

OBEN SEIN

experience the difference

PRODUCT **CATALOGUE**

HEAVY-DUTY AND **INDUSTRIAL APPLICATION**

MEFA

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» Please notice!

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» General Terms and Conditions of Sale

Please visit our website www.mefa.de

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OBEN SEIN

experience the difference

WELCOME **ON TOP**

*OUTSTANDING PRODUCTS
AND UNIQUE SERVICE*

MEFA

OBEN SEIN

experience the difference



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.

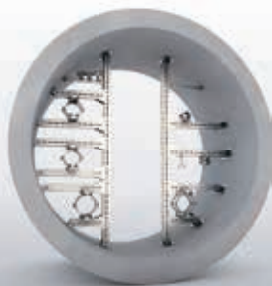
This promise we summarize in our claim „**OBEN SEIN**“.



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.

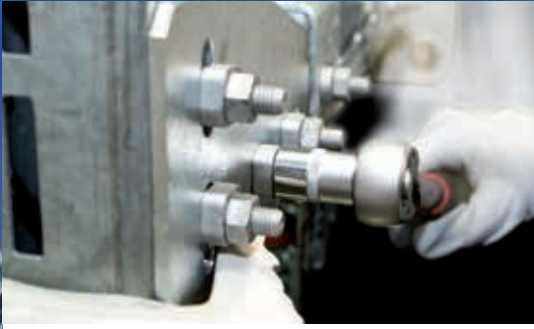
- » Manufacturing of product and system solutions for all applications
- » Development and production of customized products and solutions



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
- » Recyclability 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

» 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's account. Necessary rework and/or re-packaging, if applicable, will be displayed to the buyer and deducted after release. Customized products are generally excluded from return.

§ 10 Limitation period

(1) In deviation from Section 438 (1) no. 3 BGB, the general limitation period for claims resulting from defects of quality and title shall be one year from delivery, when purchasing goods (without assembly). Insofar as an acceptance has been agreed upon, the period of limitation shall begin with the acceptance.

(2) However, if the goods relate to a building or an item that has been used for a building in accordance with its normal method of use and has caused this building to be defective (building materials), the period of limitation shall be five years from delivery in accordance with statutory regulation (Section 438 (1) no. 2 BGB). Any other special statutory regulations regarding the statute-of-limitations (in particular, Section 438 (1) no. 1 and (3), Sections 444, 479 BGB) shall also not be affected.

(3) The afore-mentioned periods of limitation of the law governing purchases shall also apply to contractual and non-contractual claims for damages of the Purchaser which are due to a defect in the goods, unless the application of the regular legal statute-of-limitations (Sections 195, 199 BGB) would lead to a shorter period of limitation in an individual case. However, the Purchaser's claims for damages pursuant to § 8 (2) sentences 1 and 2(a) of these GTCs and pursuant to the Product Liability Act shall be statute-barred exclusively pursuant to the statutory periods of limitation.

§ 11 Choice of law and place of jurisdiction

(1) These GTCs and the contractual relationship between us and the Purchaser shall be subject to the laws of the Federal Republic of Germany under exclusion of international uniform law, in particular the UN Convention on Contracts for the International Sale of Goods.

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

■ CENTUM® - The answer for heavy-duty application!



CENTUM® is the perfect solution for heavy-duty piping and industrial application.

Especially designed to admit high loads, reliable and economically. Thanks to a minimum of system components, a clear and simple screw connection system, CENTUM® offers decisive advantages compared to common welded steel constructions.

■ The major advantages of CENTUM®:

- Saving time and labour costs
- Stepless positioning of system components
- Unique, shape-fitting screw connection system with a max. load capacity up to 10 kN per connection
- Dismantlement at any time
- Compatible interface for MEFA-profile channels
- All parts are hot-dip galvanized or zinc-nickel coated
- Closed profile geometric for max. torsion stiffness
- A well thought-out range of system components offering a maximum of possible variants in construction

■ Top-Surface-Protection (TSP®)

The optimal solution for outstanding requirements. TSP® offers surface protection for all operational areas from C3 up to C5 (survey on page 7/2).

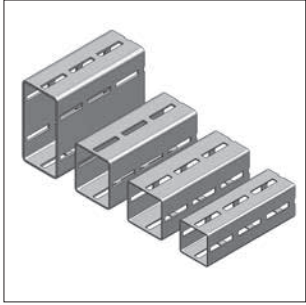


Approval/
calculation possibilities:

- 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® - components list

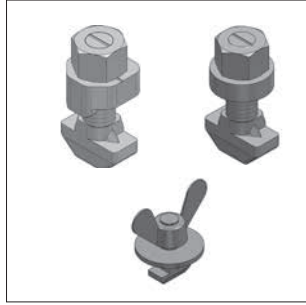
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CENTUM® Square profile
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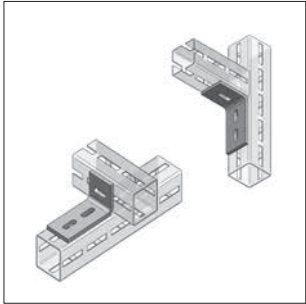
CENTUM® Protecting caps
Page 1/5



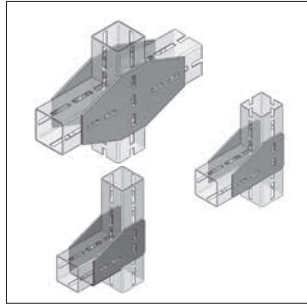
CENTUM® T-lock,
CENTUM® T-lock plus,
CENTUM® FixBob
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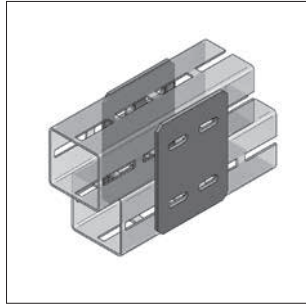
CENTUM® Profile gusset
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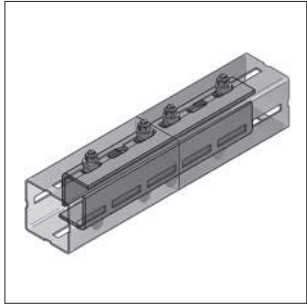
CENTUM® Angles
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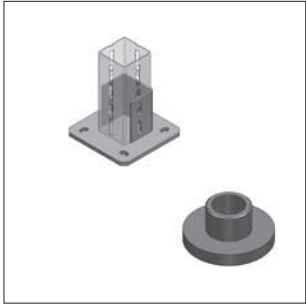
CENTUM® Angle-shoe,
CENTUM® Plates
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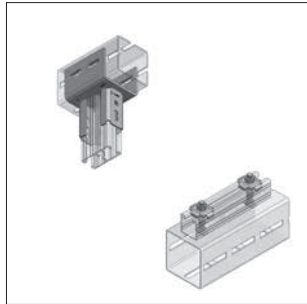
CENTUM® Connecting plate
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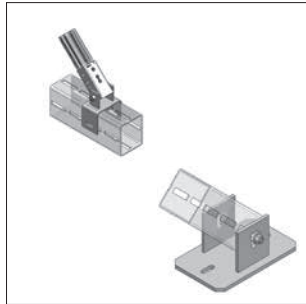
CENTUM® Connector
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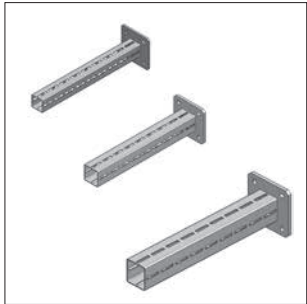
CENTUM® Holder
Adaptation anchor
Page 1/14



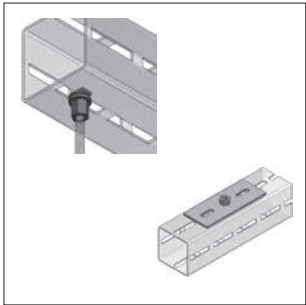
CENTUM® Adaptor
C-profile connector
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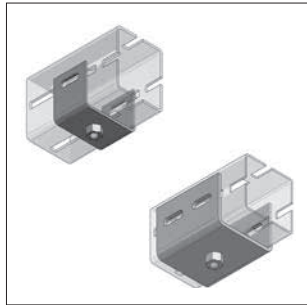
CENTUM® Joint connection,
CENTUM® Joint holder
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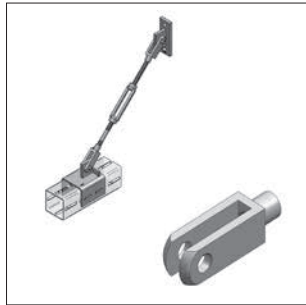
CENTUM® Consoles
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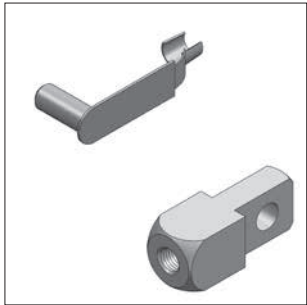
CENTUM® Direct connector
Base plate
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CENTUM® Thread connector,
CENTUM® Massive connector
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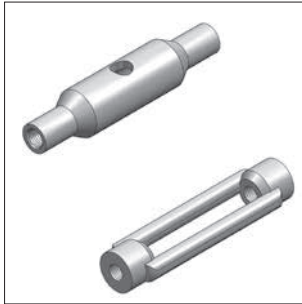


CENTUM® tension rod system,
U-heads
Page 1/22

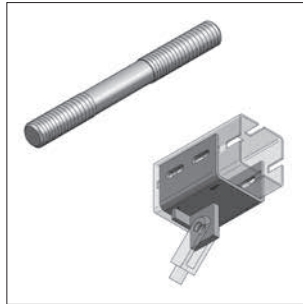


Hinged spring bolt,
U-head counterpart
Page 1/23

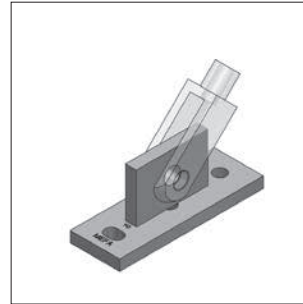
CENTUM® - components list



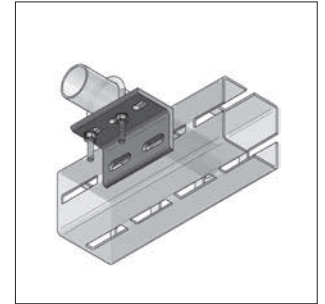
Turnbuckle DIN 1478, 1480
Page 1/24



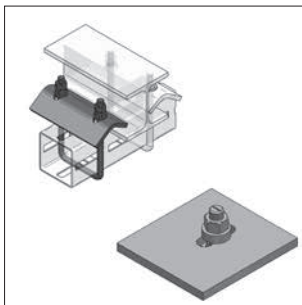
Threaded pin left right,
Tension rod connector
Page 1/25



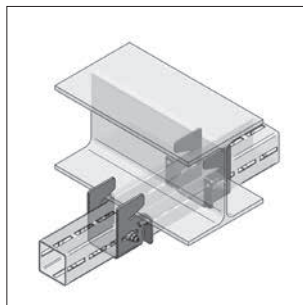
CENTUM® Wall connection
Page 1/26



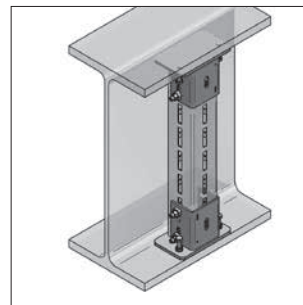
CENTUM® Pipe holder
Page 1/27



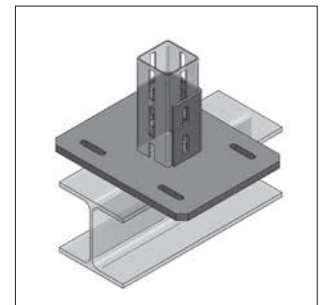
CENTUM® Clamping bow,
Spacer plate for clamping bows
Page 1/28



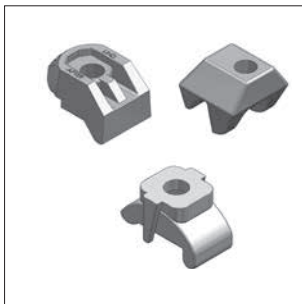
CENTUM® Clamping shoe
Page 1/29



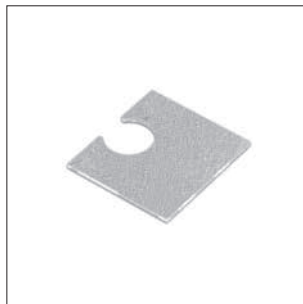
CENTUM® Girder clamping
Page 1/30



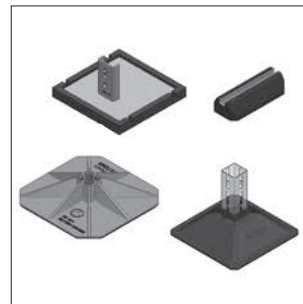
CENTUM® Girder fixation
Page 1/31



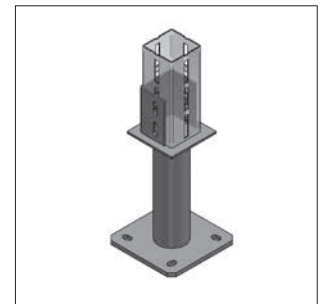
CENTUM® Clamping claws
Page 1/32



CENTUM® Washer component AF
Page 1/33



Rooftop holder/BIG FOOT®
Page 1/36

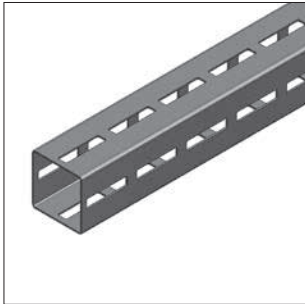


CENTUM® Wall- and roof bushing
Page 1/40

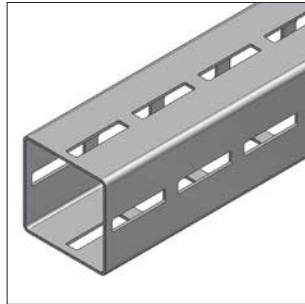
<p>i Component safety concept: According DIN EN 1991-1</p>	
<p>Global safety coefficient γ</p> <p>The evaluation of global safety coefficient for the value of impact is based on a ratio of 2/3 of tare weight and 1/3 of working load.</p> <p>$\gamma = (2/3 \gamma_G + 1/3 \gamma_Q) \times \gamma_Z = (2/3 \times 1,35 + 1/3 \times 1,50) \times 1,1 = 1,54$</p>	<p>Safety for impact</p> <p>Safety tare weight $\gamma_G = 1,35$</p> <p>Safety working load $\gamma_Q = 1,50$</p>
<p>Exceptions</p> <p>CENTUM® screwing acc. RAL GZ 655-D $\gamma = 2,0$</p>	<p>Safety for resistance</p> <p>Safety load resistance $\gamma_Z = 1,10$</p>

CENTUM® Square profile

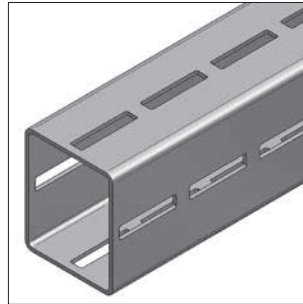
01



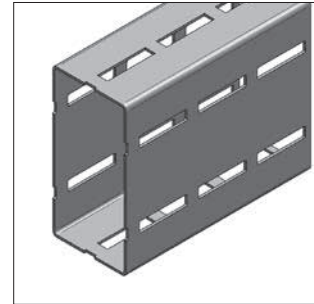
CENTUM® profile XL 80



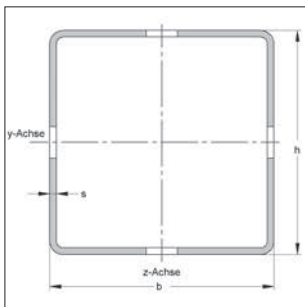
CENTUM® profile XL 100



CENTUM® profile XL 120



CENTUM® profile XL 200



Description of system:

- modular system
- 4-sided without raster in connection with mounting parts
- torsion stiffness
- high load capacity

** At 8 m delivery length special delivery conditions

Technical data:

Material:	steel
Material type	
XL 80 - XL 120s:	S275
Material type XL 200:	S235
Surface:	hot-dip galvanized according to DIN EN ISO 1461
	* not certified acc. to RAL

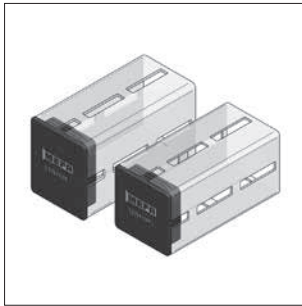
Identification	Dimensions h x b [mm]	Profile thickness s [mm]	perforation	Length L [m]	Weight [kg/m]	Bundle [m]	Packing [m]	Part-No.
CENTUM® profile XL 80	80 x 80	2,5	4-sided	6	5,51	150	6	16008060
CENTUM® profile XL 100	100 x 100	3	4-sided	6	8,46	96	6	16010060
CENTUM® profile XL 120	120 x 100	4	4-sided	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	Section modulus	Geometrical moment		Section		gyration	
	area	of torsion	of inertia		modulus		radius	
	A_k	W_t	I_{y-y}	I_{z-z}	W_{y-y}	W_{z-z}	i_y	i_z
	cm ²	cm ³	cm ⁴	cm ⁴	cm ³	cm ³	cm	cm
Profile XL 80	6,19	36,04	64,51	64,51	16,13	16,13	3,23	3,23
Profile XL 100	9,73	56,40	157,14	157,14	31,43	31,43	4,02	4,02
Profile XL 120	14,45	89,10	310,55	237,23	51,76	47,44	4,64	4,05
Profile XL 120s	17,55	109,25	372,76	284,42	62,12	56,88	4,61	4,03
Profile XL 200	24,15	185,25	1255,68	433,47	125,56	86,69	7,21	4,24

i Load values for CENTUM® profile rails can be found at the end of the chapter.

■ CENTUM® Protecting cap



CENTUM® Protecting cap

Specification:

For profile type: XL 80, XL 100 or XL 120

Technical data:

Material: plastic
 Material type: PE
 Colour: black

01

Identification

CENTUM® Protecting cap XL 80
CENTUM® Protecting cap XL 100
CENTUM® Protecting cap XL 120

Weight
[kg/pc.]Packing
[set]

Part-No.

0,059

20

1670081

0,079

20

1670101

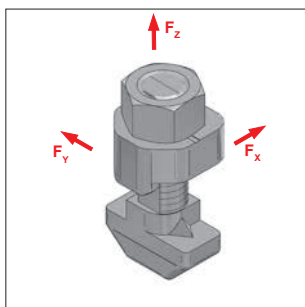
0,092

20

1670121

CENTUM® T-lock plus M12x40

01



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 $\varnothing \geq 14$ mm)

Technical data:

Material: steel
 Surface: zinc-nickel

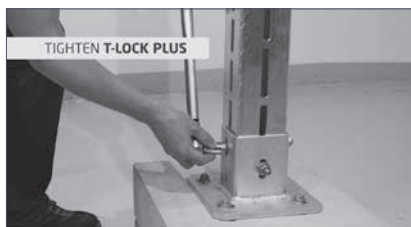
Identification	Property class	Tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® T-lock plus M12x40	10.9	XL 80 90	from XL 100 120	0,113	50	1610011001

CENTUM® T-lock plus



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:

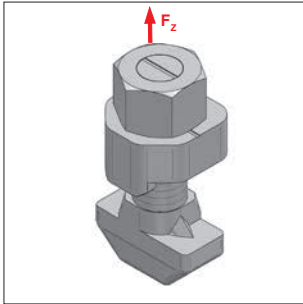


Wrench size 19 mm.
Recommended torque XL 80: 90 Nm.
Recommended torque XL 100: 120 Nm.

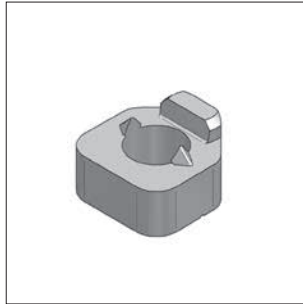
T-lock plus must not be used again after dismantling.

CENTUM® T-lock M12x40

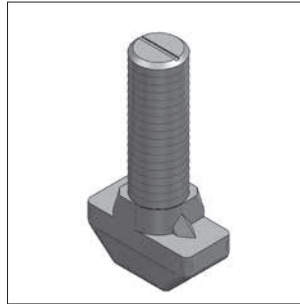
01



CENTUM® T-lock



CENTUM® Lock washer



CENTUM® T-lock bolt



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 $\varnothing \geq 14$ mm)

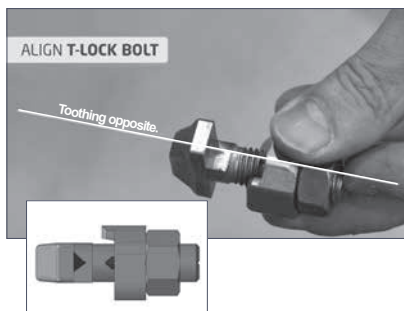
Technical data:

Material: steel
 Surface: zinc-nickel

Identification	Property class	recommended 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, toothed	10.9	90	120	0,064	50	1610012100/zn
CENTUM® hex nut M12 FK10, DIN EN ISO 4032	10	--	--	0,017	100	8989995/zn

Assembly instruction for CENTUM® T-lock

Positioning:



Insert T-lock through component and profile, position as required.

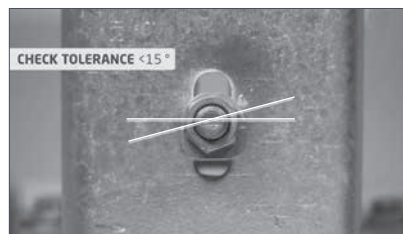


Turn T-lock 90° (marking notch stands diagonally to the elongated hole).

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.

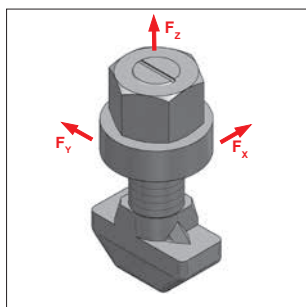
Recommended torque XL 80: 90 Nm.

Recommended torque XL 100: 120 Nm.

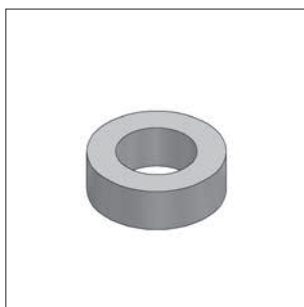
T-lock must not be used again after dismantling.

■ CENTUM® T-bolt, with steel disk

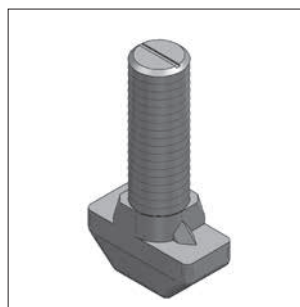
01



CENTUM® T-bolt



CENTUM® steel disk



CENTUM® T-lock bolt, toothed

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200

Features: frictional connection

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

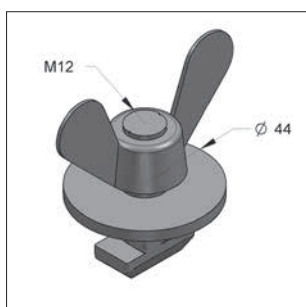
Technical data:

Material: steel

Surface: zinc-nickel

Identification	Property class	recommended tightening torque [Nm]		Weight [kg/pc.]	Packing [pcs.]	Part-No.
		XL 80	from XL 100			
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, toothed	10.9	90	120	0,064	50	1610012100/zn
CENTUM® Hexagon nut M12 FK10, DIN EN ISO 4032	10	--	--	0,017	100	8989995/zn

■ CENTUM® 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

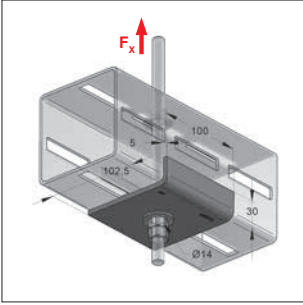
Surface: galvanized / painted red

Identification	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® FixBOB	M12	0,139	10	1610013000

i For assembly instructions, see Chapter 15.

CENTUM® Profile gusset

01



CENTUM® Profile gusset

Specification:

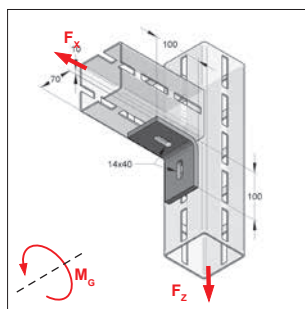
For profile type: XL 100, XL 120 and XL 200
 Application: Suspension of CENTUM® Profiles with threaded rods
 Needed accessory: 3x nut M12
 2x Washer 13 x 30 x 2,5
 threaded rod M12

Technical data:

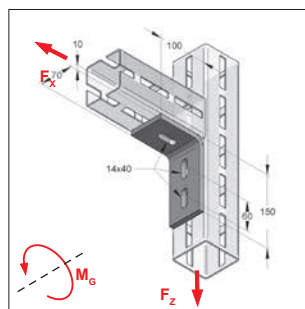
Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Safety factor: 1,54

Identification	Thread	Load F_x [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Profile gusset	M12	10,0	0,49	1	1620005010

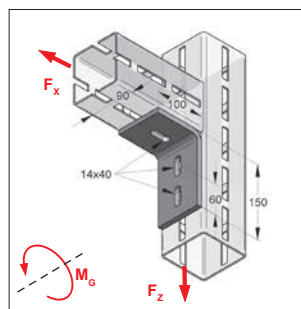
CENTUM® Angles - corner connector



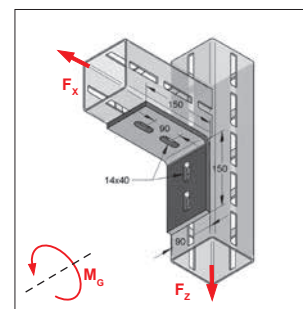
CENTUM® 2-hole angle
XL 80



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

Needed accessory: T-lock M12/40

* by using of all screw holes

Technical data:

Material: steel

Material type: S235JR

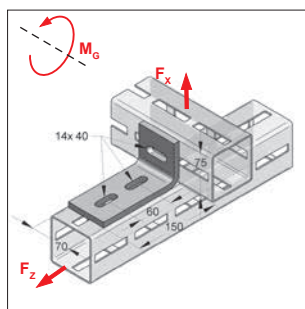
Surface: hot-dip galvanized

Safety factor: 1,54

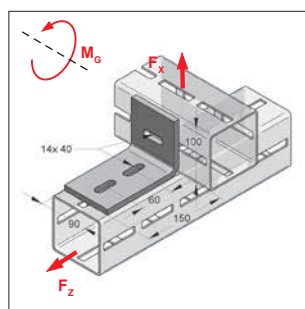
Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

Identification	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	F_x [kN]	F_z [kN]				
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

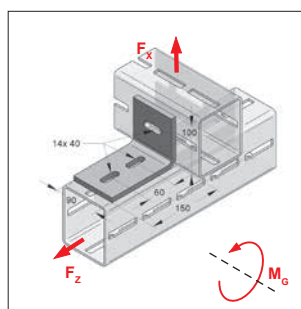
CENTUM® Angles horizontal - cross connector



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

Needed accessory: T-lock M12/40

* by using of all screw holes

Technical data:

Material: steel

Material type: S235JR

Surface: hot-dip galvanized

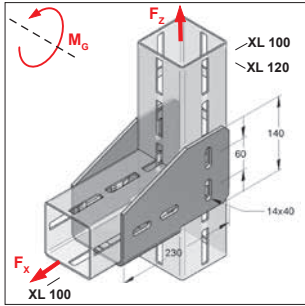
Safety factor: 1,54

Remark: Always align elongated holes of components in direction of elongated holes of CENTUM® profile.

Identification	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	F_x [kN]	F_z [kN]				
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

01



CENTUM® Angle-shoe XL 100

Specification:

For profile type: XL 100
High-strength corner connection
with profile support

Needed accessory: T-lock M12/40

Technical data:

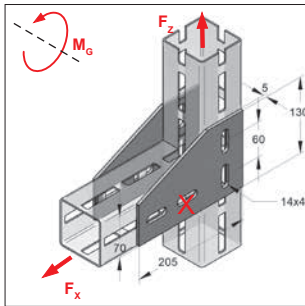
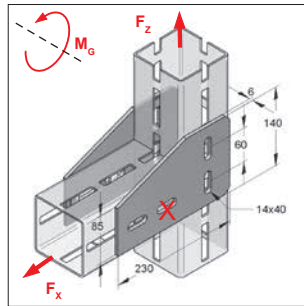
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

* by using of all screw holes

Identification

Identification	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	F_x [kN]	F_z [kN]				
CENTUM® Angle-shoe XL 100	40	40	1,2	3,57	1	1641002010

CENTUM® Corner plate

CENTUM® Corner plate
use in pairsCENTUM® Corner plate L
from XL 100**Specification:**

For profile type: XL 80, XL 100, XL 120 and XL 200
Needed accessory: T-lock M12/40

Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

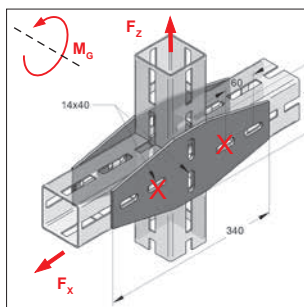
* by using of all screw holes

Remark: for $M_G = 0$ only one screw per side at X

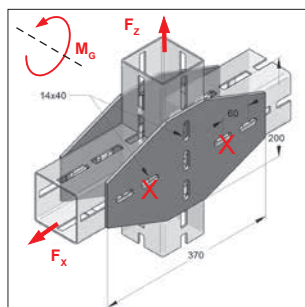
Identification

Identification	profile type	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		F_x [kN]	F_z [kN]				
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 100, XL 120 and XL 200

Needed accessory: T-lock M12/40

* by using of all screw holes

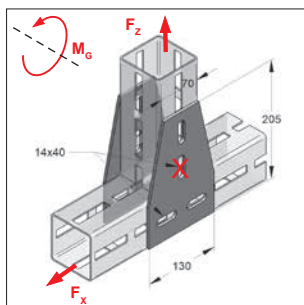
Remark: for $M_G = 0$ only one screw per side at X

Technical data:

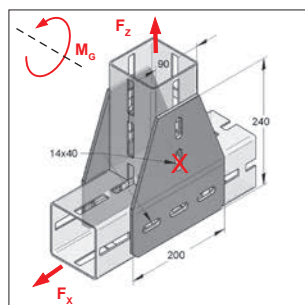
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification	profile type	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		F_x [kN]	F_z [kN]				
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

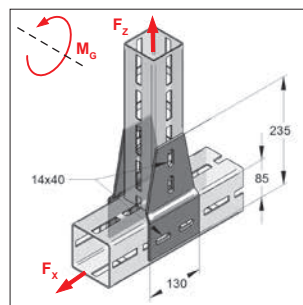
CENTUM® T-plate



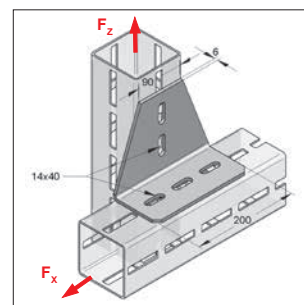
CENTUM® T-plate
XL 80



CENTUM® T-plate
from XL 100



CENTUM® T-plate cranked sym.



CENTUM® T-plate, angled

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200

Needed accessory: T-lock M12/40

Remark: for $M_G = 0$ only one screw per side at X

Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

¹⁾ by using of all screw holes

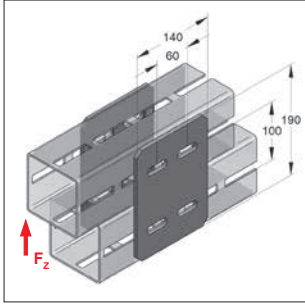
²⁾ use in pairs

³⁾ cross profile XL 100; any connecting profile

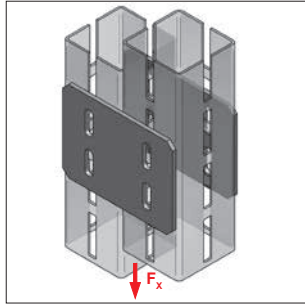
Identification	profile type	Load		max. limited torque M_G^* [kNm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		F_x [kN]	F_z [kN]				
CENTUM® T-plate XL 80²⁾	XL 80	32	32	0,95 ¹⁾	0,92	1	1640081030
CENTUM® T-plate²⁾	from XL 100	40	40	1,20 ¹⁾	1,97	1	1640001030
CENTUM® T-plate cranked sym.²⁾	to connect XL 80 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	-	1,99	1	1640001040

CENTUM® Connecting plate XL 100

01



CENTUM® Connecting plate
XL 100



CENTUM® Connecting plate
XL 100 vertical

Specification:

For profile type: XL 100
Application: Mounting aid, fixation or doubling up of CENTUM® Profiles

Needed accessory: T-lock M12/40

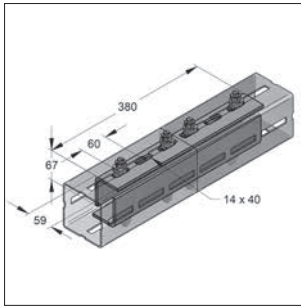
Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized

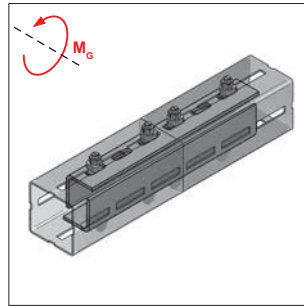
¹⁾ only when used in pairs and using all screw holes

Identification	Profile type	Load		Weight [kg/pc.]	Packing [pc.]	Part-No.
		$F_x^{1)}$ [kN]	$F_z^{1)}$ [kN]			
CENTUM® Connecting plate XL 100 (use in pairs)	XL 100	40	40	1,29	1	1640003040

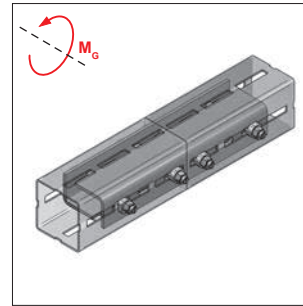
CENTUM® Connector



CENTUM® Connector



screw plant top/bottom



screw plant left/right

Specification:

Scope of supply: 2 x u-steel, 8x CENTUM® T-lock, toothed
 Function: connection of XL 80, XL 100, XL 120 or XL 200

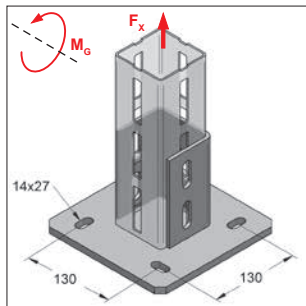
Technical data:

Material: steel
 Surface L-profile: hot-dip galvanized
 Surface screws: zinc-nickel

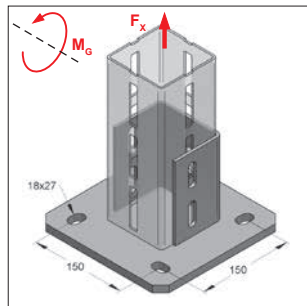
Identification	Limit moment at screw plant				Length [mm]	Width b [mm]	Height h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	XL 80		from XL 100							
	top/ bottom [kNm]	left/ right [kNm]	top/ bottom [kNm]	left/ right [kNm]						
CENTUM® Connector-Set	1,25	0,85	2,50	1,35	380	67	59	5,28	1	1640005011

CENTUM® Holder

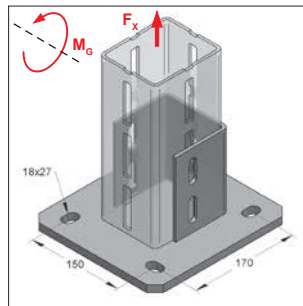
01



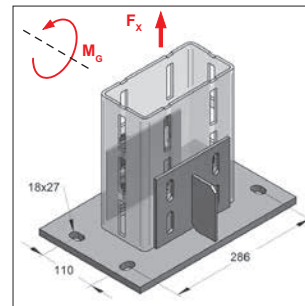
CENTUM® Holder XL 80



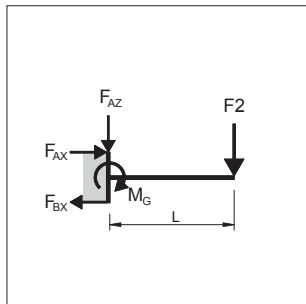
CENTUM® Holder XL 100



CENTUM® Holder XL 120



CENTUM® Holder XL 200



$$M_G = F_2 \times L$$

Specification:

For profile type: XL 80, XL 100, XL 120 and XL 200

Needed accessory: T-lock M12/40

* at least one screw per profile side / With XL 200 two screws per profile side

Technical data:

Material: steel

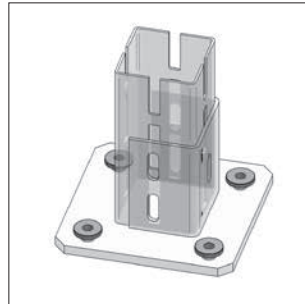
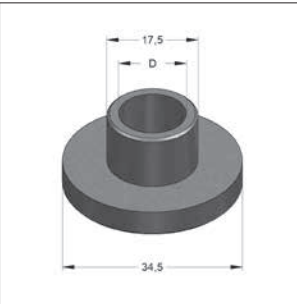
Material type: S235JR

Surface: hot-dip galvanized

Safety factor: 1,54

Identification	Load*	maximum torque	Plate-width	Plate-length	Plate-thickness	Weight	Packing	Part-No.
	F_x [kN]	M_G^* [kNm]						
CENTUM® Holder XL 80	25	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

01

Specification:

For rail holder: XL 100, XL 120 and XL 200
 application area: Reduction of mounting holes from M16 to M12 or M10

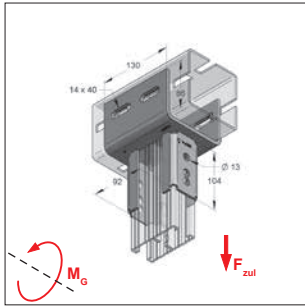
Technical data:

Material: steel
 Material type: zinc-nickel

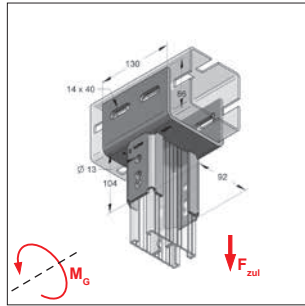
Identification	internal - Ø D [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Adaptation anchor M16 to M10	11	0,047	50	1610019502/zn
CENTUM® Adaptation anchor M16 to M12	13	0,044	50	1610019503/zn

CENTUM® Adaptor

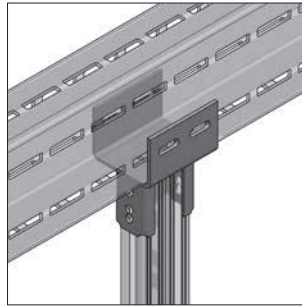
01



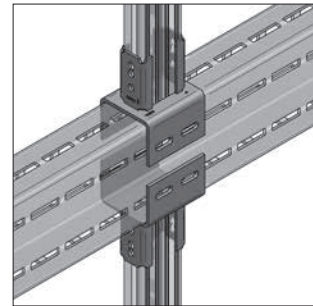
CENTUM® Adaptor
vertical



CENTUM® Adaptor
horizontal



CENTUM® Adaptor 45-90
with XL200



CENTUM® Adaptor 45-90
double

Specification:

For profile type: XL 100, XL 200, 45/90
Application: to connect C-profile rails 45/90
Recommended accessories: threaded square plate
hexagon screw
T-lock M12x40

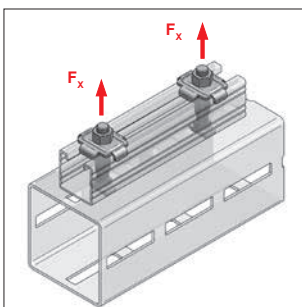
Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

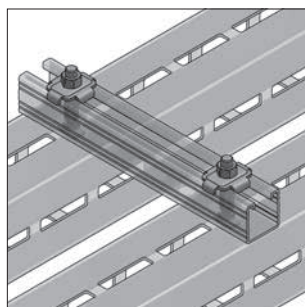
* loads referring to component, not to connection

Identification	Load* F_{zul} [kN]	maximum torque M_G		Length [mm]	Thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		[kNm] fbv	[kNm] fsv					
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® C-profile connector



CENTUM® C-profile connector



CENTUM® C-profile connector
cross

Specification: XL 80

For profile type: XL 80, XL 100, XL 120 and XL 200
Application: to connect profile rails

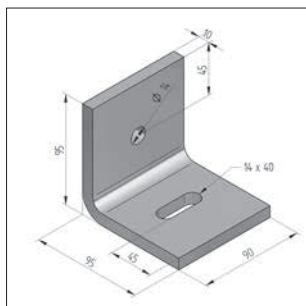
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	for profile-height [mm]	Load F_x [kN]	tightening torque [Nm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® C-profile connector	60	2,0	10	0,17	50	1640017060

CENTUM® wall angle XL100 horizontal

01



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: T-lock M12/40

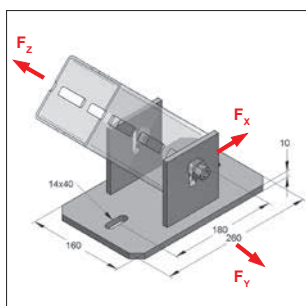
Note: Always align the slotted holes of the components in the direction of the slotted holes of the CENTUM® profile.

