



# **OBEN** SEIN

*experience the difference*

## *PRODUCT* **CATALOGUE**

**FIXING** SYSTEMS



## » Terms and Conditions of Sale, Delivery and Payment

**Following terms and conditions apply to international customers (outside of Germany), only.**

### **Pricing:**

1. All prices agreed upon are to be understood ex works, provided that no other provisions have been made.
2. Our offers are subject to alteration without notice and are valid only for immediate orders. We reserve the right to amend prices on the day of receipt of order if significant changes in the price of material, labour or other costs make this necessary.
3. A minimum quantity surcharge of Euro 25,- is invoiced by us for orders where the net value of the goods is less than Euro 250,-.
4. All information given by us in our quotations, order confirmations, etc., with regard to delivery time has been made by us in good faith and must be considered as approximate and in no way binding on our part. The delivery period begins with our confirmation of order and will be met if possible, however, any delays occurring shall not entitle the buyer to withdraw from the contract or to claim any indemnification.

### **Deliveries:**

5. Data concerning dimensions and weights are for guidance only and not binding. We reserve the right to modifications concerning design, dimensions and weights without prior notice.
6. The supplier has the right to deliver partial shipments. In case of special designs up to 10 % extra deliveries are permissible.
7. The goods shall be shipped at the buyer's risk, also in case of free delivery. The choice of shipment route and shipment method shall be at our discretion unless special shipping instructions are given in the order. In case of free delivery we shall pay for the most inexpensive shipping rate; any extra costs for express mail, express parcel or air freight shall be at the receiver's expense.

### **Notifications of defects:**

8. Supplies to third parties must be checked for correctness before passing them on. Complaints concerning weight, quality and quantity of the goods can only be taken into consideration if they are filed in writing 8 days from the arrival of the goods. If it can be proven that defective goods, which must still be in their state of delivery, have been shipped, we will at our discretion replace them free of charge after their return to us with goods according to the original order or establish a credit note on the invoiced value. We shall expressly reject any additional indemnification, penalties, freight charges, wages or costs for rework which have occurred without our prior approval.
9. Our invoices have to be paid within 14 days from the date of invoice with a 2 % discount or within 30 days from the date of invoice net in cash, unless other provisions have been made. A failure to comply with the terms agreed upon shall release us from our delivery commitments, yet not the buyer from this obligation to take delivery. If the term of payment has been exceeded all costs and interests occurred for the time between the due date and the

date of the receipt of payment charged by the bank for uncovered credits shall be invoiced, with the reservation of exerting further rights.

10. If the buyer's financial situation during the contract period becomes unfavourable or if we receive insufficient information about the buyer or if due payments are not being carried out according to agreement, our sales price demands become due with immediate effect, even in case of an already granted respite. We shall furthermore be entitled to claim the immediate provision of securities or to withdraw from the contract.

### **Reservation of title:**

11. We retain the title to all goods supplied by us until the payment of our total claim from the business connection. This also applies if the purchase price for specific supplies of goods designated by the customer surrenders already at this point his ownership or part ownership of the new object to us and will keep it with commercial diligence in his custody for us. The handling and processing of goods supplied and owned by us shall always be effected in our name without any obligations for us. If the goods owned by us are mixed with, integrated in or combined with other goods, the customer assigns his rights in the new object already now, keeping it with commercial diligence in custody for us. The customer is only allowed to sell the goods being owned by us in the normal way of business if he is not in arrears with us. When concluding a sales contract with us, he already assigns as a means of security any claims in full as arising from the sale or for other legal terms against his buyer. The customer remains entitled to collect the claim as long he is not in arrears with us. If the value exceeds the object supplied by us under reservation of title, which serves as security, by more than 20 % we are upon the customer's request obliged to a corresponding retransfer. We must be informed immediately of any impoundment, distraint or other circumstances affecting our rights.

### **Taking-back of goods:**

12. Firmly purchased or correctly supplied material shall as a matter of principle nor be taken back. If we are in special cases after prior agreement prepared to take back any goods, at least 15 % administrative costs, but at least Euro 100,- as well as the outward freight will be deducted from the credit note. The return shipment has to be made carriage paid. Any rework being required will also be invoiced to the buyer. Special designs shall not be taken back.

13. Place of delivery and payment is Kupferzell. Court of Law of our choice for all claims due to us according to the before mentioned terms of delivery shall according to our choice, regardless of the value of the object, is the Inferior Court at Öhringen. In case of export, the legal provisions of the Federal Republic of Germany shall apply.

14. Purchasing terms of our customers contradicting the above mentioned terms and conditions shall not be accepted and are excluded. We already object now to any such conditions. This objection also applies if after receipt of contradictory terms no explicit objection has been made from our end.

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# MEFA Pipe clamps

01



Ø 12 - 60 mm

Pipe clamp Sigma  
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Ø 15 - 60 mm

Pipe clamp Omnia  
Page 1/3



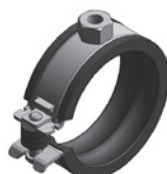
Ø 12 - 168 mm

Pipe clamp Trabant  
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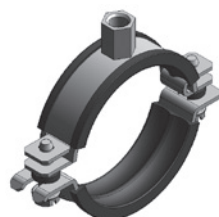
Ø 15 - 168 mm

Pipe clamp Omnia MB  
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Ø 12 - 46 mm

Sliding pipe clamp Sigma  
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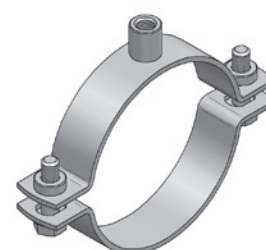
Ø 50 - 116 mm

Sliding pipe clamp Omnia MB  
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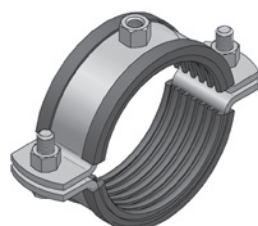
Ø 15 - 275 mm

Pipe clamp  
Maxima PSM, lined  
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Ø 12 - 273 mm

Pipe clamp  
Maxima PSM, unlined  
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Ø 64 - 508 mm

Pipe clamp Titan HD,  
lined  
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Ø 64 - 508 mm

Pipe clamp Titan HD, unlined  
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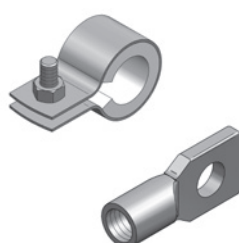
Ø 21 - 324 mm

U-bolt  
Page 1/20

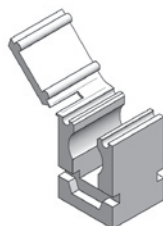


Ø 10 - 42 mm

Pipe clamp Clipstar, lined  
Page 1/21



Visible pipe clamp, lined  
Page 1/22



Ø 8 - 35 mm

Pipe clip Clipmaster  
Page 1/23



Connection adaptor  
Page 1/24



Sound insulation lining  
Page 1/25

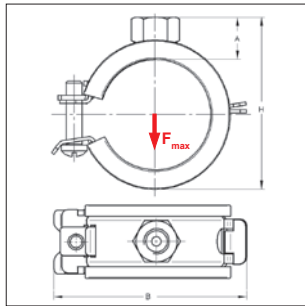
|          |                              |                |
|----------|------------------------------|----------------|
| <b>ⓘ</b> | Pipe clamps suitable for :   |                |
|          | <b>Insulated pipe clamps</b> | see chapter 6  |
|          | <b>Ventilation</b>           | see chapter 8  |
|          | <b>Sprinkler</b>             | see chapter 12 |
|          | <b>Stainless steel</b>       | see chapter 13 |
|          | <b>Plant construction</b>    | see chapter 14 |

## ■ Pipe clamp Sigma, lined

01



Pipe clamp Sigma



### Specification

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

### Technical data:

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

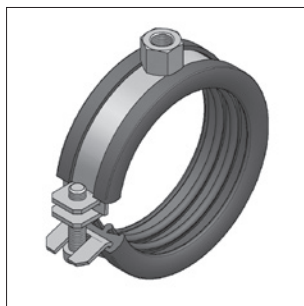
| Connection: Thread M8 |                  |          |               |                          |                        | with sound insulation lining rubber |      |          |         | black    |
|-----------------------|------------------|----------|---------------|--------------------------|------------------------|-------------------------------------|------|----------|---------|----------|
| Clamping range        |                  | Material | Closure-screw | max. load                | H <sub>(min-max)</sub> | A                                   | B    | Weight   | Packing | Part-No. |
| [mm]                  | [Inch]           | [mm]     |               | F <sub>max</sub><br>[kN] | [mm]                   | [mm]                                | [mm] | [kg/pc.] | [pcs.]  |          |
| 12 - 15               | 1/4              | 20x1,0   | M5            | 0,60                     | 30-33                  | 12                                  | 41   | 0,026    | 100     | 14510151 |
| 16 - 19               | 3/8              | 20x1,0   | M5            | 0,60                     | 34-37                  | 12                                  | 45   | 0,029    | 100     | 14510191 |
| 20 - 23               | 1/2              | 20x1,0   | M5            | 0,60                     | 38-41                  | 12                                  | 51   | 0,033    | 100     | 14510231 |
| 25 - 29               | 3/4              | 20x1,0   | M5            | 0,60                     | 43-47                  | 12                                  | 56   | 0,036    | 100     | 14510291 |
| 32 - 35               | 1                | 20x1,0   | M5            | 0,60                     | 50-53                  | 12                                  | 62   | 0,042    | 100     | 14510351 |
| 40 - 44               | 1 <sup>1/4</sup> | 20x1,0   | M5            | 0,60                     | 58-62                  | 12                                  | 71   | 0,058    | 50      | 14510441 |
| 48 - 52               | 1 <sup>1/2</sup> | 20x1,5   | M5            | 1,10                     | 66-70                  | 12                                  | 80   | 0,079    | 50      | 14510521 |
| 53 - 57               |                  | 20x1,5   | M5            | 1,10                     | 71-75                  | 12                                  | 85   | 0,086    | 50      | 14510571 |
| 58 - 60               | 2                | 20x1,5   | M5            | 1,10                     | 76-79                  | 12                                  | 89   | 0,091    | 50      | 14510601 |

| Connection: Thread M8 |     |        |    |      |       | with sound insulation lining rubber |    |       |     | white    |
|-----------------------|-----|--------|----|------|-------|-------------------------------------|----|-------|-----|----------|
| 12 - 15               | 1/4 | 20x1,0 | M5 | 0,60 | 30-33 | 12                                  | 41 | 0,026 | 100 | 14590151 |
| 16 - 19               | 3/8 | 20x1,0 | M5 | 0,60 | 34-37 | 12                                  | 45 | 0,029 | 100 | 14590191 |
| 20 - 23               | 1/2 | 20x1,0 | M5 | 0,60 | 38-41 | 12                                  | 51 | 0,033 | 100 | 14590231 |
| 25 - 29               | 3/4 | 20x1,0 | M5 | 0,60 | 43-47 | 12                                  | 56 | 0,036 | 100 | 14590291 |
| 32 - 35               | 1   | 20x1,0 | M5 | 0,60 | 50-53 | 12                                  | 62 | 0,042 | 100 | 14590351 |

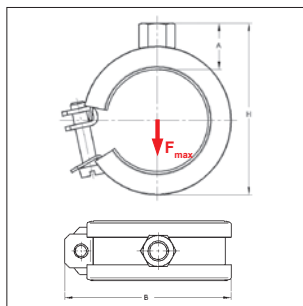
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

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

## ■ Pipe clamp Omnia, lined



Pipe clamp Omnia



01

### Specification

Closure: swiveling U-closure  
 Construction method: one-part  
 OD: 15 up to 60 mm  
 Connection: M8, M10  
 Sound insulation: according to DIN 4109

### Technical data:

Material: steel  
 Material type: DC01-A, DD11  
 Surface: galvanized

Sound insulation lining: rubber TPE  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 6 mm

Silicone

- 60 °C up to + 250 °C

6 mm

| Connection: Thread M8 |        |              |               |                        | with sound insulation lining |      |      |          |         | Silicone | Rubber   |
|-----------------------|--------|--------------|---------------|------------------------|------------------------------|------|------|----------|---------|----------|----------|
| Clamping range        | Type   | Material     | Closure-screw | max. load              | H                            | A    | B    | Weight   | Packing | Part-No. | Part-No. |
| [mm]                  | [Inch] | [mm]         |               | $F_{max}^{1)}$<br>[kN] | [mm]                         | [mm] | [mm] | [kg/pc.] | [pcs.]  |          |          |
| 15 - 17               | 15     | 20x0,8       | M6            | 0,80                   | 40                           | 19   | 39   | 0,040    | 100     | 0380652  | 0380156  |
| 18 - 20               | 18     | 3/8 20x0,8   | M6            | 0,80                   | 43                           | 19   | 43   | 0,042    | 100     | 0380687  | 0380180  |
| 22 - 24               | 22     | 1/2 20x0,8   | M6            | 0,8 0                  | 46                           | 19   | 47   | 0,045    | 100     | 0380725  | 0380229  |
| 28 - 30               | 28     | 3/4 20x0,8   | M6            | 0,80                   | 52                           | 19   | 55   | 0,051    | 100     | 0380784  | 0380288  |
| 35 - 37               | 35     | 1 20x1,0     | M6            | 1,00                   | 60                           | 19   | 61   | 0,062    | 100     | 0380822  | 0380350  |
| 42 - 43               | 42     | 1 1/4 20x1,0 | M6            | 1,00                   | 67                           | 19   | 68   | 0,067    | 50      | 0380911  | 0380423  |
| 44 - 47               | 44     | 20x1,0       | M6            | 1,00                   | 69                           | 19   | 70   | 0,067    | 50      | 0380946  | 0380431  |
| 48 - 49               | 48     | 1 1/2 20x1,0 | M6            | 1,00                   | 73                           | 19   | 75   | 0,076    | 50      | 0380989  | 0380482  |
| 50 - 52               | 50     | 20x1,5       | M6            | 1,20                   | 78                           | 20   | 85   | 0,093    | 50      | 0381012  | 0380512  |
| 54                    | 54     | 20x1,5       | M6            | 1,20                   | 80                           | 20   | 89   | 0,103    | 50      | 0381047  | 0380547  |
| 57                    | 57     | 20x1,5       | M6            | 1,20                   | 84                           | 20   | 91   | 0,100    | 50      | 0381071  | 0380571  |
| 60                    | 60     | 2 20x1,5     | M6            | 1,20                   | 86                           | 20   | 95   | 0,109    | 50      | 0381098  | 0380601  |

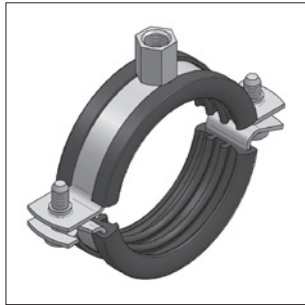
  

| Connection: Thread M10 |        |              |               |                        | with sound insulation lining |      |      |          |         | Silicone | Rubber   |
|------------------------|--------|--------------|---------------|------------------------|------------------------------|------|------|----------|---------|----------|----------|
| Clamping range         | Type   | Material     | Closure-screw | max. load              | H                            | A    | B    | Weight   | Packing | Part-No. | Part-No. |
| [mm]                   | [Inch] | [mm]         |               | $F_{max}^{1)}$<br>[kN] | [mm]                         | [mm] | [mm] | [kg/pc.] | [pcs.]  |          |          |
| 15 - 17                | 15     | 20x0,8       | M6            | 0,80                   | 42                           | 21   | 39   | 0,049    | 100     | 0381659  | 0381152  |
| 18 - 20                | 18     | 3/8 20x0,8   | M6            | 0,80                   | 45                           | 21   | 43   | 0,051    | 100     | 0381683  | 0381187  |
| 22 - 24                | 22     | 1/2 20x0,8   | M6            | 0,80                   | 48                           | 21   | 47   | 0,054    | 100     | 0381721  | 0381225  |
| 28 - 30                | 28     | 3/4 20x0,8   | M6            | 0,80                   | 54                           | 21   | 55   | 0,060    | 100     | 0381780  | 0381284  |
| 35 - 37                | 35     | 1 20x1,0     | M6            | 1,00                   | 62                           | 21   | 61   | 0,073    | 100     | 0381829  | 0381357  |
| 42 - 43                | 42     | 1 1/4 20x1,0 | M6            | 1,00                   | 69                           | 21   | 68   | 0,077    | 50      | 0381926  | 0381411  |
| 44 - 47                | 44     | 20x1,0       | M6            | 1,00                   | 71                           | 21   | 70   | 0,079    | 50      | 0381942  | 0381446  |
| 48 - 49                | 48     | 1 1/2 20x1,0 | M6            | 1,00                   | 75                           | 21   | 75   | 0,082    | 50      | 0381985  | 0381489  |
| 50 - 52                | 50     | 20x1,5       | M6            | 1,20                   | 80                           | 22   | 85   | 0,093    | 50      | 0382019  | 0381519  |
| 54                     | 54     | 20x1,5       | M6            | 1,20                   | 82                           | 22   | 89   | 0,094    | 50      | 0382043  | 0381543  |
| 57                     | 57     | 20x1,5       | M6            | 1,20                   | 86                           | 22   | 91   | 0,097    | 50      | 0382078  | 0381578  |

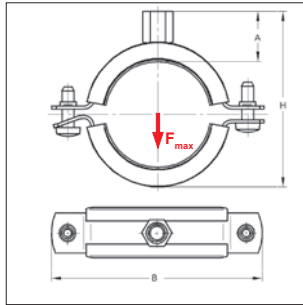
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensile pipe diameter.

## ■ Pipe clamp Trabant, lined

01



Pipe clamp Trabant



### Specification

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

### Technical data:

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

### Connection: Thread M8/M10

| Clamping range |        | Material | Closure-screw | max. load<br>$F_{max}$<br>[kN] | H<br>(min-max)<br>[mm] | A<br>[mm] | B<br>[mm] | with sound insulation lining |                   | Rubber   |
|----------------|--------|----------|---------------|--------------------------------|------------------------|-----------|-----------|------------------------------|-------------------|----------|
| [mm]           | [Inch] |          |               |                                |                        |           |           | Weight<br>[kg/pc.]           | Packing<br>[pcs.] | Part-No. |
| 12 - 15        |        | 20x1,0   | M6            | 0,29                           | 36-39                  | 22        | 58        | 0,048                        | 100               | 0426151  |
| 15 - 20        | 3/8    | 20x1,0   | M6            | 0,29                           | 39-44                  | 22        | 61        | 0,050                        | 100               | 0426201  |
| 20 - 25        | 1/2    | 20x1,0   | M6            | 0,29                           | 44-49                  | 22        | 64        | 0,052                        | 100               | 0426251  |
| 25 - 30        | 3/4    | 20x1,0   | M6            | 0,29                           | 49-54                  | 22        | 69        | 0,057                        | 100               | 0426301  |
| 32 - 37        | 1      | 20x1,0   | M6            | 0,29                           | 56-61                  | 22        | 77        | 0,064                        | 100               | 0426371  |
| 42 - 46        | 1 1/4  | 20x1,5   | M6            | 0,90                           | 66-70                  | 23        | 88        | 0,088                        | 50                | 0426461  |
| 47 - 52        | 1 1/2  | 20x1,5   | M6            | 0,90                           | 72-77                  | 23        | 94        | 0,095                        | 50                | 0426521  |
| 53 - 58        |        | 20x1,5   | M6            | 0,90                           | 78-83                  | 23        | 102       | 0,102                        | 50                | 0426581  |
| 59 - 65        | 2      | 20x1,5   | M6            | 0,90                           | 84-90                  | 23        | 109       | 0,109                        | 50                | 0426651  |
| 70 - 73        |        | 25x1,5   | M6            | 1,10                           | 92-97                  | 23        | 121       | 0,138                        | 50                | 0426721  |
| 75 - 78        | 2 1/2  | 25x1,5   | M6            | 1,10                           | 98-103                 | 23        | 124       | 0,152                        | 50                | 0426771  |
| 85 - 90        | 3      | 25x2,0   | M6            | 1,50                           | 108-116                | 23        | 134       | 0,202                        | 50                | 0426901  |
| 108 - 114      | 4      | 25x2,5   | M6            | 1,90                           | 134-140                | 24        | 165       | 0,268                        | 50                | 0427141  |

### Connection: Thread M10/M12

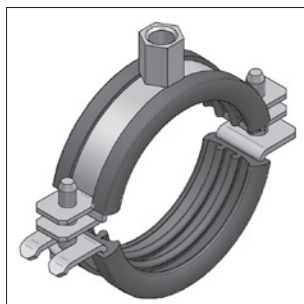
|           |   | Material | Closure-screw | max. load<br>[kN] | H<br>[mm] | A<br>[mm] | B<br>[mm] | with sound insulation lining |                   | Rubber   |
|-----------|---|----------|---------------|-------------------|-----------|-----------|-----------|------------------------------|-------------------|----------|
|           |   |          |               |                   |           |           |           | Weight<br>[kg/pc.]           | Packing<br>[pcs.] | Part-No. |
| 121 - 125 |   | 25x2,5   | M6            | 2,20              | 156-162   | 27        | 176       | 0,313                        | 25                | 04272251 |
| 132 - 136 |   | 25x2,5   | M6            | 2,20              | 167-173   | 27        | 187       | 0,337                        | 25                | 04272361 |
| 137 - 141 | 5 | 25x2,5   | M6            | 2,20              | 172-178   | 27        | 192       | 0,343                        | 25                | 04272411 |
| 159 - 163 |   | 25x2,5   | M6            | 2,20              | 194-200   | 27        | 215       | 0,388                        | 25                | 04272631 |
| 164 - 168 | 6 | 25x2,5   | M6            | 2,20              | 199-205   | 27        | 220       | 0,401                        | 25                | 04272681 |

① suitable connection adaptor see on page 1/24

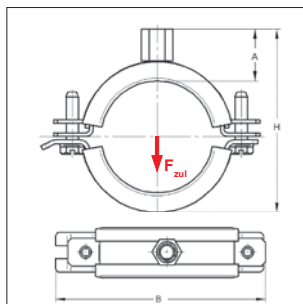
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

## ■ Pipe clamp Omnia MB, lined



Pipe clamp Omnia MB



Related fire loads see page 15/10

01

### Specification

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

Remark: also available with two connections

### Technical data:

Material: steel  
 Material type: DD11  
 Surface: galvanized

Sound insulation lining: rubber TPE  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 6 mm

Silicone<sup>1)</sup>

- 60 °C up to + 250 °C  
 6 mm

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

| Connection: Thread M8/M10  |          |               |                                        |             | with sound insulation lining |      |          |         |     | Silicone | Rubber   |
|----------------------------|----------|---------------|----------------------------------------|-------------|------------------------------|------|----------|---------|-----|----------|----------|
| Clamping range             | Material | Closure-screw | max. load                              | H (min-max) | A                            | B    | Weight   | Packing |     | Part-No. | Part-No. |
| [mm]                       | [Inch]   | [mm]          | F <sub>max</sub> <sup>1)</sup><br>[kN] | [mm]        | [mm]                         | [mm] | [kg/pc.] | [pcs.]  |     |          |          |
| 15 - 20                    | 3/8      | 20x1,5        | M6                                     | 1,00        | 42-47                        | 24   | 61       | 0,072   | 100 | 0398220  | 0398020  |
| 22 - 28                    | 1/2-3/4  | 20x1,5        | M6                                     | 1,00        | 49-56                        | 24   | 68       | 0,079   | 100 | 0398228  | 0398028  |
| 30 - 35                    | 1        | 20x1,5        | M6                                     | 1,00        | 57-62                        | 24   | 78       | 0,089   | 100 | 0398235  | 0398035  |
| 38 - 42                    | 1 1/4    | 20x2,0        | M6                                     | 1,60        | 66-70                        | 24   | 89       | 0,116   | 50  | 0398242  | 0398042  |
| 44 - 48                    | 1 1/2    | 20x2,0        | M6                                     | 1,60        | 72-76                        | 24   | 92       | 0,121   | 50  | 0398248  | 0398048  |
| 50 - 54                    |          | 20x2,0        | M6                                     | 1,60        | 78-82                        | 24   | 101      | 0,130   | 50  | 0398254  | 0398054  |
| 56 - 60                    | 2        | 20x2,0        | M6                                     | 1,60        | 84-88                        | 24   | 108      | 0,142   | 50  | 0398260  | 0398060  |
| 61 - 65                    |          | 20x2,0        | M6                                     | 1,60        | 91-92                        | 24   | 113      | 0,147   | 50  | 0398264  | 0398064  |
| 70 - 73                    |          | 20x2,0        | M6                                     | 1,60        | 98-101                       | 24   | 117      | 0,162   | 50  | 0398273  | 0398073  |
| 75 - 83                    | 2 1/2    | 20x2,0        | M6                                     | 1,60        | 103-108                      | 24   | 124      | 0,171   | 50  | 0398278  | 0398078  |
| 84 - 89                    | 3        | 25x2,5        | M6                                     | 1,80        | 113-118                      | 25   | 136      | 0,241   | 50  | 0398289  | 0398089  |
| 90 - 95                    |          | 25x2,5        | M6                                     | 1,80        | 119-124                      | 25   | 143      | 0,263   | 50  | 0398295  | 0398095  |
| 100 - 105                  |          | 25x2,5        | M6                                     | 1,80        | 129-134                      | 25   | 152      | 0,277   | 50  | 0398305  | 0398105  |
| 108 - 112                  |          | 25x2,5        | M6                                     | 1,80        | 137-141                      | 25   | 158      | 0,292   | 50  | 0398312  | 0398112  |
| 114 - 116                  | 4        | 25x2,5        | M6                                     | 1,80        | 143-145                      | 25   | 165      | 0,309   | 25  | 0398316  | 0398116  |
| 121 - 125                  |          | 25x2,5        | M6                                     | 1,80        | 150-154                      | 25   | 175      | 0,322   | 25  | 0398325  | 0398125  |
| Connection: Thread M10/M12 |          |               |                                        |             | with sound insulation lining |      |          |         |     | Silicone | Rubber   |
| 132 - 136                  |          | 25x3,0        | M8                                     | 2,30        | 171-175                      | 30   | 192      | 0,441   | 25  | 1418336  | 03981362 |
| 137 - 141                  | 5        | 25x3,0        | M8                                     | 2,30        | 176-180                      | 30   | 197      | 0,449   | 25  | 1418341  | 03981412 |
| 159 - 163                  |          | 25x3,0        | M8                                     | 2,30        | 193-197                      | 30   | 219      | 0,515   | 25  | 1418363  | 03981632 |
| 164 - 168                  | 6        | 25x3,0        | M8                                     | 2,30        | 198-202                      | 30   | 225      | 0,509   | 25  | 1418368  | 03981682 |

## ■ Pipe clamp Omnia MB, lined

01

### Connection: Thread M12

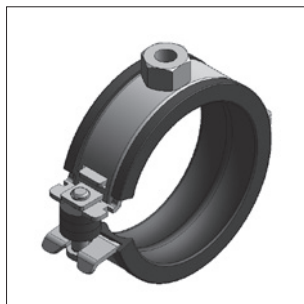
| Connection: Thread M12 |                  |          |                   |                                             |                        |      | with sound insulation lining |          |         | Silicone | Rubber   |
|------------------------|------------------|----------|-------------------|---------------------------------------------|------------------------|------|------------------------------|----------|---------|----------|----------|
| Clamping range         |                  | Material | Closure-<br>screw | max. load<br>F <sub>max</sub> <sup>1)</sup> | H <sub>(min-max)</sub> | A    | B                            | Weight   | Packing | Part-No. | Part-No. |
| [mm]                   | [Inch]           | [mm]     |                   | [kN]                                        | [mm]                   | [mm] | [mm]                         | [kg/pc.] | [pcs.]  |          |          |
| 15 - 20                | 3/8              | 20x1,5   | M6                | 1,00                                        | 43-48                  | 24   | 61                           | 0,088    | 100     | 0392227  | 0392014  |
| 22 - 28                | 1/2-3/4          | 20x1,5   | M6                | 1,00                                        | 50-56                  | 24   | 68                           | 0,095    | 100     | 0392235  | 0392030  |
| 30 - 35                | 1                | 20x1,5   | M6                | 1,00                                        | 58-63                  | 24   | 78                           | 0,105    | 100     | 0392243  | 0392049  |
| 38 - 42                | 1 <sup>1/4</sup> | 20x2,0   | M6                | 1,60                                        | 67-71                  | 24   | 89                           | 0,139    | 50      | 0392251  | 0392057  |
| 44 - 48                | 1 <sup>1/2</sup> | 20x2,0   | M6                | 1,60                                        | 73-77                  | 24   | 92                           | 0,137    | 50      | 0397448  | 0398448  |
| 50 - 54                |                  | 20x2,0   | M6                | 1,60                                        | 79-83                  | 24   | 101                          | 0,146    | 50      | 0397454  | 0398454  |
| 56 - 60                | 2                | 20x2,0   | M6                | 1,60                                        | 85-89                  | 24   | 108                          | 0,156    | 50      | 0397460  | 0398460  |
| 63 - 64                |                  | 20x2,0   | M6                | 1,60                                        | 92-93                  | 24   | 113                          | 0,163    | 50      | 0397464  | 0398464  |
| 70 - 73                |                  | 20x2,0   | M6                | 1,60                                        | 99-102                 | 24   | 117                          | 0,175    | 50      | 0397473  | 0398473  |
| 75 - 83                | 2 <sup>1/2</sup> | 20x2,0   | M6                | 1,60                                        | 104-109                | 24   | 124                          | 0,183    | 50      | 0397480  | 0398480  |
| 84 - 89                | 3                | 25x2,5   | M6                | 1,80                                        | 114-119                | 25   | 136                          | 0,260    | 50      | 0397489  | 0398489  |
| 90 - 95                |                  | 25x2,5   | M6                | 1,80                                        | 120-125                | 25   | 143                          | 0,269    | 50      | 0397495  | 0398495  |
| 100 - 105              |                  | 25x2,5   | M6                | 1,80                                        | 130-135                | 25   | 152                          | 0,295    | 50      | 0397505  | 0398505  |
| 108 - 112              |                  | 25x2,5   | M6                | 1,80                                        | 138-142                | 25   | 158                          | 0,312    | 50      | 0392405  | 0392219  |
| 114 - 116              | 4                | 25x2,5   | M6                | 1,80                                        | 144-146                | 25   | 165                          | 0,320    | 25      | 0397516  | 0398516  |
| 121 - 125              |                  | 25x2,5   | M6                | 1,80                                        | 151-155                | 25   | 175                          | 0,336    | 25      | 0397525  | 0398525  |

 suitable connection adaptor see on page 1/24

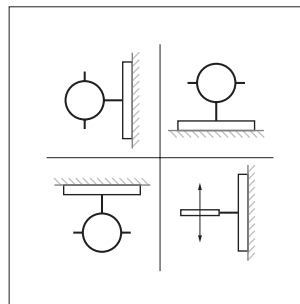
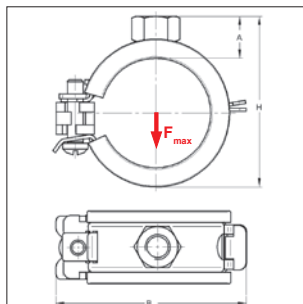
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

## Sliding pipe clamp Sigma, lined



Sliding pipe clamp Sigma



Mounting recommendation



01

### Specification

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

### Technical data:

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

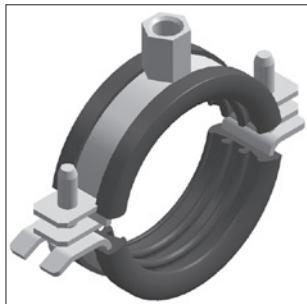
| Connection: Thread M8 |          |               |                   | with sound insulation lining |      |      |          |         | Rubber   |
|-----------------------|----------|---------------|-------------------|------------------------------|------|------|----------|---------|----------|
| Dimension             | Material | Closure-screw | max. load         | H                            | A    | B    | Weight   | Packing | Part-No. |
| [mm]                  | [mm]     |               | $F_{max}$<br>[kN] | [mm]                         | [mm] | [mm] | [kg/pc.] | [pcs.]  |          |
| 12                    | 20x0,8   | M5            | 0,75              | 33                           | 13   | 43   | 0,027    | 100     | 14520121 |
| 15                    | 20x0,8   | M5            | 0,75              | 35                           | 13   | 45   | 0,031    | 100     | 14520151 |
| 16                    | 20x0,8   | M5            | 0,75              | 35                           | 13   | 45   | 0,032    | 100     | 14520161 |
| 18                    | 20x0,8   | M5            | 0,75              | 40                           | 13   | 50   | 0,031    | 100     | 14520181 |
| 20                    | 20x1,0   | M5            | 0,75              | 40                           | 13   | 50   | 0,036    | 100     | 14520201 |
| 22                    | 20x1,0   | M5            | 0,75              | 48                           | 13   | 58   | 0,034    | 100     | 14520221 |
| 25                    | 20x1,0   | M5            | 0,75              | 48                           | 13   | 58   | 0,038    | 100     | 14520251 |
| 28                    | 20x1,0   | M5            | 0,75              | 56                           | 13   | 66   | 0,039    | 100     | 14520281 |
| 32                    | 20x1,0   | M5            | 0,75              | 56                           | 13   | 66   | 0,044    | 100     | 14520321 |
| 35                    | 20x1,0   | M5            | 0,75              | 56                           | 13   | 66   | 0,046    | 100     | 14520351 |
| 38                    | 20x1,0   | M5            | 0,75              | 64                           | 13   | 74   | 0,053    | 50      | 14520381 |
| 40                    | 20x1,0   | M5            | 0,75              | 64                           | 13   | 74   | 0,051    | 50      | 14520401 |
| 42                    | 20x1,0   | M5            | 0,75              | 64                           | 13   | 74   | 0,051    | 50      | 14520421 |
| 46                    | 20x1,5   | M5            | 0,75              | 72                           | 13   | 82   | 0,069    | 50      | 14520461 |

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

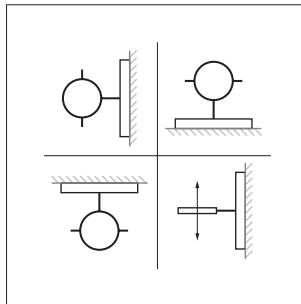
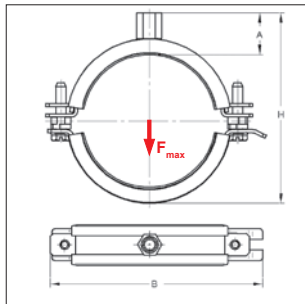
With larger dimensions an unopposed sliding can not be guaranteed.

## Sliding pipe clamp Omnia MB, lined

01



Sliding pipe clamp Omnia MB



Mounting recommendation



### Specification

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

### Technical data:

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

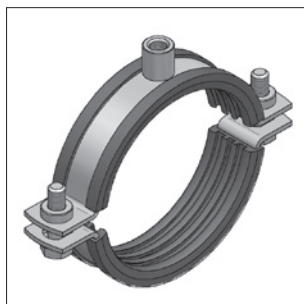
### Connection: Thread M8/M10

| Dimension<br>[mm] | Material<br>[mm] | Closure-<br>screw | max. load<br>$F_{max}$<br>[kN] | H<br>[mm] | A<br>[mm] | B<br>[mm] | with sound insulation lining |                   | Rubber   |
|-------------------|------------------|-------------------|--------------------------------|-----------|-----------|-----------|------------------------------|-------------------|----------|
|                   |                  |                   |                                |           |           |           | Weight<br>[kg/pc.]           | Packing<br>[pcs.] | Part-No. |
| 50                | 20x2,0           | M6                | 1,60                           | 74        | 24        | 101       | 0,112                        | 50                | 0387250  |
| 52                | 20x2,0           | M6                | 1,60                           | 76        | 24        | 101       | 0,126                        | 50                | 0387252  |
| 54                | 20x2,0           | M6                | 1,60                           | 78        | 24        | 101       | 0,126                        | 50                | 0387254  |
| 56                | 20x2,0           | M6                | 1,60                           | 80        | 24        | 108       | 0,137                        | 50                | 0387256  |
| 63                | 20x2,0           | M6                | 1,60                           | 87        | 24        | 113       | 0,137                        | 50                | 0387263  |
| 65                | 20x2,0           | M6                | 1,60                           | 90        | 24        | 113       | 0,143                        | 50                | 0387265  |
| 69                | 20x2,0           | M6                | 1,60                           | 93        | 24        | 117       | 0,150                        | 50                | 0387269  |
| 75                | 20x2,0           | M6                | 1,60                           | 99        | 24        | 124       | 0,150                        | 50                | 0387275  |
| 77                | 20x2,0           | M6                | 1,60                           | 101       | 24        | 124       | 0,164                        | 50                | 0387277  |
| 81                | 20x2,0           | M6                | 1,60                           | 105       | 24        | 124       | 0,164                        | 50                | 0387281  |
| 90                | 25x2,5           | M6                | 2,30                           | 115       | 25        | 143       | 0,261                        | 50                | 0387290  |
| 96                | 25x2,5           | M6                | 2,30                           | 121       | 25        | 143       | 0,261                        | 50                | 0387296  |
| 110               | 25x2,5           | M6                | 2,30                           | 135       | 25        | 158       | 0,288                        | 50                | 0387310  |
| 116               | 25x2,5           | M6                | 2,30                           | 141       | 25        | 165       | 0,303                        | 50                | 0387316  |

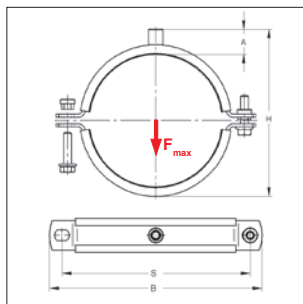
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

With larger dimensions an unopposed sliding can not be guaranteed.

## ■ Pipe clamp Maxima PSM, lined



Pipe clamp Maxima PSM



Related fire loads see page 15/10

### Delivery time:

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

**Variant demand on request!**

### Specification

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

### Technical data:

Material: steel  
Material type: DD11, S235JRG2  
Surface: galvanized<sup>1)</sup>  
Sound insulation lining: rubber TPE  
Temperature resistance: -35 °C up to +100 °C  
Insulation thickness: 6 mm

Silicone<sup>2)</sup>

-60 °C up to +250 °C  
6 mm

<sup>1)</sup> Components for usage in outdoor areas also available with zinc-nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

<sup>2)</sup> max. loads are also valid for pipe clamps with silicone lining, these are not RAL approved.

| Connection: Thread M8/M10 |        |          |               |                                             |                        | with sound insulation lining |      |      |          |         | Silicone | Rubber   |
|---------------------------|--------|----------|---------------|---------------------------------------------|------------------------|------------------------------|------|------|----------|---------|----------|----------|
| Clamping range            |        | Material | Closure screw | max. load<br>F <sup>2)</sup> <sub>max</sub> | H <sub>(min-max)</sub> | A                            | B    | S    | Weight   | Packing | Part-No. | Part-No. |
| [mm]                      | [Inch] | [mm]     |               | [kN]                                        | [mm]                   | [mm]                         | [mm] | [mm] | [kg/pc.] | [pc.]   |          |          |
| 15 - 19                   |        | 25x3,0   | M8            | 1,50                                        | 54-58                  | 30                           | 80   | 56   | 0,195    | 1       | 00695358 | 0068819  |
| 20 - 25                   | 1/2    | 25x3,0   | M8            | 1,50                                        | 59-64                  | 30                           | 87   | 63   | 0,207    | 1       | 0069536  | 0068823  |
| 26 - 30                   | 3/4    | 25x3,0   | M8            | 1,50                                        | 65-69                  | 30                           | 92   | 68   | 0,220    | 1       | 0069537  | 0068828  |
| 31 - 36                   | 1      | 25x3,0   | M8            | 1,50                                        | 70-75                  | 30                           | 98   | 74   | 0,234    | 1       | 0069538  | 0068873  |
| 38 - 45                   | 1¼     | 25x3,0   | M8            | 1,50                                        | 77-84                  | 30                           | 107  | 83   | 0,251    | 1       | 0069539  | 0068880  |
| 47 - 51                   | 1½     | 25x3,0   | M8            | 1,50                                        | 86-90                  | 30                           | 114  | 90   | 0,273    | 1       | 0069540  | 0068881  |
| 53 - 57                   |        | 25x3,0   | M8            | 1,50                                        | 92-96                  | 30                           | 120  | 96   | 0,288    | 1       | 0069541  | 0068941  |
| 58 - 64                   | 2      | 25x3,0   | M8            | 1,50                                        | 97-103                 | 30                           | 129  | 105  | 0,300    | 1       | 00695397 | 00688083 |

| Connection: Thread M10/M12 |    |        |     |      |         | with sound insulation lining |     |     |       |   | Silicone | Rubber  |
|----------------------------|----|--------|-----|------|---------|------------------------------|-----|-----|-------|---|----------|---------|
| 65 - 70                    |    | 30x3,0 | M10 | 1,85 | 104-109 | 30                           | 141 | 115 | 0,420 | 1 | 0083580  | 0080075 |
| 72 - 78                    | 2½ | 30x3,0 | M10 | 1,85 | 111-117 | 30                           | 149 | 123 | 0,441 | 1 | 0083589  | 0080106 |
| 84 - 90                    | 3  | 30x3,0 | M10 | 1,85 | 123-129 | 30                           | 162 | 135 | 0,477 | 1 | 0083596  | 0080107 |
| 94 - 100                   |    | 30x3,0 | M10 | 1,85 | 133-139 | 30                           | 172 | 145 | 0,507 | 1 | 0083610  | 0080108 |
| 102 - 106                  |    | 30x3,0 | M10 | 1,85 | 141-145 | 30                           | 178 | 152 | 0,531 | 1 | 0083626  | 0080148 |
| 108 - 112                  |    | 30x3,0 | M10 | 1,85 | 147-151 | 30                           | 184 | 158 | 0,549 | 1 | 0083635  | 0080159 |
| 113 - 117                  | 4  | 30x3,0 | M10 | 1,85 | 152-156 | 30                           | 189 | 163 | 0,564 | 1 | 0083636  | 0080167 |
| 120 - 125                  |    | 35x4,0 | M10 | 5,00 | 161-166 | 31                           | 209 | 179 | 0,810 | 1 | 0083662  | 0080168 |
| 127 - 132                  |    | 35x4,0 | M10 | 5,00 | 168-173 | 31                           | 216 | 186 | 0,841 | 1 | 0083670  | 0080185 |
| 133 - 136                  |    | 35x4,0 | M10 | 5,00 | 174-177 | 31                           | 220 | 191 | 0,867 | 1 | 0083678  | 0088136 |
| 137 - 142                  | 5  | 35x4,0 | M10 | 5,00 | 178-183 | 31                           | 226 | 196 | 0,885 | 1 | 0083679  | 0080192 |
| 145 - 150                  |    | 35x4,0 | M10 | 5,00 | 186-191 | 31                           | 234 | 204 | 0,921 | 1 | 0083686  | 0080193 |
| 152 - 156                  |    | 35x4,0 | M10 | 5,00 | 193-197 | 31                           | 240 | 211 | 0,952 | 1 | 0083694  | 0080198 |
| 158 - 163                  |    | 35x4,0 | M10 | 5,00 | 199-204 | 31                           | 247 | 218 | 0,979 | 1 | 0083708  | 0088163 |
| 164 - 168                  | 6  | 35x4,0 | M10 | 5,00 | 205-209 | 31                           | 252 | 223 | 1,005 | 1 | 0083711  | 0080222 |
| 190 - 194                  |    | 35x4,0 | M10 | 5,00 | 231-235 | 31                           | 278 | 249 | 1,121 | 1 | 0083742  | 0080244 |
| 198 - 203                  |    | 35x4,0 | M10 | 5,00 | 239-244 | 31                           | 287 | 258 | 1,156 | 1 | 0083750  | 0080270 |
| 207 - 213                  |    | 35x4,0 | M10 | 5,00 | 248-254 | 31                           | 297 | 268 | 1,196 | 1 | 0083774  | 0080293 |
| 219 - 223                  | 8  | 35x4,0 | M10 | 5,00 | 260-264 | 31                           | 308 | 278 | 1,250 | 1 | 0083804  | 0080309 |
| 225 - 230                  |    | 35x4,0 | M10 | 5,00 | 266-271 | 31                           | 315 | 285 | 1,276 | 1 | 0083806  | 0088230 |
| 242 - 246                  |    | 35x4,0 | M10 | 5,00 | 283-287 | 31                           | 331 | 301 | 1,352 | 1 | 0083839  | 0080331 |
| 270 - 275                  | 10 | 35x4,0 | M10 | 5,00 | 311-316 | 31                           | 360 | 330 | 1,476 | 1 | 0083878  | 0080374 |

## ■ Pipe clamp Maxima PSM, lined

01

| Connection: Thread M16 |        |           |               |                               |                        | with sound insulation lining |      |      |          |         | Silicone | Rubber   |
|------------------------|--------|-----------|---------------|-------------------------------|------------------------|------------------------------|------|------|----------|---------|----------|----------|
| Clamping range         |        | Material  | Closure-screw | max. load<br>F <sub>max</sub> | H <sub>(min-max)</sub> | A                            | B    | S    | Weight   | Packing | Part-No. | Part-No. |
| [mm]                   | [Inch] | [mm]      |               | [kN]                          | [mm]                   | [mm]                         | [mm] | [mm] | [kg/pc.] | [pc.]   |          |          |
| 102 - 106              |        | 30x3,0    | M10           | 1,85                          | 140-144                | 29                           | 178  | 152  | 0,547    | 1       | 0084646  | 0081620  |
| 108 - 112              |        | 30x3,0    | M10           | 1,85                          | 146-150                | 29                           | 184  | 158  | 0,565    | 1       | 0084654  | 0081639  |
| 113 - 117              |        | 4 30x3,0  | M10           | 1,85                          | 151-155                | 29                           | 189  | 163  | 0,580    | 1       | 0084659  | 0081652  |
| 120 - 125              |        | 35x4,0    | M10           | 5,00                          | 160-165                | 30                           | 209  | 179  | 0,826    | 1       | 0084665  | 0081646  |
| 127 - 132              |        | 35x4,0    | M10           | 5,00                          | 167-172                | 30                           | 216  | 186  | 0,857    | 1       | 0084670  | 0081655  |
| 133 - 136              |        | 35x4,0    | M10           | 5,00                          | 173-176                | 30                           | 220  | 191  | 0,883    | 1       | 0084689  | 0081663  |
| 137 - 142              |        | 5 35x4,0  | M10           | 5,00                          | 177-182                | 30                           | 226  | 196  | 0,901    | 1       | 0084692  | 0081668  |
| 145 - 150              |        | 35x4,0    | M10           | 5,00                          | 185-190                | 30                           | 234  | 204  | 0,937    | 1       | 0084693  | 0081670  |
| 152 - 156              |        | 35x4,0    | M10           | 5,00                          | 192-196                | 30                           | 240  | 211  | 0,968    | 1       | 0084703  | 0081674  |
| 158 - 163              |        | 35x4,0    | M10           | 5,00                          | 198-203                | 30                           | 247  | 218  | 0,995    | 1       | 0084719  | 0081701  |
| 164 - 168              |        | 6 35x4,0  | M10           | 5,00                          | 204-208                | 30                           | 252  | 223  | 1,021    | 1       | 0084723  | 0081710  |
| 190 - 194              |        | 35x4,0    | M10           | 5,00                          | 230-234                | 30                           | 278  | 249  | 1,137    | 1       | 0084750  | 0081750  |
| 198 - 203              |        | 35x4,0    | M10           | 5,00                          | 238-243                | 30                           | 287  | 258  | 1,172    | 1       | 0084754  | 0081756  |
| 207 - 213              |        | 35x4,0    | M10           | 5,00                          | 247-253                | 30                           | 297  | 268  | 1,212    | 1       | 0084794  | 0081786  |
| 219 - 223              |        | 8 35x4,0  | M10           | 5,00                          | 259-263                | 30                           | 308  | 278  | 1,266    | 1       | 0084811  | 0081797  |
| 225 - 230              |        | 35x4,0    | M10           | 5,00                          | 265-270                | 30                           | 315  | 285  | 1,292    | 1       | 0084816  | 0081809  |
| 242 - 246              |        | 35x4,0    | M10           | 5,00                          | 282-286                | 30                           | 331  | 301  | 1,368    | 1       | 0084832  | 0081826  |
| 270 - 275              |        | 10 35x4,0 | M10           | 5,00                          | 310-315                | 30                           | 360  | 330  | 1,492    | 1       | 0084870  | 0081867  |

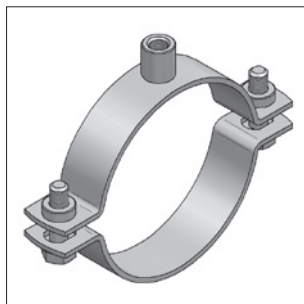
| Connection: Sleeve 1/2 " |  |           |     |      |         | with sound insulation lining |     |     |       |   | Silicone | Rubber  |
|--------------------------|--|-----------|-----|------|---------|------------------------------|-----|-----|-------|---|----------|---------|
| 102 - 106   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

① suitable connection adaptor see on page 1/24

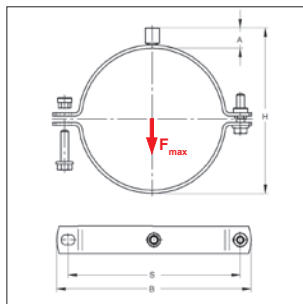
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

## ■ Pipe clamp Maxima PSM, unlined



Pipe clamp Maxima PSM, unlined



RAL-GZ 655-B



901 1118 000/Laipk

Related fire loads see page 15/10

**Delivery time:**

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

**Variant demand on request!****Specification**

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

**Technical data:**

Material: steel  
Material type: DD11, S235JRG2  
Surface: galvanized<sup>1)</sup>

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

**Connection: Thread M8/M10****without sound insulation lining**

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

**Connection: Thread M10/M12****without sound insulation lining**

| Clamping range |        |          |                          | Thread and installation |         |      |      |          |         |          |         |
|----------------|--------|----------|--------------------------|-------------------------|---------|------|------|----------|---------|----------|---------|
| Clamping range | Thread | Material | Max. load                | H (min-max)             | A       | B    | S    | Weight   | Packing | Part-No. |         |
| [mm]           | [Inch] | [mm]     | F <sub>max</sub><br>[kN] | [mm]                    | [mm]    | [mm] | [mm] | [kg/pc.] | [pc.]   |          |         |
| 84 - 90        | 3      | 30x3,0   | M10                      | 3,00                    | 111-117 | 24   | 149  | 123      | 0,390   | 1        | 0088093 |
| 96 - 102       |        | 30x3,0   | M10                      | 3,00                    | 123-129 | 24   | 162  | 135      | 0,417   | 1        | 0088105 |
| 106 - 112      |        | 30x3,0   | M10                      | 3,00                    | 133-139 | 24   | 172  | 145      | 0,440   | 1        | 0088113 |
| 114 - 118      | 4      | 30x3,0   | M10                      | 3,00                    | 141-145 | 24   | 178  | 152      | 0,458   | 1        | 0088119 |
| 120 - 124      |        | 30x3,0   | M10                      | 3,00                    | 147-151 | 24   | 184  | 158      | 0,472   | 1        | 0088125 |
| 125 - 129      |        | 30x3,0   | M10                      | 3,00                    | 152-156 | 24   | 189  | 163      | 0,483   | 1        | 0088130 |
| 132 - 137      |        | 35x4,0   | M10                      | 6,30                    | 161-166 | 25   | 209  | 179      | 0,709   | 1        | 0088138 |
| 139 - 144      | 5      | 35x4,0   | M10                      | 6,30                    | 168-173 | 25   | 216  | 186      | 0,734   | 1        | 0088145 |
| 149 - 154      |        | 35x4,0   | M10                      | 6,30                    | 178-183 | 25   | 226  | 196      | 0,769   | 1        | 0088155 |
| 157 - 162      |        | 35x4,0   | M10                      | 6,30                    | 186-191 | 25   | 234  | 204      | 0,798   | 1        | 0088164 |
| 164 - 168      | 6      | 35x4,0   | M10                      | 6,30                    | 193-197 | 25   | 240  | 211      | 0,823   | 1        | 0088169 |
| 189 - 193      |        | 35x4,0   | M10                      | 6,30                    | 218-222 | 25   | 265  | 236      | 0,912   | 1        | 0088194 |
| 195 - 200      |        | 35x4,0   | M10                      | 6,30                    | 224-229 | 25   | 272  | 243      | 0,934   | 1        | 0088201 |
| 210 - 215      |        | 35x4,0   | M10                      | 6,30                    | 239-244 | 25   | 287  | 258      | 0,987   | 1        | 0088216 |
| 219 - 225      | 8      | 35x4,0   | M10                      | 6,30                    | 248-254 | 25   | 297  | 268      | 1,020   | 1        | 0088228 |
| 244 - 250      |        | 35x4,0   | M10                      | 6,30                    | 273-279 | 25   | 323  | 293      | 1,109   | 1        | 0088253 |
| 269 - 273      | 10     | 35x4,0   | M10                      | 6,30                    | 298-302 | 25   | 346  | 316      | 1,198   | 1        | 0088274 |

## ■ Pipe clamp Maxima PSM, unlined

01

### Connection: Thread M16

without sound insulation lining

| Clamping range | Material | Closure-screw | max. load<br>$F_{\max}$ | H<br>(min-max) | A    | B    | S    | Weight   | Packing | Part-No. |
|----------------|----------|---------------|-------------------------|----------------|------|------|------|----------|---------|----------|
| [mm] [Inch]    | [mm]     |               | [kN]                    | [mm]           | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]   |          |
| 106 - 112      | 30x3,0   | M10           | 3,00                    | 132-138        | 23   | 172  | 145  | 0,456    | 1       | 0081607  |
| 114 - 118      | 30x3,0   | M10           | 3,00                    | 140-144        | 23   | 178  | 152  | 0,474    | 1       | 0081621  |
| 120 - 124      | 30x3,0   | M10           | 3,00                    | 146-150        | 23   | 184  | 158  | 0,488    | 1       | 0081643  |
| 125 - 129      | 30x3,0   | M10           | 3,00                    | 151-155        | 23   | 189  | 163  | 0,499    | 1       | 0081645  |
| 132 - 137      | 35x4,0   | M10           | 6,30                    | 160-165        | 24   | 209  | 179  | 0,725    | 1       | 0081654  |
| 139 - 144      | 35x4,0   | M10           | 6,30                    | 167-172        | 24   | 216  | 186  | 0,750    | 1       | 0081657  |
| 149 - 154      | 35x4,0   | M10           | 6,30                    | 177-182        | 24   | 226  | 196  | 0,785    | 1       | 0081667  |
| 157 - 162      | 35x4,0   | M10           | 6,30                    | 185-190        | 24   | 234  | 204  | 0,814    | 1       | 0081675  |
| 164 - 168      | 35x4,0   | M10           | 6,30                    | 192-196        | 24   | 240  | 211  | 0,839    | 1       | 0081704  |
| 189 - 193      | 35x4,0   | M10           | 6,30                    | 217-221        | 24   | 265  | 236  | 0,928    | 1       | 0081739  |
| 195 - 200      | 35x4,0   | M10           | 6,30                    | 223-229        | 24   | 272  | 243  | 0,950    | 1       | 0081746  |
| 210 - 215      | 35x4,0   | M10           | 6,30                    | 238-243        | 24   | 287  | 258  | 1,003    | 1       | 0081762  |
| 219 - 225      | 35x4,0   | M10           | 6,30                    | 247-253        | 24   | 297  | 268  | 1,036    | 1       | 0081790  |
| 244 - 250      | 35x4,0   | M10           | 6,30                    | 272-278        | 24   | 323  | 293  | 1,125    | 1       | 0081818  |
| 269 - 273      | 35x4,0   | M10           | 6,30                    | 297-301        | 24   | 346  | 316  | 1,214    | 1       | 0081843  |

### Connection: Sleeve 1/2"

without sound insulation lining

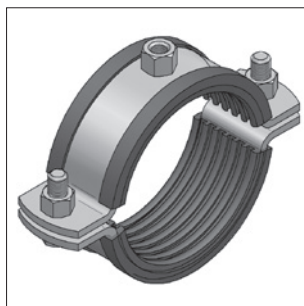
|           |        |     |      |         |    |     |     |       |   |         |
|-----------|--------|-----|------|---------|----|-----|-----|-------|---|---------|
| 106 - 112 | 30x3,0 | M10 | 3,00 | 127-133 | 18 | 172 | 145 | 0,434 | 1 | 0082109 |
| 114 - 118 | 30x3,0 | M10 | 3,00 | 135-139 | 18 | 178 | 152 | 0,452 | 1 | 0082123 |
| 120 - 124 | 30x3,0 | M10 | 3,00 | 141-145 | 18 | 184 | 158 | 0,466 | 1 | 0082144 |
| 125 - 129 | 30x3,0 | M10 | 3,00 | 146-150 | 18 | 189 | 163 | 0,477 | 1 | 0082152 |
| 132 - 137 | 35x4,0 | M10 | 6,30 | 155-160 | 19 | 209 | 179 | 0,703 | 1 | 0082153 |
| 139 - 144 | 35x4,0 | M10 | 6,30 | 162-167 | 19 | 216 | 186 | 0,728 | 1 | 0082157 |
| 149 - 154 | 35x4,0 | M10 | 6,30 | 172-177 | 19 | 226 | 196 | 0,763 | 1 | 0082173 |
| 157 - 162 | 35x4,0 | M10 | 6,30 | 180-185 | 19 | 234 | 204 | 0,792 | 1 | 0082175 |
| 164 - 168 | 35x4,0 | M10 | 6,30 | 187-191 | 19 | 240 | 211 | 0,817 | 1 | 0082196 |
| 189 - 193 | 35x4,0 | M10 | 6,30 | 212-216 | 19 | 265 | 236 | 0,906 | 1 | 0082237 |
| 195 - 200 | 35x4,0 | M10 | 6,30 | 218-223 | 19 | 272 | 243 | 0,928 | 1 | 0082247 |
| 210 - 215 | 35x4,0 | M10 | 6,30 | 233-238 | 19 | 287 | 258 | 0,981 | 1 | 0082261 |
| 219 - 225 | 35x4,0 | M10 | 6,30 | 242-248 | 19 | 297 | 268 | 1,014 | 1 | 0082291 |
| 244 - 250 | 35x4,0 | M10 | 6,30 | 267-273 | 19 | 323 | 293 | 1,103 | 1 | 0082320 |
| 269 - 273 | 35x4,0 | M10 | 6,30 | 292-296 | 19 | 346 | 316 | 1,192 | 1 | 0082342 |

 suitable connection adaptor see on page 1/24

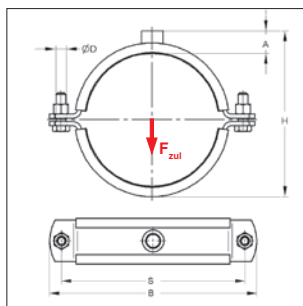
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

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

## Pipe clamp Titan HD, lined



Pipe clamp Titan HD



Related fire loads see page 15/10

**Delivery time:**

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

**Variant demand on request!**

**Specification**

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

**Technical data:**

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

Silicone<sup>2)</sup>

- 60 °C up to + 250 °C  
6 mm

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

<sup>2)</sup> max. loads are also valid for pipe clamps with silicone lining, these are not RAL approved.

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

## ■ Pipe clamp Titan HD, lined

01

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

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

# ■ Pipe clamp Titan HD, lined

01

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

| Connection: Sleeve 1" |       |        |     |      |     |    | with sound insulation lining |     |    |       | Silicone | Rubber  |         |
|-----------------------|-------|--------|-----|------|-----|----|------------------------------|-----|----|-------|----------|---------|---------|
| 64                    | 2 1/2 | 50x5,0 | M12 | 3,20 | 106 | 31 | 154                          | 125 | 13 | 0,979 | 1        | 0079498 | 0074507 |
| 76                    |       | 50x5,0 | M12 | 3,20 | 118 | 31 | 166                          | 137 | 13 | 1,069 | 1        | 0079502 | 0074511 |
| 89                    |       | 50x5,0 | M12 | 3,20 | 131 | 31 | 179                          | 150 | 13 | 1,166 | 1        | 0079504 | 0074513 |
| 108                   | 3     | 50x5,0 | M12 | 3,20 | 150 | 31 | 198                          | 169 | 13 | 1,309 | 1        | 0079510 | 0074519 |
| 110                   |       | 50x5,0 | M12 | 3,20 | 152 | 31 | 200                          | 171 | 13 | 1,324 | 1        | 0079537 | 0074535 |
| 114                   |       | 50x5,0 | M12 | 3,20 | 156 | 31 | 204                          | 175 | 13 | 1,354 | 1        | 0079553 | 0074551 |
| 125                   | 4     | 50x5,0 | M12 | 3,20 | 167 | 31 | 215                          | 186 | 13 | 1,436 | 1        | 0079588 | 0074586 |
| 127                   |       | 50x5,0 | M12 | 3,20 | 169 | 31 | 217                          | 188 | 13 | 1,451 | 1        | 0079596 | 0074594 |
| 133                   |       | 50x5,0 | M12 | 3,20 | 175 | 31 | 223                          | 194 | 13 | 1,496 | 1        | 0079618 | 0074608 |
| 135                   | 5     | 50x5,0 | M12 | 3,20 | 177 | 31 | 225                          | 196 | 13 | 1,511 | 1        | 0079626 | 0074616 |
| 140                   |       | 50x5,0 | M12 | 3,20 | 182 | 31 | 230                          | 201 | 13 | 1,549 | 1        | 0079634 | 0074624 |
| 152                   |       | 50x5,0 | M12 | 3,20 | 194 | 31 | 242                          | 213 | 13 | 1,639 | 1        | 0079642 | 0074640 |
| 160                   | 6     | 50x5,0 | M12 | 3,20 | 202 | 31 | 250                          | 221 | 13 | 1,699 | 1        | 0079685 | 0074683 |

## Pipe clamp Titan HD, lined

01

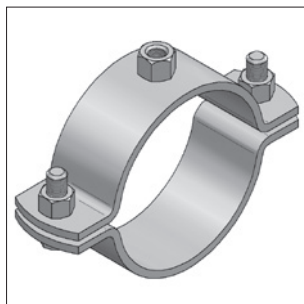
| Connection: Sleeve 1"     |        |                  |                   |                                       |           |           |           |           |           |                    |                  | with sound insulation lining | Silicone | Rubber   |
|---------------------------|--------|------------------|-------------------|----------------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

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

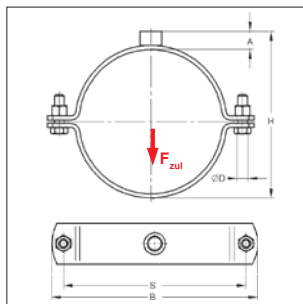
Products awarded with „Gütezeichen Rohrbefestigung“ and subject to external supervision acc. to RAL-GZ 655-B.

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

## ■ Pipe clamp Titan HD, unlined



Pipe clamp Titan HD



Related fire loads see page 15/10

**Delivery time:**

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

**Variant demand on request!**

**Specification**

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

**Technical data:**

Material: steel  
Material type: S235JRG2  
Surface: galvanized

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

| Connection: Thread M12 |          |               |                   |       |      |      |      |      |          | without sound insulation lining |          |         |
|------------------------|----------|---------------|-------------------|-------|------|------|------|------|----------|---------------------------------|----------|---------|
| Dimension              | Material | Closure-screw | max. load         | H     | A    | B    | S    | D    | Weight   | Packing                         | Part-No. |         |
| [mm]                   | [Inch]   | [mm]          | $F_{max}$<br>[kN] | [mm]  | [mm] | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]                           |          |         |
| 64                     |          | 50x5,0        | M12               | 6,00  | 85   | 16   | 141  | 112  | 13       | 0,766                           | 1        | 0066503 |
| 76                     | 2 1/2    | 50x5,0        | M12               | 6,00  | 97   | 16   | 154  | 125  | 13       | 0,842                           | 1        | 0066507 |
| 89                     | 3        | 50x5,0        | M12               | 6,00  | 110  | 16   | 167  | 138  | 13       | 0,925                           | 1        | 0066509 |
| 108                    |          | 50x5,0        | M12               | 6,00  | 129  | 16   | 186  | 157  | 13       | 1,046                           | 1        | 0066515 |
| 110                    |          | 50x5,0        | M12               | 6,00  | 131  | 16   | 188  | 159  | 13       | 1,058                           | 1        | 0066518 |
| 114                    | 4        | 50x5,0        | M12               | 6,00  | 135  | 16   | 192  | 163  | 13       | 1,084                           | 1        | 0066520 |
| 133                    |          | 50x5,0        | M12               | 6,00  | 154  | 16   | 212  | 183  | 13       | 1,205                           | 1        | 0066572 |
| 135                    |          | 50x5,0        | M12               | 6,00  | 156  | 16   | 214  | 185  | 13       | 1,217                           | 1        | 0066592 |
| 140                    | 5        | 50x5,0        | M12               | 6,00  | 161  | 16   | 219  | 190  | 13       | 1,249                           | 1        | 0066606 |
| 160                    |          | 50x5,0        | M12               | 6,00  | 181  | 16   | 239  | 210  | 13       | 1,376                           | 1        | 0066649 |
| 165                    | 6        | 50x5,0        | M12               | 6,00  | 186  | 16   | 244  | 215  | 13       | 1,408                           | 1        | 0066682 |
| 168                    |          | 50x5,0        | M12               | 6,00  | 189  | 16   | 247  | 218  | 13       | 1,427                           | 1        | 0066684 |
| 194                    |          | 50x5,0        | M12               | 16,00 | 215  | 16   | 273  | 244  | 13       | 1,592                           | 1        | 0066754 |
| 200                    |          | 50x5,0        | M12               | 16,00 | 221  | 16   | 279  | 250  | 13       | 1,630                           | 1        | 0066762 |
| 210                    |          | 50x5,0        | M12               | 16,00 | 231  | 16   | 290  | 261  | 13       | 1,694                           | 1        | 0066792 |
| 219                    | 8        | 50x5,0        | M12               | 16,00 | 240  | 16   | 299  | 270  | 13       | 1,751                           | 1        | 0066819 |
| 267                    |          | 50x5,0        | M12               | 16,00 | 288  | 16   | 347  | 318  | 13       | 2,056                           | 1        | 0066881 |
| 273                    | 10       | 50x5,0        | M12               | 16,00 | 294  | 16   | 353  | 324  | 13       | 2,095                           | 1        | 0066894 |
| 324                    | 12       | 50x5,0        | M12               | 16,00 | 345  | 16   | 404  | 375  | 13       | 2,419                           | 1        | 0066955 |
| 356                    |          | 50x5,0        | M12               | 16,00 | 377  | 16   | 436  | 407  | 13       | 2,622                           | 1        | 0066965 |
| 368                    |          | 50x5,0        | M12               | 16,00 | 389  | 16   | 448  | 419  | 13       | 2,698                           | 1        | 0066981 |

## Pipe clamp Titan HD, unlined

01

### Connection: Thread M16

### without sound insulation lining

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

### Connection: Sleeve 1/2"

### without sound insulation lining

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

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

# ■ Pipe clamp Titan HD, unlined

01

| Connection: Sleeve 1" |        |          |               |                          |      |      |      |      | without sound insulation lining |          |         |          |
|-----------------------|--------|----------|---------------|--------------------------|------|------|------|------|---------------------------------|----------|---------|----------|
| Dimension             |        | Material | Closure-screw | max. load                | H    | A    | B    | S    | D                               | Weight   | Packing | Part-No. |
| [mm]                  | [Inch] | [mm]     |               | F <sub>max</sub><br>[kN] | [mm] | [mm] | [mm] | [mm] | [mm]                            | [kg/pc.] | [pc.]   |          |
| 64                    | 2 1/2  | 50x5,0   | M12           | 6,00                     | 94   | 25   | 142  | 113  | 13                              | 0,827    | 1       | 0074505  |
| 76                    |        | 50x5,0   | M12           | 6,00                     | 106  | 25   | 154  | 125  | 13                              | 0,903    | 1       | 0074510  |
| 89                    |        | 50x5,0   | M12           | 6,00                     | 119  | 25   | 167  | 138  | 13                              | 0,986    | 1       | 0074512  |
| 108                   |        | 50x5,0   | M12           | 6,00                     | 138  | 25   | 186  | 157  | 13                              | 1,107    | 1       | 0074520  |
| 110                   | 4      | 50x5,0   | M12           | 6,00                     | 140  | 25   | 188  | 159  | 13                              | 1,119    | 1       | 0074522  |
| 114                   |        | 50x5,0   | M12           | 6,00                     | 144  | 25   | 192  | 163  | 13                              | 1,145    | 1       | 0074524  |
| 133                   |        | 50x5,0   | M12           | 6,00                     | 163  | 25   | 211  | 182  | 13                              | 1,266    | 1       | 0074587  |
| 135                   |        | 50x5,0   | M12           | 6,00                     | 165  | 25   | 213  | 184  | 13                              | 1,278    | 1       | 0074595  |
| 140                   | 5      | 50x5,0   | M12           | 6,00                     | 170  | 25   | 218  | 189  | 13                              | 1,310    | 1       | 0074609  |
| 160                   | 6      | 50x5,0   | M12           | 6,00                     | 190  | 25   | 238  | 209  | 13                              | 1,437    | 1       | 0074641  |
| 165                   |        | 50x5,0   | M12           | 6,00                     | 195  | 25   | 243  | 214  | 13                              | 1,469    | 1       | 0074684  |
| 168                   |        | 50x5,0   | M12           | 6,00                     | 198  | 25   | 246  | 217  | 13                              | 1,488    | 1       | 0074686  |
| 194                   |        | 50x5,0   | M12           | 16,00                    | 224  | 25   | 272  | 243  | 13                              | 1,653    | 1       | 0074757  |
| 200                   | 7      | 50x5,0   | M12           | 16,00                    | 230  | 25   | 278  | 249  | 13                              | 1,691    | 1       | 0074773  |
| 210                   |        | 50x5,0   | M12           | 16,00                    | 240  | 25   | 288  | 259  | 13                              | 1,755    | 1       | 0074781  |
| 219                   |        | 50x5,0   | M12           | 16,00                    | 250  | 25   | 297  | 268  | 13                              | 1,812    | 1       | 0074803  |
| 267                   |        | 50x5,0   | M12           | 16,00                    | 297  | 25   | 345  | 316  | 13                              | 2,117    | 1       | 0074874  |
| 273                   | 10     | 50x5,0   | M12           | 16,00                    | 304  | 25   | 351  | 322  | 13                              | 2,156    | 1       | 0074897  |
| 324                   | 12     | 50x5,0   | M12           | 16,00                    | 354  | 25   | 402  | 373  | 13                              | 2,480    | 1       | 0074939  |
| 356                   | 14     | 50x5,0   | M12           | 16,00                    | 386  | 25   | 434  | 405  | 13                              | 2,683    | 1       | 0074968  |
| 368                   |        | 50x5,0   | M12           | 16,00                    | 398  | 25   | 446  | 417  | 13                              | 2,759    | 1       | 0074970  |
| 406*                  |        | 50x5,0   | M12           | 16,00                    | 436  | 25   | 486  | 457  | 13                              | 3,001    | 1       | 0074992  |
| 457*                  |        | 50x5,0   | M12           | 16,00                    | 487  | 25   | 537  | 508  | 13                              | 3,325    | 1       | 00749995 |
| 508*                  |        | 50x5,0   | M12           | 16,00                    | 538  | 25   | 588  | 559  | 13                              | 3,649    | 1       | 0075012  |

| Connection: Sleeve 1 1/4" |    |        |     |       |     |    |     |     | without sound insulation lining |       |   |         |
|---------------------------|----|--------|-----|-------|-----|----|-----|-----|---------------------------------|-------|---|---------|
| 200                       | 8  | 50x5,0 | M12 | 16,00 | 232 | 27 | 278 | 249 | 13                              | 1,716 | 1 | 0063942 |
| 210                       |    | 50x5,0 | M12 | 16,00 | 242 | 27 | 288 | 259 | 13                              | 1,780 | 1 | 0063947 |
| 219                       |    | 50x5,0 | M12 | 16,00 | 252 | 27 | 297 | 268 | 13                              | 1,837 | 1 | 0063949 |
| 267                       |    | 50x5,0 | M12 | 16,00 | 299 | 27 | 345 | 316 | 13                              | 2,142 | 1 | 0063960 |
| 273                       | 10 | 50x5,0 | M12 | 16,00 | 306 | 27 | 351 | 322 | 13                              | 2,181 | 1 | 0063962 |
| 324                       | 12 | 50x5,0 | M12 | 16,00 | 356 | 27 | 402 | 373 | 13                              | 2,505 | 1 | 0063975 |
| 356                       | 14 | 50x5,0 | M12 | 16,00 | 388 | 27 | 434 | 405 | 13                              | 2,708 | 1 | 0063987 |
| 368                       |    | 50x5,0 | M12 | 16,00 | 400 | 27 | 446 | 417 | 13                              | 2,784 | 1 | 0063989 |
| 406*                      |    | 50x5,0 | M12 | 16,00 | 438 | 27 | 486 | 457 | 13                              | 3,026 | 1 | 0063997 |
| 457*                      |    | 50x5,0 | M12 | 16,00 | 489 | 27 | 537 | 508 | 13                              | 3,350 | 1 | 0064009 |
| 508*                      |    | 50x5,0 | M12 | 16,00 | 540 | 27 | 588 | 559 | 13                              | 3,674 | 1 | 0064010 |

| Without connection thread |  |        |         | without sound insulation lining |     |   |     |     |    |       |   |          |
|---------------------------|--|--------|---------|---------------------------------|-----|---|-----|-----|----|-------|---|----------|
| 406*                      |  | 50x5,0 | ohne VS | 16,00                           | 416 | - | 486 | 457 | 13 | 2,783 | 1 | 0070978  |
| 457*                      |  | 50x5,0 | ohne VS | 16,00                           | 467 | - | 537 | 508 | 13 | 3,107 | 1 | 00709887 |
| 508*                      |  | 50x5,0 | ohne VS | 16,00                           | 519 | - | 588 | 559 | 13 | 3,431 | 1 | 0070995  |

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

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

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

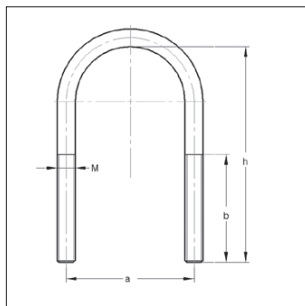
\* not certified acc. to RAL-GZ 655-B.

