Temperature resistance:	- 30° C up to + 110° C

Identification	Sliding element width [mm]	For pipe / CENTUM [mm]	Max. thickness sliding element [mm]	Load F_z [kN]	Weight [kg/Set]	Packing [Set]	Part-No.
Z-guides Set	100	100 x 100	16	4,5	1,060	1	14799100
Z-guides Set	≥ 140	100 x 100	16	4,5	1,090	1	14799140
Z-guides Set	100	100 x 120	16	4,5	1,080	1	14799101
Z-guides Set	≥ 140	100 x 120	16	4,5	1,110	1	14799141

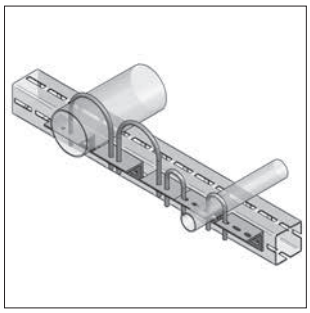
CENTUM® Pipe holder

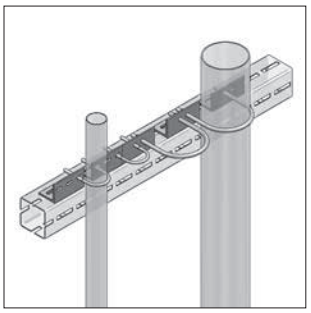


CENTUM® Ø 21,3 - 76,1



CENTUM® Ø 88,9 - 219,1





Specification:

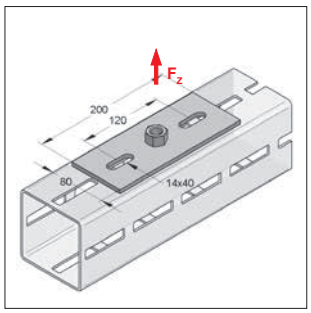
For pipe diameter:	Ø 21,3 - 219,1 mm
Mounting instruction:	Pipe must overlie
Advantage:	Installation of different pipe diameter
Required accessory:	CENTUM® T-lock plus M12 x 40 and U-bolt
Delivery time:	On request
On request:	CENTUM® Pipe holder 273,0 - 323,9 mm

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® Base plate



CENTUM® Base plate M12

Specification:

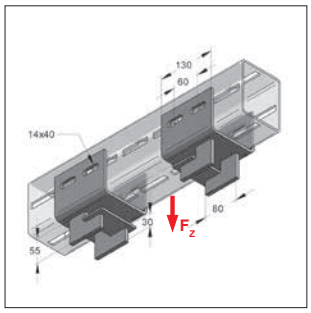
For profile type:	XL80, XL100, XL120 and XL 200
Required accessory:	CENTUM® T-lock plus M12 x 40 or T-bolt with steel disk, M12/40

Technical data:

Material:	steel
Material type:	S235JRG2
Surface:	zinc-nickel
Safety factor:	1,54

Identification	Length [mm]	Height [mm]	Load F_z [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® Sliding base, hanging



CENTUM® Sliding base, hanging

Specification:

For profile type:	XL 100, XL 120 or XL 200
Required accessory:	CENTUM® T-lock plus M12 x 40
Remark:	Shipment in pairs
sliding element:	Base plates above 150 mm width Sliding sledge and Sliding support T above 100 mm width

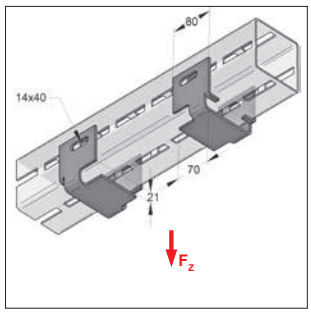
Technical data:

Material Sliding base:	steel
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

* Loads refer to pair

Identification	Profile type	Alignment	Load* F_z [kN]	Weight [kg/set]	Packing [set]	Part-No.
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:	CENTUM® T-lock plus M12 x 40
Remark:	Shipment in pairs
sliding element:	- with glued Sliding stripes - Base plates, width Sliding sledge and Sliding support T above 100 mm width

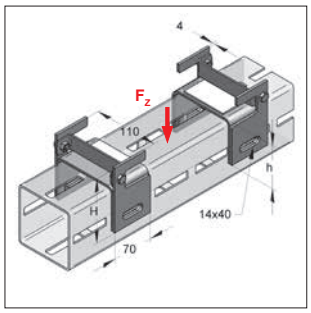
Technical data:

Material Sliding base:	steel
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

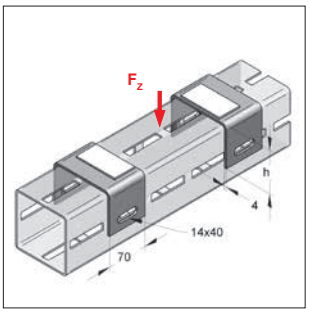
* Loads refer to pair

Identification	Profile type	Alignment	Load* F_z [kN]	Weight [kg/set]	Packing [set]	Part-No.
CENTUM® Sliding base, light	XL 80	hanging	5,0	1,13	1	1650804000
CENTUM® Sliding base, light	XL 100	hanging	5,0	1,36	1	1651004000

CENTUM® Sliding base, standing



CENTUM® Sliding base, standing with lift lock



CENTUM® Sliding base, standing without lift lock

Specification:

For profile type:	XL 80, XL 100, XL 120 and XL 200
Required accessory:	CENTUM® T-lock plus M12 x 40 or T-bolt with steel disk, M12/40
Application area:	Sliding support T and sliding sledge from 200 mm
Remark:	Shipment in pairs

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

* Loads refer to pair

Identification	Profile type	Alignment	Load * F_z [kN]	H [mm]	h [mm]	Weight [kg/set]	Packing [set]	Part-No.
Sliding base with lift lock	XL 80	standing	32	100	64	1,81	1	1650801020
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:

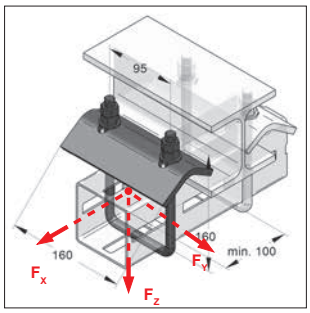
For profile type: XL 80, XL 100 or XL 120

Technical data:

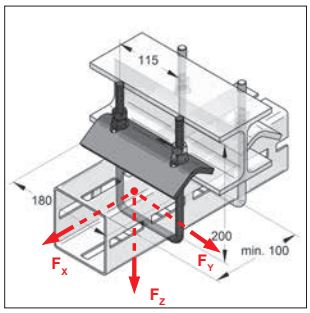
Material:	plastic
Material type:	PE
Color:	black

Identification	Weight [kg/pc.]	Packing [set]	Part-No.
CENTUM® Protecting cap XL 80	0,059	20	1670081
CENTUM® Protecting cap XL 100	0,079	20	1670101
CENTUM® Protecting cap XL 120	0,092	20	1670121

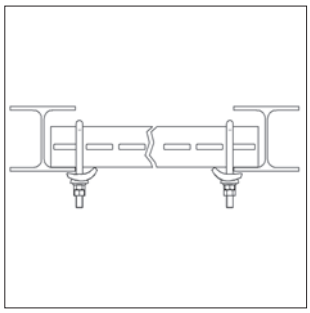
CENTUM® Clamping bow

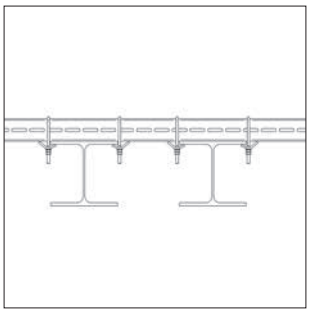


CENTUM® Clamping bow
XL 80



CENTUM® Clamping bow
XL 100 / XL 120





Specification:

For profile rail type:	XL 80, XL 100 or XL 120
Application area:	For mounting of steel profile rail on beam
Delivery time:	On request

Set consisting of:

U-bolt	1 pc.
CENTUM® tensioning bracket	1 pc.
Nuts M12	4 pcs.
Washer	2 pcs.

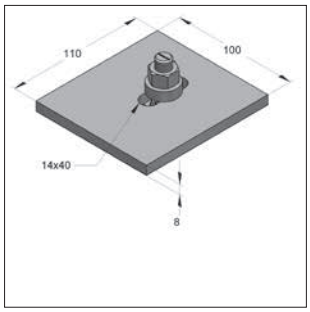
Technical data:

Material:	steel
Material type:	S235JR
Surface:	
U-bolt:	zinc-nickel
CENTUM® tensioning bracket	Galvanized
Nuts M12	Galvanized
Washer	Galvanized

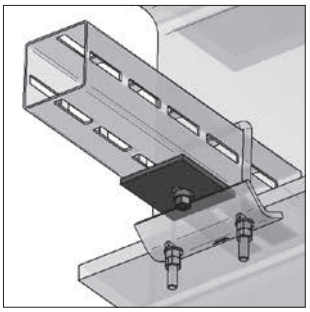
Remark: Loads refer according to a clamping bow set. Please notice loads of CENTUM® profile rails

Identification	Thread U-bolt	Load F_X	F_Y [kN]	F_Z	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	1,49	1	1661001011

CENTUM® Spacer plate for clamping bows



CENTUM® Spacer plate
for clamping bows
T-bolt, with steel disk


CENTUM® spacer plate combined
with CENTUM® clamping bow

Specification:

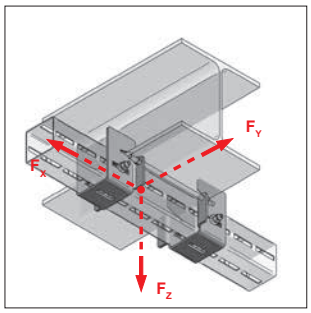
Application area:	To raise clamping thickness of CENTUM clamping bow
Mounting instruction:	With space plate clamping thickness can be increased by 8 mm
Required accessory:	T-bolt, with steel disk, M12/40
Delivery time:	On request

Technical data:

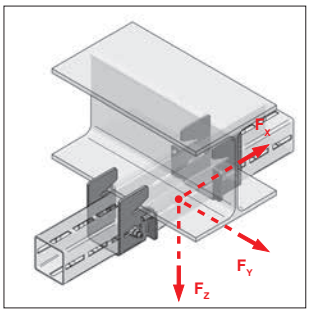
Material:	steel
Surface:	hot-dip galvanized

Identification	Dimension 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

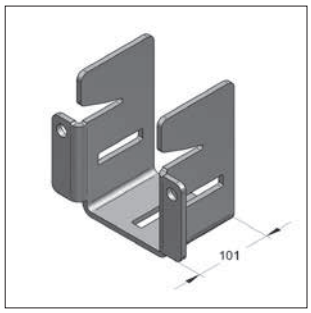
CENTUM® Clamping shoe



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 plus M12 x 40 120 Nm
Not for vertical beams.

Scope of delivery: Sold in pairs

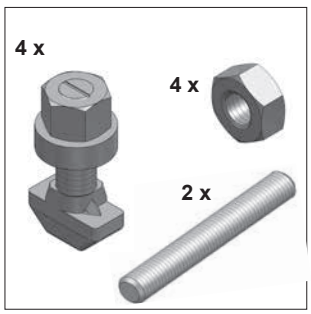
Technical data:

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]	Load F_x [kN]	Load F_y [kN]	Load F_z [kN]	Weight [kg/set]	Packing [set]	Part-No.
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:

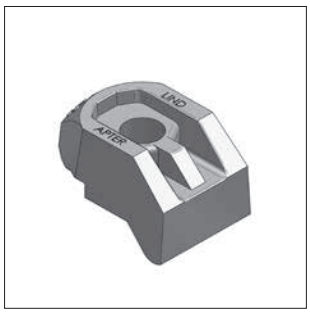
Application area: Fixing accessories for Centum clamping shoe
Content: 4 x T-lock M12/40
2 x profile rail M12
4 x nut M12

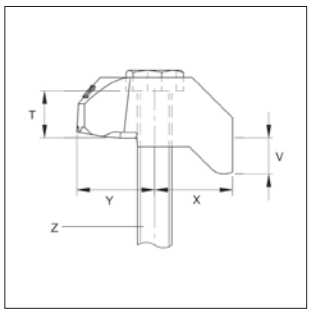
Technical data:

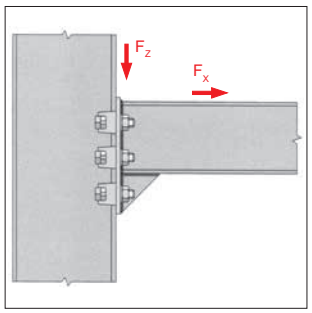
Material: Steel
Surface
T-lock: zinc-nickel
Threaded rods & nuts: galvanized

Identification	Threaded rod lenght [mm]	Clamping range flange [mm]	Weight [kg/set]	Packing [set]	Part-No.
CENTUM® clamping shoe accessory 160	160	82 - 160	0,780	1	1660019160
CENTUM® clamping shoe accessory 300	300	160 - 300	0,852	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

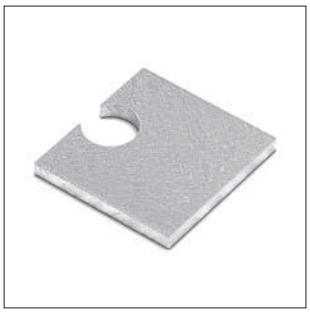
** For shear force value is valid for two screws couplings

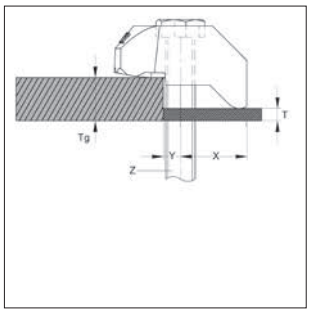
*** On request

Type	Dimensions Y [mm]	X [mm]	T [mm]	V [mm]	Width [mm]	Needed screw	Property class screw	Tightening torque [Nm]	Load* F_x [kN]	F_z coated [kN]	F_z galvanized [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
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

Selection chart for clamping claw AF page Seite 14/31.

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 Z	Dimension Y [mm]	Dimension X [mm]	Dimension T [mm]	Width [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
AF 12 CW	M12	7	33	2	40	0,030	1	0576012
AF 12 P1	M12	7	33	5	40	0,070	1	0576082
AF 12 P2	M12	7	33	10	40	0,120	1	0576112
AF 16 CW	M16	8	40	2	50	0,040	1	0576016
AF 16 P1	M16	8	42	5	52	0,100	1	0576114
AF 16 P2	M16	8	42	10	52	0,200	1	0576116

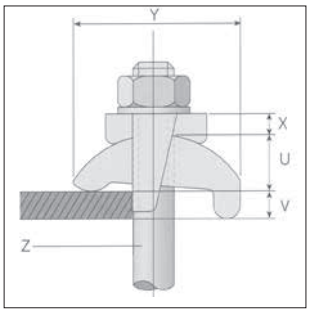
Selection chart for clamping claw AF page Seite 14/31.