Technical data:

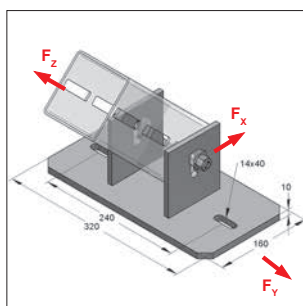
Material: steel
Material type: S235
Surface: hot-dip galvanized

Identification	Weight	Packing	Part-No.
	[kg/pc.]	[pc.]	
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:

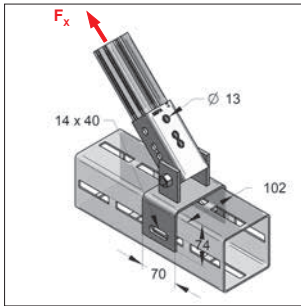
For profile type: XL 100 or XL 120
Needed accessory: T-lock M12/40
Tightening torque: 60 Nm
Delivery time: on request

Technical data:

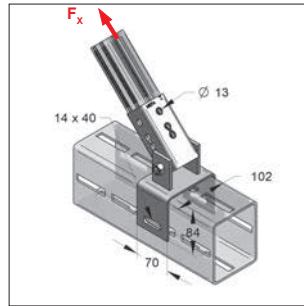
Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Safety factor: 1,54

Identification	Load			Center hole Plate	Dimension Plate L x B x S	Weight [kg/pc.]	Packing [pc.]	Part-No.
	F_x [kN]	F_z [kN]	F_y [kN]					
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 T-lock M12/40

¹⁾ loads referring to component, not to connection

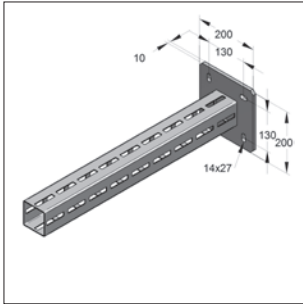
Technical data:

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

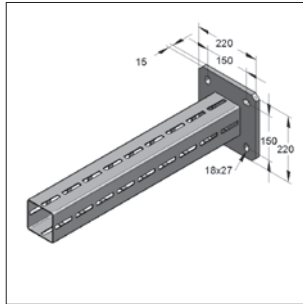
Identification	Load ¹⁾ F_x [kN]	Hole-Ø [mm]	Elongated hole-Ø [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Joint connection XL 100	7,0	13	14 x 40	1,28	1	1641014110
CENTUM® Joint connection XL 120	7,0	13	14 x 40	1,32	1	1641214110

CENTUM® Console

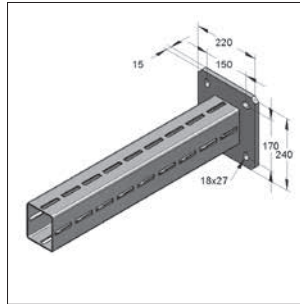
01



CENTUM® Console XL 80



CENTUM® Console XL 100



CENTUM® Console XL 120

Specification:

For profile type: XL 80, 100 and 120

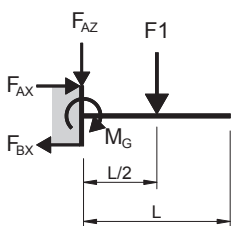
Technical data:

Material: steel
 Material type (plate): S235JR
 Material type (rail): S275JR
 Surface: hot-dip galvanized
 Safety factor: 1,35

* Delivery time on request, variant demand possible

Identification	Length [mm]	Load 1 F1 [kN]	Load 2 F2 [kN]	Load 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Console XL 80	720	8,38	4,19	11,64	7,26	1	1630800720
CENTUM® Console XL 80	960	6,29	2,94	6,55	8,58	1	1630800960
CENTUM® Console XL 80	1440	4,19	1,31	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

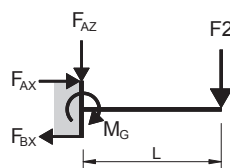
load 1 (LF1)



$$F_{AZ} = F1$$

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

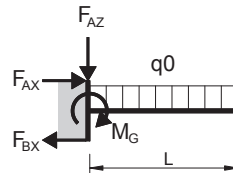
load 2 (LF2)



$$F_{AZ} = F2$$

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

load 3 (LF3)



$$F_{AZ} = q0 * L$$

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

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

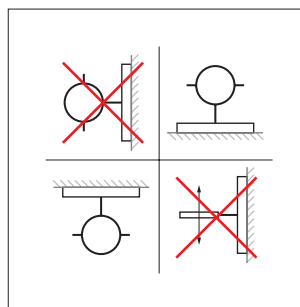
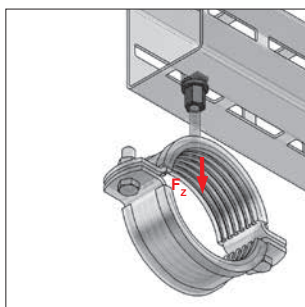
Remark:

All load capacities excessive refer to static loads.

■ CENTUM® Direct connector



CENTUM® Direct connector



Mounting recommendation

Specification:

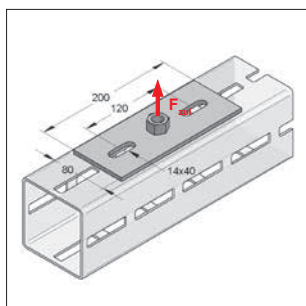
For profile type: XL 80, XL 100, XL 120, XL 200
Application: direct connection for M10 or M12 thread

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 [kN]	Weight [kg/pc.]	Packing [pc.]	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® Base plate



CENTUM® Base plate M12

Specification:

For profile type: XL80, XL100, XL120 and XL 200

Needed accessory: 2 x T-lock M12/40 or
2 x T-bolt with steel disk, M12/40

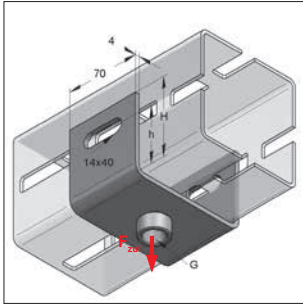
Technical data:

Material: steel
Material type: S235JRG2
Surface: zinc-nickel
Safety factor: 1,54

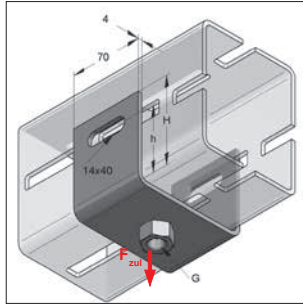
Identification	Length [mm]	Height [mm]	Load F_{zul} [kN]	Thickness [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Base plate M12	200	80	5,5	6	0,760	1	1640018106
CENTUM® Base plate M16	200	80	5,5	6	0,790	1	1640018107
CENTUM® Base plate 1/2"	200	80	5,5	6	0,780	1	1640018108
CENTUM® Base plate 1"	200	80	5,5	6	0,830	1	1640018110

CENTUM® Thread connector

01



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

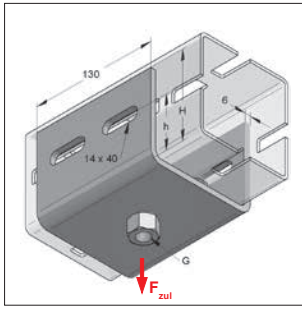
Needed accessory: 2 x T-lock M12/40

Technical data:

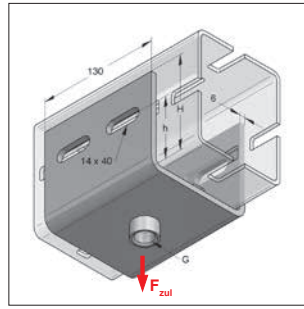
Material: steel
Material type: S235JR
Surface: zinc-nickel
Safety factor: 1,54

Identification	Profile type	Thread G	Load F_{zul} [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 T-lock M12/40

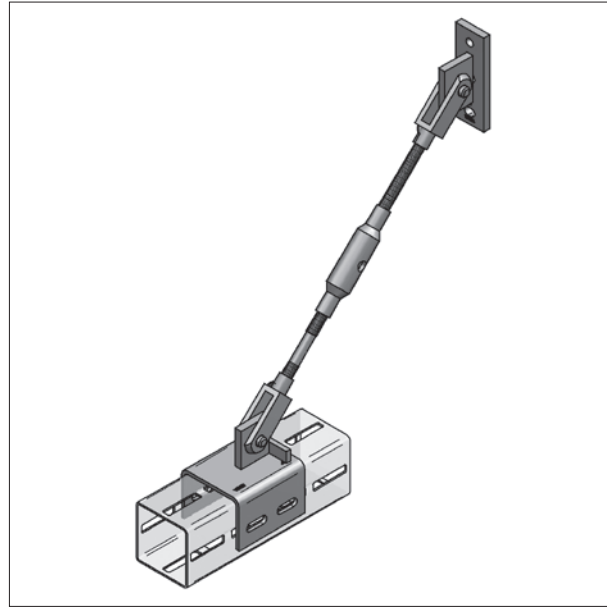
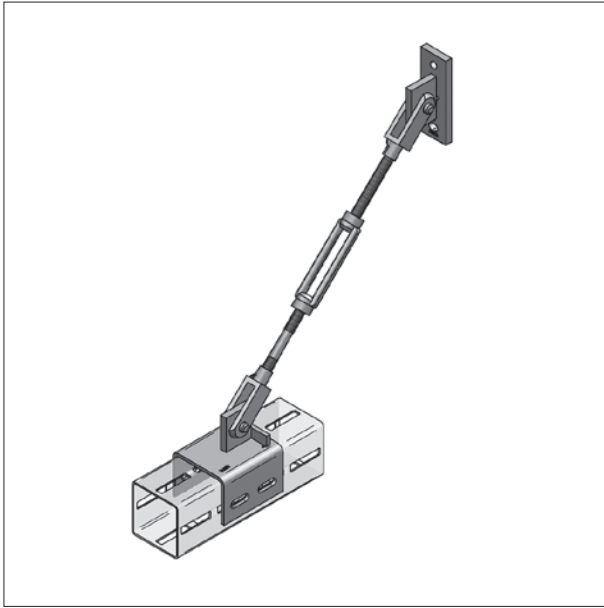
Technical data:

Material: steel
Material type: S235JR
Surface: zinc-nickel
Safety factor: 1,54

Identification	Profile type	Thread G	Load F_{zul} [kN]	H [mm]	h [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
CENTUM® Massive connector	XL 100 / XL 200	M16	10,0	86	50	1,65	1	1641019007
CENTUM® Massive connector	XL 100 / XL 200	1/2"	10,0	86	50	1,64	1	1641019008
CENTUM® Massive connector	XL 100 / XL 200	1"	10,0	86	50	1,69	1	1641019010
CENTUM® Massive connector	XL 120	M16	10,0	96	60	1,78	1	1641219007
CENTUM® Massive connector	XL 120	1/2"	10,0	96	60	1,77	1	1641219008
CENTUM® Massive connector	XL 120	1"	10,0	96	60	1,82	1	1641219010

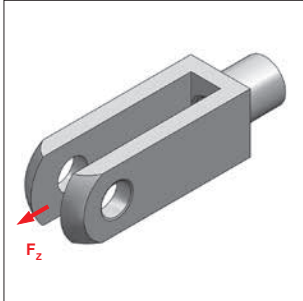
■ Tension rod system

01

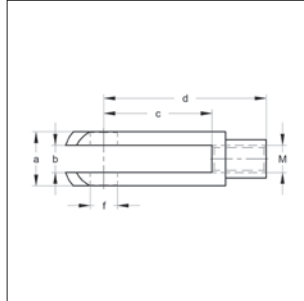


Tension rod system consisting of U-heads, turnbuckles and threaded rods

■ U-head according to DIN 71752



U-head acc. DIN 71752



mounting unit/hanger chain
page 3/14

Specification:

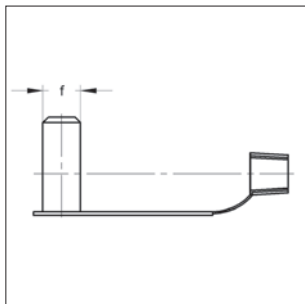
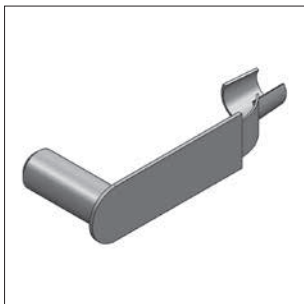
Application area: for tension rod system or hanger chain (page 3/14).
 Needed accessory: hinged spring bolt

Technical data:

Material: steel
 Surface: galvanized

Identification	Dimension						load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	a [mm]	b [mm]	c [mm]	d [mm]	M [mm]	f [mm]				
U-head 12x48	24	12	48	72	M12	12	20,0	0,175	10	1660007312
U-head 16x64	32	16	64	96	M16	16	20,0	0,414	5	1660007316

■ Hinged spring bolt for U-head according DIN 71752



Hinged spring bolt for U-head

Specification:

Application area: Lock pin for U-head according DIN 71752

Technical data:

Material: steel
Surface: galvanized

Needed accessory: U-head according DIN 71752

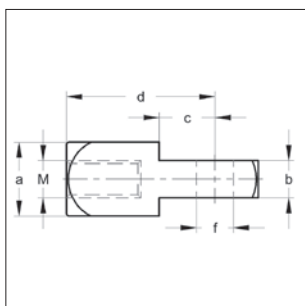
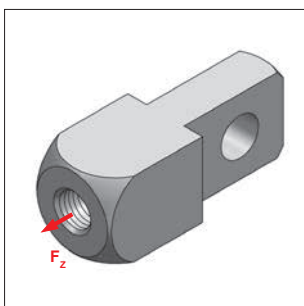
Identification

measure f [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
12	0,037	10	1660007252
16	0,075	5	1660007256

Hinged spring bolt 12x48

Hinged spring bolt 16x64

■ U-head counterpart



U-head counterpart

Specification:

Application area: in combination with U-heads acc. DIN 71752
e.g. hanger chain see page 3/14

Technical data:

Material: steel
Surface: galvanized

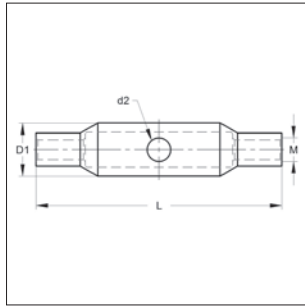
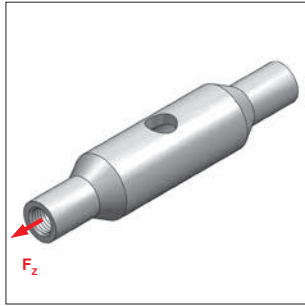
Accessory: U-head acc. DIN 71752 and hinged spring bolt

Identification

	Dimension				M	f	Weight F_z [kg/pc.]	Packing [pc.]	Part-No.
	a [mm]	b [mm]	c [mm]	d [mm]					
U-head counterpart 12x24	24	12	18	48	M12	12	0,168	1	1660007352
U-head counterpart 16x32	32	16	24	64	M16	16	0,397	1	1660007356

■ Turnbuckle according to DIN 1478 (steel)

01



Turnbuckle steel DIN 1478

Specification:

Application area: strain of tension rods in combination with left-hand right-hand threaded pin

Accessory: left-hand right-hand threaded pin, threaded rod and u-heads

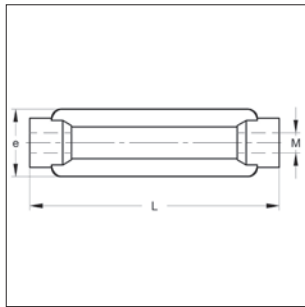
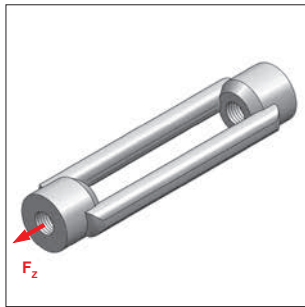
Technical data:

Material: steel

Surface: galvanized

Identification	Dimension				Adjust-ability [mm]	load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	D1 [mm]	d2 [mm]	M [mm]	L [mm]					
Turnbuckle steel M12	25	10	M12	125	90	24,0	0,241	1	1660007412
Turnbuckle steel M16	30	10	M16	170	120	44,0	0,370	1	1660007416

■ Turnbuckle according DIN 1480 (forged, open shape)

Turnbuckle forged
DIN 1480

Specification:

Application area: strain of tension rods in combination with left-hand right-hand threaded pin

Accessory: left-hand right-hand threaded pin, threaded rod and u-heads

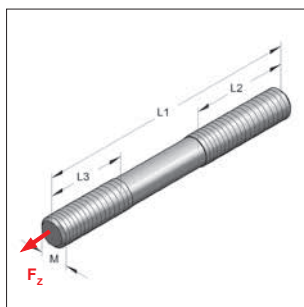
Technical data:

Material: steel

Surface: galvanized

Identification	Dimension			Adjust-ability [mm]	load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	e [mm]	M [mm]	L [mm]					
Turnbuckle forged M12	34	M12	125	80	9,3	0,247	1	1660007452
Turnbuckle forged M16	42	M16	170	110	11,2	0,511	1	1660007456

■ Threaded pin left right

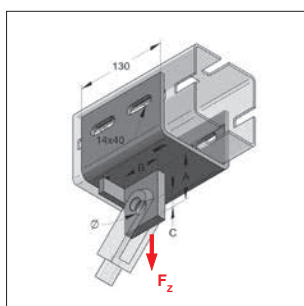


Threaded pin left right

Specification:		Technical data:	
Application area:	for tension rod system between U-head and turnbuckle	Material:	steel
Accessory:	turnbuckle and U-head	Surface:	galvanized
		Property class:	4.6

Identification	Dimension				load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	L1 [mm]	L2 [mm]	L3 [mm]	M [mm]				
Threaded pin L/R M12	250	100	80	M12	20,64	0,220	1	1660007212
Threaded pin L/R M16	250	100	80	M16	38,43	0,400	1	1660007216

■ CENTUM® Tension rod connector



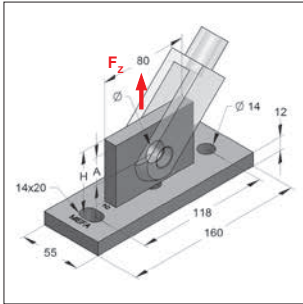
CENTUM® Tension rod connector

Specification:		Technical data:	
For profile type:	XL 100, XL 120 and XL 200	Material:	steel
Application area:	connection between CENTUM® profile channel and tension rod	Material type:	S235JR
Needed accessory:	4x T-lock M12/40	Surface:	hot-dip galvanized
		Safety factor:	1,54

Identification	Profile type	Dimension				load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		A [mm]	B [mm]	C [mm]	\emptyset [mm]				
Tension rod connector M12	XL100 / XL200	60	50	20	14	20,0	2,07	1	1621004010
Tension rod connector M16	XL100 / XL200	65	55	25	18	20,0	2,17	1	1621004011
Tension rod connector M12	XL 120	60	50	20	14	20,0	2,21	1	1621204010
Tension rod connector M16	XL 120	65	55	25	18	20,0	2,30	1	1621204011

CENTUM® Wall connection

01



CENTUM® Wall connection

Specification:

Application area: Connection between mounting underground and tension rod

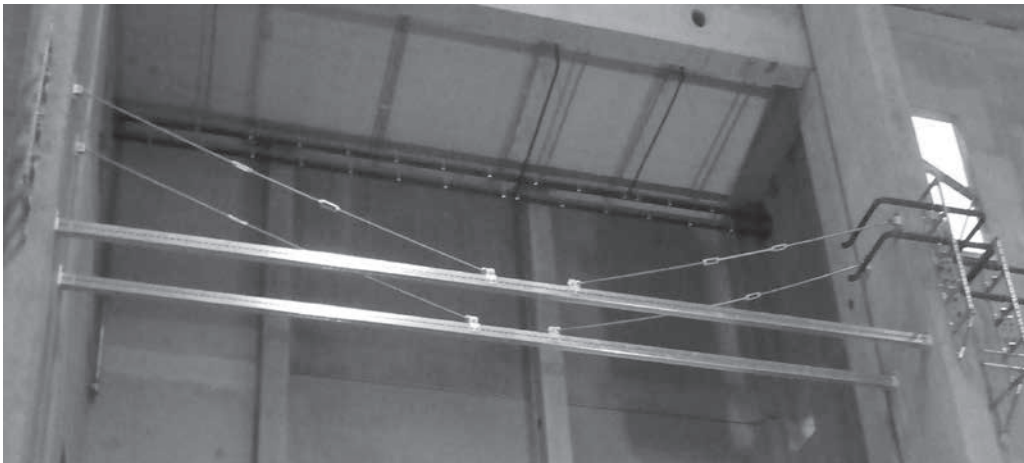
Accessory: dowels according to dimension

Technical data:

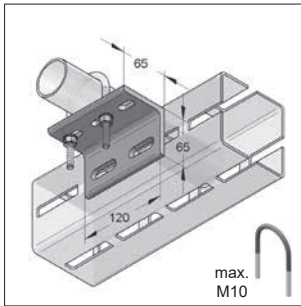
Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Safety factor: 1,54

Identification	H	A	Ø	load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	[mm]	[mm]	[mm]				
Wall connection M12	50	20	14	20,0	1,18	1	1620004010
Wall connection M16	55	25	18	20,0	1,28	1	1620004011

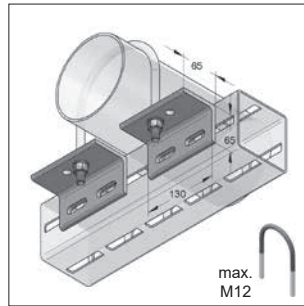
Application example tension rod system



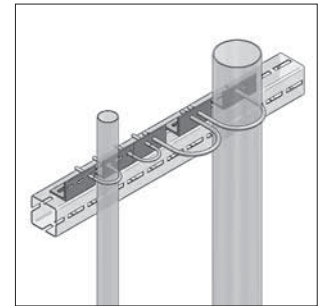
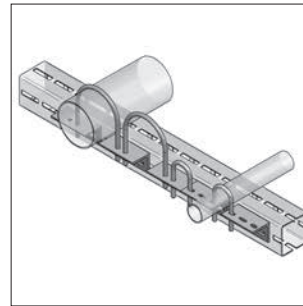
■ CENTUM® Pipe holder



CENTUM® Pipe holder
Pipe-Ø 21,3 - 76,1



CENTUM® Pipe holder
Pipe-Ø 88,9 - 219,1



01

Specification:

For pipe diameter:	21,3 - 219,1 mm
On request:	273,0 - 323,9 mm
Mounting instruction:	pipe must overlie
Advantage:	installation of different pipe diameter
Needed accessory:	T-lock and U-bolt
Delivery time:	on request

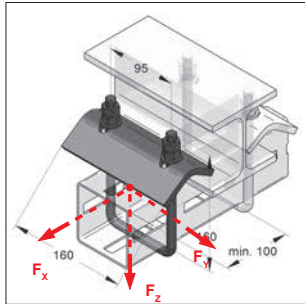
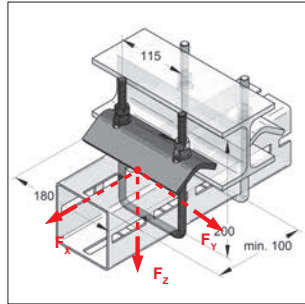
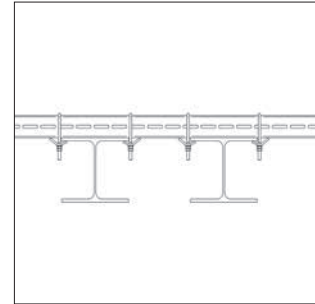
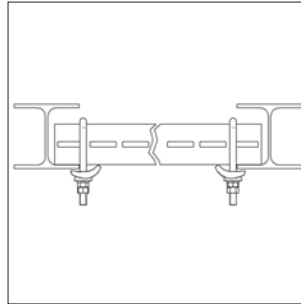
Technical data:

Material:	steel
Material type:	S235JRG2
Surface:	hot-dip galvanized

Identification	for pipe-Ø	Length [mm]	Height [mm]	Thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
CENTUM® Pipe holder	21,3 - 76,1	120	65	7	0,81	1	1640008200
CENTUM® Pipe holder	88,9 - 219,1	130	65	7	1,80	2	1640008210

CENTUM® Clamping bow

01

CENTUM® Clamping bow
XL 80CENTUM® 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 girder

Delivery time: on request

Set consisting of:

U-bolt 1 pc.
CENTUM® tensioning bracket 1 pc.
Nuts M12 4 pcs.
washer 2 pcs.

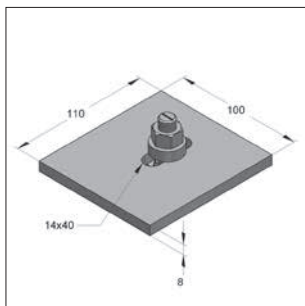
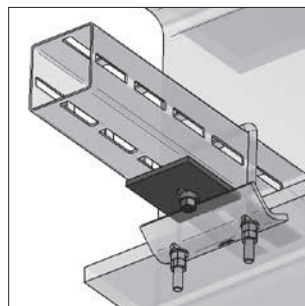
Technical data:

Material: steel
Material type: S235JR
Surface:
U-bolt: zinc-nickel
CENTUM® tensioning bracket hot-dip galvanized
Nuts M12 hot-dip galvanized
washer hot-dip galvanized

Remark: Loads refer according to a clamping bow set. Please notice loads of CENTUM® profile rails.
Two clamping brackets are to be used for each fixing point.

Identification	Thread U-bolt	Load			Tightening torque [Nm]	max. clamping strength [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		F_x	F_y	F_z					
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 diskCENTUM® 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

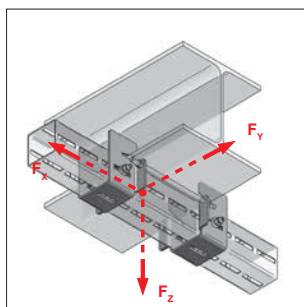
Delivery time: on request

Technical data:

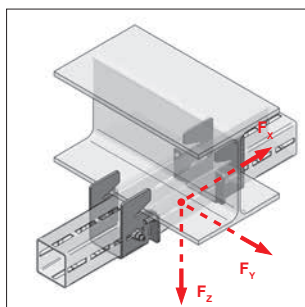
Material: steel
Surface: hot-dip galvanized

Identification	Width [mm]	Dimension			Weight [kg/pc.]	Packing [pc.]	Part-No.
		Length [mm]	Thickness s [mm]	elongated hole [mm]			
CENTUM® Spacer plate	100	110	8	14x40	0,830	1	1660011030

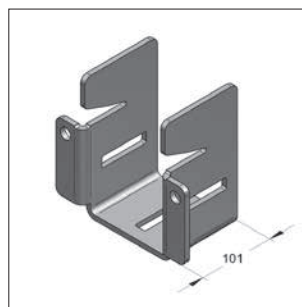
CENTUM® Clamping shoe



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 120 Nm
 Not for vertical beams.

Technical data:

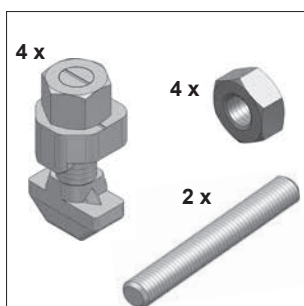
Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Safety factor: 1,54

Scope of delivery: Sold in pairs

Identification	Profile type	Clamping thickness Flange [mm]	min. Clamping range Flange [mm]	max. web thickness Girder [mm]	Load			Weight [kg/set]	Packing [set]	Part-No.
					F_x [kN]	F_y [kN]	F_z [kN]			
CENTUM® Clamping shoe S	XL 100	5-10	82*	10	20,0	4,2	22,5	4,24	1	1661002010
CENTUM® Clamping shoe M	XL 100	8-15	100	10	20,0	4,2	22,5	4,39	1	1661003010
CENTUM® Clamping shoe L	XL 100	13-20	140	20	20,0	4,2	22,5	4,56	1	1661004010
CENTUM® Clamping shoe XL	XL 100	19-30	180	40	20,0	4,2	22,5	5,20	1	1661005010
CENTUM® Clamping shoe S	XL 120	5-10	82*	10	20,0	4,2	22,5	4,77	1	1661202010
CENTUM® Clamping shoe M	XL 120	8-15	100	10	20,0	4,2	22,5	4,93	1	1661203010
CENTUM® Clamping shoe L	XL 120	13-20	140	20	20,0	4,2	22,5	5,08	1	1661204010
CENTUM® Clamping shoe XL	XL 120	19-30	180	40	20,0	4,2	22,5	5,80	1	1661205010
CENTUM® Clamping shoe L	XL 200	13-20	140	20	20,0	4,2	22,5	7,22	1	1662004010
CENTUM® Clamping shoe XL	XL 200	19-30	180	40	20,0	4,2	22,5	8,21	1	1662005010

The min. clamping width of flange with 82mm only for IPE girder, with 91mm only for IPEa girder, for other types of girder the min. clamping width is 100mm.

CENTUM® clamping shoe accessory-set



CENTUM® clamping shoe accessory

Specification:

Application area: fixing accessories for Centum® clamping shoe
 Content: 4 x T-lock M12/40
 2 x profile rail M12
 4 x nut M12

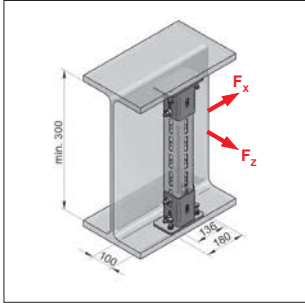
Technical data:

Material: steel
 Surface: zinc-nickel
 T-lock: zinc-nickel
 Threaded rods & nuts: galvanized

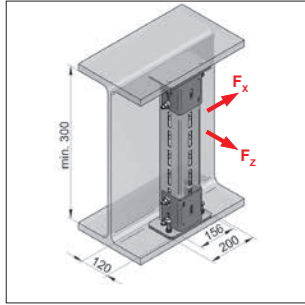
Identification	Threaded rod length [mm]	clamping range flange [mm]	Weight [kg/Set]	Packing [Set]	Part-No.
CENTUM® clamping shoe accessory 300	300	160 - 300	0,852	1	1660019300

CENTUM® Girder clamping XL 80 and XL 100

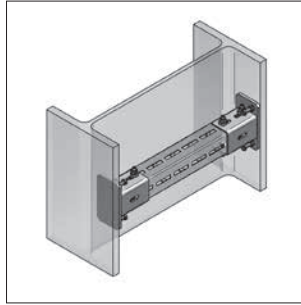
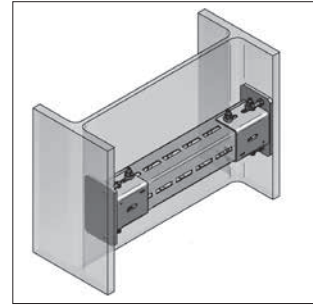
01



CENTUM® Girder clamping XL 80



CENTUM® Girder clamping XL 100

CENTUM® Girder clamping XL 80
verticalCENTUM® Girder clamping XL 100
vertical

Specification:

- For profile type: XL 80 and XL 100
delivery in pairs
- Needed accessory: - 4 x CENTUM® T-lock M12 x 40
(profile mounting to Girder clamping)
- Scope of delivery: - 2 x CENTUM® girder clamping
- with welded nuts
- 4 x hexagon screws with cup point

Technical data:

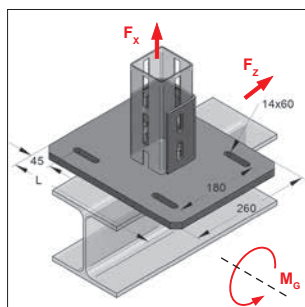
- Material: steel
Material type: S235JR
Surface: zinc-nickel

Remark: No discharge of moments at transverse fixation, e.g. by consoles or self-supporting pipes. Kipping loads or moments must be accepted by additional reinforcements or supports. Only for reclined loads and/or sliding bearing guided pipes.

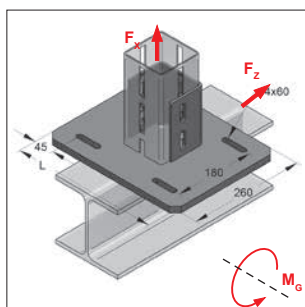
Identification	Profile type	Tightening torque eye screw [Nm]	SW	Load		Weight [kg/set]	Packing [set]	Part-No.
				F_x [kN]	F_z [kN]			
CENTUM® Girder clamping	XL 80	40	19	8	8	5,40	1	1620806000
CENTUM® Girder clamping	XL 100	40	19	8	8	6,90	1	1621006000

i No quadratic overlay of F_z and F_x .
Important: Only one direction of force,
moments = 0

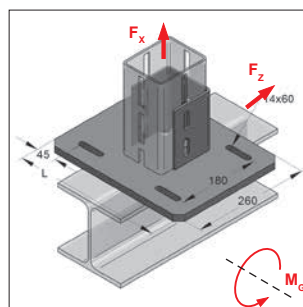
CENTUM® Girder fixation



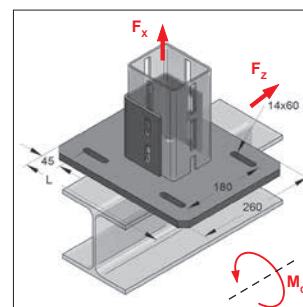
Girder fixation XL 80, vertical



Girder fixation XL 100, vertical



Girder fixation XL 120, vertical



Girder fixation XL 120, horizontal

Specification:

For profile type: XL 100
 On request: XL 80, XL 120
 Needed accessory: T-lock M12/40
 clamping claw AF/LR

Technical data:

Material: steel
 Material type: S235JR (profile holder)
 S355 JR (plate)
 Surface: hot-dip galvanized

* on request

Identification	Plate-width [mm]	Plate-length L [mm]	Plate-thickness [mm]	for min.	for max.	Weight [kg/pc.]	Packing [pc.]	Part-No.
				girder width [mm]	girder width [mm]			
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.

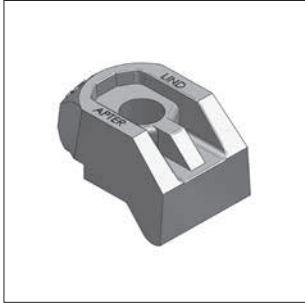
In combination with 4x clamping claw type AF, M12 (see page 1/32)			
Load	F_x max (Pulling force) [kN]	F_z max (Shear) [kN]	M_g^{**} [kNm]
CENTUM® Girder fixation XL 80	32	7,8	4,2
CENTUM® Girder fixation XL 100	34	7,8	4,2
CENTUM® Girder fixation XL 120	34	7,8	4,2

In combination with 4x clamping claw type LR, M12 (see page 1/35)			
Load	F_x max (Pulling force) [kN]	F_z max (Shear) [kN]	M_g^{**} [kNm]
CENTUM® Girder fixation XL 80	18	1,8	4,2
CENTUM® Girder fixation XL 100	18	1,8	4,2
CENTUM® Girder fixation XL 120	18	1,8	4,2

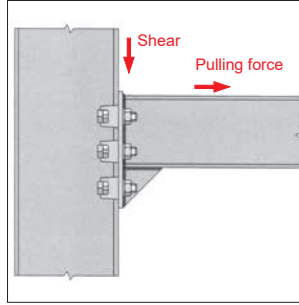
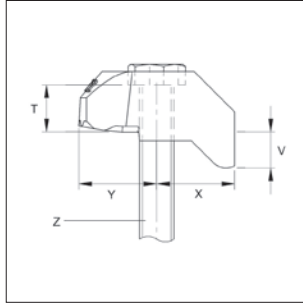
** at utilization of all bolt holes

CENTUM® Clamping claw - type AF

01



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 $V = \text{min./max. clamping thickness}$
washers for height-adjustment of flange available on request

Delivery time: on request

* in conjunction with property class 8.8

** for shear force value is valid for two screws couplings

*** on request

Technical data:

Material: cast iron
Surface: hot-dip galvanized
Safety factor: 5:1 (tensile)
2:1 (shear)

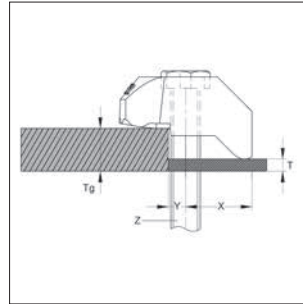
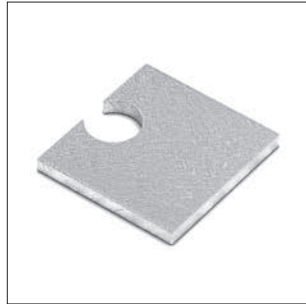
Required accessory:

hexagon bolt h.-d. galv. FK 8.8 / threaded rod
see on page 4/11.
washers DIN EN ISO 7089 h.-d. galv.
hexagon nuts h.-d. galv.

Typ	Dimensions				Width	Needed screw	Property class screw	Tightening torque	Pulling force	Load*		Weight	Packing	Part-No.
	Y	X	T	V						Shear**	Girder			
	[mm]	[mm]	[mm]	[mm]	[mm]	Z		[Nm]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
AF M12	29,0	27,0	17,0	12,5 (medium)	39,0	M12	8.8	90	8,5	3,4	3,9	0,244	1	1660004012
AF M16	35,0	37,0	22,0	15,0 (medium)	48,5	M16	8.8	240	16,0	8,0	10,0	0,460	1	1660004016
AF M12 k***	29,0	27,0	17,0	5,0 (short)	39,0	M12	8.8	90	8,5	3,4	3,9	0,191	1	1660004012/k
AF M16 k***	35,0	37,0	22,0	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 1/34.

■ 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: spheroidal cast iron

Surface: hot-dip galvanized

Identification	Needed screw Z	Dimension			Width [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		Y [mm]	X [mm]	T [mm]				
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

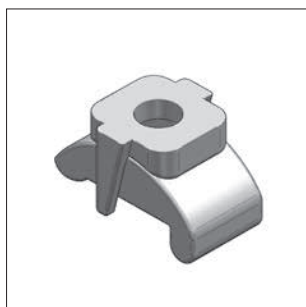
 selection chart for clamping claw AF page 1/34

Selection chart for clamping claw Typ AF with different flange thicknesses in parallel flange Straps:

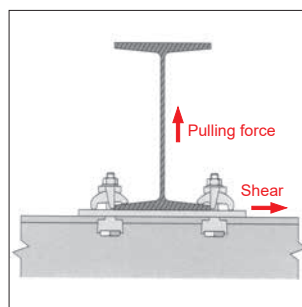
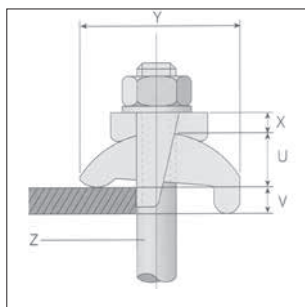
Flange thickness [mm]	M12				M16			
	Clamping claw Typ AF [cam height V]	Washer AF CW [pc.]	Washer AF P1 [pc.]	Washer AF P2 [pc.]	Clamping claw Typ AF [cam height V]	Washer AF CW [pc.]	Washer AF P1 [pc.]	Washer AF P2 [pc.]
5	short*	-	-	-	-	-	-	-
6	short*	-	-	-	-	-	-	-
7	short*	1	-	-	short*	-	-	-
8	short*	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

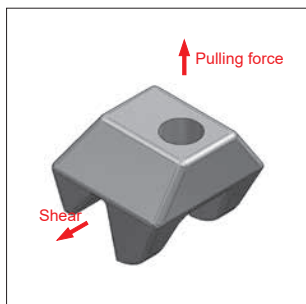
²⁾ larger flange thickness can be clamped with washer components (P1 and P2 on request)

³⁾ in conjunction with property class 8.8

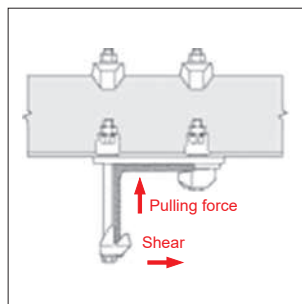
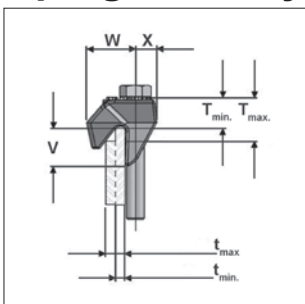
⁴⁾ for shear force value is valid for two screws couplings

Typ	Dimensions			V ²⁾ [mm]	Width [mm]	Needed Screw Z	Tightening torque [Nm]	Load ³⁾		Weight [kg/pc.]	Packing [pc.]	Part-No.
	Y [mm]	U [mm]	X [mm]					Pulling force [kN]	Shear ⁴⁾ [kN]			
LR M12	56,0	18,5	7,0	3-12	39,0	M12	69	4,5	0,9	0,172	1	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 on request

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.

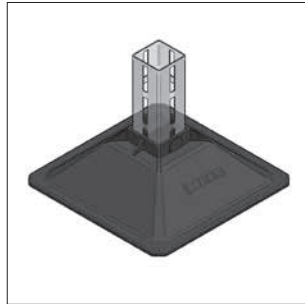
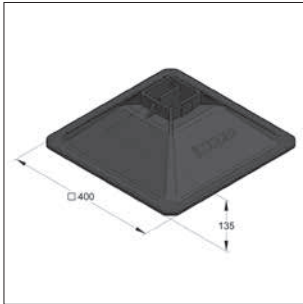
* in conjunction with property class 8.8

** for shear force value is valid for two screws couplings

Type	Dimensions			Width [mm]	min.-max. clamping size t [mm]	min.-max. projection T [mm]	Tightening torque [Nm]	Load		Weight [kg/pc.]	Packing [pc.]	Part-No.
	X [mm]	V [mm]	W [mm]					Pulling force* [kN]	Shear** [kN]			
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

Rooftop holder CENTUM® XL 80

01



Rooftop holder for Centum® XL80

Specification:

Profile rail type: XL 80

Applications area: for profile channel constructions onto rooftop

Installation advise: the pre-mounted rooftop holder prevents damage to the migration of plasticizer.
XL 80 Profile is inserted into the rooftop holder for mounting.

Technical data:

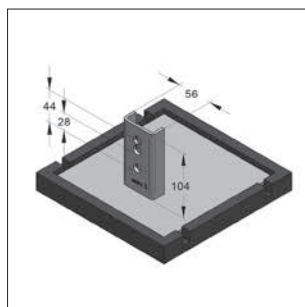
Material holder: Polyethylene (HDPE)
Anti-vibration-pad: Rubber

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

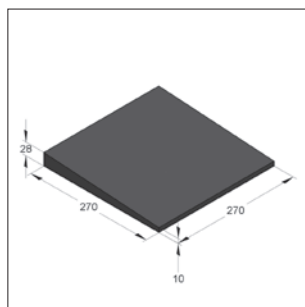
* Permissible floor load has to be checked by the customer. Wind and snow loads must be considered separately.

Identification	Dimension holder [mm]	Pressure* load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Rooftop holder for CENTUM® XL 80	400 x 400	10	3,01	2	166201001

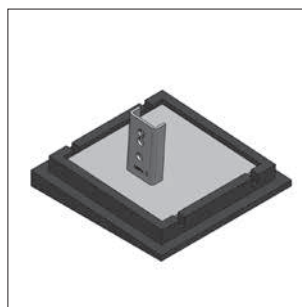
Rooftop holder for rooftop constructions



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
Applications area:	for profile channel constructions onto rooftop
Installation advise:	position rooftop holder on rubber pad. For compensation of possible roof pitch place rubber wedge (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:

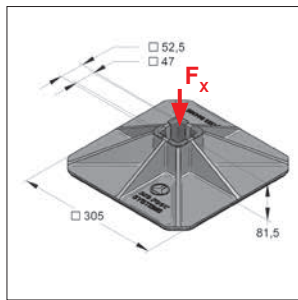
Material holder:	steel
Material type:	S235JR
Surface screw :	zinc-nickel
Surface holder::	hot-dip galv.
Material rubber pad:	EPDM
separation fleece:	polyester
according to building material class DIN 4102:	B2
temperature resistance separation fleece:	-60°C up to +220°C

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

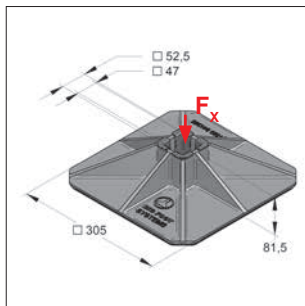
Identification	Dimension steel plate [mm]	Dimension rubber pad / seperation fleece [mm]	Pressure load [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Rooftop holder complete	200x200x6	225x225x17	4,0	3,71	2	08197500
Rooftop holder rubber wedge	-	270x270x28/10	4,0	1,73	1	08197598
Rooftop holder separation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

■ Rooftop holder BIG FOOT®

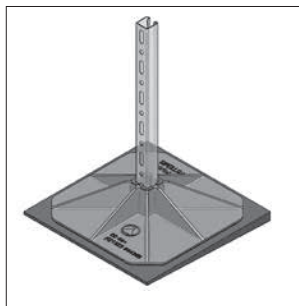
01



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: polyamide 6
holder feet: EPDM
Underlay: polyester
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.