## U-bolt

01



U-bolt



G 4940029\*

### Specification

OD: 21,3 up to 323,9 mm

Thread: M8, M10, M12, M20

• for direct installation of piping onto steel structures

• suitable for sprinkler

• suitable for push-through-assembling into profile rails

• bearing should be used with 2 nuts and 2 washers

• fixed bearing should be used with 4 nuts and 4 washers

• should not be used as fixpoint without required measures

### Technical data:

Material:

steel

Surface:

galvanized<sup>1)</sup>

### Admission:

• \*dimension 219,1 mm, M12 guideline VdS-2344 "requirements and testing methods for construction elements",

VdS-approval No.: G 4940029

• other dimensions according to VdS-2092 guideline "planning and installation"

<sup>1)</sup> U-bolts for outdoor application with Zinc-Nickel-coating see chapter 14

### U-bolt differing from DIN 3570

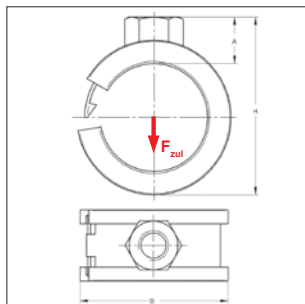
without nuts

| OD     | Thread           | Overall height | Center distance | Length of thread | Weight | Packing  | Part-No. |
|--------|------------------|----------------|-----------------|------------------|--------|----------|----------|
| [mm]   | [Inch]           | M              | h               | a                | b      | [kg/pc.] | [pc.]    |
|        |                  |                | [mm]            | [mm]             | [mm]   |          |          |
| 21,3   | 1/2              | M8             | 80              | 30               | 65     | 0,048    | 100      |
| 26,9   | 3/4              | M8             | 80              | 35               | 65     | 0,058    | 100      |
| 33,7   | 1                | M8             | 90              | 42               | 65     | 0,066    | 100      |
| 42,4   | 1 <sup>1/4</sup> | M8             | 100             | 51               | 70     | 0,074    | 100      |
| 48,3   | 1 <sup>1/2</sup> | M8             | 105             | 57               | 70     | 0,078    | 100      |
| 60,3   | 2                | M10            | 120             | 71               | 70     | 0,141    | 100      |
| 76,1   | 2 <sup>1/2</sup> | M10            | 135             | 87               | 70     | 0,161    | 100      |
| 88,9   | 3                | M10            | 150             | 100              | 70     | 0,179    | 50       |
| 108,0  |                  | M12            | 190             | 121              | 90     | 0,325    | 50       |
| 114,3  | 4                | M12            | 195             | 126              | 90     | 0,334    | 50       |
| 133,0  |                  | M12            | 215             | 146              | 90     | 0,370    | 25       |
| 139,7  | 5                | M12            | 220             | 152              | 90     | 0,379    | 25       |
| 159,0  |                  | M12            | 240             | 172              | 90     | 0,416    | 25       |
| 168,3  | 6                | M12            | 250             | 180              | 90     | 0,433    | 25       |
| 219,1* | 8                | M12            | 300             | 233              | 95     | 0,525    | 25       |

### U-bolt without nuts according to DIN 3570

|       |    |     |     |     |    |       |    |         |
|-------|----|-----|-----|-----|----|-------|----|---------|
| 273,0 | 10 | M20 | 313 | 302 | 70 | 1,631 | 10 | 0507273 |
| 323,9 | 12 | M20 | 364 | 352 | 70 | 1,892 | 1  | 0507324 |

## ■ Pipe clamp Clipstar, lined



Pipe clamp Clipstar, lined

01

### Specification

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

### Technical data:

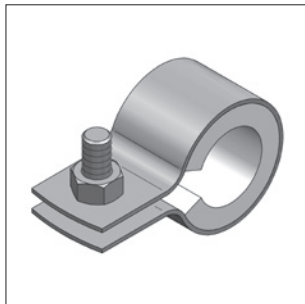
Material: steel  
 Material type: DC01-A  
 Surface: galvanized  
 Sound insulation lining: rubber TPE  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 3 mm

| Connection: Thread M8 |          |      |      |      | with sound insulation lining |          |         | Rubber   |
|-----------------------|----------|------|------|------|------------------------------|----------|---------|----------|
| Dimension             | Material | A    | B    | H    | max. load                    | Weight   | Packing | Part-No. |
| [mm]                  | [mm]     | [mm] | [mm] | [mm] | $F_{\max}$<br>[kN]           | [kg/pc.] | [pcs.]  |          |
| 10                    | 16x0,6   | 10   | 22   | 26   | 0,30                         | 0,013    | 100     | 0290106  |
| 12                    | 16x0,6   | 10   | 23   | 26   | 0,30                         | 0,013    | 100     | 0290122  |
| 15                    | 16x0,6   | 10   | 25   | 30   | 0,30                         | 0,015    | 100     | 0290157  |
| 18                    | 16x0,6   | 11   | 28   | 33   | 0,30                         | 0,016    | 100     | 0290181  |
| 22                    | 16x0,8   | 11   | 31   | 38   | 0,40                         | 0,020    | 100     | 0290211  |
| 28                    | 16x0,8   | 11   | 39   | 44   | 0,40                         | 0,023    | 100     | 0290289  |
| 35                    | 20x1,0   | 11   | 46   | 51   | 0,40                         | 0,036    | 100     | 0290351  |
| 42                    | 20x1,0   | 11   | 55   | 58   | 0,40                         | 0,042    | 100     | 0290424  |

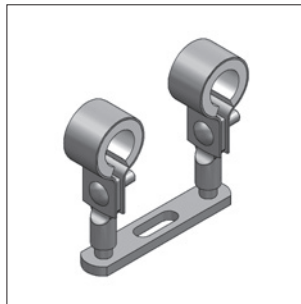
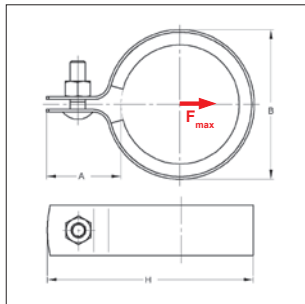
**Remark:** Determination of max. allowable load according to static methods and breaking loads, considering a max. allowable deformation of 1,5 mm or 2% of max. tensible pipe diameter.

## Visible pipe clamp, lined

01



Visible pipe clamp, lined



Option for assembly with  
Double holder + Eye nut



### Specification

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

Accessory: Duplo eye nut

Double holder see chapter 5

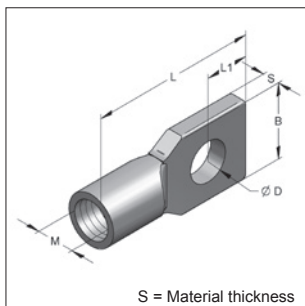
### Technical data:

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

| Visible pipe clamp |        |          |               |                          | with sound insulation lining rubber |      |      |          | white   |          |
|--------------------|--------|----------|---------------|--------------------------|-------------------------------------|------|------|----------|---------|----------|
| Dimension          |        | Material | Closure-screw | max. load                | A                                   | B    | H    | Weight   | Packing | Part-No. |
| [mm]               | [Inch] | [mm]     |               | F <sub>max</sub><br>[kN] | [mm]                                | [mm] | [mm] | [kg/pc.] | [pcs.]  |          |
| 15                 |        | 20x1,0   | M6            | 0,65                     | 33                                  | 31   | 56   | 0,038    | 100     | 0311150  |
| 18                 | 3/8    | 20x1,0   | M6            | 0,65                     | 31                                  | 34   | 57   | 0,040    | 100     | 0311180  |
| 22                 | 1/2    | 20x1,0   | M6            | 0,65                     | 31                                  | 38   | 61   | 0,044    | 100     | 0311220  |

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

## Duplo eye nut with female thread



S = Material thickness

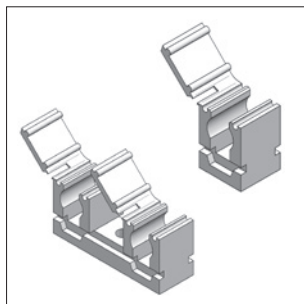
Duplo eye nut with  
female thread

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

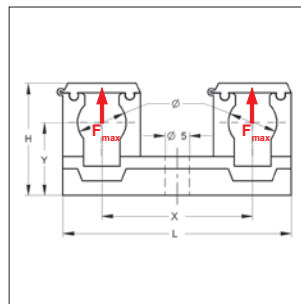
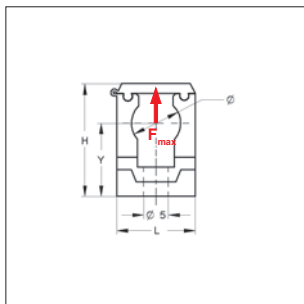
| Type                   | D    | L    | L1   | B    | S    | Admissibly tensile loading | Weight   | Packing | Part-No. |
|------------------------|------|------|------|------|------|----------------------------|----------|---------|----------|
|                        | [mm] | [mm] | [mm] | [mm] |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

## ■ Pipe clip Clipmaster

01



Single- and double clip



### Specification

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

### Technical data:

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

### Single clip

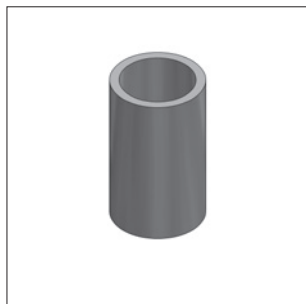
| OD   | max. load         |           | Measures  |           | Weight   | Packing | Part-No. |
|------|-------------------|-----------|-----------|-----------|----------|---------|----------|
| [mm] | $F_{max}$<br>[kN] | H<br>[mm] | B<br>[mm] | Y<br>[mm] | [kg/pc.] | [pcs.]  |          |
| 8    | 0,09              | 23        | 16        | 14        | 0,004    | 100     | 0401080  |
| 10   | 0,25              | 23        | 16        | 15        | 0,004    | 100     | 0401102  |
| 12   | 0,25              | 23        | 16        | 15        | 0,002    | 100     | 0401129  |
| 15   | 0,25              | 28        | 20        | 17        | 0,005    | 100     | 0401153  |
| 18   | 0,35              | 31        | 23        | 19        | 0,006    | 100     | 0401188  |
| 22   | 0,35              | 35        | 29        | 20        | 0,007    | 100     | 0401226  |
| 28   | 0,35              | 40        | 35        | 23        | 0,010    | 100     | 0401285  |
| 35   | 0,35              | 47        | 43        | 26        | 0,013    | 100     | 0401358  |

### Double clip

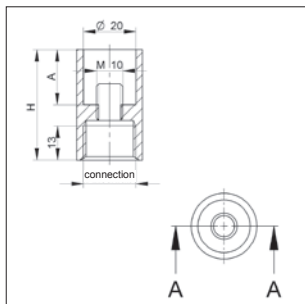
| OD   | max. load         |           | Measures  |           | Weight    | Packing  | Part-No. |
|------|-------------------|-----------|-----------|-----------|-----------|----------|----------|
| [mm] | $F_{max}$<br>[kN] | H<br>[mm] | X<br>[mm] | Y<br>[mm] | L<br>[mm] | [kg/pc.] | [pcs.]   |
| 10   | 0,25              | 23        | 31        | 15        | 47        | 0,008    | 100      |
| 12   | 0,25              | 23        | 32        | 15        | 47        | 0,008    | 100      |
| 15   | 0,25              | 28        | 36        | 17        | 55        | 0,011    | 50       |
| 18   | 0,35              | 31        | 39        | 19        | 60        | 0,012    | 50       |
| 22   | 0,35              | 35        | 45        | 20        | 73        | 0,016    | 50       |

## ■ Connection adaptor for pipe clamps

01



Connection adaptor  
for pipe clamps



### Specification

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

### Technical data:

Material: steel  
Surface: galvanized

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

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

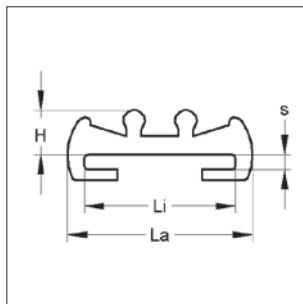
### Suitable for pipe clamps: Maxima PSM, Omnia MB (132 - 168 mm) and Trabant (121 - 168 mm)

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

## ■ Sound insulation linings



Sound absorbing rubber profile



### Sound insulation lining black (TPE)

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

### Sound insulation lining red (Silicone)

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

### Technical data of MEFA sound insulation lining

Sound insulated MEFA pipe clamps are conforming to DIN 4109.

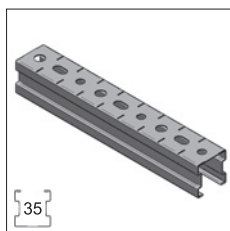
Furthermore, MEFA pipe clamps with sound insulation lining are also prepared to reduce the noise transmission to values below  $L_{AG\text{ ist}} = 30$  dB (A), which means that their corrective dimensions equal to fittings of the sound protection class quality group II according to DIN 4109.

|                                      | Rubber                                                                       | Rubber                                                                       | Silicone                                                                         |
|--------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Material                             | Elastomer EPDM                                                               | Elastomer TPE                                                                | Silicone                                                                         |
| Shore-hardness(DIN 53505)            | 50 ± 5° Shore                                                                | 60 ± 5° Shore                                                                | 40 ± 5 Shore                                                                     |
| Tensile strength                     | -                                                                            | -                                                                            | 800 N/cm <sup>2</sup>                                                            |
| Ageing, weather and ozone resistance | acc. to DIN 53509 and 53508                                                  | acc. to DIN 53509 and 53508                                                  | acc. to DIN 53509 and 53508                                                      |
| Temperature resistance               | - 35 °C up to + 110 °C                                                       | - 35 °C up to + 110 °C                                                       | - 60 °C up to + 250 °C                                                           |
| Chemical resistance                  | Diluted acid and alkaline solutions, hot water, alcoholic solutions          | Diluted acid and alkaline solutions, hot water, alcoholic solutions          | Naturals fats, glycerine, ethyl alcohol, alcoholic solutions                     |
| Chemical unstable                    | Hot oils and fats, fuels, hydrocarbons<br>- further information on request - | Hot oils and fats, fuels, hydrocarbons<br>- further information on request - | Hot oils and fats, highly concentrated acid and alkaline solutions, hydrocarbons |
| fire performance (DIN 4102)          | silicone-free<br>B2 (not burning, dropping off)                              | silicone-free<br>B2 (not burning, dropping off)                              | B2 (not burning, dropping off)                                                   |
| Building class                       |                                                                              |                                                                              |                                                                                  |

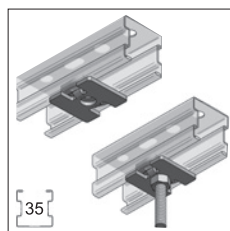
\* also available with polyester, rubber flame retardant or glass fiber lining

# MEFA rail system

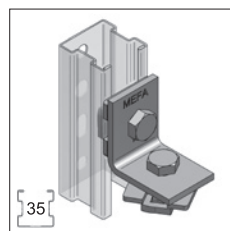
02



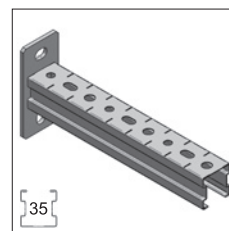
Profile rails STEX 35  
Page 2/3



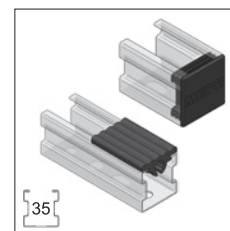
STEX 35 GP and GB  
Page 2/4



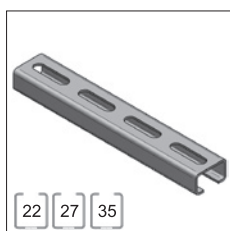
STEX 35-angle  
Page 2/5



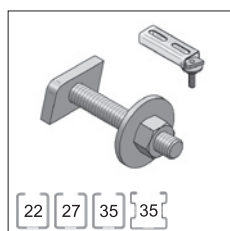
STEX 35-panels  
Page 2/6



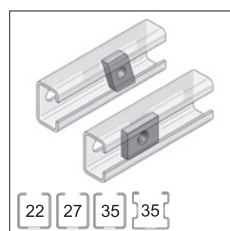
STEX 35 accessory  
Page 2/8



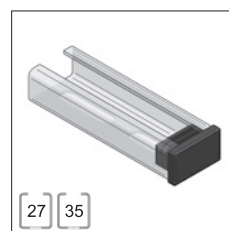
Profile rails 22 - 35  
Page 2/9



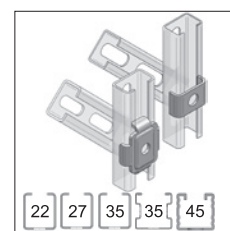
Hammerhead screw  
Page 2/10



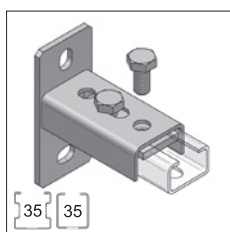
Threaded plate  
Page 2/11



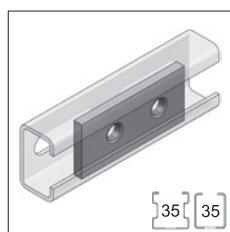
Protecting caps  
Page 2/12



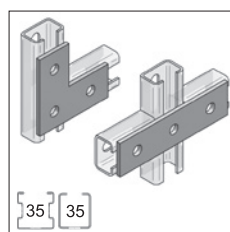
Profile holder  
Page 2/12



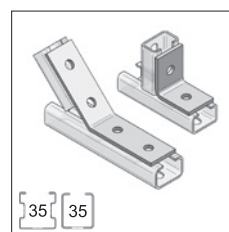
Holder 35  
Page 2/14



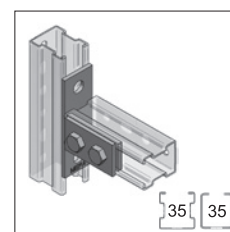
Threaded plate/ hole plate  
Page 2/14



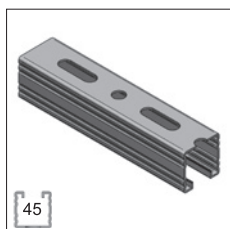
Flat connector  
Page 2/15



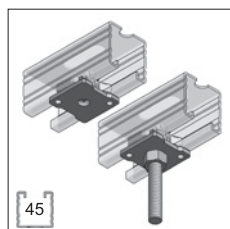
Angles  
Page 2/15



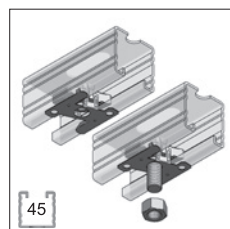
Connectors  
Page 2/16



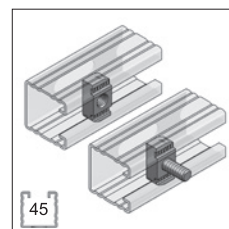
Profile rails 45  
Page 2/20



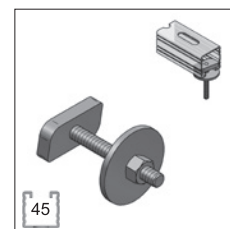
STEX 45 GP and GB  
Page 2/22



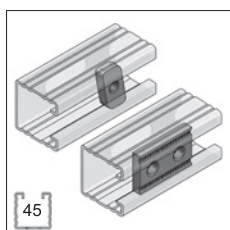
STEX 45 MP and MTB  
Page 2/23



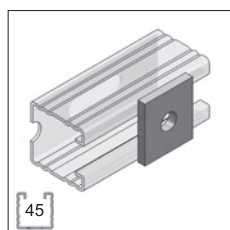
tooth plates / -bolts  
Page 2/24



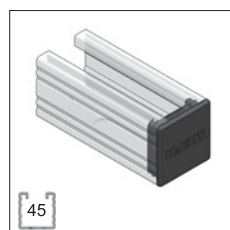
Hammerhead screws  
Page 2/25



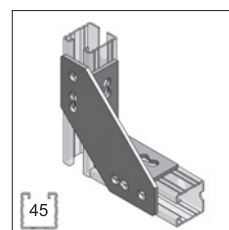
Threaded-/ tooth plates  
Page 2/25



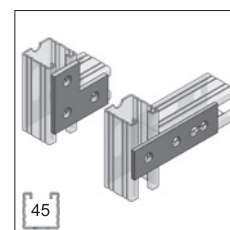
Perforated plates  
Page 2/31



Protecting caps  
Page 2/31

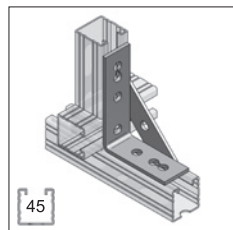


Universal knot  
Page 2/32

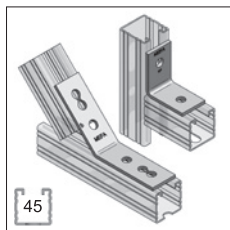


Flat connectors  
Page 2/33

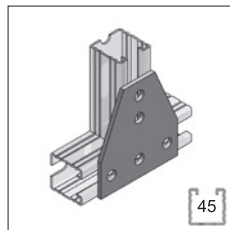
# MEFA rail system



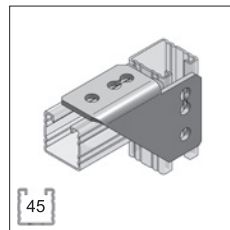
Knot triangles  
Page 2/33



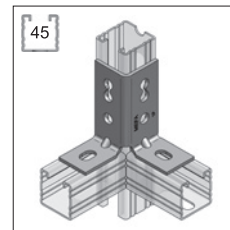
Angles  
Page 2/34



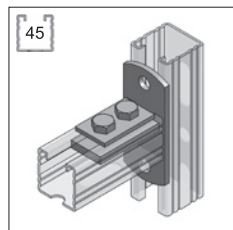
Lugs  
Page 2/35



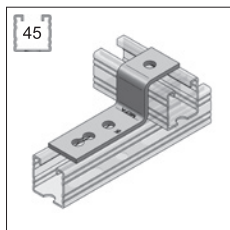
Corner angle  
Page 2/35



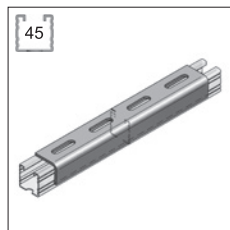
Angle connector  
Page 2/36



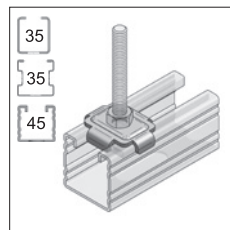
Connector  
Page 2/36



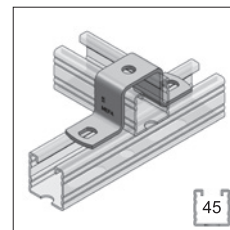
3-hole corresponding  
angle  
Page 2/37



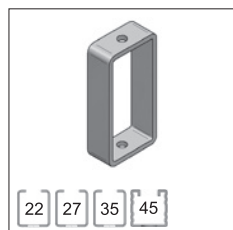
Connectors  
Page 2/37



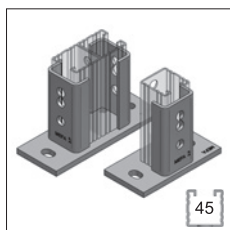
Profile holder  
Page 2/38



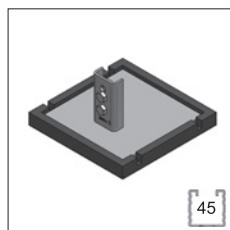
Head profile  
Page 2/38



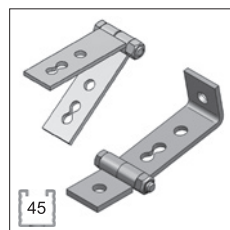
Suspending console  
Page 2/39



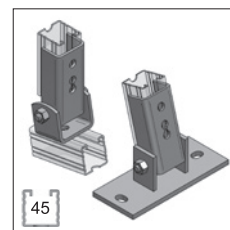
Holder  
Page 2/39



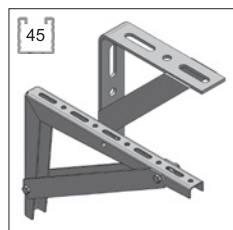
Rooftop holder  
Page 2/40



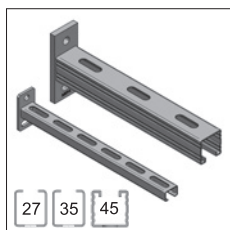
Joint connector  
Page 2/41



Joint holder  
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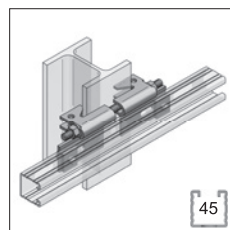
Consoles with braces  
Page 2/45



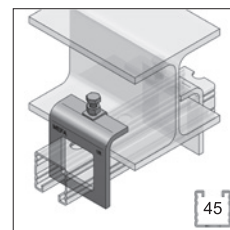
Consoles  
Page 2/46



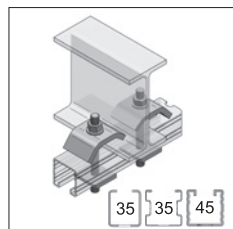
Brace 45°; Adapter angle  
Page 2/53



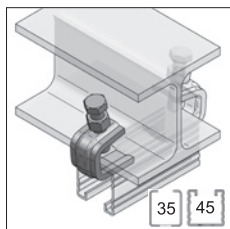
Girder connection vertical  
Page 2/54



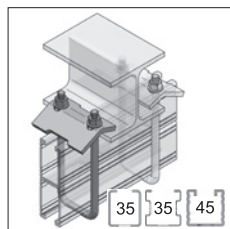
Clamping claws  
Page 2/53



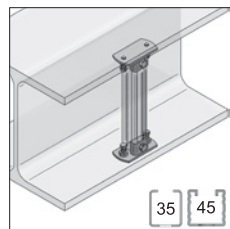
Clamping claws  
Page 2/55



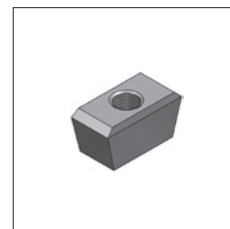
Rail clamps  
Page 2/55



Clamping bows  
Page 2/56



Girder clampings  
Page 2/57

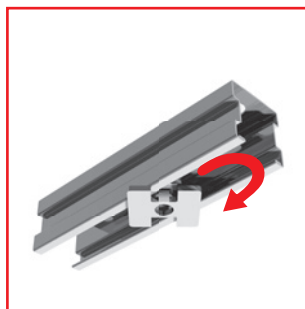


Wedge nut for ceiling  
Page 2/57

## Quick-fixing system STEX 35



Insert STEX



Turn STEX

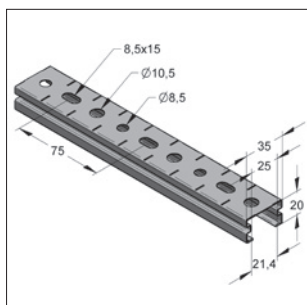


Position STEX

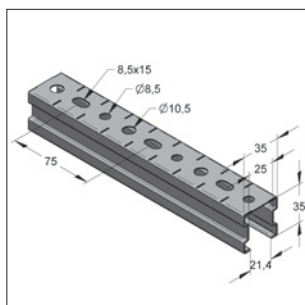


Counter STEX with nut

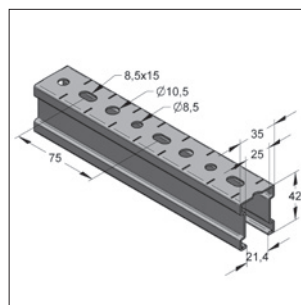
### STEX 35 profile rail



STEX profile rail 35/20



STEX profile rail 35/35



STEX profile rail 35/42



#### Specification:

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

#### Technical data:

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

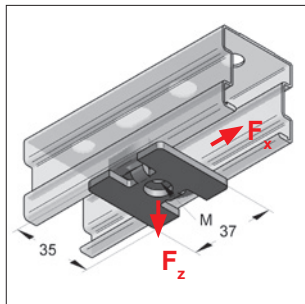
- Straight knurling against slipping of components
- Marking for fit-up aid and to cut rails

application loads see on page 2/13

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

Technical overview of profile rails see on page 2/58

## STEX 35 threaded plate GP



STEX-threaded plate

**Specification:**

Profile rail type: STEX  
Profile rail type: 35 mm

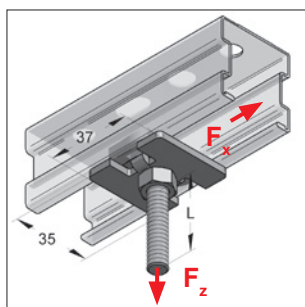
**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

application loads see on page 2/13

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

## STEX 35 threaded bolt GB



STEX threaded bolt

**Specification:**

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

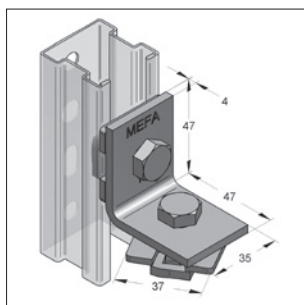
**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

application loads see on page 2/13

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

## ■ STEX 35 universal angle



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

### Specification:

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

Remark: suitable for all STEX-  
profile-rails

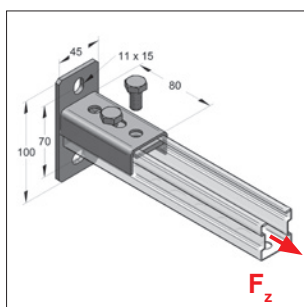
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

application loads see on page 2/13

| Description                    | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|--------------------------------|--------------------|-------------------|-----------|
| <b>STEX 35 universal angle</b> | 0,216              | 25                | 127201801 |

## ■ Holder 35



Holder 35 vertical

### Specification:

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

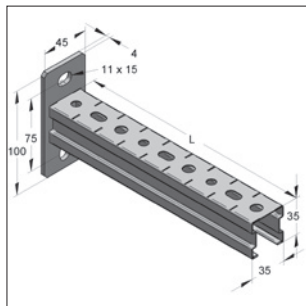
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

\* Loads are based on component, not connection

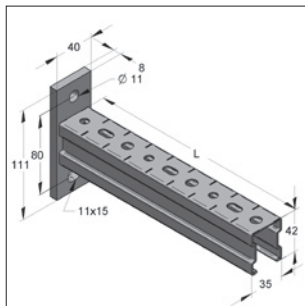
| Description                 | Dimension<br>base plate | tightening<br>torque<br>[Nm] | max. load *<br>$F_z$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|-----------------------------|-------------------------|------------------------------|------------------------------|--------------------|-------------------|-----------|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

## STEX 35 console



STEX console 35/35

Profile opening on bottom side



STEX console 35/42

Profile opening on bottom side

### Technical data: galvanized

|                                      |            |
|--------------------------------------|------------|
| Material:                            | steel      |
| Material type profile rail:          | S235JR     |
| Material type plate:                 | S235JR     |
| Surface:                             | galvanized |
| global safety coefficient $\gamma$ : | 1,35       |

### Static values only apply to Stex console 35/42:

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

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

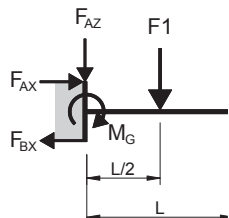
### STEX console 35/35 - profile rails 35/35/1 - plate 100 x 45 x 4 mm

| Description     | Length<br>[mm] | max. load *                   |                               |                                 | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------|----------------|-------------------------------|-------------------------------|---------------------------------|--------------------|-------------------|----------|
|                 |                | Loading cond. 1<br>F1<br>[kN] | Loading cond. 2<br>F2<br>[kN] | Loading cond. 3<br>q0<br>[kN/m] |                    |                   |          |
| STEX 35 console | 150            | 2,05                          | 1,02                          | 0,285                           | 0,271              | 25                | 1274150  |
| STEX 35 console | 225            | 1,37                          | 0,68                          | 0,362                           | 0,335              | 25                | 1274225  |
| STEX 35 console | 300            | 1,02                          | 0,51                          | 0,440                           | 0,400              | 25                | 1274300  |
| STEX 35 console | 375            | 0,82                          | 0,41                          | 0,517                           | 0,465              | 25                | 1274375  |
| STEX 35 console | 450            | 0,68                          | 0,34                          | 0,594                           | 0,561              | 20                | 1274450  |
| STEX 35 console | 525            | 0,59                          | 0,28                          | 0,671                           | 0,630              | 20                | 1274525  |

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

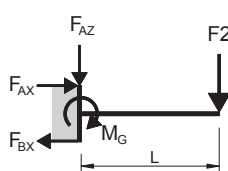
|                 |     |      |      |       |      |    |          |
|-----------------|-----|------|------|-------|------|----|----------|
| STEX 35 console | 225 | 2,78 | 1,39 | 0,630 | 0,64 | 20 | 12760225 |
| STEX 35 console | 300 | 2,08 | 1,04 | 0,752 | 0,76 | 20 | 12760300 |
| STEX 35 console | 450 | 1,39 | 0,69 | 0,997 | 0,99 | 15 | 12760450 |
| STEX 35 console | 525 | 1,19 | 0,60 | 1,119 | 1,11 | 15 | 12760525 |
| STEX 35 console | 600 | 1,04 | 0,49 | 1,241 | 1,23 | 10 | 12760600 |

Loading condition 1



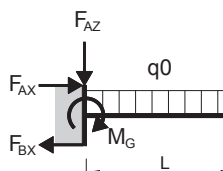
$$F_{AZ} = F1 \quad M_G = \frac{F1 \cdot L}{2}$$

Loading condition 2



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

Loading condition 3

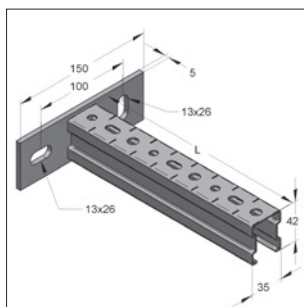


$$F_{AZ} = q0 \cdot L \quad M_G = \frac{q0 \cdot L^2}{2}$$

#### Notice:

all loads referring to static loads

## ■ STEX 35 console 35/42 plate horizontal



STEX console 35/42 horizontal  
Profile opening on bottom side

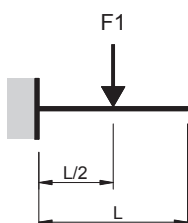
### Technical data: galvanized

|                                      |            |
|--------------------------------------|------------|
| Material:                            | steel      |
| Material type profile rail:          | S235JR     |
| Material type plate:                 | S235JR     |
| Surface:                             | galvanized |
| global safety coefficient $\gamma$ : | 1,35       |

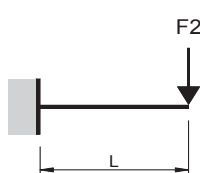
02

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

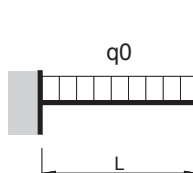
Loading condition 1



Loading condition 2



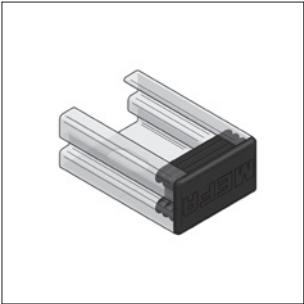
Loading condition 3



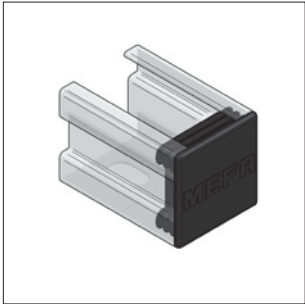
Notice:  
all loads referring to static loads

02

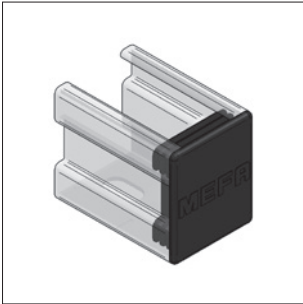
■ **STEX 35 protecting cap**



STEX protecting cap 35/20



STEX protecting cap 35/35

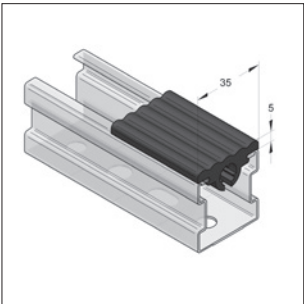


STEX protecting cap 35/42

| Specification:     |         | Technical data:  |            |
|--------------------|---------|------------------|------------|
| Profile rail type: | STEX 35 | Material:        | plastic PE |
| Profile rail type: | 35 mm   | Material colour: | black      |

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

■ **STEX 35 rail rubber**

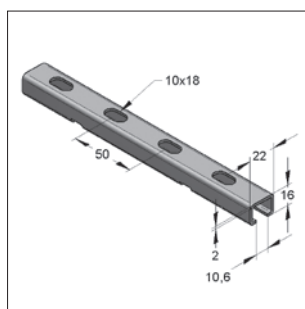


STEX 35 rail rubber

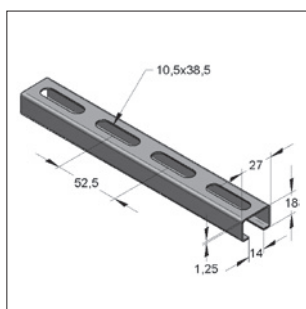
| Specification:                                                                                                     |  | Technical data:         |                        |
|--------------------------------------------------------------------------------------------------------------------|--|-------------------------|------------------------|
| sound-, soil- and insulation resistance between rail and supporting element (e.g. ventilation duct) is guaranteed. |  | Material:               | Rubber TPE             |
| Mounting profiles for rapid mounting.                                                                              |  | Material colour:        | black                  |
| Suitable for STEX 35 profile rails and threaded rod M8 and M10                                                     |  | Temperature-resistance: | - 35 °C up to + 100 °C |

| Description                     | Weight<br>[kg/m] | Packing | Part-No. |
|---------------------------------|------------------|---------|----------|
| STEX 35 rail rubber, roll       | 0,302            | 20 m    | 1272019  |
| STEX 35 rail rubber, part 50 mm | 0,016/pc         | 50 pcs. | 1272020  |

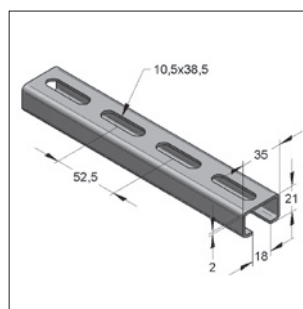
## ■ Profile rails, pre-galvanized, C-profile rail, perforated



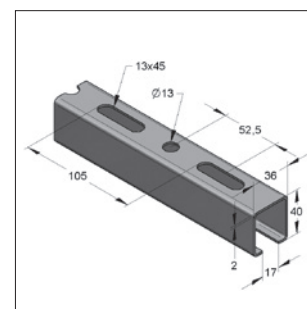
Type 22/16



Type 27/18



Type 35/21



Type 36/40

02

### Specification:

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



### Type 22/16

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

### Type 27/18

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

### Type 35/21

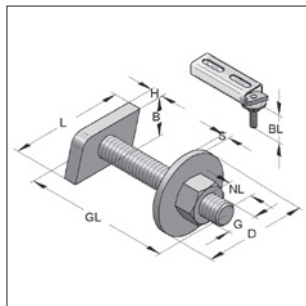
|               |                |      |   |    |     |         |
|---------------|----------------|------|---|----|-----|---------|
| 35/21/2,0 fbv | pre-galvanized | 1,16 | 2 | 12 | 192 | 0800022 |
| 35/21/2,0 fbv | pre-galvanized | 1,16 | 6 | 36 | 576 | 0800026 |

### Type 36/40

|               |                |      |   |    |     |         |
|---------------|----------------|------|---|----|-----|---------|
| 36/40/2,0 fbv | pre-galvanized | 1,85 | 2 | 12 | 80  | 0800032 |
| 36/40/2,0 fbv | pre-galvanized | 1,85 | 6 | 72 | 240 | 0800036 |

① technical overview of profile rails see on page 2/58  
 profile rails in stainless steel V2A or V4A see chapter 13  
 profile rails with coating on request

## ■ Hammer head screw 35



Hammer head screw

**Specification:**

Mounting method: for glide fast connections and shear hole haunch connections with MEFA profile rails

Application area: should preferably be used for pipe clamp mounting

**Technical data:**

Material: steel

Material type: S235JR

Surface: galvanized

application loads see on page 2/13

<sup>1)</sup> not suitable for thread M8/M10

<sup>2)</sup> not suitable for thread M10/M12

### For profile rails 22/16

| Description       | G x GL<br>[mm]      | L x B x H<br>[mm] | S<br>[mm] | D<br>[mm] | Usable<br>length<br>NL<br>[mm] | Construction<br>length<br>BL<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|---------------------|-------------------|-----------|-----------|--------------------------------|--------------------------------------|--------------------|-------------------|----------|
| Hammer head screw | M8x25 <sup>1)</sup> | 17x17x5           | 2         | 25        | 9,5                            | 18                                   | 0,029              | 100               | 0692320  |
| Hammer head screw | M8x30               | 17x17x5           | 2         | 25        | 14,5                           | 23                                   | 0,031              | 100               | 0692328  |
| Hammer head screw | M8x40               | 17x17x5           | 2         | 25        | 24,5                           | 33                                   | 0,034              | 100               | 0692330  |
| Hammer head screw | M10x40              | 17x17x5           | 2         | 20        | 23,0                           | 33                                   | 0,044              | 100               | 0693340  |

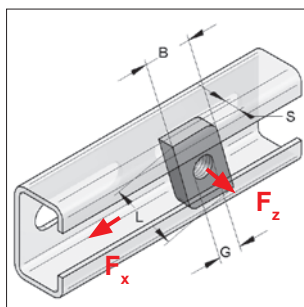
### For profile rails 27/18

|                   |                     |         |   |    |      |    |       |     |         |
|-------------------|---------------------|---------|---|----|------|----|-------|-----|---------|
| Hammer head screw | M8x20 <sup>1)</sup> | 24x13x4 | 2 | 25 | 6,3  | 15 | 0,025 | 100 | 0695289 |
| Hammer head screw | M8x30               | 24x13x4 | 2 | 25 | 16,3 | 25 | 0,028 | 100 | 0695300 |
| Hammer head screw | M8x40               | 24x13x4 | 2 | 25 | 26,3 | 35 | 0,032 | 100 | 0695327 |

### For profile rails 35/21, 36/40, STEK 35/20, STEK 35/35, STEK 35/42

|                   |                      |         |   |    |      |    |       |    |         |
|-------------------|----------------------|---------|---|----|------|----|-------|----|---------|
| Hammer head screw | M8x30 <sup>1)</sup>  | 35x18x6 | 3 | 35 | 12,5 | 22 | 0,060 | 50 | 0697044 |
| Hammer head screw | M8x40                | 35x18x6 | 3 | 35 | 22,5 | 32 | 0,063 | 50 | 0697051 |
| Hammer head screw | M8x50                | 35x18x6 | 3 | 35 | 32,5 | 42 | 0,066 | 50 | 0697060 |
| Hammer head screw | M8x70                | 35x18x6 | 3 | 35 | 52,5 | 62 | 0,073 | 50 | 0697075 |
| Hammer head screw | M10x30 <sup>2)</sup> | 35x18x6 | 3 | 35 | 10,5 | 22 | 0,070 | 50 | 0697540 |
| Hammer head screw | M10x40               | 35x18x6 | 3 | 35 | 21,0 | 32 | 0,075 | 50 | 0697560 |
| Hammer head screw | M10x50               | 35x18x6 | 3 | 35 | 31,0 | 42 | 0,080 | 50 | 0697570 |
| Hammer head screw | M10x70               | 35x18x6 | 3 | 35 | 51,0 | 62 | 0,090 | 50 | 0697590 |
| Hammer head screw | M12x35               | 35x18x6 | 3 | 37 | 14,0 | 27 | 0,086 | 50 | 0698040 |
| Hammer head screw | M12x50               | 35x18x6 | 3 | 37 | 29,0 | 42 | 0,097 | 50 | 0698050 |
| Hammer head screw | M12x70               | 35x18x6 | 3 | 37 | 49,0 | 62 | 0,111 | 50 | 0698070 |

## Threaded plate



Threaded plate

**Specification:**

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

Application area: for direct mounting of pipe clamps or bearing support

**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

application loads see on page 2/13

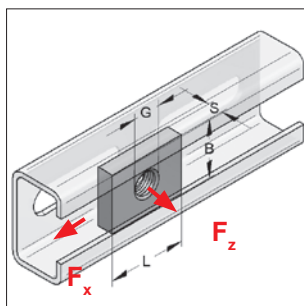
### For profile rails 27/18

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

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

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

## Threaded square plate



Threaded square plate

**Specification:**

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

Application area: for mounting of connecting parts and profile rails

**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

application loads see on page 2/13

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

### For profile rail 22 mm

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

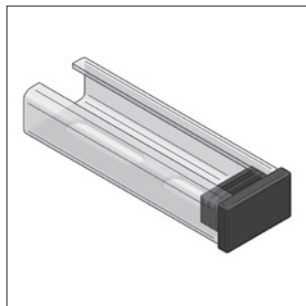
### For profile rail 27, 35, 36 mm

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

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

|                       |         |   |      |       |    |         |
|-----------------------|---------|---|------|-------|----|---------|
| Threaded square plate | 35 x 30 | 6 | M8   | 0,048 | 50 | 0816112 |
| Threaded square plate | 35 x 30 | 8 | M10* | 0,063 | 50 | 0816120 |
| Threaded square plate | 35 x 30 | 8 | M12* | 0,061 | 50 | 0816138 |
| Threaded square plate | 35 x 30 | 8 | M16* | 0,058 | 50 | 0816146 |

## ■ Protecting cap



Protecting cap

**Specification:**

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

**Technical data:**

Material: plastic PE  
 Material colour: black

Description For profile rail

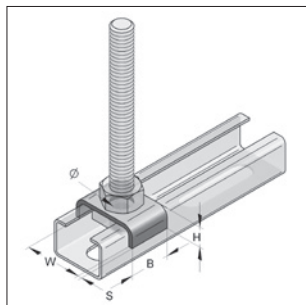
**Protecting cap 27/18**  
**Protecting cap 35/21**  
**Protecting cap 36/40**

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

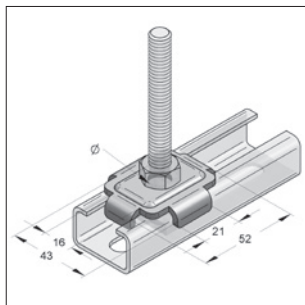
Part-No.

|       |    |         |
|-------|----|---------|
| 0,005 | 50 | 0809032 |
| 0,006 | 50 | 0809012 |
| 0,009 | 50 | 0809045 |

## ■ Profile holder



Profile holder



Profile holder combi

**Specification:**

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

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized<sup>1)</sup>

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

**For profile rail 22**

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

**For profile rail 27**

|                          |      |    |      |   |   |       |     |         |
|--------------------------|------|----|------|---|---|-------|-----|---------|
| <b>Profile holder 27</b> | 28,0 | 20 | 10,5 | 8 | 2 | 0,013 | 100 | 0809504 |
|--------------------------|------|----|------|---|---|-------|-----|---------|

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

|                                |   |   |      |   |   |       |     |          |
|--------------------------------|---|---|------|---|---|-------|-----|----------|
| <b>Profile holder combi 11</b> | - | - | 11,0 | - | - | 0,049 | 100 | 08095035 |
| <b>Profile holder combi 13</b> | - | - | 13,0 | - | - | 0,047 | 100 | 08162945 |

## Admissible loading capacity

global safety coefficient  $\gamma = 2$

02

| Profile rail<br>pre-galvanized | STEX threaded bold, threaded plate                                                |                                                                                   |                 |                |
|--------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------|----------------|
|                                |  |  |                 |                |
|                                | F <sub>z</sub><br>[kN]                                                            | F <sub>x</sub><br>[kN]                                                            | M10 4.6<br>[Nm] | M8 4.6<br>[Nm] |
| STEX 35/20/0,8                 | 1,5                                                                               | 0,4                                                                               | 12              | 10             |
| STEX 35/35/1,0                 |                                                                                   | 0,5                                                                               |                 |                |
| STEX 35/42/1,5                 | 2.5                                                                               |                                                                                   |                 |                |

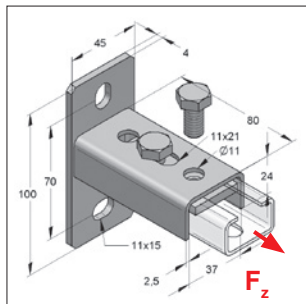
| Profile rail<br>pre-galvanized | Threaded plate 28 x 15 (24 x 13 x 4)                                              |                                                                                   |                |
|--------------------------------|-----------------------------------------------------------------------------------|--------------------------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

| Profile rail<br>pre-galvanized | Threaded plate 38 x 17 (35 x 18 x 6)                                               |                                                                                    |                 |                 |                |
|--------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------|-----------------|----------------|
|                                |  |  |                 |                 |                |
|                                | $F_z$<br>[kN]                                                                      | $F_x$<br>[kN]                                                                      | M12 4.6<br>[Nm] | M10 4.6<br>[Nm] | M8 4.6<br>[Nm] |
| 35/21/2,0                      | 1,8                                                                                | 0,5                                                                                | 30              | 25              | 20             |
| 36/40/2,0                      |                                                                                    |                                                                                    |                 |                 |                |
| STEX 35/20/0,8                 |                                                                                    |                                                                                    |                 |                 |                |
| STEX 35/35/1,0                 |                                                                                    |                                                                                    |                 |                 |                |
| STEX 35/42/1,5                 |                                                                                    |                                                                                    |                 |                 |                |

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

| Profile rail<br>pre-galvanized | Threaded square plate 30 x 22 (30 x 22 x 6)                                         |                                                                                     |                 |                 |                |
|--------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------|-----------------|----------------|
|                                |  |  |                 |                 |                |
|                                | F <sub>z</sub><br>[kN]                                                              | F <sub>x</sub><br>[kN]                                                              | M12 4.6<br>[Nm] | M10 4.6<br>[Nm] | M8 4.6<br>[Nm] |
| 27/18/1,25                     | 2,7                                                                                 | 0,5                                                                                 | 30              | 25              | 20             |
| 35/21/2,0                      | 4,3                                                                                 |                                                                                     |                 |                 |                |
| 36/40/2.0                      |                                                                                     |                                                                                     |                 |                 |                |

## Holder 35



Holder 35 vertical

**Specification:**

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

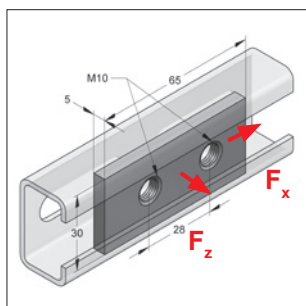
**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

\* Loads are based on component, not connection

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

## 2-hole threaded plate



2-hole threaded plate 35/4

**Specification:**

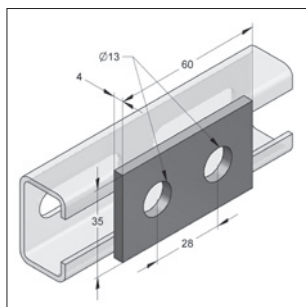
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42  
 Application area: for mounting of connecting parts and profile rails

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

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

## 2-hole plate 35/4



2-hole plate 35/4

**Specification:**

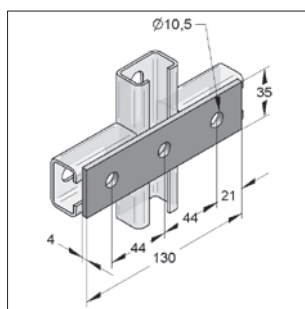
Profile rail type: 35, 36 and Stex 35/20, 35/35, 35/42  
 Application area: for connections between profile rails and components

**Technical data:**

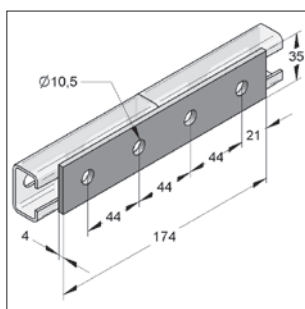
Material: steel  
 Material type: S235JR  
 Surface: galvanized

| Description              | Dimension<br>L x B x S | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------------|------------------------|--------------------|-------------------|----------|
| <b>2-hole plate 35/4</b> | 60 x 35 x 4            | 0,060              | 50                | 0816086  |

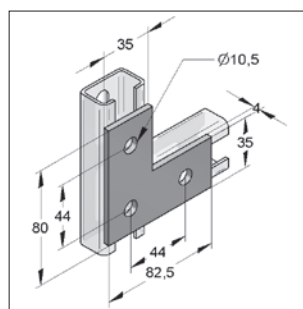
## Flat connector 35/4



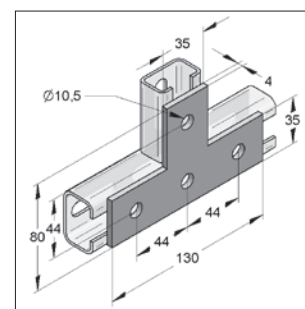
3-hole flat connector 35/4



4-hole flat connector 35/4



Flat connector 35/4 L-shape



Flat connector 35/4 T-shape

### Specification:

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

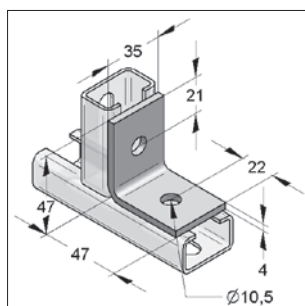
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

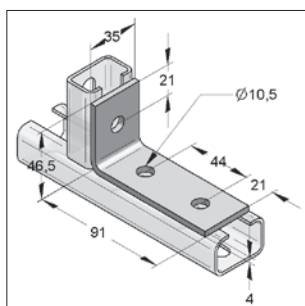
Remark: admissible loads are depending on component.

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

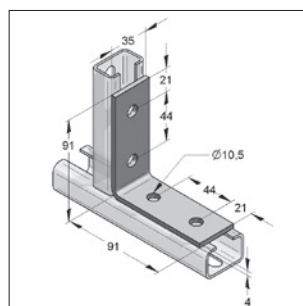
## Angle 35/4



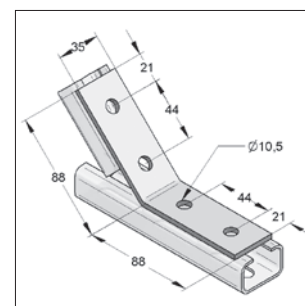
2-hole angle 35/4



3-hole angle 35/4 K



4-hole angle 35/4 90°



4-hole angle 35/4 135°

### Specification:

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

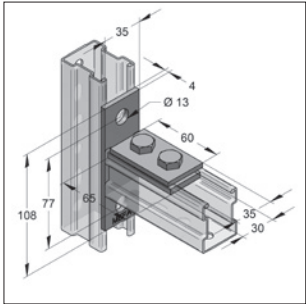
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

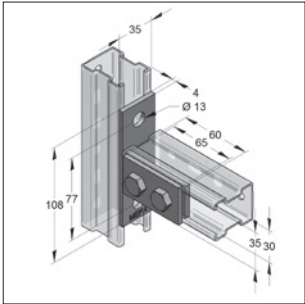
Remark: admissible loads are depending on component.

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

Connector 35



Connector 35 horizontal



Connector 35 vertical

|                       |                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------|
| <b>Specification:</b> |                                                                                                    |
| Profile rail type:    | 35, 36 and Stex 35/20, 35/35, 35/42                                                                |
| Scope of supply:      | 2-hole plate 13 mm<br>hexagon screw M10                                                            |
| Remark:               | - not applicable as ceiling support<br>or vertical use (hanging)<br>- no use as console connection |

|                        |            |
|------------------------|------------|
| <b>Technical data:</b> |            |
| Material:              | steel      |
| Material type:         | S235JR     |
| Surface:               | galvanized |

| Description             | Screws | Plate<br>L x B x S<br>[mm] | Weight   | Packing | Part-No.  |
|-------------------------|--------|----------------------------|----------|---------|-----------|
|                         |        |                            | [kg/pc.] | [pcs.]  |           |
| Connector 35 horizontal | M10    | 108 x 35 x 4               | 0,288    | 20      | 081645301 |
| Connector 35 vertical   | M10    | 108 x 35 x 4               | 0,288    | 20      | 081655801 |

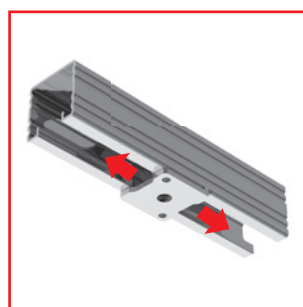
## Quick-fixing system Stex 45



Insert Stex in



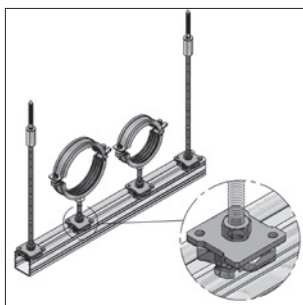
Turn Stex



Position Stex



Counter Stex with nut

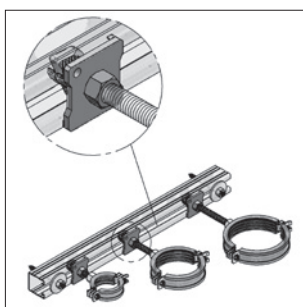


### ■ Stex 45 threaded plate GP

optional with connection M8, M10 or M12

Your advantages:

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

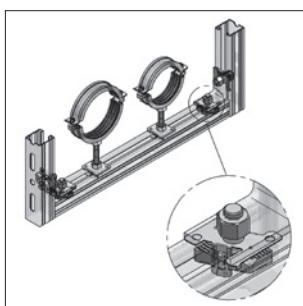


### ■ Stex 45 threaded bolt GB

optional with threaded pin M8, M10 or M12

Your advantages:

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

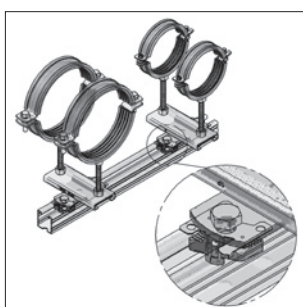


### ■ Stex 45 mounting bolt MTB

for mounting the rail constructions

Your advantages:

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



### ■ Stex 45 mounting plate MP

for mounting the rail constructions or add-on-part

Your advantages:

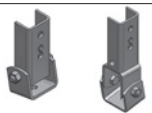
- insert mounting bolt into profile rail, turn it about 45°, position component and screw the bolt
- circumstantial insertion of tooth bolt and tooth plates is not necessary
- profile rail keeps on its own, no holder necessary
- simplifies mounting of add-on-parts like sliding elements or connection parts in rail constructions

# System components

## Profile type

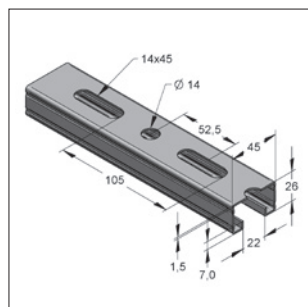
## Recommended connecting parts

| Identification - catalogue page                                                    |  | Part-No.      | 45/45 | 45/60 | 45/75 | 45/90 | 45/120 | 45/150 | Mounting plate M12                                                                | Mounting bolt                                                                      | Tooth plate M12                                                                     | Threaded square plate M12                                                           | 2-hole tooth plate M12                                                              |
|------------------------------------------------------------------------------------|--|---------------|-------|-------|-------|-------|--------|--------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                    |  |               |       |       |       |       |        |        |  |  |  |  |  |
| 2-hole angle 40/5                                                                  |  | 081402400     | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | □▲○                                                                                 |                                                                                     |
|    |  |               |       |       |       |       |        |        | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                          | Quantity: 2<br>scope of<br>delivery<br>with nut                                    | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            |                                                                                     |
| Page 2/34                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 3-hole angle 40/5                                                                  |  | L 08140300    | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | □▲○                                                                                 | ▲○                                                                                  |
|    |  | K 08140400    |       |       |       |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                          | Quantity: 3<br>scope of<br>delivery<br>with nut                                    | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 1<br>1 Mounting bolt<br>3 hex. screws<br>M12x25                           |
| Page 2/34                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 4-hole angle 40/5                                                                  |  | 08141000      | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | □▲○                                                                                 | ○                                                                                   |
|    |  | 45° 08140500  |       |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                          | Quantity: 4<br>scope of<br>delivery<br>with nut                                    | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |
| 135° 08140600                                                                      |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Page 2/34                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 4-hole knot triangle                                                               |  | 08140700      | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | □▲○                                                                                 | ○                                                                                   |
|    |  |               |       |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                          | Quantity: 4<br>scope of<br>delivery<br>with nut                                    | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 5-hole knot triangle                                                               |  | 08141700      | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | □▲○                                                                                 | ○                                                                                   |
|   |  |               |       |       |       |       |        |        | Quantity: 5<br>Accessory: 5<br>hex. screws<br>8.8 M12x25                          | Quantity: 5<br>scope of<br>delivery<br>with nut                                    | Quantity: 5<br>Accessory: 5<br>hex. screws<br>8.8 M12x25                            | Quantity: 5<br>Accessory: 5<br>hex. screws<br>8.8 M12x25                            | Quantity: 2+<br>1 Mounting bolt<br>Accessory: 5<br>hex. screws<br>M12x25            |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 3-hole flat connector                                                              |  | 0814331       | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ▲○                                                                                  |                                                                                     |
|  |  |               |       |       |       |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                          | Quantity: 3<br>scope of<br>delivery<br>with nut                                    | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x2                             | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            |                                                                                     |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 4-hole flat connector                                                              |  | 0814349       | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ▲○                                                                                  |                                                                                     |
|  |  |               |       |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                          | Quantity: 4<br>scope of<br>delivery<br>with nut                                    | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |                                                                                     |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Flat connector 40/6                                                                |  | 0814307       | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ▲○                                                                                  |                                                                                     |
|  |  | L-shape       |       |       |       |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                          | Quantity: 3<br>scope of<br>delivery<br>with nut                                    | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            |                                                                                     |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Flat connector 40/6                                                                |  | 0814315       | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ▲○                                                                                  |                                                                                     |
|  |  | T-shape       |       |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                          | Quantity: 4<br>scope of<br>delivery<br>with nut                                    | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |                                                                                     |
| Page 2/33                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Universal knot K                                                                   |  | 08141601      | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ○                                                                                   |                                                                                     |
|  |  |               |       |       |       |       |        |        | Quantity: 2<br>Accessory: 2<br>6 hex. screws<br>8.8 M12x25 *                      | Quantity: 2<br>scope of<br>delivery<br>with nut *                                  | Quantity: 2<br>Accessory: 2<br>6 hex. screws<br>8.8 M12x25 *                        | Quantity: 2<br>Accessory: 2<br>6 hex. screws<br>8.8 M12x25*                         |                                                                                     |
| Page 2/32                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 4-hole corner angle                                                                |  | 08147100      | ■     | ■     | ■     | ■     | ■      | ■      | ○                                                                                 | ●                                                                                  | ○                                                                                   | ▲○                                                                                  | ▲○                                                                                  |
|  |  | left 08147200 |       |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                          | Quantity: 4<br>scope of<br>delivery<br>with nut                                    | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |
| Page 2/35                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Cross strap                                                                        |  | 0816582       | ■     | ■     | ■     | ■     | ■      | ■      | □○                                                                                | □○                                                                                 | ●                                                                                   | ▲○□                                                                                 | ▲●                                                                                  |
|  |  |               |       |       |       |       |        |        | Quantity: 5<br>Accessory: 5<br>hex. screws<br>8.8 M12x25                          | Quantity: 5<br>scope of<br>delivery<br>with nut                                    | Quantity: 6<br>Accessory: 6<br>hex. screws<br>8.8 M12x25                            | Quantity: 5<br>Accessory: 5<br>hex. screws<br>8.8 M12x25                            | Quantity: 2+<br>2 Mounting bolt<br>+ 6 hex. screws<br>M12x25                        |
| Page 2/35                                                                          |  |               |       |       |       |       |        |        |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |

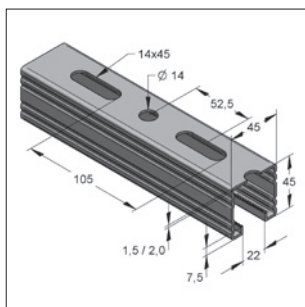
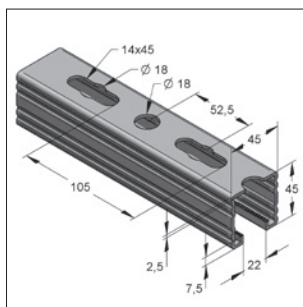
| System components                                                                   |                                              | Profile type                        |       |       |       |        |        | Recommended connecting parts                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------|-------|-------|-------|--------|--------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                     |                                              | 45/45                               | 45/60 | 45/75 | 45/90 | 45/120 | 45/150 | Mounting plate M12                                                                 | Mounting bolt                                                                       | Tooth plate M12                                                                     | Threaded square plate M12                                                           | 2-hole tooth plate M12                                                              |
| <b>Identification - catalogue page</b>                                              |                                              | <b>Part-No.</b>                     |       |       |       |        |        |  |  |  |  |  |
|    | T-lug                                        | ■                                   | ■     | ■     | ■     | ■      | ■      | □ ○                                                                                | □ ○                                                                                 | ●                                                                                   | □ ▲ ○                                                                               | ▲ ●                                                                                 |
|                                                                                     | not angled                                   | 0816574                             |       |       |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                           | Quantity: 3<br>scope of<br>delivery<br>with nut                                     | Quantity: 4<br>hex. screws<br>8.8 M12x25                                            | Quantity: 4<br>hex. screws<br>8.8 M12x25                                            | Quantity: 1<br>2 threaded<br>plate<br>4 hex. screws<br>M12x25                       |
|                                                                                     | 90° angled                                   | 0816870                             |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/35</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|    | 4-hole corner plate                          | 08165900                            | ■     | ■     | ■     | ■      | ■      | ○                                                                                  | ●                                                                                   | ○                                                                                   | ▲ ○                                                                                 | ▲ ○                                                                                 |
|                                                                                     |                                              |                                     |       |       |       |        |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                           | Quantity: 4<br>scope of<br>delivery<br>with nut                                     | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>4 hex. screws<br>M12x25                                              |
| <b>Page 2/35</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|    | Angle connector                              | 08123000                            | ■     | ■     | ■     | ■      | ■      | ○                                                                                  | ●                                                                                   | ○                                                                                   | ▲ ○                                                                                 | ▲ ○                                                                                 |
|                                                                                     | Angle connector 90°                          | 08123200                            | ■     | ■     | ■     | ■      | ■      | Quantity: 2<br>Accessory: 2<br>hex. screws<br>M12x25                               | Quantity: 2<br>scope of<br>delivery<br>with nut                                     | Quantity: 2<br>Accessory: 2<br>hex. screws<br>M12x25                                | Quantity: 2<br>Accessory: 2<br>hex. screws<br>M12x25                                | Quantity: 1<br>Accessory: 2<br>hex. screws<br>M12x25                                |
|                                                                                     | Angle connector 180°                         | 08123100                            | ■     | ■     | ■     | ■      | ■      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/36</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|    | Head profile 45                              | 08162445                            | ■     |       |       |        |        | ○                                                                                  | ●                                                                                   | ○                                                                                   |                                                                                     |                                                                                     |
|                                                                                     | 60                                           | 0816253                             |       | ■     |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                           | Quantity: 3<br>scope of<br>delivery<br>with nut                                     | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            |                                                                                     |                                                                                     |
|                                                                                     | 75                                           | 08162875                            |       |       | ■     |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | 90                                           | 08162690                            |       |       |       | ■      |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | 120                                          | 0816274                             |       |       |       |        | ■      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                                                                     | 150                                          | 081628150                           |       |       |       |        | ■      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/38</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|   | 3-hole corresp. angle 45                     | 08141245                            | ■     |       |       |        |        | ○                                                                                  | ●                                                                                   | ○                                                                                   | ▲ ○                                                                                 | ▲ ○                                                                                 |
|                                                                                     | 3-hole corresp. angle 60                     | 08141300                            |       | ■     |       |        |        | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                           | Quantity: 3<br>scope of<br>delivery<br>with nut                                     | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 1<br>1 Mounting<br>bolt<br>3 hex. screws<br>M12x25                        |
|                                                                                     |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/37</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Profile holder combi                         |                                     |       |       |       |        |        | ○                                                                                  |                                                                                     | ●                                                                                   | ○                                                                                   |                                                                                     |
|                                                                                     | 13 mm - hole Ø                               | 08162945                            | ■     | ■     | ■     | ■      | ■      | Quantity: 1<br>Accessory: 1<br>hex. screw<br>8.8 M12x30<br>+ H                     |                                                                                     | Quantity: 1<br>Accessory: 1<br>hex. screw<br>M12x30 + H                             | Quantity: 1<br>Accessory: 1<br>hex. screw<br>M12/16x30+H                            |                                                                                     |
|                                                                                     | 17 mm - hole Ø                               | 08163365                            | ■     | ■     | ■     | ■      | ■      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/38</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Connector                                    |                                     |       |       |       |        |        | ○                                                                                  | ●                                                                                   | ○                                                                                   | □ ○ ▲                                                                               | ▲ ○                                                                                 |
|                                                                                     | 45                                           | 08162000                            | ■     | ■     | ■     | ■      | ■      | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                           | Quantity: 4<br>scope of<br>delivery<br>with nut                                     | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws 8.8<br>M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |
| <b>Page 2/37</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Holder                                       |                                     |       |       |       |        |        | ●                                                                                  | □ ○                                                                                 | ○                                                                                   | ▲ ○                                                                                 | ●                                                                                   |
|                                                                                     | 45/26-52 vertical                            | 08120102                            | ■     |       |       |        |        | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                           | Quantity: 2<br>scope of<br>delivery<br>with nut                                     | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 2<br>hex. screws 8.8<br>M12x25                            | Quantity: 1<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            |
|                                                                                     | 45/26-75 horizontal                          | 08120402                            | ■     | ■     | ■     | □      | □      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/39</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Holder                                       |                                     |       |       |       |        |        | ●                                                                                  |                                                                                     | ○                                                                                   | ○                                                                                   | ○ ●                                                                                 |
|                                                                                     | 45/90                                        | 08120952                            |       |       |       | ■      |        | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                           |                                                                                     | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 4<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 4<br>hex. screws<br>8.8 M12x25                            |
|                                                                                     | 45/120                                       | 08121002                            |       |       |       |        | ■      |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Page 2/39</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Joint holder                                 |                                     |       |       |       |        |        | ○                                                                                  | ●                                                                                   | ○                                                                                   | ▲ ○                                                                                 | ▲ ○                                                                                 |
|                                                                                     | vertical                                     | 08120600                            | ■     | ■     | ■     | □      | □      | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                           | Quantity: 3<br>scope of<br>delivery<br>with nut                                     | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 3<br>Accessory: 3<br>hex. screws<br>8.8 M12x25                            | Quantity: 1+<br>1 Mounting<br>bolt<br>plate Acc.: 3 hex.<br>screws M12x25           |
| <b>Page 2/44</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Joint holder with<br>base plate              | 08122600                            | ■     | ■     | ■     | □      | □      | ○                                                                                  | ●                                                                                   |                                                                                     | ▲ ○                                                                                 | ▲ ○                                                                                 |
|                                                                                     | vertical                                     | 08122500                            |       |       |       |        |        | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                           | Quantity: 2<br>scope of<br>delivery<br>with nut                                     | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            | Quantity: 2<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            | Quantity: 1<br>Accessory: 2<br>hex. screws<br>8.8 M12x25                            |
| <b>Page 2/43</b>                                                                    |                                              |                                     |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|  | Connector<br>Joint holder<br>Joint connector | Page 2/36<br>Page 2/44<br>Page 2/41 |       |       |       |        |        |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

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

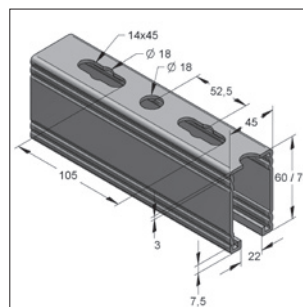
## Profile rail 45, galvanized, C-profile rail, perforated, toothed



Type 45/26/1,5

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

Type 45/45/2,5

Type 45/60/3,0  
and Type 45/75/3,0

### Specification:

Profile rail type:

C-profile rail, perforated, toothed

Mounting method:

form-locking connections and  
shear hole haunch connections

Remark:

double rails are perforated and welded

### Technical data:

Material: steel

Material type: S250GD-Z275-N-A

Surface: pre-galvanized

Material type: S235JRG2

Surface: hot-dip galvanized

<sup>1)</sup> variations up to 1 mm at hot-dip galvanized elements possible<sup>3)</sup> Load calculation acc. DIN EN 1993-1-2 (EC3)<sup>2)</sup> not certified acc. RAL

### Type 45/26

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

### Type 45/45

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

### Type 45/60

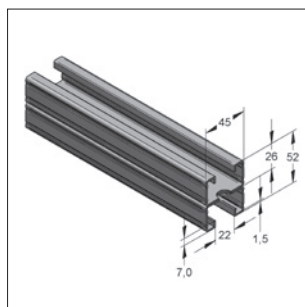
|                                |               |      |   |     |         |
|--------------------------------|---------------|------|---|-----|---------|
| 45/60/3,0 fbv <sup>3)</sup>    | pre-galv.     | 4,06 | 6 | 180 | 0810762 |
| 45/60/3,0 fsv <sup>1) 3)</sup> | hot-dip galv. | 4,35 | 6 | 180 | 0810770 |

### Type 45/75

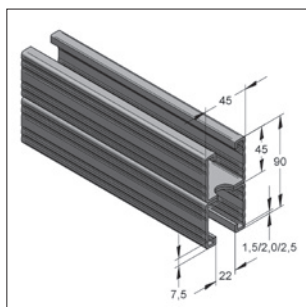
|                                   |               |      |   |     |          |
|-----------------------------------|---------------|------|---|-----|----------|
| 45/75/3,0 fbv <sup>3)</sup>       | pre-galv.     | 4,82 | 6 | 180 | 08207562 |
| 45/75/3,0 fsv <sup>1) 2) 3)</sup> | hot-dip galv. | 5,15 | 6 | 180 | 08207561 |

**i** technical overview of profile rails see on page 2/58  
 profile rails made of stainless steel V2A or V4A see in chapter 13  
 profile rails with various coatings on request

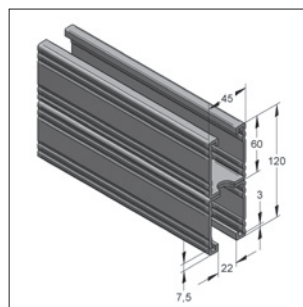
## Profile rail 45, galvanized, C-profile rail, perforated, toothed



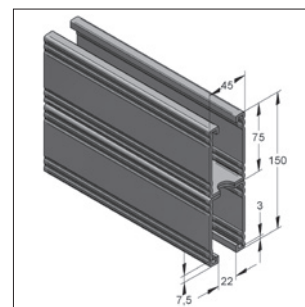
Type 45/52



Type 45/90



Type 45/120



Type 45/150

02

**Specification:**

Profile rail type:  
Mounting method:

C-profile rail, perforated, toothed  
form-locking connections and  
shear hole haunch connections

Remark:

double rails are perforated and welded

**Technical data:**

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



<sup>1)</sup> variations up to 1 mm at hot-dip galvanized elements possible

<sup>3)</sup> Load calculation acc. DIN EN 1993-1-2 (EC3)