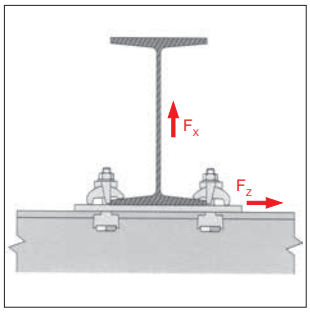
Selection chart for clamping claw Typ AF with different flange thicknesses in parallel flange Straps:

	M12				M16			
Flange thickness	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

Technical data:

Material: spherulitic cast iron
Surface: galvanized
Safety factor: 5:1

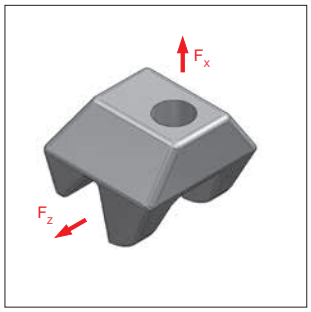
Required accessory:

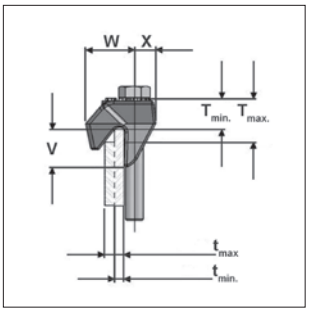
1 x hexagon bolt h.-d. galv. FK 8.8 / threaded rod
1 x washer DIN EN ISO 7089 h.-d. galv.
1 x hexagon nut h.-d. galv.

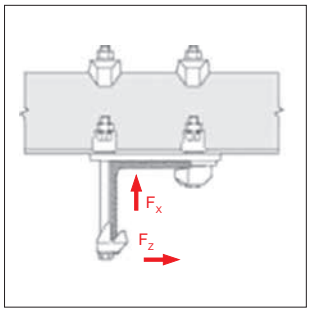
[1] Checked for dynamic loads
[3] In conjunction with property class 8.8
[4] For shear force value is valid for two screws couplings
[2] Larger flange thickness can be clamped with washer components (P1 and P2 on request)

Type	Dimensions					Needed	Tightening	Load[3]		Weight	Packing	Part-No.
	Y [mm]	U [mm]	X [mm]	V[2] [mm]	Width [mm]	Screw Z	torque [Nm]	F_x [kN]	F_z[4] [kN]	[kg/pc.]	[pc.]	
LR M12	56,0	18,5	7,0	3-12	39,0	M12	69	4,5	0,9	0,172	1	1660003012
LR M16[1]	67,0	22,5	8,0	3-16	46,0	M16	147	8,5	1,7	0,310	1	1660003016

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

Technical data:

Material: cast iron
Surface: hot-dip galvanized
Safety factor: 2,0

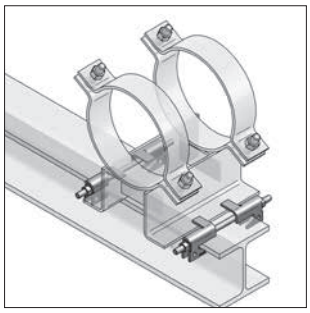
Required accessory:

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.

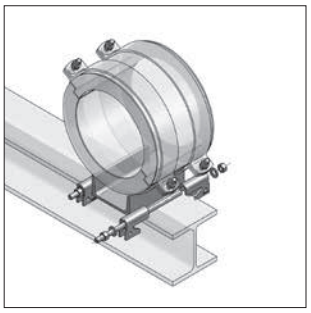
* In conjunction with property class 8.8
** For shear force value is valid for two screws couplings

Type	Dimensions				Min.-max. clamping size t	Min.-max. projection T	Tightening torque	Load F_x*	Load F_z**	Weight	Packing	Part-No.
	X [mm]	V [mm]	W [mm]	Width [mm]	[mm]	[mm]	[Nm]	[kN]	[kN]	[kg/pc.]	[pc.]	
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.

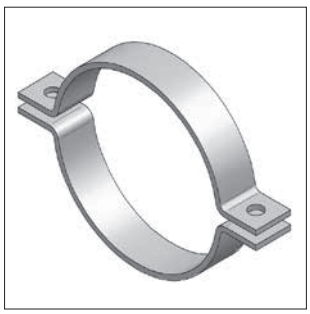
Type A with lift lock for guide bearing
Type B without lift lock for floating bearing

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 A, type Titan HD clamp

Pipe clamp Form A
type Maxima / Titan HD
clamp

Specification:		**Technical data:**	
Closure:	Hexagon nut/ closure screw	Material:	steel
Model:	2-parts	Material type:	S235JR
OD:	64 up to 368 mm	Surface:	galvanized
Connection:	Without connection		
Delivery time:	On request		

Pipe clamp Form A, type Titan HD clamp

Pipe clamp Form A
type Maxima / Titan HD
clamp

Specification:		**Technical data:**	
Closure:	Hexagon nut/ closure screw	Material:	steel
Model:	2-parts	Material type:	S235JR
OD:	64 up to 368 mm	Surface:	galvanized
Connection:	Without connection		
Sound insulation:	According to DIN 4109	Sound insulation lining:	EPDM (ceramic lining on request)
Delivery time:	On request	Temperature resistance:	- 35 °C up to + 100 °C
		Insulation thickness:	6 mm

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Pipe clamp Form A, type TGA

Pipe clamp Form A, type TGA

Specification:		**Technical data:**	
Closure:	Hexagon nut/ closure screw	Material:	steel
Model:	2-parts	Material type:	S235JR
OD:	219 up to 1220 mm	Surface:	hot-dip galvanized
Connection:	Without connection		
Delivery time:	On request		

Pipe clamp Form A, type TGA

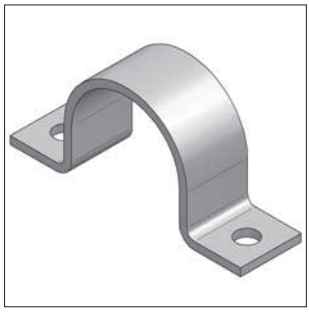
Pipe clamp Form A, type TGA

SCHALL-SCHUTZ DIN 4109

Baustoffklasse ●B2● "Normal entflammbar" nach DIN 4102

Specification:		**Technical data:**	
Closure:	Hexagon nut/ closure screw	Material:	steel
Model:	2-parts	Material type:	S235JR
OD:	219 up to 1220 mm	Surface:	galvanized
Connection:	Without connection		
Sound insulation:	According to DIN 4109	Sound insulation lining:	EPDM (ceramic lining on request)
Delivery time:	On request	Temperature resistance:	- 35 °C up to + 100 °C
		Insulation thickness:	6 mm

Stirrup clamp according to DIN 1593

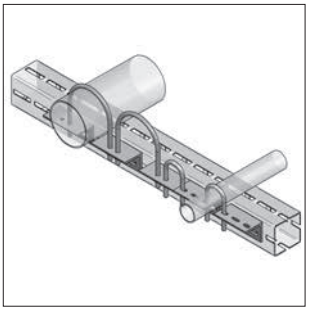


Stirrup clamp according to DIN 1593

Specification:		**Technical data:**	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	One-piece	Material type:	S235JR
OD:	20 up to 219 mm	Surface:	hot-dip galvanized
Connection:	Without connection		
Delivery time:	On request		

U-bolt pipe hanger

U-bolt pipe hanger

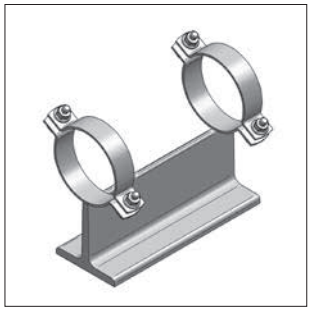


Pipe holder see page 14/22

Remark:
U-bolts galvanized
see catalogue
chapter 1

Specification:		**Technical data:**	
OD:	60,3 up to 324 mm	Material:	steel
Connection:	M10, M12, M20	Material type:	S235JR
Delivery time:	On request	Surface:	zinc-nickel

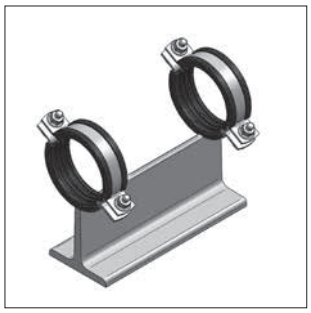
Sliding support T



Sliding support T

Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	T-support	Material type:	S235JR
OD:	20 up to 219 mm	Surface:	hot-dip galvanized
Delivery time:	On request		

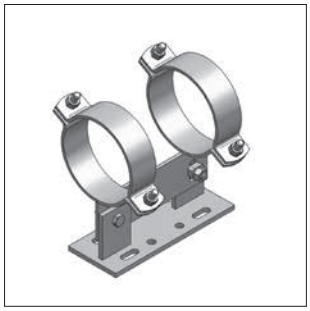
Sliding support T, sound insulated



Sliding support T, sound insulated

Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	T-support	Material type:	S235JR
OD:	20 up to 219 mm	Surface:	hot-dip galvanized
Sound insulation:	According to DIN 4109		
Delivery time:	On request	Sound insulation lining:	EPDM / TPE fibreglass lining on request
		Temperature resistance:	- 35 °C up to + 100 °C
		Insulation thickness:	6 mm

Sliding support T, 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:	250
OD:	20 up to 219 mm
Height, adjustable:	100 up to 125 mm
	125 up to 150 mm
	150 up to 175 mm
	175 up to 200 mm
Delivery time:	On request

Technical data:	
Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Sliding support T, height-adjustable, with 2 pipe clamps, sound insulated

Sliding support T 100/200

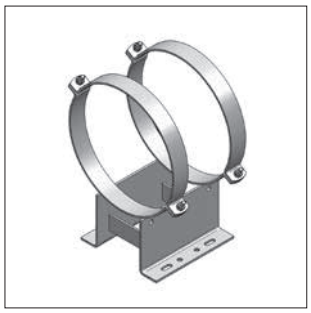
SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Specification:	
Closure:	Hexagon nut / closure screw
Model:	T-support
Support width:	100
Support length:	250
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
	175 up to 200 mm
Delivery time:	On request

Technical data:	
Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Sound insulation lining:	EPDM / TPE
	fibreglass lining on request
Temperature resistance:	- 35 °C up to + 100 °C

Sliding sledge



Sliding sledge

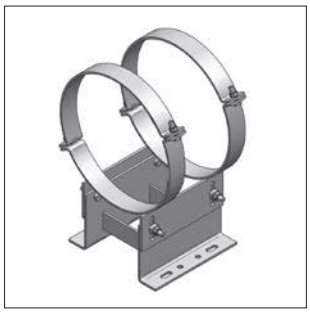
Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	Double-L-support	Material type:	S235JR
OD:	219 up to 813 mm	Surface:	hot-dip galvanized
Delivery time:	On request		

Sliding sledge, sound insulated

Sliding sledge, sound insulated

Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	Double-L-support	Material type:	S235JR
OD:	219 up to 813 mm	Surface:	hot-dip galvanized
Sound insulation:	According to DIN 4109	Sound insulation lining:	EPDM / TPE fibreglass lining on request
Delivery time:	On request	Temperature resistance:	- 35 °C up to + 100 °C
		Insulation thickness:	6 mm

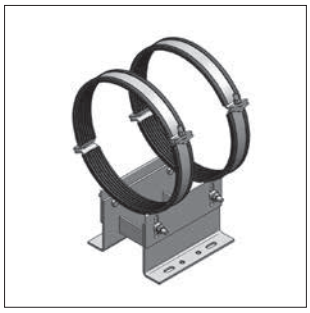
Sliding sledge, height adjustable



Sliding sledge, height adjustable

Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	Double-L-support	Material type:	S235JR
OD:	219 up to 813 mm	Surface:	hot-dip galvanized
Height, adjustable:	100 up to 150 mm 150 up to 200 mm		
Delivery time:	On request		

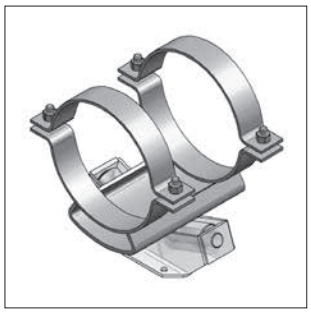
Sliding sledge, height adjustable, sound insulated



Sliding sledge, sound insulated

Specification:		Technical data:	
Closure:	Hexagon nut / closure screw	Material:	steel
Model:	Double-L-support	Material type:	S235JR
OD:	219 up to 813 mm	Surface:	hot-dip galvanized
Sound insulation:	According to DIN 4109		
Height, adjustable:	100 up to 150 mm 150 up to 200 mm	Sound insulation lining:	EPDM / TPE fibreglass lining on request
		Temperature resistance:	- 35 °C up to + 100 °C
		Insulation thickness:	6 mm
Delivery time:	On request		

Insulation-saddle for roller-bearing



Insulation-saddle for roller-bearing

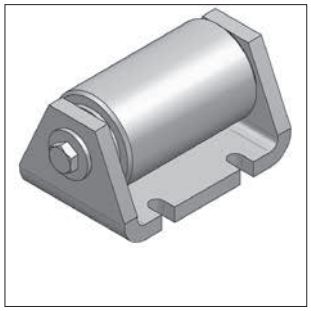
Specification:

Closure:	Hexagon nut / closure screw
OD:	219 up to 813 mm
Delivery time:	On request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Single-roller-bearing



Single-roller-bearing

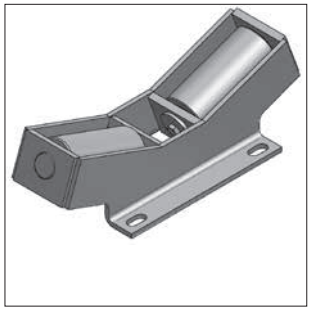
Specification:

Delivery time:	On request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Material axle:	stainless steel, polished
Material bush:	bronze

Double-roller-bearing, axial

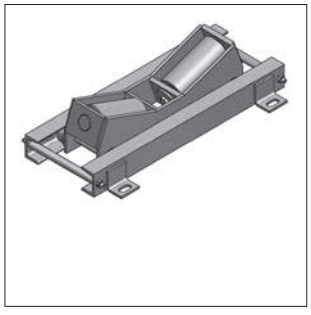


Double-roller-bearing, axial

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Material axle:	stainless steel, polished
Material bush:	bronze

Double-roller-bearing, radial-axial

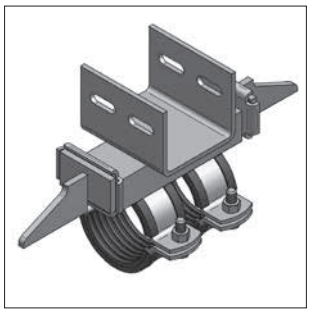


Double-roller-bearing
radial-axial

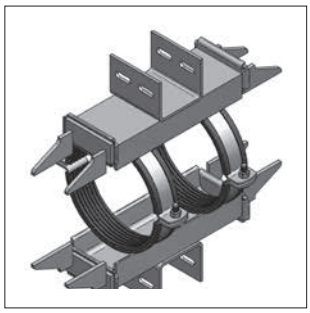
Technical data:

Material:	steel
Material type:	S235JR
Surface:	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

SCHALL-SCHUTZ DIN 4109

Baustoffklasse B2 "Normal entflammbar" nach DIN 4102

Specification:

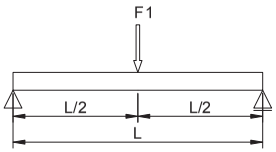
Application:	Established MEFA fixpoint for high power transmission while sound insulation. Due to welded Massive connector it´s possible to mount this fixpoint directly at CENTUM square profile.
Sound insulation:	According to DIN 4109
Accessory:	T-lock M12x40

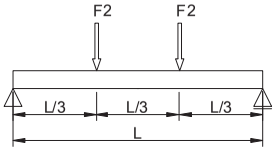
Technical data:

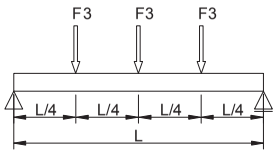
Material:	steel
Material type:	S235JR
Surface:	galvanized
Pressure piece:	raw
Sound insulation lining:	EPDM/ Silicone
Temperature resistance:	-35°C up to +100°C/ -50°C up to +250°C

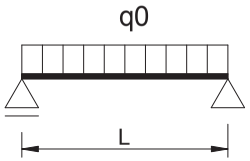
Remark: For further information regarding dimensions, loads and assembly please contact our application engineering.