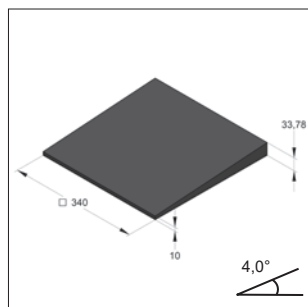
BIG FOOT® 305

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® 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

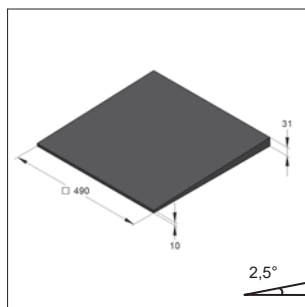
BIG FOOT® 450

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

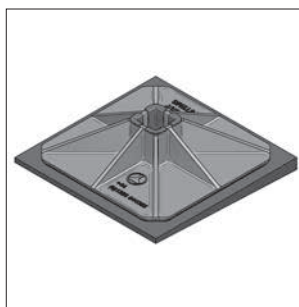
■ Universal wedge



Universal wedge 340x 340 4,0°



Universal wedge 490x 490 2,5°



Mounting example

Specification:

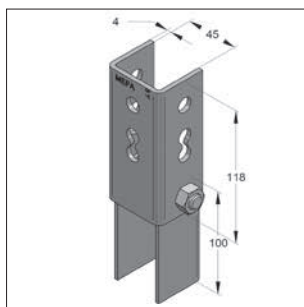
Application area: To equalise roof pitches.

Technical data:

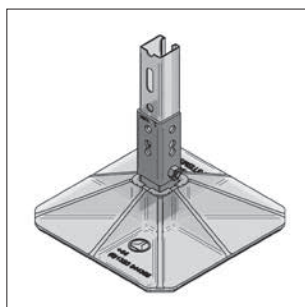
Material: EPDM
temperature resistance: -40°C up to +80°C

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:

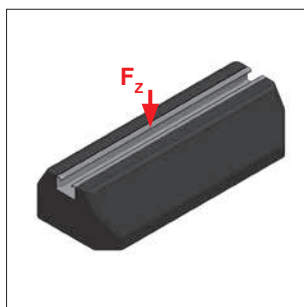
Material: steel
 Material name: S235JR
 Surface screw: zinc-nickel

Identification

Weight	Packing	Part-No.
[kg/pc.]	[pcs.]	
0,83	1	08197619/zn

Joint adapter for BIG FOOT® 305

■ 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

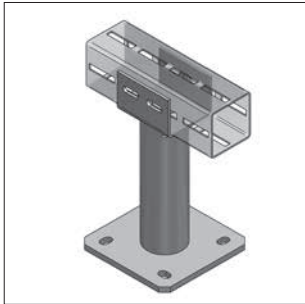
Recommended accessories: Tooth plate S with zinc-nickel coating

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

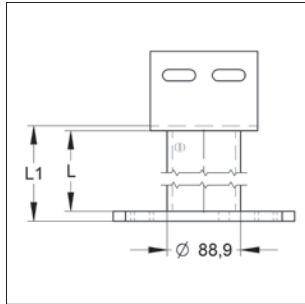
Identification	Dimension [mm]	Load* F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Rooftop Multi Support	400 x 180 x 95	1,28	3,50	1	08197620

CENTUM® Wall- and roof bushing

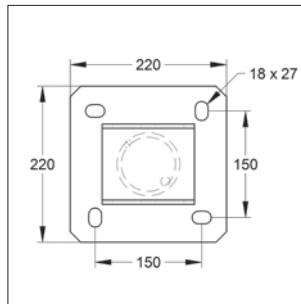
01



Roof bushing
not height adjustable



Side view



with plate 220 x 220

Specification

Applications area: Wall- and roof bushing to be mounted and sealed on carrying ground.
Insulation of facade or roof afterwards.
Various adaptations of CENTUM®- and profile channels on request.

Delivery time: on request

Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galv.

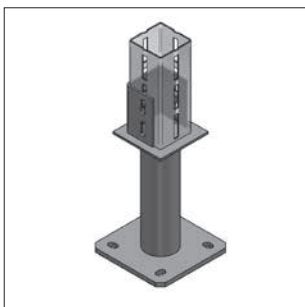
Standard:

Base plate: 220 x 220 x 12 mm
Pipe: 88,9 x 3,2 mm

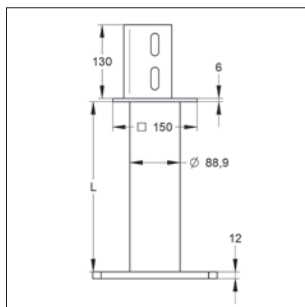
Roof bushing not height adjustable

Identification	L [mm]	L1 [mm]	plate (bottom) [mm]	For profile type [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roof bushing XL 100	300	318	220 x 220 x 12	XL100	8,79	1	166210001
Roof bushing XL 100	350	368	220 x 220 x 12	XL100	9,18	1	166210002
Roof bushing XL 100	400	418	220 x 220 x 12	XL100	9,57	1	166210003
Roof bushing XL 100	450	468	220 x 220 x 12	XL100	9,97	1	166210004
Roof bushing XL 100	500	518	220 x 220 x 12	XL100	10,36	1	166210005

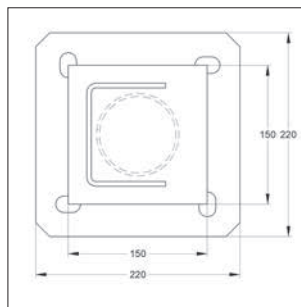
CENTUM® Roof bushing variable



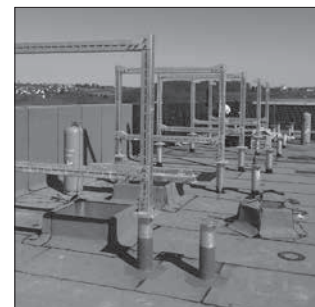
Roof bushing
variable



Side view



with plate 220 x 220



Application image

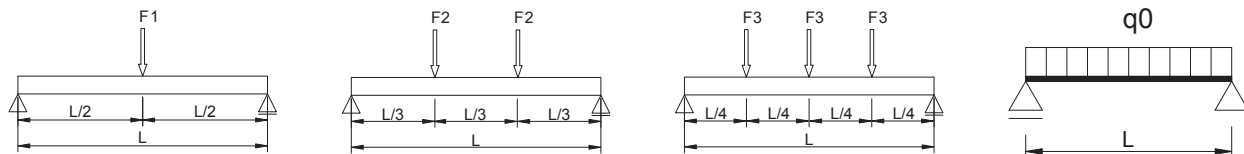
Roof bushing variable

Identification	L [mm]	L1 [mm]	plate (bottom) [mm]	For profile type [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Roof bushing XL 100	300	130	220 x 220 x 12	XL100	9,68	1	166215000
Roof bushing XL 100	350	130	220 x 220 x 12	XL100	10,07	1	166215001
Roof bushing XL 100	400	130	220 x 220 x 12	XL100	10,47	1	166215002
Roof bushing XL 100	450	130	220 x 220 x 12	XL100	10,86	1	166215003
Roof bushing XL 100	500	130	220 x 220 x 12	XL100	11,26	1	166215004

■ Load values CENTUM® profile rails

bearing spacing	XL 80				XL 100				XL 120				XL 120s				XL 200			
	single load 1xF1	double load 2xF2	three loads 3xF3	dis-tributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	dis-tributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	dis-tributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	dis-tributed load q	single load 1xF1	double load 2xF2	three loads 3xF3	dis-tributed load q
[mm]	[kN]	[kN]	[kN]	[kN/m]	[kN]	[kN]	[kN]	[kN/m]	[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	88,71	66,53	44,36	268,32	93,47	46,74	31,16	287,87
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	59,11	44,34	29,56	157,62	93,47	46,74	31,16	191,92
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	44,30	33,23	22,15	88,60	76,55	46,74	31,16	143,94
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	35,41	26,56	17,71	56,65	61,19	45,90	30,60	97,90
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	29,48	22,11	14,74	39,30	50,95	38,21	25,48	67,93
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	25,23	18,93	12,62	28,84	43,62	32,72	21,81	49,86
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	22,05	16,54	11,03	22,05	38,12	28,59	19,06	38,12
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	19,56	14,67	9,78	17,39	33,84	25,38	16,92	30,08
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	17,57	13,18	8,79	14,06	30,41	22,81	15,21	24,33
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	15,94	11,96	7,97	11,59	27,60	20,70	13,80	20,07
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	14,58	10,93	7,29	9,72	25,25	18,94	12,63	16,84
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	13,42	10,07	6,71	8,26	23,26	17,45	11,63	14,32
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	12,43	8,82	6,22	6,87	21,55	16,16	10,78	12,32
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	11,56	7,65	5,49	5,56	20,07	15,05	10,04	10,70
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	10,81	6,68	4,80	4,56	18,76	14,07	9,38	9,38
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	10,02	5,88	4,22	3,78	17,61	13,21	8,81	8,29
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	8,87	5,21	3,74	3,16	16,58	12,44	8,29	7,37
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	7,90	4,64	3,33	2,66	15,66	11,75	7,83	6,60
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	7,07	4,15	2,98	2,26	14,83	11,12	7,42	5,94
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	6,34	3,73	2,67	1,94	14,08	10,56	7,04	5,37
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	5,72	3,36	2,41	1,67	13,39	10,04	6,70	4,87
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	5,16	3,03	2,18	1,44	12,76	9,57	6,38	4,44
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	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

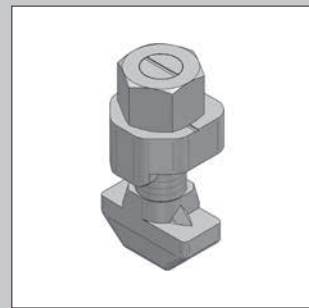
max. bending $f_{zul} = L/200$; Safety Elastic limit $\gamma = 1,54$; Yield strength $f_y = 275 \text{ N/mm}^2$; XL 200 Yield strength $f_y = 235 \text{ N/mm}^2$; E-Modul 210.000 N/mm^2



CENTUM®-Connection part 1: T-lock

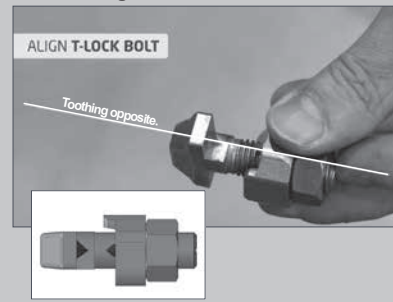


Your direct link to the video for CENTUM® T-Lock: www.mefa.de



T-lock, Lock washer
M12 x 40
part-no. 1610011000

Positioning:



Insert T-lock through component and profile, position as required.

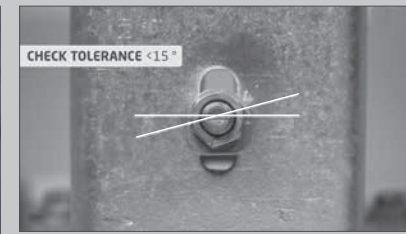


Turn T-lock 90° (marking notch stands diagonally to the elongated hole).

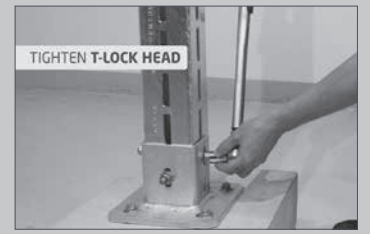
Adjustment:



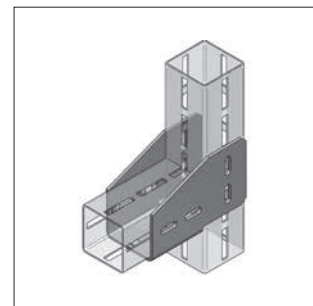
Tilt forward T-lock, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).



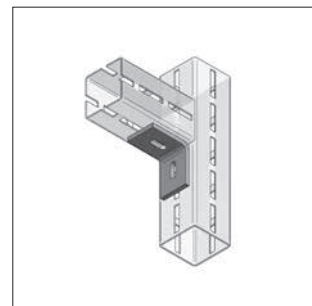
Fixation:



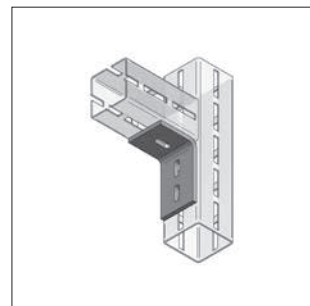
Wrench size 19 mm.
Recommended torque XL 80: 90 Nm.
Recommended torque XL 100: 120 Nm.
T-lock must not be used again after dismantling.



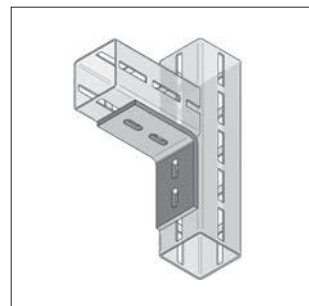
CENTUM® Angle-shoe XL



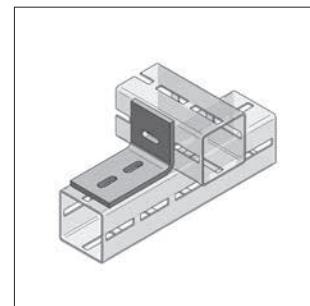
CENTUM® 2-hole angle (XL 80)



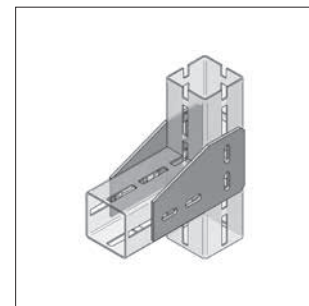
CENTUM® 3-hole angle



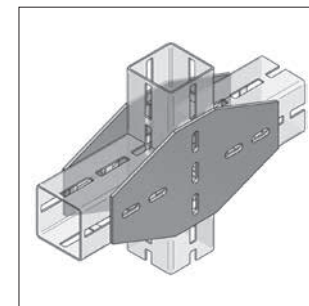
CENTUM® 4-hole angle



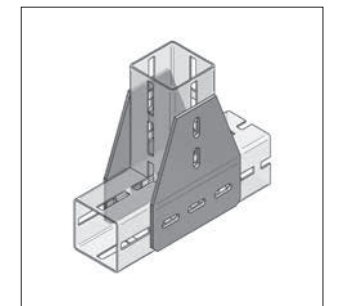
CENTUM® 3-hole angle horizontal



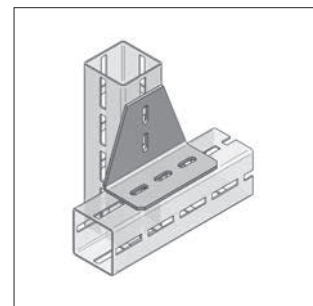
CENTUM® Corner plates



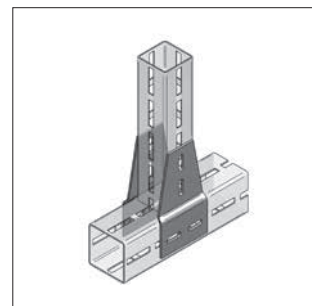
CENTUM® Cross plates



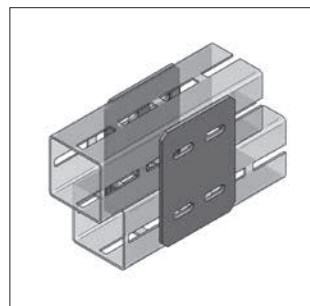
CENTUM® T-plates



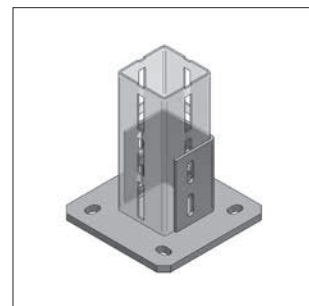
CENTUM® T-plate, angled



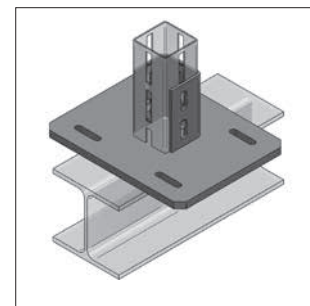
CENTUM® T-plate cranked sym.



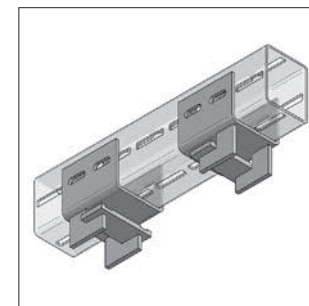
CENTUM® Connecting plate XL 100



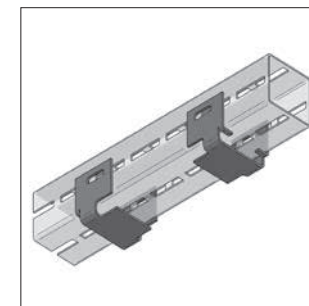
CENTUM® Holder



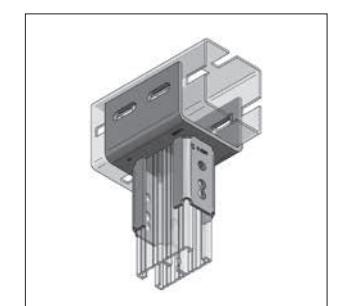
CENTUM® Adaptor vertical/ horizontal



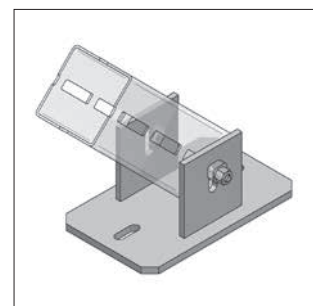
CENTUM® Sliding base, hanging



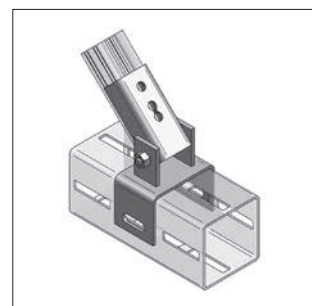
CENTUM® Sliding base, hanging light



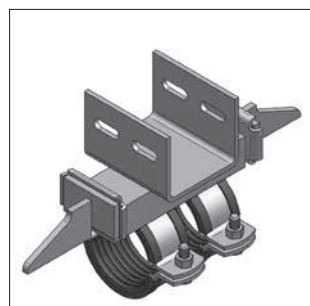
CENTUM® Adaptor vertical/ horizontal



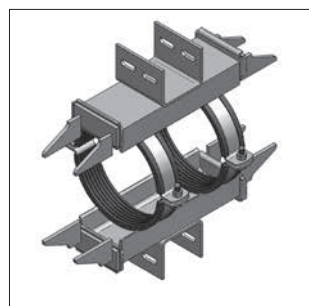
CENTUM® Joint holder vertical/ horizontal



Joint connection



Fixpoint type A with CENTUM® Massive connector

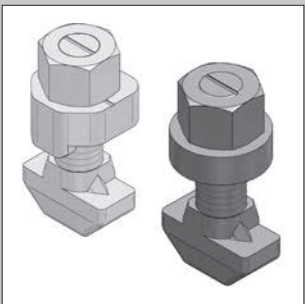


Fixpoint type B with CENTUM® Massive connector

CENTUM®-Connection part 2: T-lock or T-bolt



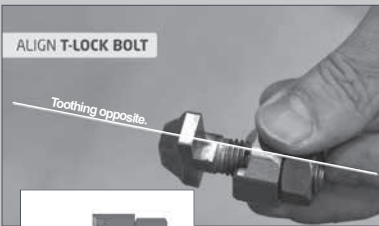
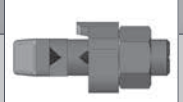
Your direct link to the video for CENTUM® T-Lock: www.mefa.de




T-lock,
Lock washer M12 x 40
part-no. 1610011000
T-bolt,
with steel disk
M12 x 40
part-no. 1610012000

Positioning:

ALIGN T-LOCK BOLT
Toothings opposite.





HOLD LOCK WASHER AND NUT




Insert T-lock through component and profile, position as required.

HOLD LOCK WASHER AND NUT



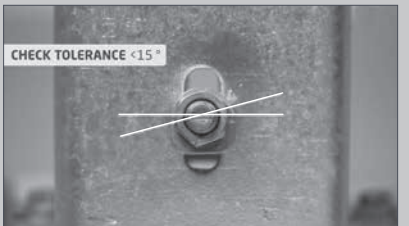
Turn T-lock 90° (marking notch stands diagonally to the elongated hole).

Adjustment:




Tilt forward T-lock, so that guide wedge of Lock washer snaps in elongated hole. Then tighten by screwing the nut (hand-tight).

CHECK TOLERANCE <15°

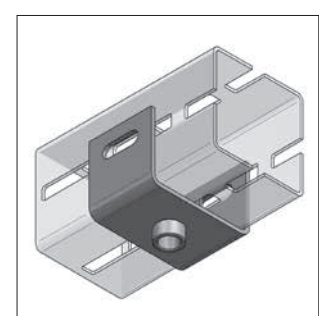


Fixation:

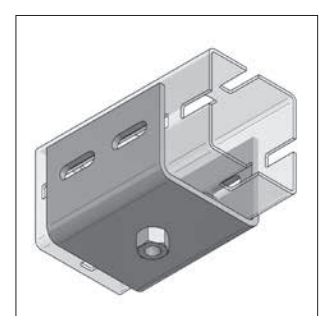
TIGHTEN T-LOCK HEAD



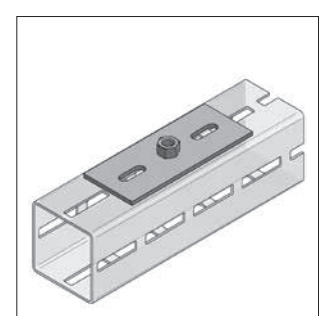
Wrench size 19 mm.
Recommended torque XL 80: 90 Nm.
Recommended torque XL 100: 120 Nm.
T-lock must not be used again after dismantling.



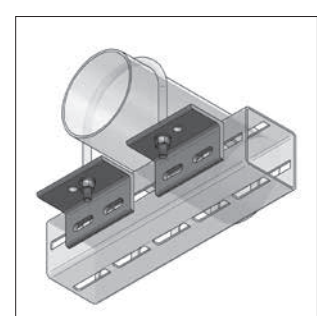
CENTUM® Thread connector



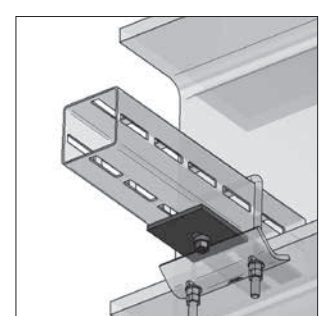
CENTUM® Massive connector



CENTUM® Base plates



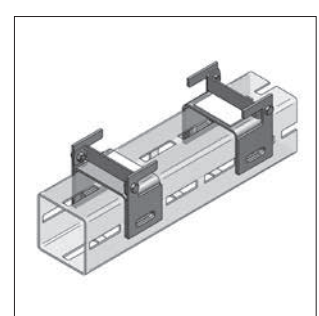
CENTUM® Pipe holder



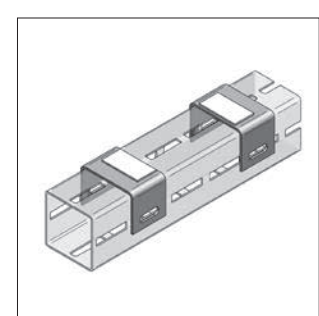
CENTUM® spacer plate combined with CENTUM® clamping bow



CENTUM® Z-guide



CENTUM® Sliding base, standing with lift lock

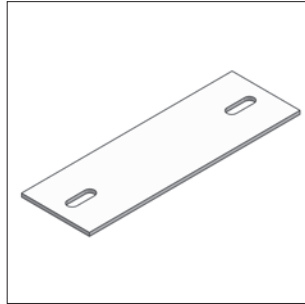


CENTUM® Sliding base, standing without lift lock

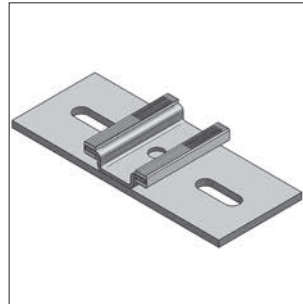
■ Pipe supports, sliding sledges and roller supports



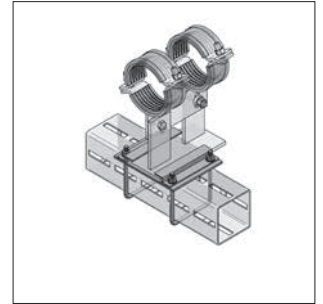
Guides
Page 2/2



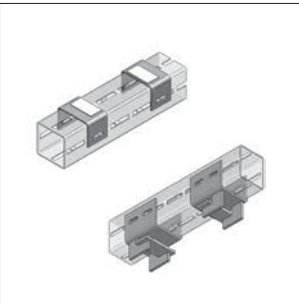
CENTUM® Sliding stripe
Page 2/3



GL slider for CENTUM®
Page 2/3



CENTUM® Z-guide
Set with U-bolt
Page 2/4



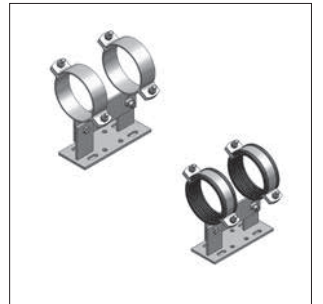
CENTUM® Sliding base
Page 2/5



Guide rail for sliding sledge,
hanging
Page 2/7



Sliding support T
Page 2/8



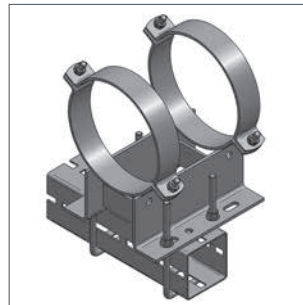
Sliding support T HV, 2 pipe clamps
Page 2/10



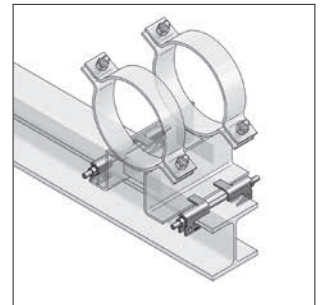
Sliding sledge
Page 2/16



Sliding sledge HV
Page 2/20



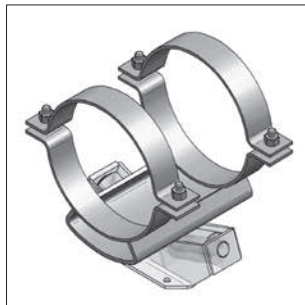
Sliding sledge as fixed point
Page 2/24



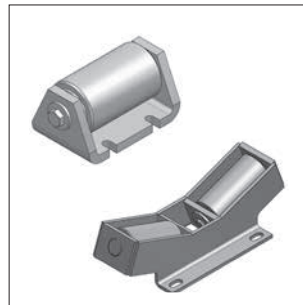
Guiding Clamp-Set
Page 2/25



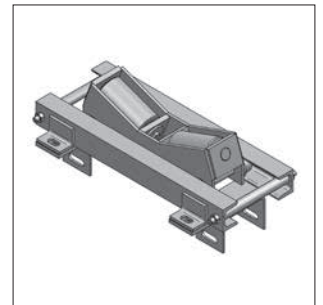
Polar plus sliding sledge
FOAMGLAS® sliding sledge
Page 2/26



Insulation-saddle for roller-bearings
Page 2/30



Roller bearings
Page 2/32



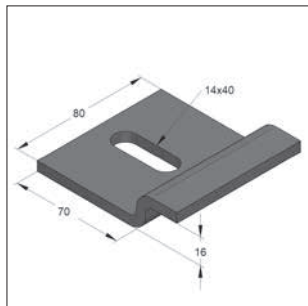
Double-roller bearing holder with
CENTUM® connection
Page 2/33

<p>i Component safety concept: According DIN EN 1991-1</p>	
<p>Global safety coefficient γ The evaluation of global safety coefficient for the value of impact is based on a ratio of 2/3 of tare weight and 1/3 of working load. $\gamma = (2/3 \gamma_G + 1/3 \gamma_Q) \times \gamma_z = (2/3 \times 1,35 + 1/3 \times 1,50) \times 1,1 = 1,54$</p>	<p>Safety for impact Safety tare weight $\gamma_G = 1,35$ Safety working load $\gamma_Q = 1,50$</p>
<p>Exceptions CENTUM® screwing acc. RAL GZ 655-D $\gamma = 2,0$</p>	<p>Safety for resistance Safety load resistance $\gamma_z = 1,10$</p>

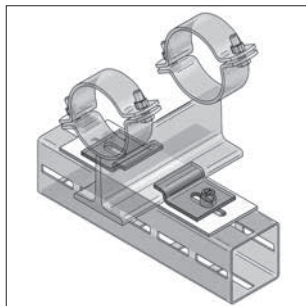
<p>i Tightening torque of locking screws on pipe clamps see chapter 03</p>

02

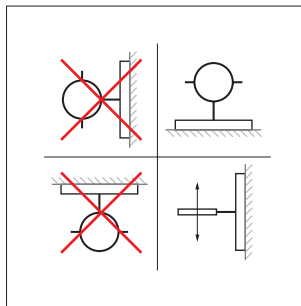
CENTUM® Z-guides



CENTUM® Z-guide



Z-guide installation example



Mounting recommendation

Specification:

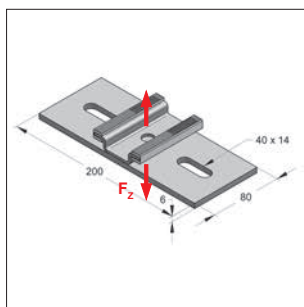
For profile type: XL100, XL120 and XL 200
 set of 2 pcs.
 Mounting instruction: suitable for standing assembly, only
 Required accessory: sliding stripe PA 6
 T-bolt with steel disk, M12/40

Technical data:

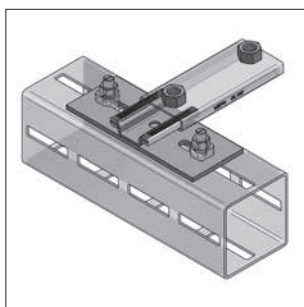
Material: steel
 Material type: S235JR
 Surface: hot galvanized

Identification	Length	Width	slide gap h	Thickness	elongated hole-Ø	Weight	Packing	Part-No.
	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/set]	[set]	
CENTUM® Z-guides s11	70	80	16	6	14 x 40	0,80	1	1650015017

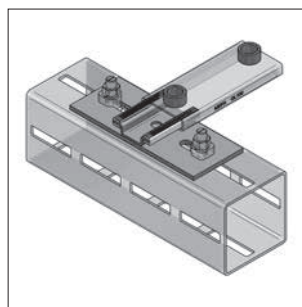
Slider GL for CENTUM®



Slider GL for CENTUM®



M16



1/2"

Specification:

For profile rail type: XL 80, XL 100, XL 120 and XL 200
Application area: absorption of axial linear expansion for standing, hanging or vertical installed pipes.

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

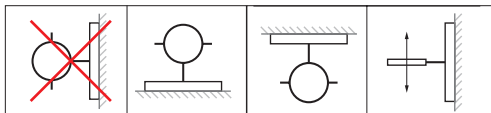
Required accessory: T-lock M12x40

Sliding distance GL 100: ca. 68 mm

Remark: after mounting protection lugs should be turned up, thereby slipping can be avoided
Other connection thread sizes on request.

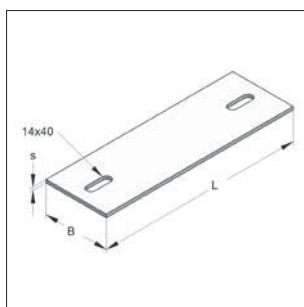
Material sliding plate: polyamide 6
Static friction factor: 0,2 - 0,3
Thermal load: - 30 °C up to + 110 °C

Assembly instruction:



Identification	Connection	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Gleiter GL 100 for CENTUM®	2 x screws nut M16	3,0	1,284	1	0770565-01
Gleiter GL 100 for CENTUM®	2 x socket 1/2"	3,0	1,262	1	0770611-01

CENTUM® Sliding stripe



CENTUM® Sliding stripe

Specification:

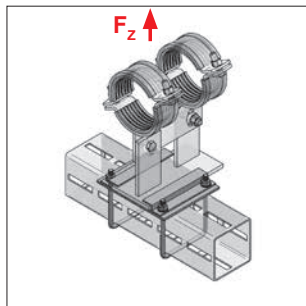
Product attributes: improvement of sliding characteristic
Application area: Sliding support T or sliding plates to 200 mm width

Technical data:

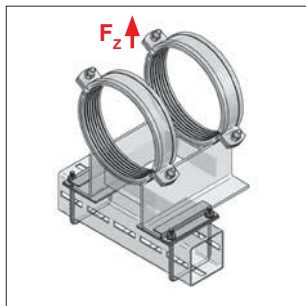
Material: polyamide 6
Static friction factor: 0,2 - 0,3
Thermal load: - 30 °C up to + 110 °C

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

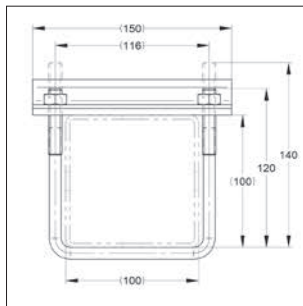
CENTUM® Z-guides Set with U-bolt



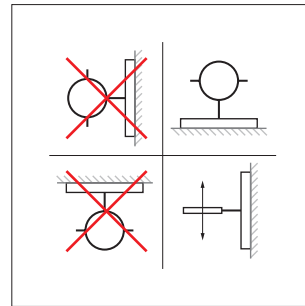
CENTUM® Z-guides Set
for sliding sledge and sliding plate
with 100 mm width



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: 2 x U-bolt 116/120 M10
(Set for 100 mm) 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: 2 x U-bolt 116/120 M10
(Set for 140 mm) 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: 2 x U-bolt 116/140 M10
(Set for 100 mm) 2 x Z-guides 150 mm 2-hole
XL 120 upright 1 x sliding stripe PA6 2-hole (150 x 165 x 5)
4 x nut M10

scope of delivery: 2 x U-bolt 116/140 M10
(Set for 140 mm) 2 x Z-guides 150 mm 2-hole
XL 120 upright 1 x sliding stripe PA6 2-hole (150 x 100 x 5)
4 x nut M10

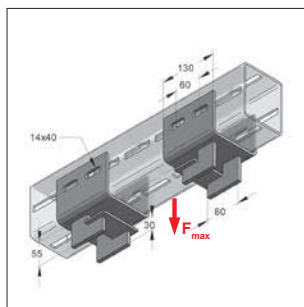
Technical data:

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	for pipe / CENTUM®	max. thickness sliding element	Load F_z	Weight	Packing	Part-No.
	[mm]	[mm]	[mm]	[kN]	[kg/Set]	[Set]	
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® Sliding base, hanging



CENTUM® Sliding base, hanging

Specification:

For profile type: XL 100, XL 120 or XL 200

Required accessory: T-lock M12/40

Remark: shipment in pairs

sliding element: Base plates above 150 mm width Sliding sledge and Sliding support T above 100 mm width

* Loads refer to pair

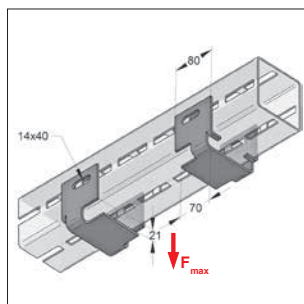
Technical data:

Material Sliding base: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 max. sliding plate thickness: ≤ 16 mm
 Material sliding body: PE - UHMW
 static friction factor: 0,2
 Temperature resistance: - 200 °C up to + 80 °C
 Safety factor: 1,54

02

Identification	Profile type	Alignment	Load* F_{max} [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: T-lock M12/40

Remark: shipment in pairs

sliding element: with glued Sliding stripes
 Base plates, width Sliding sledge and Sliding support T above 100 mm width

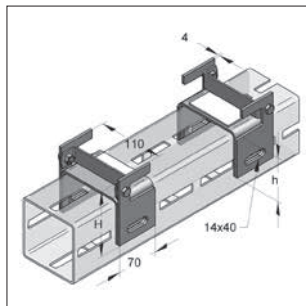
* Loads refer to pair

Technical data:

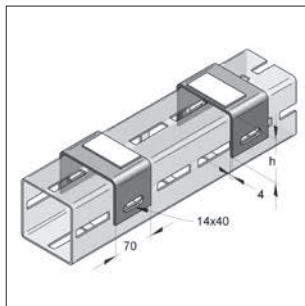
Material Sliding base: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 max. sliding plate thickness: ≤ 16 mm
 Material sliding body: PE - UHMW
 static friction factor: 0,2
 Temperature resistance: - 200 °C up to + 80 °C
 Safety factor: 1,54

Identification	Profile type	Alignment	Load* F_{max} [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:	T-lock M12/40 or T-bolt with steel disk, M12/40
Application area:	sliding support T and sliding sledge from 200 mm
Remark:	shipment in pairs

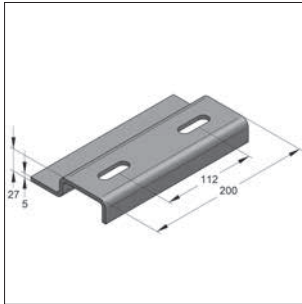
Technical data:

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
Temperature resistance:	- 200 °C up to + 80 °C
Safety factor:	1,54

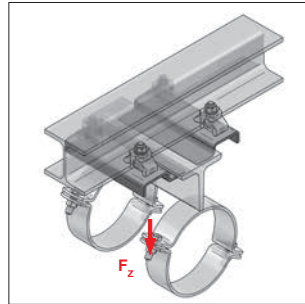
* Loads refer to pair

Identification	Profile type	Alignment	Load * F_{zul} [kN]	H	h	Weight [kg/set]	Packing [set]	Part-No.
				[mm]	[mm]			
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

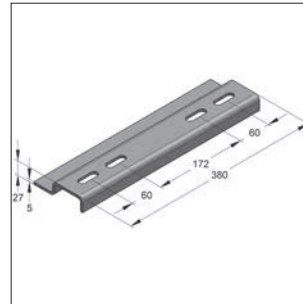
■ Guide rail for sliding sledge, hanging



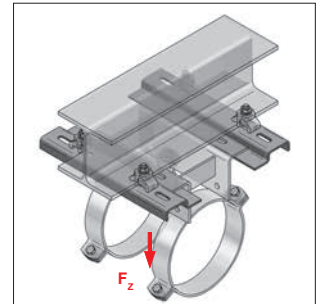
Guide rail 200
for sliding sledge, hanging



Application image
Guide rail 200



Guide rail 380
for sliding sledge, hanging



Application image
Guide rail 380

02

Specification:

For steel girder type: HEA 80 - 120
HEA 140 - 300

Application area: Fixing sliding sledge on steel girder

Required accessory: CENTUM® Clamping claws Typ LR M12
alternativ: CENTUM® Clamping claws Typ AF

Remark: shipment in pairs

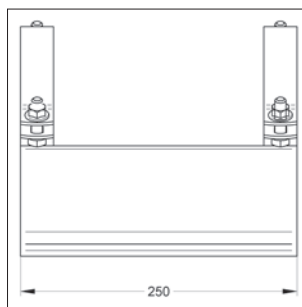
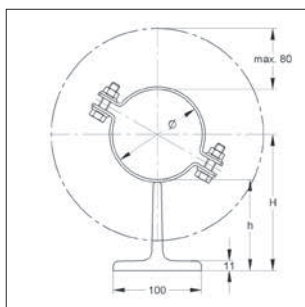
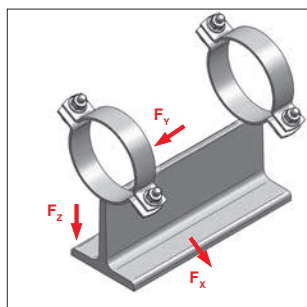
* Loads refer to pair

Technical Data:

Material: steel
Material type: S235JRG
Surface: hot-dip galvanized

Identification	Steel girder type	Load * F_z [kN]	Weight [kg/set]	Packing [set]	Part-No.
Guide rail for sliding sledge, hanging	HEA 80 - 120	6,0	2,40	1	1663080120
Guide rail for sliding sledge, hanging	HEA 140 - 300	6,0	4,55	1	1663140300

Sliding support T



Sliding support T

Specification:

Closure: hexagon nut / closure-screw
 Model: T-support
 OD: 20 up to 219 mm

Material pipe clamp:
 from 20 until 62 mm: 35 x 4 mm
 from 64 until 219 mm: 50 x 5 mm

Technical data:

Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized

Global safety coefficient: 1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
 e.g. welding collars.