<sup>2)</sup> not certified acc. RAL

**Type 45/52**

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

**Type 45/90**

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

**Type 45/120**

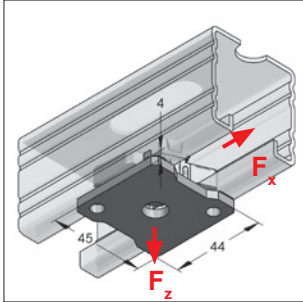
|                                   |              |      |   |    |         |
|-----------------------------------|--------------|------|---|----|---------|
| 45/120/3,0 D fbv <sup>3)</sup>    | pre-galv     | 8,12 | 6 | 96 | 0810825 |
| 45/120/3,0 D fsv <sup>1) 3)</sup> | hot-dip galv | 8,63 | 6 | 96 | 0810833 |

**Type 45/150**

|                                      |              |       |   |    |          |
|--------------------------------------|--------------|-------|---|----|----------|
| 45/150/3,0 D fbv <sup>3)</sup>       | pre-galv     | 9,64  | 6 | 96 | 08225062 |
| 45/150/3,0 D fsv <sup>1) 2) 3)</sup> | hot-dip galv | 10,24 | 6 | 96 | 08225061 |

Technical overview of profile rails see on page 2/58

## STEX 45 threaded plate GP



Stex 45 threaded plate GP

**Specification:**

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

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

application loads see on page 2/27

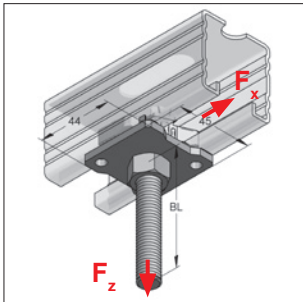
\* not certified acc. to RAL

**Identification**

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

| Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------|-------------------|----------|
| 0,113              | 30                | 1280508  |
| 0,111              | 30                | 1280510  |
| 0,108              | 30                | 1280512  |

## STEX 45 threaded bolt GB



Stex 45 threaded bolt GB

**Specification:**

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

**Technical data:**

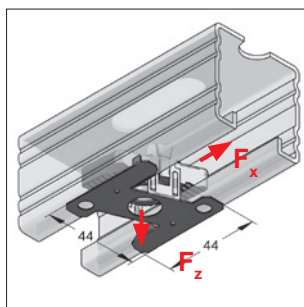
Material: steel  
 Material type: S235JR  
 Surface: galvanized  
 Threaded bolt: property class 4.6

application loads see on page 2/29

**Identification**

|                                  | Construction length<br>BL | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------------------------|---------------------------|--------------------|-------------------|----------|
|                                  | [mm]                      |                    |                   |          |
| Stex 45 threaded bolt GB M8/50   | 23                        | 0,134              | 30                | 1281050  |
| Stex 45 threaded bolt GB M8/70   | 43                        | 0,141              | 20                | 1281070  |
| Stex 45 threaded bolt GB M8/90   | 63                        | 0,147              | 20                | 1281090  |
| Stex 45 threaded bolt GB M8/110  | 83                        | 0,154              | 20                | 1281110  |
| Stex 45 threaded bolt GB M8/130  | 103                       | 0,160              | 20                | 1281130  |
| Stex 45 threaded bolt GB M10/50  | 23                        | 0,147              | 30                | 1282050  |
| Stex 45 threaded bolt GB M10/70  | 43                        | 0,157              | 20                | 1282070  |
| Stex 45 threaded bolt GB M10/90  | 63                        | 0,166              | 20                | 1282090  |
| Stex 45 threaded bolt GB M10/110 | 83                        | 0,178              | 20                | 1282110  |
| Stex 45 threaded bolt GB M10/130 | 103                       | 0,188              | 20                | 1282130  |
| Stex 45 threaded bolt GB M12/50  | 23                        | 0,159              | 30                | 1283050  |
| Stex 45 threaded bolt GB M12/70  | 43                        | 0,174              | 20                | 1283070  |
| Stex 45 threaded bolt GB M12/90  | 63                        | 0,189              | 20                | 1283090  |
| Stex 45 threaded bolt GB M12/110 | 83                        | 0,203              | 20                | 1283110  |
| Stex 45 threaded bolt GB M12/130 | 103                       | 0,218              | 20                | 1283130  |

## ■ STEX 45 mounting plate MP



Stex 45 mounting plate MP

**Specification:**

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

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

application loads see on page 2/27

\* not certified acc. to RAL

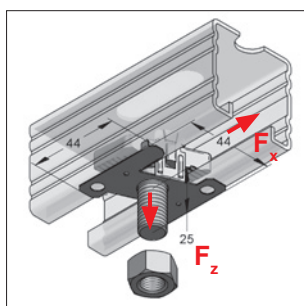
02

## Identification

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

| Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------|-------------------|----------|
| 0,059              | 30                | 1280006  |
| 0,058              | 30                | 1280008  |
| 0,056              | 30                | 1280010  |
| 0,053              | 30                | 1280012  |

## ■ STEX 45 mounting bolt MTB

Stex 45 mounting bolt MTB  
incl. nut M12**Specification:**

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

**Technical data:**

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

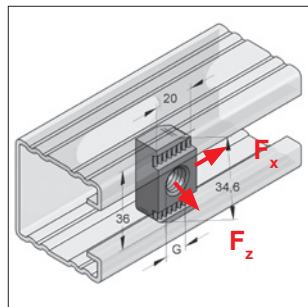
application loads see on page 2/27

## Identification

Stex 45 mounting bolt MTB M12x40

| Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------|-------------------|----------|
| 0,099              | 30                | 1280001  |

## Tooth plate S



Tooth plate S


**Specification:**

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

**Technical data:**

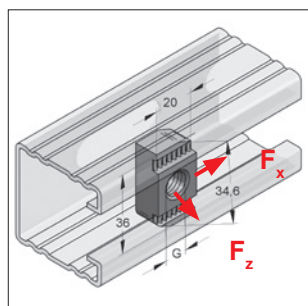
Material: steel  
 Material type: S235JR  
 Surface: galvanized

application loads see on page 2/27

\* not certified acc. to RAL

| Identification | Dimension L x W<br>[mm] | Thread<br>G | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|----------------|-------------------------|-------------|--------------------|-------------------|-----------|
| Tooth plate    | 34 x 21                 | M6*         | 0,053              | 100               | 0818000   |
| Tooth plate S  | 34 x 20                 | M8*         | 0,042              | 100               | 081810101 |
| Tooth plate S  | 34 x 20                 | M10         | 0,040              | 100               | 081810201 |
| Tooth plate S  | 36 x 20                 | M12         | 0,056              | 100               | 0818103   |

## Tooth plate S Zinc-Nickel



Tooth plate S Zinc-Nickel

**Specification:**

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

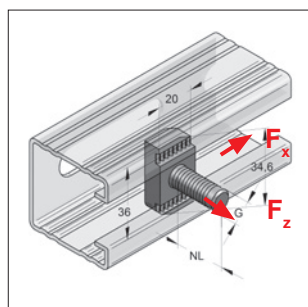
**Technical data:**

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

application loads see on page 2/27

| Identification            | Dimension L x W<br>[mm] | Thread<br>G | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No.     |
|---------------------------|-------------------------|-------------|--------------------|-------------------|--------------|
| Tooth plate S Zinc-Nickel | 34 x 20                 | M8          | 0,042              | 100               | 081810101/zn |
| Tooth plate S Zinc-Nickel | 34 x 20                 | M10         | 0,040              | 100               | 081810201/zn |
| Tooth plate S Zinc-Nickel | 36 x 20                 | M12         | 0,056              | 100               | 0818103/zn   |

## Tooth bolt



Tooth bolt


**Specification:**

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

**Technical data:**

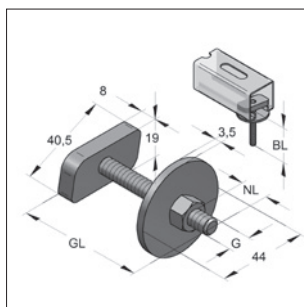
Material: steel  
 Material type: S235JR  
 Surface: galvanized  
 Tooth bolt: property class 8.8

application loads see on page 2/27

\* not certified acc. to RAL

| Identification | Usable length NL<br>[mm] | Thread<br>G | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|----------------|--------------------------|-------------|--------------------|-------------------|-----------|
| Tooth bolt     | 19,5                     | M8*         | 0,068              | 100               | 081693601 |
| Tooth bolt     | 19,5                     | M10         | 0,070              | 100               | 081694401 |
| Tooth bolt     | 24,5                     | M12         | 0,080              | 100               | 081695201 |

## ■ Hammer head screw 45



Hammer head screw

**Specification:**

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

**Technical data:**

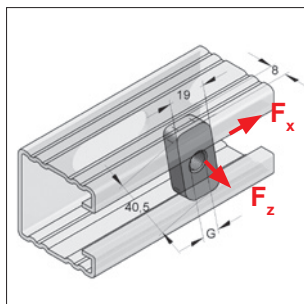
Material: steel  
 Material type: S235JR  
 Surface: galvanized

<sup>1)</sup> not in combination with thread M8/10  
<sup>2)</sup> not in combination with thread M10/12

02

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

## ■ Threaded plate



Threaded plate

**Specification:**

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

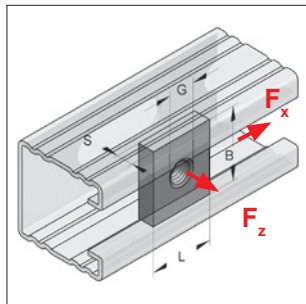
**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

application loads see on page 2/29

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

## ■ Threaded square plate



Threaded square plate

**Specification:**

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

**Technical data:**

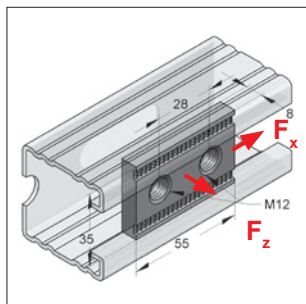
Material: steel  
 Material type: S235JR  
 Surface: galvanized

application loads see on page 2/29

### For profile rail width 45 mm

| Identification        | Dimension<br>L x B x S<br>[mm] | Thread<br>G | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------|--------------------------------|-------------|--------------------|-------------------|----------|
| Threaded square plate | 30x35x6                        | M8          | 0,048              | 50                | 0816112  |
| Threaded square plate | 30x35x8                        | M10         | 0,063              | 50                | 0816120  |
| Threaded square plate | 30x35x8                        | M12         | 0,061              | 50                | 0816138  |
| Threaded square plate | 30x35x8                        | M16         | 0,058              | 50                | 0816146  |

## ■ 2-hole tooth plate



2-hole tooth plate

**Specification:**

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

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized<sup>1)</sup>

application loads see on page 2/27

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

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

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

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

| Profile rail<br>pre-galvanized | STEX 45 threaded bolt, STEX 45 mounting plate, STEX 45 mounting bolt              |                                                                                   |                           |                           |
|--------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                |  |  | M12 8.8                   | M10 8.8                   |
|                                | F <sub>z</sub><br>[kN]                                                            | F <sub>x</sub><br>[kN]                                                            | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/26/1,5                      | 4,11                                                                              | 3,86                                                                              | 50                        | 45                        |
| 45/52/1,5 D                    |                                                                                   |                                                                                   |                           |                           |
| 45/45/1,5                      |                                                                                   |                                                                                   |                           |                           |
| 45/90/1,5 D                    |                                                                                   |                                                                                   |                           |                           |
| 45/45/2,0                      |                                                                                   |                                                                                   |                           |                           |
| 45/90/2,0 D                    | 10,94                                                                             | 4,41                                                                              |                           |                           |
| 45/45/2,5                      |                                                                                   |                                                                                   |                           |                           |
| 45/90/2,5 D                    |                                                                                   |                                                                                   |                           |                           |
| 45/60/3,0                      |                                                                                   |                                                                                   |                           |                           |
| 45/120/3,0 D                   |                                                                                   |                                                                                   |                           |                           |
| 45/75/3,0                      |                                                                                   |                                                                                   |                           |                           |
| 45/150/3,0 D                   |                                                                                   |                                                                                   |                           |                           |

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

| Profile rail<br>pre-galvanized | Tooth plate S, tooth bolt                                                           |                                                                                     |                           |                           |
|--------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                |  |  | M12 8.8                   | M10 8.8                   |
|                                | $F_z$<br>[kN]                                                                       | $F_x$<br>[kN]                                                                       | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/26/1,5                      | 4,50                                                                                | 3,91                                                                                | 60                        | 50                        |
| 45/52/1,5 D                    |                                                                                     |                                                                                     |                           |                           |
| 45/45/1,5                      |                                                                                     |                                                                                     |                           |                           |
| 45/90/1,5 D                    |                                                                                     |                                                                                     |                           |                           |
| 45/45/2,0                      |                                                                                     |                                                                                     |                           |                           |
| 45/90/2,0 D                    | 13,86                                                                               | 4,32                                                                                |                           |                           |
| 45/45/2,5                      |                                                                                     |                                                                                     |                           |                           |
| 45/90/2,5 D                    |                                                                                     |                                                                                     |                           |                           |
| 45/60/3,0                      |                                                                                     |                                                                                     |                           |                           |
| 45/120/3,0 D                   |                                                                                     |                                                                                     |                           |                           |
| 45/75/3,0                      |                                                                                     |                                                                                     |                           |                           |
| 45/150/3,0 D                   |                                                                                     |                                                                                     |                           |                           |

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

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

| Profile rail<br>hot-dip galvanized | STEX 45 threaded bolt, STEX 45 mounting plate, STEX 45 mounting bolt              |                                                                                   |                           |                           |
|------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                    |  |  | M12 8.8                   | M10 8.8                   |
|                                    | $F_z$<br>[kN]                                                                     | $F_x$<br>[kN]                                                                     | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/45/2,5                          | 10,94                                                                             | 2,95                                                                              | 50                        | 45                        |
| 45/90/2,5 D                        |                                                                                   |                                                                                   |                           |                           |
| 45/60/3,0                          |                                                                                   |                                                                                   |                           |                           |
| 45/120/3,0 D                       |                                                                                   |                                                                                   |                           |                           |
| 45/75/3,0*                         |                                                                                   |                                                                                   |                           |                           |
| 45/150/3,0 D*                      |                                                                                   |                                                                                   |                           |                           |

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

| Profile rail<br>hot-dip galvanized | Tooth plate S, tooth bolt                                                           |                                                                                     |                           |                           |
|------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                    |  |  | M12 8.8                   | M10 8.8                   |
|                                    | $F_z$<br>[kN]                                                                       | $F_x$<br>[kN]                                                                       | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/45/2,5                          | 13,86                                                                               | 2,90                                                                                | 60                        | 50                        |
| 45/90/2,5 D                        |                                                                                     |                                                                                     |                           |                           |
| 45/60/3,0                          |                                                                                     |                                                                                     |                           |                           |
| 45/120/3,0 D                       |                                                                                     |                                                                                     |                           |                           |
| 45/75/3,0*                         |                                                                                     |                                                                                     |                           |                           |
| 45/150/3,0 D*                      |                                                                                     |                                                                                     |                           |                           |

\* without approval according to RAL-GZ 655-D

## Admissible loading capacity

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

| Profile rail<br>hot-dip galvanized | STEX 45 GB, threaded bolt GB                                                      |                                                                                   |                           |
|------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|
|                                    |  |  | M12 4.6                   |
|                                    | F <sub>z</sub><br>[kN]                                                            | F <sub>x</sub><br>[kN]                                                            | tightening torque<br>[Nm] |
| 45/26/1,5                          | 4,11                                                                              | 2,80                                                                              | 29                        |
| 45/52/1,5 D                        |                                                                                   |                                                                                   |                           |
| 45/45/1,5                          |                                                                                   |                                                                                   |                           |
| 45/90/1,5 D                        |                                                                                   |                                                                                   |                           |
| 45/45/2,0                          |                                                                                   |                                                                                   |                           |
| 45/90/2,0 D                        |                                                                                   |                                                                                   |                           |
| 45/45/2,5                          | 9,54                                                                              | 2,80                                                                              |                           |
| 45/90/2,5 D                        |                                                                                   |                                                                                   |                           |
| 45/60/3,0                          |                                                                                   |                                                                                   |                           |
| 45/120/3,0 D                       |                                                                                   |                                                                                   |                           |
| 45/75/3,0                          |                                                                                   |                                                                                   |                           |
| 45/150/3,0 D                       |                                                                                   |                                                                                   |                           |

| Profile rail<br>hot-dip galvanized | Threaded plate 40 x 22 (40,5 x 19 x 8)                                            |                                                                                   |                           |
|------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|
|                                    |  |  | M12 8.8                   |
|                                    | F <sub>z</sub><br>[kN]                                                            | F <sub>x</sub><br>[kN]                                                            | tightening torque<br>[Nm] |
| 45/26/1,5                          | 4,24                                                                              | 1,10                                                                              | 40                        |
| 45/52/1,5 D                        |                                                                                   |                                                                                   |                           |
| 45/45/1,5                          |                                                                                   |                                                                                   |                           |
| 45/90/1,5 D                        |                                                                                   |                                                                                   |                           |
| 45/45/2,0                          |                                                                                   |                                                                                   |                           |
| 45/90/2,0 D                        | 10,00                                                                             | 1,10                                                                              |                           |
| 45/45/2,5                          |                                                                                   |                                                                                   |                           |
| 45/90/2,5 D                        |                                                                                   |                                                                                   |                           |
| 45/60/3,0                          |                                                                                   |                                                                                   |                           |
| 45/120/3,0 D                       |                                                                                   |                                                                                   |                           |
| 45/75/3,0                          |                                                                                   |                                                                                   |                           |
| 45/150/3,0 D                       |                                                                                   |                                                                                   |                           |

| Profile rail<br>hot-dip galvanized | Threaded square plate 35 x 30 x 8                                                   |                                                                                      |                           |                           |
|------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                    |  |  | M12 8.8                   | M10 8.8                   |
|                                    | F <sub>z</sub><br>[kN]                                                              | F <sub>x</sub><br>[kN]                                                               | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/26/1,5                          | 3,23                                                                                | 1,70                                                                                 | 60                        | 50                        |
| 45/52/1,5 D                        |                                                                                     |                                                                                      |                           |                           |
| 45/45/1,5                          |                                                                                     |                                                                                      |                           |                           |
| 45/90/1,5 D                        |                                                                                     |                                                                                      |                           |                           |
| 45/45/2,0                          |                                                                                     |                                                                                      |                           |                           |
| 45/90/2,0 D                        | 8,80                                                                                | 2,00                                                                                 |                           |                           |
| 45/45/2,5                          |                                                                                     |                                                                                      |                           |                           |
| 45/90/2,5 D                        |                                                                                     |                                                                                      |                           |                           |
| 45/60/3,0                          |                                                                                     |                                                                                      |                           |                           |
| 45/120/3,0 D                       |                                                                                     |                                                                                      |                           |                           |
| 45/75/3,0                          |                                                                                     |                                                                                      |                           |                           |
| 45/150/3,0 D                       |                                                                                     |                                                                                      |                           |                           |

## ■ Admissible loading capacity

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

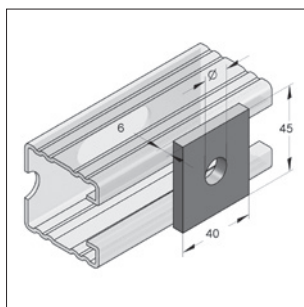
| Profile rail<br>hot-dip galvanized | STEX 45 GB, threaded bolt GB                                                      |                                                                                   |                           |
|------------------------------------|-----------------------------------------------------------------------------------|-------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

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

| Profile rail<br>hot-dip galvanized | Threaded square plate 35 x 30 x 8                                                   |                                                                                     |                           |                           |
|------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|---------------------------|
|                                    |  |  | M12 8.8                   | M10 8.8                   |
|                                    | $F_z$<br>[kN]                                                                       | $F_x$<br>[kN]                                                                       | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/45/2,5                          | 8,80                                                                                | 1,90                                                                                | 60                        | 50                        |
| 45/90/2,5 D                        |                                                                                     |                                                                                     |                           |                           |
| 45/60/3,0                          |                                                                                     |                                                                                     |                           |                           |
| 45/120/3,0 D                       |                                                                                     |                                                                                     |                           |                           |
| 45/75/3,0*                         |                                                                                     |                                                                                     |                           |                           |
| 45/150/3,0 D*                      |                                                                                     |                                                                                     |                           |                           |

\* without approval according to RAL-GZ 655-D

## ■ Perforated plate



Perforated plate

**Specification:**  
Profile rail type: rail system 45

**Technical data:**  
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

02

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

## ■ Protecting cap



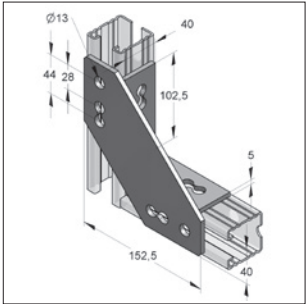
Protecting cap

**Specification:**  
Profile rail type: rail system 45

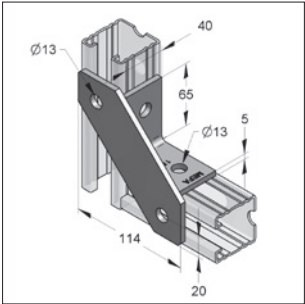
**Technical data:**  
Material: plastic PE  
Material colour: black

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

■ Universal knot



Universal knot



Universal knot K

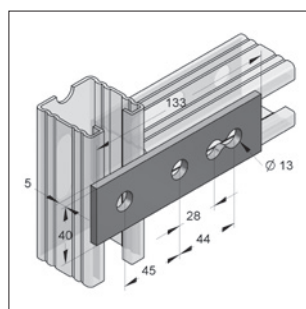
**Specification:**  
Profile rail type: rail system 45  
Applications area: corner joint of C-profile channels  
  
combination of knot triangle, corner lug and corner angle left and right

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

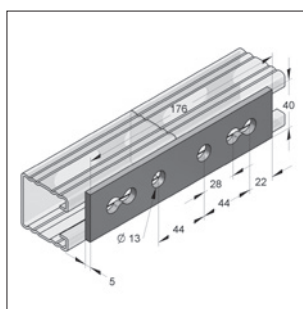
Loads refering to component, not to connection  
\*Remark: torque free rail connection.

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

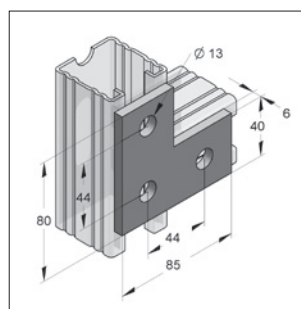
## Flat connector



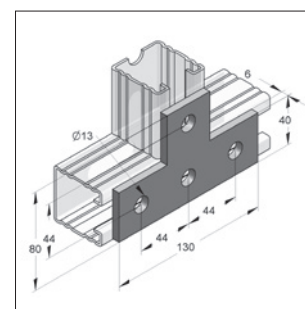
3-hole flat connector 40/5



4-hole flat connector 40/5



L-shaped flat connector 40/6



T-shaped flat connector 40/6

### Specification:

Profile rail type: rail system 45

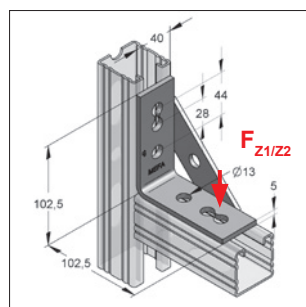
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

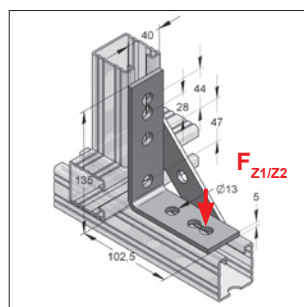
Remark: torque free rail connection

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

## Knot triangle



4-hole knot triangle 40/5



5-hole knot triangle 40/5

### Specification:

Profile rail type: rail system 45

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

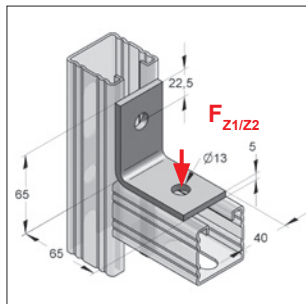
<sup>1)</sup> components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

<sup>2)</sup> loads referring to component, not to connection

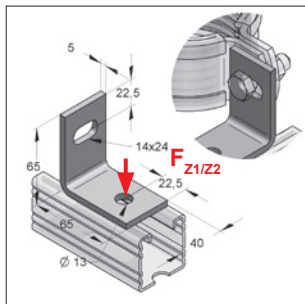
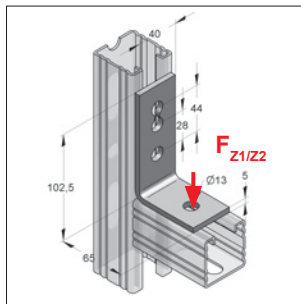
<sup>3)</sup> loads referring to component, double-sided fixed on profile

| Identification                   | Dimension<br>L x W<br>[mm] | Max. load                    |                           | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------------------------|----------------------------|------------------------------|---------------------------|--------------------|-------------------|----------|
|                                  |                            | $F_{Z1}^{2)}$                | $F_{Z2}^{3)}$             |                    |                   |          |
|                                  |                            | without profile rail<br>[kN] | with profile rail<br>[kN] |                    |                   |          |
| <b>4-hole knot triangle 40/5</b> | 102,5 x 102,5              | 2,0                          | 6,0                       | 0,363              | 25                | 08140700 |
| <b>5-hole knot triangle 40/5</b> | 135 x 102,5                | 2,0                          | 6,0                       | 0,410              | 25                | 08141700 |

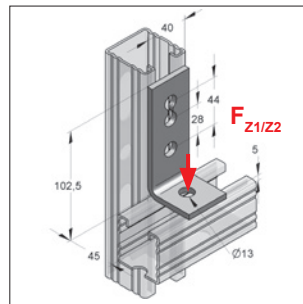
## Angle 40/5



2-hole angle 40/5

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

3-hole angle 40/5 L



3-hole angle 40/5 K

### Specification:

Profile rail type: rail system 45

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

<sup>2)</sup> loads referring to component, not to connection

<sup>3)</sup> loads referring to component, double-sided fixed on profile

### Technical data:

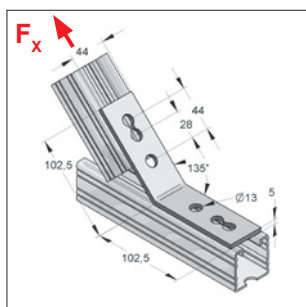
Material: steel

Material type: S235JR

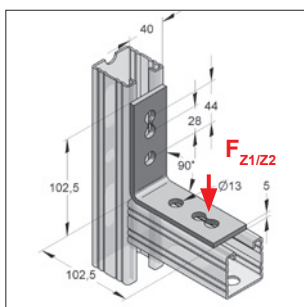
Surface: galvanized<sup>1)</sup>

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

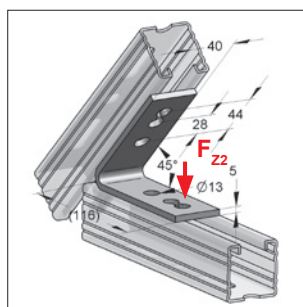
## Angle 40/5



4-hole angle 40/5 135°



4-hole angle 40/5 90°



4-hole angle 40/5 45°

### Specification:

Profile rail type: rail system 45

<sup>1), 3)</sup> loads referring to component, not to connection

<sup>2)</sup> loads referring to component, double-sided fixed on profile

### Technical data:

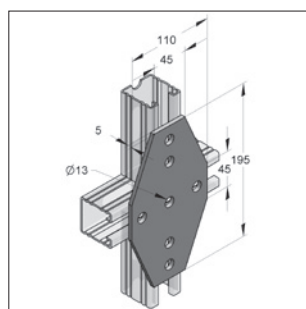
Material: steel

Material type: S235JR

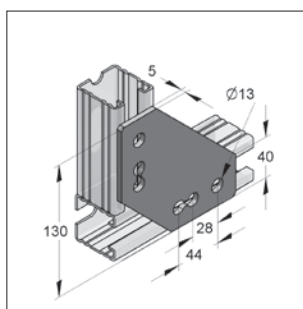
Surface: galvanized

| Identification                | Dimension<br>L x W<br>[mm] | Max. load                                     |                                            |                    | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------------|----------------------------|-----------------------------------------------|--------------------------------------------|--------------------|--------------------|-------------------|----------|
|                               |                            | $F_{Z1}^{1)}$<br>without profile rail<br>[kN] | $F_{Z2}^{2)}$<br>with profile rail<br>[kN] | $F_x^{3)}$<br>[kN] |                    |                   |          |
| <b>4-hole angle 40/5 135°</b> | 102,5 x 102,5              | -                                             | -                                          | 6,6                | 0,293              | 50                | 08140600 |
| <b>4-hole angle 40/5 90°</b>  | 102,5 x 102,5              | 1,0                                           | 2,5                                        | -                  | 0,283              | 50                | 08140500 |
| <b>4-hole angle 40/5 45°</b>  | 116 x 116                  | -                                             | 2,5                                        | -                  | 0,336              | 25                | 08141000 |

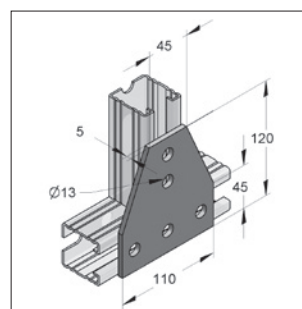
## Cross strap / T-lug



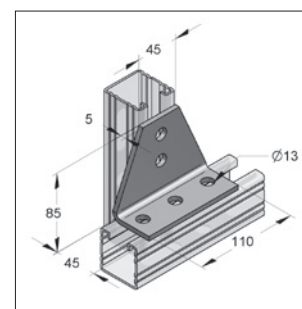
Cross strap



4-hole corner plate



T-lug, not angled



T-lug, angled

02

**Specification:**

Profile rail type: rail system 45

**Technical data:**

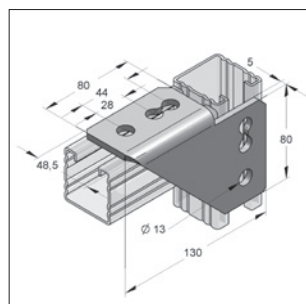
Material: steel  
 Material type: S235JR  
 Surface: galvanized<sup>1)</sup>

Remark: admissible loads are dependant on component

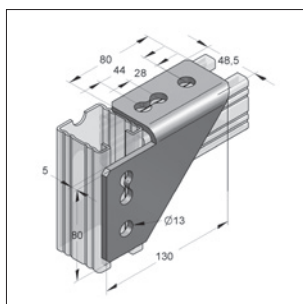
<sup>1)</sup> components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

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

## Corner angle



4-hole corner angle right



4-hole corner angle left

**Specification:**

Profile rail type: rail system 45

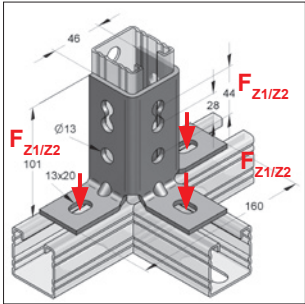
**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

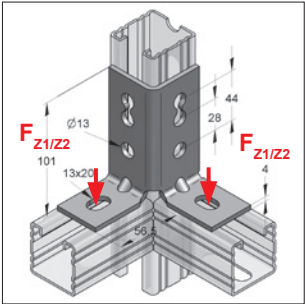
Remark: admissible loads are dependant of component

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

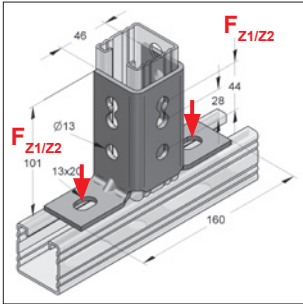
■ Angle connector



Angle connector C 45



Angle connector C 45 90°



Angle connector C 45 180°

Specification:

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

Technical data:

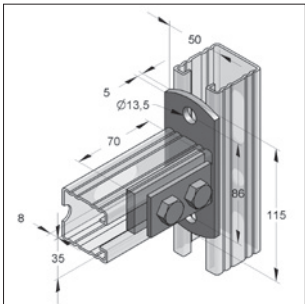
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

<sup>1)</sup> components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!  
<sup>2)</sup> loads referring to component, not to connection  
<sup>3)</sup> loads referring to component, double-sided fixed on profile

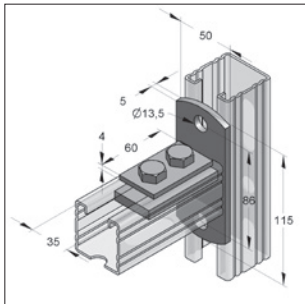
Remark: With lateral screw connection , 2-hole tooth plates have to be used

| Identification           | Max. load<br>F <sub>z1</sub> <sup>2)</sup><br>without profile rail<br>[kN] | Max. load<br>F <sub>z2</sub> <sup>3)</sup><br>with profile rail<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------|-------------------|----------|
| Angle connector C45      | 1,5                                                                        | 4,0                                                                     | 0,548              | 15                | 08123000 |
| Angle connector C45 90°  | 1,5                                                                        | 4,0                                                                     | 0,361              | 15                | 08123200 |
| Angle connector C45 180° | 1,5                                                                        | 4,0                                                                     | 0,481              | 15                | 08123100 |

■ Connector 45



Connector 45



Connector 45 horizontal

Specification:

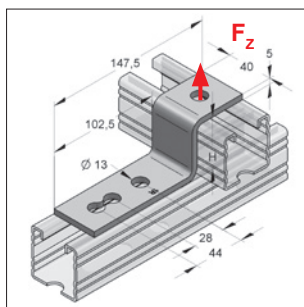
Profile rail type: rail system 45  
Applications area: connection of profile rails, moment-free connections only (not for connection of consoles)  
Scope of supply:: 2-hole plate 13 mm hexagon screw M12

Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

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

## ■ 3-hole corresponding angle 40/5



Corresponding angle 40/5

**Specification:**  
Profile rail type: rail system 45

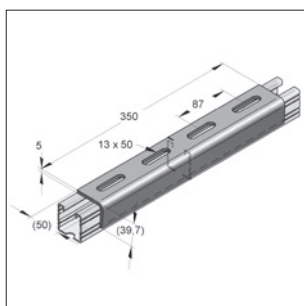
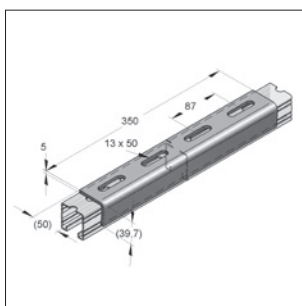
**Technical data:**  
Material: steel  
Material type: S235JR  
Surface: galvanized

\* loads referring to component, not to connection

02

| Identification                | Dimension<br>H<br>[mm] | Max. load *<br>$F_z$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------------|------------------------|------------------------------|--------------------|-------------------|----------|
| <b>Corresponding angle 45</b> | 45                     | 1,0                          | 0,277              | 25                | 08141245 |
| <b>Corresponding angle 60</b> | 60                     | 1,0                          | 0,301              | 25                | 08141300 |

## ■ Connector 45

Connector 45  
rail slot at topConnector 45  
rail slot at bottom

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

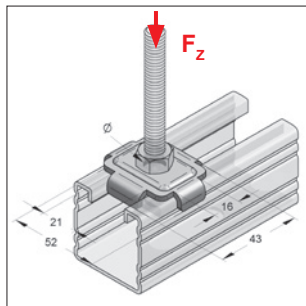
|                        |                                                                                                                     |                                                                                                                                                                        |                          |
|------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>Specification:</b>  |                                                                                                                     | <b>Technical data:</b>                                                                                                                                                 |                          |
| Profile rail type:     | rail system 45                                                                                                      | Material:                                                                                                                                                              | steel                    |
| Applications area:     | for static load connection and extension of C-profile rails of the rail system 45                                   | Material type:                                                                                                                                                         | S235JR                   |
|                        |                                                                                                                     | Surface:                                                                                                                                                               | galvanized <sup>1)</sup> |
| Recommended accessory: | 4 x tooth plate S M12 or Stex 45 MP/MTB M12<br>4 x hexagon screw M12 x 25<br>4 x washer 13 x 24 x 2,5 (DIN 7089-12) | <sup>1)</sup> components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223).<br>Delivery time on demand! |                          |
| Remark:                | connecting of double profile rails with two connectors 45                                                           |                                                                                                                                                                        |                          |

### For profile rail width 45

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

mounting recommendation see chapter 15

## Profile holder



Profile holder

**Specification:**

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

**Technical data:**

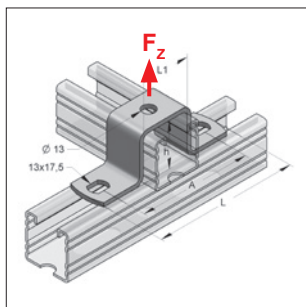
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

**For profile rail 35, 45 and Stex 35**

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

## Head profile



Head profile

**Specification:**

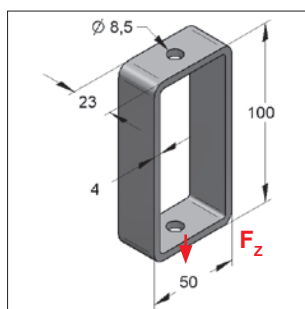
Profile rail type: rail system 45  
Applications area: suitable for connection of profile rails

**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

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

## 2-hole suspending console



2-hole suspending console  
100/50/4

### Specification:

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

### Technical data:

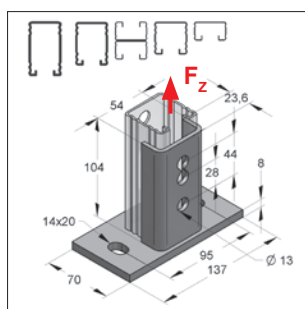
Material: steel  
Material type: S235JR  
Surface: galvanized

<sup>1)</sup> loads referring to component, not to connection

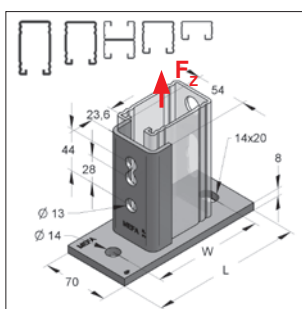
02

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

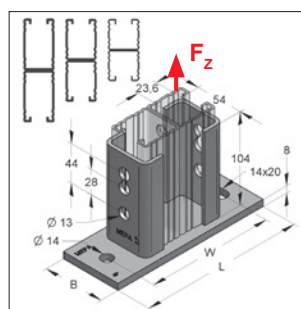
## Holder



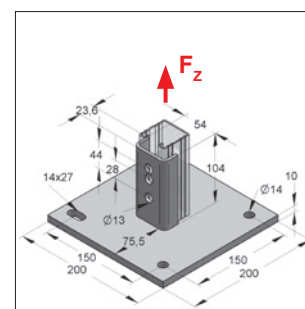
Holder horizontal  
for C-profile rail



Holder vertical  
for C-profile rail



Holder for double  
C-profile rail



Holder square  
for C-profile rail

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: hot-dip galv<sup>1)</sup>

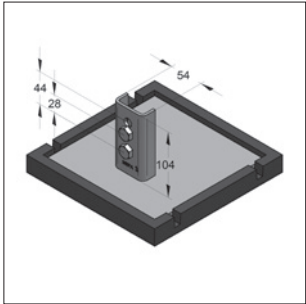
<sup>1)</sup> variations in dimension up to 1 mm possible

<sup>2)</sup> loads referring to component, not to connection

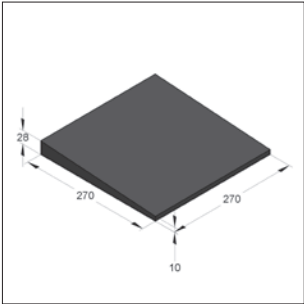
<sup>3)</sup> matching sound-decoupling set see on page 3a/11

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

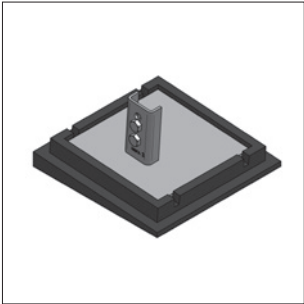
■ Rooftop holder for rooftop constructions



Rooftop holder complete



Rubber wedge 4°



Rooftop holder complete with  
rubber wedge underneath

Specification:

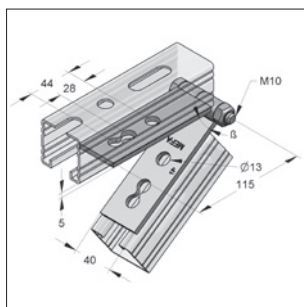
Profile rail type: 45/26, 45/45, 45/60, 45/52, 45/60, 45/75, 45/90, 45/120  
Applications area: for profile channel constructions onto rooftop  
Installation advise: position rooftop holder on rubber pad.  
For compensation of possible roof pitch place rubber wedge (4°) below rubber pad  
Separation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

Technical data:

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

| Identification                   | Dimension steel plate | Dimension rubber pad / seperation fleece | Pressure load | Weight   | Packing | Part-No.   |
|----------------------------------|-----------------------|------------------------------------------|---------------|----------|---------|------------|
|                                  | [mm]                  | [mm]                                     | [kN]          | [kg/pc.] | [pcs.]  |            |
| Rooftop holder complete          | 200x200x6             | 235x235x28                               | 4,0           | 3,71     | 2       | 08197500   |
| Rooftop holder rubber wedge      | -                     | 270x270x28/10                            | 4,0           | 1,73     | 1       | 08197598   |
| Rooftop holder separation fleece | -                     | 270x270x3,5                              | -             | 0,04     | 1       | 0819759701 |

## Joint connector for C-profile rails



Joint connector  
for C-profile rails

### Specification:

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

### Technical data:

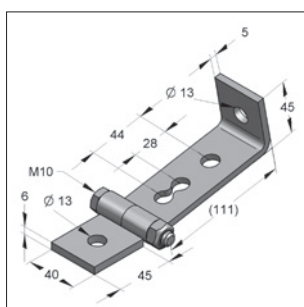
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

02

| Identification         | Dimension<br>L x W x T<br>[mm] | Angle $\beta$ | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|------------------------|--------------------------------|---------------|--------------------|-------------------|----------|
| <b>Joint connector</b> | 115 x 40 x 5                   | +/-160°       | 0,461              | 25                | 08122200 |

## Joint angle

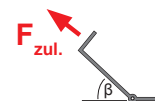


Joint angle



Mounting example  
Joint angle with bracing

### Admissible load at angle $\beta$



| Angle $\beta$ | 0°  | 30° | 45° | 60° | 90° |
|---------------|-----|-----|-----|-----|-----|
| Fzul.* [kN]   | 4,5 | 5,2 | 4,0 | 3,2 | 2,8 |

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

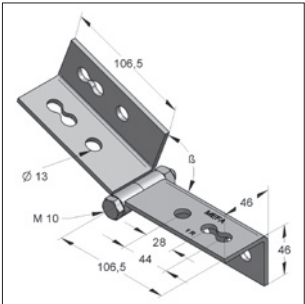
Remark: for upright mounting consider shear forces in radial tubular axle

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

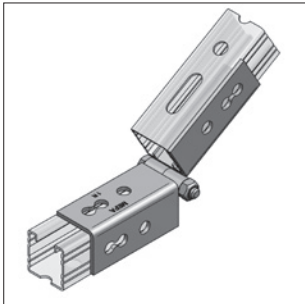
\* loads referring to component, not to connection

| Identification          | Hole-Ø<br>[mm] | Angle $\beta$ | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------|----------------|---------------|--------------------|-------------------|----------|
| <b>Joint angle 40/5</b> | 13             | 0° - 90°      | 0,407              | 20                | 08122300 |

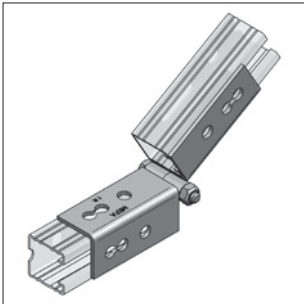
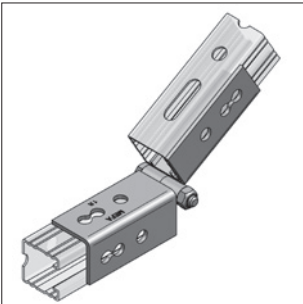
Profile joint connector



Profile joint connector



Position of channel arbitrary



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

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

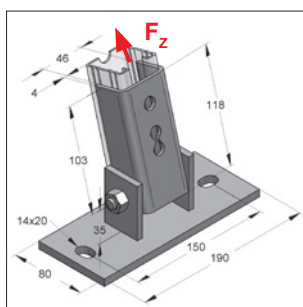
\* loads referring to component, not to connection

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

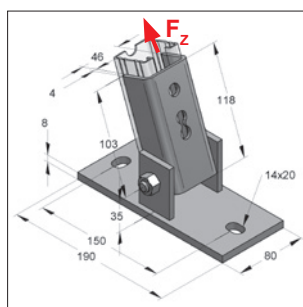
| Admissible load at angle β |     |      |      |     |
|----------------------------|-----|------|------|-----|
|                            |     |      |      |     |
| Angle β                    | 30° | 45°  | 60°  | 90° |
| Fzul.* [kN]                | 6,0 | 4,24 | 3,45 | 3,0 |

## Joint holder with base plate

02



Joint holder with  
base plate horizontal



Joint holder with  
base plate vertical

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

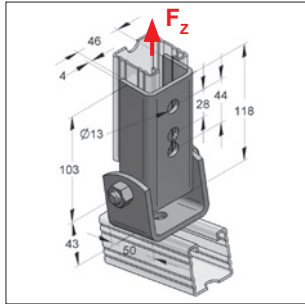
Applications area:  
cross girder at various  
angle up to 90°

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

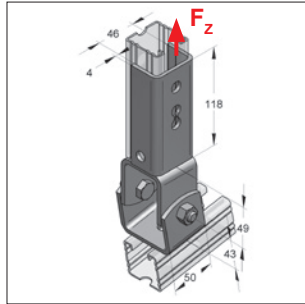
<sup>2)</sup> loads referring to component, not to connection

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

## Joint holder



Joint holder  
vertical



Joint holder  
horizontal

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

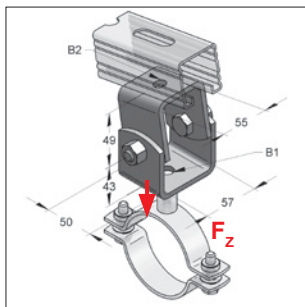
Applications area: cross girder at various  
angle up to 90°

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

<sup>2)</sup> loads referring to component, not to connection

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

## Joint holder with terminal hole



Joint holder with terminal hole

### Specification:

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

### Technical data:

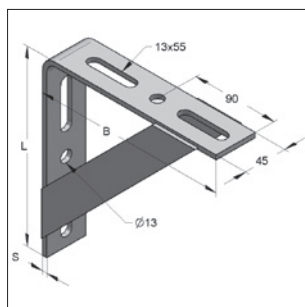
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

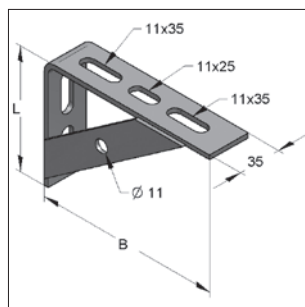
<sup>2)</sup> loads refer to component, not to connection

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

## Angle bracket



Angle bracket



Knot bracket 100/150/4 L

### Specification:

Profile rail type: rail system 45  
hole distance 105 mm

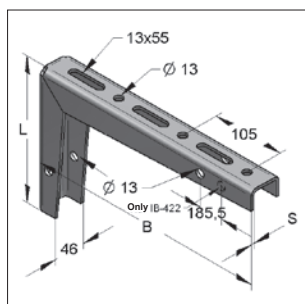
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

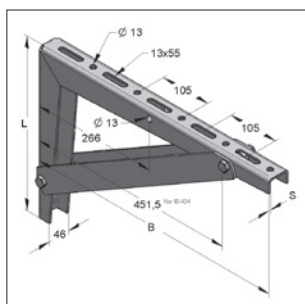
<sup>1)</sup> loads referring to component, not to connection

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

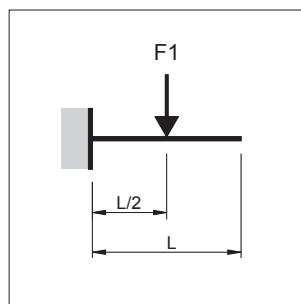
## Universal console



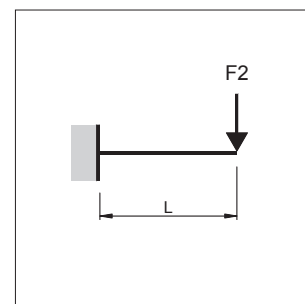
Universal console



Universal console with knot



Loading condition 1 (LC1)



Loading condition 2 (LC2)

### Specification:

Profile rail type: rail system 45  
hole distance 105 mm

### Technical data:

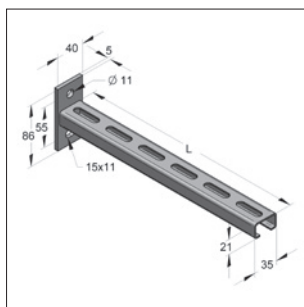
Material: steel  
Material type: S235JR  
Surface: galvanized

<sup>1)</sup> loads referring to component, not to connection

| Identification              | Dimension<br>L x B x S<br>[mm] | max. load <sup>1)</sup> |                        | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------------|--------------------------------|-------------------------|------------------------|--------------------|-------------------|----------|
|                             |                                | F <sub>1</sub><br>[kN]  | F <sub>2</sub><br>[kN] |                    |                   |          |
| Universal console           | 200 x 200 x 4,0                | 6,5                     | 4,0                    | 1,02               | 15                | 0814201  |
| Universal console           | 200 x 350 x 4,0                | 5,0                     | 3,0                    | 1,60               | 10                | 0814219  |
| Universal console           | 350 x 550 x 4,0                | 4,0                     | 1,5                    | 3,00               | 6                 | 0814227  |
| Universal console with knot | 200 x 350 x 4,0                | 6,2                     | 4,9                    | 2,47               | 10                | 0814235  |
| Universal console with knot | 350 x 550 x 4,0                | 6,5                     | 3,7                    | 5,26               | 6                 | 0814243  |



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



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

### Technical data:

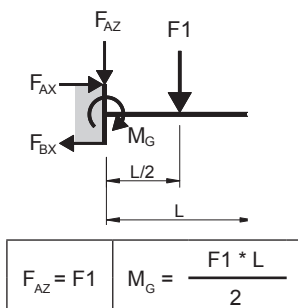
|                                      |                                    |                         |                  |
|--------------------------------------|------------------------------------|-------------------------|------------------|
| Material type plate:                 | S235JR, $f_y =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

|                           |                                   |
|---------------------------|-----------------------------------|
| limitation torque $M_G$ : | 93,86 Nm                          |
| Reaction force $F_{AX}$ : | 1,71 kN                           |
| Reaction force $F_{BX}$ : | 1,71 kN                           |
| $M_G, F_{AX}, F_{BX}$ on  | LC1: up to $L = 630,0 \text{ mm}$ |
|                           | LC2: up to $L = 315,0 \text{ mm}$ |
|                           | LC3: up to $L = 472,5 \text{ mm}$ |

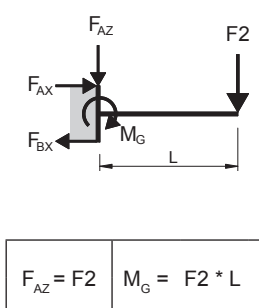
<sup>1)</sup> load limitation due to admissible bending  $L/150$ . Limitation torque  $M_G$  and bearing strengths  $F_{AX}, F_{BX}$  not valid anymore

| Identification  | Length<br>L<br>[mm] | loading<br>condition 1<br>F1<br>[kN] | max. load<br>loading<br>condition 2<br>F2<br>[kN] | loading<br>condition 3<br>q0<br>[kN/m] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------|---------------------|--------------------------------------|---------------------------------------------------|----------------------------------------|--------------------|-------------------|----------|
| Console C-35/21 | 157,5               | 1,19                                 | 0,60                                              | 7,57                                   | 0,307              | 25                | 18020158 |
| Console C-35/21 | 210,0               | 0,89                                 | 0,45                                              | 4,26                                   | 0,368              | 25                | 18020210 |
| Console C-35/21 | 262,5               | 0,72                                 | 0,36                                              | 2,72                                   | 0,429              | 25                | 18020263 |
| Console C-35/21 | 315,0               | 0,60                                 | 0,30                                              | 1,89                                   | 0,490              | 25                | 18020315 |
| Console C-35/21 | 420,0               | 0,45                                 | 0,19 <sup>1)</sup>                                | 1,06                                   | 0,612              | 25                | 18020420 |
| Console C-35/21 | 525,0               | 0,36                                 | 0,12 <sup>1)</sup>                                | 0,62 <sup>1)</sup>                     | 0,734              | 25                | 18020525 |

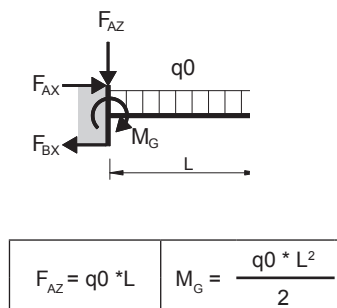
Loading condition 1 (LC1)



Loading condition 2 (LC2)



Loading condition 3 (LC3)

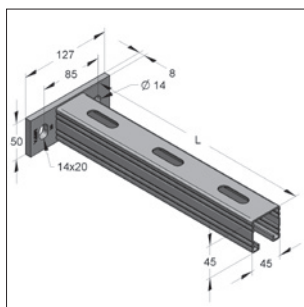


### Notice:

all loads referring to static loads



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



Console C 45/45/2,0 horizontal

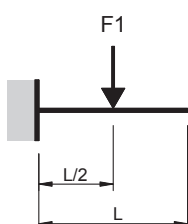
### Technical data: galvanized

|                                      |                                    |                         |                   |
|--------------------------------------|------------------------------------|-------------------------|-------------------|
| Material type profile rail:          | S355J2, $f_y = 355 \text{ N/mm}^2$ | Dimension plate:        | 127 x 50 x 8,0 mm |
| Material type plate:                 | S235JR, $f_y = 235 \text{ N/mm}^2$ | Dimension profile rail: | 45 x 45 x 2,0 mm  |
| Material:                            | steel                              |                         |                   |
| Surface:                             | galvanized                         |                         |                   |
| Global safety coefficient $\gamma$ : | 1,35                               |                         |                   |

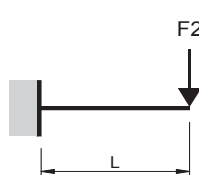
02

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

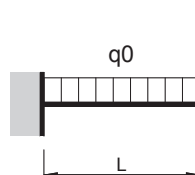
Loading condition 1 (LC1)



Loading condition 2 (LC2)



Loading condition 3 (LC3)

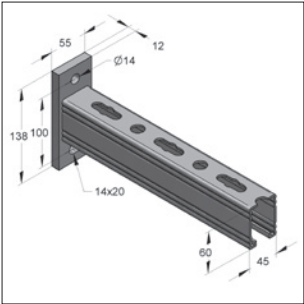


### Remark:

all loads refer to static loads

■ Console C-profile 45/60/3,0 mm

02



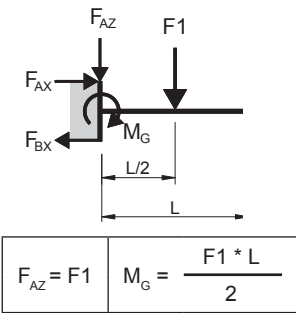
Console C 45/60/3,0 mm

|                                                       |                                    |                         |                    |
|-------------------------------------------------------|------------------------------------|-------------------------|--------------------|
| <b>Technical data:</b>                                |                                    |                         |                    |
| Material type plate:                                  | S235JR, fy = 235 N/mm <sup>2</sup> | Dimension plate:        | 138 x 55 x 12,0 mm |
| Material type profile rail:                           | S235JR, fy = 235 N/mm <sup>2</sup> | Dimension profile rail: | 45 x 60 x 3,0 mm   |
| Surface:                                              | galvanized                         |                         |                    |
| Material:                                             | steel                              |                         |                    |
| Global safety coefficient γ:                          | 1,35                               |                         |                    |
| Limitation torquet                                    | M <sub>G</sub> :                   | 1144,44 Nm              |                    |
| Reaction force                                        | F <sub>AX</sub> :                  | 11,44 kN                |                    |
| Reaction force                                        | F <sub>BX</sub> :                  | 11,44 kN                |                    |
| M <sub>G</sub> , F <sub>AX</sub> , F <sub>BX</sub> on | LC1:                               | up to L = 1155 mm       |                    |
|                                                       | LC2:                               | up to L = 630 mm        |                    |
|                                                       | LC3:                               | up to L = 840 mm        |                    |

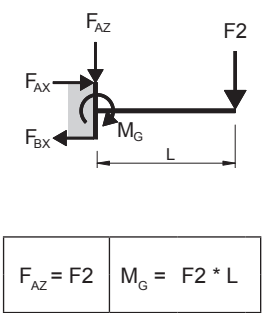
<sup>1)</sup>load limitation due to admissible bending L/150. Limitation torque M<sub>G</sub> and bearing strengths F<sub>AX</sub>, F<sub>BX</sub> not valid anymore

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

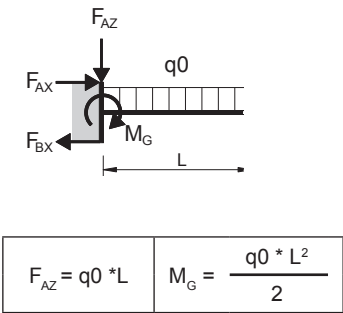
Loading condition 1 (LC1)



Loading condition 2 (LC2)

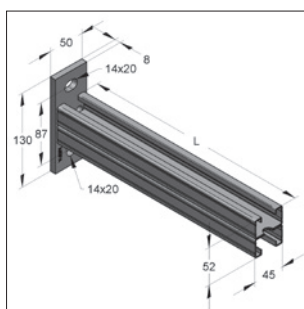


Loading condition 3 (LC3)



Remark:  
all loads refer to static loads

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



Double console C 45/52/1,5

## Technical data:

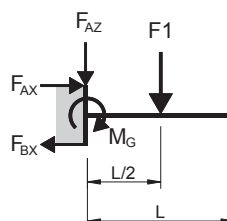
|                                      |                                    |                         |                   |
|--------------------------------------|------------------------------------|-------------------------|-------------------|
| Material type plate:                 | S235JR, $f_y = 235 \text{ N/mm}^2$ | Dimension plate:        | 130 x 50 x 8,0 mm |
| Material type profile rail:          | S235JR, $f_y = 235 \text{ N/mm}^2$ | Dimension profile rail: | 45 x 52 x 1,5 mm  |
| Surface:                             | galvanized                         |                         |                   |
| Material:                            | steel                              |                         |                   |
| Global safety coefficient $\gamma$ : | 1,35                               |                         |                   |

|                          |            |                   |
|--------------------------|------------|-------------------|
| Limitation torquet       | $M_G$ :    | 461,54 Nm         |
| Reaction force           | $F_{AX}$ : | 5,31 kN           |
| Reaction force           | $F_{BX}$ : | 5,31 kN           |
| $M_G, F_{AX}, F_{BX}$ on | LC1:       | up to L = 1155 mm |
|                          | LC2:       | up to L = 735 mm  |
|                          | LC3:       | up to L = 945 mm  |

02

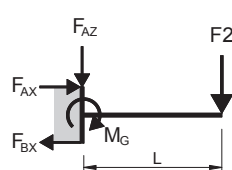
| Identification    | Length<br>L<br>[mm] | Loading<br>condition 1<br>F1<br>[kN] | Max. load<br>Loading<br>condition 2<br>F2<br>[kN] | Loading<br>condition 3<br>q0<br>[kN/m] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|---------------------|--------------------------------------|---------------------------------------------------|----------------------------------------|--------------------|-------------------|----------|
| Console C-45/52 D | 315,0               | 2,93                                 | 1,47                                              | 9,30                                   | 1,22               | 15                | 18070315 |
| Console C-45/52 D | 420,0               | 2,20                                 | 1,10                                              | 5,23                                   | 1,50               | 10                | 18070420 |
| Console C-45/52 D | 525,0               | 1,76                                 | 0,88                                              | 3,35                                   | 1,78               | 10                | 18070525 |
| Console C-45/52 D | 630,0               | 1,47                                 | 0,73                                              | 2,33                                   | 2,07               | 5                 | 18070630 |

Loading condition 1 (LC1)



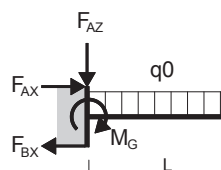
$$F_{AZ} = F1 \quad M_G = \frac{F1 * L}{2}$$

Loading condition 2 (LC2)



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

Loading condition 3 (LC3)



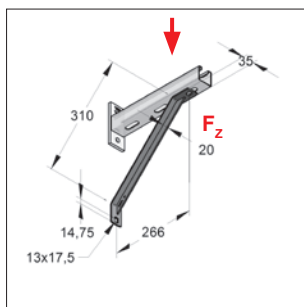
$$F_{AZ} = q0 * L \quad M_G = \frac{q0 * L^2}{2}$$

## Remark:

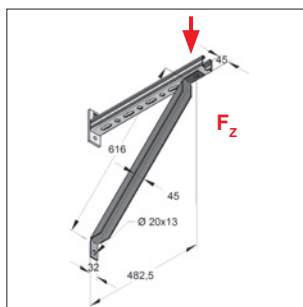
all loads refer to static loads



## ■ Brace 45°



Brace 45° short



Brace 45° long

**Specification:**

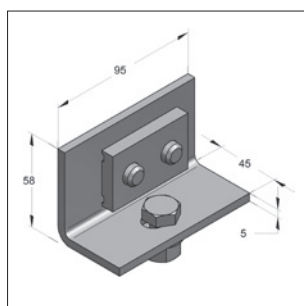
Applications area: to increase the loading capacity of consoles and wall brackets

**Technical data:**

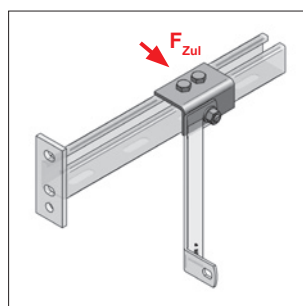
Material: steel  
Material type: S235JR  
Surface: galvanized

| Identification         | max. load (pressure)<br>$F_z$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|------------------------|---------------------------------------|--------------------|-------------------|----------|
| <b>Brace 45° short</b> | 11,5                                  | 0,68               | 25                | 0815101  |
| <b>Brace 45° long</b>  | 10,0                                  | 2,09               | 1                 | 0815102  |

## ■ Adapter angle



Adapter angle



Mounting example

**Specification:**

Applications area: angle for lateral bracing of consoles

**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

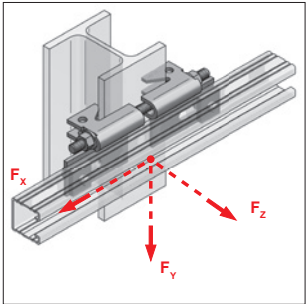
scope of delivery adapter angle: 3 x hexagon screws M12 x 25  
1 x 2-hole tooth plate  
1 x washer 13 x 24 x 2,5  
1x nut M12

\* Loads do refer to components, not to connections

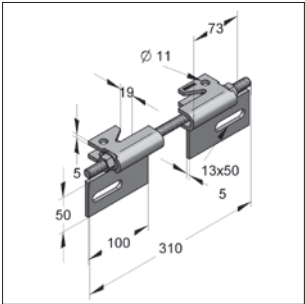
### Adapter angle for braces 45°

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

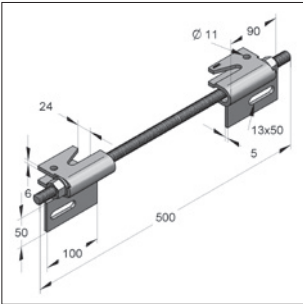
Girder connection vertical



Girder connection vertical



Typ D III



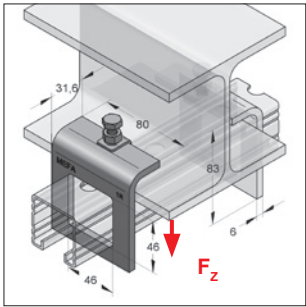
Typ D IV

|                        |                                                                                                                                                                                                                                |                        |                 |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|
| <b>Specification:</b>  |                                                                                                                                                                                                                                | <b>Technical data:</b> |                 |
| Applications area:     | vertical clamping connection of profile rails at steel girder                                                                                                                                                                  | Material:              | steel           |
| Recommended accessory: | 2 x guide cleat<br>1 x threaded rod<br>2 x nut<br>2 x washer                                                                                                                                                                   | Material type:         | S235JR (clamps) |
| Mounting instruction:  | fix buttstraps on load anticipated side. Can be combined with rail system 45. Screwing of profile rail on buttstrap of guide cleat thru profile base with 2 screws M12 x 25, washers and threaded square plates or tooth plate |                        |                 |
|                        |                                                                                                                                                                                                                                | Surface                |                 |
|                        |                                                                                                                                                                                                                                | - Clamps:              | hot-dip galv.   |
|                        |                                                                                                                                                                                                                                | - Screw connection:    | zinc-nickel     |

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

mounting recommendation see chapter 15

Clamping claw

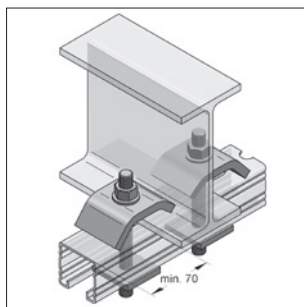


Clamping claw

|                       |                                                     |                        |            |
|-----------------------|-----------------------------------------------------|------------------------|------------|
| <b>Specification:</b> |                                                     | <b>Technical data:</b> |            |
| Profile rail type:    | C-profile rail 45/45                                | Material:              | steel      |
| Application area:     | for mounting of<br>C-profile rail 45/45 on T-girder | Material type:         | S235JR     |
|                       |                                                     | Surface:               | galvanized |

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

## ■ Clamping claw (set) steel



Clamping claw (set) steel

### Specification:

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

### Technical data:

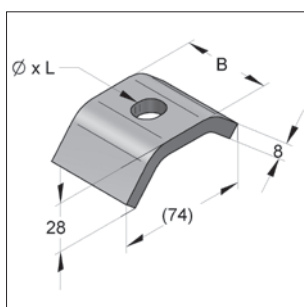
Material: steel  
Material type: S235JR  
Surface: galvanized

Assembly kit consisting of:

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

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

## ■ Clamping claw



Clamping claw

### Specification:

without accessories

### Technical data:

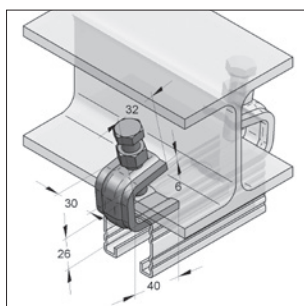
Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

<sup>2)</sup> loads referring to component, not to connection

| Identification                 | Dimension<br>Ø x L [mm] | suitable for<br>threaded rod | tightening torque<br>[Nm] | max. load <sup>2)</sup><br>[kN] | B<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|--------------------------------|-------------------------|------------------------------|---------------------------|---------------------------------|-----------|--------------------|-------------------|----------|
| <b>Clamping claws</b> (IB 458) | <b>12 x 18</b>          | M10                          | 5                         | 6,7                             | 35        | 0,170              | 50                | 0814591  |
| <b>Clamping claws</b> (IB 651) | <b>14 x 18</b>          | M12                          | 5                         | 8,2                             | 50        | 0,246              | 50                | 0816515  |
| <b>Clamping claws</b> (IB 951) | <b>Ø 18</b>             | M16                          | 10                        | 11,9                            | 50        | 0,243              | 25                | 0819519  |

## ■ Rail clamp



Rail clamp

### Specification:

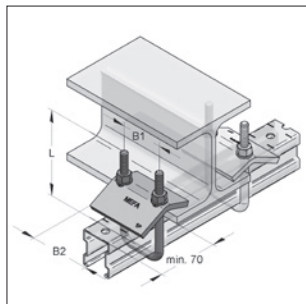
Profile rail type: rail system 35/21, 36/40, 45/45, Stex 35/35, 35/42  
Application area: for mounting the C-profile rail on steel girder  
Assembly instruction: pre-stressing 8 Nm  
requiring counter nuts, if necessary  
max. clamping thickness 23 mm

### Technical data:

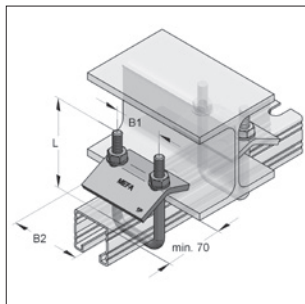
Material type: St 44-2  
Surface: galvanized  
hexagonal nut: M12, SW19  
hexagonal screw: M12x50, SW19  
with cup point

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

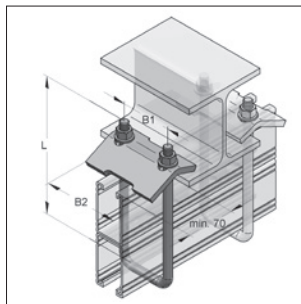
## ■ Clamping bow



Clamping bow M8 35 + 36



Clamping bow M10 45/60



Clamping bow M12 45/150

### Specification:

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

### Clamping bow consisting of:

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

### Technical data:

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

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

### Suitable for profile rail 35, 36 and STEX 35

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

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

|                        |     |    |    |    |    |     |       |    |         |
|------------------------|-----|----|----|----|----|-----|-------|----|---------|
| Clamping bow M10 45/60 | 100 | 56 | 15 | 80 | 26 | 4,0 | 0,401 | 20 | 0816720 |
|------------------------|-----|----|----|----|----|-----|-------|----|---------|

### Suitable for profile rail 45/75, 45/90

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

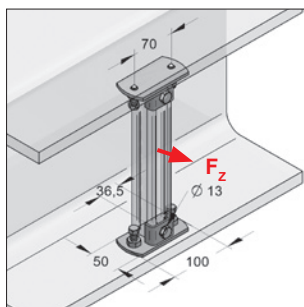
### Suitable for profile rail 45/75, 45/90

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

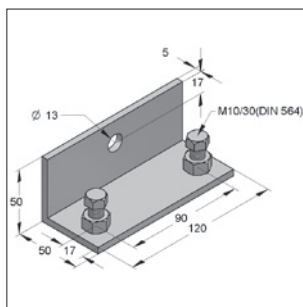
### Suitable for profile rail 45/120, 45/150

|                         |     |    |    |     |    |     |       |    |          |
|-------------------------|-----|----|----|-----|----|-----|-------|----|----------|
| Clamping bow M12 45/150 | 210 | 59 | 30 | 100 | 29 | 7,0 | 0,831 | 20 | 08167501 |
|-------------------------|-----|----|----|-----|----|-----|-------|----|----------|

## Girder clamping



Girder clamping 35



Girder clamping L 45

### Max. load on girders at a length of $\leq 400$ mm

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

#### Specification:

Profile rail type: 35/21, 36/40, Stex 35/35, Stex 35/42, 45/45  
Application area: for clamped fixation at steel girder (IPE 120 or U 160)

Assembly instruction: tightening torque min. 25 Nm

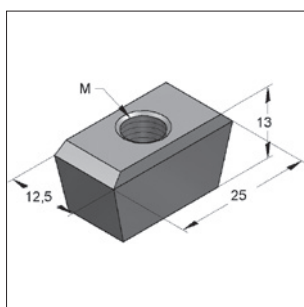
Recommended accessory: threaded square plate 35x30 (Beam clamping device L 45)  
threaded square plate 30x22 (Beam clamping device 35)

#### Technical data:

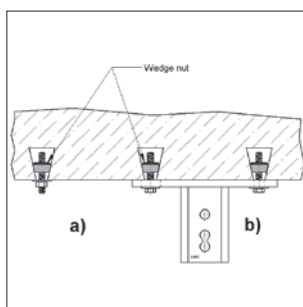
Material: steel  
Material type: S235JR  
Surface: galvanized

| Identification              | for profile rail                     | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------------|--------------------------------------|--------------------|-------------------|----------|
| <b>Girder clamping 35</b>   | 35/21, 36/40, Stex 35/35, Stex 35/42 | 0,301              | 20                | 9999695  |
| <b>Girder clamping L 45</b> | 45/45                                | 0,519              | 20                | 08163909 |

## Wedge nut for ceiling



Wedge nut for ceiling



Fixed under ceiling

#### Assembly instruction:

##### Illustration a): single mounting

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

##### Illustration b): mounting of ceiling holder

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

#### Specification:

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

#### Technical data:

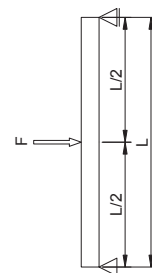
Material: GTW  
Surface: galvanized

\* Maximum load of HOLORIB-ceiling (system: Montana) is 9 kN/m<sup>2</sup> and max.4 fixing points per m<sup>2</sup>.