Load values CENTUM® profile rails XL 80 / XL 100 / XL 120









	XL 80				XL 100				XL 120			
bearing spacing	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q
[mm]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]
500	23,03	17,28	11,52	92,12	44,88	33,66	22,44	162,54	73,92	55,44	36,96	254,41
750	15,35	11,51	7,68	40,91	29,91	22,43	14,96	79,74	49,26	36,94	24,63	131,34
1000	11,50	8,63	5,75	22,99	22,41	16,81	11,21	44,82	36,92	27,69	18,46	73,83
1250	9,19	6,89	4,60	14,70	17,91	13,44	8,96	28,66	29,51	22,13	14,76	47,21
1500	7,64	5,73	3,82	10,19	14,91	11,18	7,46	19,88	24,56	18,42	12,28	32,75
1750	6,54	4,91	3,27	7,47	12,76	9,57	6,38	14,58	21,03	15,77	10,52	24,03
2000	5,71	4,28	2,86	5,71	11,15	8,36	5,58	11,15	18,37	13,78	9,19	18,37
2250	5,06	3,73	2,53	4,50	9,89	7,42	4,95	8,79	16,30	12,23	8,15	14,49
2500	4,55	3,01	2,16	3,28	8,88	6,66	4,44	7,11	14,64	10,98	7,32	11,72
2750	4,12	2,47	1,78	2,45	8,05	6,04	4,03	5,86	13,28	9,96	6,64	9,66
3000	3,52	2,07	1,48	1,88	7,36	5,08	3,64	4,62	12,15	9,11	6,08	8,10
3250	2,97	1,75	1,25	1,47	6,78	4,31	3,09	3,61	11,19	8,39	5,60	6,89
3500	2,54	1,49	1,07	1,16	6,27	3,69	2,65	2,88	10,36	7,35	5,18	5,73
3750	2,19	1,29	0,93	0,94	5,44	3,20	2,29	2,32	9,64	6,37	4,57	4,63
4000	1,90	1,12	0,80	0,76	4,75	2,79	2,00	1,90	9,01	5,57	4,00	3,80
4250	1,66	0,98	0,70	0,63	4,17	2,45	1,76	1,57	8,35	4,90	3,52	3,15
4500	1,46	0,86	0,62	0,52	3,68	2,16	1,55	1,31	7,40	4,34	3,12	2,63
4750	1,29	0,76	0,54	0,44	3,27	1,92	1,38	1,10	6,59	3,87	2,78	2,22
5000	1,14	0,67	0,48	0,37	2,91	1,71	1,23	0,94	5,89	3,46	2,48	1,89
5250	1,01	0,59	0,43	0,31	2,61	1,53	1,10	0,80	5,29	3,11	2,23	1,62
5500	0,89	0,53	0,38	0,26	2,34	1,37	0,99	0,68	4,77	2,80	2,01	1,39
5750	0,79	0,47	0,34	0,22	2,10	1,24	0,89	0,59	4,31	2,53	1,82	1,20
6000	0,71	0,42	0,30	0,19	1,89	1,11	0,80	0,51	3,90	2,29	1,65	1,04
6250	-	-	-	-	-	-	-	-	-	-	-	-
6500	-	-	-	-	-	-	-	-	-	-	-	-
6750	-	-	-	-	-	-	-	-	-	-	-	-
7000	-	-	-	-	-	-	-	-	-	-	-	-
7250	-	-	-	-	-	-	-	-	-	-	-	-
7500	-	-	-	-	-	-	-	-	-	-	-	-
7750	-	-	-	-	-	-	-	-	-	-	-	-
8000	-	-	-	-	-	-	-	-	-	-	-	-

max. bending $f_{zul.}$ = L/200; Safety Elastic limit γ = 1,54; Yield strength f_y = 275 N/mm²; XL 200 Yield strength f_y = 235 N/mm²; E-Modul 210.000 N/ mm²

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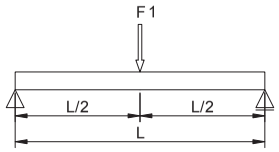
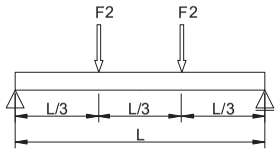
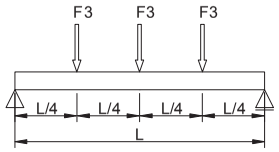
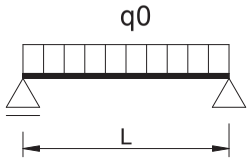
Load values CENTUM® profile rails XL 120s / XL 200









	XL 120s				XL 200			
bearing spacing	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	distributed load q
[mm]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]
500	88,71	66,53	44,36	268,32	93,47	46,74	31,16	287,87
750	59,11	44,34	29,56	157,62	93,47	46,74	31,16	191,92
1000	44,30	33,23	22,15	88,60	76,55	46,74	31,16	143,94
1250	35,41	26,56	17,71	56,65	61,19	45,90	30,60	97,90
1500	29,48	22,11	14,74	39,30	50,95	38,21	25,48	67,93
1750	25,23	18,93	12,62	28,84	43,62	32,72	21,81	49,86
2000	22,05	16,54	11,03	22,05	38,12	28,59	19,06	38,12
2250	19,56	14,67	9,78	17,39	33,84	25,38	16,92	30,08
2500	17,57	13,18	8,79	14,06	30,41	22,81	15,21	24,33
2750	15,94	11,96	7,97	11,59	27,60	20,70	13,80	20,07
3000	14,58	10,93	7,29	9,72	25,25	18,94	12,63	16,84
3250	13,42	10,07	6,71	8,26	23,26	17,45	11,63	14,32
3500	12,43	8,82	6,22	6,87	21,55	16,16	10,78	12,32
3750	11,56	7,65	5,49	5,56	20,07	15,05	10,04	10,70
4000	10,81	6,68	4,80	4,56	18,76	14,07	9,38	9,38
4250	10,02	5,88	4,22	3,78	17,61	13,21	8,81	8,29
4500	8,87	5,21	3,74	3,16	16,58	12,44	8,29	7,37
4750	7,90	4,64	3,33	2,66	15,66	11,75	7,83	6,60
5000	7,07	4,15	2,98	2,26	14,83	11,12	7,42	5,94
5250	6,34	3,73	2,67	1,94	14,08	10,56	7,04	5,37
5500	5,72	3,36	2,41	1,67	13,39	10,04	6,70	4,87
5750	5,16	3,03	2,18	1,44	12,76	9,57	6,38	4,44
6000	4,68	2,75	1,97	1,25	12,18	9,13	6,09	4,06
6250	-	-	-	-	11,64	8,73	5,82	3,73
6500	-	-	-	-	11,14	8,32	5,57	3,43
6750	-	-	-	-	10,68	7,66	5,34	3,10
7000	-	-	-	-	10,25	7,07	5,07	2,76
7250	-	-	-	-	9,85	6,54	4,69	2,46
7500	-	-	-	-	9,47	6,06	4,35	2,20
7750	-	-	-	-	9,12	5,62	4,03	1,98
8000	-	-	-	-	8,78	5,22	3,75	1,78

max. bending $f_{zul.}$ = L/200; Safety Elastic limit γ = 1,54; Yield strength f_y = 275 N/mm²; XL 200 Yield strength f_y = 235 N/mm²; E-Modul 210.000 N/ mm²

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.:

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Content

Certification marks and their meaning

RAL quality mark 655-B + 655-C + 655-D

Pipe fixing systems for mounting of media-carrying pipelines on building constructions. Part B applies to pipe clamps and part C to profile rails of the quality and test specifications.

Part D of RAL-GZ 655 contains the relevant procedures for the assessment of profile rails connecting parts.

Products tested according to the RAL procedure are awarded the quality mark „pipe support“ and are subject to external monitoring. The technical determination is carried out by an approved and independent testing institute. To ensure a constant product quality, they are regularly monitored.

RAL quality mark RAL-GZ 656

Determination of the deformation behavior of pipe clamps under fire load with statically resting, centric tensile load.

The quality mark „fire-tested pipe supports“ is only awarded to products that have already been awarded the quality mark „pipe support“. Both quality marks are based on a comprehensive technical evaluation and monitoring regulation. This always includes a neutral, independent evaluation of the mechanical product properties according to RAL-GZ 655 as well as the execution and evaluation of fire tests according to RAL-GZ 656.

Fire tested

Fire tested according to standard temperature curve considering DIN EN 1363-1.

Fire resistance classes F30, F 60, F 90

R = fire resistance

Eurocode 3

Design of steel structures - Part 1-2: general rules - structural fire design. Design according to DIN EN 1993-1-2 (EC3).

Eurocode 3 (often abbreviated to EC 3) is the name of the European standard EN 1993 entitled „Design and construction of steel structures“ and is part of the Eurocode series.

Building materials B2

B2 = normally flammable building material, non-burning droplets - flammable building material

Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102. Fire behavior of building materials and components or on a European level according to DIN EN 13501 classification of building products and types of construction regarding their fire behavior. According to DIN 4102, these building material classes are divided into non-flammable (A) and flammable building materials (B); the EU classification DIN EN 13501 provides for seven Euro classes (A1, A2, B, C, D, E, F) as well as further classes for smoke development (s = smoke): classes s1, s2 and s3, burning droplets/fall off (d = droplets).

Building materials with this logo are normally flammable according to DIN 4102-1.

Association of German Property Insurers (VdS)

G 4940029 = Recognition/certificate number. VdS is one of the world‘s most renowned institutions for corporate security with a focus on fire protection, security, natural hazard prevention and cyber security. VdS Loss Prevention GmbH Independent testing institution with focus on fire protection. MEFA products with this logo are tested and listed.

Guideline VdS-2344 „Requirements and test methods for components“. Procedures for the testing, recognition and certification of products and systems of fire protection and safety engineering. Guideline VdS CEA 4001 „Planning and installation“.

Contains all essential specifications for the design, subsequent installation and operation of sprinkler systems.

Certification marks and their meaning

FM Approved

Factory Mutual (FM), U.S. approval for the installation of sprinkler systems. Industrial property insurer with its own accredited testing and certification body. MEFA products with this logo are tested and listed.

Corresponds to VdS-CEA

Suitable for the installation of sprinkler systems in concrete according to the requirements of VdS CEA 4001.

European Technical Approval

The European Technical Approval (ETA) is issued for construction products and systems based on the EU Construction Products Directive - implemented in Germany by the German Building Products Act (BauPG) - also by DIBt, if harmonized European standards are not yet available. Thus, the European Technical Approval is regarded as proof of fitness for use for these non-regulated construction products and kits and as the basis for their CE marking. The European Technical Approvals are valid in all EU member states.

ETA-17/0783 = Approval number European Technical Assessment (ETA) with CE mark.

German association of the gas and water industry e. V

The association deals with technical and scientific tasks of fuel gas and water supply in self-administration. The DVGW rules and regulations form the basis of the high technical, safety and quality standards for gas and water. The DVWG tests and certifies products and thus proves the state of the art. According to test marks: Application for general installation purposes in drinking water, hot water, compressed air and gas.

Civil defense (Switzerland)

Shock approval of the Federal Office for Civil Protection, Bern.

Seismic

Design of anchors under seismic action identifies the anchors suitable for use under seismic conditions.

German Institute for Structural Engineering

The German Institute for Building Technology (DIBt) has a central function in the building industry: With its approvals, permits and assessments, it guarantees the safety of buildings and at the same time supports the development of new building products and types of construction. Every passed test certificate is provided with an approval number. Z-21.1-1785 = approval number

DIN-standard 4109 sound insulation

The DIN 4109 describes minimum requirements for sound insulation.
MEFA products with this logo can be used for sound insulation design according to DIN 4109.

Edelstahl rostfrei

Label of the trademark Association Stainless Steel e.V. Material symbol for stainless steel (A2, A4 or HCR grade 1.4529)

SDS-plus locking system

SDS-plus is a plug-in system for hammer drills or chisel hammers developed by Bosch in 1975.
SDS-plus originally meant „plug-turn-sit“. Today „Special Direct System“ worldwide.

Test mark of the Testing Association Masonry Drill e.V.

Material science

1.4520, 1.4301, 1.4510	Material numbers. Steel grades are distinguished by short names or material numbers.
ALU/PU	Polyurethane tray with aluminum foil wrapping. ALU = Aluminum. PU = Polyurethanes
Concrete C20/25	C = concrete. Compressive strength (cylinder) fck = 20 N/mm² / compressive strength (cube) fck = 25 N/mm²
Concrete B25 to B55	Old designation: B25 and B55. New designation: C20/25 and C50/55
DC01-A	Steel standardization. First letter: D = flat products of mild steels for cold forming. Second letter: C = cold rolled 01 = Code number steel grade 01 (1.0330). A = Surface type A, may have slight scratches, pores and discoloration, must not impair the formability and adhesion of surface coatings. Unalloyed quality steel and is attributed to the general structural steels
DD11	Steel standardization. First letter: D = flat products of mild steels for cold forming. Second letter: D = hot rolled - suitable for direct cold forming. 11 = Code number steel grade 01 (1.0332) Unalloyed quality steel and is attributed to the general structural steels
Ferritic chrome steel	Ferritic steel is known as direct chromium stainless steel because its chromium content is between 10,5 % and 30 %. In this case the carbon content decreases. Ferritic steels have a ferritic structure at any temperature because they do not show any transformation of ferrite to austenite during heating, nor any martensite transformation during cooling. For this reason, phase changes are not possible and cannot be hardened by heat treatment.
FK 4.6	Strength class 4.6. First number: 4. Tensile strength Rm. Rm = 4 * 100 N/mm². Rm = 400 N/mm². Second number: 6. Yield strength Re. Re = 4 * 6 * 10 N/mm². Re = 240 N/mm².
Glass fiber tape	A glass fiber is a long thin fiber made of glass. During production, thin threads are drawn from a glass melt and processed into a variety of end products, including textile fabrics for heat and sound insulation.
GTW	White malleable iron. Old short name is GTW and the new one is GJMW. GJ = cast iron. M = malleable cast iron. W = white (white).
Malleable cast iron	Malleable cast iron is an iron-carbon-silicone casting alloy with a steel structure of ledeburite. In malleable cast iron, a distinction is made between white and black malleable cast iron, which is due to the appearance of the fracture surface.
PE - UHMW	Ultra-high molecular polyethylene. Sliding plastic.
Plastic PE	Thermoplastic plastic. PE = polyethylene
Polyamid 6 (PA 6)	Thermoplastic with good abrasion and sliding properties
Rubber EPDM	Plastics: Elastomer (rubber) Ethylene Propylene Diene Rubber
Rubber flame-resistant (B1)	Building materials are classified regarding their flammability and combustibility on a national level according to DIN 4102 Fire behavior of building materials and components or on a European level according to DIN EN 13501 Classification of building products and types of construction regarding their fire behavior. Up to building material class B1, building materials are regarded as self-extinguishing. B1 = hardly inflammable
Rubber SBR	Plastics: Styrene butadiene rubber
Rubber TPE	Plastics: Elastomer TPE (Thermo Plastic Elastomer)
Rubber TPE, flocked	Plastics: Thermo-plastic elastomers with polyamide fleece flocking
S235JRG2	Unalloyed structural steel. S = structural steel. 235 = Minimum yield strength (in MPa) for steel thickness ≤ 16mm JR = Impact energy 27Joule at room temperature. G2 = Quality level
S250GD-Z150-N-A	Hot-dip galvanized structural steel (HDG). S = mild steel. 250 = Minimum yield strength (in MPa) for steel thickness ≤ 16mm. G = other characteristics, if necessary, with 1 or 2 digits. D = for hot dip coatings, galvanized (dipped). Z = normal galvanized. NA = usual zinc bloom different size with usual surface. 150 = coating weight on both sides 150 g/m².