Load values were determined for standard steel pipes

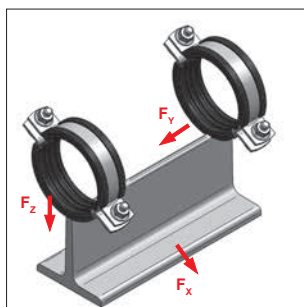
Loads at temperature > 300 °C on request

Loads be for static friction factor $\mu=0,2$ up to 0,3

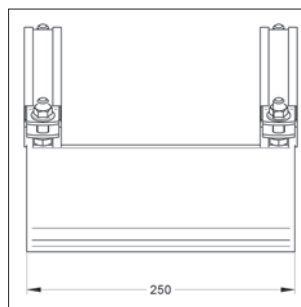
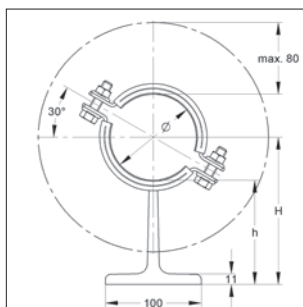
Delivery time: on request

DN	Pipe-Ø [mm]	Pipe axis H [mm]	Lower edge pipe h [mm]	F_x^* [kN]	F_y [kN]	Load		Weight [kg/pc.]	Packing [pc.]	Part-No.
						F_z hanging [kN]	F_z standing [kN]			
15	20 - 22	115	104	5,62	8,00	6,84	13,67	5,03	1	145fa0022
-	25	117	104	5,55	8,00	6,84	13,67	5,05	1	145fa0025
20	27 - 28	118	104	5,48	8,00	6,84	13,67	5,09	1	145fa0028
-	32	120	104	5,39	8,00	6,84	13,67	5,12	1	145fa0032
25	33 - 35	122	104	5,32	8,00	6,84	13,67	5,14	1	145fa0035
32	40 - 42	125	104	5,17	8,00	6,84	13,67	5,20	1	145fa0042
40	48 - 50	129	104	5,01	8,00	6,84	13,67	5,26	1	145fa0050
-	54	131	104	4,93	8,00	6,84	13,67	5,29	1	145fa0054
50	60	134	104	4,82	8,00	6,84	13,67	5,36	1	145fa0060
-	64	137	105	6,74	10,00	9,77	19,53	6,13	1	145fa0064
65	76	143	105	6,46	10,00	9,77	19,53	6,29	1	145fa0076
80	89	150	105	6,18	10,00	9,77	19,53	6,48	1	145fa0089
-	108	159	105	5,70	20,00	9,77	19,53	6,74	1	145fa0108
-	110	160	105	5,60	20,00	9,77	19,53	6,77	1	145fa0110
100	114	162	105	5,40	20,00	9,77	19,53	6,83	1	145fa0114
-	133	172	105	4,63	20,00	9,77	19,53	7,09	1	145fa0133
125	140	175	105	4,40	20,00	9,77	19,53	7,19	1	145fa0140
-	160	185	105	3,85	20,00	9,77	19,53	7,47	1	145fa0160
150	168	189	105	3,67	20,00	9,77	19,53	7,58	1	145fa0168
-	180	195	105	3,42	20,00	9,77	19,53	7,74	1	145fa0180
-	210	210	105	2,93	20,00	9,77	19,53	8,16	1	145fa0210
200	219	215	105	2,81	20,00	9,77	19,53	8,29	1	145fa0219

■ Sliding support T, sound insulated



Sliding support, sound insulated



02

Specification:

Closure: Hexagon nut / closure-screw
 Model: T-support
 OD: 20 up to 219 mm

Material pipe clamp:
 from 20 until 62 mm: 35 x 4 mm
 from 64 until 219 mm: 50 x 5 mm

Sound insulation: after DIN 4109

Technical data:

Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized

Insulation insert: Rubber EPDM / TPE
 Fibreglass insert on request
 Temperature resistance: - 35 °C up to + 100 °C
 Insulation thickness: 6 mm
 Global safety coefficient: 1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
 e.g. welding collars.

Load values were determined for standard steel pipes.

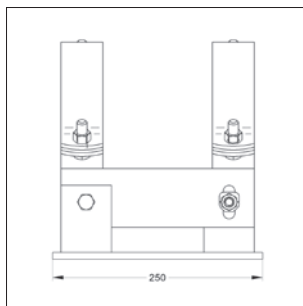
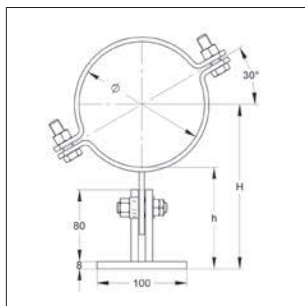
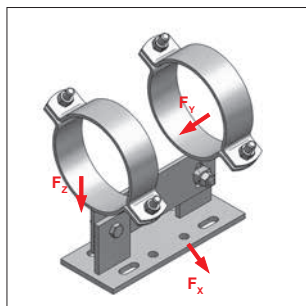
Loads at temperature > 100 °C on request

Loads be for static friction factor $\mu=0,2$ or $0,3$

Delivery time: on request

DN	Pipe-Ø [mm]	Pipe axis H [mm]	Lower edge pipe [mm]	F_x^* [kN]	F_y [kN]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
						F_z hanging $\mu=0,2$ [kN]	F_z hanging $\mu=0,3$ [kN]	F_z standing $\mu=0,2$ [kN]	F_z standing $\mu=0,3$ [kN]			
15	20 - 22	119	110	5,43	1,20	5,50	4,00	6,00	4,00	5,12	1	145fb0022
-	25	121	110	5,34	1,20	5,50	4,00	6,00	4,00	5,15	1	145fb0025
20	27 - 28	122	110	5,30	1,20	5,50	4,00	6,00	4,00	5,18	1	145fb0028
-	32	124	110	5,21	1,20	5,50	4,00	6,00	4,00	5,22	1	145fb0032
25	33 - 35	126	110	5,13	1,20	5,50	4,00	6,00	4,00	5,25	1	145fb0035
32	40 - 42	129	110	5,01	1,20	5,50	4,00	6,00	4,00	5,32	1	145fb0042
40	48 - 50	133	110	4,86	1,20	5,50	4,00	6,00	4,00	5,39	1	145fb0050
-	54	135	110	4,79	1,20	5,50	4,00	6,00	4,00	5,43	1	145fb0054
50	60	138	110	4,68	1,20	5,50	4,00	6,00	4,00	5,49	1	145fb0060
-	64	143	111	6,46	2,00	6,40	6,40	10,00	6,67	6,44	1	145fb0064
65	76	149	111	6,20	2,00	6,40	6,40	10,00	6,67	6,64	1	145fb0076
80	89	156	111	5,94	2,00	6,40	6,40	10,00	6,67	6,87	1	145fb0089
-	108	165	111	5,13	3,00	6,40	6,40	12,80	10,00	7,17	1	145fb0108
-	110	166	111	5,05	3,00	6,40	6,40	12,80	10,00	7,19	1	145fb0110
100	114	168	111	4,89	3,00	6,40	6,40	12,80	10,00	7,26	1	145fb0114
-	133	178	111	4,25	3,00	6,40	6,40	12,80	10,00	7,58	1	145fb0133
125	140	181	111	4,05	3,00	6,40	6,40	12,80	10,00	7,69	1	145fb0140
-	160	191	111	3,58	3,00	6,40	6,40	12,80	10,00	8,02	1	145fb0160
150	168	195	111	3,42	3,00	6,40	6,40	12,80	10,00	8,14	1	145fb0168
-	180	201	111	3,21	5,00	9,77	9,77	19,53	16,67	8,33	1	145fb0180
-	210	216	111	2,77	5,00	9,77	9,77	19,53	16,67	8,81	1	145fb0210
200	219	221	111	2,67	5,00	9,77	9,77	19,53	16,67	8,97	1	145fb0219

Sliding support T, HV1 with 2 pipe clamps



Sliding support T
HV1 with 2 pipe clamps

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
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Global safety coefficient:	1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 300 °C on request

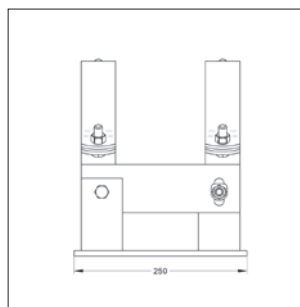
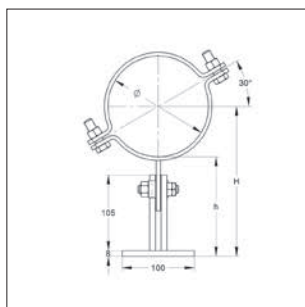
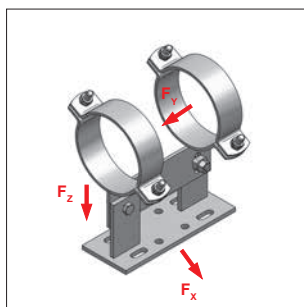
Loads be for static friction factor $\mu=0,2$ up to 0,3

Delivery time: on request

HV1, Altitude level 1, adjustable height h 100 until 125 mm

DN	Clamping range [mm]	Pipe axis H [mm]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
			F_x^* [kN]	F_y [kN]	F_z hanging [kN]	F_z standing [kN]			
15	20 - 22	109-136	5,67	8,00	6,84	13,67	3,80	1	141afba0022
-	25	112-138	5,67	8,00	6,84	13,67	3,85	1	141afba0025
20	27 - 28	113-139	5,67	8,00	6,84	13,67	3,86	1	141afba0028
-	32	115-141	5,67	8,00	6,84	13,67	3,91	1	141afba0032
25	33 - 35	116-143	5,67	8,00	6,84	13,67	3,91	1	141afba0035
32	40 - 42	119-146	5,67	8,00	6,84	13,67	3,96	1	141afba0042
40	48 - 50	123-150	5,67	8,00	6,84	13,67	4,04	1	141afba0050
-	54	126-152	5,37	8,00	6,84	13,67	4,08	1	141afba0054
50	60	129-155	4,83	8,00	6,84	13,67	4,13	1	141afba0060
-	64	132-158	5,67	10,00	9,77	19,53	4,88	1	141afba0064
65	76	138-164	5,67	10,00	9,77	19,53	5,08	1	141afba0076
80	89	145-171	4,94	10,00	9,77	19,53	5,23	1	141afba0089
-	108	154-180	4,07	20,00	9,77	19,53	5,49	1	141afba0108
-	110	155-181	4,00	20,00	9,77	19,53	5,52	1	141afba0110
100	114	157-183	3,86	20,00	9,77	19,53	5,57	1	141afba0114
-	133	167-193	3,31	20,00	9,77	19,53	5,84	1	141afba0133
125	140	170-196	3,14	20,00	9,77	19,53	5,93	1	141afba0140
-	160	180-206	2,75	20,00	9,77	19,53	6,22	1	141afba0160
150	168	184-210	2,62	20,00	9,77	19,53	6,33	1	141afba0168
-	180	190-216	2,44	20,00	9,77	19,53	6,50	1	141afba0180
-	210	205-231	2,09	20,00	9,77	19,53	6,91	1	141afba0210
200	219	210-236	2,01	20,00	9,77	19,53	7,04	1	141afba0219

■ Sliding support T, HV2 with 2 pipe clamps



Sliding support T
HV2 with 2 pipe clamps

Specification:

Closure:	Hexagon nut / closure-screw
Model:	T-support
Support-width:	100
Support-length:	200
OD:	20 up to 219 mm
Height, adjustable:	100 up to 125 mm
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Global safety coefficient:: 1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 300 °C on request

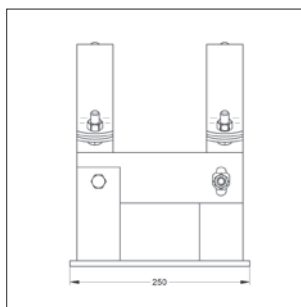
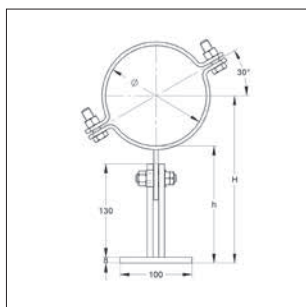
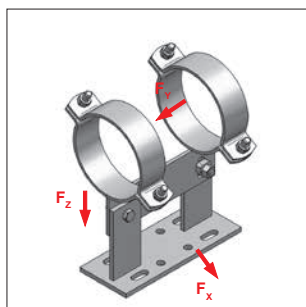
Loads be for static friction factor $\mu=0,2$ up to 0,3

Delivery time: on request

HV2, Altitude level 2, adjustable height h 125 until 150 mm

DN	Clamping range [mm]	Pipe axis H [mm]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
			F_x * [kN]	F_y [kN]	F_z hanging [kN]	F_z standing [kN]			
15	20 - 22	134-161	5,67	8,00	6,84	13,67	4,01	1	141bfba0022
-	25	136-163	5,67	8,00	6,84	13,67	4,06	1	141bfba0025
20	27 - 28	137-164	5,67	8,00	6,84	13,67	4,07	1	141bfba0028
-	32	140-166	5,67	8,00	6,84	13,67	4,12	1	141bfba0032
25	33 - 35	141-168	5,67	8,00	6,84	13,67	4,12	1	141bfba0035
32	40 - 42	145-171	5,67	8,00	6,84	13,67	4,17	1	141bfba0042
40	48 - 50	149-175	5,67	8,00	6,84	13,67	4,24	1	141bfba0050
-	54	151-177	5,37	8,00	6,84	13,67	4,29	1	141bfba0054
50	60	154-180	4,83	8,00	6,84	13,67	4,33	1	141bfba0060
-	64	157-183	5,67	10,00	9,77	19,53	5,08	1	141bfba0064
65	76	163-189	5,67	10,00	9,77	19,53	5,25	1	141bfba0076
80	89	170-196	4,94	10,00	9,77	19,53	5,43	1	141bfba0089
-	108	179-205	4,07	20,00	9,77	19,53	5,70	1	141bfba0108
-	110	180-206	4,00	20,00	9,77	19,53	5,73	1	141bfba0110
100	114	182-208	3,86	20,00	9,77	19,53	5,78	1	141bfba0114
-	133	192-218	3,31	20,00	9,77	19,53	6,06	1	141bfba0133
125	140	195-221	3,14	20,00	9,77	19,53	6,15	1	141bfba0140
-	160	205-231	2,75	20,00	9,77	19,53	6,43	1	141bfba0160
150	168	209-235	2,62	20,00	9,77	19,53	6,54	1	141bfba0168
-	180	215-241	2,44	20,00	9,77	19,53	6,71	1	141bfba0180
-	210	230-256	2,09	20,00	9,77	19,53	7,12	1	141bfba0210
200	219	235-261	2,01	20,00	9,77	19,53	7,25	1	141bfba0219

Sliding support T, HV3 with 2 pipe clamps



Sliding support T
HV3 with 2 pipe clamps

Specification:

Closure:	Hexagon nut / closure-screw
Model:	T-support
Support-width:	100
Support-length:	250
OD:	20 up to 219 mm
Height, adjustable:	150 up to 175 mm
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Global safety coefficient:	1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 300 °C on request

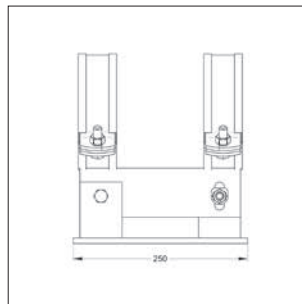
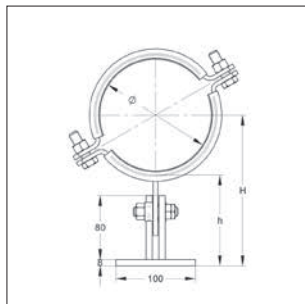
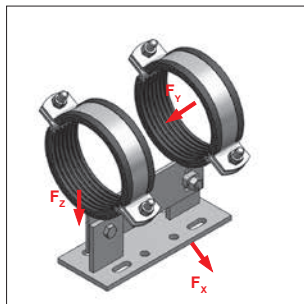
Loads be for static friction factor $\mu=0,2$ up to 0,3

Delivery time: on request

HV3, Altitude level 3, adjustable height h 150 until 175 mm

DN	Clamping range [mm]	Pipe axis H [mm]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
			F_x * [kN]	F_y [kN]	F_z hanging [kN]	F_z standing [kN]			
15	20 - 22	159-185	5,67	8,00	6,84	13,67	4,22	1	141cfba0022
-	25	161-187	5,67	8,00	6,84	13,67	4,27	1	141cfba0025
20	27 - 28	162-188	5,67	8,00	6,84	13,67	4,28	1	141cfba0028
-	32	165-191	5,67	8,00	6,84	13,67	4,32	1	141cfba0032
25	33 - 35	166-192	5,67	8,00	6,84	13,67	4,33	1	141cfba0035
32	40 - 42	170-196	5,67	8,00	6,84	13,67	4,38	1	141cfba0042
40	48 - 50	174-200	5,67	8,00	6,84	13,67	4,45	1	141cfba0050
-	54	176-202	5,37	8,00	6,84	13,67	4,50	1	141cfba0054
50	60	179-205	4,83	8,00	6,84	13,67	4,54	1	141cfba0060
-	64	182-208	5,47	10,00	9,77	19,53	5,29	1	141cfba0064
65	76	188-214	5,31	10,00	9,77	19,53	5,46	1	141cfba0076
80	89	195-221	4,94	10,00	9,77	19,53	5,64	1	141cfba0089
-	108	204-230	4,07	20,00	9,77	19,53	5,90	1	141cfba0108
-	110	205-231	4,00	20,00	9,77	19,53	5,94	1	141cfba0110
100	114	207-233	3,86	20,00	9,77	19,53	5,99	1	141cfba0114
-	133	217-243	3,31	20,00	9,77	19,53	6,27	1	141cfba0133
125	140	220-246	3,14	20,00	9,77	19,53	6,36	1	141cfba0140
-	160	230-256	2,75	20,00	9,77	19,53	6,64	1	141cfba0160
150	168	234-260	2,62	20,00	9,77	19,53	6,75	1	141cfba0168
-	180	240-266	2,44	20,00	9,77	19,53	6,92	1	141cfba0180
-	210	255-281	2,09	20,00	9,77	19,53	7,33	1	141cfba0210
200	219	260-286	2,01	20,00	9,77	19,53	7,46	1	141cfba0219

Sliding support T, HV1 with 2 pipe clamps, sound insulated



02

Sliding support T, HV1
with 2 pipe clamps, sound insulated

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
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Insulation insert:	Rubber EPDM / TPE Fibreglass insert on request
Temperature resistance:	- 35 °C up to + 100 °C
Global safety coefficient:	1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 100 °C on request

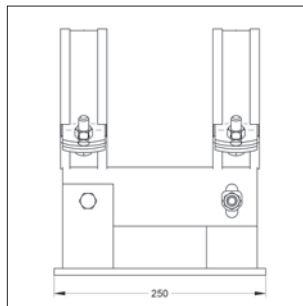
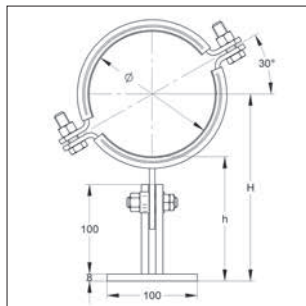
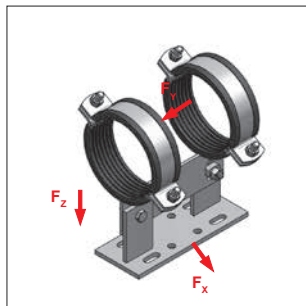
Loads be for static friction factor $\mu=0,2$ or $0,3$

Delivery time: on request

HV1, Altitude level 1, adjustable height h 100 until 125 mm

DN	Clamping range [mm]	Pipe axis H [mm]	F_x^* [kN]	F_y [kN]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
					F_z hanging $\mu=0,2$ [kN]	F_z hanging $\mu=0,3$ [kN]	F_z standing $\mu=0,2$ [kN]	F_z standing $\mu=0,3$ [kN]			
15	20 - 22	110-137	5,67	1,20	5,50	4,00	6,00	4,00	3,87	1	141afbb0022
-	25	113-139	5,67	1,20	5,50	4,00	6,00	4,00	3,90	1	141afbb0025
20	27 - 28	114-140	5,67	1,20	5,50	4,00	6,00	4,00	3,92	1	141afbb0028
-	32	116-142	5,67	1,20	5,50	4,00	6,00	4,00	3,97	1	141afbb0032
25	33 - 35	117-144	5,67	1,20	5,50	4,00	6,00	4,00	3,99	1	141afbb0035
32	40 - 42	120-147	5,67	1,20	5,50	4,00	6,00	4,00	4,06	1	141afbb0042
40	48 - 50	124-151	5,00	1,20	5,50	4,00	6,00	4,00	4,12	1	141afbb0050
-	54	127-153	4,68	1,20	5,50	4,00	6,00	4,00	4,18	1	141afbb0054
50	60	130-156	4,26	1,20	5,50	4,00	6,00	4,00	4,24	1	141afbb0060
-	64	133-159	5,67	2,00	6,40	6,40	10,00	6,67	5,14	1	141afbb0064
65	76	139-165	4,94	2,00	6,40	6,40	10,00	6,67	5,35	1	141afbb0076
80	89	146-172	4,36	2,00	6,40	6,40	10,00	6,67	5,55	1	141afbb0089
-	108	155-181	3,67	3,00	6,40	6,40	12,80	10,00	5,85	1	141afbb0108
-	110	156-182	3,61	3,00	6,40	6,40	12,80	10,00	5,89	1	141afbb0110
100	114	158-184	3,49	3,00	6,40	6,40	12,80	10,00	5,95	1	141afbb0114
-	133	168-194	3,03	3,00	6,40	6,40	12,80	10,00	6,25	1	141afbb0133
125	140	171-197	2,89	3,00	6,40	6,40	12,80	10,00	6,37	1	141afbb0140
-	160	181-207	2,56	3,00	6,40	6,40	12,80	10,00	6,69	1	141afbb0160
150	168	185-211	2,44	3,00	6,40	6,40	12,80	10,00	6,82	1	141afbb0168
-	180	191-217	2,29	5,00	9,77	9,77	19,53	16,67	7,01	1	141afbb0180
-	210	206-232	1,98	5,00	9,77	9,77	19,53	16,67	7,49	1	141afbb0210
200	219	211-237	1,90	5,00	9,77	9,77	19,53	16,67	7,63	1	141afbb0219

Sliding support T, HV2 with 2 pipe clamps, sound insulated



Sliding support T, HV2

with 2 pipe clamps, sound insulated

Specification:

Closure:	Hexagon nut / closure-screw
Model:	T-support
Support-width:	100
Support-length:	250
OD:	20 up to 219 mm
Sound insulation:	according up to DIN 4109
Height, adjustable:	125 up to 150 mm
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Insulation insert:	Rubber EPDM / TPE Fibreglass insert on request
Temperature resistance:	- 35 °C up to + 100 °C
Global safety coefficient:	1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes
e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 100 °C on request

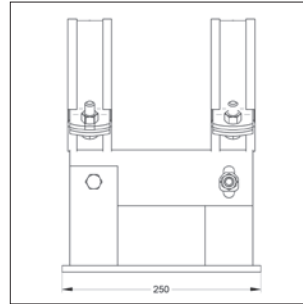
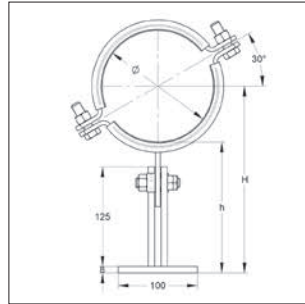
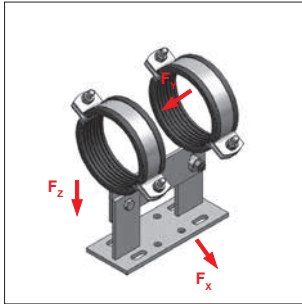
Loads be for static friction factor $\mu=0,2$ or $0,3$

Delivery time: on request

HV2, Altitude level 2, adjustable height h 125 until 150 mm

DN	Clamping range [mm]	Pipe axis H [mm]	F_x^* [kN]	F_y [kN]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
					F_z hanging $\mu=0,2$ [kN]	F_z hanging $\mu=0,3$ [kN]	F_z standing $\mu=0,2$ [kN]	F_z standing $\mu=0,3$ [kN]			
15	20 - 22	135-162	5,67	1,20	5,50	4,00	6,00	4,00	4,08	1	141bfbb0022
-	25	138-164	5,67	1,20	5,50	4,00	6,00	4,00	4,11	1	141bfbb0025
20	27 - 28	139-165	5,67	1,20	5,50	4,00	6,00	4,00	4,13	1	141bfbb0028
-	32	141-167	5,67	1,20	5,50	4,00	6,00	4,00	4,18	1	141bfbb0032
25	33 - 35	142-169	5,67	1,20	5,50	4,00	6,00	4,00	4,20	1	141bfbb0035
32	40 - 42	145-172	5,67	1,20	5,50	4,00	6,00	4,00	4,27	1	141bfbb0042
40	48 - 50	149-176	5,00	1,20	5,50	4,00	6,00	4,00	4,32	1	141bfbb0050
-	54	152-178	4,68	1,20	5,50	4,00	6,00	4,00	4,38	1	141bfbb0054
50	60	155-181	4,26	1,20	5,50	4,00	6,00	4,00	4,45	1	141bfbb0060
-	64	158-184	5,67	2,00	6,40	6,40	10,00	6,67	5,35	1	141bfbb0064
65	76	164-190	4,94	2,00	6,40	6,40	10,00	6,67	5,56	1	141bfbb0076
80	89	171-197	4,36	2,00	6,40	6,40	10,00	6,67	5,76	1	141bfbb0089
-	108	180-206	3,67	3,00	6,40	6,40	12,80	10,00	6,06	1	141bfbb0108
-	110	181-207	3,61	3,00	6,40	6,40	12,80	10,00	6,10	1	141bfbb0110
100	114	183-209	3,49	3,00	6,40	6,40	12,80	10,00	6,16	1	141bfbb0114
-	133	193-219	3,03	3,00	6,40	6,40	12,80	10,00	6,46	1	141bfbb0133
125	140	196-222	2,89	3,00	6,40	6,40	12,80	10,00	6,58	1	141bfbb0140
-	160	206-232	2,56	3,00	6,40	6,40	12,80	10,00	6,90	1	141bfbb0160
150	168	210-236	2,44	3,00	6,40	6,40	12,80	10,00	7,03	1	141bfbb0168
-	180	216-242	2,29	5,00	9,77	9,77	19,53	16,67	7,22	1	141bfbb0180
-	210	231-257	1,98	5,00	9,77	9,77	19,53	16,67	7,70	1	141bfbb0210
200	219	236-262	1,90	5,00	9,77	9,77	19,53	16,67	7,84	1	141bfbb0219

Sliding support T, HV3 with 2 pipe clamps, sound insulated



02

Sliding support T, HV3

with 2 pipe clamps, sound insulated

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:	150 up to 175 mm
Rec. tightening torque:	80 Nm

Material pipe clamp:

from 20 until 61 mm:	35 x 4 mm
from 63 until 219 mm:	50 x 5 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Insulation insert:	Rubber EPDM / TPE Fibreglass insert on request
Temperature resistance:	- 35 °C up to + 100 °C
Global safety coefficient:	1,54

* F_x = momentfree

Additional measures are to be provided for plastic pipes e.g. welding collars.

Load values were determined for standard steel pipes.

Loads at temperature > 100 °C on request

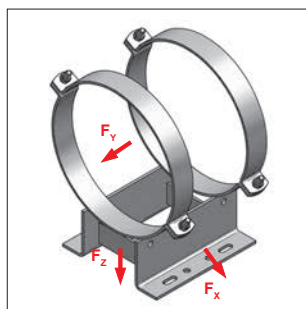
Loads be for static friction factor $\mu=0,2$ or $0,3$

Delivery time: on request

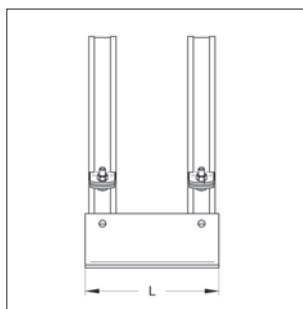
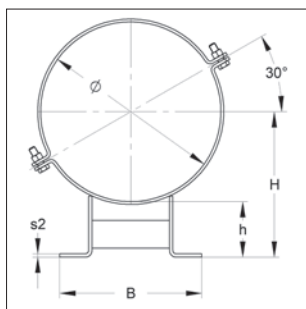
HV3, Altitude level 3, adjustable height h 150 until 175 mm

DN	Clamping range [mm]	Pipe axis H [mm]	F_x^* [kN]	F_y [kN]	Load				Weight [kg/pc.]	Packing [pc.]	Part-No.
					F_z hanging $\mu=0,2$ [kN]	F_z hanging $\mu=0,3$ [kN]	F_z standing $\mu=0,2$ [kN]	F_z standing $\mu=0,3$ [kN]			
15	20 - 22	160-187	5,67	1,20	5,50	4,00	6,00	4,00	4,29	1	141cfbb0022
-	25	163-189	5,67	1,20	5,50	4,00	6,00	4,00	4,32	1	141cfbb0025
20	27 - 28	164-190	5,67	1,20	5,50	4,00	6,00	4,00	4,34	1	141cfbb0028
-	32	166-192	5,67	1,20	5,50	4,00	6,00	4,00	4,38	1	141cfbb0032
25	33 - 35	167-194	5,67	1,20	5,50	4,00	6,00	4,00	4,41	1	141cfbb0035
32	40 - 42	170-197	5,67	1,20	5,50	4,00	6,00	4,00	4,48	1	141cfbb0042
40	48 - 50	174-201	5,00	1,20	5,50	4,00	6,00	4,00	4,54	1	141cfbb0050
-	54	177-203	4,68	1,20	5,50	4,00	6,00	4,00	4,59	1	141cfbb0054
50	60	180-206	4,26	1,20	5,50	4,00	6,00	4,00	4,66	1	141cfbb0060
-	64	183-209	5,44	2,00	6,40	6,40	10,00	6,67	5,56	1	141cfbb0064
65	76	189-215	4,94	2,00	6,40	6,40	10,00	6,67	5,77	1	141cfbb0076
80	89	196-222	4,36	2,00	6,40	6,40	10,00	6,67	5,97	1	141cfbb0089
-	108	205-231	3,67	3,00	6,40	6,40	12,80	10,00	6,27	1	141cfbb0108
-	110	206-232	3,61	3,00	6,40	6,40	12,80	10,00	6,30	1	141cfbb0110
100	114	208-234	3,49	3,00	6,40	6,40	12,80	10,00	6,37	1	141cfbb0114
-	133	218-244	3,03	3,00	6,40	6,40	12,80	10,00	6,67	1	141cfbb0133
125	140	221-247	2,89	3,00	6,40	6,40	12,80	10,00	6,79	1	141cfbb0140
-	160	231-257	2,56	3,00	6,40	6,40	12,80	10,00	7,11	1	141cfbb0160
150	168	235-261	2,44	3,00	6,40	6,40	12,80	10,00	7,24	1	141cfbb0168
-	180	241-267	2,29	5,00	9,77	9,77	19,53	16,67	7,43	1	141cfbb0180
-	210	256-282	1,98	5,00	9,77	9,77	19,53	16,67	7,91	1	141cfbb0210
200	219	261-287	1,90	5,00	9,77	9,77	19,53	16,67	8,05	1	141cfbb0219

Sliding sledge



Sliding sledge



Specification:

Closure:	Hexagon nut / closure-screw
Model:	Double-L-support
OD:	219 up to 813 mm
Material pipe clamp:	
219 up to 508 mm:	50 x 5 mm
610 up to 813 mm:	70 x 10 mm

Delivery time: on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Global safety coefficient:	1,54

Clamping and fixed point forces only apply to steel pipes.

* F_x = momentfree

Loads at temperature > 300 °C on request

Loads be for static friction factor $\mu=0,2$ up to 0,3

Type A, height h = 100 mm

DN	Pipe-Ø	s2	L	B	H	Load				Weight	Packing	Part-No.
						F_x^*	F_y	F_z hanging	F_z standing			
	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
200	219	6	270	230	210	4,68	20,00	8,52	17,05	8,58	1	110afa0219
-	225	6	270	230	213	4,61	20,00	8,52	17,05	8,66	1	110afa0225
250	273	6	270	244	237	4,40	20,00	8,52	17,05	9,39	1	110afa0273
-	280	6	270	244	240	4,33	20,00	8,52	17,05	9,49	1	110afa0280
-	315	6	270	254	258	4,20	20,00	8,52	17,05	10,02	1	110afa0315
300	324	6	270	254	262	4,13	20,00	8,52	17,05	10,15	1	110afa0324
350	356	6	270	262	278	4,02	20,00	8,52	17,05	10,63	1	110afa0356
-	400	8	270	293	300	7,40	20,00	15,15	30,31	13,67	1	110afa0400
400	406	8	270	293	303	7,32	20,00	15,15	30,31	13,75	1	110afa0406
-	450	8	270	305	325	7,11	20,00	15,15	30,31	14,48	1	110afa0450
450	457	8	270	305	329	7,04	20,00	15,15	30,31	14,58	1	110afa0457
-	500	8	390	337	350	10,54	20,00	21,89	40,00	18,68	1	110afa0500
500	508	8	390	337	354	10,42	20,00	21,89	40,00	18,80	1	110afa0508
600	610	10	390	405	405	17,10	40,00	34,20	40,00	40,34	1	110afa0610
700	711	10	390	429	456	16,11	40,00	34,20	40,00	44,39	1	110afa0711
800	813	12	470	473	507	27,71	40,00	40,00	40,00	54,46	1	110afa0813

■ Sliding sledge

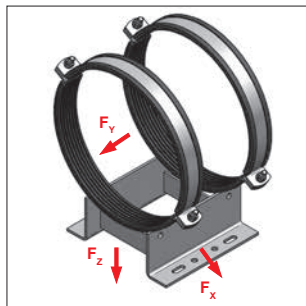
Type B, height h = 150 mm

DN	Pipe-Ø	s2	L	B	H	Load				Weight	Packing	Part-No.
						F_x^*	F_y	F_z hanging	F_z standing			
	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
200	219	6	270	230	260	3,78	20,00	8,52	17,05	10,10	1	110bfa0219
-	225	6	270	230	263	3,73	20,00	8,52	17,05	10,18	1	110bfa0225
250	273	6	270	244	287	3,63	20,00	8,52	17,05	10,91	1	110bfa0273
-	280	6	270	244	290	3,59	20,00	8,52	17,05	11,02	1	110bfa0280
-	315	6	270	254	308	3,52	20,00	8,52	17,05	11,54	1	110bfa0315
300	324	6	270	254	312	3,47	20,00	8,52	17,05	11,68	1	110bfa0324
350	356	6	270	262	328	3,40	20,00	8,52	17,05	12,15	1	110bfa0356
-	400	8	270	293	350	6,34	20,00	15,15	30,31	15,71	1	110bfa0400
400	406	8	270	293	353	6,28	20,00	15,15	30,31	15,77	1	110bfa0406
-	450	8	270	305	375	6,16	20,00	15,15	30,31	16,52	1	110bfa0450
450	457	8	270	305	379	6,11	20,00	15,15	30,31	16,62	1	110bfa0457
-	500	8	390	337	400	9,22	20,00	21,89	40,00	21,26	1	110bfa0500
500	508	8	390	337	404	9,13	20,00	21,89	40,00	21,38	1	110bfa0508
600	610	10	390	405	455	15,22	40,00	34,20	40,00	43,67	1	110bfa0610
700	711	10	390	429	506	14,51	40,00	34,20	40,00	47,72	1	110bfa0711
800	813	12	470	473	557	25,22	40,00	40,00	40,00	59,25	1	110bfa0813

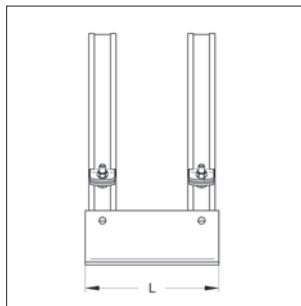
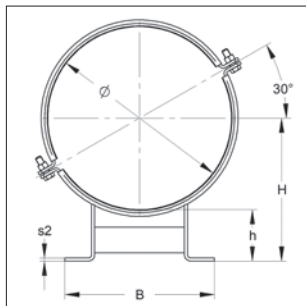
Type C, height h = 200 mm

200	219	6	270	230	310	3,17	20,00	8,52	17,05	11,51	1	110cfa0219
-	225	6	270	230	313	3,14	20,00	8,52	17,05	11,60	1	110cfa0225
250	273	6	270	244	337	3,09	20,00	8,52	17,05	12,33	1	110cfa0273
-	280	6	270	244	340	3,06	20,00	8,52	17,05	12,41	1	110cfa0280
-	315	6	270	254	358	3,03	20,00	8,52	17,05	12,96	1	110cfa0315
300	324	6	270	254	362	2,99	20,00	8,52	17,05	13,09	1	110cfa0324
350	356	6	270	262	378	2,95	20,00	8,52	17,05	13,55	1	110cfa0356
-	400	8	270	293	400	5,55	20,00	15,15	30,31	17,57	1	110cfa0400
400	406	8	270	293	403	5,50	20,00	15,15	30,31	17,65	1	110cfa0406
-	450	8	270	305	425	5,44	20,00	15,15	30,31	18,38	1	110cfa0450
450	457	8	270	305	429	5,39	20,00	15,15	30,31	18,48	1	110cfa0457
-	500	8	390	337	450	8,20	20,00	21,89	40,00	24,10	1	110cfa0500
500	508	8	390	337	454	8,12	20,00	21,89	40,00	24,22	1	110cfa0508
600	610	10	390	405	505	13,72	40,00	34,20	40,00	47,00	1	110cfa0610
700	711	10	390	429	556	13,21	40,00	34,20	40,00	51,05	1	110cfa0711
800	813	12	470	473	607	23,15	40,00	40,00	40,00	64,04	1	110cfa0813

Sliding sledge, sound insulated



Sliding sledge, sound insulated



Specification

Closure:	Hexagon nut / closure-screw
Model:	Double-L-support
OD:	219 up to 813 mm
Sound insulation:	according up to DIN 4109

Material pipe clamp:

219 up to 508 mm:	50 x 5 mm
610 up to 813 mm:	70 x 10 mm

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Insulation insert:	Rubber EPDM / TPE Fibreglass insert on request
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm
Global safety coefficient:	1,54
Clamping and fixed point forces only apply to steel pipes.	