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

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

|         |           | System 35  |           |           |           |           | System 45 (toothed) |           |           |           |           |           |           |           |           |           |           |             |             |             |             |             |              |              |              |              |
|---------|-----------|------------|-----------|-----------|-----------|-----------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
|         | 22/16/2,0 | 27/18/1,25 | 35/20/0,8 | 35/21/2,0 | 35/35/1,0 | 35/42/1,5 | 36/40/2,0           | 45/26/1,5 | 45/45/1,5 | 45/45/2,0 | 45/45/2,5 | 45/45/2,5 | 45/60/3,0 | 45/60/3,0 | 45/60/3,0 | 45/75/3,0 | 45/75/3,0 | 45/52/1,5 D | 45/90/1,5 D | 45/90/2,0 D | 45/90/2,5 D | 45/90/2,5 D | 45/120/3,0 D | 45/120/3,0 D | 45/150/3,0 D | 45/150/3,0 D |
| Surface | fbv       | fbv        | fbv       | fbv       | fbv       | fbv       | fbv                 | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv         | fbv         | fbv         | fbv         | fbv         | fbv          | fbv          | fbv          | fbv          |
| F       | [kN]      | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]                | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]        | [kN]        | [kN]        | [kN]        | [kN]        | [kN]         | [kN]         | [kN]         | [kN]         |
| L       | [kN]      | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]                | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]        | [kN]        | [kN]        | [kN]        | [kN]        | [kN]         | [kN]         | [kN]         | [kN]         |
| [mm]    |           |            |           |           |           |           |                     |           |           |           |           |           |           |           |           |           |           |             |             |             |             |             |              |              |              |              |
| 250     | 0,26      | 0,81       | 1,02      | 1,85      | 2,71      | 4,86      | 5,15                | 2,76      | 7,04      | 8,96      | 9,87      | 9,28      | 16,05     | 15,09     | 24,26     | 22,8      | 7,94      | 8,79        | 14,8        | 15,92       | 17,33       | 15,25       | 15,25        | 15,25        | 16,22        | 16,22        |
| 500     | 0,13      | 0,41       | 0,51      | 0,92      | 1,35      | 2,43      | 2,57                | 1,38      | 3,52      | 4,48      | 4,93      | 4,64      | 8,02      | 7,54      | 12,12     | 11,39     | 4,09      | 8,79        | 13,3        | 15,92       | 15,07       | 15,25       | 15,25        | 16,22        | 16,22        |              |
| 750     |           | 0,26       | 0,34      | 0,62      | 0,9       | 1,62      | 1,71                | 0,92      | 2,34      | 2,98      | 3,28      | 3,09      | 5,34      | 5,02      | 8,07      | 7,59      | 2,72      | 6,9         | 8,86        | 10,68       | 10,03       | 15,25       | 15,25        | 16,22        | 16,22        |              |
| 1000    | 0,15      |            | 0,2       | 0,4       | 0,68      | 1,21      | 1,28                | 0,69      | 1,76      | 2,23      | 2,46      | 2,31      | 4         | 3,76      | 6,05      | 5,68      | 2,04      | 5,17        | 6,64        | 8           | 7,51        | 12,93       | 12,15        | 16,22        | 16,22        |              |
| 1250    |           |            | 0,13      | 0,25      | 0,54      | 0,97      | 1,07                | 0,45      | 1,4       | 1,78      | 1,96      | 1,84      | 3,19      | 3         | 4,83      | 4,53      | 1,62      | 4,13        | 5,3         | 6,38        | 6           | 10,32       | 9,7          | 16,1         | 15,13        |              |
| 1500    |           |            |           | 0,17      | 0,41      | 0,8       | 0,85                | 0,31      | 1,16      | 1,48      | 1,63      | 1,53      | 2,65      | 2,49      | 4,01      | 3,77      | 1,35      | 3,43        | 4,41        | 5,31        | 4,98        | 8,59        | 8,06         | 13,4         | 12,59        |              |
| 1750    |           |            |           | 0,12      | 0,3       | 0,67      | 0,66                | 0,22      | 0,99      | 1,26      | 1,39      | 1,3       | 2,26      | 2,12      | 3,43      | 3,22      | 1,15      | 2,93        | 3,77        | 4,54        | 4,26        | 7,34        | 6,89         | 11,46        | 10,76        |              |
| 2000    |           |            |           |           | 0,23      | 0,51      | 0,50                | 0,17      | 0,75      | 0,96      | 1,08      | 1,08      | 1,97      | 1,85      | 2,99      | 2,8       | 1         | 2,56        | 3,28        | 3,96        | 3,71        | 6,41        | 6,01         | 10,01        | 9,4          |              |
| 2250    |           |            |           |           | 0,18      | 0,4       | 0,39                | 0,13      | 0,59      | 0,75      | 0,84      | 0,84      | 1,74      | 1,63      | 2,65      | 2,48      | 0,78      | 2,27        | 2,91        | 3,5         | 3,29        | 5,68        | 5,32         | 8,87         | 8,33         |              |
| 2500    |           |            |           |           | 0,14      | 0,32      | 0,31                | 0,10      | 0,47      | 0,6       | 0,67      | 0,67      | 1,45      | 1,44      | 2,37      | 2,22      | 0,62      | 2,03        | 2,61        | 3,14        | 2,94        | 5,09        | 4,77         | 7,96         | 7,47         |              |
| 2750    |           |            |           |           | 0,11      | 0,26      | 0,25                |           | 0,38      | 0,48      | 0,54      | 0,54      | 1,18      | 1,18      | 2,15      | 2,01      | 0,51      | 1,84        | 2,36        | 2,84        | 2,66        | 4,61        | 4,32         | 7,22         | 6,77         |              |
| 3000    |           |            |           |           |           | 0,21      | 0,20                |           | 0,31      | 0,4       | 0,44      | 0,44      | 0,98      | 0,97      | 1,9       | 1,83      | 0,41      | 1,68        | 2,15        | 2,59        | 2,42        | 4,21        | 3,94         | 6,59         | 6,18         |              |
| 3250    |           |            |           |           |           | 0,17      | 0,16                |           | 0,26      | 0,33      | 0,37      | 0,36      | 0,81      | 0,81      | 1,6       | 1,59      | 0,34      | 1,54        | 1,97        | 2,38        | 2,22        | 3,86        | 3,62         | 6,07         | 5,68         |              |
| 3500    |           |            |           |           |           | 0,14      | 0,13                |           | 0,22      | 0,27      | 0,3       | 0,3       | 0,69      | 0,68      | 1,36      | 1,35      | 0,28      | 1,4         | 1,8         | 2,17        | 2,05        | 3,57        | 3,34         | 5,61         | 5,25         |              |
| 3750    |           |            |           |           |           | 0,12      | 0,10                |           | 0,18      | 0,23      | 0,25      | 0,25      | 0,58      | 0,57      | 1,16      | 1,15      | 0,24      | 1,21        | 1,55        | 1,86        | 1,85        | 3,31        | 3,1          | 5,21         | 4,88         |              |
| 4000    |           |            |           |           |           |           |                     |           | 0,15      | 0,19      | 0,21      | 0,2       | 0,49      | 0,49      | 1         | 0,99      | 0,2       | 1,04        | 1,34        | 1,61        | 1,6         | 3,09        | 2,88         | 4,86         | 4,55         |              |
| 4250    |           |            |           |           |           |           |                     |           | 0,13      | 0,16      | 0,17      | 0,17      | 0,42      | 0,41      | 0,87      | 0,86      | 0,16      | 0,91        | 1,16        | 1,4         | 1,39        | 2,89        | 2,69         | 4,56         | 4,26         |              |
| 4500    |           |            |           |           |           |           |                     |           | 0,11      | 0,13      | 0,14      | 0,14      | 0,36      | 0,35      | 0,75      | 0,74      | 0,13      | 0,79        | 1,02        | 1,23        | 1,21        | 2,71        | 2,52         | 4,28         | 4            |              |
| 4750    |           |            |           |           |           |           |                     |           |           | 0,11      | 0,12      | 0,11      | 0,3       | 0,3       | 0,65      | 0,64      | 0,11      | 0,7         | 0,89        | 1,07        | 1,06        | 2,44        | 2,37         | 4,03         | 3,76         |              |
| 5000    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,26      | 0,25      | 0,57      | 0,56      |           | 0,61        | 0,78        | 0,94        | 0,93        | 2,17        | 2,15         | 3,81         | 3,55         |              |
| 5250    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,22      | 0,21      | 0,5       | 0,49      |           | 0,54        | 0,69        | 0,83        | 0,82        | 1,93        | 1,92         | 3,6          | 3,36         |              |
| 5500    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,18      | 0,17      | 0,43      | 0,42      |           | 0,48        | 0,61        | 0,73        | 0,72        | 1,73        | 1,71         | 3,42         | 3,18         |              |
| 5750    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,15      | 0,14      | 0,37      | 0,36      |           | 0,42        | 0,54        | 0,64        | 0,63        | 1,54        | 1,53         | 3,22         | 3,02         |              |
| 6000    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,12      | 0,11      | 0,32      | 0,31      |           | 0,37        | 0,47        | 0,57        | 0,55        | 1,38        | 1,36         | 2,91         | 2,87         |              |



Calculation according to RAL-GZ 655-C

Safety  $\chi = 1,54$

max. bending  $\delta_{zul} = L/200$

module of elasticity  $E = 210000 \text{ N/mm}^2$

Surface property

fbv: pre-galvanized

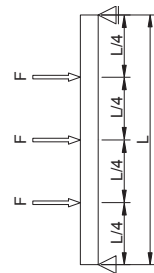
fsv: hot-dip galvanized

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

|         |           | System 35  |           |           |           |           | System 45 (toothed) |           |           |           |           |           |           |           |           |           |              |              |              |              |              |
|---------|-----------|------------|-----------|-----------|-----------|-----------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|--------------|--------------|--------------|--------------|
|         | 22/16/2,0 | 27/18/1,25 | 35/20/0,8 | 35/21/2,0 | 35/35/1,0 | 35/42/1,5 | 36/40/2,0           | 45/26/1,5 | 45/45/1,5 | 45/45/2,0 | 45/45/2,5 | 45/45/2,5 | 45/60/3,0 | 45/60/3,0 | 45/75/3,0 | 45/75/3,0 | 45/120/3,0 D | 45/120/3,0 D | 45/120/3,0 D | 45/150/3,0 D | 45/150/3,0 D |
| Surface | fbv       | fbv        | fbv       | fbv       | fbv       | fbv       | fbv                 | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv       | fbv          | fbv          | fbv          | fbv          | fbv          |
| F       | [kN]      | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]                | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]         | [kN]         | [kN]         | [kN]         | [kN]         |
| L       | [kN]      | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]                | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]         | [kN]         | [kN]         | [kN]         | [kN]         |
| [mm]    |           |            |           |           |           |           |                     |           |           |           |           |           |           |           |           |           |              |              |              |              |              |
| 250     | 0,2       | 0,61       | 0,76      | 1,39      | 2,03      | 3,65      | 3,86                | 2,07      | 5,28      | 6,72      | 7,4       | 6,96      | 12,04     | 11,32     | 18,2      | 17,1      | 3,97         | 4,4          | 7,4          | 7,96         | 8,67         |
| 500     | 0,10      | 0,31       | 0,38      | 0,69      | 1,02      | 1,82      | 1,93                | 1,04      | 2,64      | 3,36      | 3,7       | 3,48      | 6,02      | 5,66      | 9,09      | 8,55      | 3,07         | 4,4          | 7,4          | 7,96         | 8,67         |
| 750     |           | 0,16       | 0,21      | 0,42      | 0,68      | 1,21      | 1,29                | 0,69      | 1,76      | 2,24      | 2,46      | 2,32      | 4,01      | 3,77      | 6,06      | 5,69      | 2,04         | 4,4          | 6,65         | 7,96         | 7,53         |
| 1000    |           |            | 0,12      | 0,24      | 0,51      | 0,91      | 0,96                | 0,42      | 1,32      | 1,68      | 1,84      | 1,73      | 3         | 2,82      | 4,54      | 4,26      | 1,53         | 3,88         | 4,98         | 6            | 5,64         |
| 1250    |           |            |           | 0,15      | 0,35      | 0,73      | 0,77                | 0,27      | 1,05      | 1,34      | 1,47      | 1,38      | 2,39      | 2,25      | 3,62      | 3,4       | 1,22         | 3,1          | 3,98         | 4,79         | 4,5          |
| 1500    |           |            |           | 0,10      | 0,24      | 0,54      | 0,53                | 0,18      | 0,8       | 1,02      | 1,15      | 1,15      | 1,99      | 1,87      | 3,01      | 2,83      | 1,01         | 2,58         | 3,31         | 3,98         | 3,74         |
| 1750    |           |            |           |           | 0,18      | 0,4       | 0,39                | 0,13      | 0,59      | 0,74      | 0,84      | 0,84      | 1,7       | 1,59      | 2,57      | 2,42      | 0,78         | 2,2          | 2,83         | 3,4          | 3,19         |
| 2000    |           |            |           |           | 0,14      | 0,3       | 0,29                | 0,1       | 0,44      | 0,56      | 0,64      | 0,63      | 1,36      | 1,35      | 2,24      | 2,1       | 0,59         | 1,92         | 2,46         | 2,97         | 2,79         |
| 2250    |           |            |           |           | 0,11      | 0,24      | 0,23                |           | 0,35      | 0,44      | 0,5       | 0,49      | 1,06      | 1,06      | 1,99      | 1,86      | 0,46         | 1,7          | 2,18         | 2,63         | 2,47         |
| 2500    |           |            |           |           |           | 0,19      | 0,18                |           | 0,28      | 0,35      | 0,4       | 0,39      | 0,85      | 0,85      | 1,64      | 1,63      | 0,37         | 1,52         | 1,96         | 2,36         | 2,21         |
| 2750    |           |            |           |           |           | 0,15      | 0,15                |           | 0,23      | 0,29      | 0,32      | 0,32      | 0,7       | 0,69      | 1,34      | 1,34      | 0,3          | 1,37         | 1,76         | 2,12         | 2            |
| 3000    |           |            |           |           |           | 0,12      | 0,12                |           | 0,19      | 0,23      | 0,26      | 0,26      | 0,57      | 0,57      | 1,12      | 1,11      | 0,25         | 1,14         | 1,47         | 1,77         | 1,76         |
| 3250    |           |            |           |           |           | 0,10      | 0,10                |           | 0,15      | 0,19      | 0,22      | 0,21      | 0,48      | 0,48      | 0,94      | 0,94      | 0,2          | 0,97         | 1,24         | 1,49         | 1,49         |
| 3500    |           |            |           |           |           |           |                     |           | 0,13      | 0,16      | 0,18      | 0,18      | 0,4       | 0,4       | 0,8       | 0,79      | 0,17         | 0,82         | 1,06         | 1,27         | 1,27         |
| 3750    |           |            |           |           |           |           |                     |           | 0,11      | 0,14      | 0,15      | 0,15      | 0,34      | 0,34      | 0,68      | 0,68      | 0,14         | 0,71         | 0,91         | 1,09         | 1,09         |
| 4000    |           |            |           |           |           |           |                     |           |           | 0,11      | 0,13      | 0,12      | 0,29      | 0,29      | 0,59      | 0,58      | 0,12         | 0,61         | 0,79         | 0,95         | 0,94         |
| 4250    |           |            |           |           |           |           |                     |           |           | 0,10      | 0,10      | 0,10      | 0,25      | 0,24      | 0,51      | 0,51      | 0,10         | 0,54         | 0,69         | 0,83         | 0,82         |
| 4500    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,21      | 0,21      | 0,44      | 0,44      |              | 0,47         | 0,6          | 0,72         | 0,71         |
| 4750    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,18      | 0,18      | 0,39      | 0,38      |              | 0,41         | 0,53         | 0,63         | 0,63         |
| 5000    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,15      | 0,15      | 0,34      | 0,33      |              | 0,36         | 0,46         | 0,56         | 0,55         |
| 5250    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,13      | 0,12      | 0,29      | 0,29      |              | 0,32         | 0,41         | 0,49         | 0,48         |
| 5500    |           |            |           |           |           |           |                     |           |           |           |           |           | 0,11      | 0,10      | 0,26      | 0,25      |              | 0,28         | 0,36         | 0,43         | 0,42         |
| 5750    |           |            |           |           |           |           |                     |           |           |           |           |           |           |           | 0,22      | 0,21      |              | 0,25         | 0,32         | 0,38         | 0,37         |
| 6000    |           |            |           |           |           |           |                     |           |           |           |           |           |           |           | 0,19      | 0,18      |              | 0,22         | 0,28         | 0,33         | 0,32         |

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

|         |           |            |      | System 35 |           |           |           |           | System 45 (toothed) |           |           |           |           |           |           |           |             |             |             |             |             |              |              |              |              |  |  |
|---------|-----------|------------|------|-----------|-----------|-----------|-----------|-----------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--|--|
|         | 22/16/2,0 | 27/18/1,25 |      | 35/20/0,8 | 35/21/2,0 | 35/35/1,0 | 35/42/1,5 | 36/40/2,0 | 45/26/1,5           | 45/45/1,5 | 45/45/2,0 | 45/45/2,5 | 45/60/3,0 | 45/60/3,0 | 45/75/3,0 | 45/75/3,0 | 45/52/1,5 D | 45/90/1,5 D | 45/90/2,0 D | 45/90/2,5 D | 45/90/2,5 D | 45/120/3,0 D | 45/120/3,0 D | 45/150/3,0 D | 45/150/3,0 D |  |  |
| Surface | fbv       | fbv        | [kN] | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]                | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]        | [kN]        | [kN]        | [kN]        | [kN]        | [kN]         | [kN]         | [kN]         | [kN]         |  |  |
| F       | L         |            |      |           |           |           |           |           |                     |           |           |           |           |           |           |           |             |             |             |             |             |              |              |              |              |  |  |
| [mm]    |           |            |      |           |           |           |           |           |                     |           |           |           |           |           |           |           |             |             |             |             |             |              |              |              |              |  |  |
| 250     | 0,13      | 0,41       | 0,51 | 0,93      | 1,36      | 2,43      | 2,58      | 1,38      | 3,52                | 4,48      | 4,94      | 4,64      | 8,03      | 7,55      | 12,13     | 11,4      | 2,65        | 2,93        | 4,94        | 5,31        | 5,78        | 5,09         | 5,09         | 5,41         | 5,41         |  |  |
| 500     |           | 0,21       | 0,26 | 0,46      | 0,68      | 1,22      | 1,29      | 0,69      | 1,76                | 2,24      | 2,47      | 2,32      | 4,01      | 3,77      | 6,06      | 5,7       | 2,05        | 2,93        | 4,94        | 5,31        | 5,78        | 5,09         | 5,09         | 5,41         | 5,41         |  |  |
| 750     |           | 0,11       | 0,15 | 0,3       | 0,45      | 0,81      | 0,86      | 0,46      | 1,17                | 1,49      | 1,64      | 1,55      | 2,67      | 2,51      | 4,04      | 3,8       | 1,36        | 2,93        | 4,43        | 5,31        | 5,02        | 5,09         | 5,09         | 5,41         | 5,41         |  |  |
| 1000    |           |            |      | 0,17      | 0,34      | 0,61      | 0,64      | 0,3       | 0,88                | 1,12      | 1,23      | 1,16      | 2         | 1,88      | 3,03      | 2,84      | 1,02        | 2,59        | 3,32        | 4           | 3,76        | 5,09         | 5,09         | 5,41         | 5,41         |  |  |
| 1250    |           |            |      | 0,11      | 0,25      | 0,49      | 0,51      | 0,19      | 0,7                 | 0,89      | 0,98      | 0,92      | 1,6       | 1,5       | 2,42      | 2,27      | 0,81        | 2,07        | 2,65        | 3,19        | 3           | 5,09         | 4,85         | 5,41         | 5,41         |  |  |
| 1500    |           |            |      |           | 0,18      | 0,39      | 0,38      | 0,13      | 0,58                | 0,73      | 0,82      | 0,77      | 1,33      | 1,25      | 2,01      | 1,89      | 0,68        | 1,72        | 2,21        | 2,66        | 2,49        | 4,3          | 4,03         | 5,41         | 5,41         |  |  |
| 1750    |           |            |      |           | 0,13      | 0,29      | 0,28      | 0,10      | 0,42                | 0,53      | 0,6       | 0,6       | 1,13      | 1,06      | 1,72      | 1,61      | 0,56        | 1,47        | 1,89        | 2,27        | 2,13        | 3,67         | 3,45         | 5,41         | 5,38         |  |  |
| 2000    |           |            |      |           | 0,10      | 0,22      | 0,21      |           | 0,32                | 0,41      | 0,46      | 0,46      | 0,97      | 0,93      | 1,5       | 1,4       | 0,43        | 1,28        | 1,64        | 1,98        | 1,86        | 3,21         | 3,01         | 5,01         | 4,7          |  |  |
| 2250    |           |            |      |           |           | 0,17      | 0,17      |           | 0,25                | 0,32      | 0,36      | 0,36      | 0,76      | 0,76      | 1,33      | 1,24      | 0,33        | 1,14        | 1,46        | 1,75        | 1,65        | 2,84         | 2,66         | 4,44         | 4,17         |  |  |
| 2500    |           |            |      |           |           | 0,14      | 0,13      |           | 0,2                 | 0,25      | 0,29      | 0,28      | 0,61      | 0,61      | 1,17      | 1,11      | 0,27        | 1,02        | 1,31        | 1,57        | 1,47        | 2,55         | 2,39         | 3,98         | 3,74         |  |  |
| 2750    |           |            |      |           |           | 0,11      | 0,11      |           | 0,16                | 0,21      | 0,23      | 0,23      | 0,5       | 0,5       | 0,96      | 0,96      | 0,22        | 0,92        | 1,18        | 1,42        | 1,33        | 2,31         | 2,16         | 3,61         | 3,39         |  |  |
| 3000    |           |            |      |           |           |           |           |           | 0,13                | 0,17      | 0,19      | 0,19      | 0,41      | 0,41      | 0,8       | 0,8       | 0,18        | 0,82        | 1,05        | 1,27        | 1,21        | 2,11         | 1,97         | 3,3          | 3,09         |  |  |
| 3250    |           |            |      |           |           |           |           |           | 0,11                | 0,14      | 0,16      | 0,16      | 0,35      | 0,34      | 0,67      | 0,67      | 0,15        | 0,69        | 0,89        | 1,07        | 1,07        | 1,93         | 1,81         | 3,04         | 2,84         |  |  |
| 3500    |           |            |      |           |           |           |           |           |                     | 0,12      | 0,13      | 0,13      | 0,29      | 0,29      | 0,57      | 0,57      | 0,12        | 0,59        | 0,76        | 0,91        | 0,91        | 1,79         | 1,67         | 2,81         | 2,63         |  |  |
| 3750    |           |            |      |           |           |           |           |           |                     | 0,10      | 0,11      | 0,11      | 0,25      | 0,24      | 0,49      | 0,49      | 0,10        | 0,51        | 0,65        | 0,79        | 0,78        | 1,66         | 1,55         | 2,61         | 2,44         |  |  |
| 4000    |           |            |      |           |           |           |           |           |                     |           |           |           | 0,21      | 0,21      | 0,42      | 0,42      |             | 0,44        | 0,57        | 0,68        | 0,68        | 1,51         | 1,44         | 2,43         | 2,28         |  |  |
| 4250    |           |            |      |           |           |           |           |           |                     |           |           |           | 0,18      | 0,18      | 0,37      | 0,36      |             | 0,39        | 0,49        | 0,59        | 0,59        | 1,32         | 1,32         | 2,28         | 2,13         |  |  |
| 4500    |           |            |      |           |           |           |           |           |                     |           |           |           | 0,15      | 0,15      | 0,32      | 0,32      |             | 0,34        | 0,43        | 0,52        | 0,51        | 1,17         | 1,16         | 2,14         | 2            |  |  |
| 4750    |           |            |      |           |           |           |           |           |                     |           |           |           | 0,13      | 0,13      | 0,28      | 0,27      |             | 0,3         | 0,38        | 0,46        | 0,45        | 1,03         | 1,03         | 2,02         | 1,88         |  |  |
| 5000    |           |            |      |           |           |           |           |           |                     |           |           |           | 0,11      | 0,11      | 0,24      | 0,24      |             | 0,26        | 0,33        | 0,4         | 0,4         | 0,92         | 0,91         | 1,86         | 1,78         |  |  |
| 5250    |           |            |      |           |           |           |           |           |                     |           |           |           |           |           | 0,21      | 0,21      |             | 0,23        | 0,29        | 0,35        | 0,35        | 0,82         | 0,81         | 1,67         | 1,66         |  |  |
| 5500    |           |            |      |           |           |           |           |           |                     |           |           |           |           |           | 0,18      | 0,18      |             | 0,2         | 0,26        | 0,31        | 0,3         | 0,73         | 0,72         | 1,5          | 1,49         |  |  |
| 5750    |           |            |      |           |           |           |           |           |                     |           |           |           |           |           | 0,16      | 0,16      |             | 0,18        | 0,23        | 0,27        | 0,27        | 0,65         | 0,65         | 1,36         | 1,35         |  |  |
| 6000    |           |            |      |           |           |           |           |           |                     |           |           |           |           |           | 0,14      | 0,13      |             | 0,16        | 0,20        | 0,24        | 0,23        | 0,59         | 0,58         | 1,23         | 1,22         |  |  |



Calculation according to RAL-GZ 655-C

|                      |                |                            |
|----------------------|----------------|----------------------------|
| Safety               | $\chi$         | = 1,54                     |
| max. bending         | $\delta_{zul}$ | = L/200                    |
| module of elasticity | E              | = 210000 N/mm <sup>2</sup> |

## Surface property

fbv: pre-galvanized

**fsv:** hot-dip galvanized







## MEFA-Fixpoints and accessories

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

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

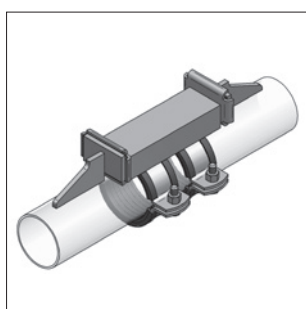
The total load of a fixpoint in connection with a compensator is independent of pressure, temperature differences and pipe lengths between the compensator and fixpoints, as well as the value balgen cross-section and axial value resistance. Pipelines fixed on building constructions have to be mounted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

### Specification:

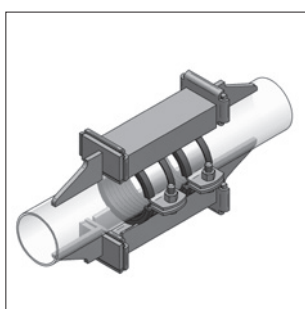
The body material of the fixpoint is galvanized. Raw parts e.g. the welding lug for fixpoints should also be coated after welding. We recommend to protect all raw parts and weldings by zinc-rich primer or zinc-spray.

### Operation/Installation advice:

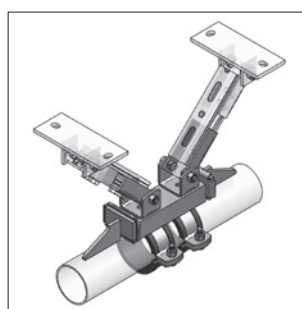
- suitable for straight, unramified pipeline alignment with axial compensator or U-expansion bend
- forced guide bearing within spitting distance of the compensator is obligatory



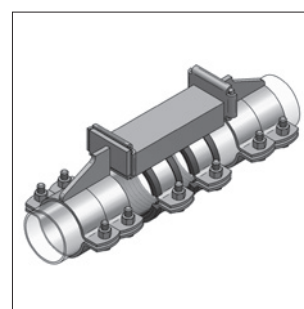
Fixpoint type A  
Page 3a/2



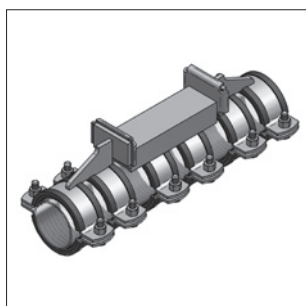
Fixpoint type B  
Page 3a/3



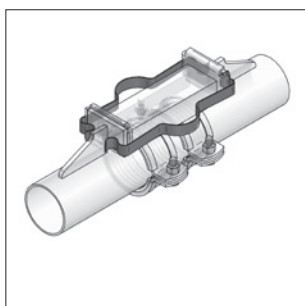
Fixpoint type A with joint holder  
Page 3a/4



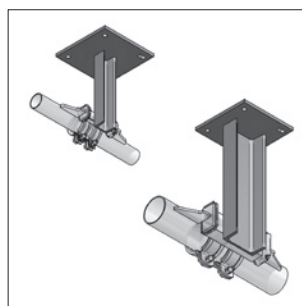
Fixpoint type A/K  
Page 3a/5



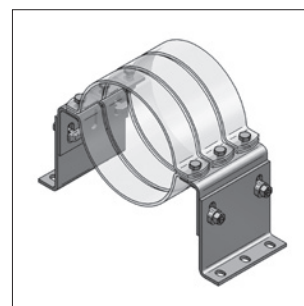
Fixpoint type A/K-MD  
Page 3a/6



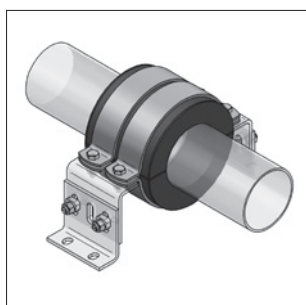
Mounting clamps for fixpoints  
Page 3a/7



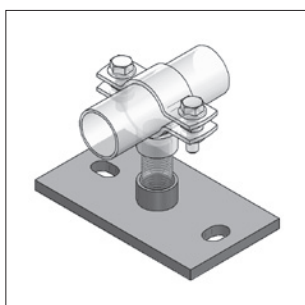
Fixpoint console  
Page 3a/8



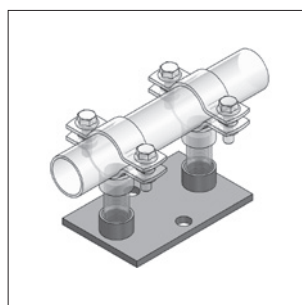
Fixpoint bracket HV  
Page 3a/9



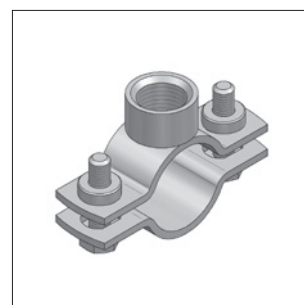
Insulated fixpoint  
Page 3a/10



Clamping fixpoint  
Seite 3a/11



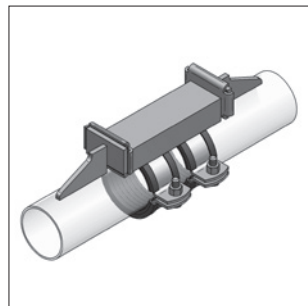
Fixpoint type FGL  
Page 3a/12



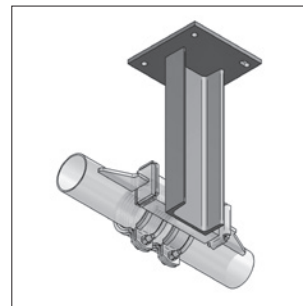
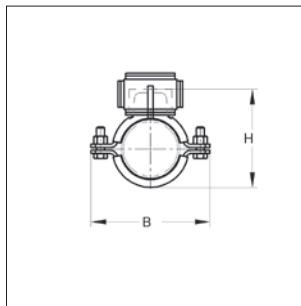
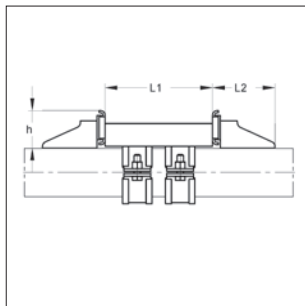
Pipe clamp FGL  
Page 3a/12

**i** Fixpoints (welded) for stainless steel pipes see chapter 13  
Remarks to fixpoints see chapter 15

## Fixpoint type A (for welding)



Fixpoint type A (mounted)



Fixpoint type A  
with fixpoint console

### Specification:

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

### Technical data:

Material: steel  
 Material type: S235JR  
 Surface: galvanized

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



Silicone  
 - 60 °C up to + 250 °C

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

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

| Clamping-range<br>[mm] | Material<br>pipe<br>clamp<br>[mm] | Sectional steel |            |           | max. axial <sup>1)</sup> |           |                        | Weight<br>[kg/pc.] | Packing<br>[pc.] | Silicone<br>Part-No. | Rubber<br>Part-No. |
|------------------------|-----------------------------------|-----------------|------------|-----------|--------------------------|-----------|------------------------|--------------------|------------------|----------------------|--------------------|
|                        |                                   | L1<br>[mm]      | L2<br>[mm] | h<br>[mm] | H<br>[mm]                | B<br>[mm] | reactive force<br>[kN] |                    |                  |                      |                    |
| 15 - 19                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 60 - 64                  | 80        | 8,5                    | 1,00               | 1                | 0030171              | 0020171            |
| 20 - 25                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 66 - 71                  | 87        | 8,5                    | 1,03               | 1                | 0030221              | 0020221            |
| 26 - 30                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 72 - 76                  | 92        | 8,5                    | 1,05               | 1                | 0030271              | 0020271            |
| 31 - 36                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 77 - 82                  | 98        | 8,5                    | 1,07               | 1                | 0030341              | 0020341            |
| 38 - 45                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 84 - 91                  | 107       | 8,5                    | 1,13               | 1                | 0030421              | 0020421            |
| 47 - 51                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 93 - 97                  | 114       | 8,5                    | 1,18               | 1                | 0030481              | 0020481            |
| 53 - 57                | 25 x 3                            | 30 x 30 x 100   | 81         | 47        | 99 - 103                 | 120       | 8,5                    | 1,20               | 1                | 0030571              | 0020571            |

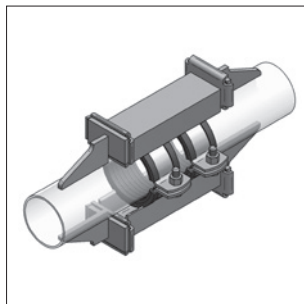
### Fixpoint size II, U-steel (accessory: mounting clamp 2 / Part-No. 9000312)

| Clamping-range<br>[mm] | Material<br>pipe<br>clamp<br>[mm] | Sectional steel |            |           | max. axial <sup>1)</sup> |           |                        | Weight<br>[kg/pc.] | Packing<br>[pc.] | Silicone<br>Part-No. | Rubber<br>Part-No. |
|------------------------|-----------------------------------|-----------------|------------|-----------|--------------------------|-----------|------------------------|--------------------|------------------|----------------------|--------------------|
|                        |                                   | L1<br>[mm]      | L2<br>[mm] | h<br>[mm] | H<br>[mm]                | B<br>[mm] | reactive force<br>[kN] |                    |                  |                      |                    |
| 60,3                   | 50 x 5                            | 65 x 42 x 200   | 116        | 69        | 112,5                    | 148       | 20                     | 4,43               | 1                | 0030601              | 0020601            |
| 76,1                   | 50 x 5                            | 65 x 42 x 200   | 116        | 69        | 131,0                    | 166       | 20                     | 4,67               | 1                | 0030761              | 0020761            |
| 88,9                   | 50 x 5                            | 65 x 42 x 200   | 116        | 69        | 146,0                    | 179       | 20                     | 4,86               | 1                | 0030891              | 0020891            |
| 108,0                  | 50 x 5                            | 65 x 42 x 200   | 116        | 69        | 165,0                    | 199       | 20                     | 5,12               | 1                | 0031081              | 0021081            |
| 114,3                  | 50 x 5                            | 65 x 42 x 200   | 116        | 69        | 171,5                    | 205       | 20                     | 5,21               | 1                | 0031141              | 0021141            |
| 133,0                  | 50 x 5                            | 80 x 45 x 200   | 116        | 69        | 191,0                    | 224       | 20                     | 5,80               | 1                | 0031331              | 0021331            |
| 139,7                  | 50 x 5                            | 80 x 45 x 200   | 116        | 69        | 198,5                    | 231       | 20                     | 5,90               | 1                | 0031401              | 0021401            |
| 159 - 160              | 50 x 5                            | 80 x 45 x 200   | 116        | 69        | 218 - 219                | 251       | 20                     | 6,19               | 1                | 0031591              | 0021591            |

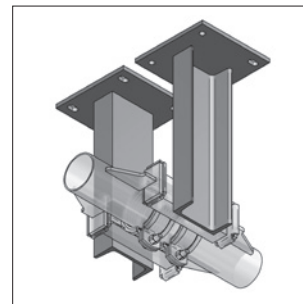
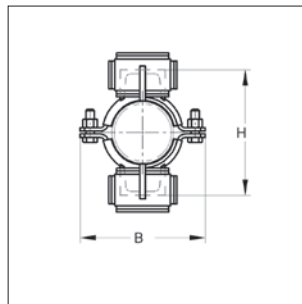
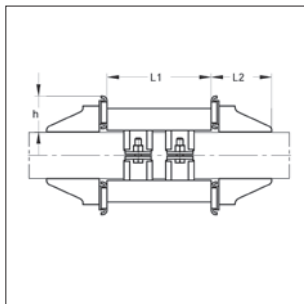
mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

mounting recommendation see chapter 15

## Fixpoint type B (for welding)



Fixpoint type B (mounted)

Fixpoint type B  
with two fixpoint consoles

3a

### Specification:

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

### Technical data:

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



Silicone

- 60 °C up to + 250 °C

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

The quality of weld seam has to be proofed.

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

| Clamping-range | Material<br>pipe-clamp | Sectional steel |       |      |      |           |                |        | max. axial <sup>1)</sup> |          |       | Part-No. | Part-No. |
|----------------|------------------------|-----------------|-------|------|------|-----------|----------------|--------|--------------------------|----------|-------|----------|----------|
|                |                        | L1              | L2    | h    | H    | B         | reactive force | Weight | Packing                  |          |       |          |          |
| [mm]           | [mm]                   | [mm]            | [mm]  | [mm] | [mm] | [mm]      | [mm]           | [mm]   | [kN]                     | [kg/pc.] | [pc.] |          |          |
| <b>20 - 25</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 96 - 101  | 87             | 17     | 1,60                     | 1        |       | 0030222  | 0020222  |
| <b>26 - 30</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 102 - 106 | 92             | 17     | 1,62                     | 1        |       | 0030272  | 0020272  |
| <b>31 - 36</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 107 - 112 | 98             | 17     | 1,65                     | 1        |       | 0030342  | 0020342  |
| <b>38 - 45</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 114 - 121 | 107            | 17     | 1,73                     | 1        |       | 0030422  | 0020422  |
| <b>47 - 51</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 123 - 127 | 114            | 17     | 1,78                     | 1        |       | 0030482  | 0020482  |
| <b>53 - 57</b> | 25 x 3                 | 30 x 30         | x 100 | 81   | 47   | 129 - 133 | 120            | 17     | 1,80                     | 1        |       | 0030572  | 0020572  |

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

| Clamping-range<br>[mm] | Material<br>pipe-clamp<br>[mm] | Sectional steel |      |    |           | max. axial <sup>1)</sup> |    |      |                        | Weight<br>[kg/pc.] | Packing<br>[pc.] | Silicone<br>Part-No. | Rubber<br>Part-No. |
|------------------------|--------------------------------|-----------------|------|----|-----------|--------------------------|----|------|------------------------|--------------------|------------------|----------------------|--------------------|
|                        |                                | [mm]            | [mm] | L1 | L2        | h                        | H  | B    | reactive force<br>[kN] |                    |                  |                      |                    |
| 60,3                   | 50 x 5                         | 65 x 42 x 200   | 116  | 69 | 143       | 148                      | 40 | 7,16 | 1                      | 0030602            | 0020602          |                      |                    |
| 76,1                   | 50 x 5                         | 65 x 42 x 200   | 116  | 69 | 164       | 166                      | 40 | 7,40 | 1                      | 0030762            | 0020762          |                      |                    |
| 88,9                   | 50 x 5                         | 65 x 42 x 200   | 116  | 69 | 180       | 179                      | 40 | 7,59 | 1                      | 0030892            | 0020892          |                      |                    |
| 108,0                  | 50 x 5                         | 65 x 42 x 200   | 116  | 69 | 200       | 199                      | 40 | 7,84 | 1                      | 0031082            | 0021082          |                      |                    |
| 114,3                  | 50 x 5                         | 65 x 42 x 200   | 116  | 69 | 207       | 205                      | 40 | 7,94 | 1                      | 0031142            | 0021142          |                      |                    |
| 133,0                  | 50 x 5                         | 80 x 45 x 200   | 116  | 69 | 227       | 224                      | 40 | 8,84 | 1                      | 0031332            | 0021332          |                      |                    |
| 139,7                  | 50 x 5                         | 80 x 45 x 200   | 116  | 69 | 235       | 231                      | 40 | 8,93 | 1                      | 0031402            | 0021402          |                      |                    |
| 159 - 160              | 50 x 5                         | 80 x 45 x 200   | 116  | 69 | 256 - 257 | 251                      | 40 | 9,23 | 1                      | 0031592            | 0021592          |                      |                    |

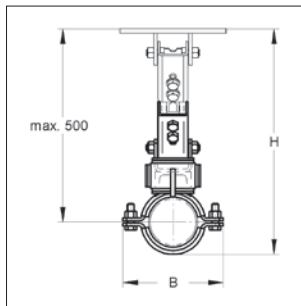
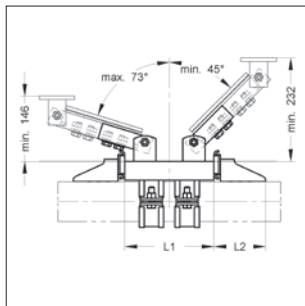
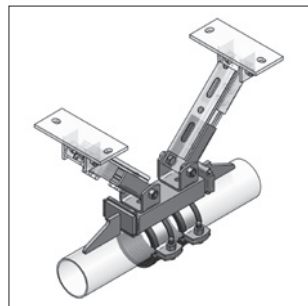
### Fixpoint size III, U-steel

| Clamping-range<br>[mm] | Material<br>pipe-clamp<br>[mm] | Sectional steel |     |    |           | max. axial <sup>1)</sup> |                        |       |   | Weight<br>[kg/pc.] | Packing<br>[pc.] | Silicone<br>Part-No. | Rubber<br>Part-No. |
|------------------------|--------------------------------|-----------------|-----|----|-----------|--------------------------|------------------------|-------|---|--------------------|------------------|----------------------|--------------------|
| [mm]                   | [mm]                           | L1              | L2  | h  | H         | B                        | reactive force<br>[kN] |       |   |                    |                  |                      |                    |
| <b>168,3</b>           | 50 x 5                         | 120 x 55 x 330  | 116 | 70 | 263       | 258                      | 60                     | 16,94 | 1 | 0031682            | 0021682          |                      |                    |
| <b>193,7</b>           | 50 x 5                         | 120 x 55 x 330  | 116 | 71 | 294       | 284                      | 60                     | 17,33 | 1 | 0031942            | 0021942          |                      |                    |
| <b>219,0</b>           | 50 x 5                         | 120 x 55 x 330  | 116 | 72 | 322       | 309                      | 60                     | 17,70 | 1 | 0032192            | 0022192          |                      |                    |
| <b>273 - 274</b>       | 50 x 5                         | 120 x 55 x 330  | 116 | 73 | 382 - 383 | 363                      | 60                     | 18,51 | 1 | 0032732            | 0022732          |                      |                    |
| <b>323,9</b>           | 50 x 5                         | 120 x 55 x 330  | 116 | 74 | 437       | 414                      | 60                     | 19,28 | 1 | 0033242            | 0023242          |                      |                    |
| <b>355 - 356</b>       | 50 x 5                         | 120 x 55 x 330  | 116 | 75 | 469 - 470 | 446                      | 60                     | 19,74 | 1 | 0033562            | 0023562          |                      |                    |

① mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

⚙ mounting recommendation see chapter 15

# ■ Fixpoint type A with joint holder (for welding)



Fixpoint type A with joint holder  
(mounted)

## Specification:

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

## Technical data:

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

## Needed accessory:

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

## Delivery time:

5 working days, ex works

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

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

| Clamping-range<br>[mm] | Material<br>pipe clamp<br>[mm] | Sectional steel<br>L1<br>[mm] | L2<br>[mm] | H <sub>max.</sub><br>[mm] | H <sub>min.</sub><br>[mm] | B<br>[mm] | max. axial <sup>1)</sup><br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Rubber<br>Part-No. |
|------------------------|--------------------------------|-------------------------------|------------|---------------------------|---------------------------|-----------|----------------------------------------------------|--------------------|------------------|--------------------|
| 20 - 25                | 25 x 3                         | 30 x 30 x 140                 | 81         | 521                       | 186                       | 87        | 8,5                                                | 2,74               | 1                | 9999671            |
| 26 - 30                | 25 x 3                         | 30 x 30 x 140                 | 81         | 523                       | 192                       | 92        | 8,5                                                | 2,76               | 1                | 9999932            |
| 31 - 36                | 25 x 3                         | 30 x 30 x 140                 | 81         | 526                       | 197                       | 98        | 8,5                                                | 2,79               | 1                | 9999835            |
| 38 - 45                | 25 x 3                         | 30 x 30 x 140                 | 81         | 531                       | 204                       | 107       | 8,5                                                | 2,82               | 1                | 9999868            |
| 47 - 51                | 25 x 3                         | 30 x 30 x 140                 | 81         | 534                       | 213                       | 114       | 8,5                                                | 2,86               | 1                | 9999869            |
| 53 - 57                | 25 x 3                         | 30 x 30 x 140                 | 81         | 537                       | 219                       | 120       | 8,5                                                | 2,89               | 1                | 9999864            |

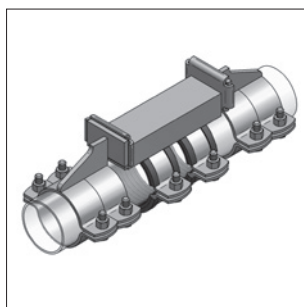
## Fixpoint size II, U-steel (accessory: mounting clamp 2 /Part-No. 9000312)

| Clamping-range<br>[mm] | Material<br>pipe clamp<br>[mm] | Sectional steel<br>L1<br>[mm] | L2<br>[mm] | H <sub>max.</sub><br>[mm] | H <sub>min.</sub><br>[mm] | B<br>[mm] | max. axial <sup>1)</sup><br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Rubber<br>Part-No. |
|------------------------|--------------------------------|-------------------------------|------------|---------------------------|---------------------------|-----------|----------------------------------------------------|--------------------|------------------|--------------------|
| 60,3                   | 50 x 5                         | 65 x 42 x 200                 | 116        | 541                       | 232,5                     | 149       | 15                                                 | 6,09               | 1                | 9999672            |
| 76,1                   | 50 x 5                         | 65 x 42 x 200                 | 116        | 549                       | 251,5                     | 166       | 15                                                 | 6,33               | 1                | 9999933            |
| 88,9                   | 50 x 5                         | 65 x 42 x 200                 | 116        | 556                       | 266                       | 179       | 15                                                 | 6,52               | 1                | 9999865            |
| 108,0                  | 50 x 5                         | 65 x 42 x 200                 | 116        | 565                       | 285                       | 199       | 15                                                 | 6,78               | 1                | 9999866            |
| 114,3                  | 50 x 5                         | 65 x 42 x 200                 | 116        | 568                       | 291,5                     | 205       | 15                                                 | 6,87               | 1                | 9999773            |
| 133,0                  | 50 x 5                         | 80 x 45 x 200                 | 116        | 578                       | 311                       | 224       | 15                                                 | 7,45               | 1                | 9999772            |
| 139,7                  | 50 x 5                         | 80 x 45 x 200                 | 116        | 581                       | 318,5                     | 231       | 15                                                 | 7,55               | 1                | 9999673            |
| 159 - 160              | 50 x 5                         | 80 x 45 x 200                 | 116        | 591                       | 339                       | 251       | 15                                                 | 7,84               | 1                | 9999674            |

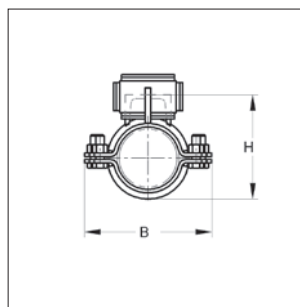
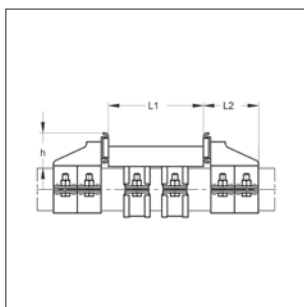
① mounting clamps for fixing pressure pads have to be ordered separately (see page 3a/7)

✂ mounting recommendation see chapter 15

## Fixpoint type A/K (for clamping)



Fixpoint type A/K (mounted)



3a

**Specification:**

Application area: galvanized steel pipes,  
ferritic steel pipes

Number of sectional steels: 1 piece

OD: 15 up to 160 mm

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

Sound insulation: according to DIN 4109

**Technical data:**

Material: steel

Material type: S235JR

Surface: galvanized

Sound insulation lining: Rubber TPE

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

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

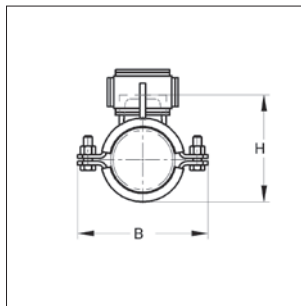
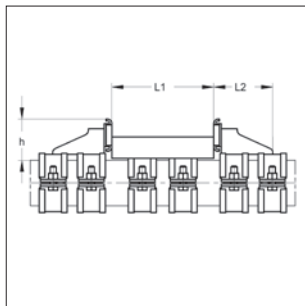
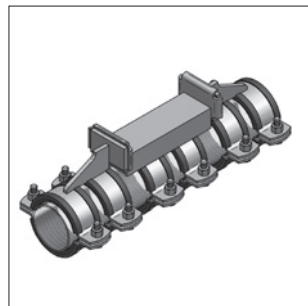
**Fixpoint size I, T-steel**

| Clamping-range<br>[mm] | Material<br>pipe clamp<br>[mm] | Sectional steel<br>[mm] | L1<br>[mm] | L2<br>[mm] | h<br>[mm] | H<br>[mm] | B<br>[mm] | tightening<br>torque<br>[Nm] | max. axial<br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Rubber<br>Part-No. |
|------------------------|--------------------------------|-------------------------|------------|------------|-----------|-----------|-----------|------------------------------|--------------------------------------|--------------------|------------------|--------------------|
| 15,0                   | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 61,0      | 80        | 6                            | 8,50                                 | 1,67               | 1                | 0020153            |
| 17,2                   | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 63,2      | 80        | 6                            | 8,50                                 | 1,69               | 1                | 0020173            |
| 20,0                   | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 66,0      | 87        | 6                            | 8,50                                 | 1,76               | 1                | 0020203            |
| 21,3                   | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 67,3      | 87        | 6                            | 8,50                                 | 1,79               | 1                | 0020223            |
| 22 - 23                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 68 - 69   | 87        | 6                            | 8,50                                 | 1,79               | 1                | 0020233            |
| 26 - 28                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 72 - 74   | 92        | 6                            | 8,50                                 | 1,85               | 1                | 0020273            |
| 30,0                   | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 76,0      | 92        | 6                            | 8,50                                 | 1,90               | 1                | 0020303            |
| 32 - 35                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 78 - 81   | 98        | 6                            | 8,50                                 | 1,93               | 1                | 0020343            |
| 38 - 40                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 84 - 86   | 107       | 6                            | 8,50                                 | 2,02               | 1                | 0020403            |
| 41 - 45                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 87 - 91   | 107       | 6                            | 8,50                                 | 2,06               | 1                | 0020423            |
| 48 - 51                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 94 - 97   | 114       | 6                            | 8,50                                 | 2,16               | 1                | 0020483            |
| 53 - 55                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 99 - 101  | 120       | 6                            | 8,50                                 | 2,19               | 1                | 0020543            |
| 58 - 60                | 25 x 3                         | 30 x 30 x 100           |            | 81         | 50        | 106 - 108 | 129       | 6                            | 8,50                                 | 2,26               | 1                | 0020583            |

**Fixpoint size II, U-steel**

| Clamping-range<br>[mm] | Material<br>pipe clamp<br>[mm] | Sectional steel<br>[mm] | L1<br>[mm] | L2<br>[mm] | h<br>[mm] | H<br>[mm] | B<br>[mm] | tightening<br>torque<br>[Nm] | max. axial<br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Rubber<br>Part-No. |
|------------------------|--------------------------------|-------------------------|------------|------------|-----------|-----------|-----------|------------------------------|--------------------------------------|--------------------|------------------|--------------------|
| 60,3                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 112,5     | 148       | 60                           | 20,0                                 | 7,28               | 1                | 0020603            |
| 63,0                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 116       | 151       | 60                           | 20,0                                 | 7,43               | 1                | 0020630            |
| 64,0                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 117       | 152       | 60                           | 20,0                                 | 7,43               | 1                | 0020633            |
| 70,0                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 124       | 158       | 60                           | 20,0                                 | 7,67               | 1                | 0020703            |
| 75,0                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 129,5     | 163       | 60                           | 20,0                                 | 7,92               | 1                | 0020753            |
| 76,1                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 131,5     | 166       | 60                           | 20,0                                 | 7,92               | 1                | 0020763            |
| 88,9                   | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 146       | 179       | 60                           | 20,0                                 | 8,43               | 1                | 0020893            |
| 108,0                  | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 165       | 198       | 60                           | 20,0                                 | 9,15               | 1                | 0021083            |
| 110,0                  | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 167       | 200       | 60                           | 20,0                                 | 9,25               | 1                | 0021103            |
| 114,3                  | 50 x 5                         | 65 x 42 x 200           |            | 127        | 70        | 171,5     | 204       | 60                           | 20,0                                 | 9,40               | 1                | 0021143            |
| 125,0                  | 50 x 5                         | 80 x 45 x 200           |            | 127        | 70        | 182,5     | 215       | 60                           | 20,0                                 | 10,16              | 1                | 0021253            |
| 133,0                  | 50 x 5                         | 80 x 45 x 200           |            | 127        | 70        | 191       | 223       | 60                           | 20,0                                 | 10,46              | 1                | 0021333            |
| 135,0                  | 50 x 5                         | 80 x 45 x 200           |            | 127        | 70        | 193       | 225       | 60                           | 20,0                                 | 10,53              | 1                | 0021353            |
| 139,7                  | 50 x 5                         | 80 x 45 x 200           |            | 127        | 70        | 198,5     | 230       | 60                           | 20,0                                 | 10,74              | 1                | 0021403            |
| 159 - 160              | 50 x 5                         | 80 x 45 x 200           |            | 127        | 70        | 219 - 220 | 250       | 60                           | 20,0                                 | 11,51              | 1                | 0021603            |

## Fixpoint type A/K-MD (for clamping)



Fixpoint type A/K-MD (mounted)

### Specification:

Application area: plastic pipes, copper pipes  
stainless steel pipes

Number of sectional steels: 1 piece

OD: 15 up to 160 mm

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

Sound insulation: according to DIN 4109

### Technical data:

Material: steel

Material type: S235JR

Surface: galvanized

Sound insulation lining: Rubber TPE

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

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

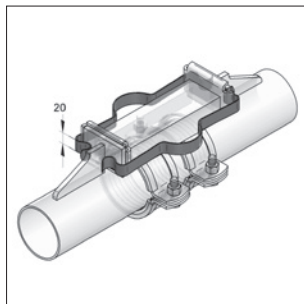
### Fixpoint size I, T-steel

| Clamping-range<br>[mm] | Material<br>pipe clamp<br>[mm] | Sectional steel |      |      |          | tightening<br>torque<br>[Nm] | max. axial<br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |         |
|------------------------|--------------------------------|-----------------|------|------|----------|------------------------------|--------------------------------------|--------------------|------------------|----------|---------|
|                        |                                | L1              | L2   | h    | H        |                              |                                      |                    |                  |          |         |
|                        |                                | [mm]            | [mm] | [mm] | [mm]     | [mm]                         | [mm]                                 |                    |                  |          |         |
| 15 - 19                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 61 - 65  | 80                           | 6                                    | 2,00               | 1,81             | 1        | 0020155 |
| 20 - 25                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 66 - 71  | 87                           | 6                                    | 2,00               | 1,90             | 1        | 0020215 |
| 26 - 30                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 72 - 76  | 92                           | 6                                    | 2,00               | 2,00             | 1        | 0020265 |
| 31 - 36                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 77 - 82  | 98                           | 6                                    | 2,00               | 1,82             | 1        | 0020315 |
| 38 - 45                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 84 - 91  | 107                          | 6                                    | 4,00               | 1,92             | 1        | 0020385 |
| 47 - 51                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 93 - 97  | 114                          | 6                                    | 4,00               | 2,05             | 1        | 0020475 |
| 53 - 57                | 25 x 3                         | 30 x 30 x 100   | 81   | 56   | 99 - 103 | 120                          | 6                                    | 4,00               | 2.14             | 1        | 0020535 |

### Fixpoint size II, U-steel

|              |        |               |     |    |       |     |           |      |       |   |         |
|--------------|--------|---------------|-----|----|-------|-----|-----------|------|-------|---|---------|
| <b>60,3</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 112,5 | 149 | <u>60</u> | 8,50 | 7,96  | 1 | 0020605 |
| <b>63,0</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 116,0 | 152 | <u>60</u> | 8,50 | 8,10  | 1 | 0020635 |
| <b>64,0</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 117,0 | 153 | <u>60</u> | 8,50 | 8,14  | 1 | 0020645 |
| <b>70,0</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 124,0 | 160 | <u>60</u> | 8,50 | 8,41  | 1 | 0020705 |
| <b>75,0</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 129,5 | 165 | <u>60</u> | 8,50 | 8,64  | 1 | 0020755 |
| <b>76,1</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 131,5 | 166 | <u>60</u> | 8,50 | 8,68  | 1 | 0020765 |
| <b>88,9</b>  | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 146,0 | 179 | <u>60</u> | 8,50 | 9,27  | 1 | 0020895 |
| <b>108,0</b> | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 165,0 | 199 | <u>60</u> | 8,50 | 10,12 | 1 | 0021085 |
| <b>110,0</b> | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 167,0 | 201 | <u>60</u> | 8,50 | 10,21 | 1 | 0021105 |
| <b>114,3</b> | 50 x 5 | 65 x 42 x 200 | 116 | 80 | 171,5 | 205 | <u>60</u> | 8,50 | 10,39 | 1 | 0021155 |
| <b>125,0</b> | 50 x 5 | 80 x 45 x 200 | 116 | 80 | 182,5 | 212 | <u>60</u> | 8,50 | 10,97 | 1 | 0021255 |
| <b>133,0</b> | 50 x 5 | 80 x 45 x 200 | 116 | 80 | 191,0 | 224 | <u>60</u> | 8,50 | 11,32 | 1 | 0021335 |
| <b>135,0</b> | 50 x 5 | 80 x 45 x 200 | 116 | 80 | 193,0 | 226 | <u>60</u> | 8,50 | 11,41 | 1 | 0021355 |
| <b>139,7</b> | 50 x 5 | 80 x 45 x 200 | 116 | 80 | 198,5 | 231 | <u>60</u> | 8,50 | 11,62 | 1 | 0021405 |
| <b>160,0</b> | 50 x 5 | 80 x 45 x 200 | 116 | 80 | 219,5 | 251 | <u>60</u> | 8,50 | 12,49 | 1 | 0021605 |

## ■ Mounting clamps for fixpoints



Mounting clamps for fixpoints

3a

### Specification:

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

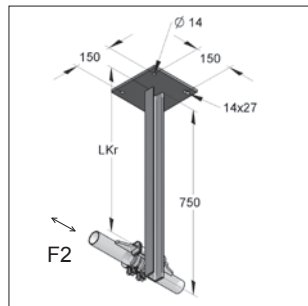
Remark: clamps are re-usable

### Technical data:

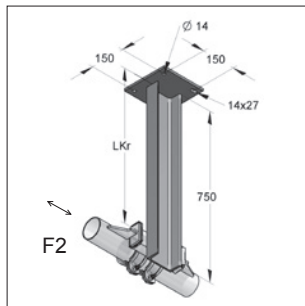
Material: steel  
Material type: S235JR  
Surface: galvanized

| Description                   | suitable for OD<br>[mm] | suitable for fixpoint type               | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------------|-------------------------|------------------------------------------|--------------------|-------------------|----------|
| <b>Mounting clamp size 1a</b> | 21,3 - 57,0             | Type A, Type B                           | 0,060              | 2                 | 9000310  |
| <b>Mounting clamp size 1b</b> | 21,3 - 57,0             | Type A with joint holder                 | 0,075              | 2                 | 9000311  |
| <b>Mounting clamp size 2</b>  | 60,3 - 159,0            | Type A, Type B, Type A with joint holder | 0,090              | 2                 | 9000312  |

## Fixpoint consoles



Fixpoint console 50/38/750



Fixpoint console 120/55/750

### Technical data: Fixpoint console 50/38/750

Material: steel  
 Material type: S235JR  
 Surface: raw  
 U-steel: overleaf welded on anchor plate,

Suitable for: fixpoint type A and B  
 Mounting recommendation: foundation concrete  $\geq$  C20/25  
 Delivery time: 5 working days, ex works

global safety coefficient  $\gamma$ : 1,35  
 maximum torque:  $M_G$ : 1617,53 Nm  
 Reaction force  $F_{AX}$ : 10,78 kN  
 Reaction force  $F_{BX}$ : 10,78 kN  
 $M_G, F_{AX}, F_{BX}$  valid for LF2: up to L= 600 mm

\* Fixpoint consoles in galvanized on request

### Technical data: Fixpoint console 120/55/750

Material: steel  
 Material type: S235JR  
 Surface: raw  
 U-steel: overleaf welded on anchor plate,

Suitable for: fixpoint type A and B  
 Mounting recommendation: foundation concrete  $\geq$  C20/25  
 Delivery time: 5 working days, ex works

global safety coefficient  $\gamma$ : 1,35  
 maximum torque:  $M_G$ : 3504,20 Nm  
 Reaction force  $F_{AX}$ : 23,36 kN  
 Reaction force  $F_{BX}$ : 23,36 kN  
 $M_G, F_{AX}, F_{BX}$  valid for LF2: up to L= 1000 mm

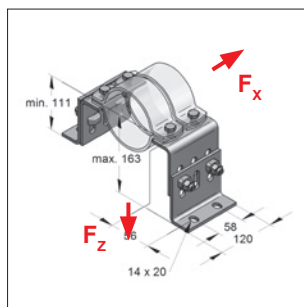
### Fixpoint console 50/38/750

| Description                           | Length<br>[mm] | Length<br>LKr<br>[mm] | max.load                       | suitable for<br>O.D.<br>[mm] | Anchor plate<br>[mm] | Weight<br>[kg/St] | Packing<br>[St] | Part-No. |
|---------------------------------------|----------------|-----------------------|--------------------------------|------------------------------|----------------------|-------------------|-----------------|----------|
|                                       |                |                       | Load situation 2<br>F2<br>[kN] |                              |                      |                   |                 |          |
| <b>Fixpoint console 50/38<br/>raw</b> | <b>750</b>     | 100                   | 16,18                          | $\geq 20$                    | 200 x 200 x 10       | 7,26              | 1               | 9997799  |
|                                       |                | 200                   | 8,09                           |                              |                      |                   |                 |          |
|                                       |                | 300                   | 5,39                           |                              |                      |                   |                 |          |
|                                       |                | 400                   | 4,04                           |                              |                      |                   |                 |          |
|                                       |                | 500                   | 3,24                           |                              |                      |                   |                 |          |
|                                       |                | 600                   | 2,70                           |                              |                      |                   |                 |          |
|                                       |                | 700                   | 2,27                           |                              |                      |                   |                 |          |

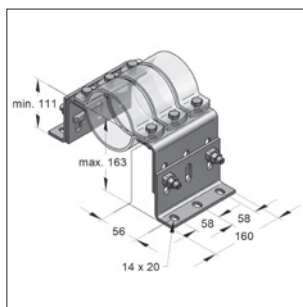
### Fixpoint console 120/55/750

|                                        |            |     |       |           |                |       |   |         |
|----------------------------------------|------------|-----|-------|-----------|----------------|-------|---|---------|
| <b>Fixpoint console 120/55<br/>raw</b> | <b>750</b> | 100 | 35,04 | $\geq 60$ | 200 x 200 x 10 | 13,42 | 1 | 9996491 |
|                                        |            | 200 | 17,50 |           |                |       |   |         |
|                                        |            | 300 | 11,68 |           |                |       |   |         |
|                                        |            | 400 | 8,76  |           |                |       |   |         |
|                                        |            | 500 | 7,00  |           |                |       |   |         |
|                                        |            | 600 | 5,84  |           |                |       |   |         |
|                                        |            | 700 | 5,00  |           |                |       |   |         |

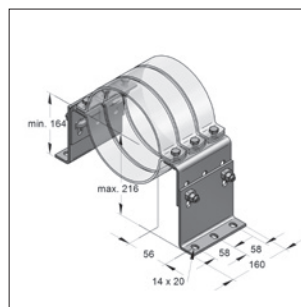
## Fixpoint bracket HV



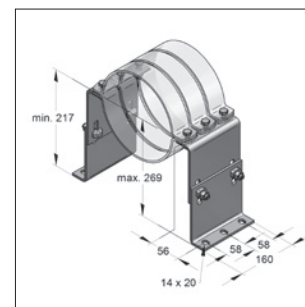
Fixpoint bracket HV1



Fixpoint bracket HV2



Fixpoint bracket HV3



Fixpoint bracket HV4

3a

### 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.

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

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

### Technical data:

**Material:** steel  
**Material type:** S235JR  
**Surface:** hot-dip galvanized  
**- angle:** Zinc-Nickle  
**- screw joint:**

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

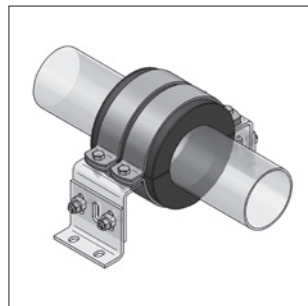
(\* OD < 168 mm = 18 kN, OD > 168 mm = 40 kN (limited by T-lock head connection))

| Type       | Length<br>L | Axis height<br>min.-max. | Number<br>of fixpoint<br>clamps | Reco-<br>mmended<br>pipe OD | Angle     |           | max. load |        | Weight   | Packing | Part-No.     |
|------------|-------------|--------------------------|---------------------------------|-----------------------------|-----------|-----------|-----------|--------|----------|---------|--------------|
|            |             |                          |                                 |                             | stilt     | side part | $F_x$     | $F_z$  |          |         |              |
|            | [mm]        | [mm]                     | [pcs.]                          | [mm]                        | [pair]    | [pair]    | [kN]      | [kN]   | [kg/pc.] | [pcs.]  |              |
| <b>HV1</b> | 120         | 111-163                  | 2                               | 64-273                      | 120/6/100 | 120/6/100 | 20        | 12     | 3,47     | 1       | 00200405/fvz |
| <b>HV2</b> | 160         | 111-163                  | 3                               | 64-273                      | 160/6/100 | 160/6/100 | 30        | 18/40* | 4,74     | 1       | 00200406/fvz |
| <b>HV3</b> | 160         | 164-216                  | 3                               | 64-406                      | 160/6/153 | 160/6/100 | 30        | 18/40* | 5,43     | 1       | 00200407/fvz |
| <b>HV4</b> | 160         | 217-269                  | 3                               | 64-508                      | 160/6/153 | 160/6/153 | 30        | 18/40* | 6,31     | 1       | 00200408/fvz |

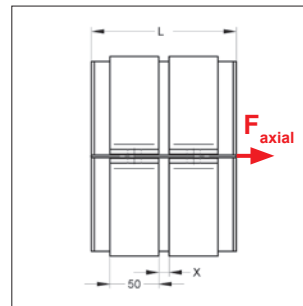
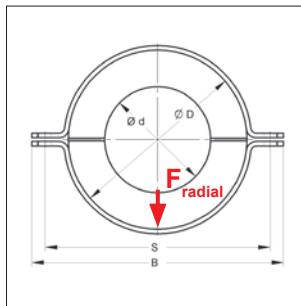
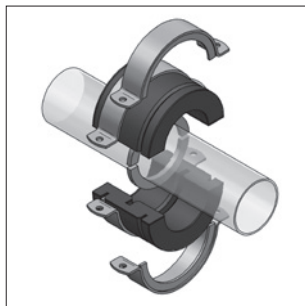
**i** Suitable Titan HD clamps without connection thread see on chapter 14 (also available in hot-dip galvanized coating)

**⚙** mounting recommendation see chapter 15

## Insulated fixpoint



Insulated fixpoint



### Specification:

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

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

Scope of delivery: 2 x half shell with slot for inner and outer split ring  
2 x inner split ring for welding to steel pipe  
4 x outer split ring for fixation on substructure

Delivery time: ca. 15 working days, ex works

### Technical data:

Insulating material: PUR (with natural rubber on the face)

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

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

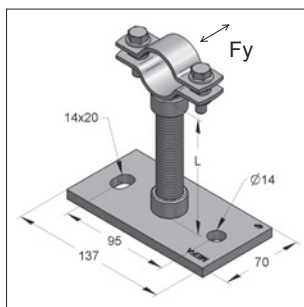
\*Required accessory: Fixpoint bracket HV

| OD    | Insulation thickness | Recom. fixpoint bracket* | Length of shell L | Dimension |      | Max. load          |                     | Weight   | Packing | Part-No.  |
|-------|----------------------|--------------------------|-------------------|-----------|------|--------------------|---------------------|----------|---------|-----------|
| [mm]  | [mm]                 | [type]                   | [mm]              | B         | S    | F <sub>axial</sub> | F <sub>radial</sub> | [kg/pc.] | [pcs.]  |           |
|       |                      |                          |                   | [mm]      | [mm] | [kN]               | [kN]                |          |         |           |
| 76,1  | 40                   | HV1                      | 148               | 235       | 206  | 2,7                | 5,4                 | 3,72     | 1       | 698400076 |
| 88,9  | 40                   | HV1                      | 148               | 246       | 217  | 2,8                | 6,3                 | 3,99     | 1       | 698400089 |
| 114,3 | 40                   | HV1                      | 148               | 272       | 243  | 3,3                | 8,0                 | 4,61     | 1       | 698400114 |
| 139,7 | 40                   | HV1                      | 148               | 300       | 271  | 4,5                | 9,2                 | 5,51     | 1       | 698400140 |
| 168,3 | 40                   | HV1                      | 148               | 328       | 299  | 5,6                | 10,4                | 6,21     | 1       | 698400168 |
| 219,1 | 40                   | HV3                      | 204               | 378       | 349  | 8,0                | 12,4                | 8,15     | 1       | 698400219 |
| 273,0 | 40                   | HV3                      | 204               | 433       | 404  | 8,9                | 13,6                | 9,68     | 1       | 698400273 |
| 323,9 | 40                   | HV4                      | 204               | 484       | 455  | 11,1               | 16,8                | 11,10    | 1       | 698400324 |
| 355,6 | 40                   | HV4                      | 204               | 516       | 487  | 12,1               | 18,2                | 12,00    | 1       | 698400356 |
| 406,4 | 40                   | HV4                      | 204               | 567       | 538  | 13,6               | 20,3                | 13,40    | 1       | 698400406 |

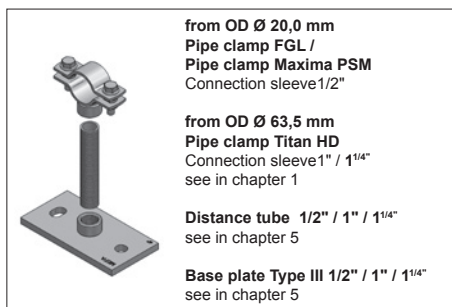
① Suitable Fixpoint brackets as substructure see page 3a/9

⚙ mounting recommendation see chapter 15

## Clamping fixpoint



Clamping fixpoint



Elements of the clamping fixpoint

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

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

3a

### Specification:

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

### Technical data:

Material: steel  
 Material type: S235JR  
 Surface: galvanized

### Specification with sound-decoupling set :

Sound insulation: according to DIN 4109

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

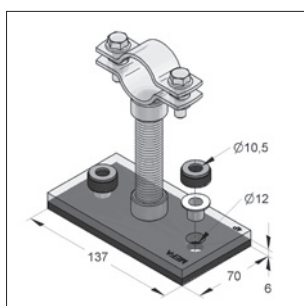
Remark: use only distance tubes with straight thread

### Recommended axial load of pipe clamp type:

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

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

## Sound-decoupling set K



Sound-decoupling set  
for the clamped fixpoint

### Specification:

Sound insulation: according to DIN 4109

Washers with integrated insulation ring

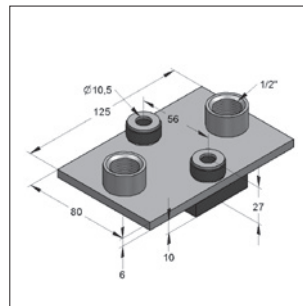
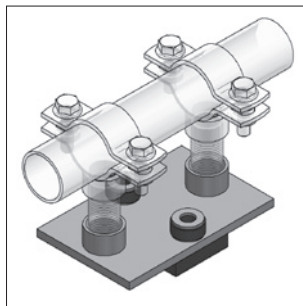
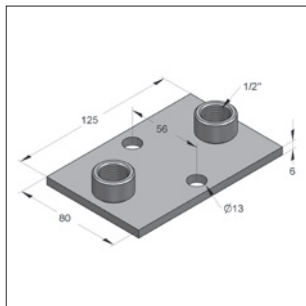
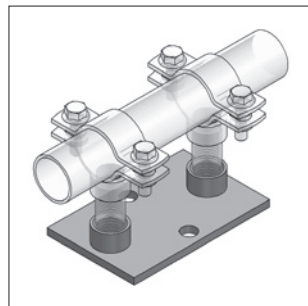
### Technical data:

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

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

| Description            | Insulating board<br>[mm] | Thickness<br>insulating board<br>[mm] | Insulating sleeve<br>for bolting | Packing<br>[pc.] | Part-No.  |
|------------------------|--------------------------|---------------------------------------|----------------------------------|------------------|-----------|
| Sound-decoupling set K | 137 x 70                 | 6                                     | M10                              | 1                | 077034001 |

## ■ Fixpoint type FGL (for clamping)



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

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

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

### Specification with sound-decoupling set:

Sound insulation: according to DIN 4109

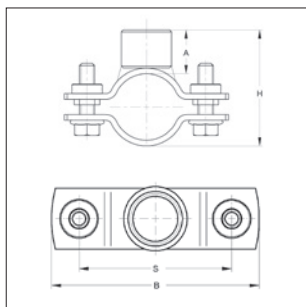
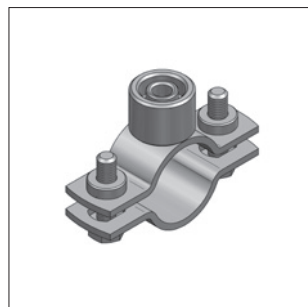
Sound insulation lining: EPDM lining  
Temperature resistance: - 35 °C up to + 100 °C

### Required accessory:

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

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

## ■ Pipe clamp FGL



Pipe clamp FGL 3G  
(with pendulum stick nut)

### Specification:

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

### Technical data:

Material: steel  
Material type: DD11  
Surface: galvanized

| Clamping range | Material | Closure<br>screws | tightening<br>torque | max. axial<br>load | H     | A    | B    | S    | Weight   | Packing | Part-No. |
|----------------|----------|-------------------|----------------------|--------------------|-------|------|------|------|----------|---------|----------|
| [mm]           | [mm]     |                   | [Nm]                 | [kN]               | [mm]  | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]   |          |
| 20 - 23        | 25 x 3,0 | M8                | 5                    | 0,7                | 41-44 | 18   | 73   | 49   | 0,172    | 1       | 0069047  |
| 25 - 29        | 25 x 3,0 | M8                | 5                    | 0,7                | 46-50 | 18   | 80   | 56   | 0,165    | 1       | 0069049  |
| 30 - 35        | 25 x 3,0 | M8                | 5                    | 0,7                | 51-56 | 18   | 87   | 63   | 0,175    | 1       | 0069053  |
| 36 - 40        | 25 x 3,0 | M8                | 5                    | 0,7                | 57-61 | 18   | 92   | 68   | 0,180    | 1       | 0069081  |
| 41 - 46        | 25 x 3,0 | M8                | 5                    | 0,7                | 62-67 | 18   | 98   | 74   | 0,195    | 1       | 0069097  |