Material science

Shore hardness	The SHORE hardness is a key figure which is mainly used for elastomers and rubber-elastic polymers. It is directly related to the penetration depth and is therefore a measure of the hardness of the material. A distinction is made between the SHORE A, C and D methods. A spring-loaded pin made of hardened steel is used as the indenter. In these methods, the respective indenter is pressed into the test specimen by a spring force and the depth of penetration is thus a measure of the SHORE hardness.
Silicone	Silicones chemically precise poly(organo)siloxanes, is a name for a group of synthetic polymers with good temperature and weather resistance.
Spherulitic cast iron	Cast iron with nodular graphite
V2A	Stainless steel. V2A = „Test melt 2 austenite”. Chrome-nickel steels with at least 13% chrome content. Area of application: food industry, city and industrial atmosphere
V4A	Corrosion resistant steel, stainless steel. V4A = „Trial melt 4 austenite”. Chrome-nickel-molybdenum steels with at least 13% chrome content. Field of application: chemical industry, salty atmospheres
Z410	Gravity die casting zinc alloy ZnAl4Cu1. Alloy components in weight %. Al: 3.7-4.1 Cu: 0.5-1.0 Mg: 0,03-0,06 Zn: remaining

MEFA-surfaces classified by corrosive categories

according to DIN EN ISO 12944 and DIN EN ISO 14713

	Possible surfaces steel	Corrosive category	Corrosion load	Environment inside (example)	Environment outside (example)
	galvanized, pre-galvanized	C1	minor / very low	heated buildings with neutral atmosphere e.g. offices, stores, schools, hotels	non
	galvanized, pre-galvanized	C2	small / low	unheated buildings, condensate can occur e.g. stocks, gyms	atmosphere with little pollution
	TSP®-3 Zinc-Nickel, hot-dip galvanized	**C3**	moderate / medium	production rooms with high humidity and polution e.g. food productions, laundries, breweries, dairies	urban and industrial atmosphere, moderate pollution by sulphur dioxide, coastal areas with little salt load
	TSP®-3 (up to useful life 10 - 20 years) TSP®-5	**C4**	strong / high	chemical plants, swimming pools, boathouses over sea	industrial and coastal areas with moderate salt load
	TSP®-5	**C5-I**	very strong (industry) / very high	buildings or areas with almost constant condensation and with heavy contamination	industrial areas with high humidity and aggressive atmosphere
	TSP®-5	**C5-M/CX**	very strong (sea) / extreme	buildings or areas with almost constant condensation and with heavy contamination	coastal and offshore areas with high salt load
				Top-Surface-Protection (TSP®)	

Image source pixelio.de: 1. Rainer Sturm / 2. Erich Westendarp / 4. Rainer Sturm / 5. Kurt Michel / 6. Katharina Wieland

Weight- and pipe schedule for medium-weight tubes

Medium-weight tubes according to DIN EN 10255 (DIN 2440)
Heat insulation: density 120 kg/m³

DN	Connecting width of the fittings ["]	OD [mm]	Wall thickness 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	1/4"	13,5	2,3	0,64	0,71	1,39	1,90	20	40	60
10	3/8"	17,2	2,3	0,84	0,98	1,74	2,26	20	40	60
15	1/2"	21,3	2,6	1,21	1,42	2,26	2,80	20	40	60
20	3/4"	26,9	2,6	1,56	1,95	2,91	3,47	20	50	70
25	1"	33,7	3,2	2,41	3,02	4,41	5,37	30	60	90
32	1 1/4"	42,4	3,2	3,10	4,15	5,74	6,75	30	70	100
40	1 1/2"	48,3	3,2	3,56	4,98	7,03	8,54	40	90	130
50	2"	60,3	3,6	5,03	7,31	10,03	12,16	50	110	160
65	2 1/2"	76,1	3,6	6,42	10,24	13,80	16,72	60	140	200
80	3"	88,9	4,0	8,36	13,60	18,47	23,01	80	170	250
100	4"	114,3	4,5	12,20	20,89	27,70	34,41	100	210	310
125	5"	139,7	5,0	16,60	29,40	37,13	44,32	100	240	340
150	6"	165,1	5,0	19,80	38,13	46,78	54,44	100	270	370

- Weights can differ
- Please note pipe manufacturer's specifications

Tightening torque of locking screws for pipe clamps

All locking screws of pipe clamps must be tightened uniformly with a torque according to table 1 depending on the size of screw. Only when these tightening torques are observed, loads specified in the technical documentation being ensured.

Table 1: tightening torque

Screw size	Tightening torque
M4	1 Nm
M5	2 Nm
M6	2 Nm
M8	3 Nm
M10	5 Nm
M12	10 Nm
M16	20 Nm
M20	25 Nm
M24	25 Nm

Torque values applying to clamps with pure tensile load only, not applying to clamps with axial load.

Weight- and pipe schedule for welded steel pipes

Welded steel pipes according to DIN EN 10220 (DIN 2458) - light version
Heat insulation: density 120 kg/m³

DN	OD [mm]	Wall thickness s [mm]	Weight in kg/m				Pipe dimension with insulation		
			empty	with water	with water and 50% insulation	with water and 100% insulation	Insulation thickness in mm at 100% insulation	OD in mm at an insulation of	
								50%	100%
8	13,5	1,80	0,52	0,60	1,28	1,78	20	30	50
	16,0	1,80	0,63	0,75	1,48	2,00	20	40	60
10	17,2	1,80	0,68	0,83	1,59	2,11	20	40	60
15	21,3	2,00	0,95	1,19	2,03	2,57	20	40	60
20	26,9	2,00	1,23	1,64	2,60	3,16	20	50	70
	31,8	2,00	1,47	2,08	3,42	4,37	30	60	90
25	33,7	2,00	1,56	2,26	3,64	4,61	30	60	90
32	42,4	2,30	2,27	3,40	4,98	6,00	30	70	100
	44,5	2,30	2,39	3,64	5,60	7,08	40	90	130
40	48,3	2,30	2,61	4,11	6,16	7,67	40	90	130
	51,0	2,30	2,76	4,45	6,57	8,10	40	90	130
50	57,0	2,30	3,10	5,26	7,89	10,00	50	110	160
	60,3	2,30	3,29	5,73	8,45	10,58	50	110	160
	63,5	2,30	3,47	6,20	9,00	11,17	50	110	160
	70,0	2,60	4,32	7,62	11,01	13,85	60	130	190
65	76,1	2,60	4,71	8,66	12,22	15,14	60	140	200
80	88,9	2,90	6,15	11,57	16,45	20,98	80	170	250
	101,6	2,90	7,06	14,27	20,62	27,09	100	200	300
	108,0	2,90	7,52	15,72	22,30	28,89	100	210	310
100	114,3	3,20	8,77	17,91	24,72	31,43	100	210	310
	127,0	3,20	9,77	21,19	28,46	35,41	100	230	330
	133,0	3,60	11,49	23,92	31,40	38,46	100	230	330
125	139,7	3,60	12,08	25,87	33,60	40,78	100	240	340
	152,4	4,00	14,64	31,02	39,20	46,63	100	260	360
	159,0	4,00	15,29	33,20	41,62	49,17	100	260	360
150	168,3	4,00	16,21	36,39	45,15	52,87	100	270	370
	177,8	4,50	19,23	41,61	50,71	58,62	100	280	380
	193,7	4,50	21,00	47,79	57,47	65,67	100	300	400
200	219,1	4,50	23,82	58,48	69,08	77,76	100	320	420
225	244,5	5,00	29,53	72,72	84,23	93,39	100	340	440
250	273,0	5,00	33,05	87,37	99,91	109,61	100	370	470
300	323,9	5,60	43,96	120,76	135,13	145,79	100	425	525
350	355,6	5,60	48,34	141,49	157,02	168,27	100	460	560
400	406,4	6,30	62,16	183,96	201,32	213,53	100	510	610
450	457,0	6,30	70,02	225,13	244,32	257,49	100	560	660
500	508,0	6,30	77,95	270,70	293,06	308,91	110	620	730
550	559,0	6,30	85,87	320,35	346,09	364,88	120	680	800
600	610,0	6,30	93,80	374,09	401,86	421,80	120	730	850
650	660,0	7,10	114,32	441,88	471,64	492,71	120	780	900

- Weights can differ
- Please note pipe manufacturer‘s specifications

Weight- and pipe schedule for seamless steel pipes

Seamless steel pipes according to DIN EN 10220 (DIN 2448) - heavy version
Heat insulation: density 120 kg/m³

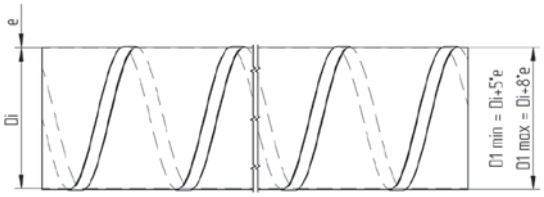
DN	OD [mm]	Wall thickness s [mm]	Weight in kg/m				Pipe dimension with insulation		
			empty	with water	with water and 50% insulation	with water and 100% insulation	Insulation thickness in mm at 100% insulation	OD in mm at an insulation of	
								50%	100%
8	13,5	1,80	0,52	0,60	1,28	1,78	20	30	50
	16,0	1,80	0,63	0,75	1,48	2,00	20	40	60
10	17,2	1,80	0,68	0,83	1,59	2,11	20	40	60
15	21,3	2,00	0,95	1,19	2,03	2,57	20	40	60
20	26,9	2,30	1,40	1,79	2,75	3,31	20	50	70
	31,8	2,60	1,87	2,43	3,77	4,72	30	60	90
25	33,7	2,60	1,99	2,63	4,02	4,98	30	60	90
32	42,4	2,60	2,55	3,64	5,23	6,24	30	70	100
	44,5	2,60	2,69	3,90	5,86	7,34	40	90	130
40	48,3	2,60	2,93	4,39	6,44	7,95	40	90	130
	51,0	2,60	3,10	4,75	6,87	8,40	40	90	130
50	57,0	2,90	3,87	5,93	8,56	10,67	50	110	160
	60,3	2,90	4,11	6,44	9,16	11,30	50	110	160
	63,5	2,90	4,33	6,95	9,75	11,92	50	110	160
	70,0	2,90	4,80	8,04	11,42	14,27	60	130	190
65	76,1	2,90	5,24	9,12	12,68	15,59	60	140	200
80	88,9	3,20	6,76	12,11	16,98	21,51	80	170	250
	101,6	3,60	8,70	15,70	22,05	28,52	100	200	300
	108,0	3,60	9,27	17,25	23,83	30,42	100	210	310
100	114,3	3,60	9,83	18,84	25,65	32,35	100	210	310
	127,0	4,00	12,13	23,26	30,52	37,47	100	230	330
	133,0	4,00	12,73	25,00	32,48	39,54	100	230	330
125	139,7	4,00	13,39	27,01	34,73	41,92	100	240	340
	152,4	4,50	16,41	32,56	40,75	48,17	100	260	360
	159,0	4,50	17,15	34,82	43,24	50,79	100	260	360
150	168,3	4,50	18,18	38,11	46,87	54,59	100	270	370
	177,8	5,00	21,31	43,42	52,52	60,43	100	280	380
	193,7	5,60	25,98	52,14	61,81	70,02	100	300	400
200	219,1	6,30	33,06	66,55	77,15	85,83	100	320	420
225	244,5	6,30	37,01	79,25	90,76	99,92	100	340	440
250	273,0	6,30	41,44	94,69	107,23	116,93	100	370	470
300	323,9	7,10	55,47	130,80	145,18	155,84	100	425	525
350	355,6	8,00	68,58	159,16	174,68	185,94	100	460	560
400	406,4	8,80	86,29	205,01	222,37	234,58	100	510	610
450	457,2	10,00	110,29	260,41	279,60	292,77	100	560	660
500	508,0	11,00	134,82	320,33	342,69	358,54	110	620	730
550	559,0	12,50	168,47	392,43	418,17	436,95	120	680	800
600	610,0	12,50	184,19	452,97	480,74	500,68	120	730	850
650	660,0	14,20	226,15	539,46	569,23	590,30	120	780	900

- Weights can differ
- Please note pipe manufacturer's specifications

General pipe weights, general

DN Inside- Ø Di	Wall thickness e [mm]	Pipe-weight [kg/m]
Ventilation pipelines acc. to DIN EN 12237 (DIN 24145)		
71	0,4	0,70
80	0,4	0,79
90	0,4	0,88
100	0,6	1,47
112	0,6	1,65
125	0,6	1,84
140	0,6	2,06
150	0,6	2,21
160	0,6	2,36
180	0,6	2,65
200	0,6	2,95
224	0,6	3,31
250	0,6	3,69
280	0,6	4,13
300	0,8	5,90
315	0,8	6,20
355	0,8	6,99
400	0,8	7,88
450	0,8	8,86
500	0,8	9,85
560	0,8	11,03
600	1,0	14,77
630	1,0	15,51
710	1,0	17,49
800	1,0	19,70
900	1,0	22,17
1000	1,2	29,56
1120	1,2	33,11
1250	1,2	36,96
1400	1,5	51,73
1600	1,5	59,13
1800	1,5	66,53
2000	1,5	73,93

OD [mm]	Wall-thickness [mm]	Empty [kg/m]	Pipe weight water-filled [kg/m]	Insulated [kg/m]	Fastening distances [m]
Type copper pipe acc. to DIN EN 1057 (DIN 1786)					
8,0	1,0	0,20	0,22	0,40	0,60
10,0	1,0	0,25	0,30	0,50	1,00
12,0	1,0	0,31	0,39	0,60	1,25
15,0	1,0	0,39	0,52	0,70	1,25
18,0	1,0	0,48	0,68	0,90	1,50
22,0	1,0	0,59	0,90	1,20	2,00
28,0	1,5	1,11	1,60	2,20	2,25
35,0	1,5	1,41	2,21	2,90	2,75
42,0	1,5	1,70	2,90	3,90	3,00
54,0	2,0	2,91	4,87	6,50	3,50
64,0	2,0	3,47	6,29	8,70	4,00
76,1	2,0	4,14	8,23	11,3	4,25
88,9	2,0	4,86	10,52	14,5	4,75
108,0	2,5	7,37	15,71	21,8	5,00
133,0	3,0	10,90	23,57	30,7	5,00
159,0	3,0	13,09	31,47	37,3	5,00