* F_x = momentfree

Loads at temperature > 100 °C on request

Loads be for static friction factor $\mu=0,2$ or $0,3$

Delivery time: on request

Type A, height h = 100 mm

DN	Pipe-Ø	s2	L	B	H	F_x^*	F_y	Load				Weight	Packing	Part-No
								F_z hanging	F_z hanging	F_z standing	F_z standing			
	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	$\mu=0,2$ [kN]	$\mu=0,3$ [kN]	$\mu=0,2$ [kN]	$\mu=0,3$ [kN]	[kg/pc.]	[pc.]	
200	219	6	270	253	210	5,00	5,00	8,52	8,52	17,05	16,67	9,32	1	110afb0219
-	225	6	270	253	213	4,94	5,00	8,52	8,52	17,05	16,67	9,42	1	110afb0225
250	273	6	270	269	237	4,73	5,00	8,52	8,52	17,05	16,67	10,26	1	110afb0273
-	280	6	270	269	240	4,66	5,00	8,52	8,52	17,05	16,67	10,38	1	110afb0280
-	315	6	270	280	258	4,53	5,00	8,52	8,52	17,05	16,67	10,99	1	110afb0315
300	324	6	270	280	262	4,45	5,00	8,52	8,52	17,05	16,67	11,14	1	110afb0324
350	356	6	270	290	278	4,35	5,00	8,52	8,52	17,05	16,67	11,68	1	110afb0356
-	400	8	270	320	300	7,92	5,00	15,15	15,15	25,00	16,67	14,96	1	110afb0400
400	406	8	270	320	303	7,85	5,00	15,15	15,15	25,00	16,67	15,06	1	110afb0406
-	450	8	270	332	325	7,60	5,00	15,15	15,15	25,00	16,67	15,88	1	110afb0450
450	457	8	270	332	329	7,52	5,00	15,15	15,15	25,00	16,67	16,00	1	110afb0457
-	500	8	390	364	350	11,19	5,00	21,89	16,67	25,00	16,67	20,09	1	110afb0500
500	508	8	390	364	354	11,07	5,00	21,89	16,67	25,00	16,67	20,22	1	110afb0508
600	610	10	390	438	405	18,14	5,00	25,00	16,67	25,00	16,67	43,85	1	110afb0610
700	711	10	390	464	456	17,12	5,00	25,00	16,67	25,00	16,67	48,31	1	110afb0711
800	813	12	470	509	507	29,36	5,00	25,00	16,67	25,00	16,67	58,92	1	110afb0813

■ Sliding sledge, sound insulated

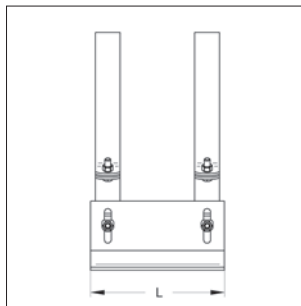
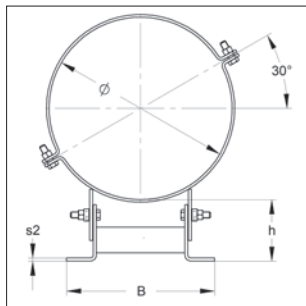
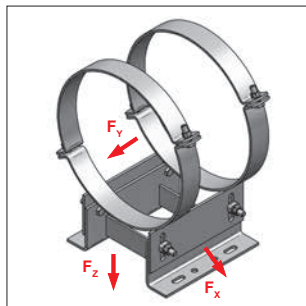
Type B, height h = 150 mm

DN	Pipe-Ø	s2	L	B	H	F _x *	F _y	Load				Weight	Packing	Part-No.
								F _z hanging μ=0,2 [kN]	F _z hanging μ=0,3 [kN]	F _z standing μ=0,2 [kN]	F _z standing μ=0,3 [kN]			
	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
200	219	6	270	253	260	4,06	5,00	8,52	8,52	17,05	16,67	10,84	1	110bfb0219
-	225	6	270	253	263	4,02	5,00	8,52	8,52	17,05	16,67	10,94	1	110bfb0225
250	273	6	270	269	287	3,92	5,00	8,52	8,52	17,05	16,67	11,79	1	110bfb0273
-	280	6	270	269	290	3,87	5,00	8,52	8,52	17,05	16,67	11,90	1	110bfb0280
-	315	6	270	280	308	3,81	5,00	8,52	8,52	17,05	16,67	12,51	1	110bfb0315
300	324	6	270	280	312	3,75	5,00	8,52	8,52	17,05	16,67	12,66	1	110bfb0324
350	356	6	270	290	328	3,70	5,00	8,52	8,52	17,05	16,67	13,20	1	110bfb0356
-	400	8	270	320	350	6,81	5,00	15,15	15,15	25,00	16,67	16,98	1	110bfb0400
400	406	8	270	320	353	6,75	5,00	15,15	15,15	25,00	16,67	17,10	1	110bfb0406
-	450	8	270	332	375	6,60	5,00	15,15	15,15	25,00	16,67	17,91	1	110bfb0450
450	457	8	270	332	379	6,54	5,00	15,15	15,15	25,00	16,67	18,02	1	110bfb0457
-	500	8	390	364	400	9,81	5,00	21,89	16,67	25,00	16,67	22,78	1	110bfb0500
500	508	8	390	364	404	9,72	5,00	21,89	16,67	25,00	16,67	22,91	1	110bfb0508
600	610	10	390	438	455	16,18	5,00	25,00	16,67	25,00	16,67	47,18	1	110bfb0610
700	711	10	390	464	506	15,45	5,00	25,00	16,67	25,00	16,67	51,64	1	110bfb0711
800	813	12	470	509	557	26,76	5,00	25,00	16,67	25,00	16,67	63,71	1	110bfb0813

Type C, height h = 200 mm

200	219	6	270	253	310	3,39	5,00	8,52	8,52	17,05	16,67	12,26	1	110cfb0219
-	225	6	270	253	313	3,39	5,00	8,52	8,52	17,05	16,67	12,35	1	110cfb0225
250	273	6	270	269	337	3,35	5,00	8,52	8,52	17,05	16,67	13,20	1	110cfb0273
-	280	6	270	269	340	3,31	5,00	8,52	8,52	17,05	16,67	13,31	1	110cfb0280
-	315	6	270	280	358	3,28	5,00	8,52	8,52	17,05	16,67	13,93	1	110cfb0315
300	324	6	270	280	362	3,24	5,00	8,52	8,52	17,05	16,67	14,07	1	110cfb0324
350	356	6	270	290	378	3,22	5,00	8,52	8,52	17,05	16,67	14,61	1	110cfb0356
-	400	8	270	320	400	5,97	5,00	15,15	15,15	25,00	16,67	18,86	1	110cfb0400
400	406	8	270	320	403	5,97	5,00	15,15	15,15	25,00	16,67	18,96	1	110cfb0406
-	450	8	270	332	425	5,84	5,00	15,15	15,15	25,00	16,67	19,78	1	110cfb0450
450	457	8	270	332	429	5,79	5,00	15,15	15,15	25,00	16,67	19,90	1	110cfb0457
-	500	8	390	364	450	8,74	5,00	21,89	16,67	25,00	16,67	25,46	1	110cfb0500
500	508	8	390	364	454	8,66	5,00	21,89	16,67	25,00	16,67	25,75	1	110cfb0508
600	610	10	390	438	505	14,60	5,00	25,00	16,67	25,00	16,67	50,51	1	110cfb0610
700	711	10	390	464	556	14,08	5,00	25,00	16,67	25,00	16,67	54,97	1	110cfb0711
800	813	12	470	509	607	24,58	5,00	25,00	16,67	25,00	16,67	68,50	1	110cfb0813

Sliding sledge, height adjustable



Sliding sledge, height adjustable

Specification

OD:	219 up to 813 mm
Material pipe clamp:	
219 up to 508 mm:	50 x 5 mm
610 up to 813 mm:	70 x 10 mm
Height, adjustable:	100 up to 150 mm 150 up to 200 mm
Rec. tightening torque (T-lock M12x40):	120 Nm
Delivery time:	on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Global safety coefficient:	1,54
Clamping and fixed point forces only apply to steel pipes.	
* F_x = momentfree	
Loads at temperature > 100 °C on request	
Loads be for static friction factor $\mu=0,2$ up to 0,3	

HV1, height level 1, adjustable height 100 to 150 mm

DN	Pipe-Ø	s2	L	B	F_x^*	F_y	Load	F_z	Weight	Packing	Part-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	F_z	F_z	[kg/pc.]	[pc.]	
							hanging	standing			
200	219	6	270	256	4,71	20,00	8,52	17,05	12,04	1	142afa0219
-	225	6	270	256	4,65	20,00	8,52	17,05	12,12	1	142afa0225
250	273	6	270	288	4,75	20,00	8,52	17,05	13,07	1	142afa0273
-	280	6	270	288	4,69	20,00	8,52	17,05	13,15	1	142afa0280
-	315	6	270	288	4,39	20,00	8,52	17,05	13,52	1	142afa0315
300	324	6	270	288	4,32	20,00	8,52	17,05	13,64	1	142afa0324
350	356	6	270	288	4,09	20,00	8,52	17,05	13,95	1	142afa0356
-	400	8	270	341	8,02	20,00	15,15	30,31	17,69	1	142afa0400
400	406	8	270	341	7,94	20,00	15,15	30,31	17,82	1	142afa0406
-	450	8	270	341	7,45	20,00	15,15	30,31	18,24	1	142afa0450
450	457	8	270	341	7,37	20,00	15,15	30,31	18,29	1	142afa0457
-	500	8	390	370	10,89	20,00	21,89	40,00	24,84	1	142afa0500
500	508	8	390	370	10,77	20,00	21,89	40,00	24,95	1	142afa0508
600	610	10	390	468	18,79	40,00	34,20	40,00	49,08	1	142afa0610
700	711	10	390	468	16,80	40,00	34,20	40,00	52,24	1	142afa0711
800	813	12	470	526	29,59	40,00	40,00	40,00	66,19	1	142afa0813

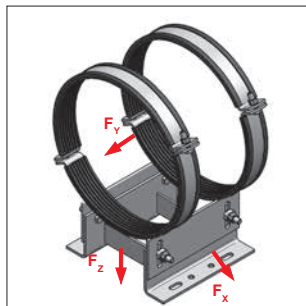
■ Sliding sledge, height adjustable

HV2, Height level 2, adjustable height 150 to 200 mm

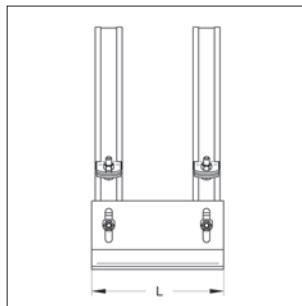
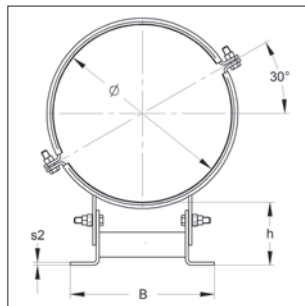
DN	Pipe-Ø	s2	L	B	F _x *	F _y	Load F _z hanging	F _z standing	Weight	Packing	Part-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
200	219	6	270	256	3,88	20,00	8,52	17,05	13,45	1	142bfa0219
-	225	6	270	256	3,84	20,00	8,52	17,05	13,53	1	142bfa0225
250	273	6	270	288	3,98	20,00	8,52	17,05	14,49	1	142bfa0273
-	280	6	270	288	3,93	20,00	8,52	17,05	14,57	1	142bfa0280
-	315	6	270	288	3,73	20,00	8,52	17,05	14,93	1	142bfa0315
300	324	6	270	288	3,68	20,00	8,52	17,05	15,06	1	142bfa0324
350	356	6	270	288	3,51	20,00	8,52	17,05	15,36	1	142bfa0356
-	400	8	270	341	6,95	20,00	15,15	30,31	19,56	1	142bfa0400
400	406	8	270	341	6,88	20,00	15,15	30,31	19,68	1	142bfa0406
-	450	8	270	341	6,51	20,00	15,15	30,31	20,10	1	142bfa0450
450	457	8	270	341	6,45	20,00	15,15	30,31	20,15	1	142bfa0457
-	500	8	390	370	9,60	20,00	21,89	40,00	27,43	1	142bfa0500
500	508	8	390	370	9,51	20,00	21,89	40,00	27,55	1	142bfa0508
600	610	10	390	468	16,81	40,00	34,20	40,00	52,40	1	142bfa0610
700	711	10	390	468	15,20	40,00	34,20	40,00	55,56	1	142bfa0711
800	813	12	470	526	27,03	40,00	40,00	40,00	70,98	1	142bfa0813

02

Sliding sledge height adjustable, sound insulated



Sliding sledge, sound insulated



Specification

OD:	219 up to 813 mm
Material pipe clamp:	
219 up to 508 mm:	50 x 5 mm
610 up to 813 mm:	70 x 10 mm

Height, adjustable:	100 up to 150 mm
	150 up to 200 mm

Sound insulation:	according up to DIN 4109
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Rec. tightening torque (T-lock M12x40):	120 Nm
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Delivery time:	on request
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Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

Sound insulation lining:	Rubber TPE / Fibreglass insert on request
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	6 mm
Global safety coefficient:	1,54

Clamping and fixed point forces only apply to steel pipes.

* F_x = momentfree

Loads at temperature > 100 °C on request

Loads be for static friction factor $\mu=0,2$ or $0,3$

HV1, height level 1, adjustable height 100 to 150 mm

DN	Pipe-Ø	s2	L	B	F_x^*	F_y	Load				Weight	Packing	Part-No.
							F_z hanging	F_z hanging	F_z standing	F_z standing			
[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	$\mu=0,2$ [kN]	$\mu=0,3$ [kN]	$\mu=0,2$ [kN]	$\mu=0,3$ [kN]	[kg/pc.]	[pc.]	
200	219	6	270	256	4,49	5,00	8,52	8,52	17,05	16,67	12,70	1	142afb0219
-	225	6	270	256	4,44	5,00	8,52	8,52	17,05	16,67	12,80	1	142afb0225
250	273	6	270	288	4,55	5,00	8,52	8,52	17,05	16,67	13,87	1	142afb0273
-	280	6	270	288	4,49	5,00	8,52	8,52	17,05	16,67	13,97	1	142afb0280
-	315	6	270	288	4,22	5,00	8,52	8,52	17,05	16,67	14,41	1	142afb0315
300	324	6	270	288	4,15	5,00	8,52	8,52	17,05	16,67	14,55	1	142afb0324
350	356	6	270	288	3,94	5,00	8,52	8,52	17,05	16,67	14,91	1	142afb0356
-	400	8	270	341	7,75	5,00	15,15	15,15	25,00	16,67	18,76	1	142afb0400
400	406	8	270	341	7,68	5,00	15,15	15,15	25,00	16,67	18,92	1	142afb0406
-	450	8	270	341	7,21	5,00	15,15	15,15	25,00	16,67	19,43	1	142afb0450
450	457	8	270	341	7,14	5,00	15,15	15,15	25,00	16,67	19,75	1	142afb0457
-	500	8	390	370	10,56	5,00	21,89	16,67	25,00	16,67	26,17	1	142afb0500
500	508	8	390	370	10,45	5,00	21,89	16,67	25,00	16,67	26,29	1	142afb0508
600	610	10	390	468	18,05	5,00	25,00	16,67	25,00	16,67	52,40	1	142afb0610
700	711	10	390	468	16,20	5,00	25,00	16,67	25,00	16,67	55,92	1	142afb0711
800	813	12	470	526	28,64	5,00	25,00	16,67	25,00	16,67	70,54	1	142afb0813

■ Sliding sledge height adjustable, sound insulated

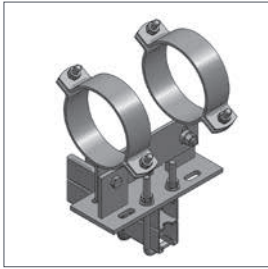
HV2, height level 2, adjustable height 150 to 200 mm

DN	Pipe-Ø	s2	L	B	F _x *	F _y	Load				Weight	Packing	Part-No.
							F _z hanging μ=0,2	F _z hanging μ=0,3	F _z standing μ=0,2	F _z standing μ=0,3			
[mm]	[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kg/pc.]	[pc.]	
200	219	6	270	256	3,72	5,00	8,52	8,52	17,05	16,67	14,11	1	142bfb0219
-	225	6	270	256	3,69	5,00	8,52	8,52	17,05	16,67	14,21	1	142bfb0225
250	273	6	270	288	3,84	5,00	8,52	8,52	17,05	16,67	15,28	1	142bfb0273
-	280	6	270	288	3,79	5,00	8,52	8,52	17,05	16,67	15,39	1	142bfb0280
-	315	6	270	288	3,60	5,00	8,52	8,52	17,05	16,67	15,82	1	142bfb0315
300	324	6	270	288	3,55	5,00	8,52	8,52	17,05	16,67	15,97	1	142bfb0324
350	356	6	270	288	3,40	5,00	8,52	8,52	17,05	16,67	16,32	1	142bfb0356
-	400	8	270	341	6,74	5,00	15,15	15,15	25,00	16,67	20,63	1	142bfb0400
400	406	8	270	341	6,69	5,00	15,15	15,15	25,00	16,67	20,78	1	142bfb0406
-	450	8	270	341	6,33	5,00	15,15	15,15	25,00	16,67	21,30	1	142bfb0450
450	457	8	270	341	6,27	5,00	15,15	15,15	25,00	16,67	21,61	1	142bfb0457
-	500	8	390	370	9,34	5,00	21,89	16,67	25,00	16,67	28,74	1	142bfb0500
500	508	8	390	370	9,26	5,00	21,89	16,67	25,00	16,67	28,88	1	142bfb0508
600	610	10	390	468	16,22	5,00	25,00	16,67	25,00	16,67	55,73	1	142bfb0610
700	711	10	390	468	14,71	5,00	25,00	16,67	25,00	16,67	59,25	1	142bfb0711
800	813	12	470	526	26,24	5,00	25,00	16,67	25,00	16,67	75,33	1	142bfb0813

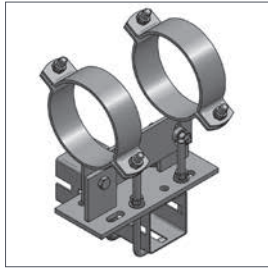
02

Sliding support as fix points

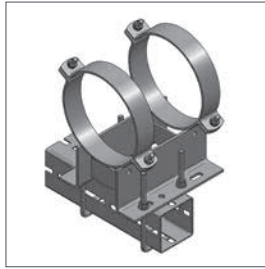
02



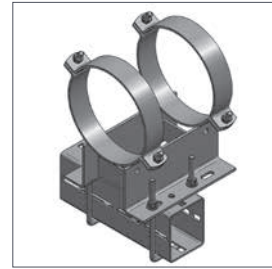
Mounting rail system profile 45, U-bolt Pos. 1



Mounting CENTUM® profile XL 80, U-bolt Pos. 2



Mounting CENTUM® profile XL 100, U-bolt Pos. 3



Mounting CENTUM® u-bolt XL 120 upright, U-bolt Pos. 3

Specification:

Required accessory: 2 x U-bolt M12,
4 x washer 13 mm, 4 x nut M12

* Galvanized

Technical data:

Material type: S235JRG
Surface: zinc-nickel

Matching u-bolt:
Identification

- U-bolt 59/150 M12** * (use in pairs)
- U-bolt 95/160 M12** (use in pairs)
- U-bolt 115/160 M12** (use in pairs)
- U-bolt 115/160 M12** (use in pairs)

For profile type

- 45/90
- XL80
- XL100
- XL120 (upright)

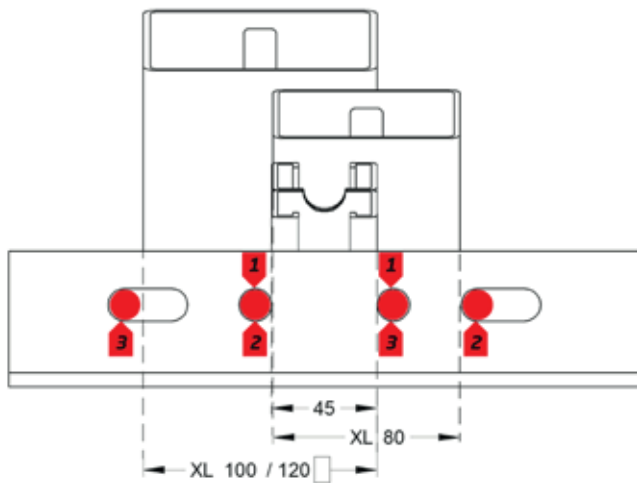
Packing

[pc.]

- 1
- 1
- 1
- 1

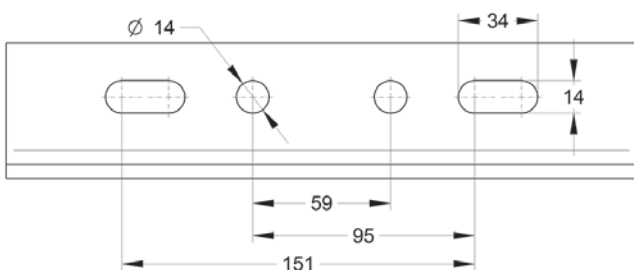
Part-No.

- 05160090
- 0516095160/zn
- 0516115160/zn
- 0516115160/zn

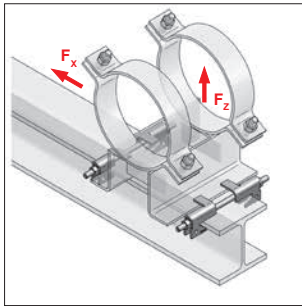


Hole pattern fixing points:

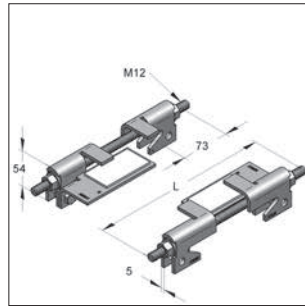
- Pos.1 for Mounting rail system profile 45
- Pos.2 for CENTUM® profile XL 80
- Pos.3 for CENTUM® profile XL 100 and XL 120 upright



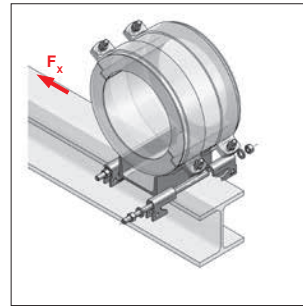
■ Guiding Clamp-Set



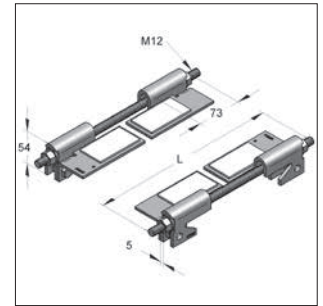
Guiding Clamp-Set type A
(assembled)



Guiding Clamp-Set type 2A



Guiding Clamp-Set type B
(assembled)



Guiding Clamp-Set type 4B

Specification

Application: for lateral guidance of sliding sledges and sliding supports on girder

Consisting of: guiding clamps, threaded pins, nuts, washers, sliding bases

Recommended torque: 64 Nm

Remark: Not suitable for hanging installation!

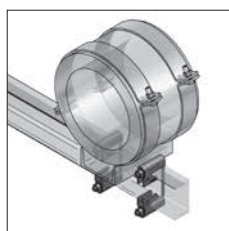
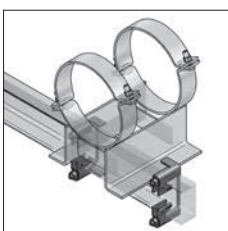
Technical data:

Material: steel
Material type: S235JR

Surface
- guiding clamps: hot-dip galvanized
- screwing: zinc-nickel

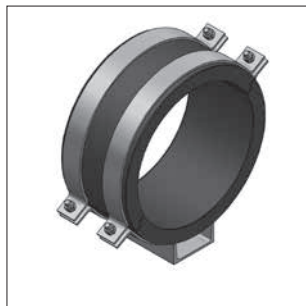
Material sliding body: PE - UHMW
Static friction factor: 0,20
Temperature resistance: - 200 °C to + 80 °C
Global safety coefficient: 1,54

Identification	Suitable for girder			max. sliding plate thickness [mm]	PE sliding base	Threaded pin M x L [mm]	Load		Weight [kg/pc.]	Packing [set]	Part-No.
	HEA	HEB	IPE				F_z [kN]	F_x [kN]			
with lift lock											
Type A I	100 - 140	100 - 120	200 - 240	18	-	M12 x 220	3,5	4,0	1,50	1	14710001
Type A II	160 - 180	140 - 160	270 - 330	18	-	M12 x 270	3,5	4,0	1,57	1	14710002
Type A III	200	180 - 200	360 - 400	18	-	M12 x 310	3,5	4,0	1,63	1	14710003
with lift lock, with sliding base											
Type 2A I	100 - 140	100 - 120	200 - 240	12	2x	M12 x 220	3,5	4,0	2,06	1	14710004
Type 2A II	160 - 180	140 - 160	270 - 330	12	2x	M12 x 270	3,5	4,0	2,13	1	14710005
Type 2A III	200	180 - 200	-	12	2x	M12 x 310	3,5	4,0	2,19	1	14710006
Type 4A III	200	180 - 200	360 - 400	12	4x	M12 x 310	3,5	4,0	2,75	1	14710007
Type 2AC I	-	-	140 - 220	12	2x	M12 x 220	1,75	4,0	1,75	1	14712002
Floating bearing without lift lock											
Type B I	100 - 140	100 - 120	200 - 240	-	-	M12 x 220	-	4,0	1,50	1	14711001
Type B II	160 - 180	140 - 160	270 - 330	-	-	M12 x 270	-	4,0	1,57	1	14711002
Type B III	200	180 - 200	360 - 400	-	-	M12 x 310	-	4,0	1,63	1	14711003
Type B IV	300 - 400	200 - 300	450 - 600	-	-	M16 x 500	-	4,0	3,51	1	147110034
Floating bearing without lift lock, with sliding base											
Type 2B I	100 - 140	100 - 120	200 - 240	-	2x	M12 x 220	-	4,0	2,06	1	14711004
Type 2B II	160 - 180	140 - 160	270 - 330	-	2x	M12 x 270	-	4,0	2,13	1	14711005
Type 4B III	200	180 - 200	360 - 400	-	4x	M12 x 310	-	4,0	2,75	1	14711007
Type 4B IV	300 - 400	200 - 300	450 - 600	-	4x	M16 x 500	-	4,0	4,63	1	14711008

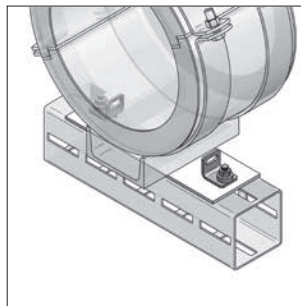
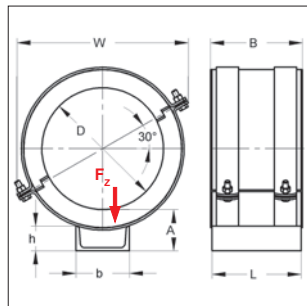


On request also for U-steel girder

■ Polar plus sliding sledge U120 / U140



Polar plus sliding sledge 140

Example: floating bearing
(without lift lock)

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

Delivery time and variant demand on request!

Sliding stripes see on page 2/2

Specification:

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

Remark: Operating loads according AGI

Technical data:

Material insulated pipe clamp: PU-hard foam with diffusion-tight coating and front-side rubber lamination.

Material pipe bracket: steel / S235JR

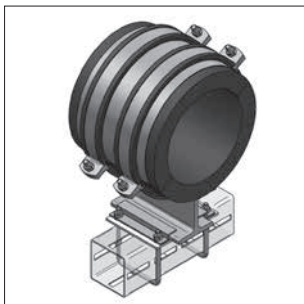
Surface: galvanized

Global safety coefficient: 1,54

Insulation thickness 40 mm

OD Steel [mm]	Shell length B [mm]	Material pipe clamp	U-Steel b x h x L [mm]	Dimension [mm]		Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
				A	W				
219,1	181	50 x 5,0	120 x 55 x 175	90	336	8,9	7,80	1	74742219
273,0	206	50 x 5,0	120 x 55 x 200	93	384	10,5	9,19	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	15,39	1	74742356
406,4	226	50 x 5,0	140 x 60 x 220	99	538	17,4	16,55	1	74742406
457,0	226	50 x 5,0	140 x 60 x 220	99	585	19,2	17,72	1	74742457

■ on request:



FOAMGLAS® sliding sledge

FOAMGLAS® sliding sledge

Waterproof

FOAMGLAS® is vapour diffusion and waterproof because it consists of closed-cell glass foam.

Advantage: Does not absorb moisture and does not swell. No moisture penetration of the insulation due to condensation. No risk of corrosion.

Vapour-tight

FOAMGLAS® is vapour-tight because it consists of hermetically sealed glass cells.

Advantage: Cannot penetrate moisture and replaces the vapour barrier. Constant thermal insulation value over decades.

Non-combustible

FOAMGLAS® is non-combustible because it consists of pure glass (DIN 4102, building material class A1, Euroclass A).

Advantage: Safe storage and processing. No fire spreading in case of fire.

Preventive disaster protection, because flammable liquids and gases are not absorbed.

Pest-proof

FOAMGLAS® is durable and pest-proof because it is inorganic.

Advantage: Risk-free insulation of all building components, also against soil and especially plant areas.

No basis for nesting, breeding and germination sites.

Pressure-resistant

FOAMGLAS® is exceptionally pressure-resistant due to its cell geometry, even under long-term load.

Advantage: Risk-free use in loaded areas. Compression-resistant insulation in the area of pipe supports.

Avoidance of thermal bridges.

Dimensionally stable

FOAMGLAS® is dimensionally stable because glass neither shrinks nor swells.

Advantage: No dishing and no shrinkage of the insulation. Cannot sag, climatic and weather influences do not change the shape and surface of the insulation. Low coefficient of expansion, almost equal to that of steel and concrete.

Acid resistant

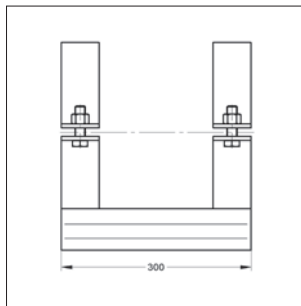
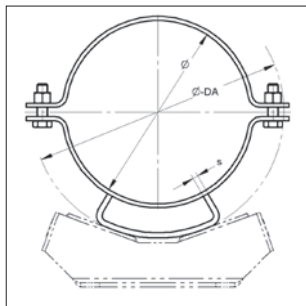
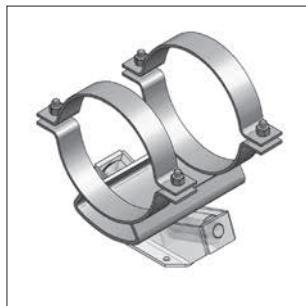
FOAMGLAS® is resistant to organic solvents and most acids because it is made of pure glass.

Advantage: No destruction of the insulation by aggressive media and atmospheres.

Easy to work with

FOAMGLAS® is easy to work with because it consists of thin-walled glass cells.

Insulation-saddle for roller-bearing



Insulation-saddle for roller-bearing

Specification:

Closure: Hexagon nut / closure-screw
 OD: 219 to 813 mm

Delivery time: on request

Technical data:

Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized

Pipe- Ø	for Insulation- thickness	s	Material pipe clamp	Ø-OD	Weight	Packing	Part-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
219	50	6	60 x 6	320	9,87	1	149afae0219
	80	6	60 x 6	380	11,30	1	149afah0219
	100	6	60 x 6	420	12,26	1	149afak0219
	120	6	60 x 6	460	13,22	1	149afam0219
	150	6	60 x 6	520	14,66	1	149afap0219
273	50	8	60 x 6	375	12,61	1	149afae0273
	80	8	60 x 6	435	14,51	1	149afah0273
	100	8	60 x 6	475	15,78	1	149afak0273
	120	8	60 x 6	515	17,04	1	149afam0273
	150	8	60 x 6	575	18,92	1	149afap0273
324	50	10	60 x 6	425	15,42	1	149afae0324
	80	10	60 x 6	485	17,77	1	149afah0324
	100	10	60 x 6	525	19,33	1	149afak0324
	120	10	60 x 6	565	20,90	1	149afam0324
	150	10	60 x 6	625	23,24	1	149afap0324
356	50	12	60 x 8	460	20,41	1	149afae0356
	80	12	60 x 8	520	23,21	1	149afah0356
	100	12	60 x 8	560	25,08	1	149afak0356
	120	12	60 x 8	600	26,94	1	149afam0356
	150	12	60 x 8	660	29,74	1	149afap0356
406	50	12	60 x 8	510	22,54	1	149afae0406
	80	12	60 x 8	570	25,27	1	149afah0406
	100	12	60 x 8	610	27,21	1	149afak0406
	120	12	60 x 8	650	29,08	1	149afam0406
	150	12	60 x 8	710	31,88	1	149afap0406

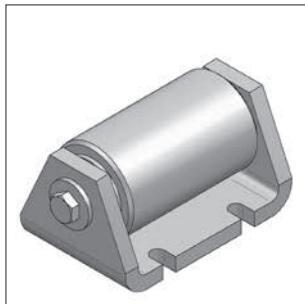
■ Insulation-saddle for roller-bearing

Pipe- Ø	for Insulation- thickness	s	Material pipe clamp	Ø-OD	Weight	Packing	Part-No.
[mm]	[mm]	[mm]	[mm]	[mm]	[kg/Pc.]	[Pc.]	
457	50	15	60 x 8	560	26,83	1	149afae0457
	80	15	60 x 8	620	30,33	1	149afah0457
	100	15	60 x 8	660	32,64	1	149afak0457
	120	15	60 x 8	700	34,96	1	149afam0457
	150	15	60 x 8	760	38,44	1	149afap0457
508	50	15	70 x 10	610	36,48	1	149afae0508
	80	15	70 x 10	670	39,97	1	149afah0508
	100	15	70 x 10	710	42,28	1	149afak0508
	120	15	70 x 10	750	44,60	1	149afam0508
	150	15	70 x 10	810	48,12	1	149afap0508
610	50	15	70 x 10	710	42,20	1	149afae0610
	80	15	70 x 10	770	45,68	1	149afah0610
	100	15	70 x 10	810	48,00	1	149afak0610
	120	15	70 x 10	850	50,33	1	149afam0610
	150	15	70 x 10	910	53,82	1	149afap0610
711	50	15	70 x 10	815	48,26	1	149afae0711
	80	15	70 x 10	875	51,75	1	149afah0711
	100	15	70 x 10	915	54,07	1	149afak0711
	120	15	70 x 10	955	56,40	1	149afam0711
	150	15	70 x 10	1015	59,88	1	149afap0711
813	50	15	70 x 10	915	54,02	1	149afae0813
	80	15	70 x 10	975	57,50	1	149afah0813
	100	15	70 x 10	1015	59,83	1	149afak0813
	120	15	70 x 10	1055	62,14	1	149afam0813
	150	15	70 x 10	1115	65,64	1	149afap0813

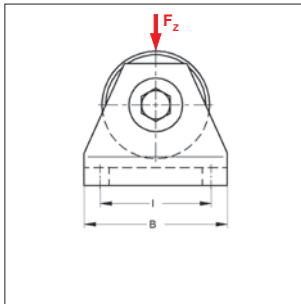
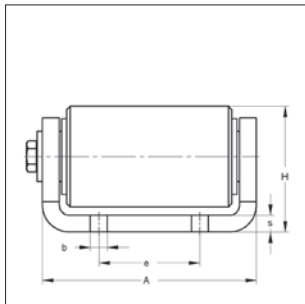
02

Single-roller bearings

02



Single-roller-bearings



Specification:

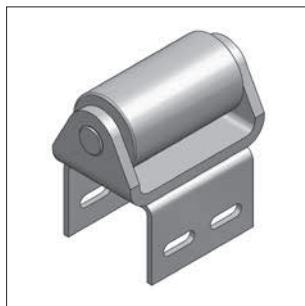
Delivery time: on request

Technical data:

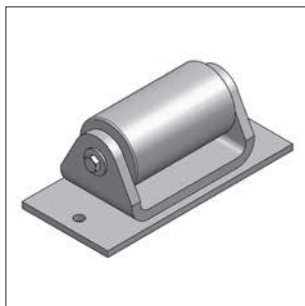
Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Material axle: stainless steel, polished
 Material bush: bronze
 Global safety coefficient: 1,54

Roller width [mm]	Dimensions			Connection-measures				Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
	A [mm]	B [mm]	H [mm]	s [mm]	b mm	e [mm]	l [mm]				
70	94	60	50	6	8	50	45	5	1,00	1	150sf060070
100	126	80	75	10	10	60	60	15	3,40	1	150sf080100
140	172	100	90	10	12	80	80	25	5,00	1	150sf100140
170	218	130	125	12	14	100	100	50	14,00	1	150sf130170

On request:

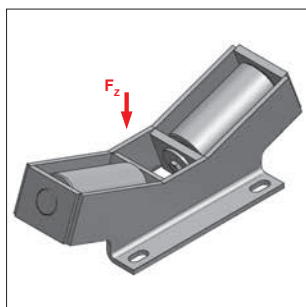


Single-roller-bearings
with CENTUM® Massive connector

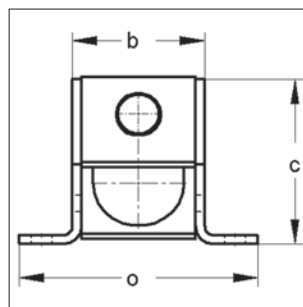
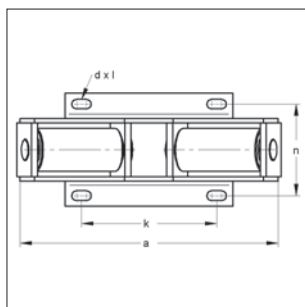


Single-roller-bearings
with welded base plate

Double-roller bearing, axial



Double-roller-bearing, axial



Specification:

If roller-bearing is welded at construction body, please pay attention, that no welding current flows through bearing body.
Load input of lateral forces up to 35% of bearing loads.

Delivery time: on request

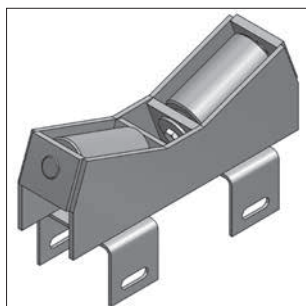
Technical data:

Material: steel
Material type: S235JR
Surface: hot-dip galvanized
Material axle: stainless steel, polished
Material bush: bronze
Global safety coefficient: 1,54

* see column ØDA for Insulation-saddle

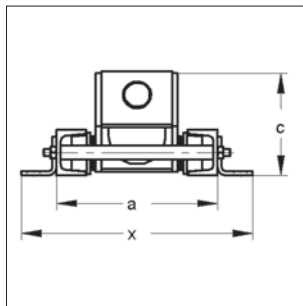
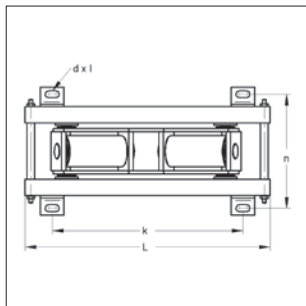
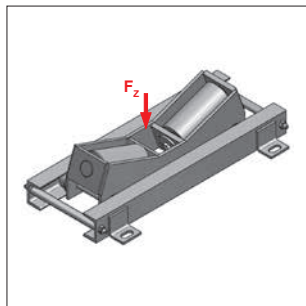
Bearing-Ø* [mm]	Load F_z [kN]	Dimensions				Connection-measures			Weight [kg/pc.]	Packing [pc.]	Part-No.
		a [mm]	b [mm]	c [mm]	o [mm]	d x l [mm]	k [mm]	n [mm]			
219 - 406	5	220	68	86	130	12 x 24	110	100	4,14	1	150df040406
323 - 660	15	335	82	109	150	14 x 28	170	120	9,44	1	150df050660
	25	335	82	109	150	14 x 28	170	120	9,50	1	150df060660
508 - 965	25	478	112	145	200	18 x 36	250	160	21,44	1	150df060965
	50	478	116	145	210	18 x 36	250	170	23,38	1	150df080965
	100	478	120	145	220	18 x 36	250	180	25,24	1	150df100965
813 - 1350	50	652	154	195	258	23 x 46	360	208	56,49	1	150df081350
	100	652	158	195	268	23 x 46	360	218	60,16	1	150df101350
	200	652	162	195	278	23 x 46	360	228	63,40	1	150df121350
1120 - 1920	100	870	190	274	330	27 x 54	500	270	112,88	1	150df101920
	200	870	194	274	340	27 x 54	500	280	118,96	1	150df121920
	300	870	200	274	350	27 x 54	500	290	128,51	1	150df151920

Double-roller bearing, axial with CENTUM®-connection



On request.

Double-roller bearing, radial-axial



Double-roller bearing
radial-axial

Specification:

Bearing loads applies for medium diameters and evenly load distributions.

Delivery time: on request

* see column ØDA for Insulation-saddle

Technical data:

Material: steel
 Material type: S235JR
 Surface: hot-dip galvanized
 Material axle: stainless steel, polished
 Material bush: bronze

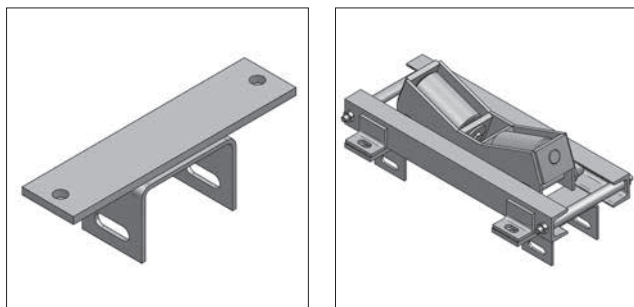
Bearing-Ø*	Load F _z [kN]	Motion [mm]	Dimension				Connection-measures			Weight [kg/pc.]	Packing [pc.]	Part-No.
			a [mm]	x [mm]	c [mm]	L [mm]	k [mm]	n [mm]	d x L [mm]			
114 - 273	3	100	156	232	76	320	180	204	14 x 27	8,62	1	150xfa030273
	3	200	156	232	76	420	280	204	14 x 27	9,85	1	150xfb030273
	3	300	156	232	76	520	380	204	14 x 27	11,09	1	150xfc030273
219 - 406	5	100	168	244	86	370	230	216	14 x 27	11,26	1	150xfa040406
	5	200	168	244	86	470	330	216	14 x 27	12,50	1	150xfb040406
	5	300	168	244	86	570	430	216	14 x 27	13,74	1	150xfc040406
323 - 660	15	100	182	250	109	485	345	230	14 x 27	18,00	1	150xfa050660
	15	200	182	250	109	585	445	230	14 x 27	19,24	1	150xfb050660
	15	300	182	250	109	685	545	230	14 x 27	20,48	1	150xfc050660
	25	100	182	250	109	485	345	230	14 x 27	18,07	1	150xfa060660
	25	200	182	250	109	585	445	230	14 x 27	19,30	1	150xfb060660
	25	300	182	250	109	685	545	230	14 x 27	20,54	1	150xfc060660
508 - 965	25	100	222	322	145	630	490	286	18 x 36	35,16	1	150xfa060965
	25	200	222	322	145	730	590	286	18 x 36	36,73	1	150xfb060965
	25	300	222	322	145	830	690	286	18 x 36	38,30	1	150xfc060965
	50	100	228	328	145	630	490	292	18 x 36	37,10	1	150xfa080965
	50	200	228	328	145	730	590	292	18 x 36	38,67	1	150xfb080965
	50	300	228	328	145	830	690	292	18 x 36	40,23	1	150xfc080965
	100	100	232	332	145	630	490	296	18 x 36	39,14	1	150xfa100965
	100	200	232	332	145	730	590	296	18 x 36	40,71	1	150xfb100965
	100	300	232	332	145	830	690	296	18 x 36	42,28	1	150xfc100965
	813 - 1350	50	100	266	386	195	805	645	340	23 x 46	73,64	1
50		200	266	386	195	905	745	340	23 x 46	75,20	1	150xfb081350
50		300	266	386	195	1005	845	340	23 x 46	76,77	1	150xfc081350
100		100	270	390	195	805	645	344	23 x 46	77,52	1	150xfa101350
100		200	270	390	195	905	745	344	23 x 46	79,08	1	150xfb101350
100		300	270	390	195	1005	845	344	23 x 46	80,65	1	150xfc101350
200		100	274	394	195	805	645	348	23 x 46	81,50	1	150xfa121350
200		200	274	394	195	905	745	348	23 x 46	83,07	1	150xfb121350
200	300	274	394	195	1005	845	348	23 x 46	84,64	1	150xfc121350	

■ Double-roller bearings, radial-axial

Bearing-Ø* [mm]	Load F _z [kN]	Motion [mm]	Dimension				Connection-measures			Weight [kg/pc.]	Packing [pc.]	Part-No.
			a [mm]	x [mm]	c [mm]	L [mm]	k [mm]	n [mm]	d x L [mm]			
1120 - 1920	100	100	308	438	274	1030	870	384	27 x 54	140,12	1	150xfa101920
	100	200	308	438	274	1130	970	384	27 x 54	142,02	1	150xfb101920
	100	300	308	438	274	1230	1070	384	27 x 54	143,93	1	150xfc101920
	200	100	312	442	274	1030	870	388	27 x 54	147,18	1	150xfa121920
	200	200	312	442	274	1130	970	388	27 x 54	149,08	1	150xfb121920
	200	300	312	442	274	1230	1070	388	27 x 54	150,99	1	150xfc121920
	300	100	318	448	274	1030	870	394	27 x 54	157,89	1	150xfa151920
	300	200	318	448	274	1130	970	394	27 x 54	159,80	1	150xfb151920
	300	300	318	448	274	1230	1070	394	27 x 54	161,70	1	150xfc151920

02

■ Double-roller bearing holder with CENTUM® connection



Double-Roller bearing holder
with CENTUM® connection

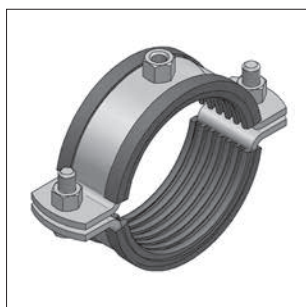
Specification:

Application area:	option to connect roller bearing with profile rail
Accessory:	T-lock M12x40 (connection to CENTUM®)
Scope of delivery:	2 roller bearing holder 4 hexagon screw M12x40 4 hexagon nut M12

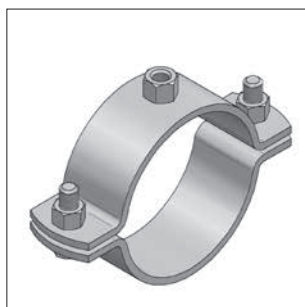
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized
Delivery time:	on request
Remark:	for each double roller bearing two roller bearing being needed

■ Pipe clamps



Pipe clamp Titan HD, lined
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Pipe clamp Titan HD
Page 3/5



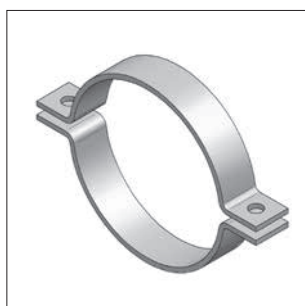
U-bolt
Page 3/7



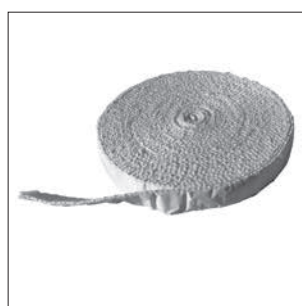
Pipe clamp Form A,
type Maxima / Titan HD
Page 3/8



Pipe clamp Form A,
type TGA
Page 3/10



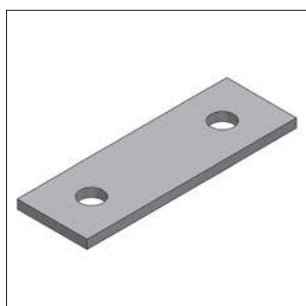
Pipe clamp form A,
Page 3/12



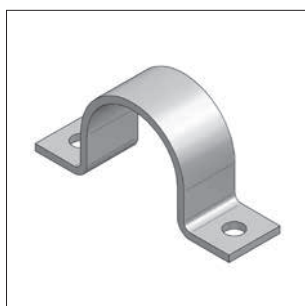
Glass fiber lining
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Mounting unit / Hanger chain
Page 3/14



2-hole Connecting plate
Page 3/14

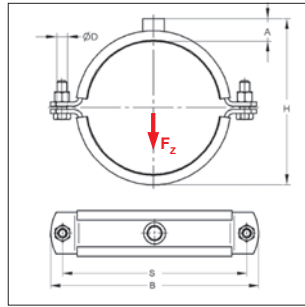
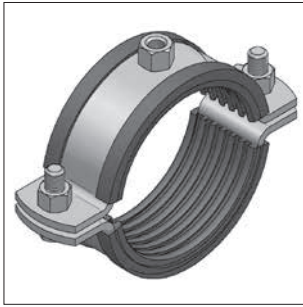


Stirrup clamp
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 Tightening torque of locking screws for pipe clamps	
All locking screws of pipe clamps must be tightened uniformly with a torque according to table 1 depending on the size of screw. Only when these tightening torques are observed, loads 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.