## ■ MEFA connectors for waste water piping



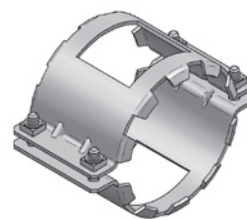
DN 50 - 100

SIMA >G< one screw  
Page 3b/2

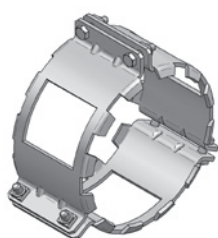
DN 125 - 150

SIMA >G< two screws  
Page 3b/2

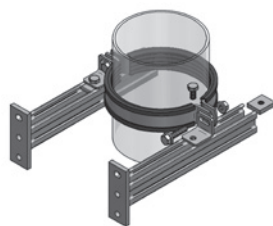
DN 200

SIMA >CV<  
Page 3b/2

DN 50 - 125

SIMA-Cramp grip connector  
Page 3b/3

DN 150 - 250

SIMA-Cramp grip connector  
Page 3b/3

DN 80 - 200

Downstream support  
Page 3b/4

DN 50 - 125

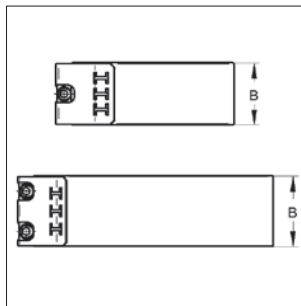
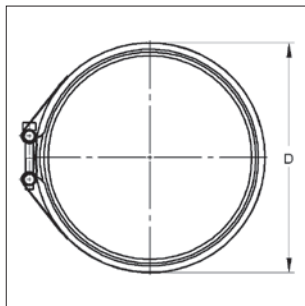
SIMA-CON reducing connector  
Page 3b/5SIMA handdriver 5/150  
Page 3b/5

3b

## SIMA >G< connector



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



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

Plug connector suitable  
for cast iron pipe and  
fittings

Entspricht  
DIN EN 877

**350 h**  
Salzsprühnebeltest  
nach  
ISO 7253

### Specification:

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

### Technical data:

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

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

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

| Identification | Nominal width<br>[DN] | OD<br>[mm] | Width clamp strap<br>B<br>[mm] | Overall width<br>D<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|-----------------------|------------|--------------------------------|----------------------------|--------------------|-------------------|----------|
| SIMA >G<       | 50                    | 58         | 46                             | 70                         | 0,146              | 100               | 4470050  |
| SIMA >G<       | 70                    | 78         | 46                             | 90                         | 0,175              | 100               | 4470070  |
| SIMA >G<       | 80                    | 83         | 46                             | 95                         | 0,181              | 50                | 4470080  |
| SIMA >G<       | 100                   | 110        | 46                             | 122                        | 0,215              | 50                | 4470100  |

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

|          |     |     |    |     |       |    |         |
|----------|-----|-----|----|-----|-------|----|---------|
| SIMA >G< | 125 | 135 | 51 | 150 | 0,285 | 25 | 4470125 |
| SIMA >G< | 150 | 160 | 51 | 175 | 0,323 | 20 | 4470150 |

## SIMA >CV< connector



SIMA >CV<

### Specification:

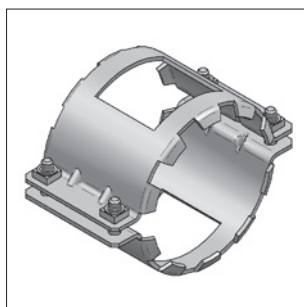
|                                 |                      |
|---------------------------------|----------------------|
| Connector type:                 | plug connector       |
| Closure part connection:        | welded connection    |
| Nominal width:                  | DN 200               |
| OD: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

### Technical data:

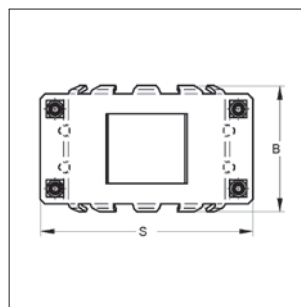
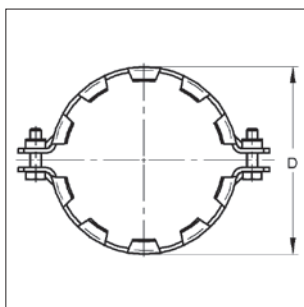
|                            |                        |
|----------------------------|------------------------|
| Material pipe clamp strap: | stainless steel        |
| Materials:                 | 1.4510/11              |
| Material clamp strap:      | steel                  |
| Surface:          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

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

## SIMA-Cramp grip connector



SIMA-Cramp grip connector  
DN 50 up to 125



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

3b

### Specification:

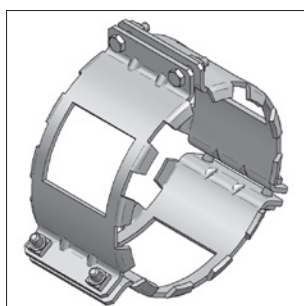
Application area: grip connector without sleeves,  
drain pipes in connection with  
connector SIMA >G<  
Nominal width: DN 50 up to 250  
OD: 58 up to 274 mm  
Pressure load: tested up to 5 bar

### Technical data:

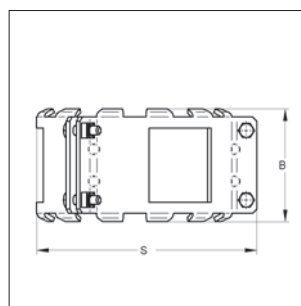
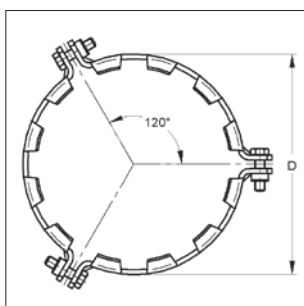
Material pipe clamp strap: steel  
Material type: S235JR  
Surface: galvanized

<sup>1)</sup> For DN80 test certificate MPA NRW-00093-1 is essential

| Identification    | Nominal width<br>[DN]  | OD<br>[mm] | Number of components | Tightening torque<br>[Nm] | D<br>[mm] | B<br>[mm] | S<br>[mm] | Pressure load tested<br>[bar] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|------------------------|------------|----------------------|---------------------------|-----------|-----------|-----------|-------------------------------|--------------------|-------------------|----------|
| <b>SIMA-Cramp</b> | <b>50</b>              | 58         | 2                    | 15                        | 75        | 79        | 113       | 5                             | 0,434              | 20                | 4472500  |
| <b>SIMA-Cramp</b> | <b>70</b>              | 78         | 2                    | 15                        | 99        | 92        | 134       | 5                             | 0,641              | 20                | 4472705  |
| <b>SIMA-Cramp</b> | <b>80<sup>1)</sup></b> | 83         | 2                    | 20                        | 102       | 74        | 138       | 5                             | 0,712              | 10                | 4472805  |
| <b>SIMA-Cramp</b> | <b>100</b>             | 110        | 2                    | 15                        | 130       | 103       | 174       | 5                             | 0,877              | 10                | 4473000  |
| <b>SIMA-Cramp</b> | <b>125</b>             | 135        | 2                    | 20                        | 154       | 103       | 202       | 5                             | 1,075              | 10                | 4473256  |



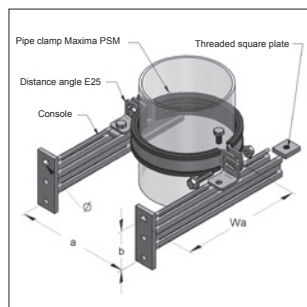
SIMA-Cramp grip connector  
DN 150 up to 250



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

| Identification    | Nominal width<br>[DN] | OD<br>[mm] | Number of components | Tightening torque<br>[Nm] | D<br>[mm] | B<br>[mm] | Pressure load tested<br>[bar] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|-----------------------|------------|----------------------|---------------------------|-----------|-----------|-------------------------------|--------------------|-------------------|----------|
| <b>SIMA-Cramp</b> | <b>150</b>            | 160        | 3                    | 20                        | 183       | 106       | 5                             | 1,600              | 10                | 4473507  |
| <b>SIMA-Cramp</b> | <b>200</b>            | 210        | 3                    | 20                        | 236       | 120       | 5                             | 2,600              | 5                 | 4474000  |
| <b>SIMA-Cramp</b> | <b>250</b>            | 274        | 3                    | 30                        | 300       | 133       | 5                             | 3,480              | 4                 | 4474508  |

## ■ Fixpoint support for downstream piping



Downstream support  
(mounted)

### Specification:

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

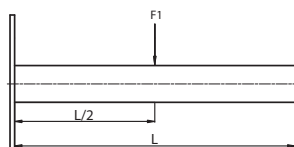
### Technical data:

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

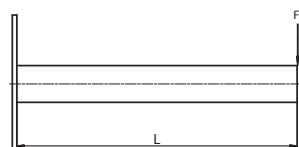
Remark: To prevent slippage of the pipe a flange or similar should be placed above the clamp

| Identification | Nominal width | OD<br>[mm] | a<br>[mm] | b<br>[mm] | WA <sub>min.</sub><br>[mm] | WA <sub>max.</sub><br>[mm] | Console<br>hole Ø<br>[mm] | max. load  |            | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|----------------|---------------|------------|-----------|-----------|----------------------------|----------------------------|---------------------------|------------|------------|--------------------|------------------|----------|
|                |               |            |           |           |                            |                            |                           | F1<br>[kN] | F2<br>[kN] |                    |                  |          |
| <b>Set</b>     | <b>DN 80</b>  | 83         | 140       | 55        | 75                         | 260                        | 15 x 11                   | 1,44       | 0,72       | 1,55               | 1                | 4500800  |
| <b>Set</b>     | <b>DN 100</b> | 110        | 165       | 55        | 75                         | 260                        | 15 x 11                   | 1,44       | 0,72       | 1,62               | 10               | 4501000  |
| <b>Set</b>     | <b>DN 125</b> | 135        | 200       | 80        | 85                         | 300                        | 15 x 11                   | 4,16       | 2,08       | 2,58               | 10               | 4501250  |
| <b>Set</b>     | <b>DN 150</b> | 160        | 230       | 80        | 100                        | 300                        | 15 x 11                   | 4,16       | 2,08       | 2,69               | 10               | 4501500  |
| <b>Set</b>     | <b>DN 200</b> | 210        | 280       | 85        | 125                        | 315                        | 20 x 14                   | 6,64       | 3,32       | 4,18               | 1                | 45020045 |

Loading condition 1 (LC1)



Loading condition 2 (LC2)



### Set-content

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

## ■ SIMA-CON reducing connector



SIMA-CON



3b

**Specification:**

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

Nominal width: DN 50 up to 125  
 OD: 40 up to 125 mm  
 Pressure load: tested up to 0,5 bar  
 Sound insulation lining according to: DIN 4060 of EN 877  
 DIN 19 522

**Technical data:**

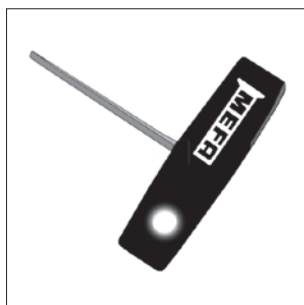
Material rubber cuff: EPDM lining  
 Temperature resistance: - 35 °C up to + 100 °C  
 Material pipe clamp: stainless steel  
 Materials: 1.4016  
 Screw: cross slot, SW7  
 Tightening torque: 2 Nm

**Manufacturer identification:** EK-Fix-Verbinder

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

 assembly instruction see chapter 15

## ■ SIMA handdriver



SIMA handdriver 5/150



Hexagon bit 25 mm

Identification

**SIMA handdriver 5/150**

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

| Packing<br>[pc.] | Part-No. |
|------------------|----------|
| 1                | 5010065  |
| 1                | 5010075  |

## ■ MEFA Spring hanger

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

### Applications:

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

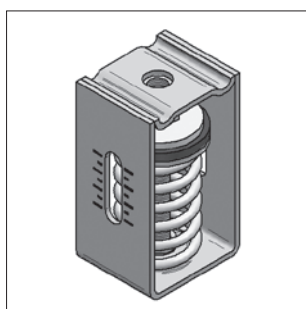
Spring bearings or -insulator can be used for installations where no rigid storage of plant systems (e.g. pipelines, assemblies) are allowed. For example a pipeline exposed to a certain temperature which requires due to its temperature bending an elastic storage.

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

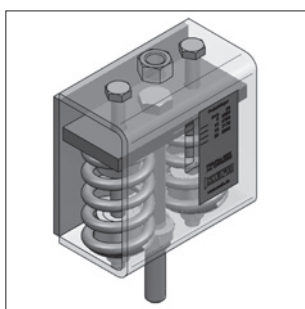
MEFA spring hanger meet the requirements of vibration insulation and disconnection of structure-borne-sound.

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

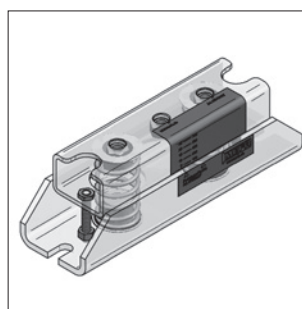
3c



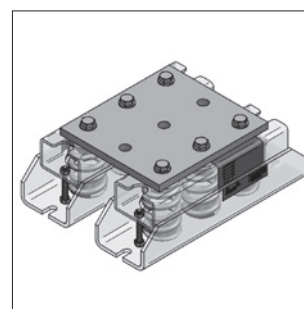
Spring insulator FH1  
Page 3c/2



Spring insulator FH2  
Page 3c/2

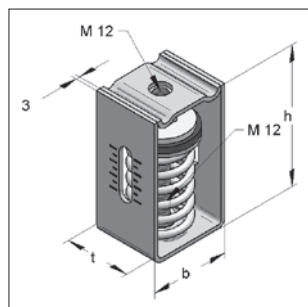


Spring bearing FL  
Page 3c/3



Spring bearing FLD  
Page 3c/3

## Spring insulator FH 1 with one spring



Spring insulator FH1  
Load range: up to 3000 N

### Specification:

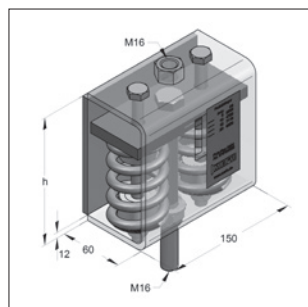
Number of springs: 1 piece  
Load range: up to 3000 N  
Spring deflection: up to 32 mm

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

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

## Spring insulator FH 2 with two springs



Spring insulator FH2  
Load range: up to 9300 N

### Specification:

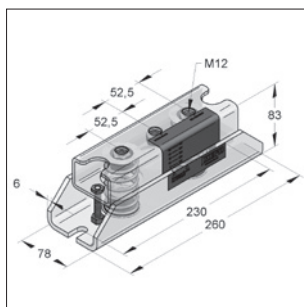
Number of springs: 2 pieces  
Load range: up to 9068 N  
Spring deflection: up to 28,5 mm

### Technical data:

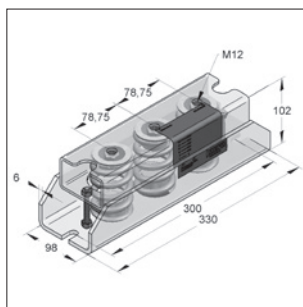
Material: steel  
Material type: S235JR  
Surface: galvanized

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

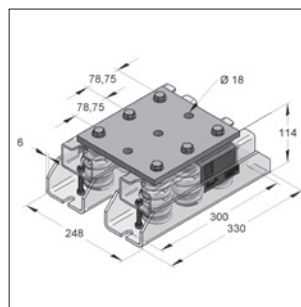
## Spring bearing FL



Spring bearing FL  
2 springs



Spring bearing FL  
3 springs



Spring bearing FLD  
two spring bearings connected  
with interface

### Specification:

Number of springs: 2 pieces / 3 pieces  
Casing: type 1 / type 2  
Load range: up to 21000 N  
Spring deflection: up to 25 mm

Recommended anchor: Bolt anchor BZ plus

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

3c

### Spring bearing FL

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

### Spring bearing FLD

|           |  |           |       |          |       |   |          |
|-----------|--|-----------|-------|----------|-------|---|----------|
| FLD-21000 |  | 0 - 21354 | 2 x 3 | 0 - 26,5 | 16,23 | 1 | 07929210 |
|-----------|--|-----------|-------|----------|-------|---|----------|

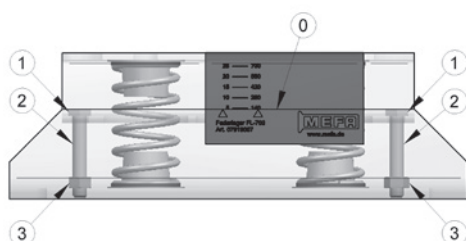


## Spring insulator selection table

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

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

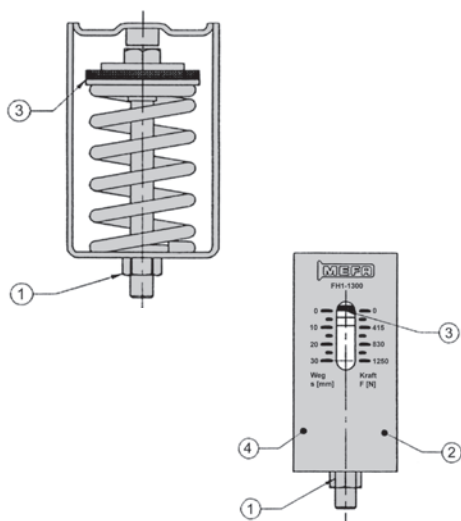
## Assembly instruction for Spring bearing FL



### Target: Vibration isolation

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

## Assembly instruction for spring insulator FH 1 and FH 2



### Target: Vibration isolation

1. The spring insulator is prestressed to absorb the load, for stationary handling, via the suitable hex. nut M12 (SW19 mm) [1] (for direct reading scale on the outside [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] 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...

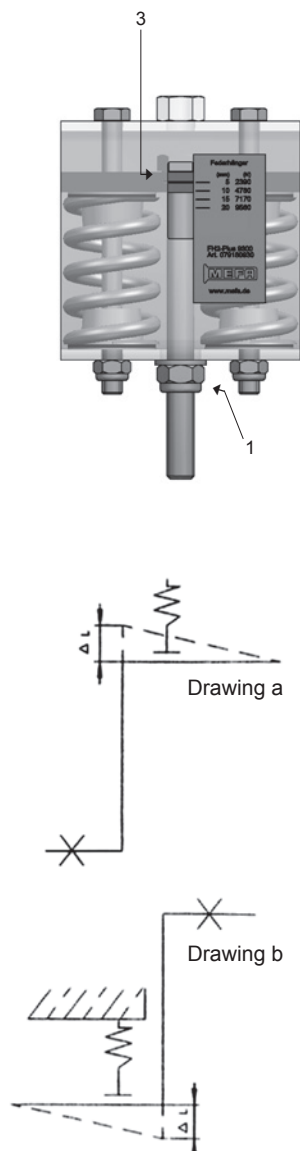
- prestressed according to **drawing a**, via the hex. screw M12 (SW19 mm) [1] for direct reading scale on the outside [3], bottom edge red washer [4])

#### During mounting the pipeline is prestressed !

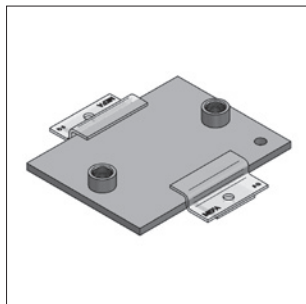
- according to **drawing b**, not prestressed

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

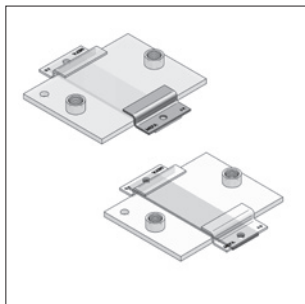
2. The spring insulator has to be mounted on the structure
3. Spring insulator with the pipe clamp can be mounted via pipe clamp, compressor or a traverse, with the help of the suitable connecting elements (threaded rod, treaded coupling and counter nut or adapted traverse mountings)
4. Releasing the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



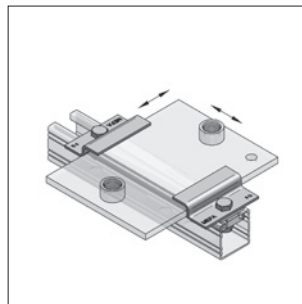
## ■ MEFA sliding elements



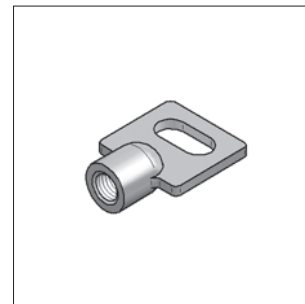
Sliding plates  
Page 4/2



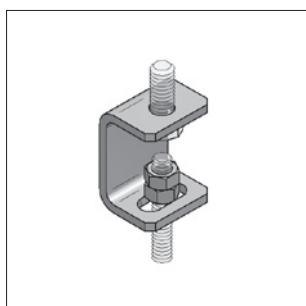
Z-pressure pads, sliding stripes  
Page 4/3



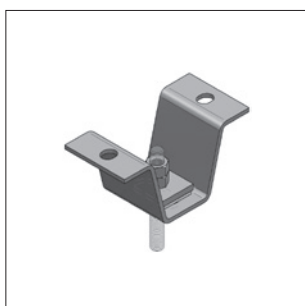
Sliding element radial-axial  
Page 4/4



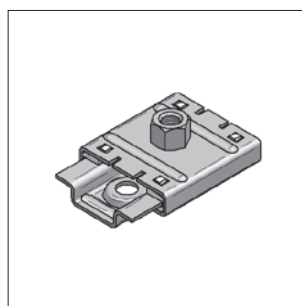
Spline end  
Page 4/4



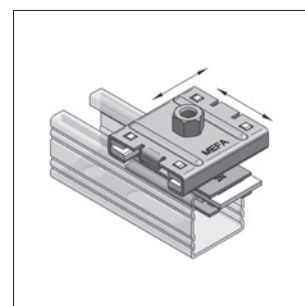
Suspended bracket  
Page 4/5



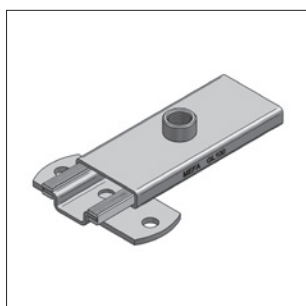
Ceiling hanger TF  
Page 4/5



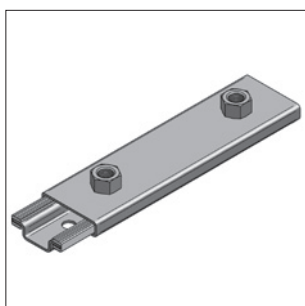
Slider GL 37  
Page 4/6



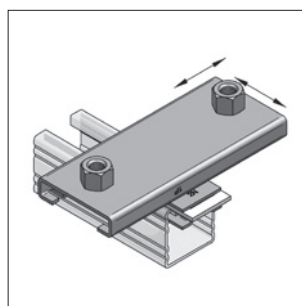
Sliding element radial-axial 37  
Page 4/7



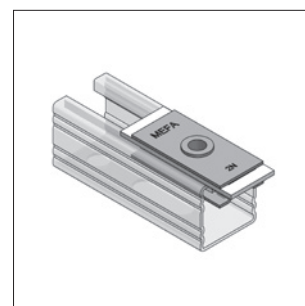
Slider GL 100  
Page 4/8



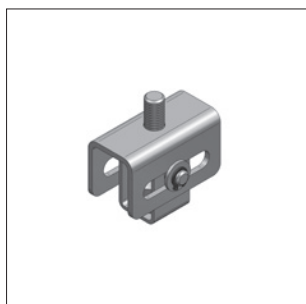
Slider GL 200  
Page 4/8



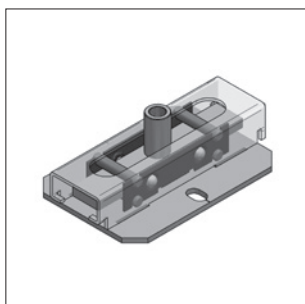
Sliding element radial-axial  
Page 4/9



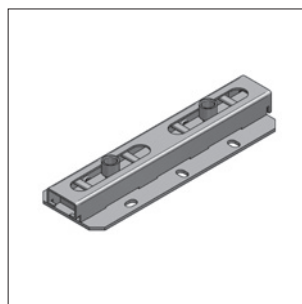
Profile rail slider 45 K  
Page 4/10



Suspended bracket 35 mm  
Page 4/11



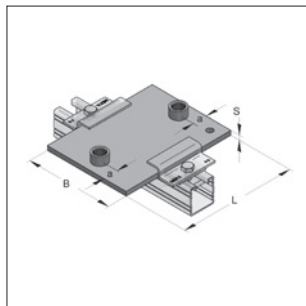
Roller bearing  
Page 4/11



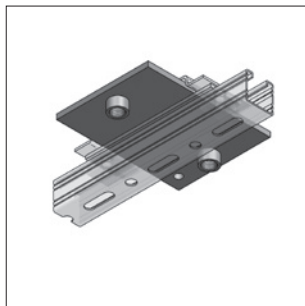
Roller bearing Duo  
Page 4/12

 sliding elements of stainless steel see chapter 13

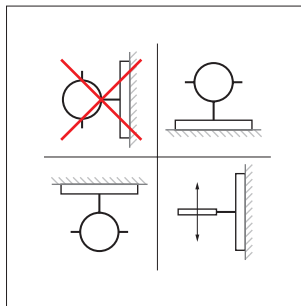
## Sliding plates



Sliding plate  
standing installation



Sliding plate  
hanging installation



Assembly instruction

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

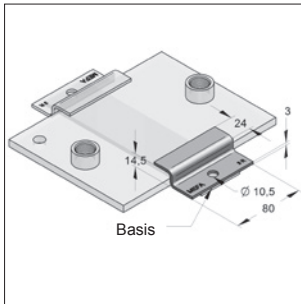
Recommended pipe diameters: L 150 = up to OD 193,0 mm  
L 200 = up to OD 299,5 mm  
L 250 = up to OD 419,0 mm

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

\* Delivery times on request

| Identification                | Dimension<br>L x B x S<br>[mm] | Connection       | a<br>[mm] | Sliding distance<br>standing<br>[mm] | Sliding distance<br>hanging<br>[mm] | max.<br>load<br>[kN] | Accessory<br>sliding stripe<br>[Part-No.] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.<br>Sliding plate |
|-------------------------------|--------------------------------|------------------|-----------|--------------------------------------|-------------------------------------|----------------------|-------------------------------------------|--------------------|------------------|---------------------------|
| Sliding plate 150 x 100 x 8   |                                | 1x nut M16       | -         | 100                                  | -                                   | 1,5                  | 077955501                                 | 0,97               | 1                | 0771162                   |
| Sliding plate 150 x 100 x 8   |                                | 1x sleeve 1/2"   | -         | 100                                  | -                                   | 1,5                  | 077955501                                 | 1,01               | 1                | 0771200                   |
| Sliding plate 150 x 100 x 8*  |                                | 1x sleeve 3/4"   | -         | 100                                  | -                                   | 1,5                  | 077955501                                 | 1,00               | 1                | 0771227                   |
| Sliding plate 150 x 100 x 8   |                                | 2x nut M16       | 25        | 100                                  | 20                                  | 4,8                  | 077955501                                 | 1,14               | 1                | 0771164                   |
| Sliding plate 150 x 100 x 8   |                                | 2x sleeve 1/2"   | 25        | 100                                  | 20                                  | 4,8                  | 077955501                                 | 1,01               | 1                | 0771202                   |
| Sliding plate 150 x 100 x 8*  |                                | 2x sleeve 3/4"   | 25        | 100                                  | 20                                  | 4,8                  | 077955501                                 | 1,00               | 1                | 0771229                   |
| Sliding plate 200 x 100 x 8   |                                | 2x nut M16       | 25        | 150                                  | 70                                  | 3,0                  | 077955501                                 | 1,30               | 1                | 0771163                   |
| Sliding plate 200 x 100 x 8   |                                | 2x sleeve 1/2"   | 25        | 150                                  | 70                                  | 3,0                  | 077955501                                 | 1,32               | 1                | 0771201                   |
| Sliding plate 200 x 100 x 8*  |                                | 2x sleeve 3/4"   | 25        | 150                                  | 70                                  | 3,0                  | 077955501                                 | 1,30               | 1                | 0771228                   |
| Sliding plate 200 x 100 x 8   |                                | 2x sleeve 1"     | 25        | 150                                  | 70                                  | 3,0                  | 077955501                                 | 1,30               | 1                | 0771236                   |
| Sliding plate 200 x 150 x 8*  |                                | 2x sleeve 1/2"   | 25        | 150                                  | 70                                  | 4,4                  | 077956701                                 | 1,90               | 1                | 0771331                   |
| Sliding plate 250 x 100 x 8   |                                | 2x nut M16       | 25        | 200                                  | 120                                 | 2,2                  | 077955501                                 | 1,63               | 1                | 0771465                   |
| Sliding plate 250 x 100 x 8   |                                | 2x sleeve 1/2"   | 25        | 200                                  | 120                                 | 2,2                  | 077955501                                 | 1,62               | 1                | 0771503                   |
| Sliding plate 250 x 100 x 8*  |                                | 2x sleeve 3/4"   | 25        | 200                                  | 120                                 | 2,2                  | 077955501                                 | 1,60               | 1                | 0771511                   |
| Sliding plate 250 x 100 x 8   |                                | 2x sleeve 1"     | 25        | 200                                  | 120                                 | 2,2                  | 077955501                                 | 1,70               | 1                | 0771538                   |
| Sliding plate 250 x 200 x 8*  |                                | 2x sleeve 1/2"   | 25        | 200                                  | 120                                 | 4,2                  | 077956001                                 | 3,20               | 1                | 0771707                   |
| Sliding plate 250 x 200 x 10* |                                | 2x sleeve 1/2"   | 25        | 200                                  | 120                                 | 6,4                  | 077956001                                 | 3,90               | 1                | 0771710                   |
| Sliding plate 300 x 200 x 10* |                                | 2x sleeve 1"     | 25        | 200                                  | 160                                 | 5,6                  | 077956001                                 | 4,96               | 1                | 0771811                   |
| Sliding plate 300 x 200 x 12* |                                | 2x sleeve 1"     | 25        | 200                                  | 160                                 | 8,1                  | 077956001                                 | 5,78               | 1                | 0771814                   |
| Sliding plate 300 x 250 x 12* |                                | 2x sleeve 1"     | 25        | 200                                  | 160                                 | 10,2                 | 077957001                                 | 7,20               | 1                | 0771817                   |
| Sliding plate 350 x 200 x 12* |                                | 2x sleeve 1 1/4" | 35        | 300                                  | 200                                 | 6,0                  | 077956001                                 | 6,60               | 1                | 0771902                   |
| Sliding plate 350 x 250 x 12* |                                | 2x sleeve 1"     | 25        | 300                                  | 200                                 | 7,4                  | 077957001                                 | 8,37               | 1                | 0771911                   |
| Sliding plate 400 x 250 x 12* |                                | 2x sleeve 1 1/4" | 35        | 350                                  | 250                                 | 5,4                  | 077957001                                 | 9,80               | 1                | 0771973                   |

## Z-pressure pad



Z-pressure pad with basis

**Specification:**

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

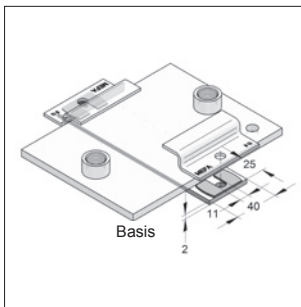
**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized<sup>1)</sup>  
 Hole OD: 10,5 mm

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

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

## Basis for Z-pressure pad



Z-pressure pad with basis

**Specification:**

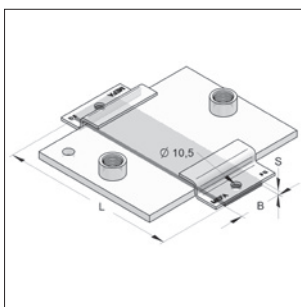
Application area: Increasing of Z-pressure pad

**Technical data:**

Material: steel  
 Surface: pre-galvanized

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

## Sliding stripe PA 6



Sliding stripe

**Specification:**

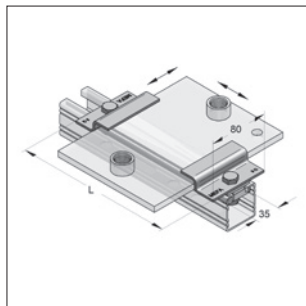
Product attributes: improvement of  
 sliding characteristic  
 Application area: sliding plates

**Technical data:**

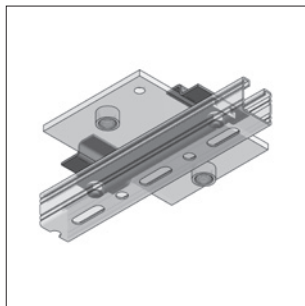
Material: polyamide 6  
 Static friction factor: 0,2 - 0,3  
 Sliding: 0,15 - 0,25  
 Thermal load: - 30 °C up to + 110 °C  
 Hole OD: 10,5 mm

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

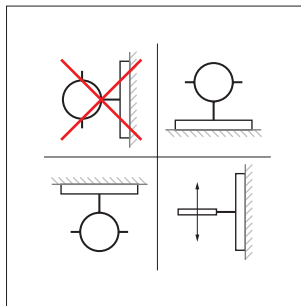
## Sliding element radial-axial



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



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



Assembly instruction

### Specification:

Profile rail type: C-profile 45 mm

Application area:

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

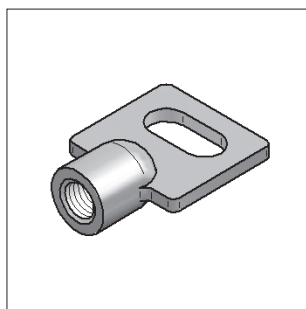
### Technical data:

Material sliding element: steel  
Material type sliding element: S235JR  
Surface sliding element: galvanized

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

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

## Spline end



Spline end

### Specification:

Application area:

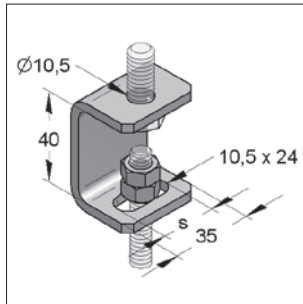
- absorption of axial length expansion
- of simple suspensions

### Technical data:

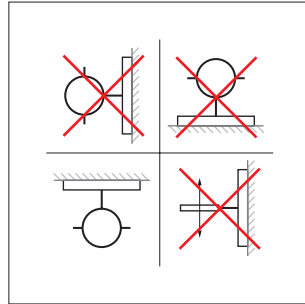
Material: malleable cast iron  
Surface: galvanized

| Identification    | Thread     | Dimension<br>elongated hole<br>[mm] | max.<br>load<br>[kN] | Material thickness<br>lug<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|------------|-------------------------------------|----------------------|-----------------------------------|--------------------|-------------------|----------|
| <b>Spline end</b> | <b>M10</b> | 25 x 11,5                           | 3,5                  | 4,0                               | 0,074              | 50                | 0600011  |
| <b>Spline end</b> | <b>M12</b> | 22 x 10,5                           | 4,7                  | 5,0                               | 0,066              | 50                | 0610046  |

## ■ Suspended bracket type L



Suspended bracket type L



Assembly instruction

### Specification:

Application area: for single fixation with threaded rod under ceiling  
 Scope of delivery: suspended bracket, cone- and counter nut

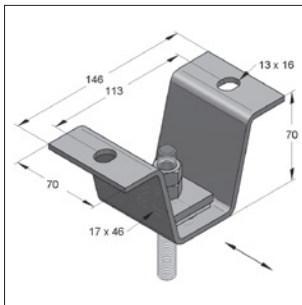
### Technical data:

Material: steel  
 Material type: S235JR  
 Surface: galvanized

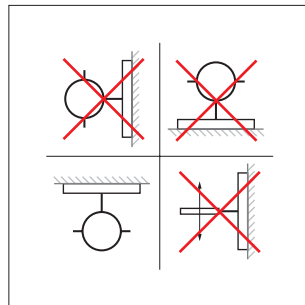
| Identification                  | Thread     | Adjustable height [mm] | Sliding distance s [mm] | max. load [kN] | Weight [kg/pc.] | Packing [pcs.] | Part-No. |
|---------------------------------|------------|------------------------|-------------------------|----------------|-----------------|----------------|----------|
| <b>Suspended bracket type L</b> | <b>M8</b>  | 30                     | 16                      | 1,6            | 0,080           | 100            | 0781010  |
| <b>Suspended bracket type L</b> | <b>M10</b> | 30                     | 14                      | 1,6            | 0,090           | 100            | 0781029  |

04

## ■ Ceiling hanger TF



Ceiling hanger TF



Assembly instruction

### Specification:

Application area: ceiling- and rail suspension  
 Scope of delivery: sliding plate, perforated plate and two nuts

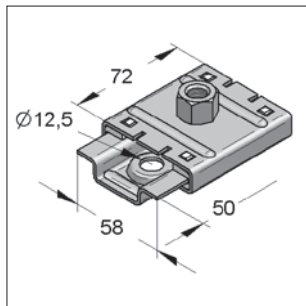
### Technical data:

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

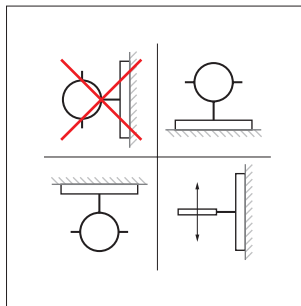
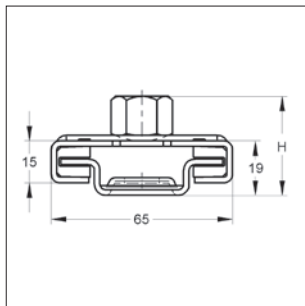
Material sliding stripe: polyamide 6  
 Static friction factor: 0,2 - 0,3  
 Sliding friction factor: 0,15 - 0,25  
 Thermal load: -30 °C up to + 110 °C

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

## Slider GL 37



Slider GL 37



Assembly instruction

### Specification:

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

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

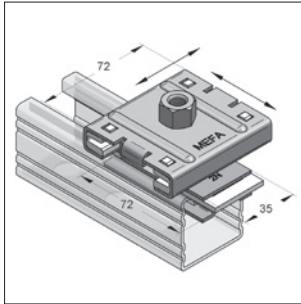
### Technical data:

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

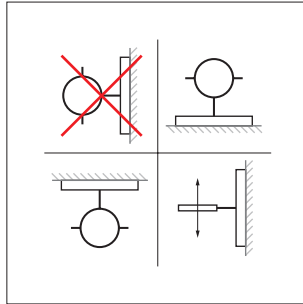
Material sliding plate: polyamide 6  
Static friction factor: 0,2 - 0,3  
Sliding friction factor: 0,15 - 0,25  
Thermal load: -30 °C up to + 110 °C

| Identification | Connection | H<br>[mm] | max. loading    |                  | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|----------------|------------|-----------|-----------------|------------------|--------------------|------------------|----------|
|                |            |           | hanging<br>[kN] | standing<br>[kN] |                    |                  |          |
| Slider GL 37   | 1 x M8     | 32        | 1,3             | 1,3              | 0,213              | 25               | 0770515  |
| Slider GL 37   | 1 x M10    | 34        | 1,3             | 1,3              | 0,211              | 25               | 0770523  |
| Slider GL 37   | 1 x M12    | 36        | 1,3             | 1,3              | 0,214              | 25               | 0770531  |
| Slider GL 37   | 1 x M16    | 34        | 1,3             | 1,3              | 0,215              | 25               | 0770558  |
| Slider GL 37   | 1 x 1/2"   | 35        | 1,3             | 1,3              | 0,217              | 25               | 0770604  |

## ■ Sliding element radial-axial GL 37



Sliding element radial-axial GL 37



Assembly instruction

### Specification:

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

Constitution: slider GL 37 and profile rail slider;  
pre-assembled (without C-profile)

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

### Technical data:

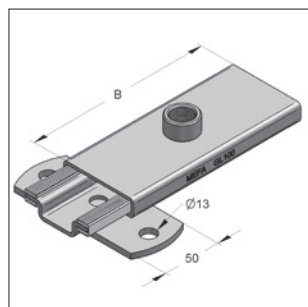
Material: steel  
Material type: S235JR  
Surface: galvanized  
Sliding distance axial: up to 37 mm  
Sliding distance radial: max. rail length

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

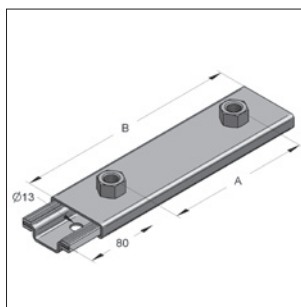
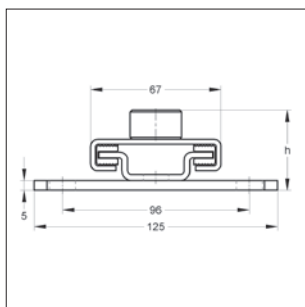
04

| Identification                                        | max. loading    |                  | Weight | Packing | Part-No.  |
|-------------------------------------------------------|-----------------|------------------|--------|---------|-----------|
|                                                       | hanging<br>[kN] | standing<br>[kN] |        |         |           |
| <b>Sliding element radial-axial GL 37 M8</b>          | 1,3             | 1,3              | 0,353  | 1       | 077046801 |
| <b>Sliding element radial-axial GL 37 M10</b>         | 1,3             | 1,3              | 0,364  | 1       | 077046001 |
| <b>Sliding element radial-axial GL 37 M12</b>         | 1,3             | 1,3              | 0,373  | 1       | 077046201 |
| <b>Sliding element radial-axial GL 37 M16</b>         | 1,3             | 1,3              | 0,370  | 1       | 077046601 |
| <b>Sliding element radial-axial GL 37 sleeve 1/2"</b> | 1,3             | 1,3              | 0,368  | 1       | 077046401 |

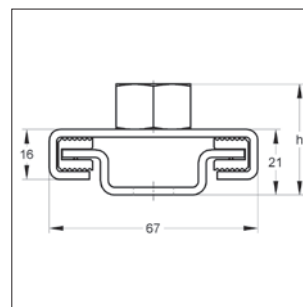
## Slider GL 100 and GL 200



Slider GL 100  
(Illustration with lug)



Slider GL 200

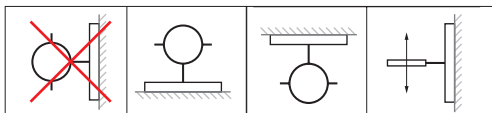


### Specification:

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

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

Assembly instruction:



### Technical data:

Material slider: steel  
Material type slider: S235JR  
Surface slider: galvanized<sup>1)</sup>

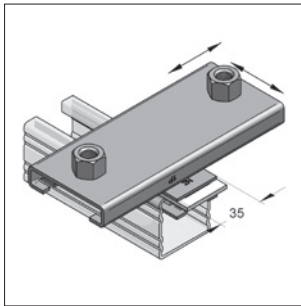
Sliding distance GL 100 approx. 75 mm  
Sliding distance GL 200 approx. 165 mm

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

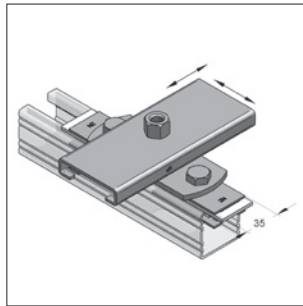
<sup>1)</sup> Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!

| Identification                | Connection     | A    | H    | B    | max. load | Weight   | Packing | Part-No. |
|-------------------------------|----------------|------|------|------|-----------|----------|---------|----------|
|                               |                | [mm] | [mm] | [mm] | [kN]      | [kg/pc.] | [pc.]   |          |
| <b>Slider GL 100</b>          | 1x nut M10     | -    | 35   | 160  | 3,0       | 0,502    | 1       | 0770524  |
|                               | 1x nut M12     | -    | 37   | 160  | 3,0       | 0,503    | 1       | 0770532  |
|                               | 1x nut M16     | -    | 36   | 160  | 3,0       | 0,534    | 1       | 0770559  |
|                               | 1x sleeve 1/2" | -    | 36   | 160  | 3,0       | 0,504    | 1       | 0770605  |
| <b>Slider GL 100 with lug</b> | 1x nut M10     | -    | 40   | 160  | 3,0       | 0,748    | 1       | 0770528  |
|                               | 1x nut M12     | -    | 42   | 160  | 3,0       | 0,757    | 1       | 0770536  |
|                               | 1x nut M16     | -    | 41   | 160  | 3,0       | 0,753    | 1       | 0770563  |
|                               | 1x sleeve 1/2" | -    | 41   | 160  | 3,0       | 0,736    | 1       | 0770609  |
| <b>Slider GL 100</b>          | 2x nut M10     | 120  | 35   | 160  | 3,0       | 0,511    | 1       | 0770526  |
|                               | 2x nut M12     | 120  | 37   | 160  | 3,0       | 0,538    | 1       | 0770534  |
|                               | 2x nut M16     | 120  | 36   | 160  | 3,0       | 0,583    | 1       | 0770561  |
|                               | 2x sleeve 1/2" | 120  | 36   | 160  | 3,0       | 0,551    | 1       | 0770607  |
| <b>Slider GL 100 with lug</b> | 2x nut M10     | 120  | 40   | 160  | 3,0       | 0,730    | 1       | 0770530  |
|                               | 2x nut M12     | 120  | 42   | 160  | 3,0       | 0,750    | 1       | 0770538  |
|                               | 2x nut M16     | 120  | 41   | 160  | 3,0       | 0,794    | 1       | 0770565  |
|                               | 2x sleeve 1/2" | 120  | 41   | 160  | 3,0       | 0,771    | 1       | 0770611  |
| <b>Slider GL 200</b>          | 2x nut M10     | 150  | 35   | 250  | 3,0       | 0,735    | 1       | 0770527  |
|                               | 2x nut M12     | 150  | 37   | 250  | 3,0       | 0,752    | 1       | 0770535  |
|                               | 2x nut M16     | 160  | 36   | 250  | 3,0       | 0,802    | 1       | 0770562  |
|                               | 2x sleeve 1/2" | 160  | 36   | 250  | 3,0       | 0,783    | 1       | 0770608  |
| <b>Slider GL 200 with lug</b> | 2x nut M10     | 150  | 40   | 250  | 3,0       | 0,955    | 1       | 0770638  |
|                               | 2x nut M12     | 150  | 42   | 250  | 3,0       | 1,003    | 1       | 0770539  |
|                               | 2x nut M16     | 160  | 41   | 250  | 3,0       | 1,002    | 1       | 0770566  |
|                               | 2x sleeve 1/2" | 160  | 41   | 250  | 3,0       | 0,998    | 1       | 0770615  |

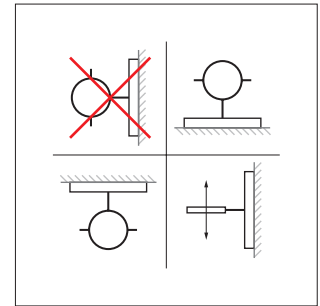
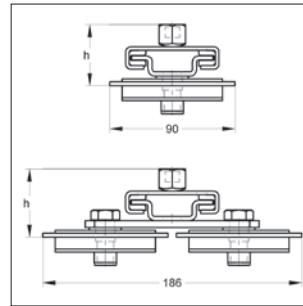
## ■ Sliding element radial-axial GL 100 and GL 200



Sliding element radial-axial  
without lug



Sliding element radial-axial  
with lug



Assembly instruction

### Specification:

For profile rail type:

Application area:

C-profile 45 mm

absorption of radial and axial length expansion  
for standing, hanging or vertical passed pipes

### Technical data:

Material:

Material type:

Surface:

steel

S235JR

galvanized

Constitution:

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

Sliding distance GL 100: approx. 75 mm

Sliding distance GL 200: approx. 165 mm

Notice:

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

Material sliding plate:

Static friction factor:

Sliding friction factor:

Thermal load:

polyamide 6

0,2 - 0,3

0,15 - 0,25

-30 °C up to + 110 °C

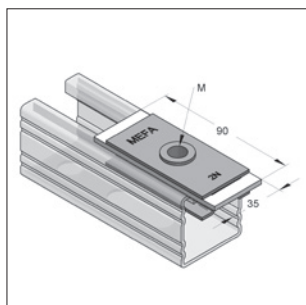
| Identification                                      | Connection     |     | h    | max. load | Weight   | Packing | Part-No.  |
|-----------------------------------------------------|----------------|-----|------|-----------|----------|---------|-----------|
|                                                     |                |     | [mm] | [kN]      | [kg/pc.] | [pc.]   |           |
| <b>Sliding element radial-axial GL 100</b>          | 1x nut         | M10 | 42   | 2,0       | 0,691    | 1       | 077048401 |
|                                                     | 1x nut         | M12 | 44   | 2,0       | 0,701    | 1       | 077048301 |
|                                                     | 1x nut         | M16 | 43   | 2,0       | 0,700    | 1       | 077048501 |
|                                                     | 1x sleeve 1/2" |     | 43   | 2,0       | 0,700    | 1       | 077048601 |
| <b>Sliding element radial-axial GL 100 with lug</b> | 1x nut         | M10 | 47   | 3,0       | 1,070    | 1       | 077048402 |
|                                                     | 1x nut         | M12 | 49   | 3,0       | 1,080    | 1       | 077048302 |
|                                                     | 1x nut         | M16 | 48   | 3,0       | 1,080    | 1       | 077048502 |
|                                                     | 1x sleeve 1/2" |     | 48   | 3,0       | 1,080    | 1       | 077048602 |
| <b>Sliding element radial-axial GL 100</b>          | 2x nut         | M10 | 42   | 2,0       | 0,703    | 1       | 077048001 |
|                                                     | 2x nut         | M12 | 44   | 2,0       | 0,719    | 1       | 077048101 |
|                                                     | 2x nut         | M16 | 43   | 2,0       | 0,744    | 1       | 077048701 |
|                                                     | 2x sleeve 1/2" |     | 43   | 2,0       | 0,713    | 1       | 077048201 |
| <b>Sliding element radial-axial GL 100 with lug</b> | 2x nut         | M10 | 47   | 3,0       | 1,080    | 1       | 077048002 |
|                                                     | 2x nut         | M12 | 49   | 3,0       | 1,090    | 1       | 077048102 |
|                                                     | 2x nut         | M16 | 48   | 3,0       | 1,110    | 1       | 077048702 |
|                                                     | 2x sleeve 1/2" |     | 48   | 3,0       | 1,110    | 1       | 077048202 |
| <b>Sliding element radial-axial GL 200</b>          | 2x nut         | M10 | 42   | 2,0       | 0,906    | 1       | 077047101 |
|                                                     | 2x nut         | M12 | 44   | 2,0       | 0,932    | 1       | 077047001 |
|                                                     | 2x nut         | M16 | 43   | 2,0       | 0,959    | 1       | 077047201 |
|                                                     | 2x sleeve 1/2" |     | 43   | 2,0       | 0,949    | 1       | 077047301 |
| <b>Sliding element radial-axial GL 200 with lug</b> | 2x nut         | M10 | 47   | 3,0       | 1,303    | 1       | 077047102 |
|                                                     | 2x nut         | M12 | 49   | 3,0       | 1,320    | 1       | 077047002 |
|                                                     | 2x nut         | M16 | 48   | 3,0       | 1,321    | 1       | 077047202 |
|                                                     | 2x sleeve 1/2" |     | 48   | 3,0       | 1,320    | 1       | 077047302 |

## Recommended values for slider GL-insert

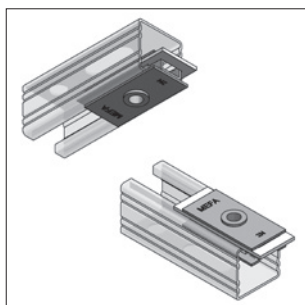
The quoted data is valid for standing and hanging mounting and point out limit values for the system function of the mounting combination.

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

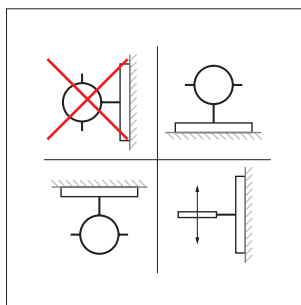
## Profile rail slider 45



Profile rail slider 45



Assembly instruction



Assembly instruction

### Specification:

For profile rail type: C-profile 45 mm

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

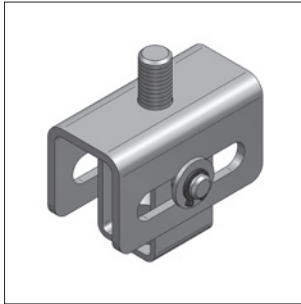
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

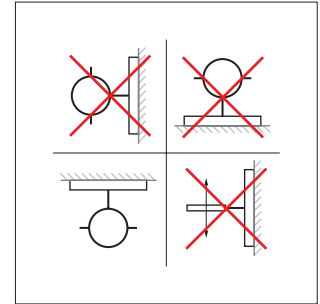
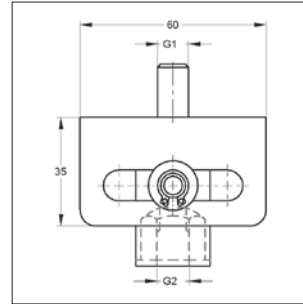
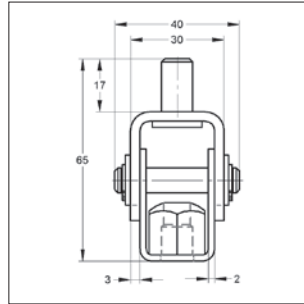
Material sliding plate: polyamide 6  
Static friction factor: 0,2 - 0,3  
Sliding friction factor: 0,15 - 0,25  
Thermal load: -30 °C up to + 110 °C

| Identification             | max. recom. distances<br>sliding body - pipe clamp |  | max. load |          | Weight | Packing | Part-No.  |
|----------------------------|----------------------------------------------------|--|-----------|----------|--------|---------|-----------|
|                            | [mm]                                               |  | hanging   | standing |        |         |           |
| Profile rail slider 45 M8  | 45                                                 |  | 2,0       | 2,0      | 0,109  | 1       | 077002801 |
| Profile rail slider 45 M10 | 55                                                 |  | 2,0       | 2,0      | 0,116  | 1       | 077003001 |
| Profile rail slider 45 M12 | 55                                                 |  | 2,0       | 2,0      | 0,125  | 1       | 077003201 |

## ■ Suspended bracket 35 mm, hanging



Suspended bracket 35 mm  
hanging



Assembly instruction

### Specification:

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

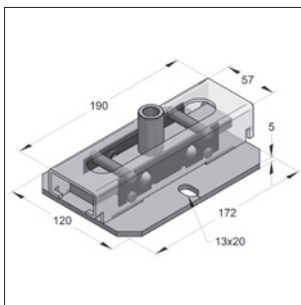
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

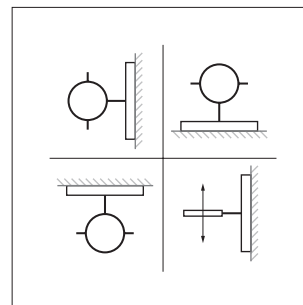
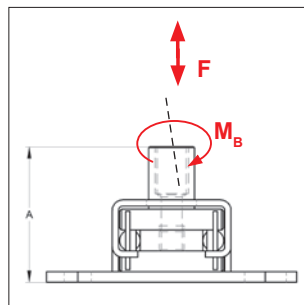
| Identification                     | G1         | G2            | Sliding distance s<br>[mm] | max. load<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|------------------------------------|------------|---------------|----------------------------|-------------------|--------------------|-------------------|----------|
| <b>Suspended bracket 35 mm M8</b>  | <b>M 8</b> | <b>M8/M10</b> | 35                         | 1,5               | 0,190              | 50                | 07709901 |
| <b>Suspended bracket 35 mm M10</b> | <b>M10</b> | <b>M8/M10</b> | 35                         | 1,5               | 0,190              | 50                | 07709902 |

04

## ■ Roller bearing



Roller bearing



Assembly instruction

### Specification:

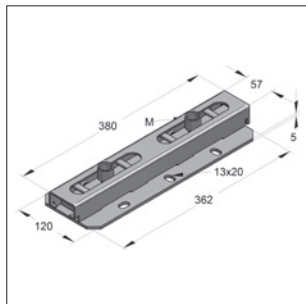
Application area: absorption of axial length expansion for standing, hanging, horizontal or vertical passed pipes

### Technical data:

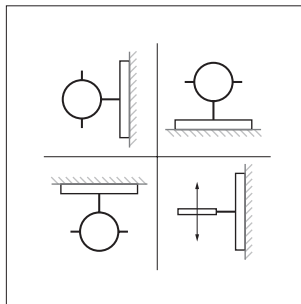
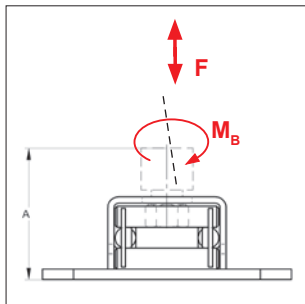
Material: steel  
Material type: S235JR  
Surface: galvanized  
Rolling resistance: 0,004 - 0,02  
Sliding distance: 120 mm  
max. temperature: up to + 300 °C

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

## Roller bearing Duo



Roller bearing Duo



Assembly instruction

### Specification:

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

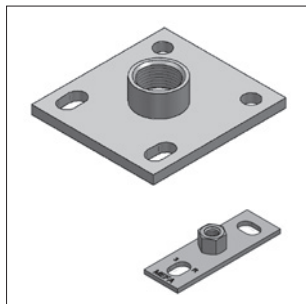
Remark: for pipe clamp size up to DN 500 may get off coupling plate, so that slide can be pushed apart. After fixing pipe clamp mount coupling plate again on both slides.

### Technical data:

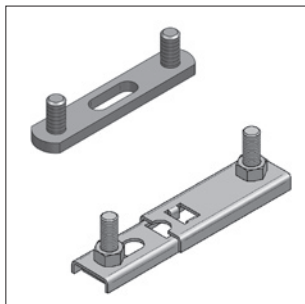
Material: steel  
Material type: S235  
Surface: galvanized  
Rolling resistance: 0,004 - 0,02  
Sliding distance: 120 mm  
max. temperature: up to +300°C

| Identification          | Connection | A<br>[mm] | max. load<br>tensile and pressure<br>load F<br>[kN] | max. load<br>bending<br>moments $M_B$<br>[Nm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.  |
|-------------------------|------------|-----------|-----------------------------------------------------|-----------------------------------------------|--------------------|------------------|-----------|
| Roller bearing Duo M10  | 2 x M10    | 65        | 8                                                   | 300                                           | 4,05               | 1                | 175911811 |
| Roller bearing Duo M12  | 2 x M12    | 65        | 8                                                   | 300                                           | 4,03               | 1                | 175911813 |
| Roller bearing Duo M16  | 2 x M16    | 65        | 8                                                   | 300                                           | 4,13               | 1                | 175911816 |
| Roller bearing Duo 1/2" | 2 x 1/2"   | 52        | 8                                                   | 300                                           | 4,03               | 1                | 175911839 |
| Roller bearing Duo 3/4" | 2 x 3/4"   | 86        | 8                                                   | 300                                           | 4,38               | 1                | 175911840 |

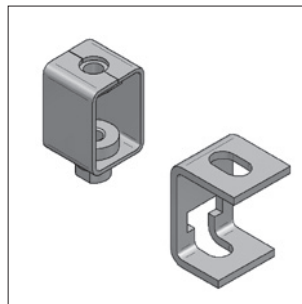
## MEFA mounting accessories



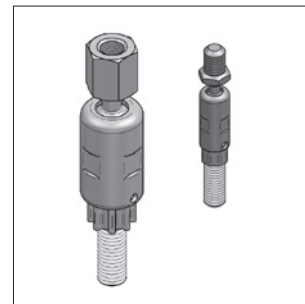
Base plates  
Page 5/2



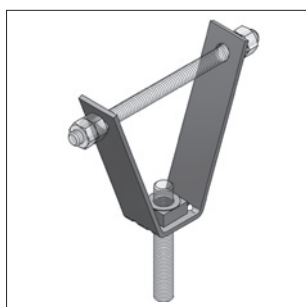
Double holder  
Page 5/4



Height-adjustable suspensions  
Page 5/5



Pendular bolt joints  
Page 5/6



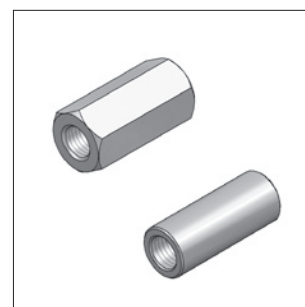
Trapeze hanger  
Page 5/7



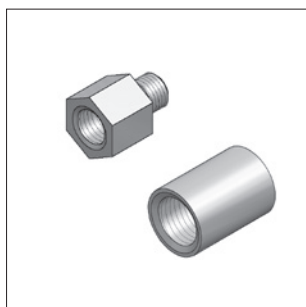
Threaded hooks, distance angles  
Page 5/8



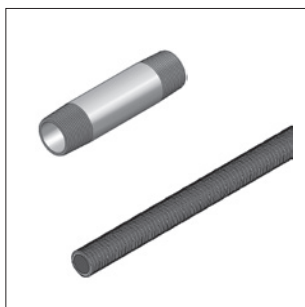
Threaded rods and bolts,  
protecting caps  
Page 5/9



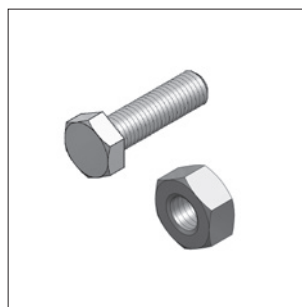
Threaded couplings, reducer  
Page 5/11



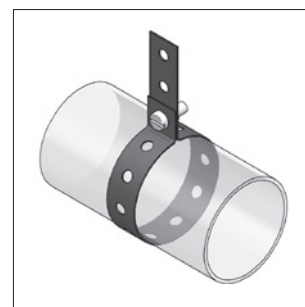
Reducer hexagon, reducing  
adaptors  
Page 5/12



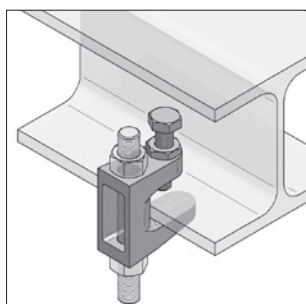
Double nipples, distance tubes  
Page 5/13



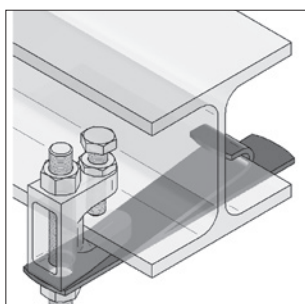
Screws, nuts and washers  
Page 5/14



MEFA Plastahl  
Page 5/21

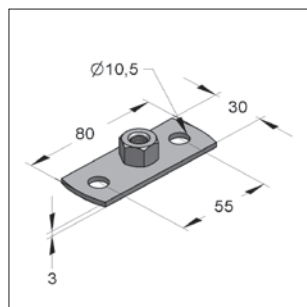


Girder clamps  
Page 5/21

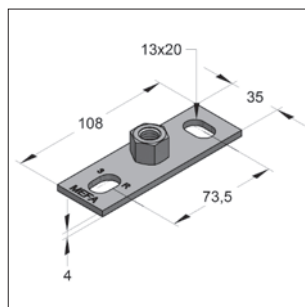


Safety lug  
Page 5/22

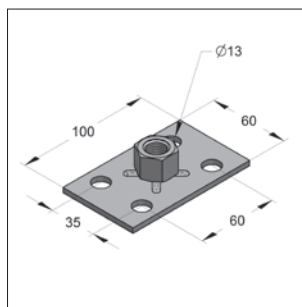
## ■ Base plates



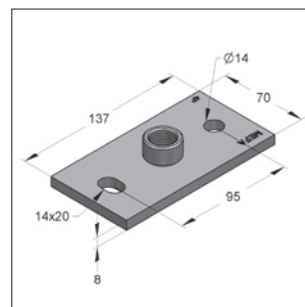
Base plate type 0



Base plate type I



Base plate type II



Base plate type III

### Specification:

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

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

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

05

### Type 0

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

### Type I

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

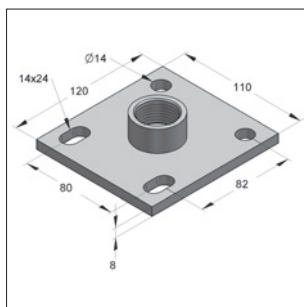
### Type II

|                    |      |                |      |      |       |    |         |
|--------------------|------|----------------|------|------|-------|----|---------|
| Base plate type II | M8   | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,186 | 50 | 0590507 |
| Base plate type II | M10  | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,197 | 50 | 0590541 |
| Base plate type II | M12  | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,205 | 50 | 0590525 |
| Base plate type II | M16  | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,231 | 50 | 0590533 |
| Base plate type II | 1/2" | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,204 | 50 | 0590509 |
| Base plate type II | 3/4" | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,217 | 50 | 0590517 |
| Base plate type II | 1"   | 100 x 60 x 4,0 | 13,0 | 3,40 | 0,251 | 50 | 0590568 |

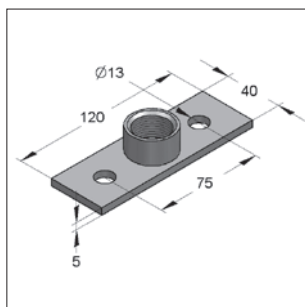
### Type III<sup>2)</sup>

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

## ■ Base plates



Base plate type IV



Base plate type V

### Specification:

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

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

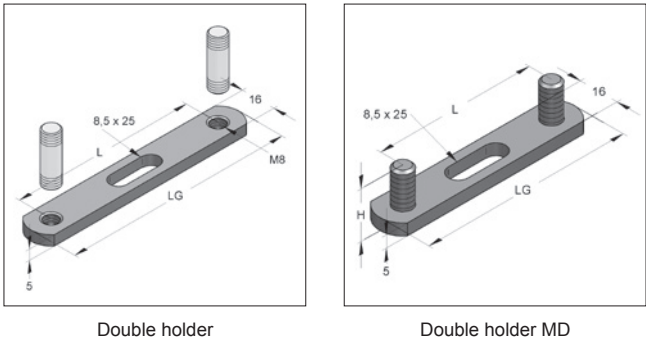
### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized<sup>1)</sup>

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

| Type IV            |        |                                                       |                     |                                 |                    |                   |          |
|--------------------|--------|-------------------------------------------------------|---------------------|---------------------------------|--------------------|-------------------|----------|
| Identification     | Thread | Dimension plate<br>length x width x thickness<br>[mm] | Perforation<br>[mm] | max. load<br>suspension<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
| Base plate type IV | M16    | 120 x 110 x 8,0                                       | 14,0 x 24,0         | 14,0                            | 0,827              | 1                 | 0590555  |
| Base plate type IV | 1/2"   | 120 x 110 x 8,0                                       | 14,0 x 24,0         | 14,0                            | 0,820              | 1                 | 0590556  |
| Base plate type IV | 3/4"   | 120 x 110 x 8,0                                       | 14,0 x 24,0         | 14,0                            | 0,833              | 1                 | 0590557  |
| Base plate type IV | 1"     | 120 x 110 x 8,0                                       | 14,0 x 24,0         | 14,0                            | 0,867              | 1                 | 0590558  |
| Base plate type IV | 1 1/4" | 120 x 110 x 8,0                                       | 14,0 x 24,0         | 14,0                            | 0,898              | 1                 | 0590559  |
| Type V             |        |                                                       |                     |                                 |                    |                   |          |
| Base plate type V  | 1/2"   | 120 x 40 x 5,0                                        | 13,0                | 2,7                             | 0,213              | 50                | 0590586  |
| Base plate type V  | 3/4"   | 120 x 40 x 5,0                                        | 13,0                | 2,7                             | 0,226              | 50                | 0590587  |
| Base plate type V  | 1"     | 120 x 40 x 5,0                                        | 13,0                | 2,7                             | 0,260              | 50                | 0590588  |

Double holder

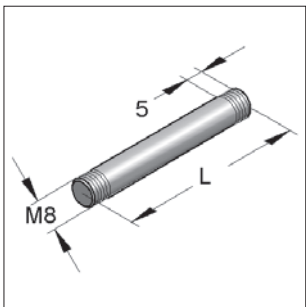


**Specification:**  
Double holder: suitable for threaded bolts with female thread  
in different lengths, without threaded bolt  
Double holder MD: with fixed threaded pin

**Technical data:**  
Material: steel  
Surface: galvanized

| Double holder    |      |               |           |      |                   |          |         |          |
|------------------|------|---------------|-----------|------|-------------------|----------|---------|----------|
| Identification   | L    | Female thread | Dimension |      | max. tensile load | Weight   | Packing | Part-No. |
|                  | [mm] | [mm]          | LG        | H    | [kN]              | [Kg/pc.] | [pcs.]  |          |
| Double holder    | 65   | M8            | 87,0      | -    | 0,2               | 0,042    | 100     | 0763071  |
| Double holder    | 85   | M8            | 105,5     | -    | 0,2               | 0,055    | 100     | 0763098  |
| Double holder    | 105  | M8            | 125,5     | -    | 0,2               | 0,068    | 100     | 0763128  |
| Double holder    | 160  | M8            | 181,0     | -    | 0,2               | 0,104    | 100     | 0763160  |
| Double holder MD |      |               |           |      |                   |          |         |          |
| Double holder MD | 65   | M8            | 85,0      | 20,0 | 0,2               | 0,055    | 50      | 0760048  |
| Double holder MD | 105  | M8            | 125,0     | 20,0 | 0,2               | 0,081    | 50      | 0760056  |

Threaded bolt

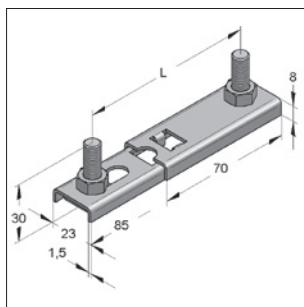


**Specification:**  
Application area: suitable for double holder  
with female thread

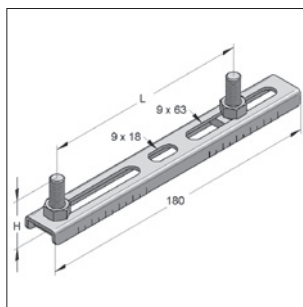
**Technical data:**  
Material: steel  
Surface: galvanized

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

## Double holder movable



Double holder VS



Double holder VSG

### Specification:

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

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

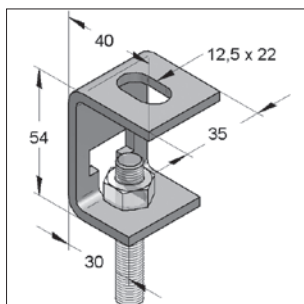
### Double holder VS

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

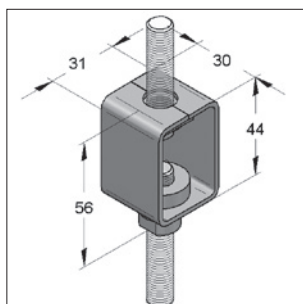
### Double holder VSG

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

## Height-adjustable suspension



Suspended bracket type T



Height adjuster

### Specification:

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

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

### Technical data:

Material: steel  
Surface: galvanized

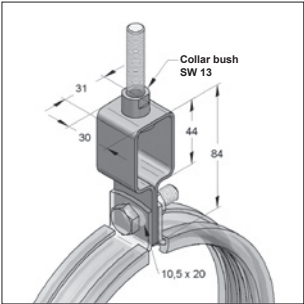
### Suspended bracket

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

### Height adjuster

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

■ Height-adjustable suspension



Height regulator

Specification:

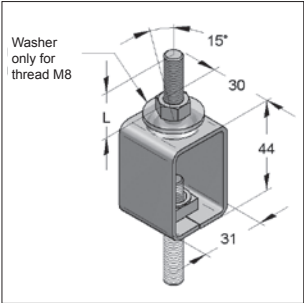
Application area:     suitable for single mounting with threaded rods  
                                 under ceiling; stepless height-adjustment

Technical data:

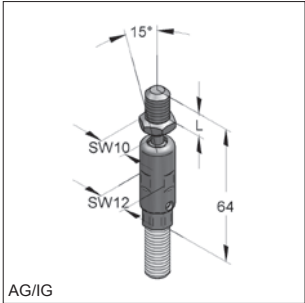
Material:           steel  
Material type: S235JR  
Surface:            galvanized

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

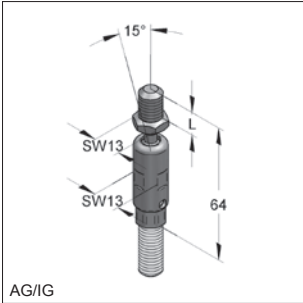
■ Pendular bolt joints



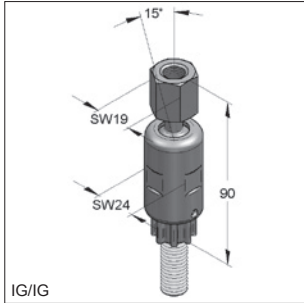
Pendulum hanger



Pendular bolt joint M8/M8



Pendular bolt joint M10/M10



Pendular bolt joint M12/M12

Specification:

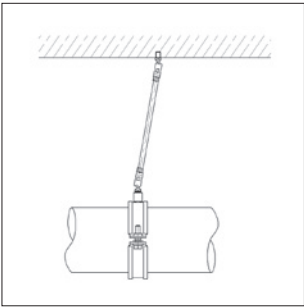
Pendular bolt joint     with inspection hole to check  
                                 the thread depth of threaded rods

Technical data:

Material:           steel  
Surface:            galvanized

Pendulum hanger:     height adjustment and pendulum function

| Identification              | Connection | Thread length L<br>[mm] | max. load<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------------|------------|-------------------------|-------------------|--------------------|-------------------|----------|
| Pendulum hanger M8/M8       | -          | 22                      | 2,5               | 0,106              | 50                | 0784031  |
| Pendulum hanger M10/M10     | -          | 22                      | 3,0               | 0,119              | 50                | 0784136  |
| Pendulum hanger M12/M12     | -          | 20                      | 3,6               | 0,137              | 50                | 0784250  |
| Pendular bolt joint M8/M8   | AG / IG    | 15                      | 2,5               | 0,04               | 50                | 0788088  |
| Pendular bolt joint M10/M10 | AG / IG    | 13                      | 2,5               | 0,037              | 50                | 0788108  |
| Pendular bolt joint M12/M12 | IG / IG    | -                       | 5,0               | 0,14               | 50                | 0788128  |

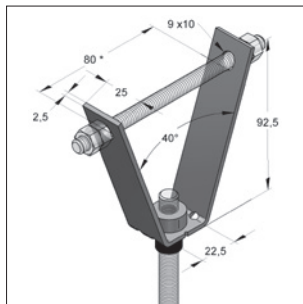


Remark:

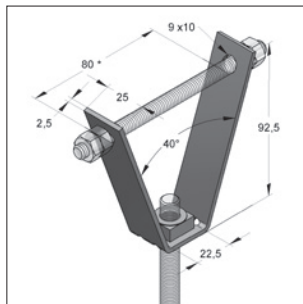
For stainless pipe mounting  
always two pendulum joints  
are required

❗ max. absorbtional tube extension when using pendular bolt joint see chapter 15

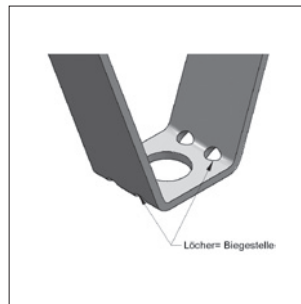
## Trapeze hanger



Trapeze hanger with  
height regulator



Trapeze hanger with  
welded nut



can bend open  
(up to approx. 120 mm)



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

### Specification:

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

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

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

\* not approved according to VdS

### With mounted height-adjustment nut

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

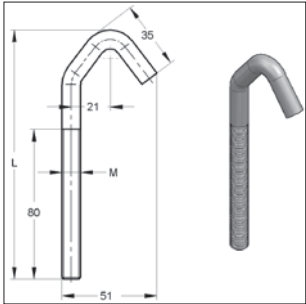
### With welded nut for mounting rails

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

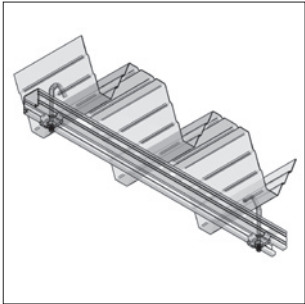
### With hole

|                              |  |     |       |     |         |
|------------------------------|--|-----|-------|-----|---------|
| Trapeze hanger hole 16,5 mm* |  | 2,0 | 0,101 | 100 | 0783801 |
|------------------------------|--|-----|-------|-----|---------|

Threaded hook



Threaded hook



Mounting example

Specification:

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

\*Load specifications refer only to component

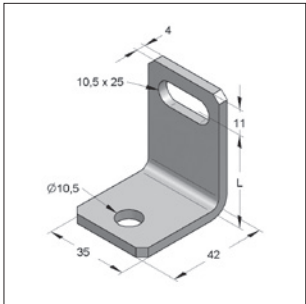
Technical data:

Material: steel  
Surface: galvanized

| Identification | Dimension<br>M x L<br>[mm] | max. load*<br>F <sub>z</sub><br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|----------------------------|--------------------------------------|--------------------|-------------------|----------|
| Threaded hook  | M8 x 130                   | 0,7                                  | 0,059              | 50                | 0592131  |
| Threaded hook  | M10 x 130                  | 1,3                                  | 0,092              | 50                | 0592132  |

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Distance angle



Distance angle E

Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

| Identification   | L<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[pc.] | Part-No. |
|------------------|-----------|--------------------|------------------|----------|
| Distance angle E | 25        | 0,069              | 1                | 0630268  |
| Distance angle E | 30        | 0,075              | 1                | 0630306  |
| Distance angle E | 35        | 0,080              | 1                | 0630357  |
| Distance angle E | 40        | 0,086              | 1                | 0630403  |
| Distance angle E | 50        | 0,097              | 1                | 0630500  |
| Distance angle E | 60        | 0,108              | 1                | 0630608  |
| Distance angle E | 70        | 0,120              | 1                | 0630705  |
| Distance angle E | 80        | 0,131              | 1                | 0630802  |
| Distance angle E | 90        | 0,142              | 1                | 0630918  |
| Distance angle E | 100       | 0,153              | 1                | 0631000  |

## ■ Protection cap, round



Protection cap, round

### Technical data:

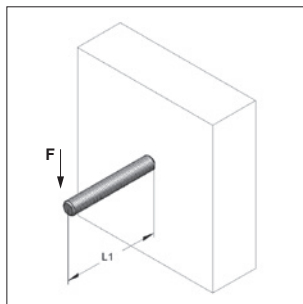
Material: plastic  
Colour: black

| Identification | Thread | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|--------|--------------------|-------------------|----------|
| Protection cap | M8     | 0,0010             | 100               | 0730008  |
| Protection cap | M10    | 0,0025             | 100               | 0730010  |
| Protection cap | M12    | 0,0075             | 100               | 0730012  |

## ■ Threaded rods



Threaded rod



### Admissible load\* on bending

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

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

### Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12, M16

Length: 1000 up to 3000 mm

### Technical data:

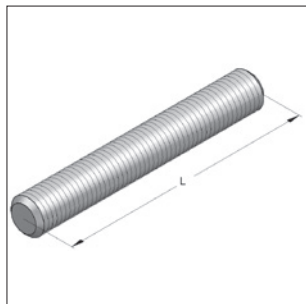
Material: steel

Surface: galvanized

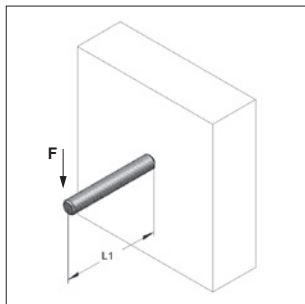
Property class: 4.6

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

## Threaded bolts



Threaded bolt



### Admissible load\* on bending

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

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

### Specification:

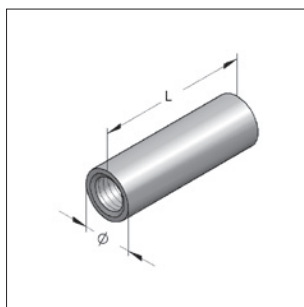
according to DIN EN ISO 976-1  
Thread: M8, M10, M12, M16  
Length: 20 up to 160 mm

### Technical data:

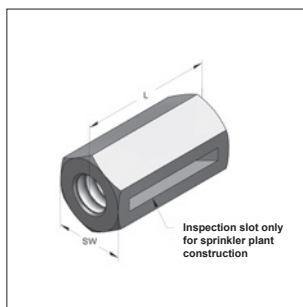
Material: steel  
Surface: galvanized  
Property class: 4.6

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

## Threaded coupling



Threaded coupling, round

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

Application area: For extension of threaded rods.