- Weights can differ
- Please note pipe manufacturer's specifications

General pipe weights

DN	OD [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	≤ 20°
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	≤ 40°
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	≤ 20°
-	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 [mm]	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 = 0,026mm/(mK))					
12	16	2,25	0,14	0,24	1,50
15	20	2,5	0,19	0,36	1,50
20	26	3,0	0,30	0,61	1,50
25	32	3,0	0,42	0,95	2,00
32	40	3,5	0,60	1,45	2,00
40	50	4,0	0,84	2,23	2,50
50	63	4,5	1,10	3,40	2,50
65	75	4,7	1,45	4,83	2,50

- Weights can differ
- Please note pipe manufacturer‘s specifications

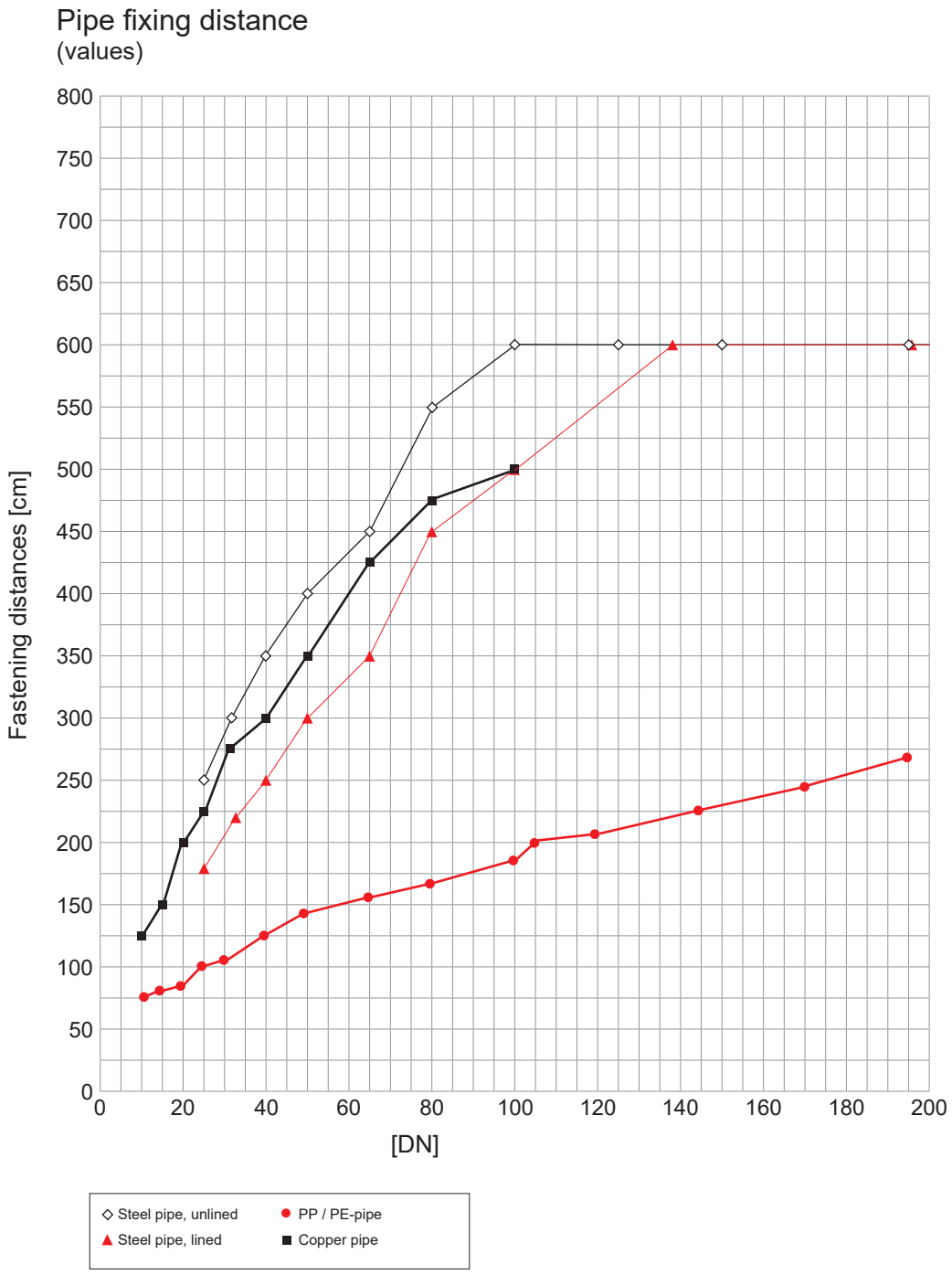
Fastening distance

Preface:

Pipe supports of pipes, pipeline elements or e.g. fittings have to be mounted according to constructional facts, service conditions and environmental effects.

Distance of pipe clamps depending on weights and wall thickness of the conduit pipe, as well as of flow medium density and operating temperature.

Stated fastening distances are only recommended values and should be estimated for every static case of operation.



- Please note pipe manufacturer‘s specifications

Pipe expansion

When calculating, due to thermal fluctuation, elongations of pipes, following information should be noticed:

1. Mounting- or rather installation temperature (e.g. environmental effects)
2. Temperature of medium in pipeline

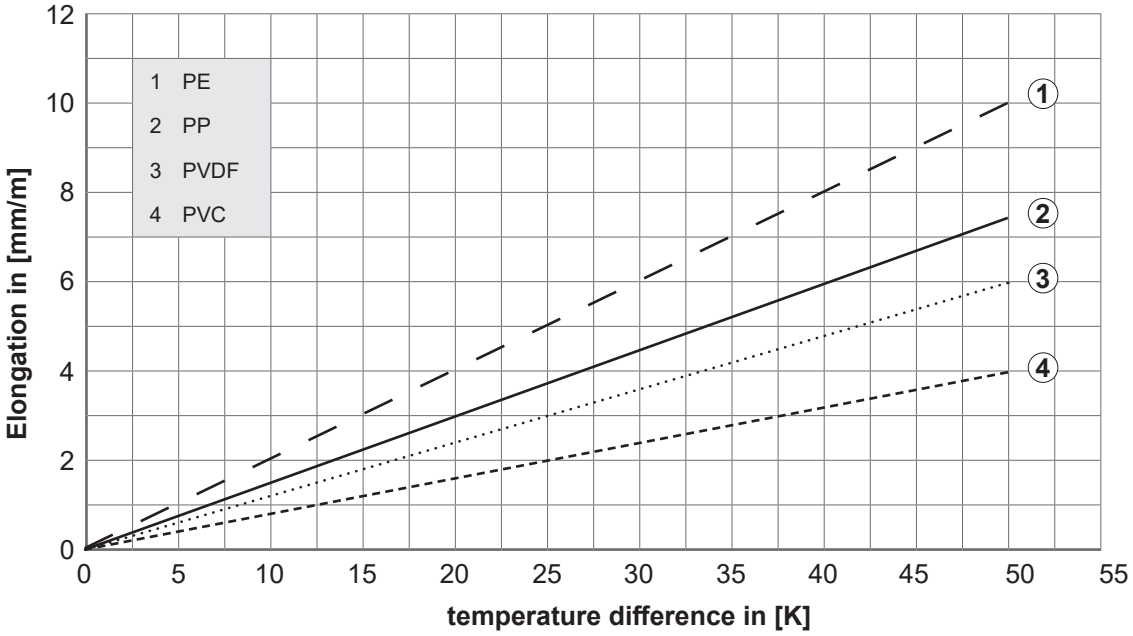
Determination of elongation

The elongation can be determined by:

ΔL = elongations mm
L = length of calculated pipe m
ΔT = temperature difference between medium- and installation temperature K
α = coefficient of linear expansion mm/m * K

Formula: $\Delta L = L \times \Delta \times \alpha$

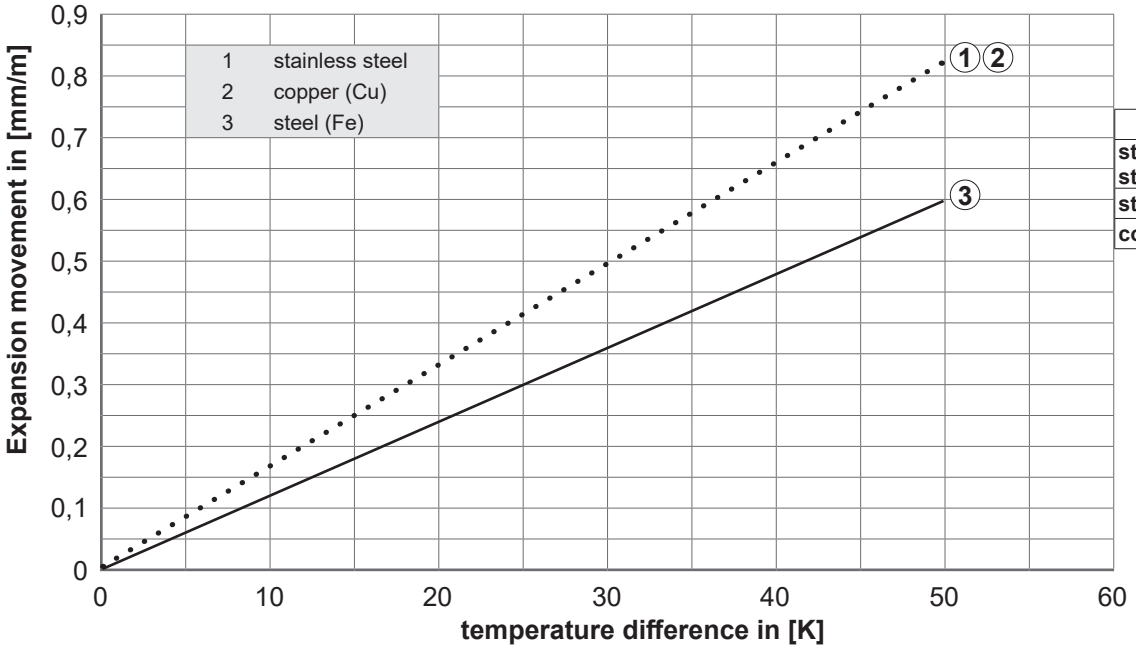
Strain diagram - plastics



Tool specific expansion coefficients (rec. values)

	mm/mK
PVC	0,0800
PE	0,2000
PP	0,1500
PVDF	0,1200

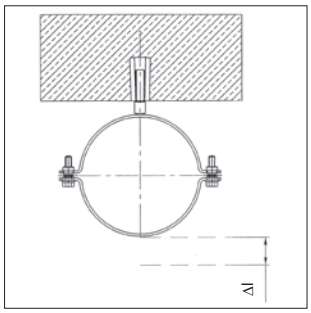
Strain diagram - stainless steel / steel / copper



Tool specific expansion coefficients

	mm/mK
stainless steel	0,0165
steel (Fe)	0,0120
copper (Cu)	0,0166

Maximum fire load for pipe clamps Trabant



Δges. = elongation of system (pipe clamp and hanger)

RAL GÜTEZEICHEN BRANDGEPRÜFTE ROHRBEFESTIGUNG RAL-GZ 656

Identification	Diameter range [mm]
Pipe clamp Trabant, lined	12 - 114
Pipe clamp Trabant, unlined	21 - 122

Summary: Admissible loads (RAL GZ 656)

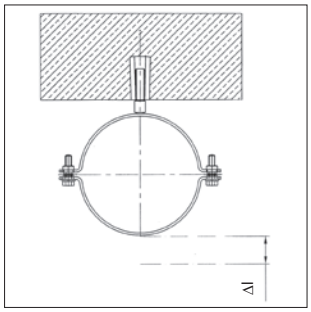
Admissible loads F_{zul} and elongation Δl for Trabant pipe clamp (ceiling-mounted)

Diameter range pipe lined / unlined [mm]	fire resistance period 30 min $F_{zul, Rd}$ [kN]	30 min Δl [mm]	60 min $F_{zul, Rd}$ [kN]	60 min Δl [mm]	90 min $F_{zul, Rd}$ [kN]	90 min Δl [mm]
12-37 / 21-48	0,18	**20**	0,09	**27**	0,06	**27**
42-65 / 51-74	0,39	**58**	0,19	**58**	0,12	**58**
70-83 / 76-90	0,28	**30**	0,18	**39**	0,13	**39**
85-90 / 94-97	0,48	**31**	0,21	**31**	0,11	**31**
98-114 / 106-122	0,41	**21**	0,23	**38**	0,16	**38**

$F_{zul, Rd}$ = max. admissible centrical tensile load on Trabant pipe clamp

Δl = vertical elongation of Trabant pipe clamp

Maximum fire load for pipe clamps Omnia MB



Δl = elongation

RAL GÜTEZEICHEN BRANDGEPRÜFTE ROHRBEFESTIGUNG RAL-GZ 656

Identification	Diameter range [mm]
Pipe clamp Omnia MB, lined	15 - 125

Summary: Admissible fire loads (RAL GZ 656)

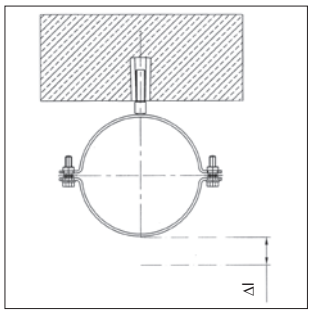
Admissible loads $F_{zul, Rd}$ and elongation Δl for Omnia MB pipe clamp (ceiling-mounted)

Diameter range Pipe [mm]	Fire resistance period 30 min $F_{zul, Rd}$ [kN]	30 min Δl [mm]	60 min $F_{zul, Rd}$ [kN]	60 min Δl [mm]	90 min $F_{zul, Rd}$ [kN]	90 min 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 Maxima PSM



Δges. = elongation of system (pipe clamp and hanger)

RAL GÜTEZEICHEN BRANDGEPRÜFTE ROHRBEFESTIGUNG RAL-GZ 656

Identification	Diameter range [mm]
Pipe clamp Maxima PSM, lined	15 - 275
Pipe clamp Maxima PSM, unlined	12 - 273

Summary: Admissible loads (RAL GZ 656)

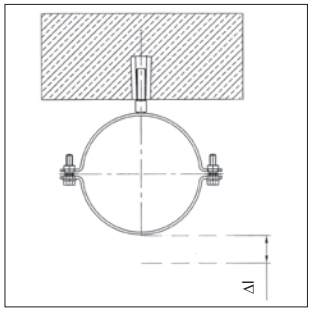
Admissible loads F_{zul} and elongation Δl for Maxima PSM pipe clamp (ceiling-mounted)

Diameter range pipe lined / unlined [mm]	Fire resistance period 30 min $F_{zul, Rd}$ [kN]	30 min Δl [mm]	60 min $F_{zul, Rd}$ [kN]	60 min Δl [mm]	90 min $F_{zul, Rd}$ [kN]	90 min Δl [mm]
15-64 / 12-76	1,50	**62**	0,82	**62**	0,47	**62**
65-117 / 84-129	1,70	**47**	0,91	**85**	0,58	**85**
120-275 / 132-273	1,03	**31**	0,52	**89**	0,30	**89**

$F_{zul, Rd}$ = max. admissible centrical tensile load on Maxima PSM pipe clamp

Δl = vertical elongation of Maxima PSM pipe clamp

Maximum fire load for pipe clamps Titan HD



Δl = elongation

RAL GÜTEZEICHEN BRANDGEPRÜFTE ROHRBEFESTIGUNG RAL-GZ 656

Identification	Diameter range [mm]
Pipe clamp Titan HD, lined	64 - 368
Pipe clamp Titan HD, unlined	64 - 368