■ Pipe clamp Titan HD, lined



Related fire loads see chapter 15
MEFA product catalogue „fixing systems“

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"
Sound insulation: according to DIN 4109

Technical data:

Material: steel
Material type: S235JRG2
Surface: galvanized¹⁾
Sound insulation lining: Silicone²⁾ rubber TPE
Temperature resistance: - 50 °C up to + 250 °C - 35 °C up to + 100 °C
Insulation thickness: 6 mm 6 mm

²⁾ loads are also valid for pipe clamps with silicone lining, these are not RAL approved.

Connection: Thread M16				with sound insulation lining						Silicone	Rubber		
Dimension	Material	Closure-screw	Load F _z ²⁾	H	A	B	S	D	Weight	Packing	Part-No.	Part-No.	
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]			
64		50x5,0	M12	3,20	101	26	154	125	13	0,94	1	0076499	0071516
76	2 1/2	50x5,0	M12	3,20	113	26	166	137	13	1,03	1	0076503	0071520
89	3	50x5,0	M12	3,20	126	26	179	150	13	1,13	1	0076505	0071522
108		50x5,0	M12	3,20	145	26	199	170	13	1,27	1	0076511	0071528
110		50x5,0	M12	3,20	147	26	201	172	13	1,28	1	0076538	0071536
114	4	50x5,0	M12	3,20	151	26	205	176	13	1,31	1	0076554	0071552
125		50x5,0	M12	3,20	162	26	216	187	13	1,40	1	0076589	0071587
127		50x5,0	M12	3,20	164	26	218	189	13	1,41	1	0076597	0071595
133		50x5,0	M12	3,20	170	26	224	195	13	1,46	1	0076600	0071609
135		50x5,0	M12	3,20	172	26	226	197	13	1,47	1	0076619	0071617
140	5	50x5,0	M12	3,20	177	26	231	202	13	1,51	1	0076627	0071625
152		50x5,0	M12	3,20	189	26	243	214	13	1,60	1	0076643	0071641
160		50x5,0	M12	3,20	197	26	251	222	13	1,66	1	0076686	0071684
165	6	50x5,0	M12	3,20	202	26	256	227	13	1,70	1	0076694	0071692
168		50x5,0	M12	3,20	205	26	259	230	13	1,72	1	0076716	0071714
177		50x5,0	M12	11,50	214	26	268	239	13	1,79	1	0076732	0071730
180		50x5,0	M12	11,50	217	26	271	242	13	1,81	1	0076759	0071757
194		50x5,0	M12	11,50	231	26	286	257	13	1,91	1	0076775	0071773
200		50x5,0	M12	11,50	237	26	292	263	13	1,96	1	0076783	0071781
210		50x5,0	M12	11,50	247	26	302	273	13	2,03	1	0076805	0071803
219	8	50x5,0	M12	11,50	256	26	311	282	13	2,10	1	0076821	0071838
225		50x5,0	M12	11,50	262	26	317	288	13	2,15	1	0076848	0071846
245		50x5,0	M12	11,50	282	26	337	308	13	2,30	1	0076872	0071870
267		50x5,0	M12	11,50	304	26	359	330	13	2,46	1	0076899	0071897
273	10	50x5,0	M12	11,50	310	26	365	336	13	2,51	1	0076902	0071900
280		50x5,0	M12	11,50	317	26	372	343	13	2,56	1	0076929	0071927
298		50x5,0	M12	11,50	335	26	390	361	13	2,69	1	0076937	0071935
324	12	50x5,0	M12	11,50	361	26	416	387	13	2,89	1	0076945	0071943
356		50x5,0	M12	11,50	393	26	448	419	13	3,13	1	0076961	0071978
368		50x5,0	M12	11,50	405	26	460	431	13	3,22	1	0076988	0071986
406*		50x5,0	M12	11,50	443	26	498	469	13	3,50	1	0076997	0071994
457*		50x5,0	M12	11,50	494	26	549	520	13	3,89	1	0077001	0072003
508*		50x5,0	M12	11,50	545	26	600	571	13	4,27	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	Material	Closure-screw	Load $F_z^{2)}$	H	A	B	S	D	Weight	Packing	Part-No.	Part-No.	
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]			
64		50x5,0	M12	3,20	101	26	154	125	13	0,94	1	0077506	0072503
76	2 ^{1/2}	50x5,0	M12	3,20	113	26	166	137	13	1,03	1	0077510	0072508
89	3	50x5,0	M12	3,20	126	26	179	150	13	1,12	1	0077512	0072510
108		50x5,0	M12	3,20	145	26	199	170	13	1,27	1	0077518	0072516
110		50x5,0	M12	3,20	147	26	201	172	13	1,28	1	0077534	0072532
114	4	50x5,0	M12	3,20	151	26	205	176	13	1,31	1	0077550	0072559
125		50x5,0	M12	3,20	162	26	216	187	13	1,39	1	0077585	0072583
127		50x5,0	M12	3,20	164	26	218	189	13	1,41	1	0077593	0072591
133		50x5,0	M12	3,20	170	26	224	195	13	1,45	1	0077607	0072605
135		50x5,0	M12	3,20	172	26	226	197	13	1,47	1	0077615	0072613
140	5	50x5,0	M12	3,20	177	26	231	202	13	1,51	1	0077623	0072621
152		50x5,0	M12	3,20	189	26	243	214	13	1,60	1	0077631	0072648
160		50x5,0	M12	3,20	197	26	251	222	13	1,66	1	0077682	0072680
165	6	50x5,0	M12	3,20	202	26	256	227	13	1,69	1	0077690	0072699
168		50x5,0	M12	3,20	205	26	259	230	13	1,72	1	0077712	0072710
177		50x5,0	M12	11,50	214	26	268	239	13	1,78	1	0077739	0072737
180		50x5,0	M12	11,50	217	26	271	242	13	1,81	1	0077755	0072753
194		50x5,0	M12	11,50	231	26	286	257	13	1,91	1	0077771	0072761
200		50x5,0	M12	11,50	237	26	292	263	13	1,96	1	0077798	0072788
210		50x5,0	M12	11,50	247	26	302	273	13	2,03	1	0077801	0072818
219	8	50x5,0	M12	11,50	256	26	311	282	13	2,10	1	0077828	0072826
225		50x5,0	M12	11,50	262	26	317	288	13	2,14	1	0077844	0072842
245		50x5,0	M12	11,50	282	26	337	308	13	2,29	1	0077879	0072877
267		50x5,0	M12	11,50	304	26	359	330	13	2,46	1	0077895	0072893
273	10	50x5,0	M12	11,50	310	26	365	336	13	2,50	1	0077909	0072907
280		50x5,0	M12	11,50	317	26	372	343	13	2,56	1	0077925	0072923
298		50x5,0	M12	11,50	335	26	390	361	13	2,69	1	0077933	0072931
324	12	50x5,0	M12	11,50	361	26	416	387	13	2,88	1	0077941	0072958
356		50x5,0	M12	11,50	393	26	448	419	13	3,12	1	0077968	0072966
368		50x5,0	M12	11,50	405	26	460	431	13	3,21	1	0077984	0072982

Connection: Sleeve 1"				with sound insulation lining								Silicone	Rubber
Dimension	Material	Closure-screw	Load $F_z^{2)}$	H	A	B	S	D	Weight	Packing	Part-No.	Part-No.	
[mm]	[Inch]	[mm]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]			
64		50x5,0	M12	3,20	106	31	154	125	13	0,98	1	0079498	0074507
76	2 ^{1/2}	50x5,0	M12	3,20	118	31	166	137	13	1,07	1	0079502	0074511
89	3	50x5,0	M12	3,20	131	31	179	150	13	1,17	1	0079504	0074513
108		50x5,0	M12	3,20	150	31	199	170	13	1,31	1	0079510	0074519
110		50x5,0	M12	3,20	152	31	201	172	13	1,33	1	0079537	0074535
114	4	50x5,0	M12	3,20	156	31	205	176	13	1,36	1	0079553	0074551
125		50x5,0	M12	3,20	167	31	216	187	13	1,44	1	0079588	0074586
127		50x5,0	M12	3,20	169	31	218	189	13	1,46	1	0079596	0074594
133		50x5,0	M12	3,20	175	31	224	195	13	1,50	1	0079618	0074608
135		50x5,0	M12	3,20	177	31	226	197	13	1,52	1	0079626	0074616
140	5	50x5,0	M12	3,20	182	31	231	202	13	1,55	1	0079634	0074624
152		50x5,0	M12	3,20	194	31	243	214	13	1,64	1	0079642	0074640
160		50x5,0	M12	3,20	202	31	251	222	13	1,70	1	0079685	0074683

■ Pipe clamp Titan HD, lined

Connection: Sleeve 1"				with sound insulation lining								Silicone	Rubber
Dimension		Material	Closure-	Load	H	A	B	S	D	Weight	Packing	Part-No.	Part-No.
[mm]	[Inch]	[mm]	screw	$F_z^{2)}$ [kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg/pc.]	[pc.]		
165	6	50x5,0	M12	3,20	207	31	256	227	13	1,74	1	0079693	0074691
168		50x5,0	M12	3,20	210	31	259	230	13	1,76	1	0079715	0074713
177		50x5,0	M12	11,50	219	31	268	239	13	1,83	1	0079731	0074748
180		50x5,0	M12	11,50	222	31	271	242	13	1,85	1	0079758	0074756
194		50x5,0	M12	11,50	236	31	286	257	13	1,96	1	0079774	0074772
200		50x5,0	M12	11,50	242	31	292	263	13	2,00	1	0079782	0074780
210		50x5,0	M12	11,50	252	31	302	273	13	2,08	1	0079804	0074802
219	8	50x5,0	M12	11,50	261	31	311	282	13	2,15	1	0079820	0074829
225		50x5,0	M12	11,50	267	31	317	288	13	2,19	1	0079847	0074845
245		50x5,0	M12	11,50	287	31	337	308	13	2,34	1	0079871	0074861
267		50x5,0	M12	11,50	309	31	359	330	13	2,51	1	0079898	0074896
273	10	50x5,0	M12	11,50	315	31	365	336	13	2,55	1	0079901	0074918
280		50x5,0	M12	11,50	322	31	372	343	13	2,60	1	0079928	0074926
298		50x5,0	M12	11,50	340	31	390	361	13	2,74	1	0079936	0074934
324	12	50x5,0	M12	11,50	366	31	416	387	13	2,93	1	0079944	0074942
356		50x5,0	M12	11,50	398	31	448	419	13	3,17	1	0079960	0074969
368		50x5,0	M12	11,50	410	31	460	431	13	3,26	1	0079987	0074985
406*		50x5,0	M12	11,50	448	31	498	469	13	3,55	1	00799895	0074993
457*		50x5,0	M12	11,50	499	31	549	520	13	3,93	1	00799903	0075003
508*		50x5,0	M12	11,50	550	31	600	571	13	4,31	1	00799907	0075013

Without connection thread				with sound insulation lining								Silicone	Rubber
406*	50x5,0	without VS	11,50	428	-	498	469	13	3,33	1	0075990	0070979	
457*	50x5,0	without VS	11,50	479	-	549	520	13	3,71	1	0075998	0070989	
508*	50x5,0	without VS	11,50	530	-	600	571	13	4,09	1	0076009	0070996	

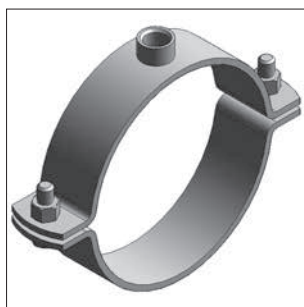
* not certified acc. to RAL-GZ 655-B

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.

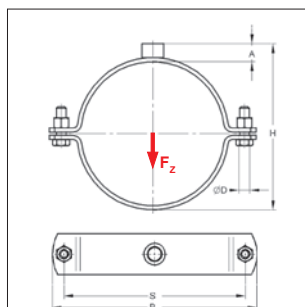
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

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

■ Pipe clamp Titan HD, unlined



Pipe clamp Titan HD, unlined



Related fire loads see chapter 15
MEFA product catalogue „fixing systems“

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!

03

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 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	0,79	1	0071515
76	2 1/2	50x5,0	M12	6,00	101	20	153	124	13	0,86	1	0071519
89	3	50x5,0	M12	6,00	114	20	167	138	13	0,95	1	0071521
108		50x5,0	M12	6,00	133	20	186	17	13	1,07	1	0071527
110		50x5,0	M12	6,00	135	20	188	159	13	1,08	1	0071529
114	4	50x5,0	M12	6,00	139	20	192	163	13	1,11	1	0071530
133		50x5,0	M12	6,00	158	20	212	183	13	1,23	1	0071588
135		50x5,0	M12	6,00	160	20	214	185	13	1,24	1	0071596
140	5	50x5,0	M12	6,00	165	20	219	190	13	1,27	1	0071610
160		50x5,0	M12	6,00	185	20	239	210	13	1,40	1	0071642
165	6	50x5,0	M12	6,00	190	20	244	215	13	1,43	1	0071685
168		50x5,0	M12	6,00	193	20	247	218	13	1,45	1	0071687
194		50x5,0	M12	16,00	219	20	273	244	13	1,61	1	0071758
200		50x5,0	M12	16,00	225	20	279	250	13	1,65	1	0071774
210		50x5,0	M12	16,00	235	20	290	261	13	1,72	1	0071784
219	8	50x5,0	M12	16,00	244	20	299	270	13	1,77	1	0071804
267		50x5,0	M12	16,00	292	20	347	318	13	2,08	1	0071873
273	10	50x5,0	M12	16,00	298	20	353	324	13	2,12	1	0071898
324	12	50x5,0	M12	16,00	349	20	404	375	13	2,44	1	0071939
356		50x5,0	M12	16,00	381	20	436	407	13	2,64	1	0071977
368	14	50x5,0	M12	16,00	393	20	448	419	13	2,72	1	0071979
406*		50x5,0	M12	16,00	431	20	486	457	13	2,96	1	0071993
457*		50x5,0	M12	16,00	482	20	537	508	13	3,29	1	00720091
508*		50x5,0	M12	16,00	533	20	588	559	13	3,61	1	007205082

Connection: Sleeve 1/2"

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	0,78	1	0072502
76	2 1/2	50x5,0	M12	6,00	101	20	153	124	13	0,86	1	0072507
89	3	50x5,0	M12	6,00	114	20	167	138	13	0,94	1	0072509
108		50x5,0	M12	6,00	133	20	186	17	13	1,06	1	0072514
110		50x5,0	M12	6,00	135	20	188	159	13	1,08	1	0072517
114	4	50x5,0	M12	6,00	139	20	192	163	13	1,10	1	0072519
133		50x5,0	M12	6,00	158	20	212	183	13	1,22	1	0072584
135		50x5,0	M12	6,00	160	20	214	185	13	1,23	1	0072592
140	5	50x5,0	M12	6,00	165	20	219	190	13	1,27	1	0072606

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

■ Pipe clamp Titan HD, unlined

Connection: Sleeve 1/2"				without sound insulation lining								
Dimension		Material	Closure-screw	Load F _Z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
[mm]	[Inch]	[mm]										
160		50x5,0	M12	6,00	185	20	239	210	13	1,39	1	0072649
165	6	50x5,0	M12	6,00	190	20	244	215	13	1,43	1	0072681
168		50x5,0	M12	6,00	193	20	247	218	13	1,44	1	0072683
194	7	50x5,0	M12	16,00	219	20	273	244	13	1,61	1	0072754
200		50x5,0	M12	16,00	225	20	279	250	13	1,65	1	0072762
210		50x5,0	M12	16,00	235	20	290	261	13	1,71	1	0072791
219	8	50x5,0	M12	16,00	244	20	299	270	13	1,77	1	0072819
267		50x5,0	M12	16,00	292	20	347	318	13	2,07	1	0072892
273	10	50x5,0	M12	16,00	298	20	353	324	13	2,11	1	0072894
324	12	50x5,0	M12	16,00	349	20	404	375	13	2,44	1	0072955
356		50x5,0	M12	16,00	381	20	436	407	13	2,64	1	0072965
368	14	50x5,0	M12	16,00	393	20	448	419	13	2,72	1	0072967

Connection: Sleeve 1"				without sound insulation lining								
Dimension		Material	Closure-screw	Load F _Z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
[mm]	[Inch]	[mm]										
64		50x5,0	M12	6,00	94	25	141	112	13	0,83	1	0074505
76	2 ^{1/2}	50x5,0	M12	6,00	106	25	153	124	13	0,91	1	0074510
89	3	50x5,0	M12	6,00	119	25	167	138	13	0,99	1	0074512
108		50x5,0	M12	6,00	138	25	186	157	13	1,11	1	0074520
110		50x5,0	M12	6,00	140	25	188	159	13	1,12	1	0074522
114	4	50x5,0	M12	6,00	144	25	192	163	13	1,15	1	0074524
133		50x5,0	M12	6,00	163	25	212	183	13	1,27	1	0074587
135		50x5,0	M12	6,00	165	25	214	185	13	1,28	1	0074595
140	5	50x5,0	M12	6,00	170	25	219	190	13	1,31	1	0074609
160		50x5,0	M12	6,00	190	25	239	210	13	1,44	1	0074641
165	6	50x5,0	M12	6,00	195	25	244	215	13	1,47	1	0074684
168		50x5,0	M12	6,00	198	25	247	218	13	1,49	1	0074686
194	7	50x5,0	M12	16,00	224	25	273	244	13	1,66	1	0074757
200		50x5,0	M12	16,00	230	25	279	250	13	1,70	1	0074773
210		50x5,0	M12	16,00	240	25	290	261	13	1,76	1	0074781
219	8	50x5,0	M12	16,00	249	25	299	270	13	1,82	1	0074803
267		50x5,0	M12	16,00	297	25	347	318	13	2,12	1	0074874
273	10	50x5,0	M12	16,00	303	25	353	324	13	2,16	1	0074897
324	12	50x5,0	M12	16,00	354	25	404	375	13	2,48	1	0074939
356		50x5,0	M12	16,00	386	25	436	407	13	2,69	1	0074968
368	14	50x5,0	M12	16,00	398	25	448	419	13	2,76	1	0074970
406*		50x5,0	M12	16,00	436	25	486	457	13	3,01	1	0074992
457*		50x5,0	M12	16,00	487	25	537	508	13	3,33	1	00749995
508*		50x5,0	M12	16,00	538	25	588	559	13	3,65	1	0075012

Without connection thread				without sound insulation lining								
Dimension		Material	Closure-screw	Load F _Z [kN]	H [mm]	A [mm]	B [mm]	S [mm]	D [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
[mm]	[Inch]	[mm]										
406*		50x5,0	without VS	16,00	416	-	486	457	13	2,79	1	0070978
457*		50x5,0	without VS	16,00	467	-	537	508	13	3,11	1	00709887
508*		50x5,0	without VS	16,00	518	-	588	559	13	3,44	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.

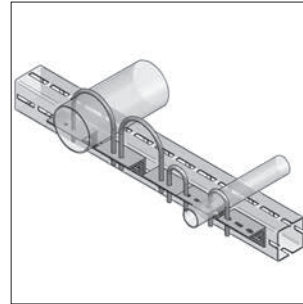
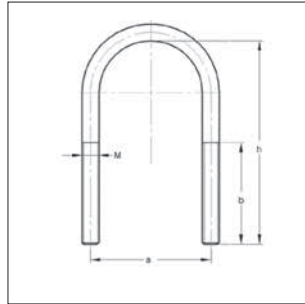
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

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

U-bolt



U-bolt

Pipe holder
pageSeite 1/25

Specification:

OD: 60 up to 324 mm
 Connection: M8, M10, M12, M20
 Delivery time: on request

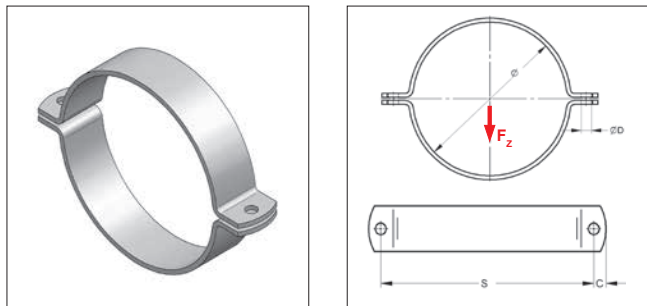
Technical data:

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

U-bolt galvanized see MEFA product catalogue „fixing systems“ chapter 1

U-bolt differing from DIN 3570									without nuts
OD		for max.	Thread	Overall height	Center distance	Length of thread	Weight	Packing	Part-No.
[mm]	[Inch]	profile height	M	h	a	b	[kg/pc.]	[pc.]	
60,3	2	40	M10	120	71	70	0,141	1	0507060/zn
76,1	2 ^{1/2}	40	M10	140	87	75	0,169	1	050707601/zn
88,9	3	40	M10	150	100	70	0,179	1	0507089/zn
114,3	4	60	M12	200	126	95	0,348	1	050711401/zn
139,7	5	60	M12	225	152	95	0,394	1	050714001/zn
168,3	6	60	M12	255	180	95	0,449	1	050716801/zn
219,1	8	60	M12	300	233	95	0,525	1	0507219/zn
U-bolt without nuts according to DIN 3570									
323,9	12	20	M20	364	352	70	1,929	1	0507324/zn

■ Pipe clamp Form A, Titan HD, unlined



Pipe clamp shape A
Titan HD

Specification:

Closure:	closure-screw
Construction method:	two-part
OD:	64 up to 368 mm
Connection:	without connection
Delivery time:	on request
	bright or hot dip galvanised on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

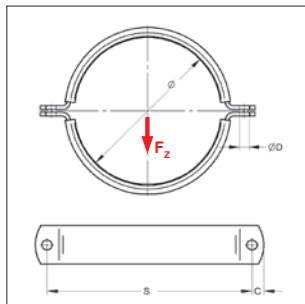
OD	Material	Accessory: screw	ØD	S	C	Weight	Packing	Part-No.
[mm]	[mm]		[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	galvanized
64	50x5,0	M12	13,0	112	14,5	0,61	1	0070500
76	50x5,0	M12	13,0	124	14,5	0,69	1	0070504
89	50x5,0	M12	13,0	138	14,5	0,77	1	0070506
108	50x5,0	M12	13,0	157	14,5	0,89	1	0070512
110	50x5,0	M12	13,0	159	14,5	0,91	1	0070515
114	50x5,0	M12	13,0	163	14,5	0,93	1	0070514
133	50x5,0	M12	13,0	183	14,5	1,05	1	0070581
135	50x5,0	M12	13,0	185	14,5	1,06	1	0070600
140	50x5,0	M12	13,0	190	14,5	1,10	1	0070603
159	50x5,0	M12	13,0	209	14,5	1,22	1	0070647
165	50x5,0	M12	13,0	215	14,5	1,26	1	0070686
168	50x5,0	M12	13,0	218	14,5	1,27	1	0070689
194	50x5,0	M12	13,0	244	14,5	1,44	1	0070751
200	50x5,0	M12	13,0	250	14,5	1,48	1	0070778
210	50x5,0	M12	13,0	261	14,5	1,54	1	0070786
219	50x5,0	M12	13,0	270	14,5	1,60	1	0070808
267	50x5,0	M12	13,0	318	14,5	1,90	1	0070881
273	50x5,0	M12	13,0	324	14,5	1,94	1	0070891
324	50x5,0	M12	13,0	375	14,5	2,27	1	0070945
356	50x5,0	M12	13,0	407	14,5	2,47	1	0070962
368	50x5,0	M12	13,0	419	14,5	2,55	1	0070964

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 Form A, Titan HD, lined



Pipe clamp Form A
Titan HD



03

Specification:

Closure:	closure-screw
Construction method:	two-part
OD:	64 up to 368 mm
Connection:	without connection
Sound insulation:	for DIN 4109
Delivery time:	on request
	bright or hot dip galvanised on request

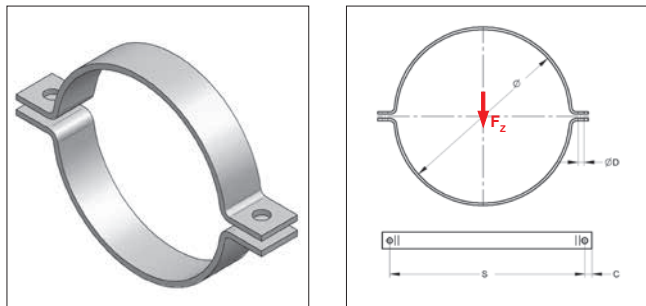
Technical data:

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

OD	Material	Accessory: screw	ØD	S	C	Weight	Packing	Part-No.
[mm]	[mm]		[mm]	[mm]	[mm]	[kg/pc.]	[pc.]	
64	50x5,0	M12	13,0	125	14,5	0,76	1	0070501
76	50x5,0	M12	13,0	137	14,5	0,85	1	0070505
89	50x5,0	M12	13,0	150	14,5	0,95	1	0070507
108	50x5,0	M12	13,0	170	14,5	1,10	1	0070513
110	50x5,0	M12	13,0	172	14,5	1,11	1	0070548
114	50x5,0	M12	13,0	176	14,5	1,14	1	0070556
133	50x5,0	M12	13,0	195	14,5	1,28	1	0070602
135	50x5,0	M12	13,0	197	14,5	1,30	1	0070610
140	50x5,0	M12	13,0	202	14,5	1,34	1	0070629
159	50x5,0	M12	13,0	221	14,5	1,48	1	0070649
165	50x5,0	M12	13,0	227	14,5	1,52	1	0070696
168	50x5,0	M12	13,0	230	14,5	1,55	1	0070718
194	50x5,0	M12	13,0	257	14,5	1,74	1	0070777
200	50x5,0	M12	13,0	263	14,5	1,79	1	0070785
210	50x5,0	M12	13,0	273	14,5	1,86	1	0070807
219	50x5,0	M12	13,0	282	14,5	1,93	1	0070823
267	50x5,0	M12	13,0	330	14,5	2,29	1	0070890
273	50x5,0	M12	13,0	336	14,5	2,33	1	0070904
324	50x5,0	M12	13,0	387	14,5	2,71	1	0070947
356	50x5,0	M12	13,0	419	14,5	2,95	1	0070963
368	50x5,0	M12	13,0	431	14,5	3,04	1	0070971

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 Form A, type TGA, unlined



Pipe clamp Form A, type TGA

Specification:

Closure:	nut / closure-screw
Construction method:	two-part
OD:	219 up to 1220 mm
Connection:	without connection
Delivery time:	on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

OD [mm]	Material [mm]	accessory: screw	Load F_z [kN]	$\varnothing D$ [mm]	S [mm]	C [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
219	60 x 6	M16	16,0	17	288	24	2,55	1	109ffaa0219
267	60 x 6	M16	16,0	17	337	24	3,00	1	109ffaa0267
273	60 x 6	M16	16,0	17	343	24	3,05	1	109ffaa0273
324	60 x 6	M16	16,0	17	395	24	3,54	1	109ffaa0324
356	60 x 8	M16	16,0	17	430	24	5,06	1	109fgaa0356
368	60 x 8	M16	16,0	17	442	24	5,22	1	109fgaa0368
406	60 x 8	M16	16,0	17	481	24	5,68	1	109fgaa0406
419	60 x 8	M16	16,0	17	494	24	5,85	1	109fgaa0419
457	60 x 8	M16	16,0	17	532	24	6,32	1	109fgaa0457
508	70 x 10	M20	16,0*	23	598	30	10,23	1	109fhaa0508
521	70 x 10	M20	16,0*	23	611	30	10,47	1	109fhaa0521
610	70 x 10	M20	16,0*	23	700	30	12,07	1	109fhaa0610
711	70 x 10	M20	16,0*	23	802	30	13,88	1	109fhaa0711
813	70 x 10	M20	16,0*	23	904	30	15,73	1	109fhaa0813
914	90 x 15	M24	16,0*	27	1034	36	33,42	1	109fkaa0914
1016	90 x 15	M24	16,0*	27	1137	36	37,82	1	109fkaa1016
1220	90 x 15	M24	16,0*	27	1341	36	45,06	1	109fkaa1220

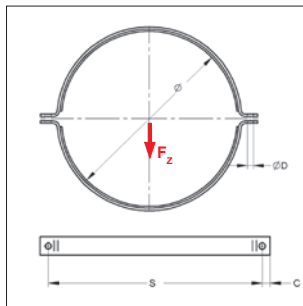
* mounting distances < 6m

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 Form A, type TGA, lined



Pipe clamp Form A, type TGA



03

Specification:

Closure:	nut / closure-screw
Construction method:	two-part
OD:	219 up to 1220 mm
Connection:	without connection
Sound insulation:	for DIN 4109
Delivery time:	on request

Technical data:

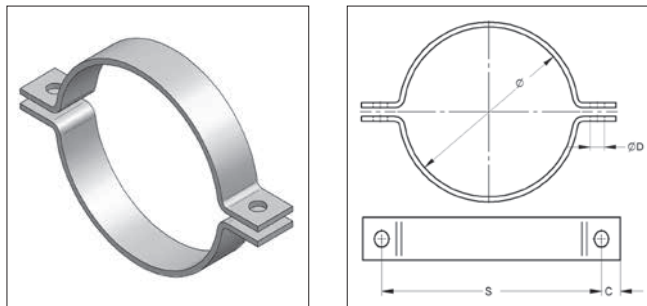
Material:	steel
Material type:	S235JR
Surface:	galvanized
Sound insulation lining:	EPDM lining
Temperature resistance:	- 35 °C up to + 100 °C
Insulation thickness:	8 mm

OD [mm]	Material [mm]	Accessory: screw	Load F_z [kN]	ØD [mm]	S [mm]	C [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
219	60 x 6	M16	11,50	17	304	24	3,27	1	109gfba0219
267	60 x 6	M16	11,50	17	353	24	3,85	1	109gfba0267
273	60 x 6	M16	11,50	17	359	24	3,92	1	109gfba0273
324	60 x 6	M16	11,50	17	411	24	4,54	1	109gfba0324
356	60 x 8	M16	11,50	17	446	24	6,18	1	109ggba0356
368	60 x 8	M16	11,50	17	458	24	6,37	1	109ggba0368
406	60 x 8	M16	11,50*	17	497	24	6,93	1	109ggba0406
419	60 x 8	M16	11,50*	17	510	24	7,13	1	109ggba0419
457	60 x 8	M16	11,50*	17	548	24	7,70	1	109ggba0457
508	70 x 10	M20	11,50*	23	614	30	12,04	1	109ghba0508
521	70 x 10	M20	11,50*	23	627	30	12,31	1	109ghba0521
610	70 x 10	M20	11,50*	23	716	30	14,18	1	109ghba0610
711	70 x 10	M20	11,50*	23	818	30	16,29	1	109ghba0711
813	70 x 10	M20	11,50*	23	920	30	18,44	1	109ghba0813
914	90 x 15	M24	11,50*	27	1050	36	38,24	1	109gkba0914
1016	90 x 15	M24	11,50*	27	1153	36	42,24	1	109gkba1016
1220	90 x 15	M24	11,50*	27	1357	36	50,26	1	109gkba1220

* mounting distances < 6m

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 Form A, DIN 3567, unlined



Pipe clamp Form A, DIN 3567

Specification:

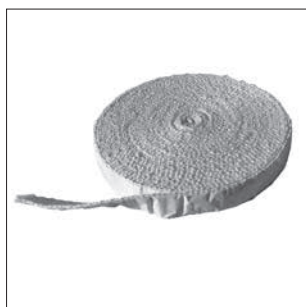
Closure:	nut / closure-screw
Construction method:	two-part
OD:	25 up to 521 mm
Connection:	without connection
Delivery time:	on request

Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

OD [mm]	Material [mm]	Accessory: screw	ØD [mm]	S [mm]	C [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
25	30 x 5	M10	11,5	62	15	0,25	1	107afd0025
27	30 x 5	M10	11,5	66	15	0,26	1	107afd0027
30	30 x 5	M10	11,5	68	15	0,27	1	107afd0030
34	30 x 5	M10	11,5	72	15	0,29	1	107afd0034
43	30 x 5	M10	11,5	82	15	0,33	1	107afd0043
49	30 x 5	M10	11,5	88	15	0,35	1	107afd0049
57	40 x 6	M12	14,0	104	18	0,64	1	107aff0057
61	40 x 6	M12	14,0	108	18	0,67	1	107aff0061
77	40 x 6	M12	14,0	122	18	0,77	1	107aff0077
89	40 x 6	M12	14,0	136	18	0,85	1	107aff0089
108	50 x 8	M16	18,0	172	24	1,75	1	107afh0108
115	50 x 8	M16	18,0	178	24	1,83	1	107afh0115
133	50 x 8	M16	18,0	196	24	2,02	1	107afh0133
140	50 x 8	M16	18,0	204	24	2,11	1	107afh0140
159	50 x 8	M16	18,0	222	24	2,30	1	107afh0159
169	50 x 8	M16	18,0	232	24	2,41	1	107afh0169
194	50 x 8	M16	18,0	258	24	2,69	1	107afh0194
220	50 x 8	M16	18,0	284	24	3,03	1	107afh0220
267	60 x 8	M20	23,0	342	30	4,29	1	107afi0267
273	60 x 8	M20	23,0	348	30	4,37	1	107afi0273
324	60 x 8	M20	23,0	398	30	5,04	1	107afi0324
356	60 x 8	M20	23,0	432	30	5,45	1	107afi0356
368	60 x 8	M20	23,0	444	30	5,61	1	107afi0368
407	70 x 10	M24	27,0	498	36	9,06	1	107afk0407
457	70 x 10	M24	27,0	550	36	10,03	1	107afk0457
508	70 x 10	M24	27,0	600	36	10,99	1	107afk0508
521	70 x 10	M24	27,0	614	36	11,24	1	107afk0521

■ Glass fiber lining



Glass fiber lining

03

Specification:

Application area: Glass fiber lining for thermal separation, sound-decoupling and prevention of contact corrosion

Attributes: self-adhesive

Technical data:

Material: glass filament yarn

Thickness: 5 mm

Temperature - resistance: up to 450° C
(Glue as a mounting aid up to 100° C.)

Remark: For high temperature pipes eventually consider a reduction of bearing loads acc. DIN EN 1993 and DIN EN 13480-3

Info: fiber glass tapes for pipe clamps available in requested length and attached lose

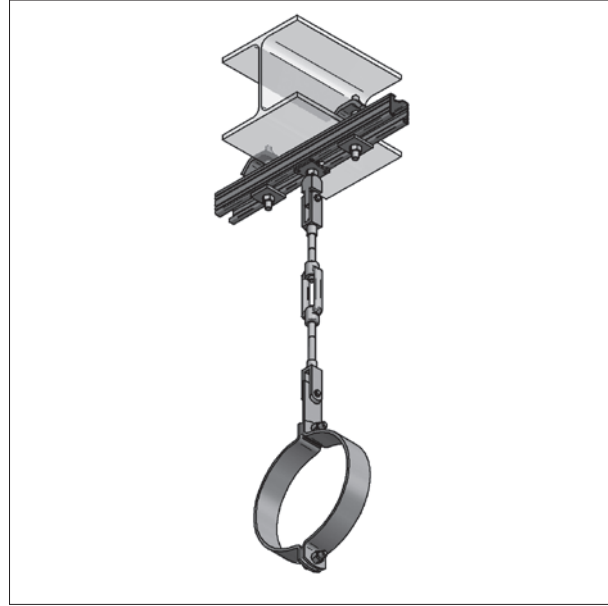
Identification	Dimension [mm]	Weight [kg/m]	Packing [m]	Part.-No.
Glass fiber lining, self-adhesive	25x5	0,068	25	723022505
Glass fiber lining, self-adhesive	30x5	0,081	25	723023005
Glass fiber lining, self-adhesive	35x5	0,098	25	723023505
Glass fiber lining, self-adhesive	50x5	0,135	25	723025005

■ Mounting unit / Hanger chain

03

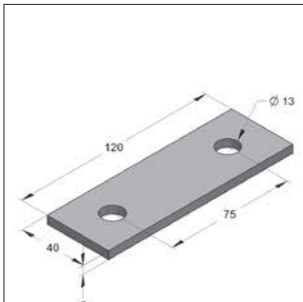


Hanger chain on CENTUM® profile

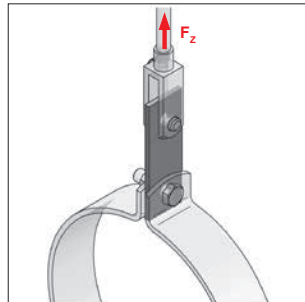


Hanger chain on system 45

■ 2-hole connection lug for hanger chain



Connecting lug mounting unit / hanger chain



Connecting lug with Titan HD and U-head
page 1/18

Specification:

Application area: for connection of Titan HD-pipe clamps with U-head on mounting unit / hanger chain

Remark: connection lug for higher strains or for M16 connector on request

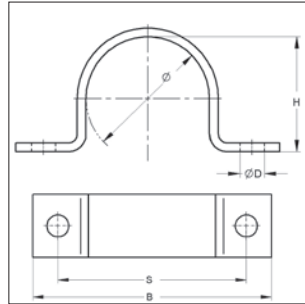
Technical data:

Material: steel
Material type: S235JR
Surface: galvanized
Safety factor: 1,54

Identification	Dimension plate length x width x strength [mm]	Hole [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part.-No.
Connection lug	120 x 40 x 5,0	13,0	12,5	0,190	1	1660001413

i suitable locking screws and nuts see on page 4/13

■ Stirrup clamp according to DIN 1593



Stirrup clamp according
to DIN 1593

Specification:

Closure:	one-piece
OD:	20 up to 219 mm
Connection:	without connection
Delivery time:	on request

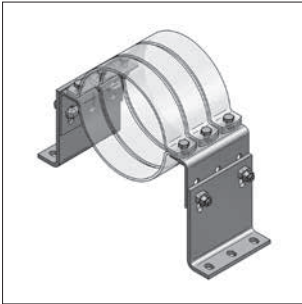
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galvanized

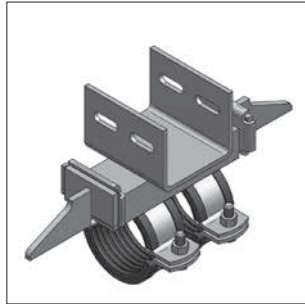
* similar to DIN 1593

OD [mm]	Material [mm]	Ø [mm]	B [mm]	S [mm]	ØD [mm]	H [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
20 - 23	25 x 3	23,0	82	56	11	19	0,070	1	106ffb0023
23 - 26	25 x 3	26,0	84	58	11	22	0,080	1	106ffb0026
26 - 29	25 x 3	28,5	90	64	11	24	0,080	1	106ffb0029
29 - 31	25 x 3	31,0	90	64	11	27	0,090	1	106ffb0031
33 - 36	30 x 5	36,0	106	80	11	32	0,190	1	106ffd0036
36 - 39	30 x 5	39,0	110	84	11	34	0,200	1	106ffd0039
39 - 43	30 x 5	43,0	120	88	14	38	0,220	1	106ffd0043
43 - 46	30 x 5	46,0	122	90	14	41	0,230	1	106ffd0046
46 - 49	30 x 5	49,0	122	90	14	44	0,230	1	106ffd0049
53 - 58	40 x 5	58,0	142	110	14	52	0,370	1	106ffn0058
58 - 61	40 x 5	61,0	142	110	14	57	0,380	1	106ffn0061
67 - 71	40 x 5	71,0	152	120	14	66	0,430	1	106ffn0071
73 - 77	40 x 5	77,0	176	136	18	72	0,480	1	106ffn0077
77 - 81	40 x 5	81,0	184	144	18	76	0,500	1	106ffn0081
86 - 91	40 x 8	91,0	198	158	18	85	0,850	1	106ffo0091
99 - 103	40 x 8	103,0	214	174	18	98	0,950	1	106ffo0103
105 - 109	40 x 8	109,0	220	180	18	104	1,000	1	106ffo0109
110 - 115	40 x 8	115,0	226	186	18	109	1,030	1	106ffo0115
133 *	50 x 8	133,0	262	214	18	128	1,270	1	106ffh0133
140 *	50 x 8	140,0	270	222	18	135	1,320	1	106ffh0140
159 *	50 x 8	159,0	288	240	18	154	1,500	1	106ffh0159
168 *	50 x 8	169,0	298	250	18	161	1,800	1	106ffh0168
194 *	50 x 8	194,0	326	278	18	189	1,800	1	106ffh0194
219 *	50 x 8	220,0	356	308	18	215	2,270	1	106ffh0219

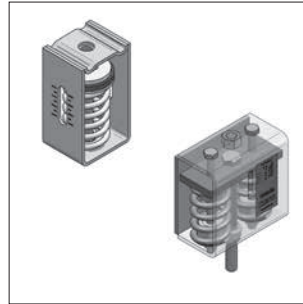
■ Accessory



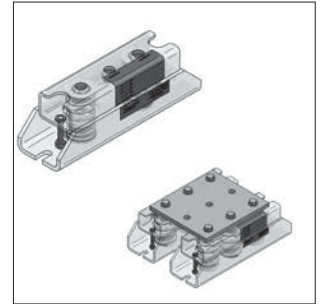
Fixpoint bracket HV
Page 4/2



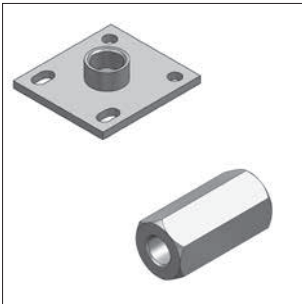
Fixpoint with CENTUM®
Massive connector
Page 4/3



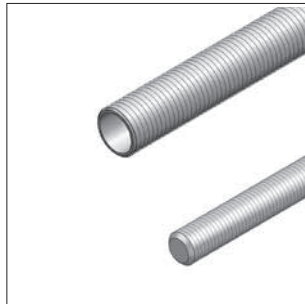
Spring insulator FH1 / FH2
Page 4/5



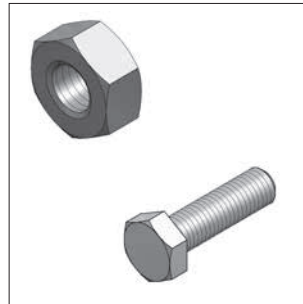
Spring bearing FL / FLD
Page 4/8



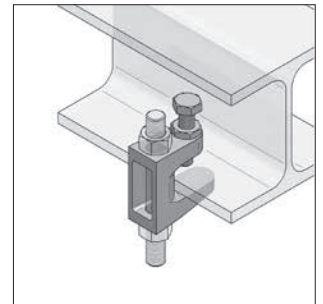
Base plates, Threaded coupling
Page 4/10



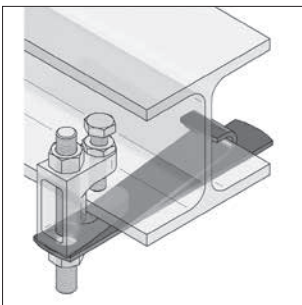
Threaded rods, Distance tube
Page 4/11



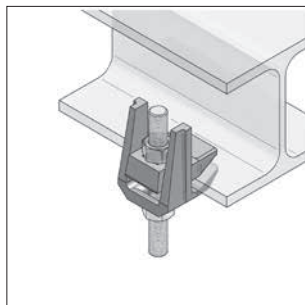
Hexagon nut, Hexagon screw
Page 4/13



Washer, Girder clamps
Page 4/14



Safety lug
Page 4/15



Girder clamp F3 / F9
Page 4/16

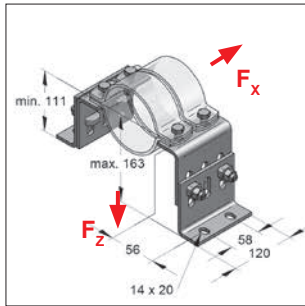


Bolt anchor BZ plus,
Bolt anchor BZ plus A4
Page 4/17

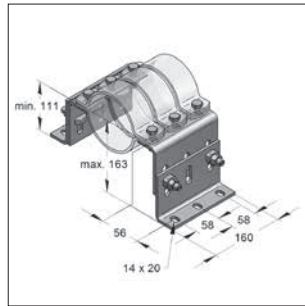


Injection system VMZ,
Injection system VMZ A4
Page 4/20

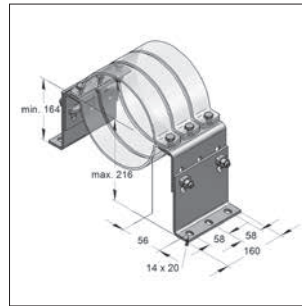
Fixpoint bracket HV



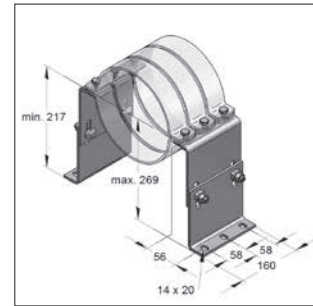
Fixpoint bracket HV1



Fixpoint bracket HV2



Fixpoint bracket HV3



Fixpoint bracket HV4

04

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 girder)

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
Safety factor: 1,54

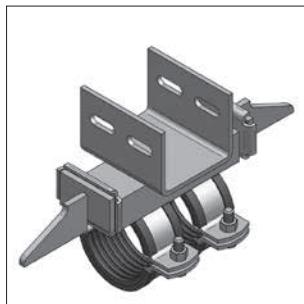
Tightening torque
- pipe clamp: 60 Nm
- T-lock: 120 Nm

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

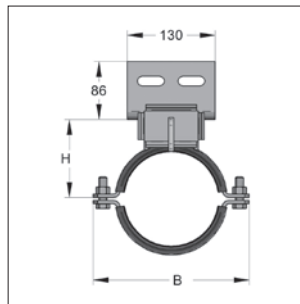
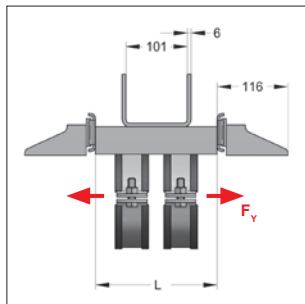
Type	Length L [mm]	Axis height min.-max. [mm]	Number of fixpoint clamps [pcs.]	Reco- mmended pipe OD [mm]	Angle		Load		Weight [kg/pc.]	Packing [pc.]	Part-No.
					stilt [pair]	side part [pair]	F _x [kN]	F _z [kN]			
HV1	120	111-163	2	64-273	120/6/100	120/6/100	20	12	3,58	1	00200405/fvz
HV2	160	111-163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

i Suitable Titan HD clamps 50/5 without connection thread must be ordered separately

■ Fixpoint type A with CENTUM® XL100 massive connector



Fixpoint type A with CENTUM®
massive connector



Specification:

Application: established MEFA fixpoint for high power transmission while sound insulation. Due to welded Massive connector it's possible to mount this fixpoint directly at CENTUM® square profile.