Hexagonal distance sleeve with checking taps, for sprinkler installations.

Remark: Fire loads on demand

**Technical data:**

Material: steel

Surface: galvanized<sup>1)</sup><sup>1)</sup> Components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on request!
**Threaded coupling, round**

| Identification           | Female thread | L [mm] | OD [mm] | SW [mm] | Weight [Kg/pc.] | Packing [pcs.] | Part-No. |
|--------------------------|---------------|--------|---------|---------|-----------------|----------------|----------|
| Threaded coupling, round | M6            | 25     | 10      | -       | 0,012           | 100            | 0700010  |
| Threaded coupling, round | M8            | 30     | 11      | -       | 0,015           | 100            | 0700029  |
| Threaded coupling, round | M10           | 40     | 13      | -       | 0,024           | 100            | 0700037  |
| Threaded coupling, round | M12           | 40     | 15      | -       | 0,030           | 100            | 0700045  |
| Threaded coupling, round | M16           | 50     | 22      | -       | 0,091           | 25             | 0700053  |

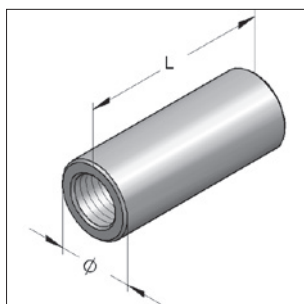
**Threaded coupling hexagon**

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

**Threaded coupling hexagon, with inspection hole**

|                                                 |    |    |   |    |       |     |         |
|-------------------------------------------------|----|----|---|----|-------|-----|---------|
| Threaded coupling hexagon, with inspection hole | M8 | 25 | - | 13 | 0,027 | 100 | 0700092 |
|-------------------------------------------------|----|----|---|----|-------|-----|---------|

## Reducing socket



Reducing socket, round

**Specification:**

Version: round

Remark: Fire loads on demand

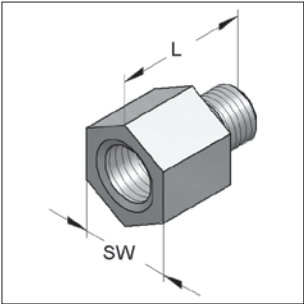
**Technical data:**

Material: steel

Surface: galvanized

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

Reducer hexagon



Reducer hexagon

Specification:

Version: hexagon  
Female- and male thread

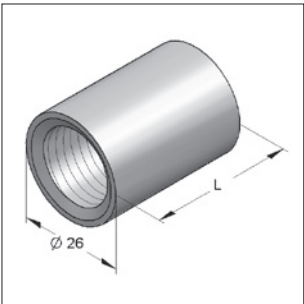
Technical data:

Material: steel  
Surface: galvanized

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

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Reducing adaptor



Reducing adaptor

Specification:

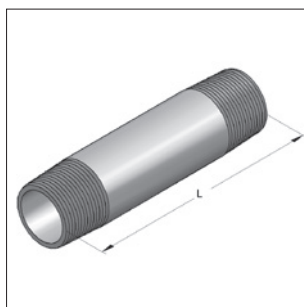
Application area: for all MEFA pipe clamps with welded nut M8 or M10.  
Applicable as transition for M8 or M10 to 1/2".  
Version M8: suited threaded bolt M8x20  
Version M10: suited threaded bolt M10x20

Technical data:

Material: steel  
Surface: galvanized

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

## Double nipple



Double nipple

**Specification:**

Length: 40 up to 150 mm

**Technical data:**

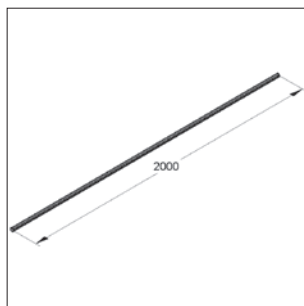
Material: steel

Surface: galvanized

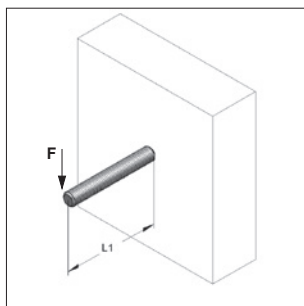
| Identification | Thread | L<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[pc.] | Part-No. |
|----------------|--------|-----------|--------------------|------------------|----------|
| Double nipple  | 1/2"   | 40        | 0,037              | 1                | 0700403  |
| Double nipple  | 1/2"   |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

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## Distance tube



Distance tube


**Admissible load\* on bending**

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

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

Version: tube with male thread

Thread: according to DIN EN ISO 228 „G“

**Technical data:**

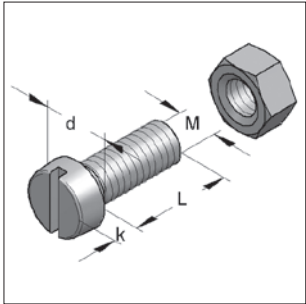
Material: steel

Surface: galvanized

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

| Identification | Thread | Length<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[m] | Part-No. |
|----------------|--------|----------------|--------------------|----------------|----------|
| Distance tube  | 1/2"   | 2000           | 1,88               | 2              | 0737002  |
| Distance tube  | 3/4"   | 2000           | 2,78               | 2              | 0737003  |
| Distance tube  | 1"     | 2000           | 5,18               | 2              | 0737004  |
| Distance tube  | 1 1/4" | 2000           | 6,66               | 2              | 0737005  |

■ Slotted screw



Slotted screw

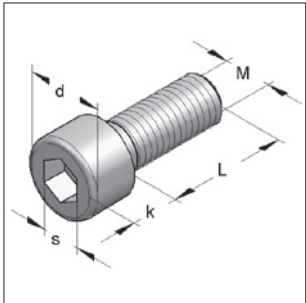
**Specification:**  
Scope of delivery: with nut according to  
DIN EN ISO 4032

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

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

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■ Allen screw



Allen screw

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

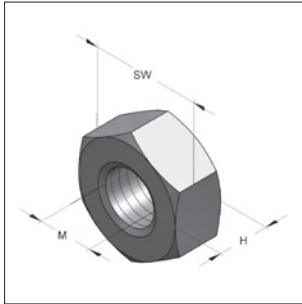
**Technical data:**  
Material: steel  
Surface: galvanized<sup>1)</sup>

Needed accessory: washer according to DIN EN ISO 7089

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

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

## Hexagon nut



Hexagon nut

**Specification:**

according to DIN EN ISO 4032

**Technical data:**

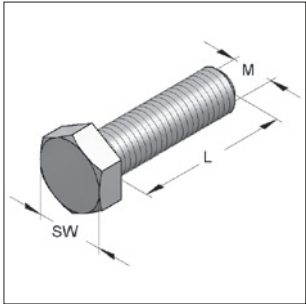
Material: steel

Surface: galvanized

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

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

Hexagon screw



Hexagon screw

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

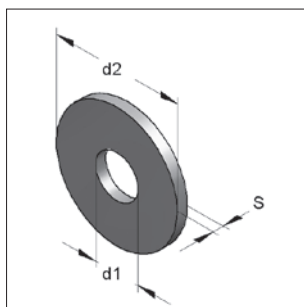
**Technical data:**  
Material: steel  
Surface: galvanized<sup>1)</sup>  
Property class: 8.8

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

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

## Washer



Washer

(according to DIN EN-ISO 7089)

**Specification:**

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

**Technical data:**

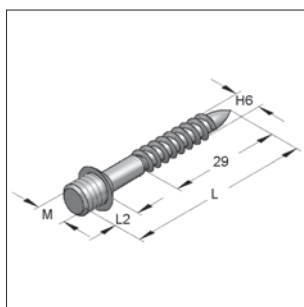
Material: steel  
Surface: galvanized<sup>1)</sup>

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

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

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## Bolt screw



Bolt screw

with wood- and metric thread

**Specification:**

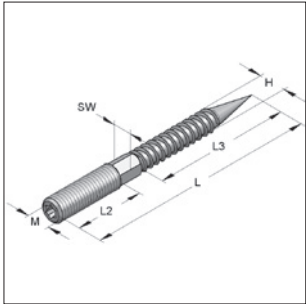
Version: with wood- and metric thread

**Technical data:**

Material: steel  
Surface: galvanized

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

Hanger bolt



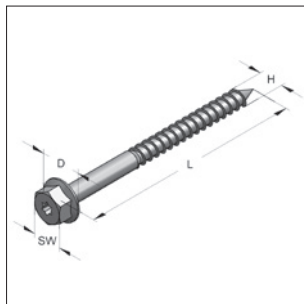
Hanger bolt  
multi-tooth TX 25

| Specification: |                                           | Technical data: |            |
|----------------|-------------------------------------------|-----------------|------------|
| Version:       | with wood- and metric thread              | Material:       | steel      |
|                | multi-tooth TX 25                         | Surface:        | galvanized |
|                | * Specification without multi-tooth TX 25 |                 |            |

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

## Wood screw with washer



Wood screw with washer

**Specification:**

Version: with contact pressed washer

**Technical data:**

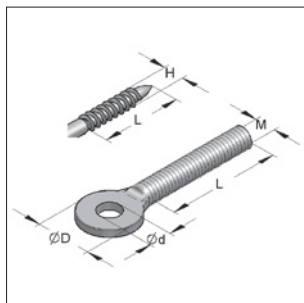
Material: steel

Surface: galvanized

| Identification         | Thread<br>H L<br>[mm] |     | Wrench size<br>SW | Torx drive | D x t<br>[mm] | Recommended<br>anchor K2 | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|------------------------|-----------------------|-----|-------------------|------------|---------------|--------------------------|--------------------|-------------------|-----------|
| Wood screw with washer | 8                     | 50  | 13                | -          | 25 x 1,5      | 10 x 44                  | 0,022              | 100               | 3500012   |
| Wood screw with washer | 8                     | 60  | 13                | 30         | 18 x 2,0      | 10 x 44                  | 0,024              | 100               | 350002018 |
| Wood screw with washer | 8                     | 70  | 13                | 30         | 18 x 2,0      | 10 x 60                  | 0,025              | 100               | 350003918 |
| Wood screw with washer | 8                     | 80  | 13                | 30         | 18 x 2,0      | 10 x 60                  | 0,029              | 100               | 350004718 |
| Wood screw with washer | 8                     | 90  | 13                | -          | 25 x 1,5      | 10 x 60                  | 0,033              | 100               | 3500055   |
| Wood screw with washer | 8                     | 100 | 13                | -          | 25 x 1,5      | 10 x 60                  | 0,036              | 100               | 3500063   |

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## Eye screw



Eye screw

**Specification:**

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

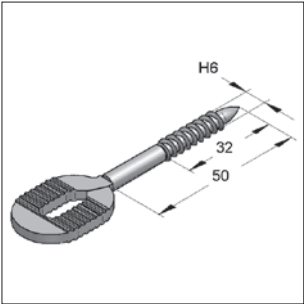
**Technical data:**

Material: steel

Surface: galvanized

| Identification | Thread | L<br>[mm] | Ø D<br>[mm] | Ø d<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|--------|-----------|-------------|-------------|--------------------|-------------------|----------|
| Eye screw      | H6     | 32        | 18          | 9,0         | 0,012              | 100               | 1180010  |
| Eye screw      | M8     | 20        | 21          | 8,5         | 0,014              | 100               | 1190059  |
| Eye screw      | M8     | 45        | 21          | 8,5         | 0,022              | 100               | 1190024  |
| Eye screw      | M10    | 20        | 25          | 12,0        | 0,023              | 100               | 1190040  |
| Eye screw      | M10    | 45        | 25          | 12,0        | 0,035              | 100               | 1190032  |

Elongated hole screw



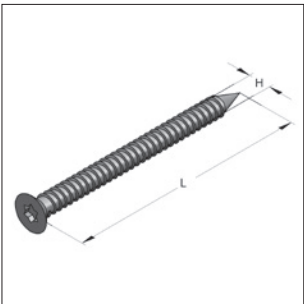
Elongated hole screw

| Specification: |                  | Technical data: |            |
|----------------|------------------|-----------------|------------|
| Version:       | with wood thread | Material:       | steel      |
|                |                  | Surface:        | galvanized |

| Identification       | Thread | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------------|--------|--------------------|-------------------|----------|
| Elongated hole screw | H 6    | 0,022              | 100               | 1140019  |

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Countersunk woodscrew

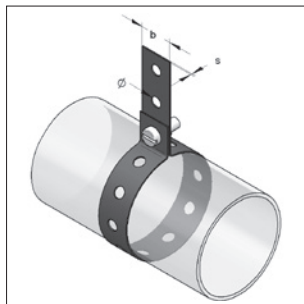


Countersunk woodscrew

| Specification: |                                          | Technical data: |            |
|----------------|------------------------------------------|-----------------|------------|
| Version:       | Countersunk woodscrew<br>with torx drive | Material:       | steel      |
|                |                                          | Surface:        | galvanized |

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

## MEFA Plastahl



Mounting steel belt -  
PLASTAHL

**Specification:**

Application: suspension of round and squared channel ducts

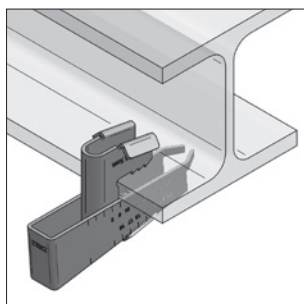
**Technical data:**

max. load  
against breaking: determined safety factor 3

| Identification                   | Dimension width | Steel band<br>[mm] | OD<br>[mm] | max. load<br>[kN] | Delivery length<br>[m] | Weight<br>[kg/m] | Packing<br>[m] | Part-No. |
|----------------------------------|-----------------|--------------------|------------|-------------------|------------------------|------------------|----------------|----------|
| <b>PLASTAHL - plastic coated</b> | <b>19</b>       | 17 x 0,8           | 6,4        | 0,8               | 10                     | 0,12             | 10             | 1100017  |
| <b>PLASTAHL - plastic coated</b> | <b>27</b>       | 25 x 1,0           | 8,4        | 1,4               | 10                     | 0,16             | 10             | 1100025  |
| <b>Steel band, galvanized</b>    | <b>17</b>       | 17 x 0,8           | 6,4        | 0,8               | 10                     | 0,08             | 10             | 1110012  |
| <b>Steel band, galvanized</b>    | <b>25</b>       | 25 x 1,0           | 8,4        | 1,4               | 10                     | 0,15             | 10             | 1110020  |

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## Girder clamp TKM



Girder clamp TKM



G 413 001


**Specification:**

Application area: fast and simple mounting at steel structures and profiles

Mounting: Girder clamp for stroking by hammer (3 graduation marks).

\* not approved according to FM

**Technical data:**

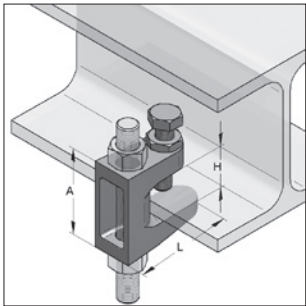
Material: steel

Surface: galvanized

Approval: VdS and FM  
VdS G 413001

| Identification                  | clamping range<br>[mm] | for threaded rod | max. load<br>$F_z$<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pc.] | Part-No. |
|---------------------------------|------------------------|------------------|----------------------------|--------------------|------------------|----------|
| <b>Girder clamp TKM 1 M 8 *</b> | <b>8 - 20</b>          | M6-M8            | 2,0                        | 0,159              | 25               | 05799908 |
| <b>Girder clamp TKM 2 M10</b>   | <b>8 - 20</b>          | M10              | 3,5                        | 0,161              | 25               | 05799910 |
| <b>Girder clamp TKM 3 M12</b>   | <b>8 - 20</b>          | M12              | 5,0                        | 0,167              | 25               | 05799912 |
| <b>Girder clamp TKM 4 M16</b>   | <b>11 - 26</b>         | M16              | 10,0                       | 0,290              | 16               | 05799916 |

Girder clamp, cast iron



Girder clamp, cast iron



G 400 0005  
G 403 0026  
G 491 0044



Specification:

Application area: fast and simple mounting at steel structures and profiles

Variable height-adjustment: possible via hole  
possible via thread

Clamboltg screw: stepless adjustment of different clamboltg strengths

Technical data:

Material: malleable cast iron

Surface: galvanized

Approval: VdS and FM (starting with M10) approved

<sup>1)</sup> VdS-approval number: G 400 0005

<sup>2)</sup> VdS-approval number: G 491 0044

<sup>3)</sup> VdS-approval number: G 403 0026

With hole

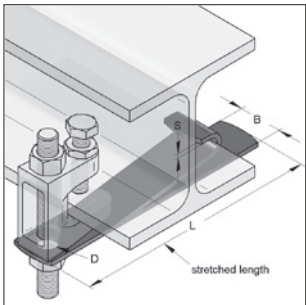
| Identification                    | Thread  | Borehole<br>[mm] | L<br>[mm] | A<br>[mm] | H<br>[mm] | max. load<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------------------|---------|------------------|-----------|-----------|-----------|-------------------|--------------------|-------------------|----------|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

With thread

|                                   |     |   |    |    |    |     |       |    |         |
|-----------------------------------|-----|---|----|----|----|-----|-------|----|---------|
| Girder clamp TKN 8 <sup>1)</sup>  | M8  | - | 32 | 37 | 18 | 1,2 | 0,081 | 50 | 0579558 |
| Girder clamp TKN 10 <sup>1)</sup> | M10 | - | 44 | 42 | 20 | 2,5 | 0,143 | 50 | 0579560 |
| Girder clamp TK 12 <sup>2)</sup>  | M12 | - | 58 | 54 | 26 | 3,5 | 0,216 | 50 | 0579562 |
| Girder clamp TK 16 <sup>3)</sup>  | M16 | - | 58 | 58 | 26 | 5,5 | 0,318 | 50 | 0579548 |

mounting example see chapter 15

Safety lug



Safety lug

Specification:

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

Technical data:

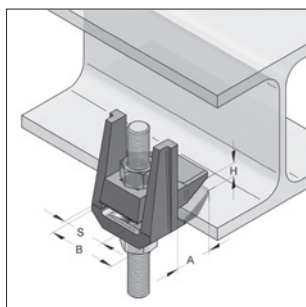
Material: steel

Material type: S235JR

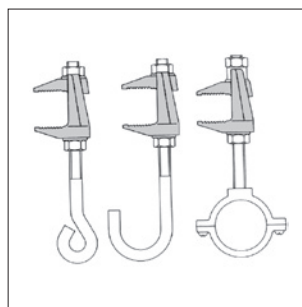
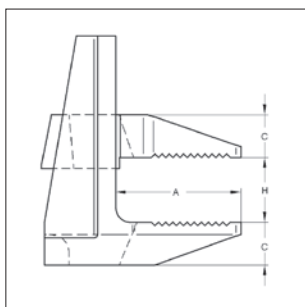
Surface: galvanized

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

## ■ Girder clamp F3, two-part



Girder clamp F3  
two-part



### Specification:

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

\* safety factor 4:1 against breaking

### Technical data:

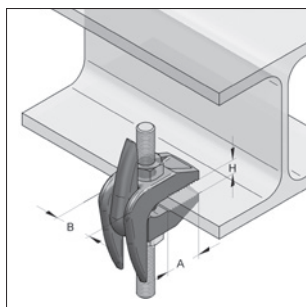
Material: malleable cast iron  
Surface: hot-dip galvanized

Remark: Not suitable for disposed flanges

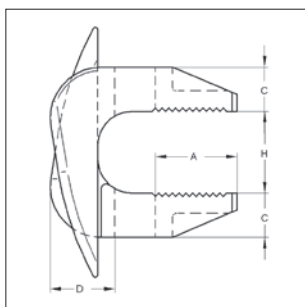
| Identification | Type   | Suited thread | max. load tensile* [kN] | Tightening torque (property class screw 4.6) [Nm] | Dimension |        |        |        |        | Weight [Kg/pc.] | Packing [pc.] | Part-No. |
|----------------|--------|---------------|-------------------------|---------------------------------------------------|-----------|--------|-------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

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## ■ Girder clamp F9



Girder clamp F9



### Specification:

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

Remark: Not suitable for disposed flanges

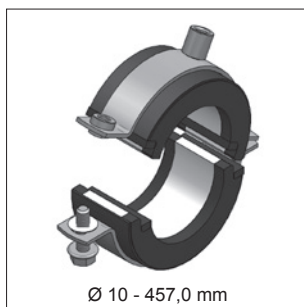
\* safety factor 5:1 against breaking

### Technical data:

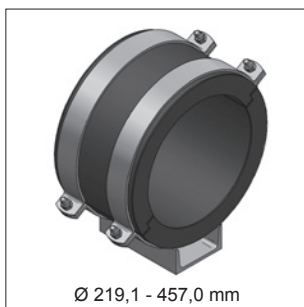
Material: malleable cast iron  
Surface: galvanized

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

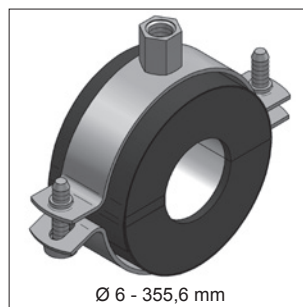
## MEFA insulated pipe clamps



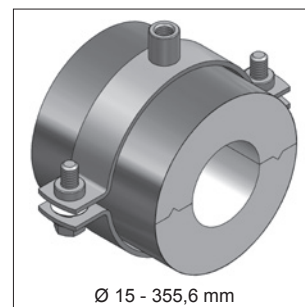
Ø 10 - 457,0 mm  
Polar plus  
insulated pipe clamp  
Page 6/2



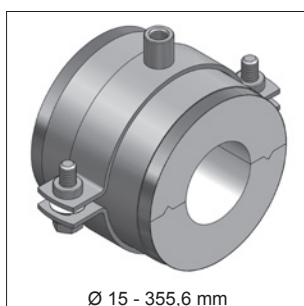
Ø 219,1 - 457,0 mm  
Polar plus sliding sledge  
U120 / U140  
Page 6/5



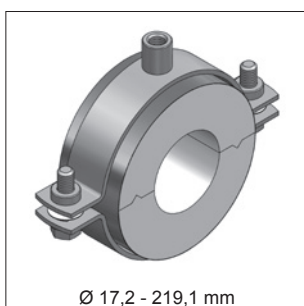
Ø 6 - 355,6 mm  
Husky  
insulated pipe clamp  
Page 6/6



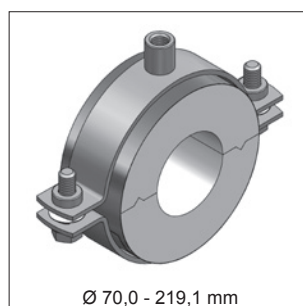
Ø 15 - 355,6 mm  
ALU/PU >80<  
insulated pipe clamp  
Page 6/9



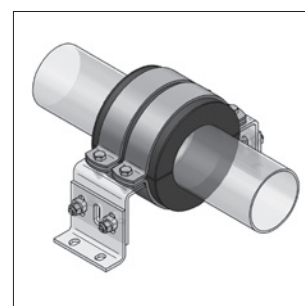
Ø 15 - 355,6 mm  
ALU/PU >80< insulated  
pipe clamp with sheet jacket  
Page 6/9



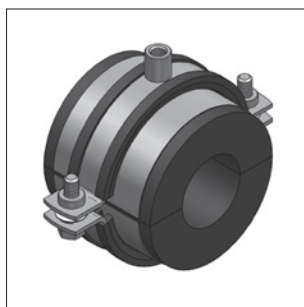
Ø 17,2 - 219,1 mm  
ALU/PU >80< s  
insulated pipe clamp  
Page 6/12



Ø 70,0 - 219,1 mm  
ALU/PU >80< s insulated pipe  
clamp with half jacket  
Page 6/12



Insulated fixpoint  
Page 6/14

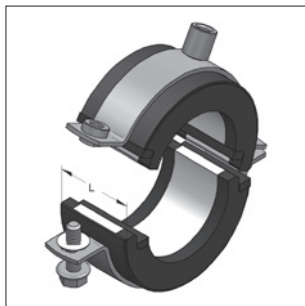


Foamglas®  
insulated pipe clamp  
Page 6/14



PUR-assembling glue  
Page 6/15

## ■ Polar plus insulated pipe clamp



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

- Pipe clamp body situated outside of insulation
- Joining surface of half shells sealed with synthetic rubber cushion at joints
- No gluing on site
- Assembly unit can be opened again after closing
- High water vapor diffusion resistance and low thermal conductivity
- Pipe clamps and insulation glued together and form an assembly unit
- Rubber completion on face side

### Application range

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

A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping

### Materials

#### Polyurethane rigid foam (PU):

Density: 145 kg/m<sup>3</sup>  
 Static load: 0,38 N/mm<sup>2</sup>  
 (according to AGI Q 03 only 20 % of average nominal compressive strength)

Average nominal compressive strength: 1,9 N/mm<sup>2</sup>

**Synthetic rubber (elastomer):**  $\mu \geq 7000$

#### Bracket-system: Pipe clamp

Material: steel  
 Material type: DD11 (Omnia MB),  
 DD11 / S235JRG2 (Maxima PSM)  
 S235JRG2 (Titan HD)  
 S235JR (Pipe clamp form A, type TGA)  
 Surface: galvanized  
 Coating: acrylic dispersion (vapour barrier)  
 $\mu \geq 36000$

### Technical data

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

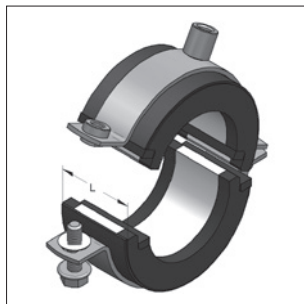
**Temperature range:** - 50 °C up to + 105 °C

#### Thermal conductivity according to DIN EN 12667

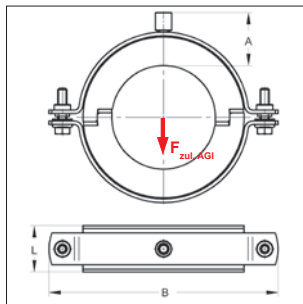
Thermal conductivity: 0,031 W/mk



## ■ Polar plus insulated pipe clamp



Polar plus insulated pipe clamp  
(with clamp Maxima PSM)



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

customized demand on request!

\* Delivery time on request

### Insulation thickness 20 mm

| Steel<br>[mm] | OD             |                 | Pipe clamp<br>type | Connection | Dimension |           | max. load<br>$F_{max. AGI}^{**}$<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|---------------|----------------|-----------------|--------------------|------------|-----------|-----------|------------------------------------------|--------------------|-------------------|----------|
|               | Copper<br>[mm] | Plastic<br>[mm] |                    |            | A<br>[mm] | B<br>[mm] |                                          |                    |                   |          |
| 17,2          | 10*            |                 | Omnia MB           | M8/M10     | 37        | 89        | 0,18                                     | 0,111              | 20                | 74620100 |
|               | 12*            |                 | Omnia MB           | M8/M10     | 37        | 89        | 0,18                                     | 0,111              | 20                | 74620120 |
|               | 15             |                 | Omnia MB           | M8/M10     | 37        | 89        | 0,18                                     | 0,111              | 20                | 74620150 |
|               |                |                 | Omnia MB           | M8/M10     | 38        | 92        | 0,21                                     | 0,121              | 20                | 74620170 |
| 21,3          | 18             |                 | Omnia MB           | M8/M10     | 38        | 92        | 0,21                                     | 0,121              | 20                | 74620180 |
|               |                |                 | Omnia MB           | M8/M10     | 37        | 92        | 0,25                                     | 0,126              | 20                | 74620210 |
| 26,9          | 22             |                 | Omnia MB           | M8/M10     | 37        | 92        | 0,26                                     | 0,121              | 20                | 74620220 |
|               |                |                 | Omnia MB           | M8/M10     | 37        | 101       | 0,32                                     | 0,126              | 20                | 74620270 |
| 33,7          | 28             |                 | Omnia MB           | M8/M10     | 37        | 101       | 0,33                                     | 0,140              | 20                | 74620280 |
|               |                | 32*             | Omnia MB           | M8/M10     | 40        | 113       | 0,38                                     | 0,141              | 20                | 74620320 |
|               |                |                 | Omnia MB           | M8/M10     | 38        | 113       | 0,40                                     | 0,138              | 20                | 74620340 |
|               |                |                 | Omnia MB           | M8/M10     | 38        | 113       | 0,42                                     | 0,141              | 20                | 74620350 |
| 42,4          | 35             |                 | Omnia MB           | M8/M10     | 40        | 117       | 0,48                                     | 0,156              | 20                | 74620400 |
|               | 42             | 40*             | Omnia MB           | M8/M10     | 38        | 117       | 0,51                                     | 0,170              | 20                | 74620430 |
| 48,3          |                |                 | Omnia MB           | M8/M10     | 39        | 124       | 0,58                                     | 0,164              | 20                | 74620480 |
|               |                | 50*             | Omnia MB           | M8/M10     | 39        | 124       | 0,60                                     | 0,164              | 20                | 74620500 |
| 57,0          | 54             |                 | Omnia MB           | M8/M10     | 37        | 124       | 0,65                                     | 0,162              | 20                | 74620540 |
|               |                |                 | Omnia MB           | M8/M10     | 40        | 136       | 0,79                                     | 0,158              | 20                | 74620570 |
| 60,3          |                |                 | Omnia MB           | M8/M10     | 38        | 136       | 0,84                                     | 0,239              | 15                | 74620600 |
| 63,5          | 64             |                 | Omnia MB           | M8/M10     | 39        | 143       | 0,89                                     | 0,253              | 15                | 74620640 |
|               |                | 75*             | Omnia MB           | M8/M10     | 39        | 152       | 1,05                                     | 0,271              | 15                | 74620750 |
| 76,1          |                |                 | Omnia MB           | M8/M10     | 38        | 152       | 1,06                                     | 0,271              | 15                | 74620760 |
| 88,9          |                |                 | Omnia MB           | M8/M10     | 39        | 165       | 1,24                                     | 0,296              | 15                | 74620890 |
| 108,0         |                |                 | Maxima PSM         | M10/M12    | 45        | 226       | 1,93                                     | 0,844              | 10                | 74621080 |
| 114,3         |                |                 | Maxima PSM         | M10/M12    | 45        | 226       | 2,05                                     | 0,810              | 10                | 74621140 |

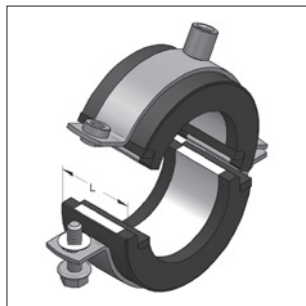
### Insulation thickness 30 mm

|        |      |     |            |         |    |     |      |       |    |           |
|--------|------|-----|------------|---------|----|-----|------|-------|----|-----------|
| 42,4*  |      |     | Omnia MB   | M8/M10  | 48 | 136 | 0,59 | 0,251 | 20 | 74630430  |
| 48,3   |      |     | Omnia MB   | M8/M10  | 48 | 143 | 0,67 | 0,264 | 20 | 74630480  |
|        |      | 50* | Omnia MB   | M8/M10  | 51 | 152 | 0,70 | 0,284 | 20 | 74630500  |
| 57,0*  | 54*  |     | Omnia MB   | M8/M10  | 49 | 152 | 0,75 | 0,282 | 20 | 74630540  |
|        |      |     | Omnia MB   | M8/M10  | 47 | 152 | 0,79 | 0,282 | 20 | 74630570  |
| 60,3   |      |     | Omnia MB   | M8/M10  | 49 | 158 | 0,84 | 0,299 | 15 | 74630600  |
| 63,5*  | 64*  |     | Omnia MB   | M8/M10  | 48 | 158 | 0,89 | 0,298 | 15 | 74630640  |
|        |      | 75* | Omnia MB   | M8/M10  | 49 | 175 | 1,05 | 0,326 | 15 | 74630750  |
| 76,1   |      |     | Omnia MB   | M8/M10  | 48 | 175 | 1,06 | 0,325 | 15 | 74630760  |
| 88,9   |      |     | Omnia MB   | M10/M12 | 59 | 206 | 1,24 | 0,442 | 15 | 74630890  |
| 108,0* |      |     | Maxima PSM | M10/M12 | 55 | 240 | 1,93 | 0,925 | 10 | 74631080  |
|        | 110* |     | Maxima PSM | M10/M12 | 54 | 240 | 1,97 | 0,923 | 10 | 74631100  |
| 114,3  |      |     | Maxima PSM | M10/M12 | 57 | 252 | 2,05 | 0,981 | 10 | 74631140  |
|        | 125* |     | Maxima PSM | M10/M12 | 55 | 258 | 2,24 | 1,001 | 1  | 74631250  |
| 133,0* |      |     | Maxima PSM | M10/M12 | 55 | 265 | 2,38 | 1,029 | 1  | 74631330  |
| 139,7  |      |     | Maxima PSM | M10/M12 | 55 | 272 | 2,50 | 1,057 | 1  | 74631400  |
| 159,0* |      |     | Maxima PSM | M10/M12 | 57 | 297 | 2,85 | 1,163 | 1  | 74631590  |
|        | 160* |     | Maxima PSM | M10/M12 | 57 | 297 | 2,87 | 1,161 | 1  | 74631600  |
| 168,3  |      |     | Maxima PSM | M10/M12 | 45 | 307 | 3,16 | 1,144 | 1  | 746316802 |
| 219,1  |      |     | Titan HD   | M16     | 45 | 358 | 5,23 | 2,230 | 1  | 746321902 |

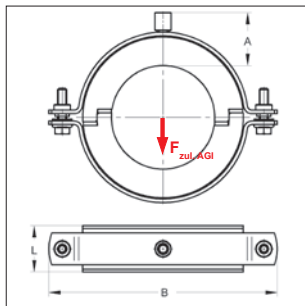
assembly instruction see chapter 15

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

## ■ Polar plus insulated pipe clamp



Polar plus insulated pipe clamp  
(with clamp Maxima PSM)



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

customized demand on request!

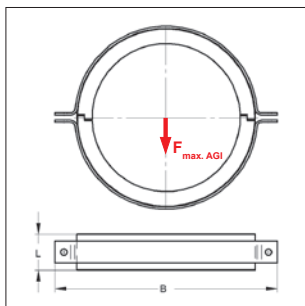
\* Delivery time on request

### Insulation thickness 40 mm

| Steel<br>[mm] | OD             |                 | Pipe clamp<br>type | Connection | Dimension |           | max. load<br>$F_{\text{max, AGI}}^{**}$<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No.  |
|---------------|----------------|-----------------|--------------------|------------|-----------|-----------|-------------------------------------------------|--------------------|-------------------|-----------|
|               | Copper<br>[mm] | Plastic<br>[mm] |                    |            | A<br>[mm] | B<br>[mm] |                                                 |                    |                   |           |
| 108,0*        |                |                 | Maxima PSM         | M10/M12    | 67        | 265       | 1,93                                            | 1,062              | 10                | 74641080  |
|               |                | 110*            | Maxima PSM         | M10/M12    | 66        | 265       | 1,97                                            | 1,060              | 10                | 74641100  |
| 114,3         |                |                 | Maxima PSM         | M10/M12    | 64        | 265       | 2,05                                            | 1,054              | 10                | 74641140  |
|               |                | 125*            | Maxima PSM         | M10/M12    | 66        | 278       | 2,24                                            | 1,104              | 1                 | 74641250  |
| 133,0*        |                |                 | Maxima PSM         | M10/M12    | 66        | 287       | 2,38                                            | 1,154              | 1                 | 74641330  |
| 139,7         |                |                 | Maxima PSM         | M10/M12    | 67        | 297       | 2,50                                            | 1,198              | 1                 | 74641400  |
| 159,0*        |                |                 | Maxima PSM         | M10/M12    | 67        | 315       | 2,85                                            | 1,261              | 1                 | 74641590  |
|               |                | 160*            | Maxima PSM         | M10/M12    | 66        | 315       | 2,87                                            | 1,259              | 1                 | 74641600  |
| 168,3*        |                |                 | Titan HD           | M16        | 56        | 330       | 4,02                                            | 2,160              | 1                 | 746416802 |
| 219,1         |                |                 | Titan HD           | M16        | 55        | 380       | 5,23                                            | 2,555              | 1                 | 746421903 |
| 273,0         |                |                 | Titan HD           | M16        | 56        | 428       | 6,52                                            | 2,957              | 1                 | 746427302 |
| 323,9         |                |                 | Titan HD           | M16        | 56        | 486       | 7,73                                            | 3,354              | 1                 | 746432404 |



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



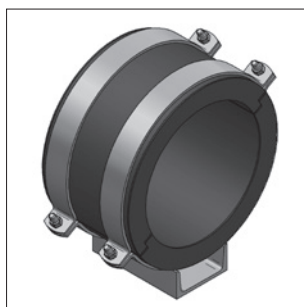
### Insulation thickness 40 mm

| OD<br>Steel<br>[mm] | Pipe clamp<br>type | Ø Flange<br>punch hole<br>[mm] | Connection | Dimension |           | max. load<br>$F_{\text{max, AGI}}^{**}$<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|---------------------|--------------------|--------------------------------|------------|-----------|-----------|-------------------------------------------------|--------------------|-------------------|----------|
|                     |                    |                                |            | L<br>[mm] | B<br>[mm] |                                                 |                    |                   |          |
| 355,6*              | TGA                | 17                             | -          | 86        | 560       | 9,91                                            | 5,041              | 1                 | 74643560 |
| 406,4               | TGA                | 17                             | -          | 86        | 610       | 11,32                                           | 5,561              | 1                 | 74644060 |
| 457,0*              | TGA                | 17                             | -          | 86        | 660       | 12,73                                           | 6,079              | 1                 | 74644570 |

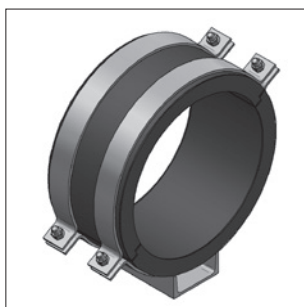
assembly instruction see chapter 15

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

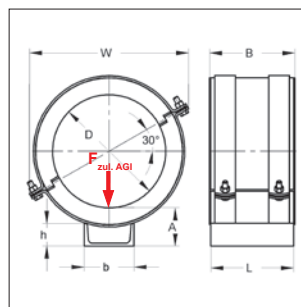
## ■ Polar plus sliding sledge U120 / U140



Polar plus sliding sledge 120



Polar plus sliding sledge 140



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

Delivery time and variant demand on request!

### Specification:

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

### Technical data:

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

### Insulation thickness 40 mm

| OD<br>Steel<br>[mm] | Shell lenght<br>B<br>[mm] | Material<br>pipe clamp | U-Steel<br>b x h x L<br>[mm] | Dimension |           | max. load              | Weight   | Packing | Part-No. |
|---------------------|---------------------------|------------------------|------------------------------|-----------|-----------|------------------------|----------|---------|----------|
|                     |                           |                        |                              | A<br>[mm] | W<br>[mm] | $F_{max. AGI}$<br>[kN] | [Kg/pc.] | [pcs.]  |          |
| 219,1               | 181                       | 50 x 5,0               | 120 x 55 x 175               | 90        | 336       | 5,06                   | 7,81     | 1       | 74742219 |
| 273,0               | 206                       | 50 x 5,0               | 120 x 55 x 200               | 93        | 384       | 6,89                   | 9,31     | 1       | 74742273 |
| 323,9               | 226                       | 50 x 5,0               | 140 x 60 x 220               | 96        | 427       | 8,70                   | 11,16    | 1       | 74742324 |
| 355,6               | 226                       | 60 x 6,0               | 140 x 60 x 220               | 98        | 498       | 9,50                   | 16,00    | 1       | 74742356 |
| 406,4               | 226                       | 60 x 6,0               | 140 x 60 x 220               | 99        | 538       | 11,00                  | 17,20    | 1       | 74742406 |
| 457,0               | 226                       | 60 x 6,0               | 140 x 60 x 220               | 99        | 585       | 12,00                  | 18,41    | 1       | 74742457 |

## HUSKY insulated pipe clamp



HUSKY insulated pipe clamp

- Consisting of pipe clamp, PU pipe shells with synthetic rubber interface and PVC jacket
- PVC jacket overlapping, self-adhesive and closable
- Joining surface of half shells sealed with synthetic rubber cushion at joints
- High water vapor diffusion resistance and low thermal conductivity
- Pipe clamp body situated outside of insulation

### Application range

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

A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping.

### Materials

#### Polyurethane rigid foam (PU):

Density: 120 kg/m<sup>3</sup>  
 Static load: 0,27 N/mm<sup>2</sup>  
 (according to AGI Q 03 only 20 %  
 of average nominal compressive strength)

Average nominal compressive strength: 1,35 N/mm<sup>2</sup>

Synthetic rubber:  $\mu \geq 7000$

#### Bracket-system: pipe clamp

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

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

### Technical data

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

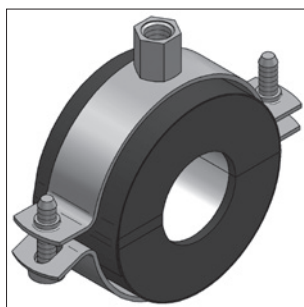
Temperature range: -45 °C up to + 105 °C

#### Thermal conductivity according to DIN EN 12667

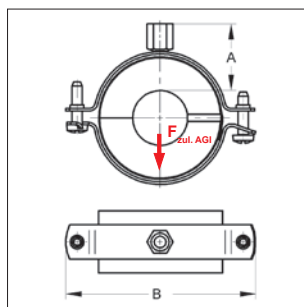
Thermal conductivity: 0,029 W/mk



## HUSKY insulated pipe clamp



HUSKY insulated pipe clamp



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

customized demand on request!

\* Delivery time on request

 Assembly instruction see chapter 15

### Type II-13

| Steel<br>[mm] | OD<br>Copper<br>[mm] | Plastic<br>[mm] | Insulation<br>thickness<br>[mm] | Pipe clamp<br>type | Connection | Dimension<br>A<br>[mm] | Dimension<br>B<br>[mm] | max. load<br>F <sub>zul, AGI</sub> **<br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|---------------|----------------------|-----------------|---------------------------------|--------------------|------------|------------------------|------------------------|-----------------------------------------------|--------------------|-------------------|----------|
|               | 6*                   |                 | 12,5                            | Sigma              | M8         | 22                     | 56                     | 0,05                                          | 0,034              | 24                | 6830060  |
|               | 10                   |                 | 12,5                            | Trabant            | M8/M10     | 30                     | 69                     | 0,08                                          | 0,053              | 24                | 6830100  |
|               | 12                   | 12              | 13,5                            | Trabant            | M8/M10     | 31                     | 77                     | 0,10                                          | 0,064              | 24                | 6830120  |
|               | 15                   | 15              | 13,0                            | Trabant            | M8/M10     | 31                     | 77                     | 0,13                                          | 0,065              | 24                | 6830150  |
| 17,2          | 18                   | 18              | 13,0                            | Trabant            | M8/M10     | 31                     | 77                     | 0,15                                          | 0,065              | 24                | 6830180  |
|               |                      | 20*             | 14,0                            | Trabant            | M8/M10     | 33                     | 88                     | 0,17                                          | 0,088              | 24                | 6830200  |
| 21,3          | 22                   |                 | 13,0                            | Trabant            | M8/M10     | 32                     | 88                     | 0,19                                          | 0,088              | 24                | 6830220  |
|               |                      | 25*             | 13,0                            | Trabant            | M8/M10     | 32                     | 88                     | 0,21                                          | 0,088              | 12                | 6830250  |
| 26,9          |                      |                 | 13,1                            | Trabant            | M8/M10     | 32                     | 88                     | 0,23                                          | 0,089              | 12                | 6830270  |
|               | 28                   |                 | 12,5                            | Trabant            | M8/M10     | 32                     | 88                     | 0,24                                          | 0,089              | 12                | 6830280  |
| 31,8          |                      | 32              | 13,0                            | Trabant            | M8/M10     | 32                     | 94                     | 0,27                                          | 0,092              | 12                | 6830320  |
| 33,7*         |                      |                 | 14,2                            | Trabant            | M8/M10     | 33                     | 102                    | 0,29                                          | 0,098              | 12                | 6830340  |
|               | 35                   |                 | 13,5                            | Trabant            | M8/M10     | 32                     | 102                    | 0,30                                          | 0,098              | 12                | 6830350  |
|               |                      | 40*             | 14,0                            | Trabant            | M8/M10     | 33                     | 109                    | 0,34                                          | 0,107              | 12                | 6830400  |
| 42,4          | 42                   |                 | 13,8                            | Trabant            | M8/M10     | 32                     | 109                    | 0,36                                          | 0,107              | 12                | 6830420  |
| 48,3          |                      |                 | 14,9                            | Trabant            | M8/M10     | 33                     | 121                    | 0,48                                          | 0,126              | 10                | 6830480  |
|               |                      | 50              | 14,5                            | Trabant            | M8/M10     | 33                     | 121                    | 0,49                                          | 0,139              | 10                | 6830500  |
|               | 54*                  |                 | 14,5                            | Trabant            | M8/M10     | 33                     | 124                    | 0,53                                          | 0,145              | 10                | 6830540  |
| 57,0          |                      |                 | 14,5                            | Trabant            | M8/M10     | 33                     | 124                    | 0,56                                          | 0,147              | 10                | 6830570  |
| 60,3          |                      |                 | 16,9                            | Trabant            | M8/M10     | 35                     | 134                    | 0,60                                          | 0,197              | 10                | 6830600  |
| 63,5          | 64                   |                 | 15,0                            | Trabant            | M8/M10     | 34                     | 134                    | 0,63                                          | 0,196              | 10                | 6830640  |
| 70,0*         |                      |                 | 13,5                            | Trabant            | M8/M10     | 32                     | 134                    | 0,69                                          | 0,196              | 8                 | 6830700  |
| 76,1          |                      |                 | 16,0                            | Trabant            | M8/M10     | 34                     | 153                    | 0,75                                          | 0,237              | 8                 | 6830761  |
| 88,9          |                      |                 | 16,1                            | Trabant            | M8/M10     | 35                     | 165                    | 0,86                                          | 0,277              | 8                 | 6830891  |
| 108,0         |                      |                 | 17,5                            | Trabant            | M10/M12    | 42                     | 187                    | 1,01                                          | 0,333              | 8                 | 6831081  |
|               |                      | 110*            | 17,5                            | Trabant            | M10/M12    | 42                     | 187                    | 1,02                                          | 0,333              | 4                 | 6831101  |
| 114,3         |                      |                 | 16,4                            | Trabant            | M10/M12    | 40                     | 192                    | 1,04                                          | 0,338              | 4                 | 6831141  |
|               |                      | 125*            | 21,5                            | Trabant            | M10/M12    | 45                     | 215                    | 1,17                                          | 0,385              | 4                 | 6831251  |
| 133,0*        |                      |                 | 17,5                            | Trabant            | M10/M12    | 42                     | 215                    | 1,19                                          | 0,379              | 4                 | 6831331  |
| 139,7         |                      |                 | 17,7                            | Trabant            | M10/M12    | 42                     | 220                    | 1,24                                          | 0,394              | 4                 | 6831401  |
|               |                      | 160             | 16,5                            | Maxima PSM         | M10/M12    | 42                     | 265                    | 1,91                                          | 0,980              | 4                 | 6831600  |
| 168,3         |                      |                 | 15,9                            | Maxima PSM         | M10/M12    | 41                     | 272                    | 1,98                                          | 1,010              | 2                 | 6831680  |

### Type IV-19

|       |     |     |      |         |        |    |     |      |       |    |         |
|-------|-----|-----|------|---------|--------|----|-----|------|-------|----|---------|
|       | 12* | 12* | 19,5 | Trabant | M8/M10 | 38 | 88  | 0,10 | 0,090 | 24 | 6840120 |
|       | 15  | 15  | 18,0 | Trabant | M8/M10 | 37 | 88  | 0,13 | 0,090 | 24 | 6840150 |
| 17,2  | 18  | 18  | 19,0 | Trabant | M8/M10 | 38 | 94  | 0,15 | 0,097 | 12 | 6840180 |
| 21,3  | 22  |     | 20,0 | Trabant | M8/M10 | 39 | 102 | 0,19 | 0,101 | 12 | 6840220 |
| 26,9* |     |     | 20,6 | Trabant | M8/M10 | 39 | 109 | 0,23 | 0,110 | 12 | 6840270 |
|       | 28  |     | 20,0 | Trabant | M8/M10 | 39 | 109 | 0,24 | 0,110 | 12 | 6840280 |
| 31,8* |     | 32* | 19,5 | Trabant | M8/M10 | 38 | 109 | 0,27 | 0,112 | 12 | 6840320 |
| 33,7* |     |     | 19,7 | Trabant | M8/M10 | 38 | 109 | 0,29 | 0,112 | 12 | 6840340 |
|       | 35  |     | 21,0 | Trabant | M8/M10 | 40 | 121 | 0,35 | 0,143 | 12 | 6840350 |
|       |     | 40* | 21,0 | Trabant | M8/M10 | 40 | 124 | 0,40 | 0,150 | 12 | 6840400 |
| 42,4  | 42  |     | 21,8 | Trabant | M8/M10 | 40 | 124 | 0,42 | 0,153 | 12 | 6840420 |
| 48,3  |     |     | 23,4 | Trabant | M8/M10 | 42 | 134 | 0,48 | 0,203 | 10 | 6840480 |
|       |     | 50* | 22,5 | Trabant | M8/M10 | 41 | 134 | 0,49 | 0,203 | 10 | 6840500 |
|       | 54  |     | 21,5 | Trabant | M8/M10 | 40 | 134 | 0,53 | 0,203 | 10 | 6840540 |
| 57,0* |     |     | 25,5 | Trabant | M8/M10 | 42 | 153 | 0,56 | 0,245 | 8  | 6840571 |
| 60,3  |     |     | 23,9 | Trabant | M8/M10 | 42 | 153 | 0,60 | 0,249 | 8  | 6840601 |

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

## Type IV-19

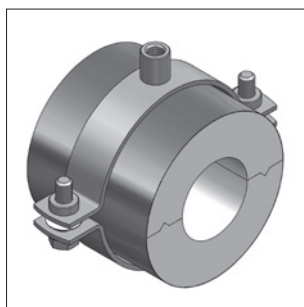
| Steel<br>[mm] | OD<br>Copper<br>[mm] | Plastic<br>[mm] | Insulation<br>thickness<br>[mm] | Pipe clamp<br>type | Connection | Dimension<br>A<br>[mm] | Dimension<br>B<br>[mm] | max. load<br>F <sub>zul. AGI</sub> <sup>**</sup><br>[kN] | Weight<br>[Kg/pc.] | Packing<br>[pcs.] | Part-No. |
|---------------|----------------------|-----------------|---------------------------------|--------------------|------------|------------------------|------------------------|----------------------------------------------------------|--------------------|-------------------|----------|
| 63,5          | 64                   |                 | 23,0                            | Trabant            | M8/M10     | 44                     | 153                    | 0,63                                                     | 0,249              | 8                 | 6840641  |
| 70,0*         |                      |                 | 23,5                            | Trabant            | M8/M10     | 43                     | 165                    | 0,69                                                     | 0,285              | 8                 | 6840701  |
| 76,1          |                      |                 | 23,5                            | Trabant            | M8/M10     | 42                     | 165                    | 0,75                                                     | 0,288              | 8                 | 6840761  |
| 88,9          |                      |                 | 26,6                            | Trabant            | M10/M12    | 43                     | 187                    | 0,88                                                     | 0,336              | 8                 | 6840891  |
| 108,0         |                      |                 | 29,0                            | Trabant            | M10/M12    | 53                     | 215                    | 1,07                                                     | 0,401              | 4                 | 6841081  |
|               |                      | 110*            | 28,0                            | Trabant            | M10/M12    | 52                     | 215                    | 1,09                                                     | 0,398              | 4                 | 6841101  |
| 114,3         |                      |                 | 25,9                            | Trabant            | M10/M12    | 50                     | 215                    | 1,13                                                     | 0,389              | 4                 | 6841141  |
| 133,0*        |                      |                 | 29,0                            | Maxima PSM         | M10/M12    | 54                     | 265                    | 1,69                                                     | 1,020              | 4                 | 6841330  |
| 139,7         |                      |                 | 25,7                            | Maxima PSM         | M10/M12    | 51                     | 265                    | 1,78                                                     | 1,020              | 4                 | 6841400  |
|               |                      | 160             | 26,0                            | Maxima PSM         | M10/M12    | 51                     | 287                    | 2,04                                                     | 1,090              | 2                 | 6841600  |
| 168,3         |                      |                 | 26,4                            | Maxima PSM         | M10/M12    | 51                     | 297                    | 2,14                                                     | 1,148              | 2                 | 6841680  |
| 219,1         |                      |                 | 26,0                            | Maxima PSM         | M10/M12    | 51                     | 346                    | 2,68                                                     | 1,320              | 1                 | 6842190  |
| 273,0         |                      |                 | 25,5                            | Titan HD           | M16        | 42                     | 402                    | 4,58                                                     | 2,600              | 1                 | 68427304 |
| 323,9*        |                      |                 | 26,6                            | Titan HD           | M16        | 43                     | 457                    | 5,33                                                     | 2,980              | 1                 | 68432404 |
| 355,6*        |                      |                 | 25,0                            | Titan HD           | M16        | 41                     | 486                    | 5,74                                                     | 3,170              | 1                 | 68435604 |

## Type VI-32

|        |     |     |      |            |         |    |     |      |       |    |          |
|--------|-----|-----|------|------------|---------|----|-----|------|-------|----|----------|
| 17,2*  | 18* | 18* | 30,0 | Trabant    | M8/M10  | 49 | 121 | 0,18 | 0,147 | 12 | 6850180  |
| 21,3*  | 22* |     | 30,0 | Trabant    | M8/M10  | 49 | 121 | 0,22 | 0,150 | 12 | 6850220  |
| 26,9*  |     |     | 29,6 | Trabant    | M8/M10  | 48 | 124 | 0,27 | 0,158 | 12 | 6850270  |
| 33,7*  |     |     | 31,7 | Trabant    | M8/M10  | 50 | 134 | 0,33 | 0,213 | 12 | 6850340  |
| 42,4*  |     |     | 36,3 | Trabant    | M8/M10  | 56 | 165 | 0,42 | 0,296 | 12 | 6850420  |
| 48,3*  |     |     | 36,4 | Trabant    | M8/M10  | 56 | 165 | 0,48 | 0,301 | 10 | 6850480  |
| 60,3*  |     |     | 34,9 | Trabant    | M10/M12 | 57 | 176 | 0,60 | 0,334 | 8  | 6850601  |
| 76,1*  |     |     | 36,5 | Trabant    | M10/M12 | 62 | 192 | 0,75 | 0,371 | 8  | 6850761  |
| 88,9*  |     |     | 40,1 | Trabant    | M10/M12 | 64 | 215 | 0,88 | 0,418 | 8  | 6850891  |
| 114,3* |     |     | 41,4 | Maxima PSM | M10/M12 | 67 | 272 | 1,45 | 1,080 | 4  | 6851140  |
| 139,7* |     |     | 42,2 | Maxima PSM | M10/M12 | 67 | 297 | 1,78 | 1,180 | 4  | 6851400  |
| 168,3* |     |     | 44,9 | Maxima PSM | M10/M12 | 70 | 331 | 2,14 | 1,340 | 2  | 6851680  |
| 219,1* |     |     | 52,5 | Titan HD   | M16     | 68 | 402 | 3,72 | 2,770 | 1  | 68521904 |
| 273,0* |     |     | 53,5 | Titan HD   | M16     | 70 | 460 | 4,63 | 3,210 | 1  | 68527304 |
| 323,9* |     |     | 50,6 | Titan HD   | M16     | 67 | 505 | 5,49 | 3,530 | 1  | 68532404 |
| 355,6* |     |     | 50,5 | Titan HD   | M16     | 67 | 537 | 6,04 | 3,770 | 1  | 68535604 |

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

## ■ ALU/PU >80< insulated pipe clamp



ALU/PU >80< insulated pipe clamp

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

### Application range

| OD<br>[mm]   | Insulation thickness<br>[mm] | Shell length<br>[mm] | Specification                                                                                                                                                                        |
|--------------|------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15,0 - 273,0 | 20                           | 100                  | ALU/PU-compound shell completely covered by aluminium foil, overlapping with self-adhesive strip                                                                                     |
| 17,2 - 355,6 | 30                           | 100                  |                                                                                                                                                                                      |
| 17,2 - 355,6 | 40                           | 100                  | A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe-clamping |
| 17,2 - 355,6 | 50                           | 100                  |                                                                                                                                                                                      |

### Materials

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

### Technical data

#### Steam diffusion resistance number

$\mu = 18.750$  average value

(vapour leak-proof according to DIN 4108)

#### Fire-performance:

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



#### Temperature range:

- 50 °C up to + 120 °C

#### Thermal conductivity according to DIN 52612

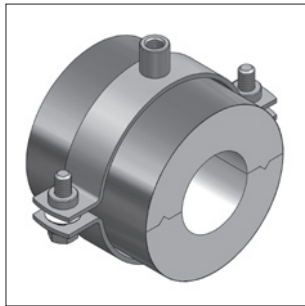
Average Temperature:

21 °C

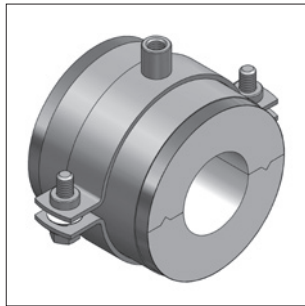
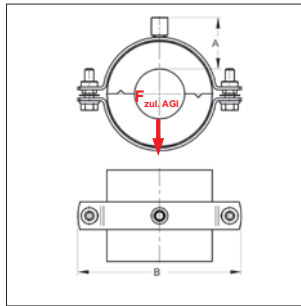
Thermal conductivity:

0,025 W/mk

## ■ ALU/PU >80< insulated pipe clamp



ALU/PU &gt;80&lt; insulated pipe clamp

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

Delivery time:  
5 working days, ex works  
(no exchange or return)

<sup>1)</sup> At shell length 100 mm:  
sheet jacket width 80 mm

### Insulation thickness 20 mm shell length 100 mm<sup>1)</sup>

| OD    | Material | Connection | Dimension |           | max. load                |                   | Weight       | Packing | Part-No.        | Part-No.                   |
|-------|----------|------------|-----------|-----------|--------------------------|-------------------|--------------|---------|-----------------|----------------------------|
| Steel | Copper   | pipe clamp | A         | B         | F <sub>max. AGI</sub> ** |                   | without      |         | Ins. pipe clamp | Ins. pipe clamp            |
|       |          |            |           |           | without sheet jacket     | with sheet jacket | sheet jacket |         | without         | with                       |
| [mm]  | [mm]     | [mm]       |           | [mm] [mm] | [kN]                     | [kN]              | [kg/pc.]     | [pc.]   | sheet jacket    | sheet jacket <sup>1)</sup> |
|       | 15       | 25x3,0     | M8/M10    | 46 114    | 0,2                      | 0,3               | 0,259        | 1       | 75601545        | 75601545/B                 |
| 17,2  | 18       | 25x3,0     | M8/M10    | 45 114    | 0,2                      | 0,3               | 0,258        | 1       | 7560172         | 75601745/B                 |
| 21,3  | 22       | 25x3,0     | M8/M10    | 46 120    | 0,2                      | 0,3               | 0,278        | 1       | 75602145        | 75602145/B                 |
| 26,9  | 28       | 25x3,0     | M8/M10    | 46 129    | 0,3                      | 0,4               | 0,292        | 1       | 7560275         | 75602745/B                 |
| 33,7  | 35       | 25x3,0     | M8/M10    | 44 129    | 0,3                      | 0,5               | 0,292        | 1       | 75603445        | 75603445/B                 |
| 42,4  | 42       | 30x3,0     | M10/M12   | 46 151    | 0,4                      | 0,6               | 0,422        | 1       | 7560426         | 7560426/B                  |
| 48,3  |          | 30x3,0     | M10/M12   | 44 151    | 0,4                      | 0,7               | 0,421        | 1       | 7560486         | 7560486/B                  |
|       | 54       | 30x3,0     | M10/M12   | 46 162    | 0,4                      | 0,7               | 0,455        | 1       | 75605432        | 7560543/B                  |
| 57,0  |          | 30x3,0     | M10/M12   | 45 162    | 0,4                      | 0,8               | 0,453        | 1       | 75605742        | 75605742/B                 |
| 60,3  |          | 30x3,0     | M10/M12   | 44 162    | 0,4                      | 0,9               | 0,453        | 1       | 7560606         | 7560606/B                  |
| 63,5  |          | 30x3,0     | M10/M12   | 46 172    | 0,5                      | 0,9               | 0,480        | 1       | 75606442        | 75606442/B                 |
| 70,0  |          | 30x3,0     | M10/M12   | 44 172    | 0,5                      | 1,0               | 0,478        | 1       | 75607042        | 75607042/B                 |
| 76,1  |          | 30x3,0     | M10/M12   | 47 184    | 0,5                      | 1,1               | 0,521        | 1       | 7560766         | 75607642/B                 |
| 88,9  |          | 35x4,0     | M10/M12   | 47 209    | 0,7                      | 1,3               | 0,773        | 1       | 7560896         | 7560896/B                  |
| 108,0 |          | 35x4,0     | M10/M12   | 46 226    | 0,8                      | 1,6               | 0,845        | 1       | 75610844        | 75610844/B                 |
| 114,3 |          | 35x4,0     | M10/M12   | 47 234    | 0,8                      | 1,7               | 0,879        | 1       | 75611444        | 75611444/B                 |
| 133,0 |          | 35x4,0     | M10/M12   | 47 252    | 0,9                      | 1,9               | 0,966        | 1       | 75613344        | 75613344/B                 |
| 139,7 |          | 35x4,0     | M10/M12   | 45 252    | 0,9                      | 2,0               | 0,959        | 1       | 75614044        | 75614044/B                 |
| 159,0 |          | 35x4,0     | M10/M12   | 47 278    | 1,0                      | 2,3               | 1,067        | 1       | 75615944        | 75615944/B                 |
| 168,3 |          | 35x4,0     | M10/M12   | 46 287    | 1,1                      | 2,5               | 1,086        | 1       | 75616844        | 75616844/B                 |
| 219,1 |          | 50x5,0     | M16       | 46 342    | 1,9                      | 3,1               | 2,160        | 1       | 7562197         | 7562197/B                  |
| 273,0 |          | 50x5,0     | M16       | 45 396    | 2,3                      | 3,7               | 2,515        | 1       | 7562733         | 7562733/B                  |

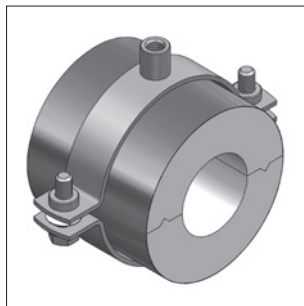
### Insulation thickness 30 mm shell length 100 mm<sup>1)</sup>

|       |    |        |         |    |     |     |     |       |   |          |            |
|-------|----|--------|---------|----|-----|-----|-----|-------|---|----------|------------|
| 17,2  | 18 | 30x3,0 | M10/M12 | 55 | 141 | 0,3 | 0,3 | 0,405 | 1 | 7590182  | 7590182/B  |
| 21,3  | 22 | 30x3,0 | M10/M12 | 56 | 151 | 0,3 | 0,3 | 0,430 | 1 | 75902142 | 75902142/B |
| 26,9  | 28 | 30x3,0 | M10/M12 | 55 | 151 | 0,4 | 0,4 | 0,431 | 1 | 75902742 | 75902742/B |
| 33,7  | 35 | 30x3,0 | M10/M12 | 56 | 162 | 0,4 | 0,5 | 0,466 | 1 | 75903442 | 75903442/B |
| 42,4  | 42 | 30x3,0 | M10/M12 | 57 | 172 | 0,5 | 0,6 | 0,494 | 1 | 75904242 | 75904242/B |
| 48,3  |    | 30x3,0 | M10/M12 | 55 | 172 | 0,5 | 0,7 | 0,493 | 1 | 75904842 | 75904842/B |
|       | 54 | 30x3,0 | M10/M12 | 55 | 178 | 0,5 | 0,7 | 0,516 | 1 | 75905442 | 75905442/B |
| 57,0  |    | 30x3,0 | M10/M12 | 54 | 178 | 0,5 | 0,8 | 0,515 | 1 | 75905742 | 75905742/B |
| 60,3  |    | 30x3,0 | M10/M12 | 55 | 184 | 0,5 | 0,9 | 0,535 | 1 | 75906042 | 75906042/B |
| 63,5  |    | 30x3,0 | M10/M12 | 56 | 189 | 0,6 | 0,9 | 0,550 | 1 | 75906442 | 75906442/B |
| 70,0  |    | 35x4,0 | M10/M12 | 57 | 209 | 0,7 | 1,0 | 0,792 | 1 | 75907042 | 75907042/B |
| 76,1  |    | 35x4,0 | M10/M12 | 57 | 216 | 0,7 | 1,1 | 0,812 | 1 | 75907644 | 75907644/B |
| 88,9  |    | 35x4,0 | M10/M12 | 56 | 226 | 0,8 | 1,3 | 0,870 | 1 | 75908944 | 75908944/B |
| 108,0 |    | 35x4,0 | M10/M12 | 57 | 247 | 0,9 | 1,6 | 0,963 | 1 | 75910844 | 75910844/B |
| 114,3 |    | 35x4,0 | M10/M12 | 57 | 252 | 0,9 | 1,7 | 0,995 | 1 | 75911444 | 75911444/B |
| 133,0 |    | 35x4,0 | M10/M12 | 57 | 272 | 1,0 | 1,9 | 1,064 | 1 | 75913344 | 75913344/B |
| 139,7 |    | 35x4,0 | M10/M12 | 57 | 278 | 1,0 | 2,0 | 1,104 | 1 | 75914044 | 75914044/B |
| 159,0 |    | 35x4,0 | M10/M12 | 56 | 297 | 1,1 | 2,3 | 1,164 | 1 | 75915912 | 75915944/B |
| 168,3 |    | 35x4,0 | M10/M12 | 57 | 308 | 1,2 | 2,5 | 1,231 | 1 | 75916844 | 75916844/B |
| 219,1 |    | 50x5,0 | M16     | 55 | 364 | 2,1 | 3,2 | 2,357 | 1 | 7592193  | 7592193/B  |
| 273,0 |    | 50x5,0 | M16     | 55 | 416 | 2,5 | 3,9 | 2,719 | 1 | 7592733  | 7592733/B  |
| 323,9 |    | 50x5,0 | M16     | 55 | 467 | 2,8 | 4,5 | 3,086 | 1 | 7593243  | 7593243/B  |
| 355,6 |    | 50x5,0 | M16     | 55 | 495 | 3,1 | 4,9 | 3,423 | 1 | 7593563  | 7593563/B  |

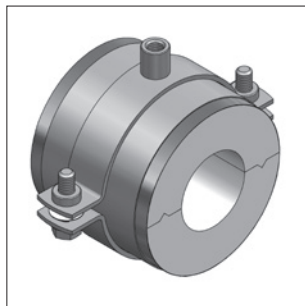
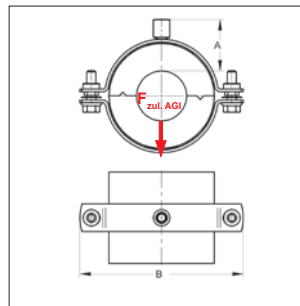
assembly instruction see chapter 15

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

## ■ ALU/PU >80< insulated pipe clamp



ALU/PU &gt;80&lt; insulated pipe clamp

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

Delivery time:  
5 working days, ex works  
(no exchange or return)