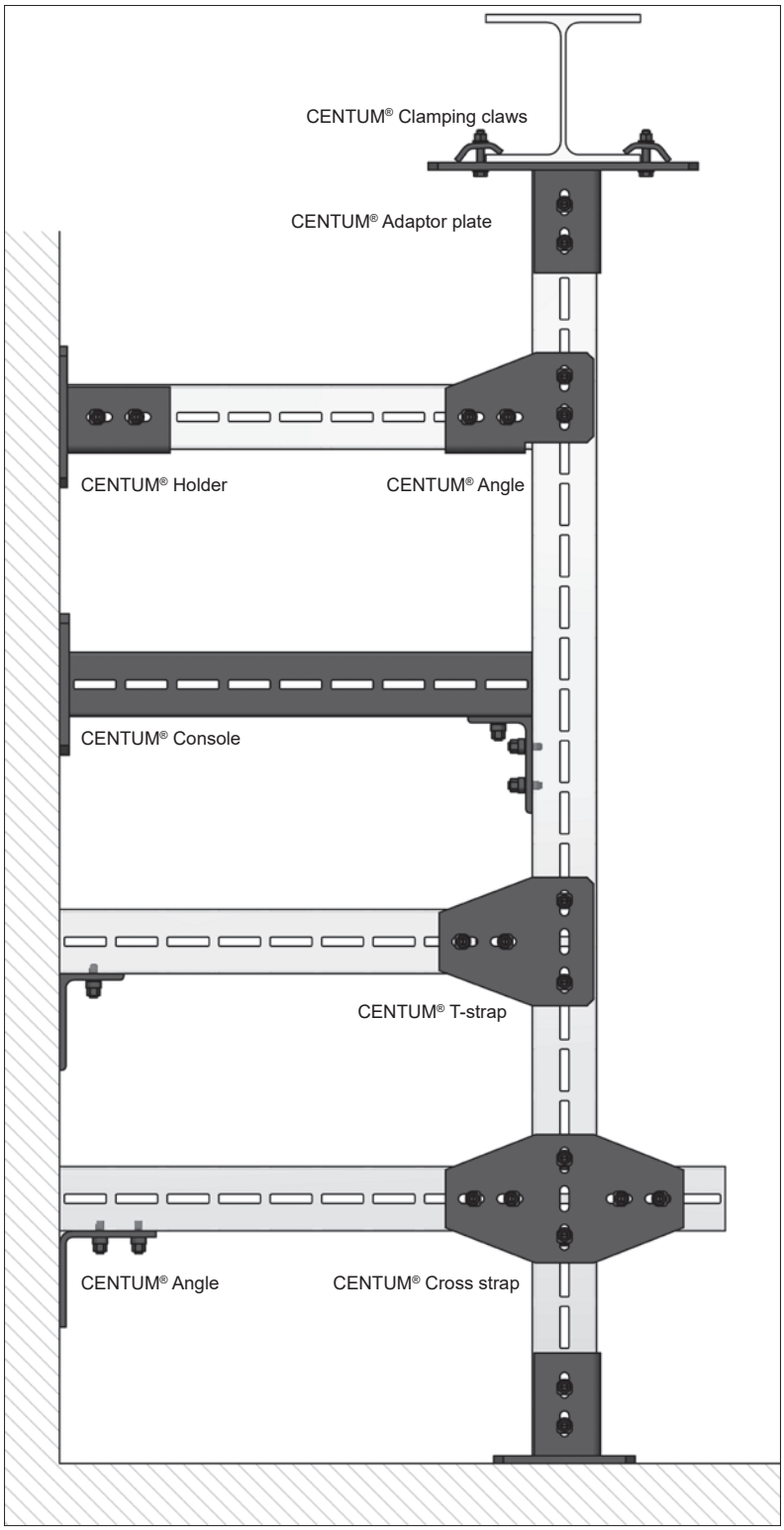
Summary: Admissible fire loads (RAL GZ 656)

Admissible loads $F_{zul, Rd}$ and elongation Δl for Omnia MB pipe clamp (ceiling-mounted)

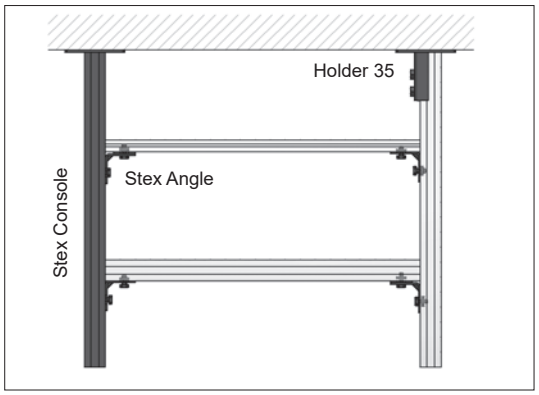
Diameter range pipe [mm]	Fire resistance period 30 min $F_{zul, Rd}$ [kN]	30 min Δl [mm]	60 min $F_{zul, Rd}$ [kN]	60 min Δl [mm]	90 min $F_{zul, Rd}$ [kN]	90 min Δl [mm]
64 up to 168	2,49	**45**	1,57	**88**	1,16	**88**
177 up to 368	3,01	**40**	1,88	**75**	1,39	**75**

Construction examples for pipe installations

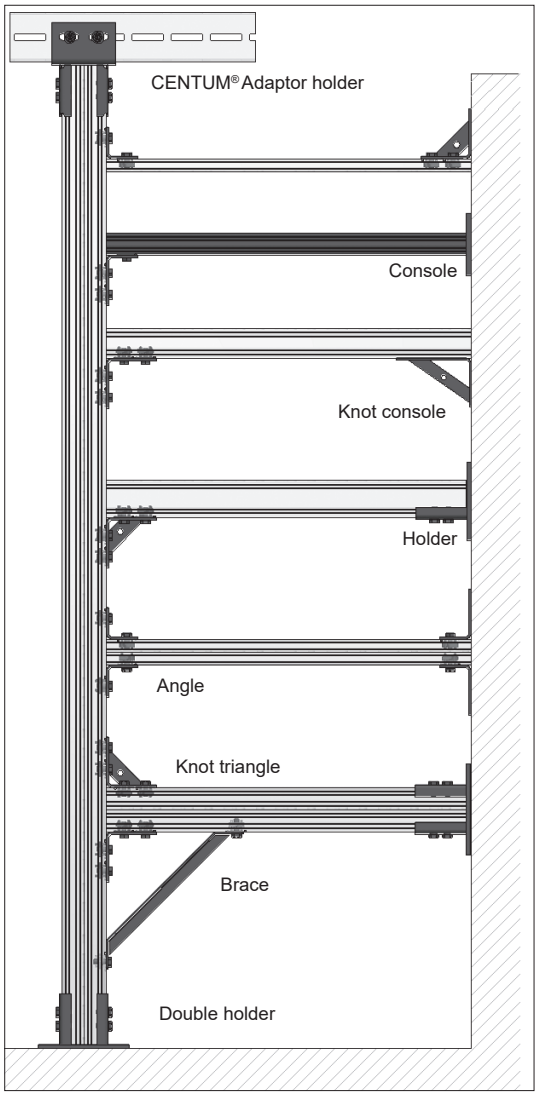
With application of MEFA profile rail system pipe bridges, frame- and supporting structures can be designed easily and in a short time on site. Due to the flexibility of the system all tolerances on site can be balanced. All units are galvanized or hot-dip galvanized.
If there are any problems, MEFA guarantees to find the best solution to resolve and present suitable suggestions for occurred problem.



Construction example CENTUM



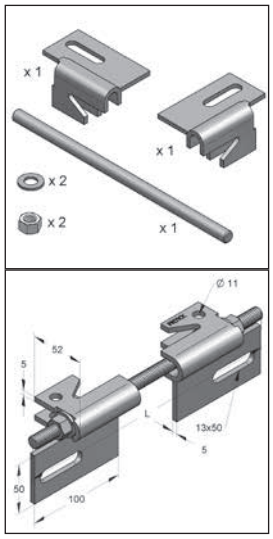
Construction example Stex 35

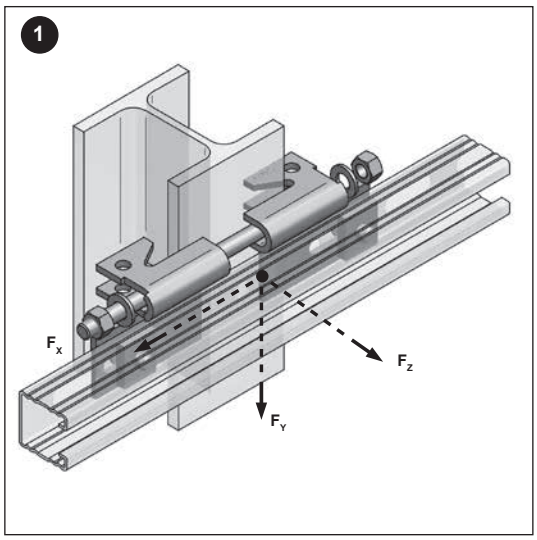


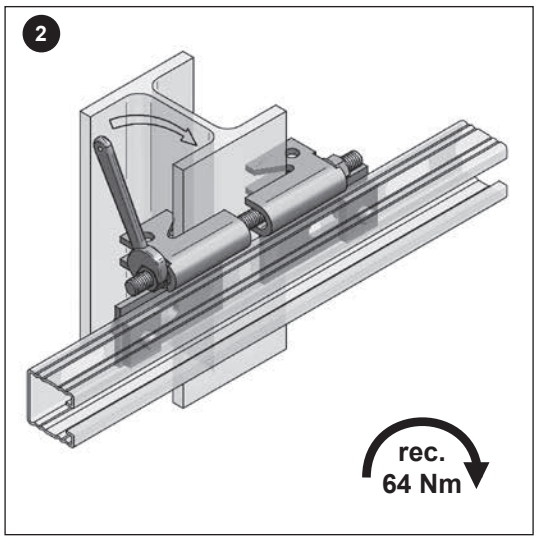
Construction example Stex 45

Assembly instructions beam connection vertical

Resilient, vertical clamping connection of c-profile rails to steel beam







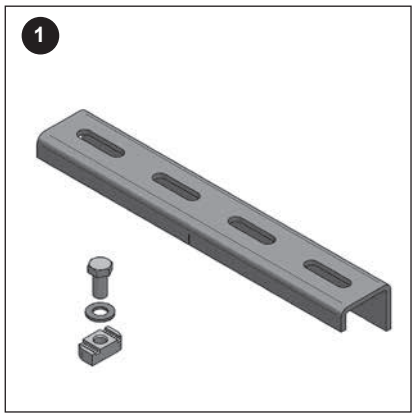
Identification	Max. load F_X [kN]	F_Y [kN]	F_z [kN]	For girder HEA	HEB	Weight [kg/pc.]	Part-No.
Beam connection vertical type D III	4,0	4,0	4,0	100-220	100-200	1,10	08146103
Beam connection vertical type D IV	4,0	4,0	4,0	280-360	160-300	1,99	08146104

Important:

Please note recommended torques!

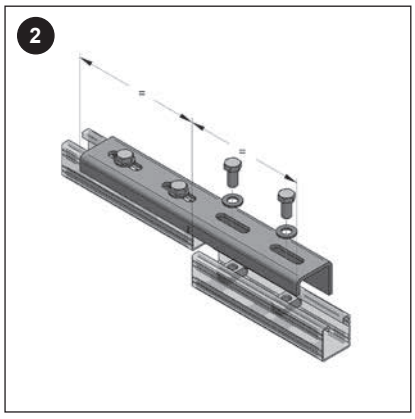
Assembly instructions connector 45

Element to connect profile rail system 45

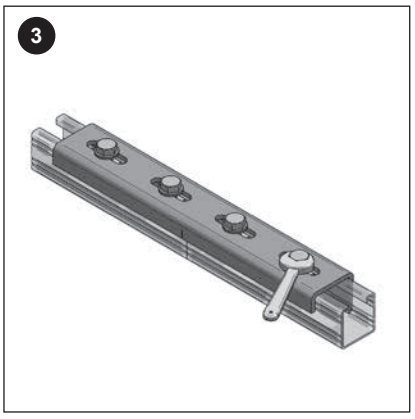


Scope of delivery:
Connector 45

Accessory (not included):
- 4 x tooth plate S M12 or Stex MP/MTB M12
- 4 x hexagon screw M12 x 25
- 4 x washer DIN 7089-12



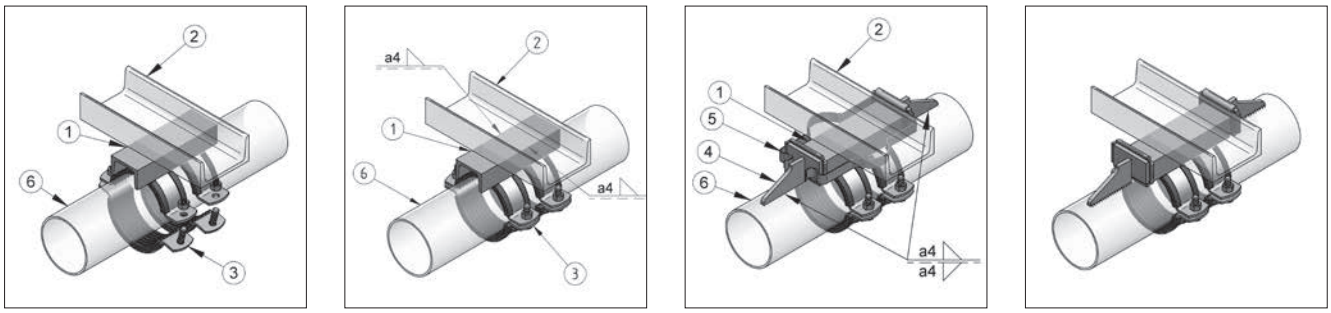
Center connector element between both ends of profile rails (consider central mark).
For double profile rails and single rails from size 45/60 two connectors shall be taken.



Please consider recommended torgues of tooth plates / Stex elements (see MEFA catalogue).
No gap may exist between rails.

Identification	Limit Moment M_G [Nm]	H [mm]	B [mm]	L [mm]	Weight [kg/Set]	Part-No.
Connector 45	675	47	57	350	1,47	08162002
Connector 45	675	47	57	350	1,47	08162002/fvz

Assembly instructions of fixpoints



Version I: Pipe not installed yet

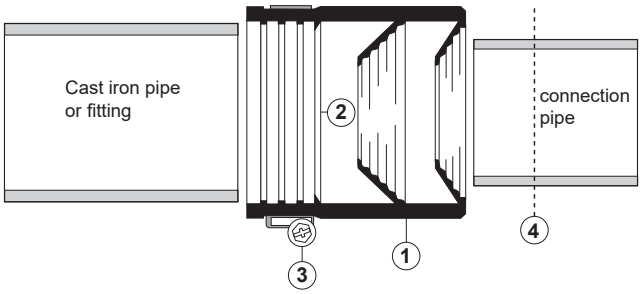
1. Mount body material of fixpoint (1) on supporting structure (2) (e.g. by welding)
2. When installing pipe, fix pipe (6) in fixpoint clamps (3).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

Version II: Pipe 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

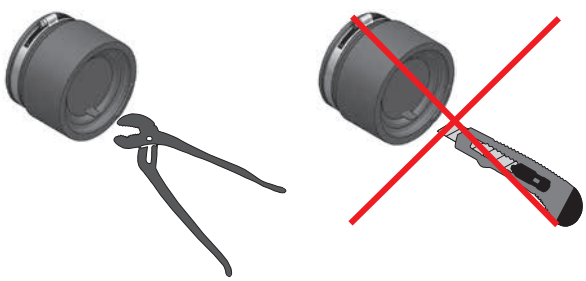
Assembly instructions SIMA-CON



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).