Sound insulation: according to DIN 4109
Accessory: T-lock M12x40

Technical data:

Material: Steel
Material type: S235JR
Surface: galvanized
Pressure piece: raw (welding on pipe on site)

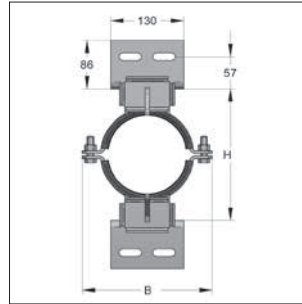
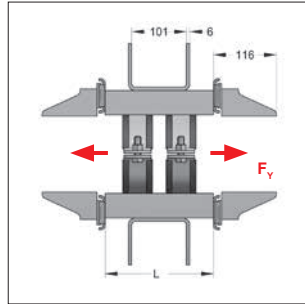
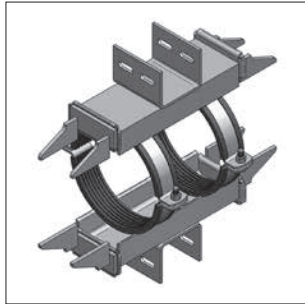
Sound insulation lining: **Silicone (on request)** TPE/EPDM lining
Temperature resistance: **- 50°C up to +250°C** - 35 °C up to + 100 °C
On request: Massive connector vertical/horizontal, XL120, XL 80

¹⁾ Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left) and CENTUM® construction too. The quality of weld seam has to be proofed.

Fixpoint type A

Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel			H [mm]	B [mm]	Load ¹⁾ F _y [kN]	Weight [kg/pc.]	Packing [pc.]	TPE/EPDM
		[mm]	[mm]	L [mm]						Part-No.
60,3	50 x 5	65	42	200	72	148	20	6,12	1	9993633
76,1	50 x 5	65	42	200	82	166	20	6,36	1	9993732
88,9	50 x 5	65	42	200	90	179	20	6,55	1	9994027
114,3	50 x 5	65	42	200	104	205	20	6,93	1	9993256
139,7	50 x 5	80	45	200	118	231	20	7,69	1	9993733
168,3	50 x 5	120	55	330	132	258	20	11,75	1	9993734
219,1	50 x 5	120	55	330	161	309	20	12,51	1	9992830
273 - 274	50 x 5	120	55	330	192	363	20	13,32	1	9992178

■ Fixpoint type B with CENTUM® XL100 massive connector



Fixpoint type B with CENTUM® massive connector

04

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:

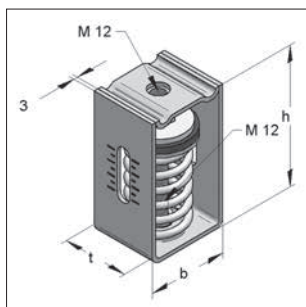
Material: Steel
Material type: S235JR
Surface: galvanized
Pressure piece: raw (welding on pipe on site)

Sound insulation lining: Silicone (on request) TPE/EPDM lining
Temperature resistance: -50°C up to +250°C -35 °C up to +100 °C
On request: Massive connector vertical/horizontal, XL120, XL 80

¹⁾ Bearing pressure or reactive force depends on weld seam on site (min. 3 mm fillet weld right / left) and CENTUM® construction too. The quality of weld seam has to be proofed.

Fixpoint type B									TPE/EPDM	
Clamping-range [mm]	Material pipe clamp [mm]	Sectional steel			H [mm]	B [mm]	Load ¹⁾ F _{ys} [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
		[mm]	[mm]	L [mm]						
60,3	50 x 5	65	42	200	155	148	40	10,50	1	9993378
76,1	50 x 5	65	42	200	176	166	40	10,74	1	9991592
88,9	50 x 5	65	42	200	192	179	40	10,94	1	9991611
114,3	50 x 5	65	42	200	219	205	40	11,31	1	9992192
139,7	50 x 5	80	45	200	235	231	40	12,44	1	9991612
168,3	50 x 5	120	55	330	276	258	60	20,15	1	9993874
219,1	50 x 5	120	55	330	335	309	60	20,91	1	9994028
273 - 274	50 x 5	120	55	330	396	363	60	21,72	1	9994029
323,9	50 x 5	120	55	330	449	414	60	22,49	1	9993005
355 - 356	50 x 5	120	55	330	483	446	60	22,95	1	9993146
406,4	50 x 5	120	55	330	523	498	60	23,72	1	9993006
457,0	50 x 5	120	55	330	576	549	60	24,48	1	9993145

Spring insulator FH 1 with one spring



Spring insulator FH1
Load range: up to 3000 N



CENTUM® Holder
Spring insulator FH1

Specification:

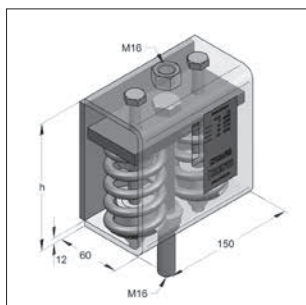
Number of springs: 1 piece
Load range: up to 3000 N
Spring deflection: up to 32 mm

Technical data:

Material: steel
Material type: S235JR
Surface: galvanized

Identification	Load range [N]	Spring deflection [mm]	Connection thread	Dimension			Weight [kg/pc.]	Packing [pc.]	Part-No.
				h [mm]	b [mm]	t [mm]			
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	1,148	1	0794210
FH 1 - 3000	0 - 3084	0 - 23,0	M12	130	80	60	1,188	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]	Dimension			Weight [kg/pc.]	Packing [pc.]	Part-No.
			h [mm]	width [mm]	Length [mm]			
FH 2 - 4300 plus	0 - 4301	0 - 28,5	140	80	140	5,09	1	079170430
FH 2 - 6000 plus	0 - 6044	0 - 22,5	140	80	140	5,11	1	079170600
FH 2 - 9300 plus	2386 - 9545	0 - 15,0	140	80	140	5,13	1	079180930

Design of the spring bearings

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

Please notice the following production steps:

1. The „free“ forming of the tested pipeline should be detected
2. In case of vertical forming Δs ($\Delta s \geq 10\text{mm}$) mounting the spring hanger is necessary
3. The static load should be detected on the point of support (\rightarrow operation load $F_{V, operation}$)
4. Spring hanger should be choosed with help of the detected point of support and the suited selection chart (page 3c15).
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 \rightarrow 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	$\Delta s = 16\text{ mm}$
	- load on the mounting bracket	$F_v = 1.300\text{ N}$

Solution method (see shedule):

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

Result:	c	Choice spring hanger	FH 1 - 2100
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Combination of spring bearings:

Series connection

e.g. for the enlargement of spring deflections

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

Series connection with 2 equal spring hanger:

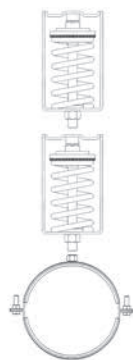
$$R_{\text{compl}} = (R_1 + R_2)/2$$

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

Series connection with 2 different spring hanger:

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

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



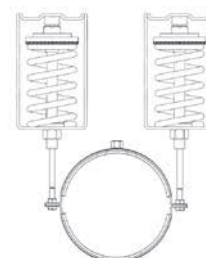
Parallel connection

e.g. for the increasing of bearing pressure

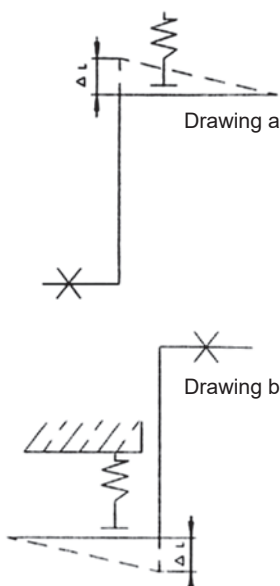
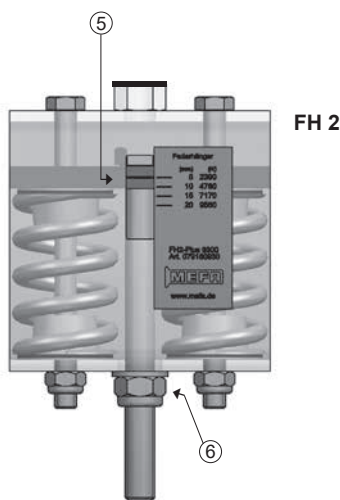
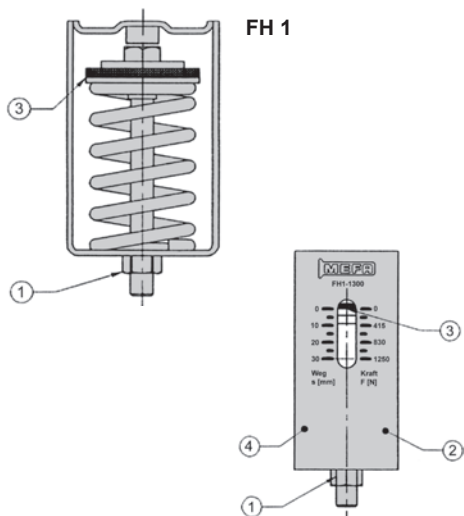
F_v = vertical operation load
 Δs = spring deflection / vertical forming
 R = spring rate

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

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



■ 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...

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

During mounting the pipeline is prestressed !

- according to **drawing b**, not prestressed

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

2. The spring insulator has to be mounted on the structure

3. Spring insulator with the pipe clamp can be mounted via pipe clamp, compressor or a traverse, with the help of the suitable connecting elements (threaded rod, treaded coupling and counter nut or adapted traverse mountings)

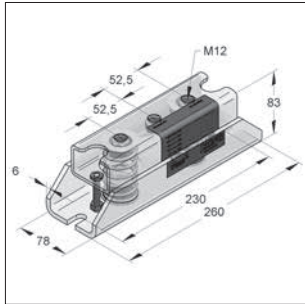
4. Releasing the springs:

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

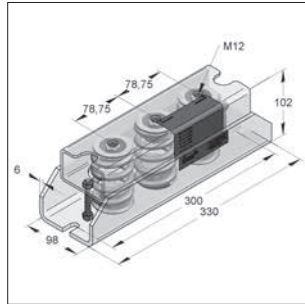
4.2 After successful mounting of the pipeline according to the **drawing b**, should the hex. screw M12 (SW 19 mm) [1] / M16 (SW 24 mm) [6] be mounted on the towards-mounted element (e.g. threaded coupling) and used as a counter nut, before using the pipeline

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

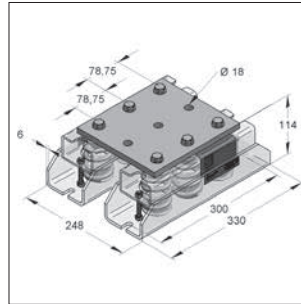
Spring bearing FL



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

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

Recommended anchor: Bolt anchor BZ plus M12

Spring bearing FL

Identification	Casing	Load range [N]	Number of springs	Spring Deflection [mm]	Weight [kg/pc.]	VPE [pc.]	Part-No.
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

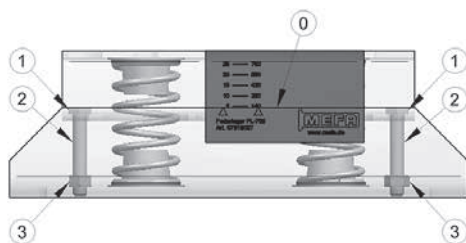
FLD-21000		0 - 21354	2 x 3	0 - 26,5	16,60	1	07929210
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Spring insulator selection table

Spring-insulator	Spring rate	Max. working load	Distance at max. working load	Load dependent on spring deflection s										
				0 [mm]	5 [mm]	suitable section								26,5 [mm]
[Type]	[N/mm]	[N]	[mm]	[N]	[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	9.545	15,0	2.386	4.772	7.159	9.545	-	-	-	-	-	-	
FL-700	25,74	682	26,5	0	129	257	386	450	515	579	644	682	-	
FL-1000	38,61	1.023	26,5	0	193	386	579	676	772	869	965	1.023	-	
FL-2300	83,16	2.204	26,5	0	416	832	1.247	1.455	1.663	1.871	2.079	2.204	-	
FL-3800	150,92	3.999	26,5	0	755	1.509	2.264	2.641	3.018	3.396	3.773	3.999	-	
FL-5700	226,38	5.999	26,5	0	1.132	2.264	3.396	3.962	4.528	5.094	5.660	5.999	-	
FL-7200	268,60	7.118	26,5	0	1.343	2.686	4.029	4.701	5.372	6.044	6.715	7.118	-	
FL-10500	402,90	10.677	26,5	0	2.015	4.029	6.044	7.051	8.058	9.065	10.073	10.677	-	
FL-21000	805,80	21.354	26,5	0	4.029	8.058	12.087	14.102	16.116	18.131	20.145	21.354	-	

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

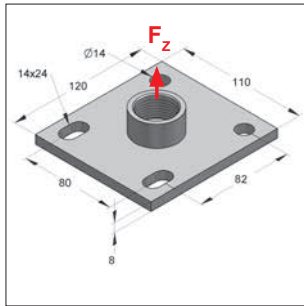
Assembly instruction for spring bearing FL



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]

■ Base plates



Base plate type IV

Specification:

Application area: plates with threaded connection suitable for mounting on steel structure or profile rails.

Used for manufacturing pipe clamp connections via threaded pin/- rod or distance tube.

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

Technical data:

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

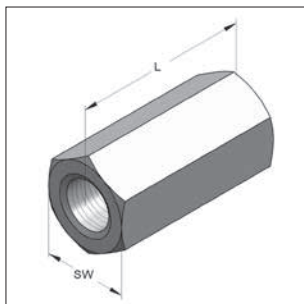
Safety factor: 1,54

Other types of Base plates see MEFA product catalogue or www.mefa.de

Type IV

Identification	Thread	Dimension plate length x width x thickness [mm]	Perforation [mm]	Load F_z [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Base plate type IV	1/2"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,82	1	0590556/zn
Base plate type IV	1"	120 x 110 x 8,0	14,0 x 24,0	14,0	0,87	1	0590558/zn

■ Threaded coupling



Threaded coupling hexagon

Specification:

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

Remark: Fire loads on demand

Technical data:

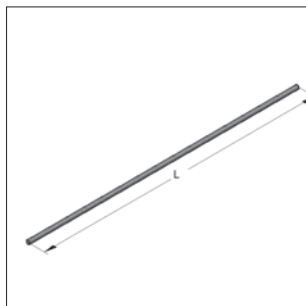
Material: steel
Surface: zinc-nickel

Other Threaded couplings see MEFA product catalogue or www.mefa.de

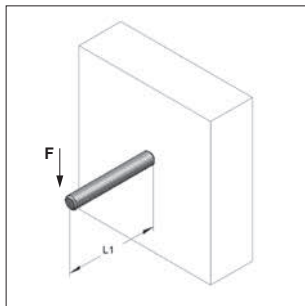
Threaded coupling hexagon

Identification	Female thread	L [mm]	SW [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Threaded coupling, hexagon	M12	40	17	0,046	50	0700123/zn

Threaded rods



Threaded rod



Admissible load* on bending

Distance L1 [mm]	M12 F [kN]	M16 F [kN]	* $f_y = 640 \text{ N/mm}^2$, safety factor=1,5, E-module=210.000 N/mm ² max. bending $f = L/150$
50	0,91	2,34	
100	0,45	1,17	
150	0,20	0,72	
200	0,11	0,40	
250	0,07	0,26	
300	0,05	0,18	
350	0,03	0,13	
400	0,02	0,10	

04

Specification:

according to DIN 976-1
Thread: M12, M16
Length: 1000 mm

Other Threaded rods see MEFA product catalogue or www.mefa.de

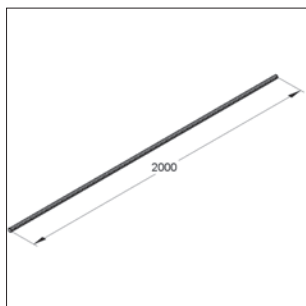
¹ FWD = fire endurance

Technical data:

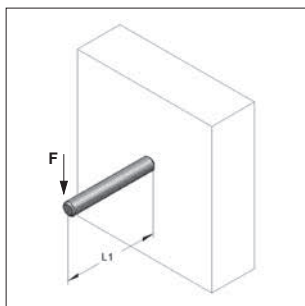
Material: steel
Surface: galvanized
Property class: 8.8
Safety factor FWD¹: 1,0

Identification	Thread	L [mm]	Limited tractive force max. [kN]	FWD			Weight [kg/m]	Packing [pc.]	Part-No.
				FWD 30 [kN]	FWD 60 [kN]	FWD 90 [kN]			
Threaded rod	M12	1000	41,27	3,67	2,10	1,60	0,735	25	0739137/fvz
Threaded rod	M16	1000	76,87	6,68	3,91	2,98	1,306	10	0739162/fvz

Distance tube



Distance tube



Admissible load* on bending

Distance L [mm]	1/2" F [kN]	1" F [kN]
50	1,482	5,350
100	0,741	2,675
150	0,494	1,783
200	0,371	1,337
250	0,290	1,070
300	0,201	0,892
350	0,148	0,764
400	0,113	0,665
450	0,089	0,525
500	0,072	0,425

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

Specification:

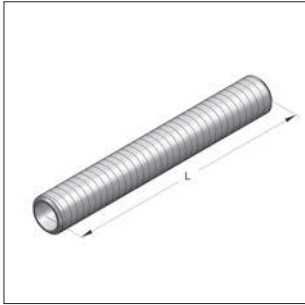
Version: tube with male thread
Thread: according to DIN EN ISO 228 G 1/2 - 1B

Technical data:

Material: steel
Surface: zinc-nickel

Identification	Thread	Length [mm]	Outer diameter [mm]	Weight [kg/pc.]	Packing [m]	Part-No.
Distance tube	1/2"	2000	21,0	2,26	2	0737002/zn
Distance tube	1"	2000	33,2	4,51	2	0737004/zn

■ 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

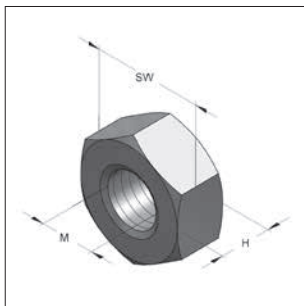
Technical data:

Material: steel
 Surface: galvanized

04

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

Hexagon nut



Hexagon nut

Specification:
according to DIN EN ISO 4032

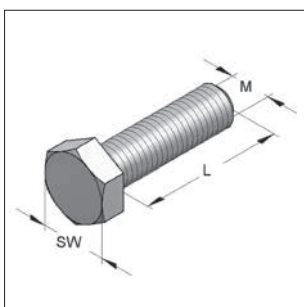
Technical data:
Material: steel
Surface: galvanized

Other DIN- and Standard parts see MEFA product catalogue or www.mefa.de

Identification	Thread M	Height H [mm]	Wrench size SW	Weight [kg/pc.]	Packing [pc.]	Part-No.
Hexagon nut	M10	8,0	17	0,012	100	4120477/fvz
Hexagon nut	M12	10,0	19	0,017	100	4120485/fvz
Hexagon nut	M16	13,0	24	0,039	100	4120523/fvz

04

Hexagon screw



Hexagon screw

Specification:
according to DIN EN ISO 4017
Thread: M12, M16

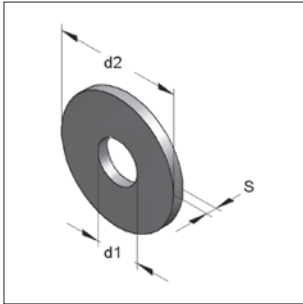
Technical data:
Material: steel
Surface: galvanized
Property class: 8.8

Other DIN- and Standard parts see MEFA product catalogue or www.mefa.de

Identification	Thread M	Wrench size SW	Length L [mm]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Hexagon screw	M12	19	25	0,039	100	3206591/fvz
			40	0,052	100	3206606/fvz
			55	0,065	100	320660655/fvz
			80	0,087	50	32066068/fvz
			90	0,096	50	32066069/fvz
Hexagon screw	M16	24	30	0,086	50	3207630/fvz
			60	0,133	50	3207660/fvz
			90	0,180	25	3207690/fvz

locking screws and nuts M20/M24 on request

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

Other DIN- and Standard parts see MEFA product catalogue or www.mefa.de

04

Identification

Dimension
d1 x d2 x S
[mm]

DIN
EN-ISO

Weight
[kg/pc.]

Packing
[pcs.]

Part-No.

Washer
Reinforced washer
Reinforced washer

13,0 x 24,0 x 2,5
13,0 x 37,0 x 3,0
17,0 x 50,0 x 3,0

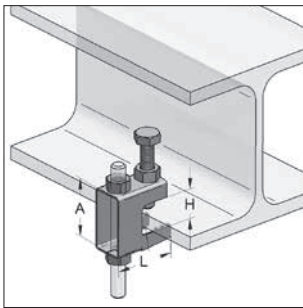
7089
7093-1
7093-1

0,007
0,023
0,041

100
100
100

4320271/fvz
4330277/fvz
4330285/fvz

Girder clamp PK/PKB



Girder clamp PK/PKB



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

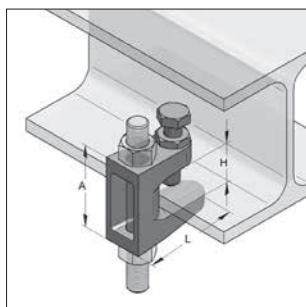
With hole

Identification	Thread	Borehole [mm]	L [mm]	A [mm]	H [mm]	Load [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Girder clamp PKB 8	for M8	9	38	37	0-18	1,2	0,050	50	0576801
Girder clamp PKB 10	for M10	11	44	44	0-20	2,5	0,134	50	0576805
Girder clamp PK 12	for M12	13	58	56	0-26	3,5	0,236	50	0576807

With thread

Girder clamp PKB 8	M8	-	38	37	0-18	1,2	0,51	50	0576802
Girder clamp PKB 10	M10	-	44	44	0-20	2,5	0,134	50	0576806
Girder clamp PK 12	M12	-	58	56	0-26	3,5	0,236	50	0576808

■ Girder clamp, cast iron



Girder clamp, cast iron



G 403 0026
G 403 0044



Specification:

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

Other Girder clamps see MEFA product catalogue or www.mefa.de

Technical data:

Material: malleable cast iron
 Surface: galvanized
 Approval: VdS and FM (starting with M10) approved
 VdS-approval number: G 403 0026

04

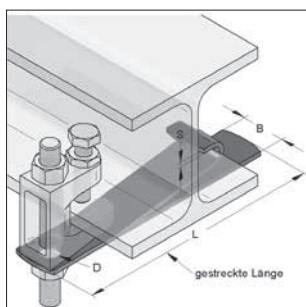
With hole

Identification	Thread	Bore hole [mm]	L [mm]	A [mm]	H [mm]	Load [kN]	Weight [kg/pc.]	Packing [pc.]	Part-No.
Girder clamp TK 12	for M12	13	58	54	26	3,5	0,235	50	0579462
Girder clamp TK 16	for M16	17	58	58	28	5,5	0,395	50	0579448

With thread

Girder clamp TK 12	M12	-	58	54	26	3,5	0,240	50	0579562
Girder clamp TK 16	M16	-	58	58	26	5,5	0,399	50	0579548

■ Safety lug



Safety lug

Specification:

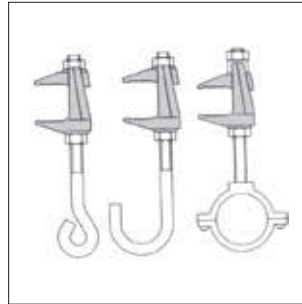
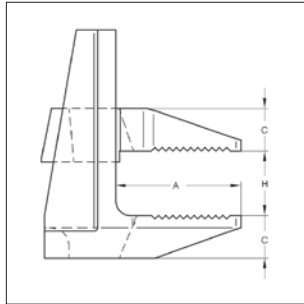
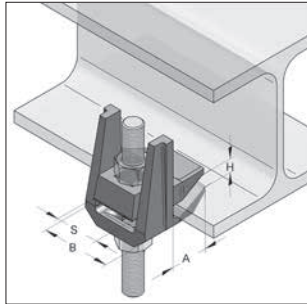
Application: for stationary sprinkler plant constructions according to VdS codes.
 Recommended for pipes above DN 65

Technical data:

Material: steel
 Material type: S235JR
 Surface: galvanized

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

Girder clamp F3, two-part



Girder clamp F3
two-part

Specification:

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

Brand: Lindapter

* safety factor 4:1 against breaking

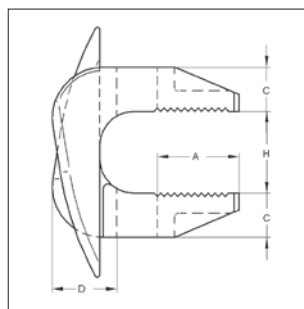
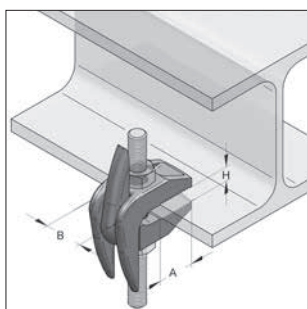
Technical data:

Material: malleable cast iron
 Surface: hot-dip galvanized

Remark: Not suitable for disposed flanges

Identification	Type	Suited thread	Load tensile* [kN]	Tightening torque (property class screw 4.6) [Nm]	Dimension					Weight [Kg/pc.]	Packing [pc.]	Part-No.
					A [mm]	H [mm]	C [mm]	B [mm]	S [mm]			
Girder clamp	F3/M12	M12	2,00	39	35	0-40	12	49	29	0,350	1	0579637
Girder clamp	F3/M16	M16	4,00	93	46	0-55	16	60	36	0,810	1	0579649

Girder clamp F9



Girder clamp F9

Specification:

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

* safety factor 5:1 against breaking

Other Girder clamps see MEFA product catalogue or www.mefa.de

Technical data:

Material: malleable cast iron
 Surface: galvanized

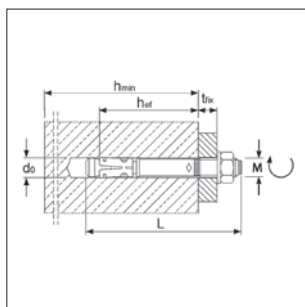
Remark: Not suitable for disposed flanges

Identification	Type	Load tensile* [kN]	Tightening torque (property class screw 4.6) [Nm]	Dimension					Weight [Kg/pc.]	Packing [pc.]	Part-No.
				A [mm]	H [mm]	C [mm]	D [mm]	B [mm]			
Girder clamp	F9/M12	2,80	39,0	35	26-60	17	24	30	0,520	1	0579703
Girder clamp	F9/M16	5,60	93,0	43	29-69	21	28	35	0,680	1	0579704
Girder clamp	F9/M20	8,40	177,0	51	32-82	25	35	44	1,280	1	0579705

Bolt anchor BZ plus



Bolt anchor BZ plus
Bolt anchor BZ plus 4A



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

Application example: Anchorage for moderately heavy up to heavy loads in cracked and uncracked concrete:
Pillars, steel girder, handrail fittings, cable routes, wooden construction, consoles.

Technical data:

Material BZ plus: steel
Surface: galvanized
Material BZ plus A4: stainless steel V4A

Approval: ETA-99/0010

Other anchors see MEFA product catalogue or www.mefa.de

¹⁾ Applies only for standard anchorage depth

Bolt anchor BZ plus, galvanized

Identification	Standard anchorage depth /		Reduced anchorage depth						Seismic ¹⁾ C1 / C2	Anchor-length [mm]	Thread [mm]	Weight [kg/100]	Packing [pc.]	Part no.
	Clamping thickness [mm]	Drill-Ø x Drillhole depth [mm]	Setting-depth [mm]	Anchoring depth [mm]	Seismic ¹⁾ C1	Seismic ¹⁾ C2	Seismic ¹⁾ C1	Seismic ¹⁾ C2						
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	ja	110	M12x51	10,20	25	221112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	ja	125	M12x66	11,36	25	22111203001
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	ja	145	M12x86	12,92	25	221112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	ja	200	M12x141	16,84	25	221112105
BZ 16 -15-35/135	15	35	16x110	16x90	97	77	85	65	ja	135	M16x56	23,00	20	221116015
BZ 16 -25-45/145	25	45	16x110	16x90	97	77	85	65	ja	145	M16x66	35,00	20	221116025
BZ 16 -80-100/200	80	100	16x110	16x90	97	77	85	65	ja	200	M16x121	32,00	10	221116080

Bolt anchor BZ plus A4, stainless steel

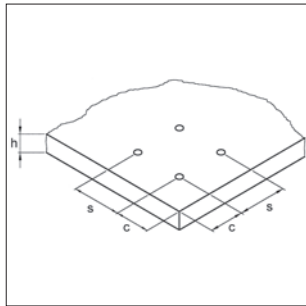
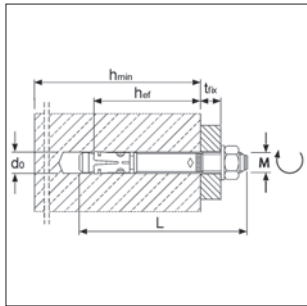
BZ 12 -15-35/110	15	35	12x90	12x70	80	60	70	50	ja	110	M12x51	10,20	25	222112015
BZ 12 -30-50/125	30	50	12x90	12x70	80	60	70	50	ja	125	M12x66	11,36	25	222112030
BZ 12 -50-70/145	50	70	12x90	12x70	80	60	70	50	ja	145	M12x86	12,92	25	222112050
BZ 12 -105-125/200	105	125	12x90	12x70	80	60	70	50	ja	200	M12x141	16,84	25	222112105
BZ 16-25-45/145	25	45	16x110	16x90	97	77	85	65	ja	145	M16x66	23,16	20	222116025



i Delivery time: 3 working days

i Loads see on page 4/18 ff.

Load values Bolt anchor BZ plus



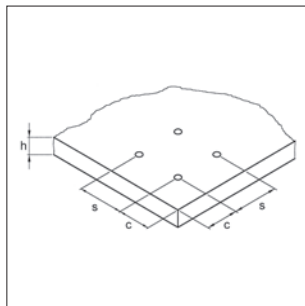
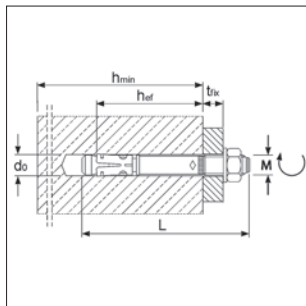
Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data		bolt anchor BZ plus		M 8		M 10		M 12		M 16	
standard anchorage depth	h_{ef}	[mm]	46	-	60	-	70	-	85	-	
reduced anchorage depth	$h_{ef, red}$	[mm]	-	35	-	40	-	50	-	65	
cracked concrete											
Mean ultimate loads, tension	C20/25	appr. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9	9,0
	C25/30	appr. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0	9,8
	C30/37	appr. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5	10,9
	C40/50	appr. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8	12,7
	C50/60	appr. N	[kN]	3,7	3,7	6,6	5,5	11,8	9,4	18,4	13,9
non-cracked concrete											
Approved loads, tension	C20/25	appr. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7	12,6
	C25/30	appr. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3	13,8
	C30/37	appr. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3	15,3
	C40/50	appr. N	[kN]	7,5	5,1	10,8	6,1	16,8	12,0	23,6	17,8
	C50/60	appr. N	[kN]	7,5	5,5	11,8	6,6	18,4	13,2	25,8	19,5
cracked / non-cracked concrete											
Approved loads, shear	C20/25	appr. V	[kN]	7,0	7,0	11,5	10,4/11,5	17,1	14,5/17,1	31,4	21,6/30,2
	\geq C25/30	appr. V	[kN]	7,0	7,0	11,5	11,4/11,5	17,1	15,9/17,1	31,4	23,6/31,4
Approved bending moments		appr. M	[Nm]	13,1	13,1	26,9	26,9	46,9	46,9	123,4	123,4
Spacing and edge distance											
Effective anchorage depth	h_{ef}	[mm]	46	35	60	40	70	50	85	65	
Characteristic spacing	$s_{cr, N}$	[mm]	138	105	180	120	210	150	255	195	
Characteristic edge distance	$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5	97,5	
Respective minimum spacing and edge distance for standard thickness of concrete member											
cracked concrete											
Standard thickness of concrete slab	$h_{min, 1}$	[mm]	100	-	120	-	140	-	170	-	
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	-	45 / 70	-	60 / 100	-	60 / 100	-	
Minimale Randabstand / for Achsabstand s	c_{min} / s	[mm]	40 / 80	-	45 / 90	-	60 / 140	-	60 / 180	-	
ungerissener Beton											
Minimale Achsabstand / for Randabstand 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	
ungerissener Beton											
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



Extract from Permissible Service Conditions of ETA-99/0010

Approved loads for single anchor without influence of spacing and edge distance.

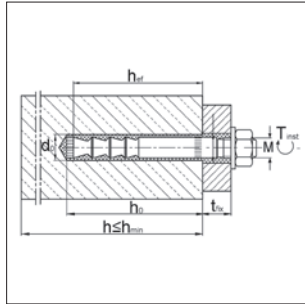
Total safety factor as per ETAG 001 included (γ_M and γ_F).

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
	\geq C25/30	appr. V	[kN]	7,0	7,0	11,5	11,4/11,5	17,1	15,9/17,1	31,4	23,6/31,4
Approved bending moments	appr. M	[Nm]	13,1	13,1	26,9	26,9	46,9	46,9	123,4	123,4	
Spacing and edge distance											
Effective anchorage depth	h_{ef}	[mm]	46	35	60	40	70	50	85	65	
Characteristic spacing	$s_{cr, N}$	[mm]	138	105	180	120	210	150	255	195	
Characteristic edge distance	$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5	97,5	
Respective minimum spacing and edge distance for standard thickness of concrete member											
cracked concrete											
Standard thickness of concrete slab	$h_{min, 1}$	[mm]	100	-	120	-	140	-	170	-	
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	-	45/70	-	60 / 100	-	60 / 100	-	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40 / 80	-	45/90	-	60 / 140	-	60 / 180	-	
non-cracked concrete											
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 80	-	45 / 70	-	60 / 120	-	65 / 120	-	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	-	50 / 100	-	75 / 150	-	80 / 150	-	
Respective minimum spacing and edge distance for minimum thickness of concrete member											
cracked concrete											
Minimum component thickness	h_{min}	[mm]	80	80	100	80	120	100	140	140	
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 70	50/60	45 / 90	50/100	60 / 100	50/160	70 / 160	65/170	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40 / 80	40/185	50 / 115	65/180	60 / 140	65/250	80 / 180	100/250	
non-cracked concrete											
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40 / 80	50/60	60 / 140	50/100	60 / 120	50/160	80 / 180	65/170	
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50 / 100	40/185	90 / 140	65/180	75 / 150	100/185	90 / 200	170/65	
Installation parameters											
Drill hole diameter	d_o	[mm]	8	8	10	10	12	12	16	16	
Diameter of clearance hole in the fixture	d_f	[mm]	9	9	12	12	14	14	18	18	
Depth of drill hole	h_1	[mm]	60	49	75	55	90	70	110	90	
Installation torque	T_{inst}	[Nm]	20	20	25	25	45	45	110	90	
Width across nut	SW	[mm]	13	13	17	17	19	19	24	24	

Injection system VMZ



Anchor rod VMZ-A
Anchor rod VMZ-A A4



Specification:

Application area: cracked and non-cracked concrete
C20/25 up to C50/60

Installation advise: composite spread anchor for pre- and through fastening installation in conjunction with Injection cartridge VMZ

Required accessory: two component cartridge VMZ, Cleaning Brush, Blow-out pump

Technical data:

Material VMZ-A: steel
Surface: galvanized
Material VMZ-A A4: stainless steel V4A

Approval: ETA-04/0092

Application example: heavy duty fastenings in cracked and non-cracked concrete, e.g. steel beams, steel supports, railings, brackets, facade substructures, cable trays.

Other anchors see MEFA product catalogue or www.mefa.de

Anchor rod VMZ-A, galvanized

Identification	Drill-Ø x Drillhole depth [mm]	Setting- depth [mm]	Max. clamping- strength [mm]	Anchor- length [mm]	SW	Torque T _{inst} [Nm]	Thread M [mm]	Weight [kg/100]	Packing [pcs.]	Part no.
VMZ-A 80 M12-10/110	14 x 85	84	10	110	19	25	M12x21	11,70	10	221832305101
VMZ-A 80 M12-25/125	14 x 85	84	25	125	19	25	M12x36	12,80	10	221832325101
VMZ-A 100 M12-60/180	14 x 105	104	60	180	19	30	M12x56	17,50	10	221832385101
VMZ-A 105 M16-30/160	18 x 113	109	30	160	24	50	M16x44	24,50	10	221832550101
VMZ-A 125 M16-60/210	18 x 133	130	60	210	24	50	M16x55	36,00	10	221832520101

Anchor rod VMZ-A, stainless steel V4A

VMZ-A 80 M12-25/125/A4	14 x 85	84	25	125	19	25	M12x36	12,80	10	222832325501
VMZ-A 100 M12-60/180/A4	14 x 105	104	60	180	19	30	M12x56	17,50	10	222832385501
VMZ-A 105 M16-30/160/A4	18 x 113	109	30	160	24	50	M16x44	24,50	10	222832550501
VMZ-A 125 M16-60/210/A4	18 x 133	130	60	210	24	50	M16x55	36,00	10	222832520501



i Delivery time: 3 working days

i Loads see on page 4/22

Injection cartridge VMZ and accessories



Cartridge VMZ 345
(a Static mixer enclosed)



Cartridge VMZ 300
for silicone guns
(a Static mixer enclosed)



Injection cartridge

Identification	Dispenser	Content [ml]	Packing [pc.]	Weight [Kg/pc.]	Part-no.
Cartridge VMZ 300	Silicon Dispenser	300	1	0,53	530828253201
Cartridge VMZ 345	VM-P 345 Standard	345	1	0,69	530828255310

04

Accessory Injection cartridge VMZ



Dispenser VM-P 345
Standard



Blow-out pump VM-AP 360



RB 14/18 M6 (for VMZ)

Remark: Cleaning of drilling hole being part of anchor approval

Accessory Injection cartridge VMU / VMZ 345

Identification	Packing [pc.]	Part-no.
Dispenser VM-P 345 Standard	1	530828350505
Blow-out pump VM-AP 360	1	530833200101

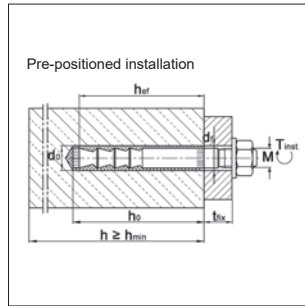
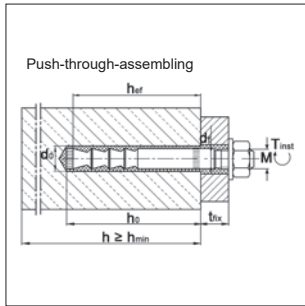
Mixer nozzle

Mixer nozzle VM-X	1	530828305111
Mixer extension VM-XE (200 mm)	1	530828306011

Cleaning brush

Cleaning brush RB 14 M6 (for VMZ)	1	530833514101
Cleaning brush RB 18 M6 (for VMZ)	1	530833518101

Load values Conical Stud VMZ-A / VMZ-A A4



Extract from Permissible Service Conditions of ETA-04/0092

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads for different mounting depth on request.