<sup>1)</sup> At shell length 100 mm:  
sheet jacket width 80 mm

### Insulation thickness 40 mm shell length 100 mm<sup>1)</sup>

| Steel | Copper | Material<br>pipe clamp | Connection | Dimension |      | max. load            |                   | Weight<br>without<br>sheet jacket | Packing | Part-No.<br>Ins. pipe clamp<br>without<br>sheet jacket | Part-No.<br>Ins. pipe clamp<br>with<br>sheet jacket <sup>1)</sup> |
|-------|--------|------------------------|------------|-----------|------|----------------------|-------------------|-----------------------------------|---------|--------------------------------------------------------|-------------------------------------------------------------------|
|       |        |                        |            | A         | B    | without sheet jacket | with sheet jacket |                                   |         |                                                        |                                                                   |
| [mm]  | [mm]   | [mm]                   |            | [mm]      | [mm] | [kN]                 | [kN]              | [Kg/pc.]                          | [pc.]   |                                                        |                                                                   |
| 17,2  | 18     | 30x3,0                 | M10/M12    | 65        | 162  | 0,3                  | 0,3               | 0,472                             | 1       | 76201742                                               | 76201742/B                                                        |
| 21,3  | 22     | 30x3,0                 | M10/M12    | 67        | 172  | 0,3                  | 0,3               | 0,503                             | 1       | 76202142                                               | 76202142/B                                                        |
| 26,9  | 28     | 30x3,0                 | M10/M12    | 65        | 172  | 0,4                  | 0,4               | 0,502                             | 1       | 76202742                                               | 76202742/B                                                        |
| 33,7  | 35     | 30x3,0                 | M10/M12    | 65        | 178  | 0,5                  | 0,5               | 0,528                             | 1       | 7620348                                                | 76203442/B                                                        |
| 42,4  | 42     | 30x3,0                 | M10/M12    | 64        | 184  | 0,5                  | 0,6               | 0,547                             | 1       | 7620428                                                | 7620428/B                                                         |
| 48,3  |        | 35x4,0                 | M10/M12    | 66        | 209  | 0,7                  | 0,7               | 0,807                             | 1       | 7620488                                                | 76204842/B                                                        |
|       | 54     | 35x4,0                 | M10/M12    | 66        | 209  | 0,7                  | 0,7               | 0,807                             | 1       | 7620548                                                | 76205444/B                                                        |
| 57,0  |        | 35x4,0                 | M10/M12    | 67        | 216  | 0,7                  | 0,8               | 0,828                             | 1       | 76205744                                               | 76205744/B                                                        |
| 60,3  |        | 35x4,0                 | M10/M12    | 66        | 216  | 0,7                  | 0,9               | 0,829                             | 1       | 76206044                                               | 7620608/B                                                         |
| 63,5  |        | 35x4,0                 | M10/M12    | 67        | 220  | 0,7                  | 0,9               | 0,875                             | 1       | 76206444                                               | 76206444/B                                                        |
| 70,0  |        | 35x4,0                 | M10/M12    | 66        | 226  | 0,8                  | 1,0               | 0,888                             | 1       | 7620708                                                | 76207044/B                                                        |
| 76,1  |        | 35x4,0                 | M10/M12    | 66        | 234  | 0,8                  | 1,1               | 0,926                             | 1       | 76207644                                               | 7620768/B                                                         |
| 88,9  |        | 35x4,0                 | M10/M12    | 66        | 247  | 0,9                  | 1,3               | 0,987                             | 1       | 7620898                                                | 76208944/B                                                        |
| 108,0 |        | 35x4,0                 | M10/M12    | 67        | 265  | 1,0                  | 1,6               | 1,066                             | 1       | 76210844                                               | 76210844/B                                                        |
| 114,3 |        | 35x4,0                 | M10/M12    | 66        | 272  | 1,0                  | 1,7               | 1,094                             | 1       | 7621148                                                | 76211444/B                                                        |
| 133,0 |        | 35x4,0                 | M10/M12    | 65        | 287  | 1,1                  | 1,9               | 1,158                             | 1       | 76213344                                               | 76213344/B                                                        |
| 139,7 |        | 35x4,0                 | M10/M12    | 66        | 297  | 1,1                  | 2,0               | 1,202                             | 1       | 7621408                                                | 7621408/B                                                         |
| 159,0 |        | 35x4,0                 | M10/M12    | 65        | 315  | 1,2                  | 2,3               | 1,287                             | 1       | 76215944                                               | 76215944/B                                                        |
| 168,3 |        | 35x4,0                 | M10/M12    | 68        | 331  | 1,3                  | 2,5               | 1,380                             | 1       | 7621688                                                | 7621688/B                                                         |
| 219,1 |        | 50x5,0                 | M16        | 65        | 382  | 2,2                  | 3,2               | 2,554                             | 1       | 7622196                                                | 7622196/B                                                         |
| 273,0 |        | 50x5,0                 | M16        | 65        | 436  | 2,6                  | 4,0               | 2,936                             | 1       | 7622736                                                | 7622736/B                                                         |
| 323,9 |        | 50x5,0                 | M16        | 65        | 486  | 3,0                  | 4,7               | 3,297                             | 1       | 7623247                                                | 7623247/B                                                         |
| 355,6 |        | 50x5,0                 | M16        | 65        | 519  | 3,2                  | 5,1               | 3,527                             | 1       | 7623565                                                | 7623565/B                                                         |

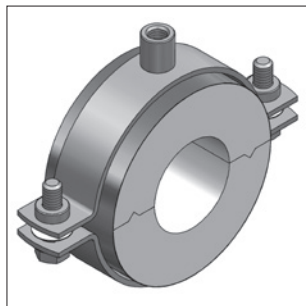
### Insulation thickness 50 mm shell length 100 mm<sup>1)</sup>

| Steel | Copper | Material   | Connection | Dimension |      | max. load            |                   | Weight<br>without<br>sheet jacket | Packing | Part-No.<br>Ins. pipe clamp<br>without<br>sheet jacket | Part-No.<br>Ins. pipe clamp<br>with<br>sheet jacket <sup>1)</sup> |
|-------|--------|------------|------------|-----------|------|----------------------|-------------------|-----------------------------------|---------|--------------------------------------------------------|-------------------------------------------------------------------|
|       |        | pipe clamp |            | A         | B    | without sheet jacket | with sheet jacket |                                   |         |                                                        |                                                                   |
| [mm]  | [mm]   | [mm]       |            | [mm]      | [mm] | [kN]                 | [kN]              | [Kg/pc.]                          | [pc.]   |                                                        |                                                                   |
| 17,2  | 18     | 30x3,0     | M10/M12    | 76        | 184  | 0,3                  | 0,3               | 0,556                             | 1       | 76501742                                               | 76501742/B                                                        |
| 21,3  | 22     | 30x3,0     | M10/M12    | 75        | 184  | 0,3                  | 0,3               | 0,556                             | 1       | 76502142                                               | 76502142/B                                                        |
| 26,9  | 28     | 30x3,0     | M10/M12    | 74        | 189  | 0,4                  | 0,4               | 0,572                             | 1       | 76502742                                               | 76502742/B                                                        |
| 33,7  | 35     | 35x4,0     | M10/M12    | 76        | 209  | 0,5                  | 0,5               | 0,819                             | 1       | 76503444                                               | 76503444/B                                                        |
| 42,4  | 42     | 35x4,0     | M10/M12    | 75        | 216  | 0,6                  | 0,6               | 0,840                             | 1       | 76504244                                               | 76504244/B                                                        |
| 48,3  |        | 35x4,0     | M10/M12    | 76        | 226  | 0,7                  | 0,7               | 0,904                             | 1       | 76504844                                               | 76504844/B                                                        |
|       | 54     | 35x4,0     | M10/M12    | 75        | 234  | 0,7                  | 0,7               | 0,944                             | 1       | 76505444                                               | 76505444/B                                                        |
| 57,0  |        | 35x4,0     | M10/M12    | 76        | 234  | 0,8                  | 0,8               | 0,942                             | 1       | 76505744                                               | 76505744/B                                                        |
| 60,3  |        | 35x4,0     | M10/M12    | 75        | 234  | 0,8                  | 0,9               | 0,942                             | 1       | 76506044                                               | 76506044/B                                                        |
| 63,5  |        | 35x4,0     | M10/M12    | 76        | 240  | 0,8                  | 0,9               | 0,973                             | 1       | 76506444                                               | 76506444/B                                                        |
| 70,0  |        | 35x4,0     | M10/M12    | 76        | 247  | 0,9                  | 1,0               | 1,006                             | 1       | 76507044                                               | 76507044/B                                                        |
| 76,1  |        | 35x4,0     | M10/M12    | 76        | 252  | 0,9                  | 1,1               | 1,042                             | 1       | 76507644                                               | 76507644/B                                                        |
| 88,9  |        | 35x4,0     | M10/M12    | 76        | 265  | 1,0                  | 1,3               | 1,090                             | 1       | 76508944                                               | 76508944/B                                                        |
| 108,0 |        | 35x4,0     | M10/M12    | 77        | 297  | 1,1                  | 1,6               | 1,193                             | 1       | 76510844                                               | 76510844/B                                                        |
| 114,3 |        | 35x4,0     | M10/M12    | 78        | 297  | 1,1                  | 1,7               | 1,240                             | 1       | 7651146                                                | 76511444/B                                                        |
| 133,0 |        | 35x4,0     | M10/M12    | 75        | 308  | 1,2                  | 1,9               | 1,300                             | 1       | 76513344                                               | 76513344/B                                                        |
| 139,7 |        | 35x4,0     | M10/M12    | 75        | 315  | 1,2                  | 2,0               | 1,333                             | 1       | 76514044                                               | 76514044/B                                                        |
| 159,0 |        | 35x4,0     | M10/M12    | 77        | 340  | 1,3                  | 2,3               | 1,440                             | 1       | 76515944                                               | 76515944/B                                                        |
| 168,3 |        | 35x4,0     | M10/M12    | 76        | 346  | 1,4                  | 2,5               | 1,467                             | 1       | 76516844                                               | 76516844/B                                                        |
| 219,1 |        | 50x5,0     | M16        | 75        | 404  | 2,4                  | 3,2               | 2,777                             | 1       | 7652195                                                | 7652195/B                                                         |
| 273,0 |        | 50x5,0     | M16        | 75        | 456  | 2,8                  | 4,0               | 3,152                             | 1       | 7652734                                                | 7652734/B                                                         |
| 323,9 |        | 50x5,0     | M16        | 75        | 507  | 3,1                  | 4,7               | 3,526                             | 1       | 7653245                                                | 7653245/B                                                         |
| 355,6 |        | 50x5,0     | M16        | 75        | 539  | 3,4                  | 5,2               | 3,764                             | 1       | 7653567                                                | 7653567/B                                                         |

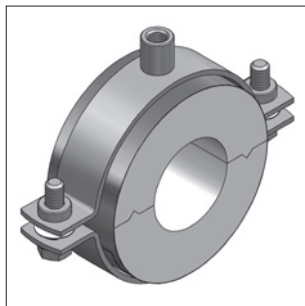
assembly instruction see chapter 15

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

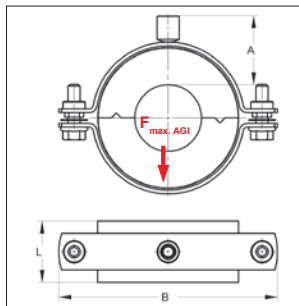
## ■ ALU/PU >80< s short insulated pipe clamp



ALU/PU >80< s insulated  
pipe clamp



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



Delivery time:  
5 working days, ex works  
(no exchange or return)

<sup>1)</sup> At shell length 100 mm:  
sheet jacket width 80 mm

### Insulation thickness 20 mm

| OD    | Material | Connection | Dimension  |      |      | max. load            |                           | Weight      | Packing  | Part-No.       | Part-No.        |                 |
|-------|----------|------------|------------|------|------|----------------------|---------------------------|-------------|----------|----------------|-----------------|-----------------|
| Steel | Copper   |            | pipe clamp | A    | L    | B                    | F <sub>max. AG I</sub> ** |             |          | without        | Ins. pipe clamp | Ins. pipe clamp |
|       |          |            |            |      |      | without sheet jacket | with sheet jacket         | half jacket |          | <u>without</u> | <u>with</u>     |                 |
| [mm]  | [mm]     | [mm]       |            | [mm] | [mm] | [mm]                 | [kN]                      | [kN]        | [Kg/pc.] | [pc.]          | half jacket     | half jacket     |
| 17,2  | 18       | 20x1,5     | M8/M10     | 38   | 40   | 104                  | 0,1                       | -           | 0,081    | 1              | 70401848        | -               |
| 21,3  | 22       | 20x1,5     | M8/M10     | 40   | 40   | 111                  | 0,1                       | -           | 0,094    | 1              | 70402248        | -               |
| 26,9  | 28       | 20x1,5     | M8/M10     | 40   | 40   | 119                  | 0,2                       | -           | 0,099    | 1              | 70402848        | -               |
| 33,7  | 35       | 20x2,0     | M8/M10     | 39   | 40   | 113                  | 0,2                       | -           | 0,125    | 1              | 70403449        | -               |
| 42,4  | 42       | 25x1,5     | M8/M10     | 39   | 40   | 128                  | 0,2                       | -           | 0,133    | 1              | 70404248        | -               |
| 48,3  |          | 20x2,0     | M8/M10     | 39   | 50   | 124                  | 0,3                       | -           | 0,141    | 1              | 70504849        | -               |
| 54,0  |          | 25x2,0     | M8/M10     | 43   | 50   | 141                  | 0,3                       | -           | 0,189    | 1              | 70505448        | -               |
| 57,0  |          | 25x2,0     | M8/M10     | 38   | 50   | 141                  | 0,4                       | -           | 0,189    | 1              | 70505748        | -               |
| 60,3  |          | 25x2,5     | M8/M10     | 39   | 50   | 136                  | 0,4                       | -           | 0,235    | 1              | 70506049        | -               |
| 63,5  |          | 25x2,5     | M8/M10     | 41   | 50   | 143                  | 0,4                       | -           | 0,240    | 1              | 70506449        | -               |
| 70,0  |          | 25x2,5     | M8/M10     | 39   | 66   | 152                  | 0,4                       | 0,7         | 0,254    | 1              | 70607049        | 70607049/T      |
| 76,1  |          | 25x2,5     | M8/M10     | 42   | 66   | 158                  | 0,4                       | 0,7         | 0,278    | 1              | 70607649        | 70607649/T      |
| 88,9  |          | 25x2,5     | M8/M10     | 42   | 83   | 175                  | 0,5                       | 1,1         | 0,316    | 1              | 75208949        | 75208949/T      |
| 108,0 |          | 25x3,0     | M10/M12    | 45   | 83   | 197                  | 0,5                       | 1,3         | 0,493    | 1              | 75210850        | 75210850/T      |
| 114,3 |          | 30x3,0     | M10/M12    | 46   | 83   | 234                  | 0,7                       | 1,4         | 0,574    | 1              | 75211442        | 75211442/T      |
| 133,0 |          | 25x3,0     | M10/M12    | 46   | 100  | 225                  | 0,7                       | 1,9         | 0,554    | 1              | 75613350        | 75613350/T      |
| 139,7 |          | 30x3,0     | M10/M12    | 45   | 100  | 252                  | 0,8                       | 2,0         | 0,665    | 1              | 75614042        | 75614042/T      |
| 159,0 |          | 30x3,0     | M10/M12    | 46   | 100  | 278                  | 0,9                       | 2,3         | 0,735    | 1              | 75615942        | 75615942/T      |
| 168,3 |          | 30x3,0     | M10/M12    | 45   | 100  | 288                  | 1,1                       | 2,5         | 1,070    | 1              | 75616842        | 75616842/T      |
| 219,1 |          | 35x4,0     | M16        | 45   | 100  | 340                  | 1,9                       | 3,1         | 1,317    | 1              | 75621927        | 75621927/T      |

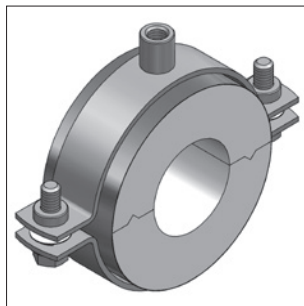
### Insulation thickness 30 mm

|       |    |        |         |    |     |     |     |     |        |   |          |            |
|-------|----|--------|---------|----|-----|-----|-----|-----|--------|---|----------|------------|
| 17,2  | 18 | 25x1,5 | M8/M10  | 48 | 40  | 123 | 0,1 | -   | 0,131  | 1 | 71101848 | -          |
| 21,3  | 22 | 25x1,5 | M8/M10  | 49 | 40  | 128 | 0,1 | -   | 0,139  | 1 | 71102248 | -          |
| 26,9  | 28 | 20x2,0 | M8/M10  | 49 | 40  | 124 | 0,2 | -   | 0,158  | 1 | 71102849 | -          |
| 33,7  | 35 | 25x2,0 | M8/M10  | 50 | 40  | 141 | 0,2 | -   | 0,189  | 1 | 71103448 | -          |
| 42,4  | 42 | 25x2,5 | M8/M10  | 52 | 40  | 143 | 0,2 | -   | 0,236  | 1 | 71104249 | -          |
| 48,3  |    | 25x2,5 | M8/M10  | 50 | 50  | 152 | 0,4 | -   | 0,255  | 1 | 71204849 | -          |
| 54,0  |    | 25x2,5 | M8/M10  | 49 | 50  | 152 | 0,4 | -   | 0,2640 | 1 | 71205449 | -          |
| 57,0  |    | 25x2,5 | M8/M10  | 49 | 50  | 152 | 0,4 | -   | 0,265  | 1 | 71205749 | -          |
| 60,3  |    | 25x2,5 | M8/M10  | 50 | 50  | 158 | 0,4 | -   | 0,278  | 1 | 71206049 | -          |
| 63,5  |    | 25x2,5 | M8/M10  | 51 | 50  | 158 | 0,5 | -   | 0,279  | 1 | 71206449 | -          |
| 70,0  |    | 25x2,5 | M8/M10  | 51 | 66  | 165 | 0,5 | 0,7 | 0,302  | 1 | 71307049 | 71307049/T |
| 76,1  |    | 25x2,5 | M8/M10  | 51 | 66  | 175 | 0,5 | 0,7 | 0,317  | 1 | 71307649 | 71307649/T |
| 88,9  |    | 25x3,0 | M10/M12 | 55 | 83  | 197 | 0,5 | 1,1 | 0,513  | 1 | 75308950 | 75308950/T |
| 108,0 |    | 25x3,0 | M10/M12 | 56 | 83  | 219 | 0,6 | 1,3 | 0,580  | 1 | 75310850 | 75310850/T |
| 114,3 |    | 25x3,0 | M10/M12 | 56 | 83  | 225 | 0,7 | 1,4 | 0,584  | 1 | 75311450 | 75311450/T |
| 133,0 |    | 30x3,0 | M10/M12 | 56 | 100 | 272 | 0,9 | 1,9 | 0,748  | 1 | 75913342 | 75913342/T |
| 139,7 |    | 30x3,0 | M10/M12 | 56 | 100 | 278 | 0,9 | 2,0 | 0,763  | 1 | 75914042 | 75914042/T |
| 159,0 |    | 30x3,0 | M10/M12 | 55 | 100 | 297 | 1,0 | 2,3 | 0,820  | 1 | 75915942 | 75915942/T |
| 168,3 |    | 35x4,0 | M10/M12 | 57 | 100 | 308 | 1,2 | 2,5 | 1,200  | 1 | 75916844 | 75916844/T |
| 219,1 |    | 35x4,0 | M16     | 55 | 100 | 360 | 2,1 | 3,2 | 1,440  | 1 | 75921927 | 75921927/T |

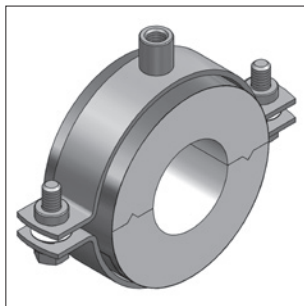
assembly instruction see chapter 15

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

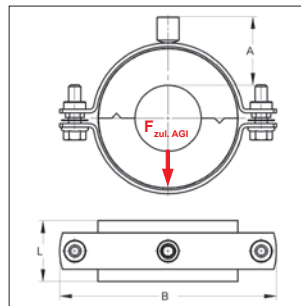
## ■ ALU/PU >80< short insulated pipe clamp



ALU/PU >80< s insulated pipe clamp



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



Delivery time:  
5 working days, ex works  
(no exchange or return)

<sup>1)</sup> At shell length 100 mm:  
sheet jacket width 80 mm

### Insulation thickness 40 mm

| OD    |        | Material<br>pipe clamp | Connection | Dimension |      |      | max. load                                     |                         | Weight<br>without<br>half jacket | Packing<br>[pc.] | Part-No.<br>Ins. pipe clamp<br>without<br>half jacket | Part-No.<br>Ins. pipe clamp<br>with<br>half jacket |
|-------|--------|------------------------|------------|-----------|------|------|-----------------------------------------------|-------------------------|----------------------------------|------------------|-------------------------------------------------------|----------------------------------------------------|
| Steel | Copper |                        |            | A         | L    | B    | F <sub>max. AGI</sub><br>without sheet jacket | **<br>with sheet jacket |                                  |                  |                                                       |                                                    |
| [mm]  | [mm]   | [mm]                   |            | [mm]      | [mm] | [mm] | [kN]                                          | [kN]                    | [Kg/pc.]                         |                  |                                                       |                                                    |
| 17,2  | 18     | 25x2,0                 | M8/M10     | 58        | 40   | 141  | 0,1                                           | -                       | 0,195                            | 1                | 71401848                                              | -                                                  |
| 21,3  | 22     | 25x2,5                 | M8/M10     | 62        | 40   | 143  | 0,1                                           | -                       | 0,242                            | 1                | 71402249                                              | -                                                  |
| 26,9  | 28     | 25x2,5                 | M8/M10     | 60        | 40   | 152  | 0,2                                           | -                       | 0,253                            | 1                | 71402849                                              | -                                                  |
| 33,7  | 35     | 25x2,5                 | M8/M10     | 60        | 40   | 152  | 0,2                                           | -                       | 0,262                            | 1                | 71403449                                              | -                                                  |
| 42,4  | 42     | 25x2,5                 | M8/M10     | 59        | 40   | 158  | 0,2                                           | -                       | 0,277                            | 1                | 71404249                                              | -                                                  |
| 48,3  |        | 25x2,5                 | M8/M10     | 62        | 50   | 165  | 0,4                                           | -                       | 0,294                            | 1                | 71504849                                              | -                                                  |
| 54,0  |        | 25x2,5                 | M8/M10     | 61        | 50   | 175  | 0,4                                           | -                       | 0,311                            | 1                | 71505449                                              | -                                                  |
| 57,0  |        | 25x2,5                 | M8/M10     | 61        | 50   | 175  | 0,4                                           | -                       | 0,311                            | 1                | 71505749                                              | -                                                  |
| 60,3  |        | 30x3,0                 | M10/M12    | 65        | 50   | 203  | 0,4                                           | -                       | 0,547                            | 1                | 71506042                                              | -                                                  |
| 63,5  |        | 25x3,0                 | M10/M12    | 66        | 50   | 192  | 0,5                                           | -                       | 0,464                            | 1                | 71506450                                              | -                                                  |
| 70,0  |        | 25x3,0                 | M10/M12    | 65        | 66   | 197  | 0,5                                           | 0,7                     | 0,494                            | 1                | 71607050                                              | 71607050/T                                         |
| 76,1  |        | 30x3,0                 | M10/M12    | 65        | 66   | 219  | 0,6                                           | 0,7                     | 0,614                            | 1                | 71607642                                              | 71607642/T                                         |
| 88,9  |        | 25x3,0                 | M10/M12    | 65        | 83   | 219  | 0,6                                           | 1,1                     | 0,599                            | 1                | 75408950                                              | 75408950/T                                         |
| 108,0 |        | 30x3,0                 | M10/M12    | 65        | 83   | 265  | 0,8                                           | 1,3                     | 0,738                            | 1                | 75410842                                              | 75410842/T                                         |
| 114,3 |        | 30x3,0                 | M10/M12    | 65        | 83   | 271  | 0,9                                           | 1,4                     | 0,746                            | 1                | 75411442                                              | 75411442/T                                         |
| 133,0 |        | 30x3,0                 | M10/M12    | 64        | 100  | 288  | 1,1                                           | 1,9                     | 0,882                            | 1                | 76213342                                              | 76213342/T                                         |
| 139,7 |        | 30x3,0                 | M10/M12    | 65        | 100  | 297  | 1,1                                           | 2,0                     | 0,896                            | 1                | 76214042                                              | 76214042/T                                         |
| 159,0 |        | 35x4,0                 | M10/M12    | 65        | 100  | 315  | 1,2                                           | 2,3                     | 1,300                            | 1                | 76215944                                              | 76215944/T                                         |
| 168,3 |        | 35x4,0                 | M10/M12    | 68        | 100  | 323  | 1,3                                           | 2,5                     | 1,310                            | 1                | 76216888                                              | 76216888/T                                         |
| 219,1 |        | 35x4,0                 | M16        | 65        | 100  | 380  | 2,2                                           | 3,2                     | 1,631                            | 1                | 7622195                                               | 7622195/T                                          |

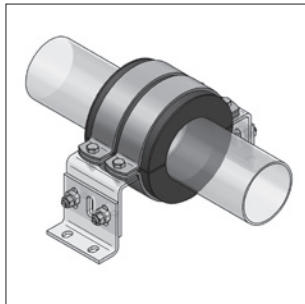
### Insulation thickness 50 mm

| 17,2  | 18 | 25x2,5 | M8/M10  | 71 | 40  | 158 | 0,1 | -   | 0,278 | 1 | 71701849 | -          |
|-------|----|--------|---------|----|-----|-----|-----|-----|-------|---|----------|------------|
| 21,3  | 22 | 25x2,5 | M8/M10  | 70 | 40  | 158 | 0,1 | -   | 0,281 | 1 | 71702249 | -          |
| 26,9  | 28 | 25x2,5 | M8/M10  | 69 | 40  | 165 | 0,2 | -   | 0,292 | 1 | 71702849 | -          |
| 33,7  | 35 | 25x2,5 | M8/M10  | 70 | 40  | 175 | 0,2 | -   | 0,306 | 1 | 71703449 | -          |
| 42,4  | 42 | 25x3,0 | M10/M12 | 74 | 40  | 192 | 0,2 | -   | 0,460 | 1 | 71704250 | -          |
| 48,3  |    | 25x3,0 | M10/M12 | 75 | 50  | 197 | 0,4 | -   | 0,484 | 1 | 71804850 | -          |
| 54,0  |    | 30x3,0 | M10/M12 | 75 | 50  | 234 | 0,4 | -   | 0,596 | 1 | 71805442 | -          |
| 57,0  |    | 30x3,0 | M10/M12 | 75 | 50  | 220 | 0,4 | -   | 0,600 | 1 | 71805742 | -          |
| 60,3  |    | 30x3,0 | M10/M12 | 74 | 50  | 223 | 0,4 | -   | 0,610 | 1 | 71806042 | -          |
| 63,5  |    | 30x3,0 | M10/M12 | 75 | 50  | 226 | 0,5 | -   | 0,627 | 1 | 71806442 | -          |
| 70,0  |    | 25x3,0 | M10/M12 | 75 | 66  | 219 | 0,6 | 0,7 | 0,527 | 1 | 71907050 | 71907050/T |
| 76,1  |    | 25x3,0 | M10/M12 | 75 | 66  | 225 | 0,6 | 0,7 | 0,581 | 1 | 71907650 | 71907650/T |
| 88,9  |    | 30x3,0 | M10/M12 | 75 | 83  | 252 | 0,8 | 1,1 | 0,750 | 1 | 75508942 | 75508942/T |
| 108,0 |    | 30x3,0 | M10/M12 | 76 | 83  | 272 | 0,9 | 1,3 | 0,818 | 1 | 75510842 | 75510842/T |
| 114,3 |    | 30x3,0 | M10/M12 | 77 | 83  | 290 | 1,0 | 1,4 | 0,838 | 1 | 75511442 | 75511442/T |
| 133,0 |    | 35x4,0 | M10/M12 | 75 | 100 | 308 | 1,2 | 1,9 | 1,280 | 1 | 76513344 | 76513344/T |
| 139,7 |    | 35x4,0 | M10/M12 | 75 | 100 | 323 | 1,2 | 2,0 | 1,340 | 1 | 76514044 | 76514044/T |
| 159,0 |    | 35x4,0 | M10/M12 | 77 | 100 | 332 | 1,3 | 2,3 | 1,420 | 1 | 76515944 | 76515944/T |
| 168,3 |    | 35x4,0 | M10/M12 | 76 | 100 | 342 | 1,4 | 2,5 | 1,460 | 1 | 76516844 | 76516844/T |
| 219,1 |    | 35x4,0 | M16     | 77 | 100 | 400 | 2,4 | 3,2 | 1,745 | 1 | 76521927 | 76521927/T |

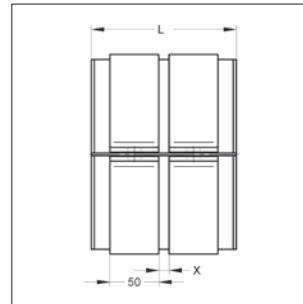
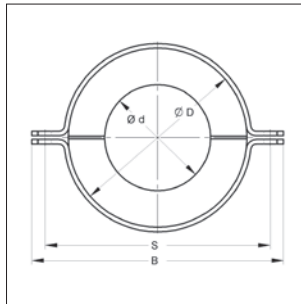
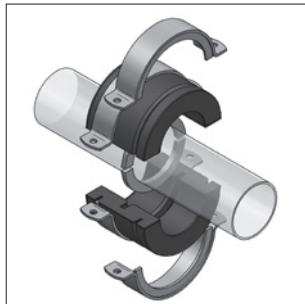
assembly instruction see chapter 15

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

## ■ Insulated fixpoint



Insulated fixpoint mounted  
with fixpoint bracket HV1



### Specification:

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

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

### Technical data:

Insulating material: PUR (with natural rubber on the face)

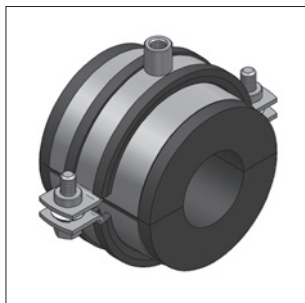
Density: 200 kg/m³  
Thermal conductivity: 0,037 W/mK  
Temperature range: -50 °C up to +105 °C

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

❗ For detailed information see chapter 3a

06

## ■ Foamglas® insulated pipe clamp



Foamglas® insulated pipe clamp  
with sheet jacket

Delivery time on request

Due to high risk of breakage during shipment of Foamglas® insulated pipe clamps, suitable packing is mandatory. A handling fee of 60 € will apply.

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

No exchange or return.



### Specification:

Application area: A thermal decoupled mounting of tubes guarantees a reliable prevention of condensate for refrigeration, air-conditioning and drinking water technologies in the sector pipe clamping. Recommended for horizontales pipeline laying.

Remark: Insulated clamps Foamglas will be delivered always with half jacket (not overlapping)

Scope of supply: Insulation thickness: 30 - 50 mm  
Pipe diameter: 21,3 - 610,0 mm  
Variant demand on request.

Characteristic: Acc. AGI requirements

**Needed accessory:** Single-package bitumen system PC® 18

Part-No.: 5919001

Temperature range: -20°C - +80°C

Water vapor diffusion:  $\mu = 50000$

Color: black

### Technical data:

Identification: Foamglas® shell  
Compounding: aluminium-silicate-glass, inorganic, without binding material  
Deformation resistance: dimension-stable, no swelling, no shrinking, no distortion and no dishing

Fire-performance: noncombustible acc. DIN 4102, T1, reaction to fire classification A1, Euro class A

Temperature range: -260°C - +430°C

Steam diffusion resistance number: vapour leak-proof according DIN 52615

Thermal conductivity: 0,041 W/mK

Density: 120 kg/m³

Maximum pressure load: 0,7 N/mm²

## ■ PUR-assembling glue



PUR-assembling glue

**Specification:**

Application area: to glue the insulated pipe clamps  
 Suitable for a diffusion-resistant gluing of:

- insulating tubes of PE
- insulating tubes of synthetic rubber

Quantity requirement: approx. 400 g/m<sup>2</sup>  
 Storage: frost-protected

**Technical data:**

Identification: polyurethane-assembling glue

Remark: special glue, free of silicone  
 for gluing the connection-insulations see chapter 09.

| Identification            | Packaging | Content | Packing<br>[pc.] | Part-No. |
|---------------------------|-----------|---------|------------------|----------|
| <b>PU-assembling glue</b> | cartridge | 310 ml  | 1                | 5911040  |
| <b>PU-assembling glue</b> | bucket    | 5,0 kg  | 1                | 5911508  |

# Anchor Overview

| Identification                  |                                                                                     |      | Approval                                      |                                  |                           | Anchorage       |          |                     |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
|---------------------------------|-------------------------------------------------------------------------------------|------|-----------------------------------------------|----------------------------------|---------------------------|-----------------|----------|---------------------|-------------|-----------------|--------|-----------------|--------------|-----------------------|-----------------|--------------|---------------------------------------|------------------------------------|
|                                 |                                                                                     | Page | Pressure area proofed<br>(uncracked concrete) | Tensile area, (cracked concrete) | With approval ETA or DIBt | Stainless steel | Concrete | Dense natural stone | Solid brick | Lime-sand-brick | Pumice | Porous concrete | Plasterboard | Vertical coring brick | Lime-sand plate | Hollow block | fiber-cement, chipboard, plasterboard | Metal profile, trapeze sheet metal |
| General anchoring               |                                                                                     |      |                                               |                                  |                           |                 |          |                     |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| MEFA nylon dowel K2             |    | 7/3  |                                               |                                  |                           |                 | ■        | ■                   | ■           | ■               | ■      | ■               | ■            | □                     | □               | □            |                                       |                                    |
| Brass expansion anchor          |    | 7/3  |                                               |                                  |                           |                 | ■        | ■                   | ■           | ■               | ■      |                 |              | □                     | □               | □            |                                       |                                    |
| Heavy-duty anchors              |                                                                                     |      |                                               |                                  |                           |                 |          |                     |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| TSM concrete screw              |    | 7/4  | ●                                             | ●                                | ●                         | x               | ■        | □                   | □           | □               |        |                 |              |                       |                 |              |                                       |                                    |
| Bolt anchor BZ plus             |    | 7/6  | ●                                             | ●                                | ●                         | x               | ■        | □                   |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| Nail anchor N                   |    | 7/7  |                                               | ●                                | ● <sup>3</sup>            | x               | ■        | □                   |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| Zykon hammer-set anchor FZEA II |   | 7/8  | ●                                             | ●                                | ●                         | x               | ■        | □                   | □           | □               |        |                 |              |                       |                 |              |                                       |                                    |
| Impact anchor E / ES and E A4   |  | 7/9  | ●                                             | ●                                | ● <sup>3</sup>            | x               | ■        | □                   |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| Cavity fixing                   |                                                                                     |      |                                               |                                  |                           |                 |          |                     |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| Hollow core anchor Easy         |  | 7/10 | ●                                             | ●                                | ● <sup>2</sup>            |                 | ■        |                     |             |                 |        |                 |              |                       |                 |              |                                       |                                    |
| Toggle bolt                     |  | 7/11 |                                               |                                  |                           |                 |          |                     |             |                 |        |                 |              |                       | □               | □            | ■                                     | ■                                  |
| Toggle bolt BIG M               |                                                                                     | 7/11 |                                               |                                  |                           |                 |          |                     |             |                 |        |                 |              |                       | □               | □            | ■                                     | ■                                  |

■ well suited    □ suited to a limited extend    ● available

<sup>1</sup> available in brickwork

<sup>2</sup> prestressed concrete, false ceiling plate

<sup>3</sup> min 3 running anchorage points

# Overview

| Overview for the<br>fixing of single<br>and paired anchors<br><br>Loads $N_{zul}$ : according to<br>the general technical<br>approval for tensile area <sup>1) 2)</sup><br><br>(permanent loads) | Clearance hole on the<br>component | Thread | Execution        |                 | Drill-Ø<br>[mm] | min. drill hole depth<br>[mm] | Clamping strength<br>[mm]     | characteristic<br>wall clearance $C_{ct, N}$<br>[mm] | characteristic<br>axial distance $S_{a, N}$<br>[mm] | Centric tensile load $N_{zul}$<br>[kN] | $N_{zul}$ in tensile area<br>for 2 anchors with<br>standardised<br>axial distance<br>of MEFA-components |                   |                  |      | reduced tensile loads $N_{zul}$<br>single anchor with<br>possible min.<br>axial distance $S_{min}$<br>[mm] | needed anchorage-<br>concrete (tensile area)          | min. component thickness<br>[mm] |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------|------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------------------------------|-----------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------|------------------|------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------|
|                                                                                                                                                                                                  |                                    |        | Galvanized steel | Stainless steel |                 |                               |                               |                                                      |                                                     |                                        | 150<br>mm<br>[kN]                                                                                       | 100<br>mm<br>[kN] | 80<br>mm<br>[kN] |      |                                                                                                            |                                                       |                                  |
|                                                                                                                                                                                                  |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
|                                                                                                                                                                                                  |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| Zykon hammerset anchor FZEA II                                                                                                                                                                   |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| FZEA II 10 x 40                                                                                                                                                                                  |                                    | M8     | x                | x               | 10              | 40                            | -                             | 60                                                   | 120                                                 | 1,6                                    | 3,2                                                                                                     | 3,2               | 3,2              | 1,6  | 40                                                                                                         | ≥ C20/25                                              | 80                               |
| FZEA II 12 x 40                                                                                                                                                                                  |                                    | M10    | x                | x               | 12              | 40                            | -                             | 60                                                   | 120                                                 | 3,0                                    | 6,1                                                                                                     | 6,1               | 6,1              | 2,5  | 45                                                                                                         |                                                       | 80                               |
| FZEA II 14 x 40                                                                                                                                                                                  |                                    | M12    | x                | x               | 14              | 40                            | -                             | 60                                                   | 120                                                 | 3,7                                    | 7,4                                                                                                     | 6,8               | 6,2              | 2,6  | 50                                                                                                         | or ≥B25                                               | 80                               |
| Bolt anchor BZ plus                                                                                                                                                                              |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| BZ 8-10/75                                                                                                                                                                                       | 9                                  | M8     | x                | x               | 8               | 60                            | 10                            | 69,0                                                 | 138                                                 | 2,5                                    | 4,9                                                                                                     | 4,9               | 4,9              | 2,5  | 40                                                                                                         | ≥ C20/25<br><br>or<br>≥ B25                           | 80                               |
| BZ 8-30/95                                                                                                                                                                                       | 9                                  | M8     | x                | x               | 8               | 60                            | 30                            | 69,0                                                 | 138                                                 | 2,5                                    | 4,9                                                                                                     | 4,9               | 4,9              | 2,5  | 40                                                                                                         |                                                       | 80                               |
| BZ 10-10/90                                                                                                                                                                                      | 12                                 | M10    | x                | x               | 10              | 75                            | 10                            | 90,0                                                 | 180                                                 | 4,4                                    | 8,9                                                                                                     | 8,9               | 8,9              | 4,4  | 50                                                                                                         |                                                       | 100                              |
| BZ 10-30/110                                                                                                                                                                                     | 12                                 | M10    | x                | x               | 10              | 75                            | 30                            | 90,0                                                 | 180                                                 | 4,4                                    | 8,9                                                                                                     | 8,9               | 8,9              | 4,4  | 50                                                                                                         |                                                       | 100                              |
| BZ 10-50/130                                                                                                                                                                                     | 12                                 | M10    | x                | x               | 10              | 75                            | 50                            | 90,0                                                 | 180                                                 | 4,4                                    | 8,9                                                                                                     | 8,9               | 8,9              | 4,4  | 50                                                                                                         |                                                       | 100                              |
| BZ 12-15/110                                                                                                                                                                                     | 14                                 | M12    | x                | x               | 12              | 90                            | 15                            | 97,5                                                 | 195                                                 | 5,9                                    | 11,8                                                                                                    | 11,8              | 11,8             | 5,9  | 60                                                                                                         |                                                       | 110                              |
| BZ 12-30/125                                                                                                                                                                                     | 14                                 | M12    | x                | x               | 12              | 90                            | 30                            | 97,5                                                 | 195                                                 | 5,9                                    | 11,8                                                                                                    | 11,8              | 11,8             | 5,9  | 60                                                                                                         |                                                       | 110                              |
| BZ 12-50/145                                                                                                                                                                                     | 14                                 | M12    | x                | x               | 12              | 90                            | 50                            | 97,5                                                 | 195                                                 | 5,9                                    | 11,8                                                                                                    | 11,8              | 11,8             | 5,9  | 60                                                                                                         |                                                       | 110                              |
| BZ 12-105/200                                                                                                                                                                                    | 14                                 | M12    | x                |                 | 12              | 90                            | 105                           | 97,5                                                 | 195                                                 | 5,9                                    | 11,8                                                                                                    | 11,8              | 11,8             | 5,9  | 60                                                                                                         | 110                                                   |                                  |
| BZ 16-25/145                                                                                                                                                                                     | 18                                 | M16    | x                | x               | 16              | 110                           | 25                            | 127,5                                                | 255                                                 | 12,3                                   | 22,1                                                                                                    | 19,4              | 18,3             | 8,6  | 60                                                                                                         |                                                       | 170 (140) <sup>4)</sup>          |
| BZ 16-100/220                                                                                                                                                                                    | 18                                 | M16    | x                | x               | 16              | 110                           | 100                           | 127,5                                                | 255                                                 | 12,3                                   | 22,1                                                                                                    | 19,4              | 18,3             | 8,6  | 60                                                                                                         |                                                       | 170 (140) <sup>4)</sup>          |
| Hollow core anchor Easy                                                                                                                                                                          |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| Easy M8                                                                                                                                                                                          | 9                                  | M8     | x                |                 | 12              | 55                            | by screw length               | 150                                                  | 300                                                 | 0,70                                   | 0,94                                                                                                    | 0,79              | 0,73             | 0,35 | 70                                                                                                         | Prestressed<br>concrete-<br>≥C45/55<br><br>or<br>≥B55 | thickness<br>≥ 25mm              |
| Easy M10                                                                                                                                                                                         | 12                                 | M10    | x                |                 | 16              | 60                            |                               | 150                                                  | 300                                                 | 1,20                                   | 2,13                                                                                                    | 2,04              | 2,00             | 1,00 | 80                                                                                                         |                                                       | ≥ 30mm                           |
| Impact anchor E (for multiple use of non-structural systems) <sup>5)</sup>                                                                                                                       |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| E M6                                                                                                                                                                                             | 7                                  | M6     | x                | x               | 8               | 30                            | selectable by<br>screw length | 65                                                   | 130                                                 | 1,2                                    | 2,2                                                                                                     | 2,1               | 2,0              | 0,9  | 55                                                                                                         | ≥ C20/25<br><br>or<br>≥ B25                           | 100                              |
| E M8                                                                                                                                                                                             | 9                                  | M8     | x                | x               | 10              | 30                            |                               | 90                                                   | 180                                                 | 1,7                                    | 2,2                                                                                                     | 2,2               | 2,2              | 1,1  | 60                                                                                                         |                                                       | 100                              |
| E M8x40                                                                                                                                                                                          | 9                                  | M8     | x                | x               | 10              | 40                            |                               | 105                                                  | 210                                                 | 2,1                                    | 2,2                                                                                                     | 2,2               | 2,2              | 1,1  | 80                                                                                                         |                                                       | 100                              |
| E M10                                                                                                                                                                                            | 12                                 | M10    | x                | x               | 12              | 40                            |                               | 85                                                   | 170                                                 | 2,1                                    | 2,2                                                                                                     | 2,2               | -                | 1,1  | 100                                                                                                        |                                                       | 120                              |
| E M12                                                                                                                                                                                            | 14                                 | M12    | x                | x               | 15              | 50                            |                               | 85                                                   | 170                                                 | 2,5                                    | 2,2                                                                                                     | -                 | -                | 1,1  | 120                                                                                                        |                                                       | 130                              |
| TSM concrete screw                                                                                                                                                                               |                                    |        |                  |                 |                 |                               |                               |                                                      |                                                     |                                        |                                                                                                         |                   |                  |      |                                                                                                            |                                                       |                                  |
| TSM 6x60 <sup>5)</sup>                                                                                                                                                                           |                                    | -      | x                | -               | 6               | 65                            | 5                             | 100                                                  | 200                                                 | 0,8                                    | 1,6                                                                                                     | 1,6               | 1,6              | 0,8  | 40                                                                                                         | ≥ C20/25<br><br>or<br>≥ B25                           | 110                              |
| TSM 6x80 <sup>5)</sup>                                                                                                                                                                           |                                    | -      | x                | -               | 6               | 65                            | 25                            | 100                                                  | 200                                                 | 0,8                                    | 1,6                                                                                                     | 1,6               | 1,6              | 0,8  | 40                                                                                                         |                                                       | 110                              |
| TSM 6x100 <sup>5)</sup>                                                                                                                                                                          |                                    | -      | x                | -               | 6               | 65                            | 45                            | 100                                                  | 200                                                 | 0,8                                    | 1,6                                                                                                     | 1,6               | 1,6              | 0,8  | 40                                                                                                         |                                                       | 110                              |
| TSM 8x70                                                                                                                                                                                         |                                    | -      | x                | -               | 8               | 85                            | 5                             | 76,5                                                 | 153                                                 | 1,5                                    | 3,4                                                                                                     | 3,4               | 3,4              | 1,5  | 50                                                                                                         |                                                       | 120                              |
| TSM 8x100                                                                                                                                                                                        |                                    | -      | x                | -               | 8               | 85                            | 35                            | 76,5                                                 | 153                                                 | 1,5                                    | 3,4                                                                                                     | 3,4               | 3,4              | 1,5  | 50                                                                                                         |                                                       | 120                              |
| TSM 10x90                                                                                                                                                                                        |                                    | -      | x                | -               | 10              | 95                            | 5                             | 102                                                  | 204                                                 | 2,5                                    | 5,1                                                                                                     | 5,1               | 5,1              | 2,5  | 70                                                                                                         |                                                       | 130                              |
| TSM 10x120                                                                                                                                                                                       |                                    | -      | x                | -               | 10              | 95                            | 25                            | 102                                                  | 204                                                 | 2,5                                    | 5,1                                                                                                     | 5,1               | 5,1              | 2,5  | 70                                                                                                         |                                                       | 130                              |
| TSM 10x150                                                                                                                                                                                       |                                    | -      | x                | -               | 10              | 95                            | 50                            | 102                                                  | 204                                                 | 2,5                                    | 5,1                                                                                                     | 5,1               | 5,1              | 2,5  | 70                                                                                                         |                                                       | 130                              |
| TSM 10x105 A4                                                                                                                                                                                    |                                    | -      | -                | x               | 10              | 95                            | 20                            | 102                                                  | 204                                                 | 4,0                                    | 7,4                                                                                                     | 7,4               | 7,4              | 4,0  | 70                                                                                                         | 130                                                   |                                  |

<sup>1)</sup> Live load or load-mix has to be considered special.

<sup>2)</sup> All loading capacities are determined without influence of wall distances.

<sup>3)</sup> Pre-positioned installation.

<sup>4)</sup> Wall- and axial distance for reduced min. component thickness see approval

<sup>5)</sup> 3 running anchorage points; max. load per anchorage point max. 2,0 kN

## MEFA nylon dowel K2



MEFA nylon dowel K2

**Specification:**

Application area: concrete- and masonry material, perforated brick, porous concrete, gas concrete

Mounting method: Wood- and chipboard screw

**Technical data:**

Material: plastic

Material type: polyamide PA 6 / nylon

Color: yellow

Temperature resistance: - 40 °C up to + 100 °C

**Installation advise:** The screw should drive through the end of dowel

| Size      | Length | drill diameter | min. drilling depth | screw OD   | Weight   | Packing | Part-no. |
|-----------|--------|----------------|---------------------|------------|----------|---------|----------|
| [mm]      | [mm]   | [mm]           | [mm]                | [mm]       | [kg/100] | [pcs.]  |          |
| <b>5</b>  | 25     | 5,0 - 5,5      | 30                  | 2,5 - 4,0  | 0,038    | 100     | 2010011  |
| <b>6</b>  | 33     | 6,0 - 6,5      | 40                  | 3,5 - 5,0  | 0,076    | 100     | 2010038  |
| <b>8</b>  | 44     | 8,0 - 8,5      | 64                  | 4,5 - 6,0  | 0,162    | 100     | 2010046  |
| <b>10</b> | 44     | 10,0 - 10,5    | 64                  | 6,0 - 8,0  | 0,246    | 50      | 2010054  |
| <b>10</b> | 60     | 10,0 - 10,5    | 80                  | 6,0 - 8,0  | 0,304    | 50      | 2010062  |
| <b>12</b> | 60     | 12,0 - 13,0    | 80                  | 8,0 - 10,0 | 0,472    | 25      | 2010070  |
| <b>14</b> | 80     | 14,0           | 100                 | 8,0 - 12,0 | 0,748    | 25      | 2010089  |

Loads see on page 7/12

## Brass expansion anchor



Brass expansion anchor

**Specification:**

Application area: concrete, solid brick, natural stone, lime sand brick

Mounting method: machine screw, threaded bolt

**Technical data:**

Material: brass

**Installation advise:** Length of screw should correspond exactly with length of anchor plus material thickness of attaching part.

| Size       | Length | drill diameter | drilling depth | depth of anchoring | Weight   | Packing | Part-no. |
|------------|--------|----------------|----------------|--------------------|----------|---------|----------|
|            | [mm]   | [mm]           | [mm]           | [mm]               | [kg/100] | [pcs.]  |          |
| <b>M6</b>  | 22,0   | 8,0            | 26             | 23                 | 0,360    | 100     | 2060035  |
| <b>M8</b>  | 27,5   | 11,0           | 34             | 30                 | 0,790    | 100     | 2060043  |
| <b>M10</b> | 32,0   | 13,0           | 38             | 34                 | 1,300    | 100     | 2060051  |
| <b>M12</b> | 40,0   | 18,0           | 44             | 40                 | 2,360    | 50      | 2060078  |

## TSM concrete screws



Cheese-head screw VZ 30


Hexagon head  
with pressed washer


### Specification

Application area:

concrete

Suitable for:

profile rails, consoles,  
pipe clamps, duct holder

### Technical data:

Material TSM:

steel

Surface:

zinc-lamella coating, galvanized

Material TSM A4:

stainless steel V4A

### Approval:

**ETA-16/0123** (TSM 5+6)  
for multiple fastening  
(TSM 6 for pre-stressed  
hollow concrete slabs)  
**ETA-15/0514** (TSM 6-14)  
for single fixation  
**ETA-15/0055** (TSM-L 6)  
for multiple fastening

### Application example:

Drilling holes have to be drilled vertically to the mounting plane and with predefined minimum drilling depth. Drilling dust has to be removed from drilling hole. When turning screw in - put pressure onto impact driver.

### Mounting tool:

TSM concrete screw has to be fixed by an impact screw driver with a torque control (direction of rotation to be checked). Impact drilling machines are not allowed!!

\*The TSM-L 6 may not be screwed with an impact screw driver.

### Allen-head screw VZ 30, galvanized

| Type /<br>thread | Length<br>L | Drill-Ø<br>d | WS | min.<br>drill hole<br>t | min.<br>anchoring-<br>depth | Clamping-<br>thickness<br>d <sub>a</sub> , t <sub>fix</sub> | head-Ø | Weight   | Packing | Part-no. |
|------------------|-------------|--------------|----|-------------------------|-----------------------------|-------------------------------------------------------------|--------|----------|---------|----------|
|                  | [mm]        | [mm]         |    | [mm]                    | [mm]                        | [mm]                                                        | [mm]   | [kg/100] | [pcs.]  |          |
| <b>TSM-L 6*</b>  | <b>28</b>   | 6            | -  | 28                      | 25                          | 3                                                           | 14,3   | 0,76     | 100     | 2230628  |
| <b>TSM 6</b>     | <b>60</b>   | 6            | -  | 60                      | 55                          | 5                                                           | 14,4   | 1,54     | 100     | 2230660  |

### Hexagon head with pressed washer, zinc-lamella coating

|               |            |    |    |    |    |    |      |      |     |          |
|---------------|------------|----|----|----|----|----|------|------|-----|----------|
| <b>TSM 6</b>  | <b>60</b>  | 6  | 13 | 60 | 55 | 5  | 15,0 | 1,88 | 100 | 2230664  |
| <b>TSM 8</b>  | <b>70</b>  | 8  | 13 | 75 | 65 | 5  | 16,0 | 3,83 | 50  | 2230876  |
| <b>TSM 8</b>  | <b>100</b> | 8  | 13 | 75 | 65 | 35 | 16,0 | 5,00 | 50  | 2230901  |
| <b>TSM 10</b> | <b>90</b>  | 10 | 15 | 95 | 85 | 5  | 20,0 | 7,30 | 50  | 22310091 |

### Hexagon head with pressed washer, stainless steel V4A

|                  |            |    |    |    |    |    |      |      |    |         |
|------------------|------------|----|----|----|----|----|------|------|----|---------|
| <b>TSM-A4 10</b> | <b>100</b> | 10 | 15 | 95 | 85 | 15 | 20,0 | 8,10 | 50 | 2231238 |
|------------------|------------|----|----|----|----|----|------|------|----|---------|



Delivery time: 2 working days

Loads see from page 7/12

# TSM concrete screws



Countersunk head VZ 30



Shoulder screw



Sleeve



## Specification

Application area:  
Suitable for:

concrete  
profile rails, consoles,  
pipe clamps, duct holder

## Technical data:

Material TSM: steel  
Surface: zinc-lamella coating / galvanized

## Approval:

**ETA-16/0123** (TSM 5 + 6)  
for multiple fastening  
(TSM 6 for pre-stressed  
hollow concrete slabs)  
**ETA-15/0514** (TSM 6 - 14)  
for single fixation

## Application example:

The screw head is designed for fixing of MEFA-profile rails trough the slot of C-Profile.  
Drilling holes have to be drilled vertically to the mounting plane and with predefined minimum drilling depth.  
The drilling dust has to be removed from the drilling hole. When turning in screw - put pressure onto impact driver.

## Machines:

The TSM concrete screw has to be screwed with impact driver with torque control (direction of rotation to be checked). Impact drilling machines are not allowed!!

## Countersunk head VZ 30, galvanized

| Type /<br>thread | Length<br>L | Drill-Ø<br>d | min.<br>drill hole<br>t | Clamping-<br>thickness<br>da, tfi x | Male-<br>thread | Female-<br>thread | Weight   | Packing | Part-no. |
|------------------|-------------|--------------|-------------------------|-------------------------------------|-----------------|-------------------|----------|---------|----------|
|                  | [mm]        | [mm]         | [mm]                    | [mm]                                |                 |                   | [kg/100] | [pc.]   |          |
| <b>TSM 6</b>     | <b>80</b>   | 6            | 60                      | 25,0                                | -               | -                 | 1,80     | 100     | 2230681  |

## Shoulder screw SW 10, galvanized

|              |           |   |    |  |       |   |      |     |         |
|--------------|-----------|---|----|--|-------|---|------|-----|---------|
| <b>TSM 6</b> | <b>55</b> | 6 | 65 |  | M8x16 | - | 1,85 | 100 | 2230002 |
|--------------|-----------|---|----|--|-------|---|------|-----|---------|

## Sleeve SW 13, galvanized

|              |           |   |    |  |   |        |      |    |         |
|--------------|-----------|---|----|--|---|--------|------|----|---------|
| <b>TSM 6</b> | <b>55</b> | 6 | 65 |  | - | M8/M10 | 3,80 | 50 | 2230001 |
| <b>TSM 6</b> | <b>35</b> | 6 | 40 |  | - | M8/M10 | 3,40 | 50 | 2230000 |

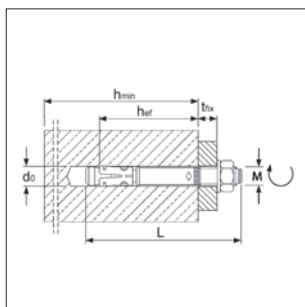
Loads see page 7/12

# 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

## Technical data:

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

Approval: ETA-99/0010

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

<sup>1)</sup> Applies only for standard anchorage depth.

## Bolt anchor BZ plus, galvanized

| Identification     | standard anchorage depth /<br>reduced anchorage depth |     |                              |       |                   |    |                    |    | Seismic <sup>1)</sup><br>C1 / C2 | Anchor-<br>length | Thread  | Weight | Packing | Part no.    |
|--------------------|-------------------------------------------------------|-----|------------------------------|-------|-------------------|----|--------------------|----|----------------------------------|-------------------|---------|--------|---------|-------------|
|                    | clamping<br>strength                                  |     | Drill-Ø<br>x Drillhole depth |       | Setting-<br>depth |    | anchoring<br>depth |    |                                  |                   |         |        |         |             |
|                    | [mm]                                                  |     | [mm]                         |       | [mm]              |    | [mm]               |    |                                  |                   |         |        |         |             |
|                    |                                                       |     |                              |       |                   |    |                    |    |                                  |                   |         |        |         |             |
| BZ 8 -10-21/75     | 10                                                    | 21  | 8x60                         | 8x49  | 52                | 41 | 46                 | 35 | nein                             | 75                | M8x32   | 2,99   | 100     | 221108010   |
| BZ 8 -30-41/95     | 30                                                    | 41  | 8x60                         | 8x49  | 52                | 41 | 46                 | 35 | nein                             | 95                | M8x52   | 3,60   | 100     | 221108030   |
| BZ 10 -10-30/90    | 10                                                    | 30  | 10x75                        | 10x55 | 68                | 48 | 60                 | 40 | ja                               | 90                | M10x42  | 5,88   | 50      | 221110010   |
| BZ 10 -30-50/110   | 30                                                    | 50  | 10x75                        | 10x55 | 68                | 48 | 60                 | 40 | ja                               | 110               | M10x62  | 6,88   | 50      | 221110030   |
| BZ 10 -50-70/130   | 50                                                    | 70  | 10x75                        | 10x55 | 68                | 48 | 60                 | 40 | ja                               | 130               | M10x82  | 7,90   | 50      | 221110050   |
| BZ 12 -15-35/110   | 15                                                    | 35  | 12x90                        | 12x70 | 80                | 60 | 70                 | 50 | ja                               | 110               | M12x51  | 10,20  | 25      | 221112015   |
| BZ 12 -30-50/125   | 30                                                    | 50  | 12x90                        | 12x70 | 80                | 60 | 70                 | 50 | ja                               | 125               | M12x66  | 11,36  | 25      | 22111203001 |
| BZ 12 -50-70/145   | 50                                                    | 70  | 12x90                        | 12x70 | 80                | 60 | 70                 | 50 | ja                               | 145               | M12x86  | 12,92  | 25      | 221112050   |
| BZ 12 -105-125/200 | 105                                                   | 125 | 12x90                        | 12x70 | 80                | 60 | 70                 | 50 | ja                               | 200               | M12x141 | 16,84  | 25      | 221112105   |
| BZ 16 -15-35/135   | 15                                                    | 35  | 16x110                       | 16x90 | 97                | 77 | 85                 | 65 | ja                               | 135               | M16x56  | 21,60  | 20      | 221116015   |
| BZ 16 -25-45/145   | 25                                                    | 45  | 16x110                       | 16x90 | 97                | 77 | 85                 | 65 | ja                               | 145               | M16x66  | 23,00  | 20      | 221116025   |
| BZ 16 -80-100/200  | 80                                                    | 100 | 16x110                       | 16x90 | 97                | 77 | 85                 | 65 | ja                               | 220               | M16x121 | 32,00  | 10      | 221116080   |

## Bolt anchor BZ plus A4, stainless steel

|                    |     |     |        |       |    |    |    |    |      |     |         |       |     |           |
|--------------------|-----|-----|--------|-------|----|----|----|----|------|-----|---------|-------|-----|-----------|
| BZ 8 -10-21/75     | 10  | 21  | 8x60   | 8x49  | 52 | 41 | 46 | 35 | nein | 75  | M8x32   | 2,99  | 100 | 222108010 |
| BZ 8 -30-41/95     | 30  | 41  | 8x60   | 8x49  | 52 | 41 | 46 | 35 | nein | 95  | M8x52   | 3,60  | 100 | 222108030 |
| BZ 10 -10-30/90    | 10  | 30  | 10x75  | 10x55 | 68 | 48 | 60 | 40 | ja   | 90  | M10x42  | 5,88  | 50  | 222110010 |
| BZ 10 -30-50/110   | 30  | 50  | 10x75  | 10x55 | 68 | 48 | 60 | 40 | ja   | 110 | M10x62  | 6,88  | 50  | 222110030 |
| BZ 10 -50-70/130   | 50  | 70  | 10x75  | 10x55 | 68 | 48 | 60 | 40 | ja   | 130 | M10x82  | 7,90  | 50  | 222110050 |
| BZ 12 -15-35/110   | 15  | 35  | 12x90  | 12x70 | 80 | 60 | 70 | 50 | ja   | 110 | M12x51  | 10,20 | 25  | 222112015 |
| BZ 12 -30-50/125   | 30  | 50  | 12x90  | 12x70 | 80 | 60 | 70 | 50 | ja   | 125 | M12x66  | 11,36 | 25  | 222112030 |
| BZ 12 -50-70/145   | 50  | 70  | 12x90  | 12x70 | 80 | 60 | 70 | 50 | ja   | 145 | M12x86  | 12,92 | 25  | 222112050 |
| BZ 12 -105-125/200 | 105 | 125 | 12x90  | 12x70 | 80 | 60 | 70 | 50 | ja   | 200 | M12x141 | 16,84 | 25  | 222112105 |
| BZ 16-25-45/145    | 25  | 45  | 16x110 | 16x90 | 97 | 77 | 85 | 65 | ja   | 145 | M16x66  | 23,40 | 20  | 222116025 |



Delivery time: 3 working days

Loads see on page 7/13

assembly instruction see chapter 15

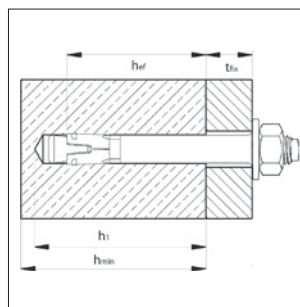
# Nail anchor N



Nail anchor N  
Nail anchor N A4



Nail anchor N-M



## Specification:

Application area: cracked concrete with redundant fastening C12/15 - C50/60  
installation advise: hammer Nail anchor N trough fixture into concrete. When load is applied Nail anchor expands automatically

## Technical data:

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

**Application example:** ceiling constructions, piping, cladding etc.

<sup>1)</sup> Please note reduced loads at reduced anchorage depth.

## Nail anchor N, galvanized

| Identification | Drill<br>Ø | Drillhole<br>depth     |                                | effective-<br>anchoring<br>depth |                                 | max. clam-<br>ping strength <sup>1)</sup> |                                  | Washer-<br>Ø | Anchor-<br>length | Weight   | Packing | Part no. |
|----------------|------------|------------------------|--------------------------------|----------------------------------|---------------------------------|-------------------------------------------|----------------------------------|--------------|-------------------|----------|---------|----------|
|                | d<br>[mm]  | h <sub>1</sub><br>[mm] | h <sub>1, red 1)</sub><br>[mm] | h <sub>ef</sub><br>[mm]          | h <sub>ef, red 1)</sub><br>[mm] | t <sub>fix</sub><br>[mm]                  | t <sub>fix, red 1)</sub><br>[mm] |              | L<br>[mm]         | [kg/100] | [pcs.]  |          |
| N 6-5-10/49    | 6          | 40                     | 35                             | 30                               | 25                              | 5                                         | 10                               | 18           | 49                | 1.40     | 200     |          |

## Nail anchor N A4, stainless steel

|                    |   |    |    |    |    |   |   |    |    |      |     |              |
|--------------------|---|----|----|----|----|---|---|----|----|------|-----|--------------|
| <b>N 6-5/49 A4</b> | 6 | 40 | 40 | 30 | 30 | 5 | 5 | 18 | 49 | 1,40 | 200 | 222861010541 |
|--------------------|---|----|----|----|----|---|---|----|----|------|-----|--------------|

## Nail anchor N-M, galvanized

| Identification         | Drill<br>Ø | Drillhole<br>depth     | effective-<br>anchoring<br>depth | SW | female<br>thread | Anchor-<br>length | Weight   | Packing | Part no.     |
|------------------------|------------|------------------------|----------------------------------|----|------------------|-------------------|----------|---------|--------------|
|                        | d<br>[mm]  | h <sub>1</sub><br>[mm] | h <sub>ef</sub><br>[mm]          |    |                  | L<br>[mm]         | [kg/100] | [pcs.]  |              |
| <b>N-M 6-25 M8/M10</b> | 6          | 35                     | 25                               | 13 | M8/M10           | 58                | 2,75     | 100     | 221860310101 |
| <b>N-M 6-30 M8/M10</b> | 6          | 40                     | 30                               | 13 | M8/M10           | 63                | 2,85     | 100     | 221860315101 |



**i** Delivery time: 3 working days

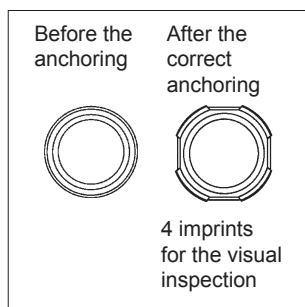
**i** Loads see on page 7/15

**⚠** assembly instruction see chapter 15

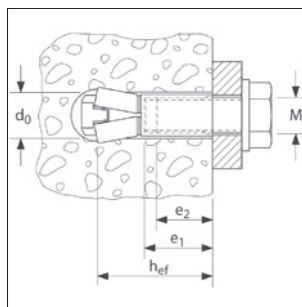
# Zykon hammerset anchor FZEA II and FZEA II A4



Zykon hammerset anchor FZEA II  
Zykon hammerset anchor FZEA II A4



FZEA II-imprint



## Specification:

Application area: cracked and non-cracked concrete B25 up to B55 / C20/25 up to C50/60, concrete B15, natural stone with dense structure, solid brick, solid sand-lime brick.  
Application: undercut anchor with female thread pre-positioned installation

## Technical data:

Material FZEA II: steel  
Surface: galvanized  
Material FZEA II A4: stainless steel V4A

Approval: ETA-06/0271

Application example: When the internal expansion pin is driven in with setting tool, anchor sleeve expands to fill undercut hole with a positive fit. Therefore assembly defects can be avoided.

## Steel, galvanized

| Identification  | Drill hole-Ø  | Anchorage depth  | min. screw in depth | max. screw in depth | Thread | Weight   | Packing | Part no. |
|-----------------|---------------|------------------|---------------------|---------------------|--------|----------|---------|----------|
|                 | $d_0$<br>[mm] | $h_{ef}$<br>[mm] | $e_2$<br>[mm]       | $e_1$<br>[mm]       | M      | [kg/100] | [pcs.]  |          |
| FZEA II 10 x 40 | 10            | 40               | 11                  | 17                  | M8     | 1,50     | 100     | 21721040 |
| FZEA II 12 x 40 | 12            | 40               | 13                  | 19                  | M10    | 2,06     | 100     | 21721240 |
| FZEA II 14 x 40 | 14            | 40               | 15                  | 21                  | M12    | 2,78     | 50      | 21721440 |

## Stainless steel, V4A

|                    |    |    |    |    |     |      |     |         |
|--------------------|----|----|----|----|-----|------|-----|---------|
| FZEA II 10 x 40 A4 | 10 | 40 | 11 | 17 | M8  | 1,50 | 100 | 2176042 |
| FZEA II 12 x 40 A4 | 12 | 40 | 13 | 19 | M10 | 2,06 | 100 | 2176242 |
| FZEA II 14 x 40 A4 | 14 | 40 | 15 | 21 | M12 | 2,78 | 50  | 2176442 |



Delivery time: 3 working days

Loads see on page 7/16

assembly instruction see chapter 15

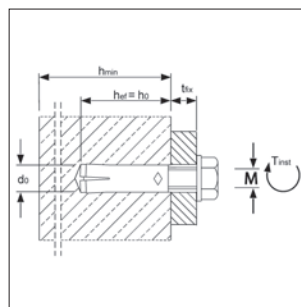
## Impact anchor E / ES and E / ES A4



Impact anchor E  
Impact anchor E A4



Impact anchor ES  
Impact anchor ES A4



### Specification:

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

### Technical data:

Material E / ES: steel  
Surface: galvanized  
Material E / ES A4: stainless steel V4A

### Approval:

ETA-05/0116

### Application example:

Attaching suspended ceilings, ventilation and sprinkler systems,  
structural steel, brackets, threaded rods.

### Steel, galvanized

| Identification | Drill hole<br>Ø x depth | Thread<br>Ø x length | Minimum<br>screwing depth<br>L <sub>sd</sub><br>[mm] | Maximum<br>screwing depth<br>L <sub>th</sub><br>[mm] | Weight<br>[kg/100] | Packing<br>[pcs.] | Part no.     |
|----------------|-------------------------|----------------------|------------------------------------------------------|------------------------------------------------------|--------------------|-------------------|--------------|
| E M6x30        | 8 x 30                  | M6 x 13              | 7                                                    | 13                                                   | 0,84               | 100               | 210805005101 |
| ES M8x30       | 10 x 30                 | M8 x 13              | 9                                                    | 13                                                   | 1,15               | 100               | 210805130101 |
| ES M8x40       | 10 x 40                 | M8 x 20              | 9                                                    | 20                                                   | 1,53               | 100               | 210805155101 |
| ES M10x40      | 12 x 40                 | M10 x 15             | 11                                                   | 15                                                   | 2,20               | 50                | 210805240101 |
| ES M12x50      | 15 x 50                 | M12 x 18             | 13                                                   | 18                                                   | 4,30               | 50                | 210805330101 |
| E M16x65       | 20 x 65                 | M16 x 23             | 18                                                   | 23                                                   | 10,20              | 25                | 210805500101 |

### Stainless steel V4A

|              |         |          |    |    |       |     |              |
|--------------|---------|----------|----|----|-------|-----|--------------|
| ES M8x30 A4  | 10 x 30 | M8 x 13  | 9  | 13 | 1,15  | 100 | 211805150501 |
| ES M10x40 A4 | 12 x 40 | M10 x 15 | 11 | 15 | 2,20  | 50  | 211805250501 |
| ES M12x50 A4 | 15 x 50 | M12 x 18 | 13 | 18 | 4,30  | 50  | 211805350501 |
| E M16x65 A4  | 20 x 65 | M16 x 23 | 18 | 23 | 10,28 | 25  | 211805500501 |



**i** Delivery time: 2 working days

**i** Loads see on page 7/17

**⚠** assembly instruction see chapter 15

## Setting tool



### Setting tool E SW and E MSH

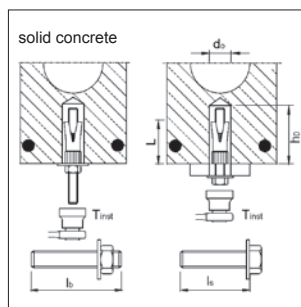
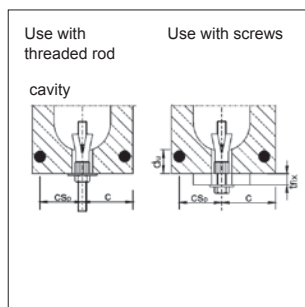
| Identification                         | Fits anchor        | Packing<br>[pc.] | Part no.     |
|----------------------------------------|--------------------|------------------|--------------|
| <b>E SW 6*x30</b> (without hand guard) | E M6               | 1                | 531809005150 |
| <b>E MSH 8x30</b>                      | ES M8 / ES M8 A4   | 1                | 531809100180 |
| <b>E MSH 8x40</b>                      | ES M8 x 40         | 1                | 531809105180 |
| <b>E MSH 10x40</b>                     | ES M10 / ES M10 A4 | 1                | 531809200180 |
| <b>E MSH 12x50</b>                     | ES M12 / ES M12 A4 | 1                | 531809300180 |
| <b>E MSH 16x65</b>                     | E M16 / E M16 A4   | 1                | 531809500180 |

\* without placing mark

# Hollow core anchor Easy



Hollow core anchor Easy



## Specification:

Application area: pre-stressed hollow concrete slabs  
Concrete B55 / C45/55

## Technical data:

Material: steel  
Surface: galvanized

## Mounting:

The Hollow-Core Anchor Easy is a one-piece unit, specially designed in pre-stressed hollow concrete slabs. Tightening the screw or nut pulls the expansion cone inside the anchor sleeve which keys into the cavity or provides strong expansion in solid concrete. The approval Z-21.1-1785 allows the anchor to be installed even if the drill hole does not hit the cavity.

## Approval:

Z-21.1-1785

**!! The anchor may also be used, if the expansion area isn't located in a hollow chamber !!**

## Application example:

Suspension of ventilation, sprinkler system, false ceilings, brackets with threaded studs or screws, ducts, anchoring prefabricated panels on hollow concrete floors/ceilings.

| Identification  | Drill-Ø | Thread Ø | Drill hole depth | Sleeve length (without cone) | min. screw length | Tightening torque $T_{inst}$ | Packing | Weight   | Part-no.     |
|-----------------|---------|----------|------------------|------------------------------|-------------------|------------------------------|---------|----------|--------------|
|                 | [mm]    | [mm]     | $h_0$ [mm]       | L [mm]                       | $l_s$             | [Nm]                         | [pc.]   | [kg/100] |              |
| <b>Easy M8</b>  | 12      | M8       | 55               | 35                           | $47 + t_{fix}$    | 20                           | 50      | 1,44     | 221851100101 |
| <b>Easy M10</b> | 16      | M10      | 60               | 40                           | $55 + t_{fix}$    | 30                           | 50      | 3,32     | 221851200101 |

**i** Loads see on page 7/18

**⚙** assembly instruction see chapter 15

# Toggle bolts



KV 8 Toggle bolt



K 8 Toggle bolt



K 10 Heavy-duty-toggle bolt



BIG M Heavy-duty-toggle bolt

**Specification:**

Application area: cavity walls, ceilings, suspended ceilings

**Technical Data:**

Material: steel  
Surface: galvanized, chromated

**Approval:**

G 4890027\*

**Mounting:**

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

KV 8: For stationary fire protection systems apply guidelines of VdS or FM (for pipes up DN 2").  
Nominal load per fixing point for pipes on profiled sheeting is max. 0,8 kN, for other fixation objects on profiled sheeting 1,0 kN. It is recommended to mount every 4th or 5th fixation on a higher static load-bearing position.