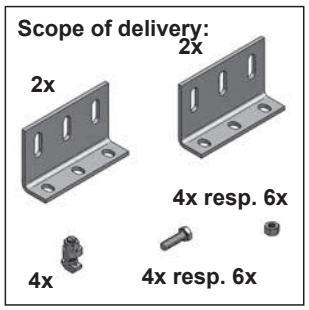
2. Sign connecting pipe for required plug-in module depth **(4)**, if necessary use lubricant for insection.

Attention: Do not use sharp-edged items. To pull out opening pin just use gripper.

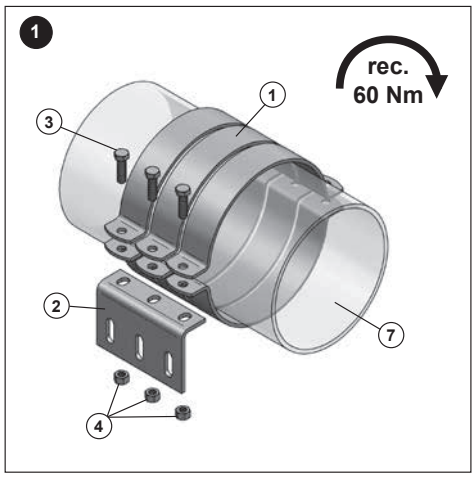


Assembly instructions fixpoint bracket HV

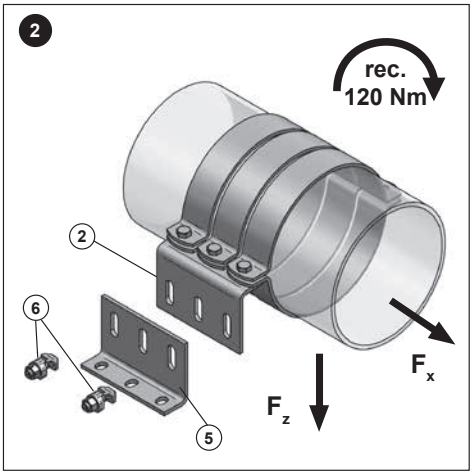
For height adjustable bracket of pipes, without sound insulation



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.

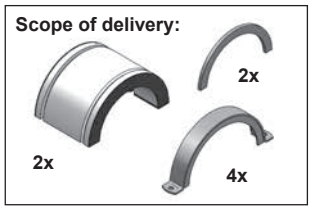


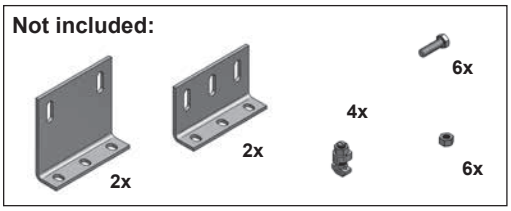
2.) Install stilt (5) using T-lock (6) on side panel (2). Adjust desired height and attract with torque of 120 Nm. Fix entire construction on any suitable substructure (e.g. C-profile rail, CENTUM, steel beam).

Important:

Please note recommended torque!

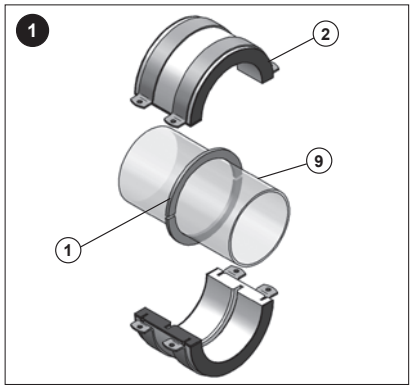
Assembly instructions insulated fixpoint





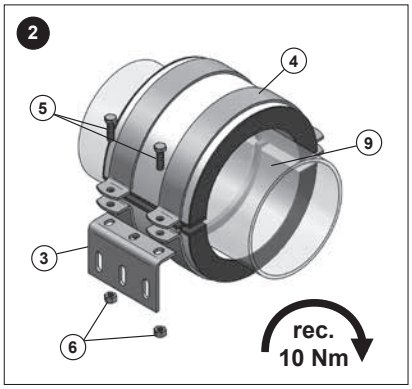
Important:

Please note recommended torque!

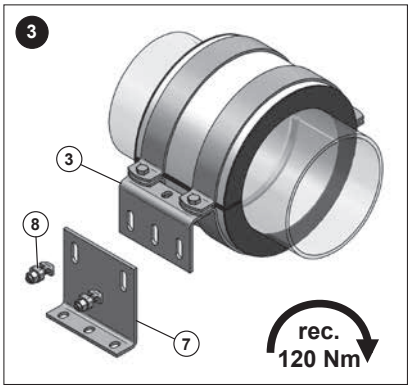


1.) Weld inner split rings (1) of insulated fixpoint to steel pipe (9).
- Ø 76,1 to Ø 114,3 per split ring with 3 segments a3 60 mm alternated weld
- Ø139,7 to Ø 406,4 per split ring with 4 segments a3 60 mm alternated weld

Raw parts e.g. inner split rings, should be coated after welding. Stick PU-halfshell (2) across inner split ring (1).

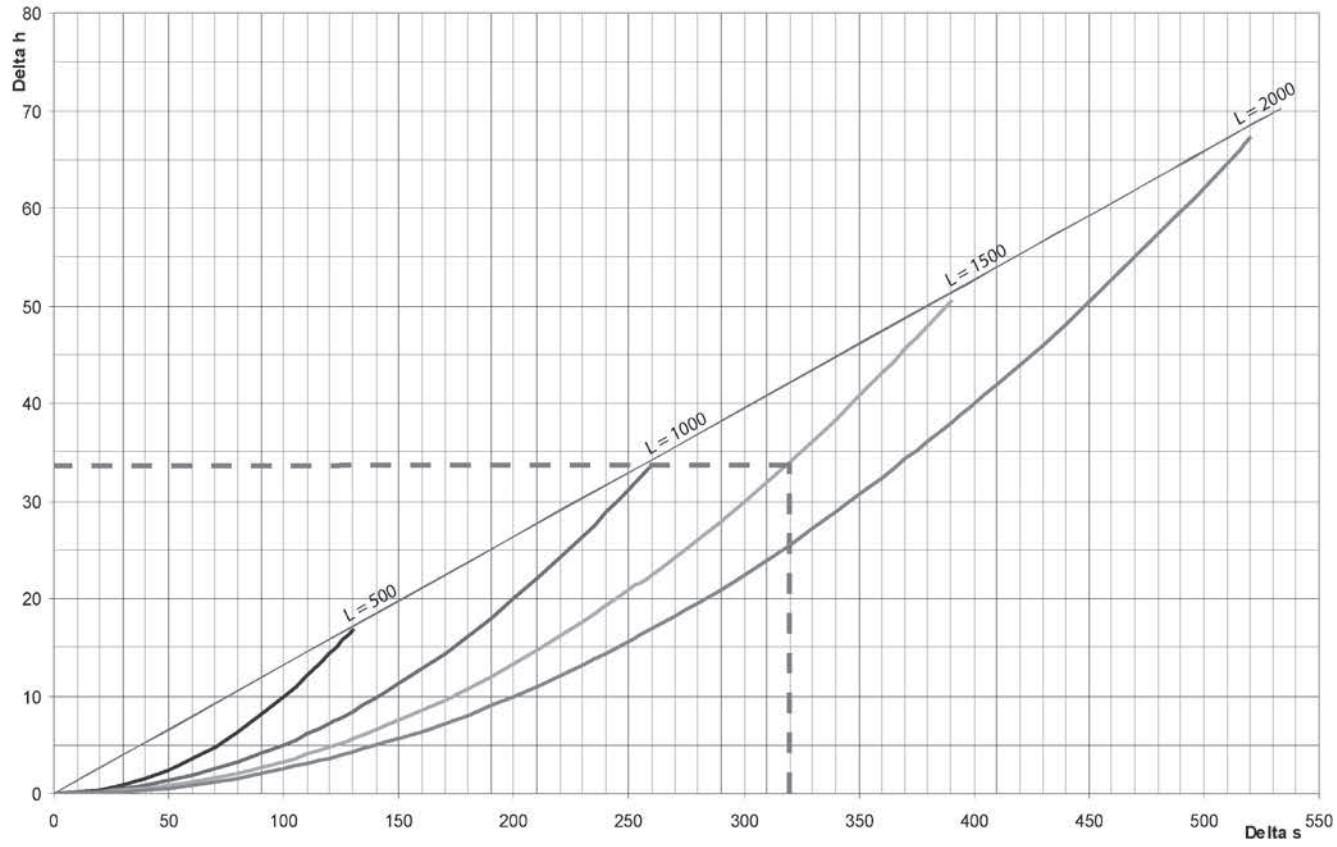


2.) Mount Side part (3) of recommended Fixpoint bracket HV under straps of outer split ring (4). Attract screws (5) and nuts (6) with torque of 10 Nm.



3.) Install stilt (7) using T-lock (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 beam).

Max. absorptional pipe expansion of pendular pin joint

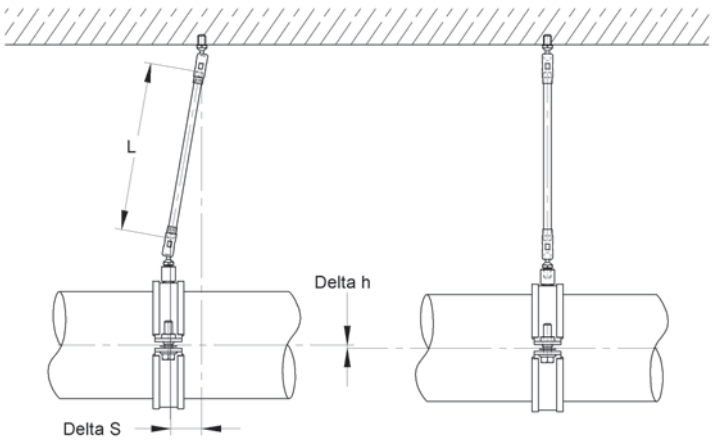


Example:

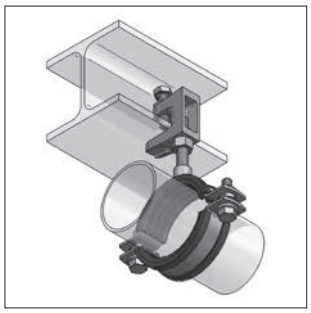
With threaded rod length of 1500 mm and pipe expansion of 320 mm, pipe is lifted about 34 mm.That means that the pendular stick joint can achieve the lifting, as no angle came up to ≥ 15°.

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°

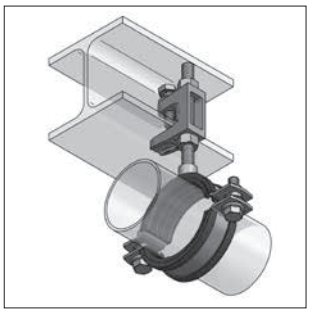
Example



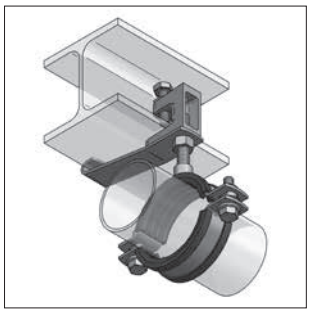
Construction examples beam clamps



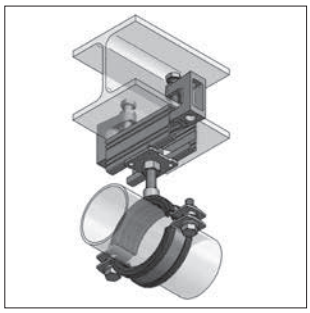
Single fixation of beam clamp underneath



Single fixation of beam clamp underneath with pass hole



Beam clamp with safety lug



Beam clamps combined with profile channel

Notice for mounting of beam clamp on beam:
Tigthen screw of girder clamp manual; then tighten with open-end wrench by a half turn

For stationary sprinkler systems according to VdS, a safety lug has to be used in connection with a beam clamp for fixation on pipes > DN 65 mm. It should be noticed that beam clamps, suitable for pipes above DN 65 only can be mounted on beam with a bearing area, differing less than 10° of horizontal.

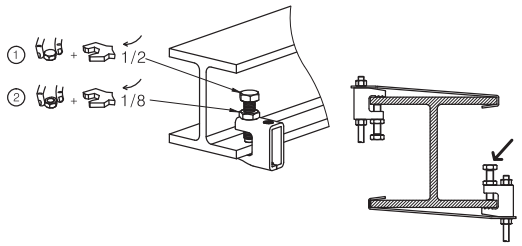
Clamps may only be loaded by vertical tension.

Clamping screws have to grip on inclined surface of beam.

Nominal pipe diameter (mm)	Safety lug
≤ DN 65	-
> DN 65 ≤ 100	S 3
> DN 100 ≤ 150	S 5

Construction examples are valid for beam clamps of cast iron and steel

Construction examples beam clamps PK / PKB

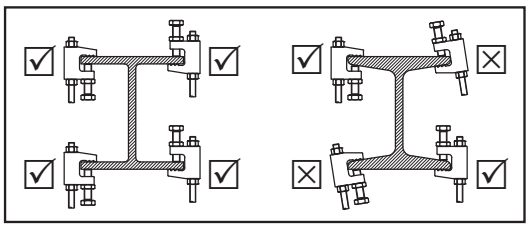


Pipe width	Beam clamp	Threaded rod	Safety lug	Safe working load (kN)
≤ DN 65	PKB 8	M8	-	1,2
> DN 65 ≤ 100	PKB 10	M10	S 3	2,5
> DN 100 ≤ 150	PK 12	M12	S 5	3,5

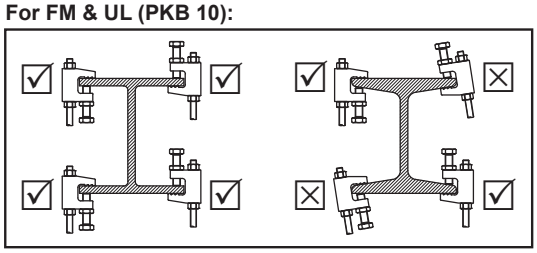
Installation Tips:
Slide PK / PKB steel beam clamp onto beam flange and tighten set screw according to the instruction ① and ②. To avoid over tightening, a rough guide to achieve the correct torque is to tighten the setscrew with thumb and forefinger and then apply a further half turn ① (180°) with a spanner. Tighten the locknut as per the instruction ②. When used with taper flanges, it is important to ensure that the screw of the PK / PKB steel beam clamp bites into the tapered face of the flange, rather than the parallel underside.

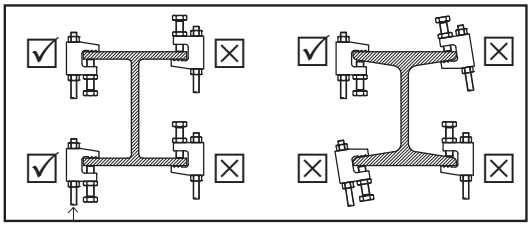
Application:
According to the German VdS regulations, the beam clamps must be secured by safety strip when the pipe to be fixed is larger than DN 65 (see table). Dimensions and material meet the VdS CEA-guideline for sprinkler systems.