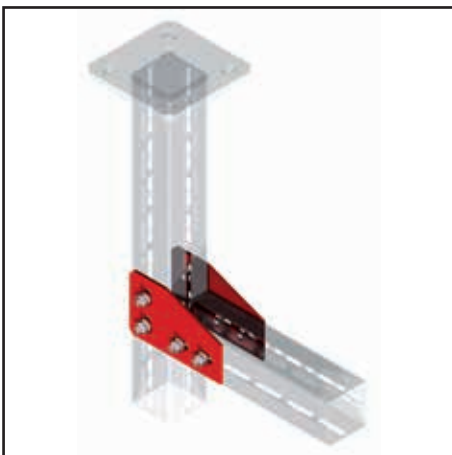
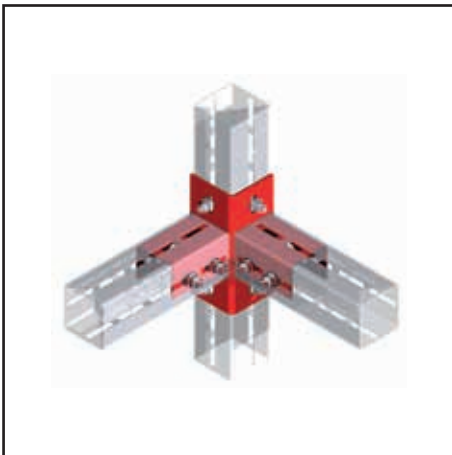
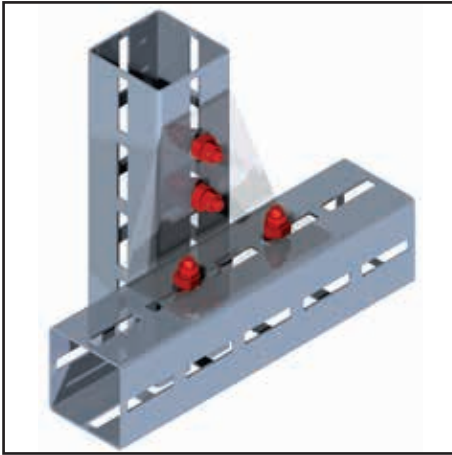
Loads and performance data	Conical Stud VMZ-A / VMZ-A A4	80 M 12	100 M 12	105 M16	125 M 16
cracked concrete					
Mean ultimate loads, tension	C20/25Zul. N [kN]	12,3	17,1	18,4	24,0
	C25/30Zul. N [kN]	13,5	18,9	20,3	26,4
	C30/37Zul. N [kN]	15,0	20,9	22,5	29,2
	C40/50Zul. N [kN]	17,3	24,2	26,0	33,8
	C50/60Zul. N [kN]	19,0	26,6	28,6	37,1
non-cracked concrete					
Mean ultimate loads, tension	C20/25Zul. N [kN]	17,2	24,0	25,8	33,5
	C25/30Zul. N [kN]	18,9	26,4	28,4	36,9
	C30/37Zul. N [kN]	21,0	27,1	31,5	40,9
	C40/50Zul. N [kN]	24,2	27,1	36,4	47,3
	C50/60Zul. N [kN]	25,7	27,1	40,0	52,0
cracked / non-cracked concrete					
Approved loads, shear	\geq C20/25Zul. V [kN]	19,4	19,4	36,0	36,0
Approved loads, shear Version LG	\geq C20/25Zul. V [kN]	19,4	19,4	36,0	36,0
Approved bending moments	Zul. M [Nm]	60,0	60,0	152,0	152,0
Spacing and edge distance					
Effective anchorage depth	h_{ef} [mm]	80	100	105	125
Characteristic spacing	$s_{cr,N}$ [mm]	240	300	315	375
Characteristic edge distance	$c_{cr,N}$ [mm]	120	150	157,5	187,5
cracked concrete					
Minimal thickness of concrete member	$\geq h_{min}$ [mm]	110	130	150	170
Minimal spacing	s_{min} [mm]	40	50	50	60
Minimal edge distance	c_{min} [mm]	50	50	50	60
non-cracked concrete					
Minimal thickness of concrete member	$\geq h_{min}$ [mm]	110	130	150	170
Minimal spacing	s_{min} [mm]	55	80 ¹⁾	60	60
Minimal edge distance	c_{min} [mm]	55	55 ¹⁾	60	60
Installation parameters					
Drill hole diameter	d_o [mm]	14	14	18	18
Diameter of clearance hole in the fixture Pre-positioned installation	d_f [mm]	14	14	18	18
Diameter of clearance hole in the fixture Push-through-assembling ²⁾	d_f [mm]	16	16	20	20
Depth of drill hole	h_o [mm]	85	105	113	133
Installation torque	T_{inst} [Nm]	25	30	50	50
Width across nut	SW [mm]	19	19	24	24
Drilling hole filling capacity, scaling on cartridge 345	[mm]	5	6	8	9
Mortar demand per drilling hole ³⁾	[ml]	8,6	9,2	12,6	14,5
additional mortar demand per drilling hole at draw lead mounting per 10mm	[ml/10mm]	1,2	1,2	1,6	1,6
Drill holes per cartridge ³⁾ VMZ 150	[pcs.]	12	11	8	7
Drill holes per cartridge ³⁾ VMZ 345	[pcs.]	34	32	23	20
Drill holes per cartridge ³⁾ VMZ 410	[pcs.]	43	40	29	25

¹⁾ for edge distance $c \geq 80$ mm, minimal center distance $s_{min} = 55$ mm

²⁾ The annular gap in attached part must be completely filled with mortar after mounting

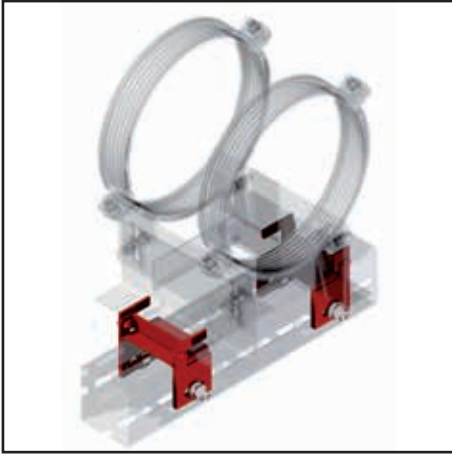
³⁾ Only cotter mounting. For draw-lead mounting a additional quantity of mortar is needed for filling of clearance hole max. long-term temperature +50°C / max. short-term temperature +80°C

■ CENTUM®-mounting examples

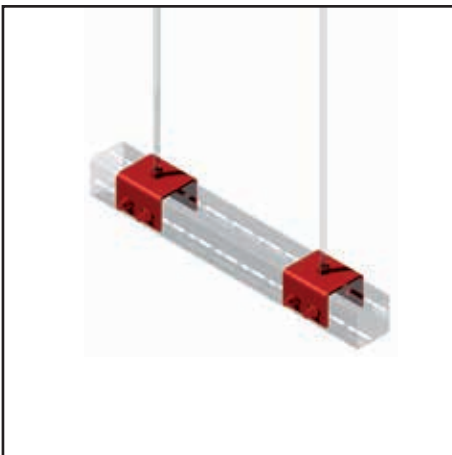
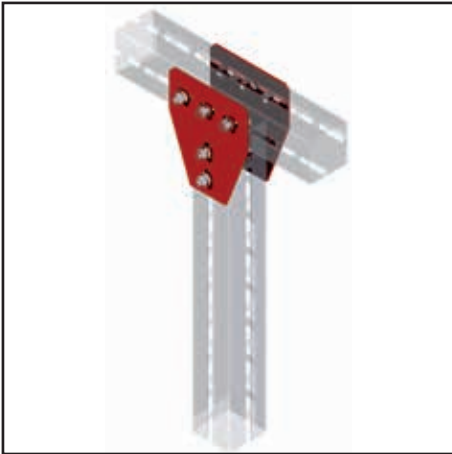
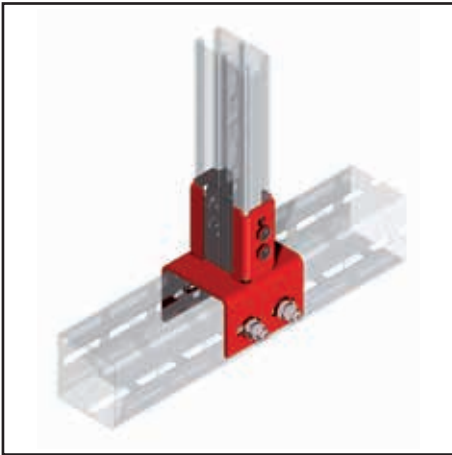


05

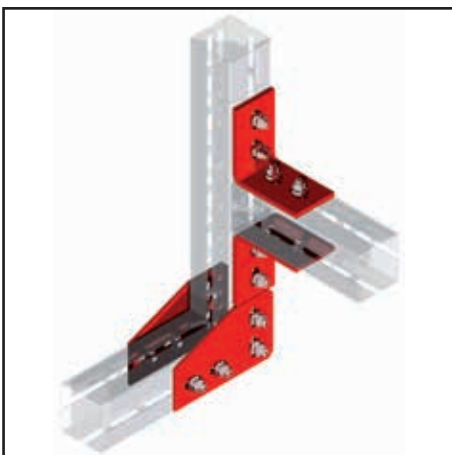
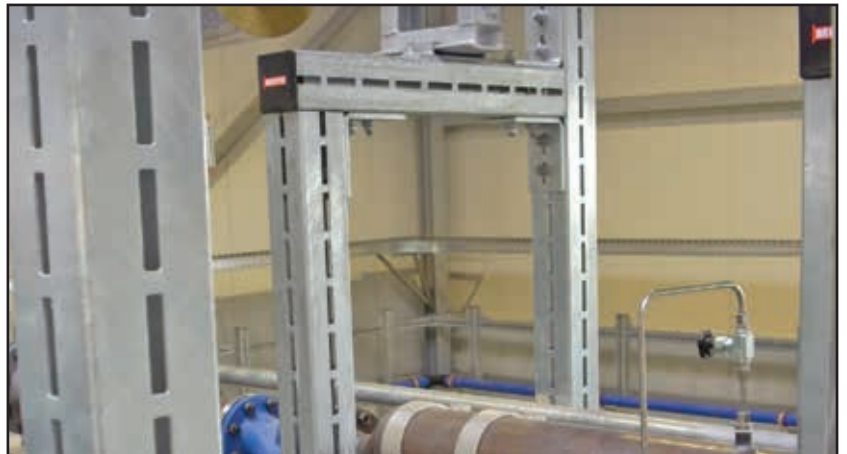
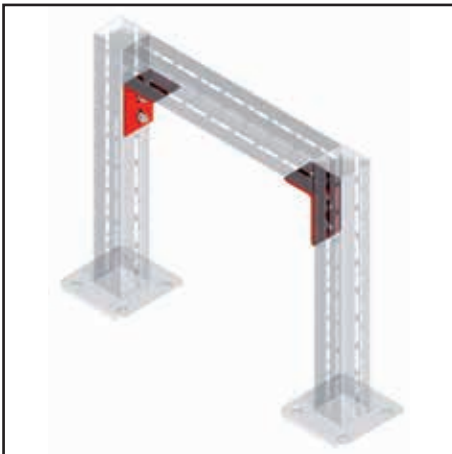
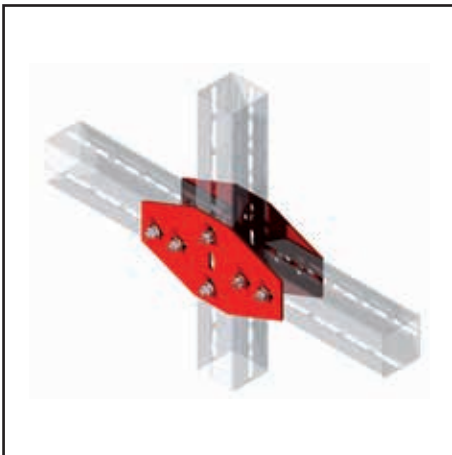
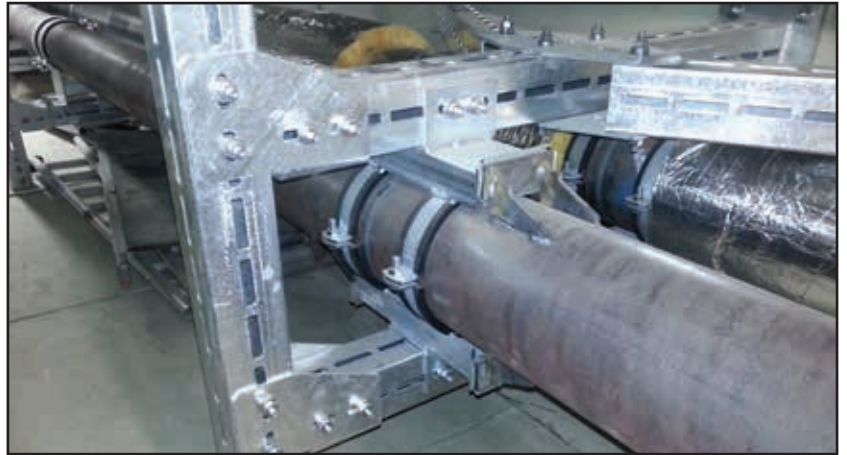
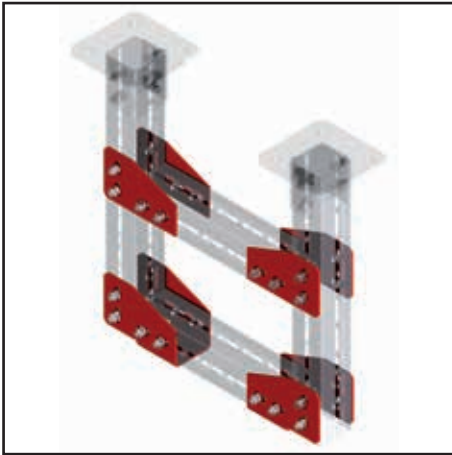
CENTUM®-mounting examples



05

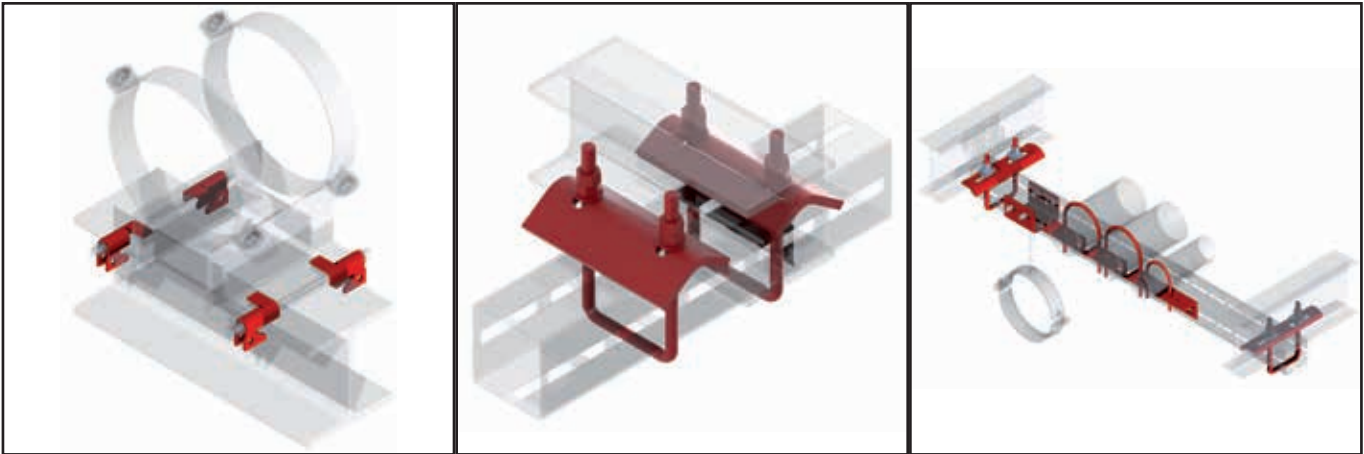
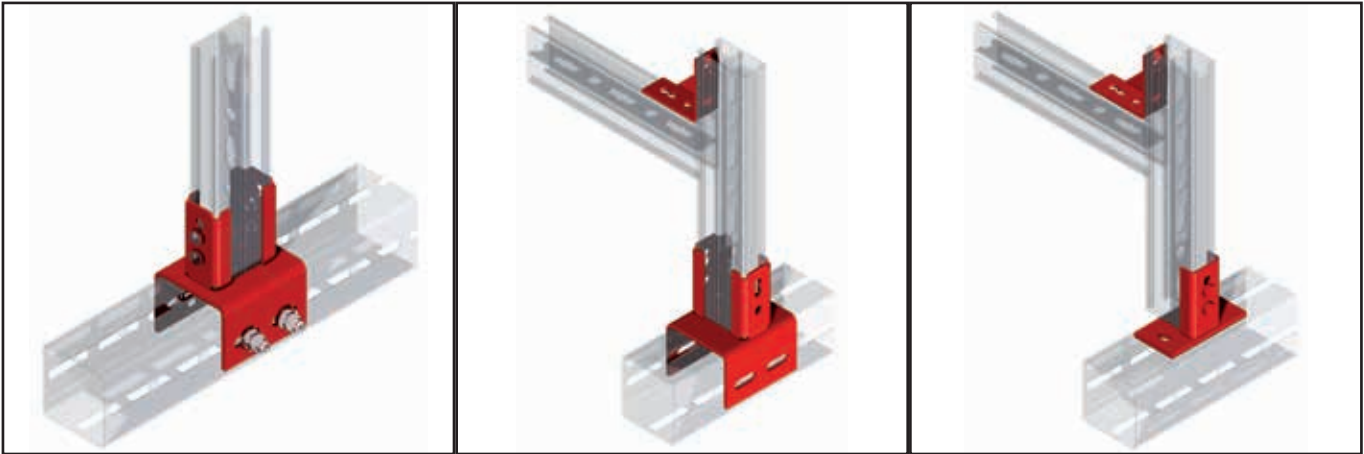
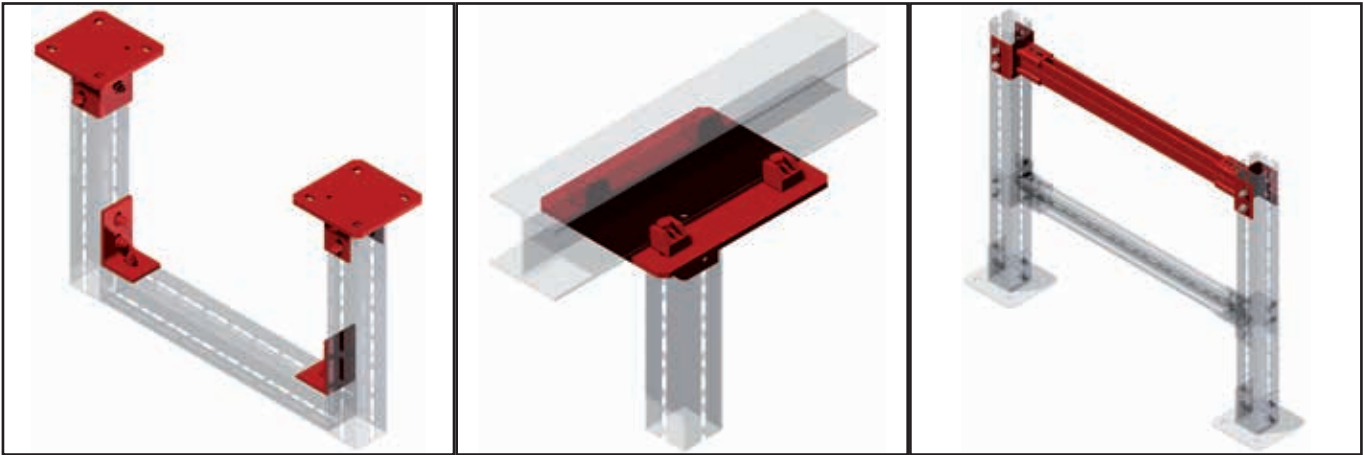


■ CENTUM®-mounting examples



05

CENTUM®-mounting examples



05

■ MEFA-Planning support

MEFA offers its customers extensive support. Our team of well-experienced engineers support the entire scope of planning. From admission of data and generation of technical solutions, also on site, through design of pipeline and air duct alignment, to fixpoint calculations.

In addition to afore mentioned support thru our technical department, we offer you various software tools.

- **TRICAD MS**

Components from the CENTUM® system and rail assembly system 45 are provided interface-compliant for transfer into various TRICAD MS® modules. Please note: TRICAD MS® is an application based on MicroStation or OpenBuildings Designer, not available from us and subject to a fee.

- **MEFA-E3D / pdms 12 till 12.1**

Components from the CENTUM® system and rail assembly system 45 divisions are provided in interface-compliant for transfer into 3D planning systems. Please note: E3D is a chargeable software and not available from us.

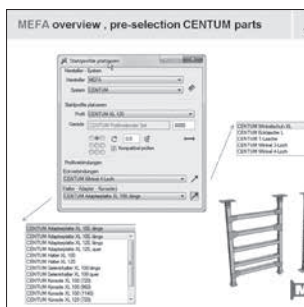
- **MEFA statiCAL**

Static load calculation software for HVAC contractors for planning of fastening solutions.

- **MEFA eShop**

Catalog and shop system with structured search function

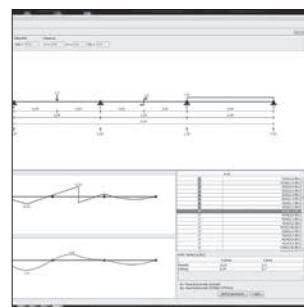
Our application engineering is prepared to solve special tasks and problems and to give you advice at any time.



TRICAD MS
Page 6/2

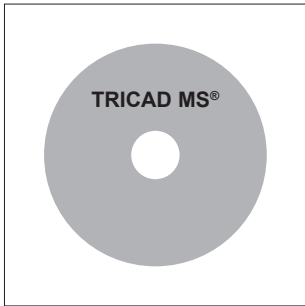


MEFA-E3D
Page 6/3



MEFA statiCAL
Page 6/4

TRICAD MS®



TRICAD MS®

TRICAD MS® overview:

Components selection by list preselection:

By clicking on the desired components, corresponding products are automatically opened and the components are preselected. Then you can select and place them in CAD.

Part list production:

Part lists can be created in the modules. The part list can be generated in ASCII or EXCEL-compatible format.

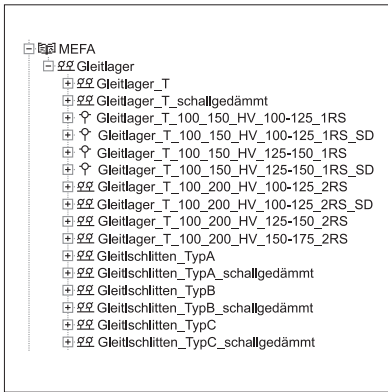
Summary:

- Intuitive construction of secondary steelworks in combination with common MEFA profile channels and complementary elements.
- Situational catalog selection of supports.
- Smart addition of necessary connecting elements (masonry, steelworks, etc.)
- Automatic generation of part list (ready-to-order).
- 100% integration and compatibility in all TRICAD MS® modules.

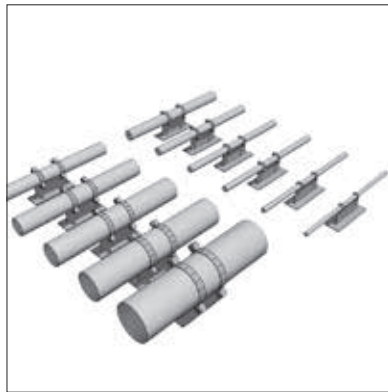
License:

Access via Venturis TRICAD MS® license.

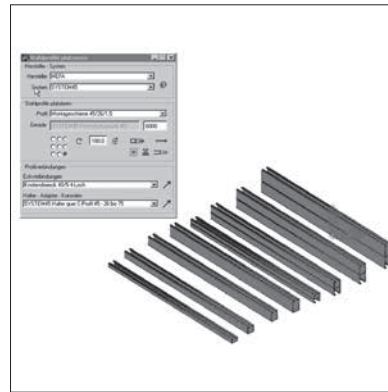
06



Product selection list



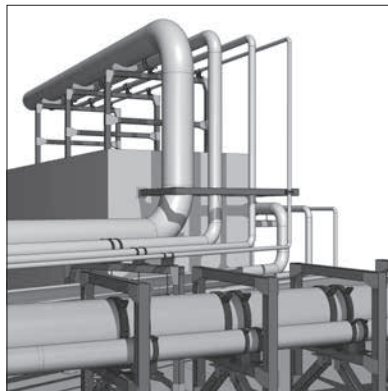
CAD-Component representation (for example sliding sledge)



Product selection Profile (C-profile channels)



Part list

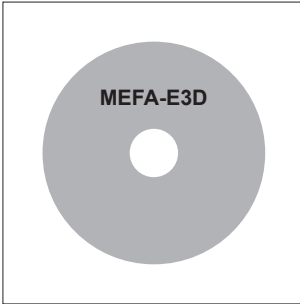


Construction level 3D (for example CENTUM®)



Photorealistic illustration

MEFA-E3D / pdms 12 till 12.1 for system 45 and CENTUM®



MEFA-E3D

MEFA-E3D overview:

Components selection symbol-surfaces:

A click on selected component symbol will open corresponding E3D-steelwork-selection mask (in CREATE or MODIFY mode) and article group pre selected.

Part list generation:

Part lists can be generated in module E3D-DESIGN, generation in ASCII resp. EXCEL compatible format.

Conjunction MEFA assembly-pipeline:

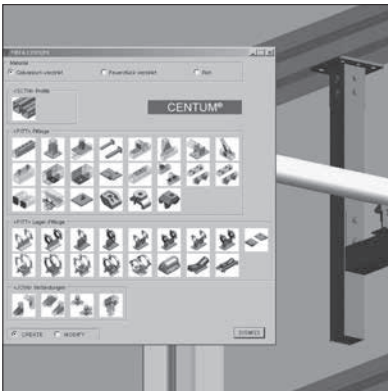
The menu item CONNECTIONS enable logical connection of support points and support assemblies.

Additional parts in DESIGN:

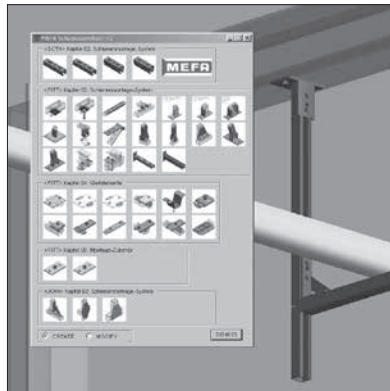
With the menu item ACCESSORIES additional parts and components, which are not planned separately in the 3D-model, can be set in DESIGN (for example spacer plates etc.) Such additional and components being also catalog referenced, but without 3D graphic.

Draw/Draft:

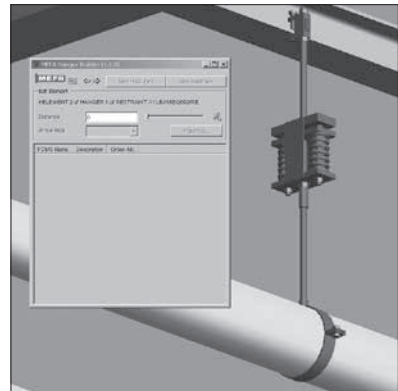
The Draw/Draft application facilitates automatic drawing of MEFA-based assemblies and all important elements.



Selection mask CENTUM®



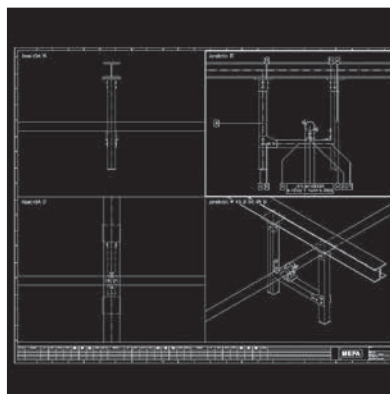
Selection mask rail system 45



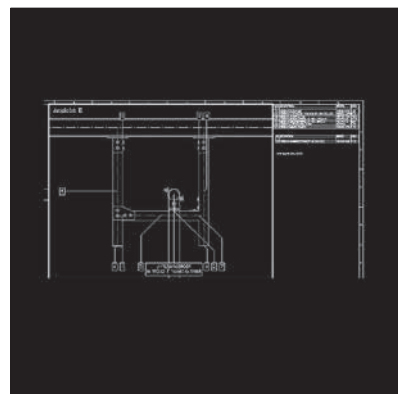
Hanger builder form



Components view 3D

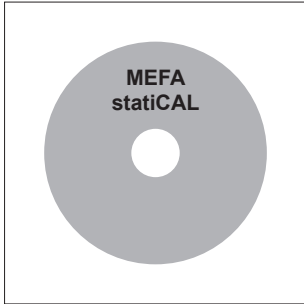


Draw/Draft-application (general view)



Draw/Draft-application (detail)

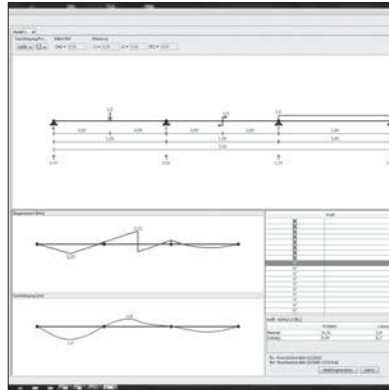
MEFA statiCAL



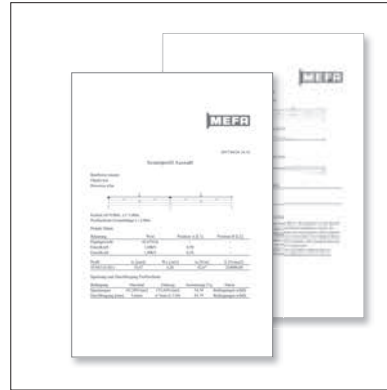
MEFA statiCAL

MEFA statiCAL overview:

Easy to operate, MEFA statiCAL enables you to generate uncomplicated load calculation in combination with MEFA C-profiles and CENTUM®. The static report can be taken for documentation.



Static calculation



Static report

■ TSP® – TOP-SURFACE-PROTECTION

High sophisticated surface protection

Mainly steel is used for support structures within the range of fixing systems for pipes or technical building installations. Especially rail systems, pipe clamps and threaded hangers are concerned. To achieve a long-lasting protection against rust for these parts, a sufficient corrosion protection is required. This is the only way how facilities can be operated efficiently and without damages in the long term.

Informations about environmental conditions, humidity, temperature, air pollution (sulphur or chlorides) as well as salt loading are necessary for choosing the right corrosion protection. The service life should be considered and maybe optical issues becomes important, also.

With TSP®, MEFA offers a comprehensive **system of surface protections** for a wide range up to the highest corrosive category **C5**. This means, that support structures can be installed in indoor swimming pools, road tunnels or in the offshore sector without difficulties.

Therefore you can avoid expensive and difficult to obtain **stainless steel constructions** in many applications and use approved fixing systems at once.

The protection systems **TSP®-3** and **TSP®-5** are the core pieces of **TSP®**.



TSP®-3 is ideal up to corrosive category C3. For many standard parts it is immediately available.

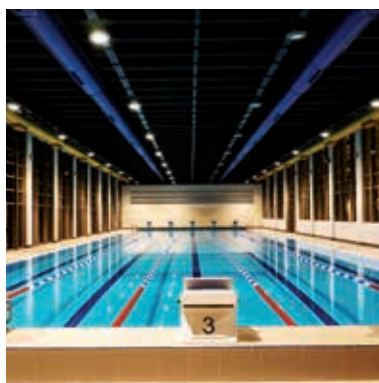


TSP®-5 is perfectly suitable up to corrosive category C5 I/M. Due to the three-layered structure, TSP®-5 achieved 5950 hours* in the salt spray test (according to DIN EN ISO 9227).

*Statement of coating supplier

Advantages TSP®-5

- Suitable for the highest **corrosive category C5** (DIN EN ISO 12944)
- **Better protection and durability** for surfaces than hot-dip galvanization or thick coated wet painting
- **Stable** to acids, bases, oils and fuels
- Parts with **hollow spaces** or complex structures can be coated
- **Homogeneous** surface
- **Low energy consumption** during coating process
- **No corrosion creep** due to the excellent adhesion to the steel ground, even if small damages occur



Picture sources: Rainer Sturm / pixello.de



Picture sources: Katharina Wieland / pixello.de

MEFA surfaces classified by corrosive categories

According to DIN EN ISO 12944 oder DIN EN ISO 14713

			Corrosive category	Corrosion load
		galvanized, pre-galvanized	C1	minor / very low
		galvanized, pre-galvanized	C2	small / low
07 Top-Surface-Protection (TSP®)		TSP®-3 Zinc-Nickel, hot-dip galvanized	C3	moderate / medium
		TSP®-3 possible (to the durability 10- 20 years) TSP®-5	C4	strong / high
		TSP®-5	C5-I	very strong (industry) / very high
		TSP®-5	C5-M/CX	very strong (sea) / extreme

Picture sources, pixelio.de: 1. Rainer Sturm / 2. Erich Westendarp / 4. Rainer Sturm / 5. Kurt Michel / 6. Katharina Wieland

Environment inside (example)	Environment outside (example)
heated buildings with neutral atmosphere e.g. offices, stores, schools, hotels	non
unheated buildings, condensate can occur e.g. stocks, gyms	atmosphere with little pollution
production rooms with high humidity and pollution e.g. food productions, laundries, breweries, dairies	urban and industrial atmosphere, moderate pollution by sulphur dioxide, coastal areas with little salt load
chemical plants, swimming pools, boathouses over sea	industrial and coastal areas with moderate salt load
buildings or areas with almost constant condensation and with heavy contamination	industrial areas with high humidity and aggressive atmosphere
buildings or areas with almost constant condensation and with heavy contamination	coastal and offshore areas with high salt load

The corrosion of metal surfaces depends amongst others on the following factors:

- Environment (atmosphere, water or earth)
- Concentration of substances favouring corrosion (sulphur or chlorides)
- Temperature (increasing temperature causes higher corrosion)
- Strains during use (e.g. mechanical abrasion)

The overall climate (climate, countryside or industrial areas, urban or coastal area) as well as climatic differences on site (e.g. sunny or shady side respectively weather side, covered or not covered, fluctuating humidity within the interior, local chemical strains) are highly significant for corrosion.

The **DIN EN ISO 12944** specifies the corrosive categories. The environmental conditions are classified into six categories from insignificant to highly respectively extreme.

The DIN EN ISO 12944 encompasses the protection of steel parts against corrosion by coating systems. **DIN EN ISO 14713** the protection by galvanization. Both standards contain almost the same corrosive categories.

■ DIN EN ISO 12944 / DIN EN ISO 14713

Two standards are the base for finding the right surface protection:

DIN EN ISO 12944 (coating parts) and **DIN EN ISO 14713** (galvanized parts). The following tables provide an overview of the assessment criteria for the period of corrosion protection under defined conditions.

Period of protection until first maintenance

In addition to the corrosive categories, the service life of a steel construction must be considered in order to choose the right surface protection.

Period of protection* until first maintenance (DIN EN ISO 12944)		
L	quick	2 to 5 years
M	medium	5 to 15 years
H	long	over 15 years

for coated parts

* the protection period is not a warranty period

Period of protection* until first maintenance (DIN EN ISO 14713)		
VL	very quick	0 to <2 years
L	quick	2 to <5 years
M	medium	5 to <10 years
H	high	10 to <20 years
VH	very high	≥ 20 years

for galvanized parts

Thickness reduction of zinc layer after the first year of outdoor use

The salt spray test should not be used to evaluate galvanized parts. In case of hot-dip galvanized parts, the zinc corrosion rate per year can be used as a criterion for the corrosive category.

Thickness reduction of steel and zinc after the first year of outdoor use under atmospheric loads - according to DIN EN ISO 14713 / DIN EN ISO 9223		
Corrosive category	unalloyed steel (thickness reduction in μm)	Zinc (thickness reduction in μm)
C1	≤ 1,3	≤ 0,1
C2	> 1,3 - 25	> 0,1 - 0,7
C3	> 25 - 50	> 0,7 - 2,1
C4	> 50 - 80	> 2,1 - 4,2
C5-I	> 80 - 200	> 4,2 - 8,4
C5-M/CX	> 200 - 700	> 8,4 - 25,0

Always consider, that higher material removal rates can occur due to local environmental influences or sections.

■ Influence of neutral salt spray test

With the help of corrosion test like the salt spray test you can evaluate which protection systems is usable for a specific corrosive category.

Pressure criteria for coating systems on steel (DIN EN ISO 12944)		
Corrosive category	Influence of neutral salt spray test (according ISO 9227) by hours (h)	
C1	low (L)	
	medium (M)	
	high (H)	
C2	low (L)	
	medium (M)	
	high (H)	
C3	low (L)	120
	medium (M)	240
	high (H)	480
C4	low (L)	240
	medium (M)	480
	high (H)	720
C5-I	low (L)	480
	medium (M)	720
	high (H)	1440
C5-M/CX	low (L)	480
	medium (M)	720
	high (H)	1440

It should be considered, that the results of a simulated corrosion test, like the salt spray test, show a simulated corrosion load. And this load has not necessarily the same effect than a outdoor weathering.

A lot of factors have an effect on corrosion. And it is not possible to integrate all these factors into laboratory tests. So they can only be an aid for choosing the right protection system.

The results of these rapid corrosion tests (e.g. Kesternich-Test or salt spray test) should not be used to forecast the long term corrosion resistance for hot-dip galvanized parts. The permanent moisturisation, for example, prohibits the build-up of a passive protective layer.

■ Certificate for ISO 9001:2015

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 090728**

Certificate Holder: **MEFA Befestigungs-und Montagesysteme GmbH**
 Schillerstr. 15
 74635 Kupferzell
 Germany

Scope: Design, engineering, manufacturing and distribution of pipe supports, fixing systems, renewable energy sources for heat pumps and customized solutions

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2021-09-11 until 2024-09-10.
 First certification 2009

2021-08-02



TÜV Rheinland Cert GmbH
 Am Grauen Stein · 51105 Köln

www.tuv.com



08

■ Certificate for RAL-GZ 655 (exemplary for CENTUM® profile)

VERLEIHUNGSURKUNDE

AWARD CERTIFICATE

Die Gütegemeinschaft Rohrbefestigung e.V. verleiht hiermit aufgrund des ihrem Güteausschuss vorliegenden Prüfberichts der Firma

Based upon the test report of the following company which has been released by their quality commission the quality assurance association Gütegemeinschaft Rohrbefestigung e.V. hereby awards the company

MEFA Befestigungs- und Montagesysteme GmbH

für das Produkt
Montageschiene

for the product
pipe support channel / strut

CENTUM® Profil XL

das vom RAL Deutsches Institut für Gütesicherung und Kennzeichnung e.V., St. Augustin, anerkannte und durch Eintragung beim Deutschen Patent- und Markenamt als Kollektivmarke geschützte

the RAL quality label „Gütezeichen Rohrbefestigung“ which is recognised by RAL (Deutsches Institut für Gütesicherung und Kennzeichnung e.V.) and is protected as collective mark by registration with the German Patent and Trademark Office

„Gütezeichen Rohrbefestigung“



in Verbindung mit dem produktbezogenen Hinweis

to be used in combination with the marking

RAL-GZ 655-C „Montageschienen / pipe support channel/strut“

Landsberg am Lech, den 27.01.2017

Gütegemeinschaft Rohrbefestigung e.V.

Der Geschäftsführer
Managing Director

2012-01a

08

■ Certificate of conformity of the factory production control

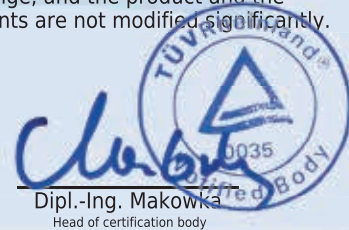
CERTIFICATE

Conformity of the Factory Production Control

0035-CPR-1090-1.02635.TÜVRh.2023.003

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the following construction product:

Construction product	Structural components and kits for steel structures to EXC2 according to EN 1090-2
Intended use	for load-bearing structures in all types of buildings
CE - marking method	ZA.3.2 to ZA.3.5 acc. to EN 1090-1:2009+A1:2011
	produced by or for
Manufacturer	MEFA Befestigungs-und Montagesysteme GmbH Schillerstr. 15 74635 Kupferzell GERMANY
Manufacturing plant <small>Production facility of the manufacturer</small>	-
Confirmation	This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the harmonised standard EN 1090-1:2009+A1:2011 under system 2+ are applied, and that the factory production control fulfills all the prescribed requirements stated therein.
Date of first issue	17.08.2016
Next Surveillance audit	16.08.2025
Period of validity	This certificate will remain valid as long as the test methods and/or the factory production control requirements included in the harmonised standard used to assess the performance of the declared characteristics do not change, and the product and the manufacturing conditions in the plants are not modified significantly.
Remarks	see reverse
Place and date of issue	Köln, 13.03.2023 R. Veith



Dipl.-Ing. Makowka
Head of certification body

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■ Welding Certificate DIN 1090

Welding Certificate

TÜVRh-EN1090-2.02558.2024.004

in accordance with EN 1090-1, table B.1, its hereby declared:
The manufacturer has produced evidence that he fulfills the requirements of the European standard EN 1090-2 for execution of structural steel components

Manufacturer	MEFA Befestigungs-und Montagesysteme GmbH Schillerstr. 15 74635 Kupferzell GERMANY
Technical specification	EN 1090-2:2018
Execution class(es)	EXC2 according to EN 1090-2
Welding Process(es) <small>(Reference no. acc. to DIN EN ISO 4063)</small>	135 - Metal active gas welding, partly mechanized 135 - Metal active gas welding, fully mechanized 21 - Spot welding
Material Group	1.1, 1.2 according to CEN ISO/TR 15608 and EN 1090-2, table 2 and 3
Responsible Welding Coordinator <small>(Title, Surname, Name, Qualification, Date of birth)</small>	Peter Butz, IWS
Substitute <small>(Title, Surname, Name, Qualification, Date of birth)</small>	-
Confirmation	All provisions concerning welding as described in the above mentioned technical specification(s) were applied.
Validity start	17.08.2016
Period of validity	16.08.2025
Remarks	-

Place and date of issue Köln, 07.03.2024
Veith/LB


Dipl.-Ing. Makowka
Head of certification body

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Precisely Right.



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info@mefa.de | www.mefa.de