For VdS (PKB 8, PKB 10, PK 12):



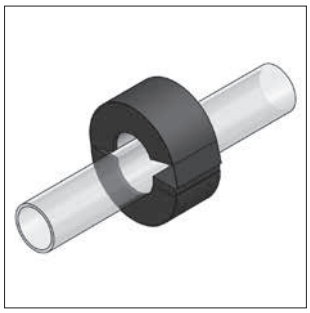
For FM & UL (PKB 10):



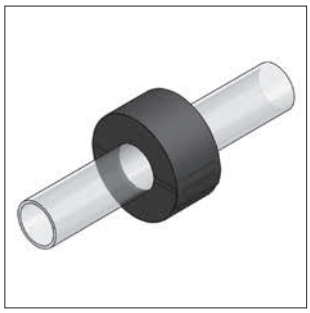


For FM & UL (PK 12):

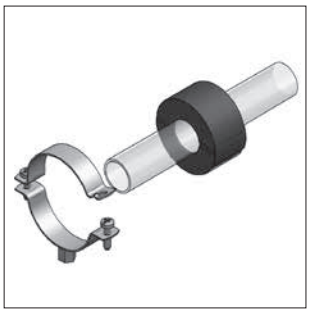
Assembly instructions HUSKY



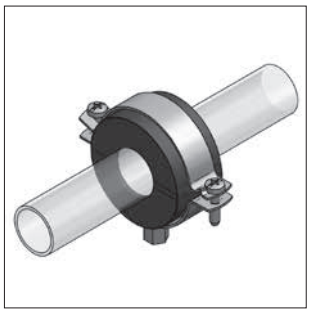
Position insulation body on pipe



Close insulation body and press overlap*



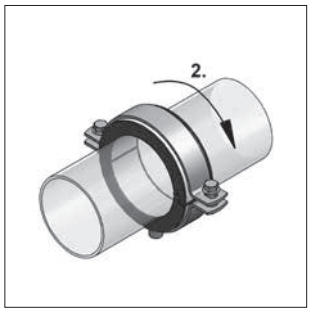
Position insulation body on pipe to pipe



Close clamp an adjust closings in parallel

Assembly instructions POLAR plus insulated pipe clamp

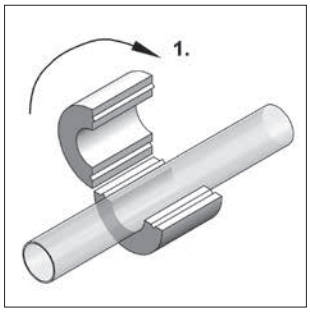
Position pipe in insulated pipe clamp



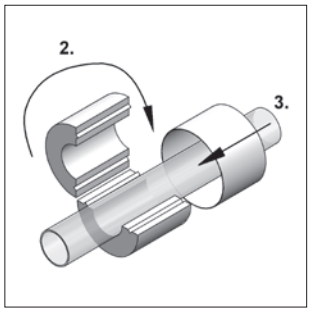
Close insulated pipe clamp*

* Bonding of shell and pipe is not necessary

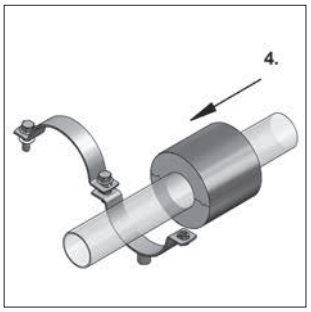
Assembly instructions ALU/PU >80< insulated pipe clamp



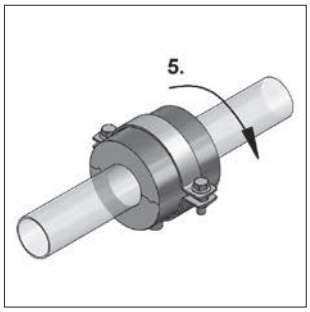
Enclose insulation body on pipe and close



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

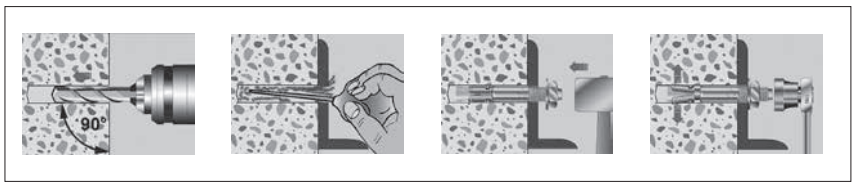
Gluing of insulated pipe clamps with sound proofing, made of synthetic rubber or closed cell PE material can be executed easily with usual glue of the insulation manufacturers (for example Armaflex 520 / Kaiflex „Spezial Kleber“).

Notice:

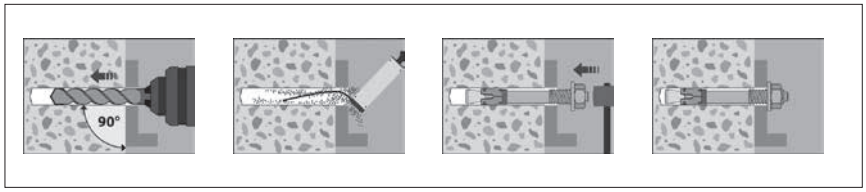
Insulated pipe clamp ALU/PU 80: less insulation thickness is recommended for glueing with insulated connection interface
a) sealing via applying frontsides completely with insulating glue or
b) buildup insulation at connection field with fitted insulation strips to insulation thickness of PUR-field.

Assembly instructions anchor

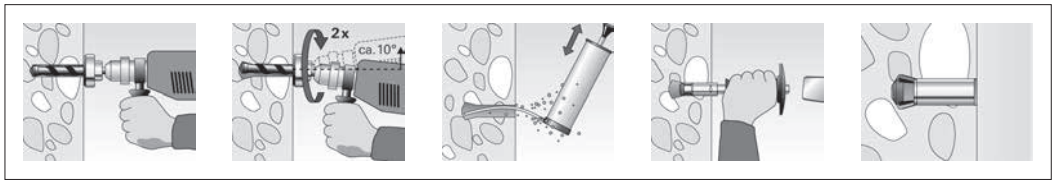
Bolt anchor BZ plus and BZ plus A4



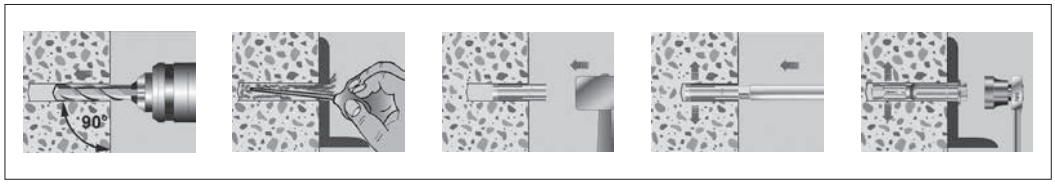
Nail anchor N and N-M



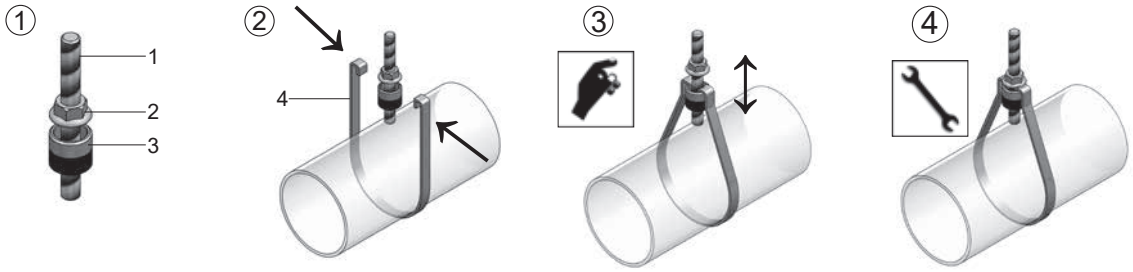
Zykon hammerset anchor FZEA II



Drop-in Anchor E and E A4



Assembly instructions Pipe Loop Hanger SLH

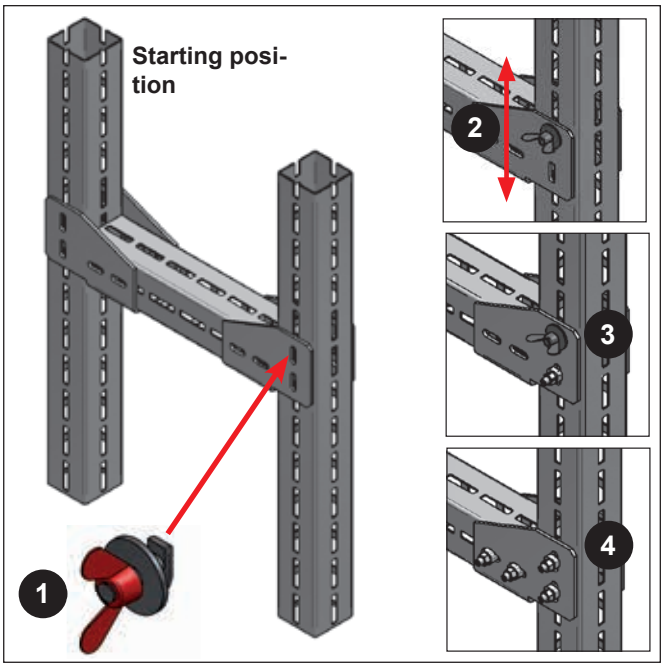


1. Mount threaded rod (1) into dowel/anchor. Fix flange nut (2) onto threaded rod (1). Allocation as per margined table. Push cup nut (3) from down across threaded rod (1).
2. Push pipe loop (4) across pipe with open end on top. Press open ends of pipe loop (4) and fasten downwards into cup nut (3).
3. Relieve cup nut (3) thru lifting pipe loop (4) and adjust mounting height by hand.
4. Finally screw pipe loop together with flange nut (2).

cup 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 instruction for CENTUM® FixBOB

Adjusting aid to position CENTUM® components.



1. **Placing:** Insert CENTUM® FixBOB through component and profile at desired position and tighten it hand-tight.

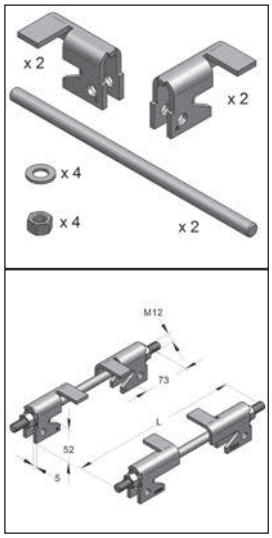
2. **Align**: To align the profile, loosen the CENTUM® FixBOB and tighten again (hand-tight only) after reaching desired position/location.

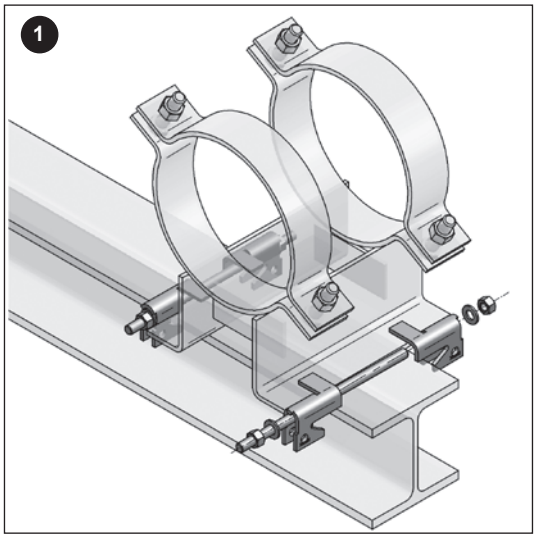
3. **Fixation**: Insert T-lock through component and profile in desired position. Tighten T-lock professionally according to „assembly instructions for T-lock“.

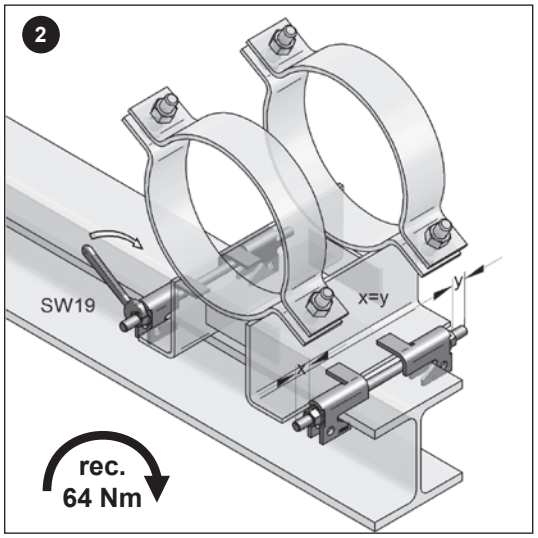
4. **Final assembly:** Loosen and remove CENTUM® FixBOB. Instead of the CENTUM® FixBOB, insert T-lock through the component and profile and tighten again properly according to „assembly instructions for T-lock“.

Assembly instructions Guiding Clamp Type A

For lateral guidance of sliding supports and sliding sledges on steel girder





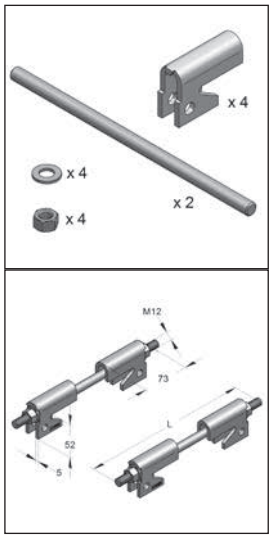


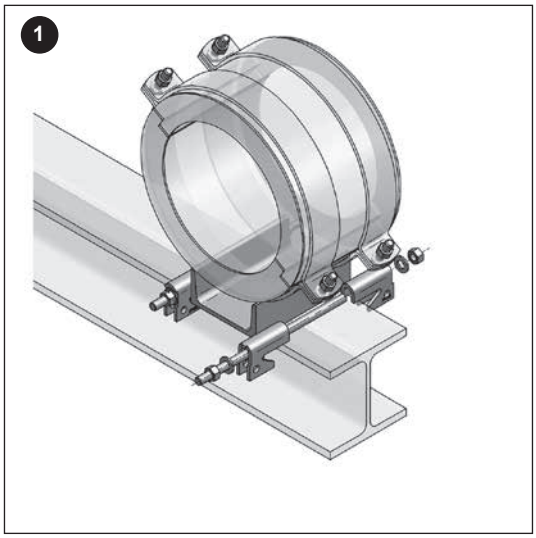
Important:

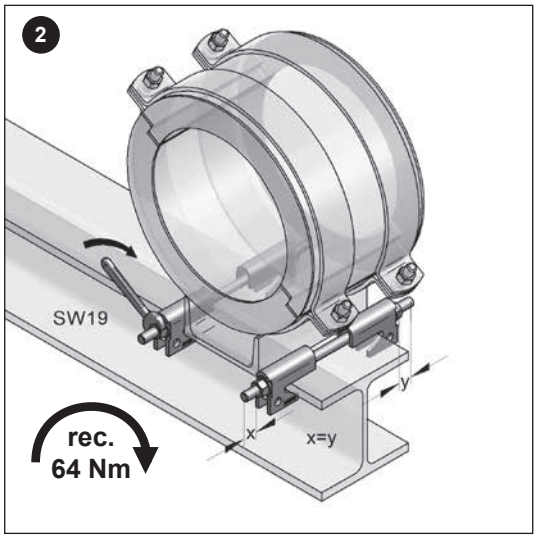
Please note the recommended tightening torques!

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!