**Toggle bolt KV 8**

| Type                    | Threaded rod | Drill-<br>Ø<br>[mm] | min.<br>Hollow depth<br>[mm] | Breaking<br>load<br>[kN] | Weight<br>[kg/pc] | Packing<br>[pcs.] | Part-no. |
|-------------------------|--------------|---------------------|------------------------------|--------------------------|-------------------|-------------------|----------|
| 100 Toggle bolt x KV 8* | M8 x 100     | 22                  | 90                           | 20                       | 0,110             | 50                | 2120081  |
| 200 Toggle bolt x KV 8* | M8 x 200     | 22                  | 90                           | 20                       | 0,138             | 25                | 2120082  |
| 300 Toggle bolt x KV 8* | M8 x 300     | 22                  | 90                           | 20                       | 0,170             | 25                | 2120083  |
| 500 Toggle bolt x KV 8* | M8 x 500     | 22                  | 90                           | 20                       | 0,229             | 25                | 2120085  |

**Toggle bolt K 8**

|                 |          |    |    |    |       |     |         |
|-----------------|----------|----|----|----|-------|-----|---------|
| Toggle bolt K 8 | M8 x 100 | 20 | 75 | 13 | 0,081 | 100 | 2128306 |
|-----------------|----------|----|----|----|-------|-----|---------|

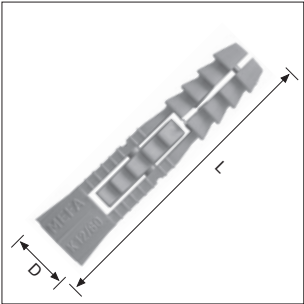
**Toggle bolt K 10 - Heavy-duty**

|                  |           |    |     |    |       |    |         |
|------------------|-----------|----|-----|----|-------|----|---------|
| Toggle bolt K 10 | M10 x 180 | 30 | 140 | 12 | 0,205 | 25 | 2120518 |
|------------------|-----------|----|-----|----|-------|----|---------|

**Toggle bolt BIG M - Heavy-duty**

|                   |           |    |    |    |       |    |         |
|-------------------|-----------|----|----|----|-------|----|---------|
| Toggle bolt BIG M | M10 x 180 | 30 | 90 | 11 | 0,232 | 25 | 2123517 |
|-------------------|-----------|----|----|----|-------|----|---------|

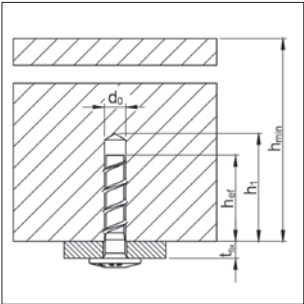
■ Load values MEFA nylon dowel K2



| Allowable tensile load and shear stress (in pressure zone) |      |      |       |       |        |        |
|------------------------------------------------------------|------|------|-------|-------|--------|--------|
| Type of dowel / length of dowel                            | [mm] | 8/44 | 10/44 | 10/60 | 12/60  | 14/80  |
| Screw size                                                 | [mm] | 6/80 | 8/80  | 8/110 | 10/110 | 12/140 |
| Drilling hole depth                                        | [mm] | 64   | 64    | 80    | 80     | 100    |
| Min. depth of anchoring                                    | [mm] | 44   | 44    | 60    | 60     | 80     |
| Tensile load                                               |      |      |       |       |        |        |
| Min. thickness of the component                            | [mm] | 8,5  | 8,5   | 10,0  | 10,0   | 12,0   |
| Admissible load (concrete quality B 25)                    | [kN] | 0,65 | 1,30  | 2,00  | 2,40   | 3,40   |
| Shear stress                                               |      |      |       |       |        |        |
| Min. thickness of the component                            | [mm] | 20   | 20    | 20    | 20     | 20     |
| Admissible load (concrete quality B 25)                    | [kN] | 1,75 | 2,30  | 2,70  | 3,60   | 5,50   |

Inspected: Official research and material test establishment for building industry  
Otto-Graf-Institut at university Stuttgart

■ Load values TSM L 6 concrete screws



07

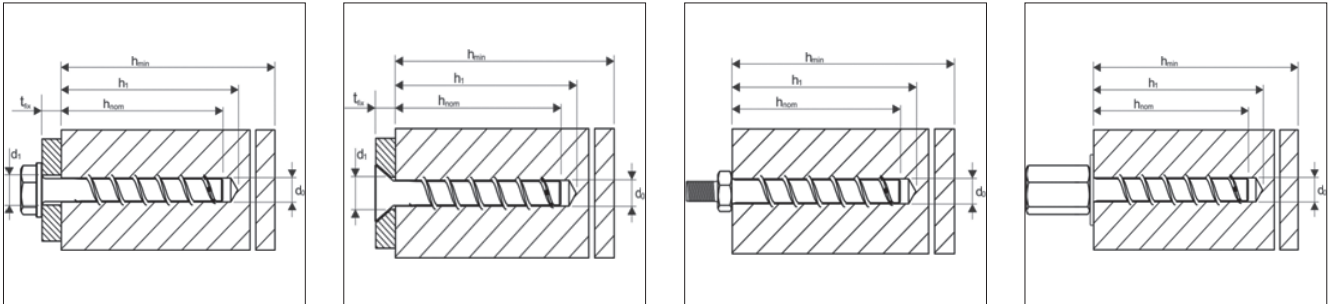
| Technical characteristics without fire request                                    |           |      |      |
|-----------------------------------------------------------------------------------|-----------|------|------|
| Drill diameter                                                                    | $d_0$     | [mm] | 6    |
| Drilling hole depth                                                               | $h_1$     | [mm] | 28   |
| Depth of anchoring                                                                | $h_{ef}$  | [mm] | 25   |
| Min. thickness of the component                                                   | $h_{min}$ | [mm] | 80   |
| Edge distance                                                                     | $c$       | [mm] | 150  |
| Center distance                                                                   | $s$       | [mm] | 200  |
| Allowable load in cracked and uncracked concrete C 20/25 to C 50/60 <sup>1)</sup> | $N_{zul}$ | [kN] | 0,43 |

| Technical characteristics resistant to fire |                                       |      |         |
|---------------------------------------------|---------------------------------------|------|---------|
|                                             |                                       |      | TSM L 6 |
| Fire resistance class                       |                                       |      |         |
| R 30                                        | Allowable load $F_{R, zul, 30}^{1)}$  | [kN] | 0,34    |
| R 60                                        | Allowable load $F_{R, zul, 60}^{1)}$  | [kN] | 0,31    |
| R 90                                        | Allowable load $F_{R, zul, 90}^{1)}$  | [kN] | 0,22    |
| R 120                                       | Allowable load $F_{R, zul, 120}^{1)}$ | [kN] | 0,17    |
| R 30 to R 120                               | Center distance $S_B$                 | [mm] | 120     |
|                                             | Edge distance $C_B$                   |      | 60      |

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.5$  as well a partial safety factor for load actions  $Y_F = 1.4$  were considered for determining the load.

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.0$  as well a partial safety factor for load actions  $Y_F = 1.0$  were considered for determining the load.

# Load values TSM concrete screws for single fixation



| Technical characteristics without fire request for single fixation TSM / TSM A4 / TSM HCR |                   |        |        |        |        |        |        |        |        |        |
|-------------------------------------------------------------------------------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Screw size TSM high performance                                                           |                   |        | TSM 6  |        | TSM 8  |        |        | TSM 10 |        |        |
| Nominal screw-in depth                                                                    | h <sub>nom</sub>  | [mm]   | hnom,1 | hnom,2 | hnom,1 | hnom,2 | hnom,3 | hnom,1 | hnom,2 | hnom,3 |
|                                                                                           |                   |        | 40     | 55     | 45     | 55     | 65     | 55     | 75     | 85     |
| Nominal borehole diameter                                                                 | d <sub>0</sub>    | [mm]   | 6      |        | 8      |        |        | 10     |        |        |
| Borehole depth                                                                            | h <sub>i</sub>    | ≥ [mm] | 45     | 60     | 55     | 65     | 75     | 65     | 85     | 95     |
| Effective anchorage depth                                                                 | h <sub>ef</sub>   | [mm]   | 31     | 44     | 35     | 43     | 52     | 43     | 60     | 68     |
| Round hole in the mounting part                                                           | d <sub>r</sub>    | ≤ [mm] | 8      |        | 12     |        |        | 14     |        |        |
| Admissible tensile loading in cracked concrete                                            | N <sub>zul</sub>  | [kN]   | 1,0    | 1,9    | 2,4    | 4,3    | 5,7    | 4,3    | 8,0    | 9,6    |
| Admissible shear load in cracked concrete                                                 | V <sub>zul</sub>  | [kN]   | 3,3    |        | 8,1    |        |        | 16,2   |        |        |
| Admissible tensile loading in uncracked concrete                                          | N <sub>zul</sub>  | [kN]   | 1,9    | 4,3    | 3,6    | 5,7    | 7,6    | 5,7    | 0,0    | 0,0    |
| Admissible shear load in uncracked concrete                                               | V <sub>zul</sub>  | [kN]   | 3,3    |        | 8,1    |        |        | 16,2   |        |        |
| Minimum edge distance                                                                     | C <sub>min</sub>  | [mm]   | 40     |        | 40     | 50     |        | 50     |        |        |
| Minimum center distance                                                                   | S <sub>min</sub>  | [mm]   | 40     |        | 40     | 50     |        | 50     |        |        |
| Minimum component thickness                                                               | h <sub>min</sub>  | [mm]   | 100    |        | 100    |        | 120    | 100    | 130    |        |
| installation torque                                                                       | T <sub>inst</sub> | [Nm]   | 10     |        | 20     |        |        | 40     |        |        |
| Max. torque                                                                               |                   | [Nm]   | 160    |        | 300    |        |        | 400    |        |        |
| ETA Seismik C1                                                                            | C1                |        | x      |        | x      |        | yes    | x      |        | yes    |

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.5$  as well as a partial safety factor for load actions  $Y_F = 1.4$  were considered for determining the load.

<sup>2)</sup> These values apply without influence of center distance and edge distances.

| Technical characteristics without fire request for single fixation TSM (steel, A4 and HCR)           |                      |                                         |        |                        |        |        |        |        |        |        |     |
|------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------|--------|------------------------|--------|--------|--------|--------|--------|--------|-----|
| Screw size TSM high performance                                                                      |                      |                                         |        | TSM 6                  |        | TSM 8  |        |        | TSM 10 |        |     |
| Nominal screw-in depth                                                                               | h <sub>nom</sub>     | [mm]                                    | hnom,1 | hnom,2                 | hnom,1 | hnom,2 | hnom,3 | hnom,1 | hnom,2 | hnom,3 |     |
|                                                                                                      |                      |                                         | 40     | 55                     | 45     | 55     | 65     | 55     | 75     | 85     |     |
| Admissible tensile and shear load (F <sub>zul,fi</sub> = N <sub>zul,fi</sub> = V <sub>zul,fi</sub> ) |                      |                                         |        |                        |        |        |        |        |        |        |     |
| R 30                                                                                                 | permitted resistance | F <sub>fi, zul, 30</sub> <sup>1)</sup>  | [kN]   | 0,5                    | 0,9    | 1,3    | 2,3    | 2,3    | 2,3    | 4,1    | 4,3 |
| R 60                                                                                                 |                      | F <sub>fi, zul, 60</sub> <sup>1)</sup>  | [kN]   | 0,5                    | 0,8    | 1,3    | 1,7    | 1,7    | 2,3    | 3,3    | 3,3 |
| R 90                                                                                                 |                      | F <sub>fi, zul, 90</sub> <sup>1)</sup>  | [kN]   | 0,5                    | 0,6    | 1,3    | 1,1    | 1,1    | 2,3    | 2,2    | 2,2 |
| R 120                                                                                                |                      | F <sub>fi, zul, 120</sub> <sup>1)</sup> | [kN]   | 0,4                    | 0,4    | 0,7    | 0,7    | 0,7    | 1,7    | 1,7    | 1,7 |
| R 30                                                                                                 |                      | M <sub>zul,fi 30</sub> <sup>0</sup>     | [kN]   | 0,7                    |        | 2,4    |        |        | 5,9    |        |     |
| R 60                                                                                                 |                      | M <sub>zul,fi 60</sub> <sup>0</sup>     | [kN]   | 0,6                    |        | 1,8    |        |        | 4,5    |        |     |
| R 90                                                                                                 |                      | M <sub>zul,fi 90</sub> <sup>0</sup>     | [kN]   | 0,5                    |        | 1,2    |        |        | 3,0    |        |     |
| R 120                                                                                                |                      | M <sub>zul,fi 120</sub> <sup>0</sup>    | [kN]   | 0,3                    |        | 0,9    |        |        | 2,3    |        |     |
| Edge distance                                                                                        |                      |                                         |        |                        |        |        |        |        |        |        |     |
| R 30 to R 120                                                                                        |                      | C <sub>cr,fi</sub>                      | [mm]   | 2 x h <sub>ef</sub>    |        |        |        |        |        |        |     |
| Edge distance must be ≥ 300 mm under fire exposure from more than one side.                          |                      |                                         |        |                        |        |        |        |        |        |        |     |
| Center distance                                                                                      |                      |                                         |        |                        |        |        |        |        |        |        |     |
| R 30 to R 120                                                                                        |                      | S <sub>cr,fi</sub>                      | [mm]   | 2 x C <sub>cr,fi</sub> |        |        |        |        |        |        |     |
| concrete edge failure                                                                                |                      |                                         |        |                        |        |        |        |        |        |        |     |
| R 30 to R 120                                                                                        |                      | k                                       | [-]    | 1,0                    |        |        |        |        |        |        |     |
| For wet concrete the depth of anchoring must be increased by at least 30 mm.                         |                      |                                         |        |                        |        |        |        |        |        |        |     |

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.0$  as well as a partial safety factor for load actions  $Y_F = 1.0$  were considered for determining the load.

# Load values TSM concrete screws for multiple fastening



| Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR |                 |       |     |       |
|----------------------------------------------------------------------------------------------|-----------------|-------|-----|-------|
| Screw size TSM high performance                                                              |                 | TSM 5 |     | TSM 6 |
| Nominal screw-in depth                                                                       | $h_{nom}$ [mm]  | 35    | 35  | 55    |
| Nominal borehole diameter                                                                    | $d_0$ [mm]      | 5     | 6   |       |
| Borehole depth                                                                               | $h_1 \geq$ [mm] | 40    | 40  | 60    |
| Effective anchorage depth                                                                    | $h_{ef}$ [mm]   | 27    | 27  | 44    |
| Round hole in the mounting part                                                              | $d_f \leq$ [mm] | 7     | 8   |       |
| Admissible tensile loading in cracked concrete                                               | $N_{zul}$ [kN]  | 0,6   | 0,6 | 3,6   |
| Admissible shear load in cracked concrete                                                    | $V_{zul}$ [kN]  | 2,1   | 3,3 |       |
| Admissible tensile loading in uncracked concrete                                             | $N_{zul}$ [kN]  | 0,6   | 0,6 | 3,6   |
| Admissible shear load in uncracked concrete                                                  | $V_{zul}$ [kN]  | 2,1   | 3,3 |       |
| Minimum edge distance                                                                        | $C_{min}$ [mm]  | 35    | 35  | 40    |
| Minimum center distance                                                                      | $S_{min}$ [mm]  | 35    | 35  | 40    |
| Minimum component thickness                                                                  | $h_{min}$ [mm]  | 80    | 80  | 100   |
| installation torque                                                                          | $T_{inst}$ [Nm] | 8     | 10  |       |
| Max. torque                                                                                  | [Nm]            | 120   | 160 |       |

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.5$  as well a partial safety factor for load actions  $Y_F = 1.4$  were considered for determining the load.

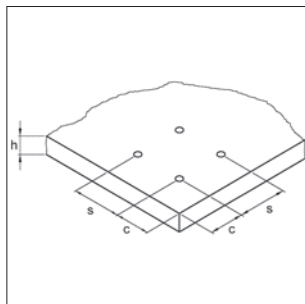
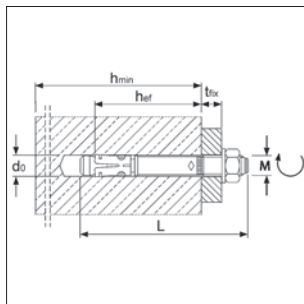
Only for screw size 6

| Technical characteristics without fire request for multiple fastening TSM / TSM A4 / TSM HCR |                      |                         |       |                      |                |     |     |
|----------------------------------------------------------------------------------------------|----------------------|-------------------------|-------|----------------------|----------------|-----|-----|
| Screw size TSM high performance                                                              |                      |                         | TSM 6 |                      | TSM 6 A4 / HCR |     |     |
| Nominal screw-in depth                                                                       |                      | $h_{nom}$               | [mm]  | 35                   | 55             | 35  | 55  |
| Admissible tensile and shear load ( $F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$ )                 |                      |                         |       |                      |                |     |     |
| R 30                                                                                         | permitted resistance | $F_{fi, zul, 30}^{1)}$  | [kN]  | 0,4                  | 0,9            | 0,4 | 1,2 |
| R 60                                                                                         |                      | $F_{fi, zul, 60}^{1)}$  | [kN]  | 0,4                  | 0,8            | 0,4 | 1,2 |
| R 90                                                                                         |                      | $F_{fi, zul, 90}^{1)}$  | [kN]  | 0,4                  | 0,6            | 0,4 | 1,2 |
| R 120                                                                                        |                      | $F_{fi, zul, 120}^{1)}$ | [kN]  | 0,3                  | 0,4            | 0,3 | 0,8 |
| R 30                                                                                         |                      | $M_{zul,fi 30}^0$       | [kN]  | 0,7                  |                | 0,9 |     |
| R 60                                                                                         |                      | $M_{zul,fi 60}^0$       | [kN]  | 0,6                  |                | 0,9 |     |
| R 90                                                                                         |                      | $M_{zul,fi 90}^0$       | [kN]  | 0,5                  |                | 0,9 |     |
| R 120                                                                                        |                      | $M_{zul,fi 120}^0$      | [kN]  | 0,3                  |                | 0,6 |     |
| Edge distance                                                                                |                      |                         |       |                      |                |     |     |
| R 30 to R 120                                                                                |                      | $C_{cr,fi}$             | [mm]  | $2 \times h_{ef}$    |                |     |     |
| Edge distance must be $\geq 300$ mm under fire exposure from more than one side.             |                      |                         |       |                      |                |     |     |
| Center distance                                                                              |                      |                         |       |                      |                |     |     |
| R 30 to R 120                                                                                |                      | $S_{cr,fi}$             | [mm]  | $2 \times C_{cr,fi}$ |                |     |     |
| concrete edge failure                                                                        |                      |                         |       |                      |                |     |     |
| R 30 to R 120                                                                                |                      | k                       | [-]   | 1,0                  |                |     |     |
| For wet concrete the depth of anchoring must be increased by at least 30 mm                  |                      |                         |       |                      |                |     |     |

<sup>1)</sup> The partial safety factor for material resistance from the approval  $Y_M = 1.0$  as well a partial safety factor for load actions  $Y_F = 1.0$  were considered for determining the load.

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# Load values Bolt anchor BZ plus



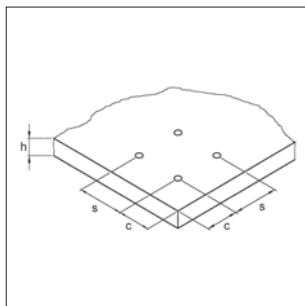
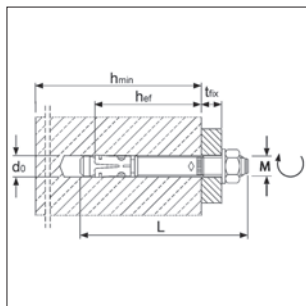
## Extract from Permissible Service Conditions of ETA-99/0010

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

Total safety factor as per ETAG 001 included ( $\gamma_M$  und  $\gamma_F$ ).

| 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       | -         | 65      | -       |
| 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       | 13,0    | 9,8     |
|                                                                                        | C25/30 appr. N        | [kN] | 2,6                 | 2,6    | 4,7      | 3,9       | 8,3      | 6,6       | 13,0     | 9,8       | 14,5    | 10,9    |
|                                                                                        | C30/37 appr. N        | [kN] | 2,9                 | 2,9    | 5,2      | 4,3       | 9,3      | 7,4       | 14,5     | 10,9      | 16,8    | 12,7    |
|                                                                                        | C40/50 appr. N        | [kN] | 3,4                 | 3,4    | 6,1      | 5,1       | 10,8     | 8,6       | 16,8     | 12,7      | 18,4    | 13,9    |
|                                                                                        | C50/60 appr. N        | [kN] | 3,7                 | 3,7    | 6,6      | 5,5       | 11,8     | 9,4       | 18,4     | 13,9      | 20,3    | 15,3    |
| 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      | 23,6    | 17,8    |
|                                                                                        | C25/30 appr. N        | [kN] | 6,3                 | 3,9    | 8,3      | 4,7       | 13,0     | 9,3       | 18,3     | 13,8      | 25,8    | 19,5    |
|                                                                                        | C30/37 appr. N        | [kN] | 7,0                 | 4,3    | 9,3      | 5,2       | 14,5     | 10,3      | 20,3     | 15,3      | 27,9    | 21,4    |
|                                                                                        | C40/50 appr. N        | [kN] | 7,5                 | 5,1    | 10,8     | 6,1       | 16,8     | 12,0      | 23,6     | 17,8      | 30,0    | 23,4    |
|                                                                                        | C50/60 appr. N        | [kN] | 7,5                 | 5,5    | 11,8     | 6,6       | 18,4     | 13,2      | 25,8     | 19,5      | 32,0    | 24,9    |
| 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 | 42,0    | 31,4    |
|                                                                                        | $\geq$ 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 | 42,0    | 31,4    |
| Approved bending moments                                                               | appr. M               | [Nm] | 13,1                | 13,1   | 26,9     | 26,9      | 46,9     | 46,9      | 123,4    | 123,4     | 123,4   | 123,4   |
| Spacing and edge distance                                                              |                       |      |                     |        |          |           |          |           |          |           |         |         |
| Effective anchorage depth                                                              | $h_{ef}$              | [mm] | 46                  | 35     | 60       | 40        | 70       | 50        | 85       | 65        | 65      | 65      |
| Characteristic spacing                                                                 | $s_{cr, N}$           | [mm] | 138                 | 105    | 180      | 120       | 210      | 150       | 255      | 195       | 195     | 195     |
| Characteristic edge distance                                                           | $c_{cr, N}$           | [mm] | 69                  | 52,5   | 90       | 60        | 105      | 75        | 127,5    | 97,5      | 97,5    | 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 | -         | -       | -       |
| ungerissener Beton                                                                     |                       |      |                     |        |          |           |          |           |          |           |         |         |
| Minimum spacing / for edge distance c                                                  | $s_{min} / c$         | [mm] | 40 / 80             | -      | 45 / 70  | -         | 60 / 120 | -         | 65 / 120 | -         | -       | -       |
| Minimum edge distance / for spacing s                                                  | $c_{min} / s$         | [mm] | 50 / 100            | -      | 50 / 100 | -         | 75 / 150 | -         | 80 / 150 | -         | -       | -       |
| Respective minimum spacing and edge distance for minimum thickness of concrete member  |                       |      |                     |        |          |           |          |           |          |           |         |         |
| cracked concrete                                                                       |                       |      |                     |        |          |           |          |           |          |           |         |         |
| Minimum component thickness                                                            | $h_{min2} / h_{min3}$ | [mm] | 80                  | 80     | 100      | 80        | 120      | 100       | 140      | 140       | 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    | 65/170  | 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   | 100/250 | 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    | 65/170  | 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    | 170/65  | 170/65  |
| Installation parameters                                                                |                       |      |                     |        |          |           |          |           |          |           |         |         |
| Drill hole diameter                                                                    | $d_o$                 | [mm] | 8                   | 8      | 10       | 10        | 12       | 12        | 16       | 16        | 16      | 16      |
| Diameter of clearance hole in the fixture                                              | $d_i$                 | [mm] | 9                   | 9      | 12       | 12        | 14       | 14        | 18       | 18        | 18      | 18      |
| Depth of drill hole                                                                    | $h_i$                 | [mm] | 60                  | 49     | 75       | 55        | 90       | 70        | 110      | 90        | 90      | 90      |
| Installation torque                                                                    | $T_{inst}$            | [Nm] | 20                  | 20     | 25       | 25        | 45       | 45        | 90       | 90        | 90      | 90      |
| Width across nut                                                                       | SW                    | [mm] | 13                  | 13     | 17       | 17        | 19       | 19        | 24       | 24        | 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 ( $\gamma_M$  und  $\gamma_F$ ).

| 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       | -         | 85       |
| reduced anchorage depth                                                                | $h_{ef, red}$ [mm]         | -                      | 35     | -        | 40        | 50       |
| cracked concrete                                                                       |                            |                        |        |          |           |          |
| Mean ultimate loads, tension                                                           | C20/25 appr. N [kN]        | 2,4                    | 2,4    | 4,3      | 3,6       | 7,6      |
|                                                                                        | C25/30 appr. N [kN]        | 2,6                    | 2,6    | 4,7      | 3,9       | 8,3      |
|                                                                                        | C30/37 appr. N [kN]        | 2,9                    | 2,9    | 5,2      | 4,3       | 9,3      |
|                                                                                        | C40/50 appr. N [kN]        | 3,4                    | 3,4    | 6,1      | 5,1       | 10,8     |
|                                                                                        | C50/60 appr. N [kN]        | 3,7                    | 3,7    | 6,6      | 5,5       | 11,8     |
| non-cracked concrete                                                                   |                            |                        |        |          |           |          |
| Approved loads, tension                                                                | C20/25 appr. N [kN]        | 5,7                    | 3,6    | 7,6      | 4,3       | 11,9     |
|                                                                                        | C25/30 appr. N [kN]        | 6,3                    | 3,9    | 8,3      | 4,7       | 13,0     |
|                                                                                        | C30/37 appr. N [kN]        | 7,0                    | 4,3    | 9,3      | 5,2       | 14,5     |
|                                                                                        | C40/50 appr. N [kN]        | 7,5                    | 5,1    | 10,8     | 6,1       | 16,8     |
|                                                                                        | C50/60 appr. N [kN]        | 7,5                    | 5,5    | 11,8     | 6,6       | 18,4     |
| cracked / non-cracked concrete                                                         |                            |                        |        |          |           |          |
| Approved loads, shear                                                                  | C20/25 appr. V [kN]        | 7,0                    | 7,0    | 11,5     | 10,4/11,5 | 17,1     |
|                                                                                        | $\geq$ C25/30 appr. V [kN] | 7,0                    | 7,0    | 11,5     | 11,4/11,5 | 17,1     |
| Approved bending moments                                                               | appr. M [Nm]               | 13,1                   | 13,1   | 26,9     | 26,9      | 46,9     |
| Spacing and edge distance                                                              |                            |                        |        |          |           |          |
| Effective anchorage depth                                                              | $h_{ef}$ [mm]              | 46                     | 35     | 60       | 40        | 70       |
| Characteristic spacing                                                                 | $s_{cr, N}$ [mm]           | 138                    | 105    | 180      | 120       | 210      |
| Characteristic edge distance                                                           | $c_{cr, N}$ [mm]           | 69                     | 52,5   | 90       | 60        | 105      |
| 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      |
| Minimum spacing / for edge distance c                                                  | $s_{min} / c$ [mm]         | 40 / 70                | -      | 45/70    | -         | 60 / 100 |
| Minimum edge distance / for spacing s                                                  | $c_{min} / s$ [mm]         | 40 / 80                | -      | 45/90    | -         | 60 / 140 |
| non-cracked concrete                                                                   |                            |                        |        |          |           |          |
| Minimum spacing / for edge distance c                                                  | $s_{min} / c$ [mm]         | 40 / 80                | -      | 45 / 70  | -         | 60 / 120 |
| Minimum edge distance / for spacing s                                                  | $c_{min} / s$ [mm]         | 50 / 100               | -      | 50 / 100 | -         | 75 / 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      |
| Minimum spacing / for edge distance c                                                  | $s_{min} / c$ [mm]         | 40 / 70                | 50/60  | 45 / 90  | 50/100    | 60 / 100 |
| Minimum edge distance / for spacing s                                                  | $c_{min} / s$ [mm]         | 40 / 80                | 40/185 | 50 / 115 | 65/180    | 60 / 140 |
| non-cracked concrete                                                                   |                            |                        |        |          |           |          |
| Minimum spacing / for edge distance c                                                  | $s_{min} / c$ [mm]         | 40 / 80                | 50/60  | 60 / 140 | 50/100    | 60 / 120 |
| Minimum edge distance / for spacing s                                                  | $c_{min} / s$ [mm]         | 50 / 100               | 40/185 | 90 / 140 | 65/180    | 75 / 150 |
| Installation parameters                                                                |                            |                        |        |          |           |          |
| Drill hole diameter                                                                    | $d_o$ [mm]                 | 8                      | 8      | 10       | 10        | 12       |
| Diameter of clearance hole in the fixture                                              | $d_f$ [mm]                 | 9                      | 9      | 12       | 12        | 14       |
| Depth of drill hole                                                                    | $h_i$ [mm]                 | 60                     | 49     | 75       | 55        | 90       |
| Installation torque                                                                    | $T_{inst}$ [Nm]            | 20                     | 20     | 25       | 25        | 45       |
| Width across nut                                                                       | SW [mm]                    | 13                     | 13     | 17       | 17        | 19       |

# Load values Nail anchor N



## Extract from Permissible Service Conditions of ETA-11/0240

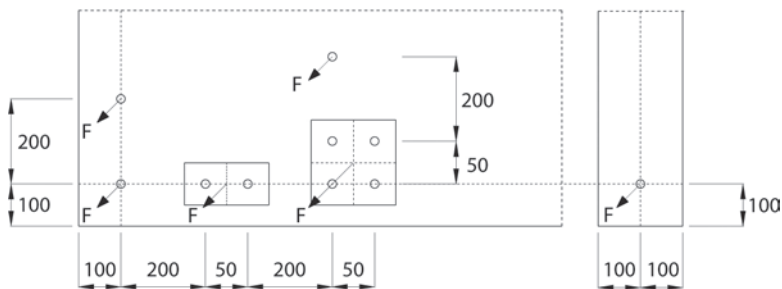
Multiple use for non-structural systems.

Total safety factor as per ETAG 001 included ( $\gamma_M$  and  $\gamma_F$ ).

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

<sup>1)</sup> When applying a shear load to anchor version N-M, shear load with lever arm must be proven.

Picture 1: maximum loads



The approved load F is for one fixing point.

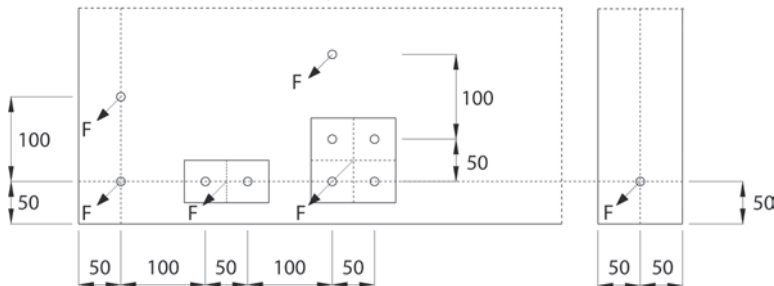
One fixing point can be:

- **Single anchor**,
- **Pair of anchors** with spacing  $s \geq 50$  mm or
- **Group of four anchors** with  $s \geq 50$  mm

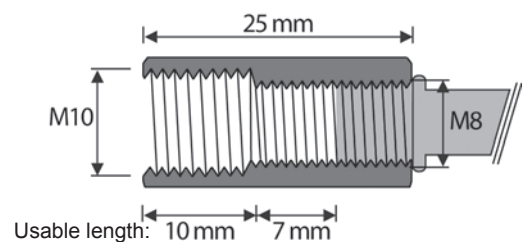
If spacing in fixing point is above or equal to respective spacing between fixing points, characteristic resistances apply to every single anchor.

07

Picture 2: minimum spacing and edge distance

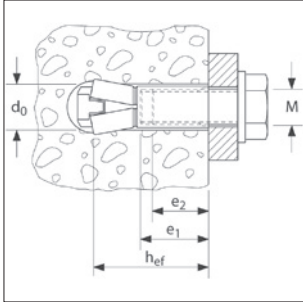


Dimensions threaded sleeve N-M:



Assembly instruction see chapter 15

# Load values Zykon hammer-set anchor FZEA II and FZEA II A4



Mean ultimate loads, design resistant and recommended loads for single anchors of Zykon hammer-set anchor FZEA with large axial spacing and edge distance.

|                                                                 |              |           |                          | Non-cracked concrete     |                           |                           | Cracked concrete          |                           |                           |       |
|-----------------------------------------------------------------|--------------|-----------|--------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------|
| Anchor type                                                     |              |           |                          | FZEA 10 x 40 M 8         | FZEA 12 x 40 M 10         | FZEA 14 x 40 M 12         | FZEA 10 x 40 M 8          | FZEA 12 x 40 M 10         | FZEA 14 x 40 M 12         |       |
| Effective anchorage depth                                       | $h_{ef}$     | [mm]      |                          | 40                       | 40                        | 40                        | 40                        | 40                        | 40                        |       |
| Mean ultimate loads $N_U$ and $V_U$ [kN]                        |              |           |                          |                          |                           |                           |                           |                           |                           |       |
| Tensile                                                         | 0°           | $N_U$     | [kN]                     | gvz                      | 9,6*                      | 17,0*                     | 17,1                      | 9,6*                      | 12,0                      | 12,0  |
|                                                                 |              |           | A4/C                     | 12,2*                    | 17,1                      | 17,1                      | 12,0                      | 12,0                      | 12,0                      |       |
| Shear                                                           | 90°          | $V_U$     | [kN]                     | gvz                      | 10,2*                     | 17,1*                     | 23,4*                     | 10,2*                     | 17,1*                     | 23,4* |
|                                                                 |              |           | A4/C                     | 15,1*                    | 19,5*                     | 26,0*                     | 15,1*                     | 19,5*                     | 26,0*                     |       |
| Design resistant loads $N_{Rd}$ and $V_{Rd}$ [kN]               |              |           |                          |                          |                           |                           |                           |                           |                           |       |
| Tensile                                                         | 0°           | $N_{Rd}$  | [kN]                     | gvz                      | 6,4                       | 8,0                       | 8,0                       | 5,7                       | 6,0                       | 6,1   |
|                                                                 |              |           | A4/C                     | 8,0 (5,5) <sup>1)</sup>  | 8,0                       | 8,0                       | 5,7 (5,5) <sup>1)</sup>   | 6,0                       | 6,1                       |       |
| Shear                                                           | 90°          | $V_{Rd}$  | [kN]                     | gvz                      | 6,6 (5,2) <sup>2)</sup>   | 10,9 (8,5) <sup>2)</sup>  | 12,2 (11,9) <sup>2)</sup> | 6,6 (5,2) <sup>2)</sup>   | 7,9                       | 7,9   |
|                                                                 |              |           | A4/C                     | 8,0 (3,8) <sup>1)</sup>  | 12,0 (5,8) <sup>1)</sup>  | 12,2 (7,9) <sup>1)</sup>  | 7,9 (3,8) <sup>1)</sup>   | 7,9 (5,8) <sup>1)</sup>   | 7,9                       |       |
| Recommended loads $N_{rec}$ and $V_{rec}$ [kN]                  |              |           |                          |                          |                           |                           |                           |                           |                           |       |
| Tensile                                                         | 0°           | $N_{rec}$ | [kN]                     | gvz                      | 4,6                       | 5,7                       | 5,7                       | 4,0                       | 4,3                       | 4,3   |
|                                                                 |              |           | A4/C                     | 5,7 (4,0) <sup>1)</sup>  | 5,7                       | 5,7                       | 4,0                       | 4,3                       | 4,3                       |       |
| Shear                                                           | 90°          | $V_{rec}$ | [kN]                     | gvz                      | 4,7 (3,7) <sup>2)</sup>   | 7,8 (6,1) <sup>2)</sup>   | 8,7 (8,5) <sup>2)</sup>   | 4,7 (3,7) <sup>2)</sup>   | 5,6                       | 5,6   |
|                                                                 |              |           | A4/C                     | 5,7 (2,7) <sup>1)</sup>  | 8,6 (4,1) <sup>1)</sup>   | 8,7 (5,7) <sup>1)</sup>   | 5,6 (2,7) <sup>1)</sup>   | 5,6 (4,1) <sup>1)</sup>   | 5,6                       |       |
| Recommended bending moment $M_{rec}$ [Nm]                       |              |           |                          |                          |                           |                           |                           |                           |                           |       |
|                                                                 | $M_{rec}$    | [Nm]      | gvz                      | 8,6 (7,7) <sup>2)</sup>  | 13,1 (11,7) <sup>2)</sup> | 17,7 (15,8) <sup>2)</sup> | 8,6 (7,7) <sup>2)</sup>   | 13,1 (11,7) <sup>2)</sup> | 17,7 (15,8) <sup>2)</sup> |       |
|                                                                 |              | A4/C      | 10,9 (5,4) <sup>1)</sup> | 16,6 (8,3) <sup>1)</sup> | 22,3 (11,1) <sup>1)</sup> | 10,9 (5,4) <sup>1)</sup>  | 16,6 (8,3) <sup>1)</sup>  | 22,3 (11,1) <sup>1)</sup> |                           |       |
| Component dimensions, minimum axial spacings and edge distances |              |           |                          |                          |                           |                           |                           |                           |                           |       |
| Characteristic axial spacing                                    | $S_{or^*} N$ | [mm]      |                          | = 3 x $h_{ef}$           |                           |                           | = 3 x $h_{ef}$            |                           |                           |       |
| Characteristic edge distance                                    | $S_{or^*} N$ | [mm]      |                          | = 1,5 x $h_{ef}$         |                           |                           | = 1,5 x $h_{ef}$          |                           |                           |       |
| Min. axial spacing <sup>3)</sup>                                | $S_{min}$    | [mm]      |                          | 40                       | 45                        | 50                        | 40                        | 45                        | 50                        |       |
| Min. edge distance <sup>3)</sup>                                | $c_{min}$    | [mm]      |                          | 40                       | 45                        | 50                        | 40                        | 45                        | 50                        |       |
| Min. structural component thickness                             | $h_{min}$    | [mm]      |                          | 80                       | 80                        | 80                        | 80                        | 80                        | 80                        |       |
| Min. screw penetration depth                                    | min $l_s$    | [mm]      |                          | 11                       | 13                        | 15                        | 11                        | 13                        | 15                        |       |
| Max. screw penetration depth                                    | max $l_s$    | [mm]      |                          | 17                       | 19                        | 21                        | 17                        | 19                        | 21                        |       |
| Clearance-hole in fixture to be attached                        | $d_t$        | [mm]      |                          | 9                        | 12                        | 14                        | 9                         | 12                        | 14                        |       |
| Installation torque                                             | $T_{inst}$   | [Nm]      |                          | ≤ 10                     | ≤ 15                      | ≤ 20                      | ≤ 10                      | ≤ 15                      | ≤ 20                      |       |
| Universal drill bit FZUB <sup>4)</sup>                          |              | [-]       |                          | FZUB 10 x 40             | FZUB 12 x 40              | FZUB 14 x 40              | FZUB 10 x 40              | FZUB 12 x 40              | FZUB 14 x 40              |       |
| Setting mandrel FZED <sup>5)</sup>                              |              | [-]       |                          | FZED 10 x 40             | FZED 12 x 40              | FZED 14 x 40              | FZED 10 x 40              | FZED 12 x 40              | FZED 14 x 40              |       |
| Machine setting tool FZEM <sup>5)</sup>                         |              | [-]       |                          | FZEM 10 x 40             | FZEM 12 x 40              | FZEM 14 x 40              | FZEM 10 x 40              | FZEM 12 x 40              | FZEM 14 x 40              |       |

\* Steel failure value.

1) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class A50.

2) Values in brackets apply to the use of a fixing screw resp. threaded rod of the minimum strength class 5.6.

3) For minimum spacing and minimum edge distance the above described loads have to be reduced.

4) For drilling obligatory.

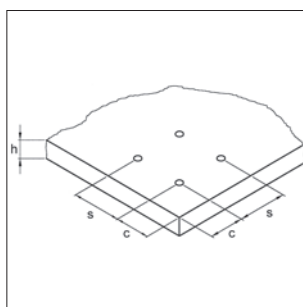
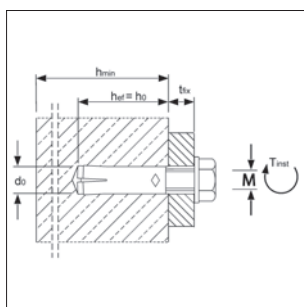
5) For installation of FZEA II the setting mandrel FZED or alternatively the setting tool FZEM is obligatory. All load values apply for concrete C20/25 without edge or spacing influences.

Design resistant loads: material safety factors γ<sub>M</sub> are included. Material safety factor γ<sub>M</sub> depends on type of anchor.

Permissible loads: material safety factors γ<sub>M</sub> and safety factor for load γ<sub>L</sub> = 1,4 are included.

Source: Fischer

# Load values Impact anchor E / ES and E / ES A4



## Extract from Permissible Service Conditions of ETA-05/0116

Usage as multiple fixation of non-structural systems acc. to ETAG 001, part 6. Overall safety factor considered acc. to ETAG 001 ( $Y_M$  and  $Y_F$ ).

| Loads and performance data           |         | impact anchor E | M 6 | M 8  | M 8x40 | M 10 | M 12 | M 16  |
|--------------------------------------|---------|-----------------|-----|------|--------|------|------|-------|
| cracked and non-cracked concrete     |         |                 |     |      |        |      |      |       |
| Approved loads (C20/25 to C50/60)    | appr. F | [kN]            | 1,2 | 1,7  | 2,0    | 2,0  | 2,4  | 6,3   |
| Approved bending moments (Steel 4.6) | appr. M | [Nm]            | 2,6 | 6,4  | 6,4    | 12,8 | 22,2 | 56,9  |
| Approved bending moments (Steel 5.6) | appr. M | [Nm]            | 3,3 | 8,1  | 8,1    | 15,8 | 27,8 | 71,0  |
| Approved bending moments (Steel 5.8) | appr. M | [Nm]            | 4,3 | 10,9 | 10,9   | 21,1 | 37,1 | 94,9  |
| Approved bending moments (Steel 8.8) | appr. M | [Nm]            | 6,9 | 17,1 | 17,1   | 34,3 | 60,0 | 152,0 |

### Spacing and edge distance

|                                    |      |      |     |     |     |     |     |     |
|------------------------------------|------|------|-----|-----|-----|-----|-----|-----|
| Effective anchorage depth          | hef  | [mm] | 30  | 30  | 40  | 40  | 50  | 65  |
| Characteristic spacing             | scr  | [mm] | 130 | 180 | 210 | 170 | 170 | 400 |
| Characteristic edge distance       | ccr  | [mm] | 65  | 90  | 105 | 85  | 85  | 200 |
| Minimum spacing                    | smin | [mm] | 55  | 60  | 80  | 100 | 120 | 150 |
| Minimum edge distance              | cmin | [mm] | 95  | 95  | 95  | 135 | 165 | 200 |
| Minimum thickness of concrete slab | hmin | [mm] | 100 | 100 | 100 | 120 | 130 | 160 |

### Installation parameters

|                                           |       |      |    |    |    |    |    |    |
|-------------------------------------------|-------|------|----|----|----|----|----|----|
| Drill hole diameter                       | do    | [mm] | 8  | 10 | 10 | 12 | 15 | 20 |
| Diameter of clearance hole in the fixture | df    | [mm] | 7  | 9  | 9  | 12 | 14 | 18 |
| Depth of drill hole                       | h0    | [mm] | 30 | 30 | 40 | 40 | 50 | 65 |
| Installation torque                       | Tinst | [Nm] | 4  | 8  | 8  | 15 | 35 | 60 |
| Minimum screwing depth                    | Lsd   | [mm] | 7  | 9  | 9  | 11 | 13 | 18 |
| Maximum screwing depth                    | Lth   | [mm] | 13 | 13 | 20 | 15 | 18 | 23 |

### Loads under fire exposure

|                              |        |      |     |     |     |     |     |     |
|------------------------------|--------|------|-----|-----|-----|-----|-----|-----|
| Approved loads R30           | zul. F | [kN] | 0,2 | 0,4 | 0,4 | 0,9 | 1,5 | 3,1 |
| Approved loads R60           | zul. F | [kN] | 0,2 | 0,3 | 0,3 | 0,8 | 1,3 | 2,4 |
| Approved loads R90           | zul. F | [kN] | 0,1 | 0,3 | 0,3 | 0,6 | 1,1 | 2,0 |
| Approved loads R120          | zul. F | [kN] | 0,1 | 0,2 | 0,2 | 0,5 | 0,8 | 1,6 |
| Characteristic spacing       | scr,fi | [mm] | 130 | 180 | 210 | 170 | 200 | 400 |
| Characteristic edge distance | ccr,fi | [mm] | 65  | 90  | 105 | 85  | 100 | 200 |
| Minimum spacing              | smin   | [mm] | 55  | 60  | 80  | 100 | 120 | 150 |
| Minimum edge distance        | cmin   | [mm] | 95  | 95  | 95  | 135 | 165 | 200 |

| Loads and performance data        |        | impact anchor ES A4 | M 6x30 | M 8x30 | M 8x40 | M 10x40 | M 12x50 | M 16x65 |
|-----------------------------------|--------|---------------------|--------|--------|--------|---------|---------|---------|
| cracked and non-cracked concrete  |        |                     |        |        |        |         |         |         |
| Approved loads (C20/25 to C50/60) | zul. F | [kN]                | 1,2    | 1,7    | 2,0    | 2,0     | 2,4     | 6,3     |
| Approved bending moments (A4-70)  | zul. M | [Nm]                | 5,0    | 11,9   | 11,9   | 23,8    | 42,1    | 106,7   |

### Spacing and edge distance

|                                    |      |      |     |     |     |     |     |     |
|------------------------------------|------|------|-----|-----|-----|-----|-----|-----|
| Effective anchorage depth          | hef  | [mm] | 30  | 30  | 40  | 40  | 50  | 65  |
| Characteristic spacing             | scr  | [mm] | 130 | 180 | 210 | 170 | 170 | 400 |
| Characteristic edge distance       | ccr  | [mm] | 65  | 90  | 105 | 85  | 85  | 200 |
| Minimum spacing                    | smin | [mm] | 50  | 60  | 80  | 100 | 120 | 150 |
| Minimum edge distance              | cmin | [mm] | 80  | 95  | 95  | 135 | 165 | 200 |
| Minimum thickness of concrete slab | hmin | [mm] | 100 | 100 | 100 | 130 | 140 | 160 |

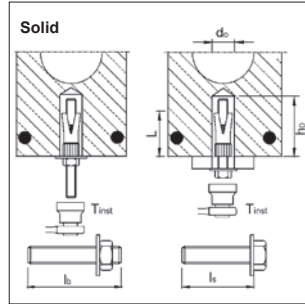
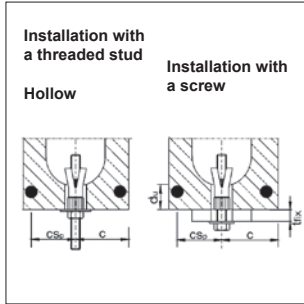
### Installation parameters

|                                           |       |      |    |    |    |    |    |    |
|-------------------------------------------|-------|------|----|----|----|----|----|----|
| Drill hole diameter                       | do    | [mm] | 8  | 10 | 10 | 12 | 15 | 20 |
| Diameter of clearance hole in the fixture | df    | [mm] | 7  | 9  | 9  | 12 | 14 | 18 |
| Depth of drill hole                       | h0    | [mm] | 30 | 30 | 40 | 40 | 50 | 65 |
| Installation torque                       | Tinst | [Nm] | 4  | 8  | 8  | 15 | 35 | 60 |
| Minimum screwing depth                    | Lsd   | [mm] | 7  | 9  | 9  | 11 | 13 | 18 |
| Maximum screwing depth                    | Lth   | [mm] | 13 | 13 | 20 | 15 | 18 | 23 |

### Loads under fire exposure

|                              |        |      |     |     |     |     |     |     |
|------------------------------|--------|------|-----|-----|-----|-----|-----|-----|
| Approved loads R30           | zul. F | [kN] | 0,8 | 0,9 | 1,5 | 1,5 | 1,5 | 4,0 |
| Approved loads R60           | zul. F | [kN] | 0,8 | 0,9 | 1,5 | 1,5 | 1,5 | 4,0 |
| Approved loads R90           | zul. F | [kN] | 0,4 | 0,9 | 0,9 | 1,5 | 1,5 | 3,7 |
| Approved loads R120          | zul. F | [kN] | 0,3 | 0,5 | 0,5 | 1,0 | 1,2 | 2,4 |
| Characteristic spacing       | scr,fi | [mm] | 130 | 180 | 210 | 170 | 200 | 400 |
| Characteristic edge distance | ccr,fi | [mm] | 65  | 90  | 105 | 85  | 100 | 200 |
| Minimum spacing              | smin   | [mm] | 50  | 60  | 80  | 100 | 120 | 150 |
| Minimum edge distance        | cmin   | [mm] | 80  | 95  | 95  | 135 | 165 | 200 |

## Load values Hollow core anchor Easy



### Extract from Permissible Service Conditions of Z-21.1-1785

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

Total safety factor as per ETAG 001 included ( $\gamma_M$  and  $\gamma_F$ ).

$t_{fix}$  = Fixture thickness  
 $c_{sp}$  = Spacing to tension wire  
 $b_{st}$  = Width of web  
 $b_h$  = Width of hollow  
 $d_u$  = Web thickness  
 $c$  = Edge distance

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

<sup>1)</sup> For edge distance  $c_{min} < c \leq c_{cr}$  can be determined by linear interpolation.

<sup>2)</sup> Approved loads valid for double anchorage. Recommended load of the most stressed anchor may not exceed the recommended load of a single anchor. On double anchorages with spacing  $s_{min} < s < s_{cr}$  the recommended load may be determined by linear interpolation, assuming the limiting value  $s = s_{cr}$  for the double anchorage exposed to tension is twice the recommended load of a single anchor.

## ■ MEFA mounting systems for ventilation



Ventilation pipe clamp VENTUS  
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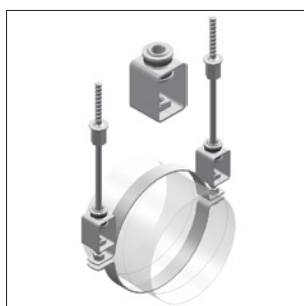
Ventilation pipe clamp lined  
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Ventilation pipe clamp  
Page 8/5



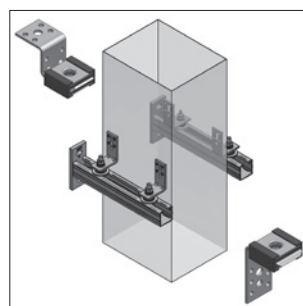
Ventilation pipe clamp DHL  
Page 8/7



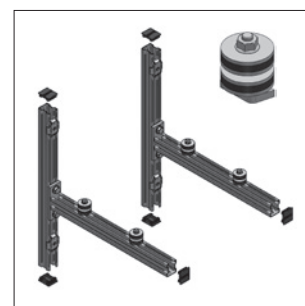
Sound absorption element DHL  
Page 8/8



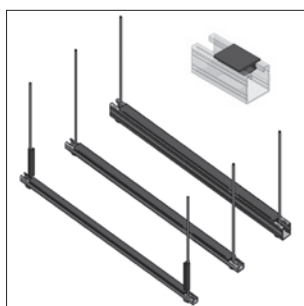
Ducting strap  
Page 8/8



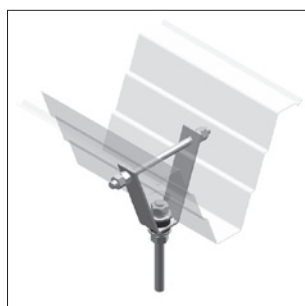
Duct holder  
Page 8/9



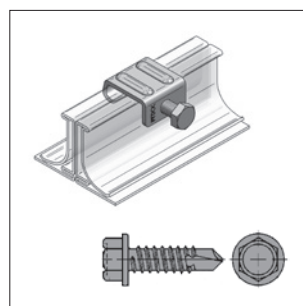
Console-set, Sound absorption  
element  
Page 8/11



C-profile linings, EPDM  
Page 8/12



Trapeze hanger  
Page 8/13



Duct clamp, Self-drilling screw  
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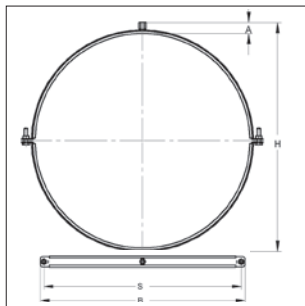


Duct sealing tape, Cold shrink tape  
Page 8/15



Duct sealing compound  
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## VENTUS, ventilation pipe clamp



VENTUS, ventilation pipe clamp

### Specification:

|                     |                          |
|---------------------|--------------------------|
| Closure:            | closure-screw            |
| Construction:       | two-part                 |
| Nominal width [DN]: | 80 up to 630             |
| Connection:         | thread M8, thread M8/M10 |
| Sound insulation:   | for DIN 4109             |

### Technical data:

|                         |                        |
|-------------------------|------------------------|
| Material:               | steel                  |
| Material type:          | S235JR                 |
| Surface:                | galvanized             |
| Sound insulation:       | EPDM lining            |
| Temperature resistance: | - 35 °C up to + 100 °C |
| Insulation thickness:   | 4,5 mm                 |

### Connection: Thread M8, thread M8/M10

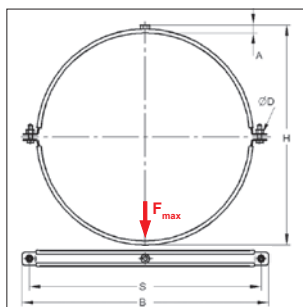
### with sound insulation lining EPDM

| Dimension [DN] | OD [mm] | Material [mm] | Thread | H [mm] | A [mm] | B [mm] | S [mm] | max. load [kN] | Weight [kg/pc.] | Packing [pc.] | Part-No.   |
|----------------|---------|---------------|--------|--------|--------|--------|--------|----------------|-----------------|---------------|------------|
| 80             | 84      | 20 x 1,5      | M8     | 102    | 15     | 127    | 109    | 0,75           | 0,12            | 50            | 0449931080 |
| 100            | 105     | 20 x 1,5      | M8     | 122    | 15     | 147    | 130    | 0,75           | 0,14            | 50            | 0449931100 |
| 125            | 130     | 20 x 1,5      | M8     | 147    | 15     | 173    | 155    | 0,75           | 0,16            | 50            | 0449931125 |
| 140            | 145     | 20 x 1,5      | M8     | 162    | 15     | 188    | 170    | 0,75           | 0,18            | 25            | 0449931140 |
| 150            | 155     | 20 x 1,5      | M8     | 172    | 15     | 198    | 180    | 0,75           | 0,19            | 25            | 0449931150 |
| 160            | 165     | 20 x 1,5      | M8     | 182    | 15     | 208    | 190    | 0,75           | 0,20            | 25            | 0449931160 |
| 180            | 185     | 20 x 1,5      | M8     | 202    | 15     | 228    | 210    | 0,75           | 0,22            | 25            | 0449931180 |
| 200            | 205     | 25 x 1,5      | M8     | 222    | 15     | 248    | 230    | 1,00           | 0,24            | 25            | 0449931200 |
| 224            | 229     | 25 x 1,5      | M8     | 248    | 16     | 281    | 263    | 1,00           | 0,36            | 10            | 0449931224 |
| 250            | 255     | 25 x 1,5      | M8     | 274    | 16     | 307    | 289    | 1,00           | 0,39            | 10            | 0449931250 |
| 280            | 285     | 25 x 1,5      | M8     | 304    | 16     | 337    | 319    | 1,00           | 0,43            | 10            | 0449931280 |
| 300            | 307     | 25 x 1,5      | M8     | 325    | 16     | 358    | 340    | 1,00           | 0,45            | 10            | 0449931300 |
| 315            | 322     | 25 x 1,5      | M8     | 340    | 16     | 373    | 355    | 1,00           | 0,47            | 10            | 0449931315 |
| 355            | 362     | 25 x 1,5      | M8     | 380    | 16     | 413    | 395    | 1,00           | 0,52            | 10            | 0449931355 |
| 400            | 407     | 25 x 1,5      | M8/M10 | 433    | 24     | 458    | 440    | 1,00           | 0,59            | 10            | 0449932400 |
| 450            | 457     | 25 x 1,5      | M8/M10 | 483    | 24     | 508    | 490    | 1,00           | 0,65            | 10            | 0449932450 |
| 500            | 507     | 25 x 2,5      | M8/M10 | 535    | 25     | 560    | 542    | 1,50           | 1,09            | 10            | 0449932500 |
| 560            | 567     | 25 x 2,5      | M8/M10 | 595    | 25     | 620    | 602    | 1,50           | 1,21            | 10            | 0449932560 |
| 600            | 607     | 25 x 2,5      | M8/M10 | 635    | 25     | 660    | 642    | 1,50           | 1,28            | 10            | 0449932600 |
| 630            | 639     | 25 x 2,5      | M8/M10 | 665    | 25     | 690    | 672    | 1,50           | 1,35            | 10            | 0449932630 |

## Ventilation pipe clamp, lined



Ventilation pipe clamp,  
lined



### Specification:

|                     |                                    |
|---------------------|------------------------------------|
| Closure:            | nut / closure-screw                |
| Construction:       | two-part                           |
| Nominal width [DN]: | 71 up to 1250                      |
| Connection:         | thread M8, M10, without connection |
| Sound insulation:   | according to DIN 4109              |

### Technical data:

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

### Connection: thread M8

### with sound insulation lining rubber

| Dimension | Material | Closure-screw | max. load<br>$F_{max}$<br>[kN] | H<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | Ø D<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|-----------|----------|---------------|--------------------------------|-----------|-----------|-----------|-----------|-------------|--------------------|------------------|----------|
| [DN]      | [mm]     |               |                                |           |           |           |           |             |                    |                  |          |
| 71        | 20x2,0   | M8            | 0,8                            | 103       | 20        | 145       | 120       | 8,5         | 0,189              | 1                | 0430711  |
| 80        | 20x2,0   | M8            | 0,8                            | 112       | 20        | 154       | 129       | 8,5         | 0,202              | 1                | 0430801  |
| 90        | 20x2,0   | M8            | 0,8                            | 122       | 20        | 164       | 139       | 8,5         | 0,216              | 1                | 0430901  |
| 100       | 20x2,0   | M8            | 0,8                            | 133       | 20        | 175       | 150       | 8,5         | 0,231              | 1                | 0431001  |
| 112       | 20x2,0   | M8            | 0,8                            | 145       | 20        | 187       | 162       | 8,5         | 0,248              | 1                | 0431121  |
| 125       | 20x2,0   | M8            | 0,8                            | 158       | 20        | 200       | 175       | 8,5         | 0,266              | 1                | 0431251  |
| 140       | 20x2,0   | M8            | 0,8                            | 173       | 20        | 215       | 190       | 8,5         | 0,287              | 1                | 0431401  |
| 150       | 20x2,0   | M8            | 0,8                            | 183       | 20        | 225       | 200       | 8,5         | 0,301              | 1                | 0431501  |
| 160       | 20x2,0   | M8            | 0,8                            | 193       | 20        | 235       | 210       | 8,5         | 0,315              | 1                | 0431601  |
| 180       | 20x2,5   | M8            | 1,5                            | 213       | 20        | 255       | 230       | 8,5         | 0,414              | 1                | 0431801  |
| 200       | 20x2,5   | M8            | 1,5                            | 233       | 20        | 275       | 250       | 8,5         | 0,449              | 1                | 0432001  |
| 224       | 20x2,5   | M8            | 1,5                            | 257       | 20        | 299       | 274       | 8,5         | 0,491              | 1                | 0432241  |
| 250       | 20x2,5   | M8            | 1,5                            | 283       | 20        | 325       | 300       | 8,5         | 0,620              | 1                | 0432501  |
| 280       | 25x2,5   | M8            | 2,0                            | 315       | 21        | 356       | 331       | 8,5         | 0,682              | 1                | 0432801  |
| 300       | 25x2,5   | M8            | 2,0                            | 337       | 21        | 378       | 353       | 8,5         | 0,727              | 1                | 0433001  |
| 315       | 25x2,5   | M8            | 2,0                            | 352       | 21        | 393       | 368       | 8,5         | 0,758              | 1                | 0433151  |
| 355       | 25x2,5   | M8            | 2,0                            | 392       | 21        | 433       | 408       | 8,5         | 0,840              | 1                | 0433551  |
| 400       | 25x2,5   | M8            | 2,0                            | 437       | 21        | 478       | 453       | 8,5         | 0,932              | 1                | 0434001  |
| 450       | 25x2,5   | M8            | 2,0                            | 487       | 21        | 528       | 503       | 8,5         | 1,035              | 1                | 0434501  |
| 500       | 25x2,5   | M8            | 2,0                            | 537       | 21        | 578       | 553       | 8,5         | 1,138              | 1                | 0435001  |
| 560       | 25x2,5   | M8            | 2,0                            | 597       | 21        | 638       | 613       | 8,5         | 1,262              | 1                | 0435601  |

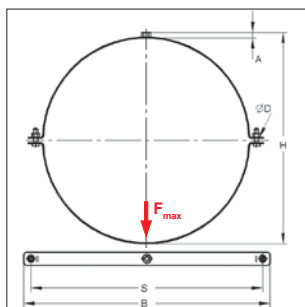
## Ventilation pipe clamp, lined

| Connection: Thread M10                     |          |               |                          | with sound insulation lining rubber |      |      |      |      |          |         |          |
|--------------------------------------------|----------|---------------|--------------------------|-------------------------------------|------|------|------|------|----------|---------|----------|
| Dimension                                  | Material | Closure-screw | max. load                | H                                   | A    | B    | S    | Ø D  | Weight   | Packing | Part-No. |
| [DN]                                       | [mm]     |               | F <sub>max</sub><br>[kN] | [mm]                                | [mm] | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]   |          |
| 71                                         | 20x2,0   | M8            | 0,8                      | 105                                 | 22   | 145  | 120  | 8,5  | 0,189    | 1       | 0430712  |
| 80                                         | 20x2,0   | M8            | 0,8                      | 114                                 | 22   | 154  | 129  | 8,5  | 0,202    | 1       | 0430802  |
| 90                                         | 20x2,0   | M8            | 0,8                      | 124                                 | 22   | 164  | 139  | 8,5  | 0,216    | 1       | 0430902  |
| 100                                        | 20x2,0   | M8            | 0,8                      | 135                                 | 22   | 175  | 150  | 8,5  | 0,231    | 1       | 0431002  |
| 112                                        | 20x2,0   | M8            | 0,8                      | 147                                 | 22   | 187  | 162  | 8,5  | 0,248    | 1       | 0431122  |
| 125                                        | 20x2,0   | M8            | 0,8                      | 160                                 | 22   | 200  | 175  | 8,5  | 0,266    | 1       | 0431252  |
| 140                                        | 20x2,0   | M8            | 0,8                      | 175                                 | 22   | 215  | 190  | 8,5  | 0,287    | 1       | 0431402  |
| 150                                        | 20x2,0   | M8            | 0,8                      | 185                                 | 22   | 225  | 200  | 8,5  | 0,301    | 1       | 0431502  |
| 160                                        | 20x2,0   | M8            | 0,8                      | 200                                 | 22   | 235  | 210  | 8,5  | 0,315    | 1       | 0431602  |
| 180                                        | 20x2,5   | M8            | 1,5                      | 215                                 | 22   | 255  | 230  | 8,5  | 0,414    | 1       | 0431802  |
| 200                                        | 20x2,5   | M8            | 1,5                      | 235                                 | 22   | 275  | 250  | 8,5  | 0,449    | 1       | 0432002  |
| 224                                        | 20x2,5   | M8            | 1,5                      | 259                                 | 22   | 299  | 274  | 8,5  | 0,491    | 1       | 0432242  |
| 250                                        | 20x2,5   | M8            | 1,5                      | 285                                 | 22   | 325  | 300  | 8,5  | 0,620    | 1       | 0432502  |
| 280                                        | 25x2,5   | M8            | 2,0                      | 317                                 | 23   | 356  | 331  | 8,5  | 0,682    | 1       | 0432802  |
| 300                                        | 25x2,5   | M8            | 2,0                      | 332                                 | 23   | 378  | 353  | 8,5  | 0,727    | 1       | 0433002  |
| 315                                        | 25x2,5   | M8            | 2,0                      | 354                                 | 23   | 393  | 368  | 8,5  | 0,758    | 1       | 0433152  |
| 355                                        | 25x2,5   | M8            | 2,0                      | 394                                 | 23   | 433  | 408  | 8,5  | 0,840    | 1       | 0433552  |
| 400                                        | 25x2,5   | M8            | 2,0                      | 439                                 | 23   | 478  | 453  | 8,5  | 0,932    | 1       | 0434002  |
| 450                                        | 25x2,5   | M8            | 2,0                      | 489                                 | 23   | 528  | 503  | 8,5  | 1,035    | 1       | 0434502  |
| 500                                        | 25x2,5   | M8            | 2,0                      | 539                                 | 23   | 578  | 553  | 8,5  | 1,138    | 1       | 0435002  |
| 560                                        | 25x2,5   | M8            | 2,0                      | 599                                 | 23   | 638  | 613  | 8,5  | 1,262    | 1       | 0435602  |
| Without connection, without closure-screws |          |               |                          | with sound insulation lining rubber |      |      |      |      |          |         |          |
| 224                                        | 20x2,5   | for M8        | 1,5                      | 245                                 | -    | 299  | 274  | 8,5  | 0,431    | 1       | 0432240  |
| 250                                        | 20x2,5   | for M8        | 1,5                      | 271                                 | -    | 325  | 300  | 8,5  | 0,560    | 1       | 0432500  |
| 280                                        | 25x2,5   | for M8        | 2,0                      | 303                                 | -    | 356  | 331  | 8,5  | 0,622    | 1       | 0432800  |
| 300                                        | 25x2,5   | for M8        | 2,0                      | 325                                 | -    | 378  | 353  | 8,5  | 0,667    | 1       | 0433000  |
| 315                                        | 25x2,5   | for M8        | 2,0                      | 340                                 | -    | 393  | 368  | 8,5  | 0,698    | 1       | 0433150  |
| 355                                        | 25x2,5   | for M8        | 2,0                      | 380                                 | -    | 433  | 408  | 8,5  | 0,780    | 1       | 0433550  |
| 400                                        | 25x2,5   | for M8        | 2,0                      | 425                                 | -    | 478  | 453  | 8,5  | 0,872    | 1       | 0434000  |
| 450                                        | 25x2,5   | for M8        | 2,0                      | 475                                 | -    | 528  | 503  | 8,5  | 0,975    | 1       | 0434500  |
| 500                                        | 25x2,5   | for M8        | 2,0                      | 525                                 | -    | 578  | 553  | 8,5  | 1,078    | 1       | 0435000  |
| 560                                        | 25x2,5   | for M8        | 2,0                      | 585                                 | -    | 638  | 613  | 8,5  | 1,202    | 1       | 0435600  |
| 600                                        | 25x2,5   | for M8        | 2,0                      | 625                                 | -    | 678  | 653  | 8,5  | 1,255    | 1       | 0436000  |
| 630                                        | 25x3,0   | for M10       | 2,0                      | 657                                 | -    | 711  | 686  | 10,5 | 1,552    | 1       | 0436300  |
| 710                                        | 25x3,0   | for M10       | 2,0                      | 737                                 | -    | 791  | 766  | 10,5 | 1,755    | 1       | 0437100  |
| 800                                        | 25x3,0   | for M10       | 2,0                      | 828                                 | -    | 882  | 857  | 10,5 | 1,965    | 1       | 0438000  |
| 900                                        | 30x3,0   | for M10       | 2,0                      | 928                                 | -    | 982  | 957  | 10,5 | 2,673    | 1       | 0439000  |
| 1000                                       | 30x3,0   | for M10       | 2,0                      | 1030                                | -    | 1084 | 1059 | 10,5 | 2,961    | 1       | 0440000  |
| 1120                                       | 30x3,0   | for M10       | 2,0                      | 1150                                | -    | 1204 | 1179 | 10,5 | 3,392    | 1       | 0441200  |
| 1250                                       | 30x3,0   | for M10       | 2,0                      | 1280                                | -    | 1334 | 1309 | 10,5 | 3,776    | 1       | 0442500  |

## Ventilation pipe clamp



Ventilation pipe clamp


**Specification:**

Closure: nut / closure-screw  
 Construction: two-part  
 Nominal width [DN]: 71 up to 1250  
 Connection: thread M8, M10, without connection

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized

| Connection: thread M8 |          |               |                   |      |      |      |      |      | without sound insulation |         |          |
|-----------------------|----------|---------------|-------------------|------|------|------|------|------|--------------------------|---------|----------|
| Dimension             | Material | Closure-screw | max. load         | H    | A    | B    | S    | Ø D  | Weight                   | Packing | Part-No. |
| [DN]                  | [mm]     |               | $F_{max}$<br>[kN] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg/pc.]                 | [pc.]   |          |
| 71                    | 20x2,0   | M8            | 1,5               | 91   | 14   | 133  | 108  | 8,5  | 0,151                    | 1       | 0430721  |
| 80                    | 20x2,0   | M8            | 1,5               | 100  | 14   | 142  | 117  | 8,5  | 0,160                    | 1       | 0430811  |
| 90                    | 20x2,0   | M8            | 1,5               | 110  | 14   | 152  | 127  | 8,5  | 0,170                    | 1       | 0430911  |
| 100                   | 20x2,0   | M8            | 1,5               | 121  | 14   | 163  | 138  | 8,5  | 0,180                    | 1       | 0431011  |
| 112                   | 20x2,0   | M8            | 1,5               | 133  | 14   | 175  | 150  | 8,5  | 0,192                    | 1       | 0431131  |
| 125                   | 20x2,0   | M8            | 1,5               | 146  | 14   | 188  | 163  | 8,5  | 0,205                    | 1       | 0431261  |
| 140                   | 20x2,0   | M8            | 1,5               | 161  | 14   | 203  | 178  | 8,5  | 0,220                    | 1       | 0431411  |
| 150                   | 20x2,0   | M8            | 1,5               | 171  | 14   | 213  | 188  | 8,5  | 0,230                    | 1       | 0431511  |
| 160                   | 20x2,0   | M8            | 1,5               | 181  | 14   | 223  | 198  | 8,5  | 0,240                    | 1       | 0431611  |
| 180                   | 20x2,5   | M8            | 2,0               | 201  | 14   | 243  | 218  | 8,5  | 0,310                    | 1       | 0431811  |
| 200                   | 20x2,5   | M8            | 2,0               | 221  | 14   | 263  | 238  | 8,5  | 0,334                    | 1       | 0432011  |
| 224                   | 20x2,5   | M8            | 2,0               | 245  | 14   | 287  | 262  | 8,5  | 0,364                    | 1       | 0432251  |
| 250                   | 20x2,5   | M8            | 2,0               | 271  | 14   | 313  | 288  | 8,5  | 0,396                    | 1       | 0432511  |
| 280                   | 25x2,5   | M8            | 2,0               | 302  | 15   | 345  | 320  | 8,5  | 0,526                    | 1       | 0432811  |
| 300                   | 25x2,5   | M8            | 2,0               | 324  | 15   | 367  | 342  | 8,5  | 0,560                    | 1       | 0433011  |
| 315                   | 25x2,5   | M8            | 2,0               | 339  | 15   | 382  | 357  | 8,5  | 0,583                    | 1       | 0433161  |
| 355                   | 25x2,5   | M8            | 2,0               | 379  | 15   | 422  | 397  | 8,5  | 0,645                    | 1       | 0433561  |
| 400                   | 25x2,5   | M8            | 2,0               | 424  | 15   | 467  | 442  | 8,5  | 0,714                    | 1       | 0434011  |
| 450                   | 25x2,5   | M8            | 2,0               | 474  | 15   | 517  | 492  | 8,5  | 0,791                    | 1       | 0434511  |
| 500                   | 25x2,5   | M8            | 2,0               | 524  | 15   | 567  | 542  | 8,5  | 0,868                    | 1       | 0435011  |
| 560                   | 25x2,5   | M8            | 2,0               | 584  | 15   | 627  | 602  | 8,5  | 0,961                    | 1       | 0435611  |

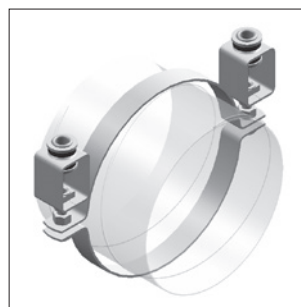
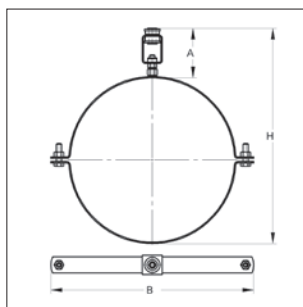
## Ventilation pipe clamp

| Connection: Thread M10                     |          |               |                         |      |      |      |      |      | without sound insulation |         |          |
|--------------------------------------------|----------|---------------|-------------------------|------|------|------|------|------|--------------------------|---------|----------|
| Dimension                                  | Material | Closure-screw | max. load<br>$F_{\max}$ | H    | A    | B    | S    | Ø D  | Weight                   | Packing | Part-No. |
| [DN]                                       | [mm]     |               | [kN]                    | [mm] | [mm] | [mm] | [mm] | [mm] | [kg/pc.]                 | [pc.]   |          |
| 71                                         | 20x2,0   | M8            | 1,5                     | 93   | 16   | 133  | 108  | 8,5  | 0,151                    | 1       | 0430722  |
| 80                                         | 20x2,0   | M8            | 1,5                     | 102  | 16   | 142  | 117  | 8,5  | 0,160                    | 1       | 0430812  |
| 90                                         | 20x2,0   | M8            | 1,5                     | 112  | 16   | 152  | 127  | 8,5  | 0,170                    | 1       | 0430912  |
| 100                                        | 20x2,0   | M8            | 1,5                     | 123  | 16   | 163  | 138  | 8,5  | 0,180                    | 1       | 0431012  |
| 112                                        | 20x2,0   | M8            | 1,5                     | 135  | 16   | 175  | 150  | 8,5  | 0,192                    | 1       | 0431132  |
| 125                                        | 20x2,0   | M8            | 1,5                     | 148  | 16   | 188  | 163  | 8,5  | 0,205                    | 1       | 0431262  |
| 140                                        | 20x2,0   | M8            | 1,5                     | 163  | 16   | 203  | 178  | 8,5  | 0,220                    | 1       | 0431412  |
| 150                                        | 20x2,0   | M8            | 1,5                     | 173  | 16   | 213  | 188  | 8,5  | 0,230                    | 1       | 0431512  |
| 160                                        | 20x2,0   | M8            | 1,5                     | 183  | 16   | 223  | 198  | 8,5  | 0,240                    | 1       | 0431612  |
| 180                                        | 20x2,5   | M8            | 2,0                     | 203  | 16   | 243  | 218  | 8,5  | 0,310                    | 1       | 0431812  |
| 200                                        | 20x2,5   | M8            | 2,0                     | 223  | 16   | 263  | 238  | 8,5  | 0,334                    | 1       | 0432012  |
| 224                                        | 20x2,5   | M8            | 2,0                     | 247  | 16   | 287  | 262  | 8,5  | 0,364                    | 1       | 0432252  |
| 250                                        | 20x2,5   | M8            | 2,0                     | 273  | 16   | 313  | 288  | 8,5  | 0,396                    | 1       | 0432512  |
| 280                                        | 25x2,5   | M8            | 2,0                     | 305  | 17   | 345  | 320  | 8,5  | 0,526                    | 1       | 0432812  |
| 300                                        | 25x2,5   | M8            | 2,0                     | 327  | 17   | 367  | 342  | 8,5  | 0,560                    | 1       | 0433012  |
| 315                                        | 25x2,5   | M8            | 2,0                     | 342  | 17   | 382  | 357  | 8,5  | 0,583                    | 1       | 0433162  |
| 355                                        | 25x2,5   | M8            | 2,0                     | 382  | 17   | 422  | 397  | 8,5  | 0,645                    | 1       | 0433562  |
| 400                                        | 25x2,5   | M8            | 2,0                     | 427  | 17   | 467  | 442  | 8,5  | 0,714                    | 1       | 0434012  |
| 450                                        | 25x2,5   | M8            | 2,0                     | 477  | 17   | 517  | 492  | 8,5  | 0,791                    | 1       | 0434512  |
| 500                                        | 25x2,5   | M8            | 2,0                     | 527  | 17   | 567  | 542  | 8,5  | 0,868                    | 1       | 0435012  |
| 560                                        | 25x2,5   | M8            | 2,0                     | 587  | 17   | 627  | 602  | 8,5  | 0,961                    | 1       | 0435612  |
| Without connection, without closure-screws |          |               |                         |      |      |      |      |      | without sound insulation |         |          |
| 71                                         | 20x2,0   | für M8        | 1,5                     | 79   | -    | 133  | 108  | 8,5  | 0,091                    | 1       | 0430720  |
| 80                                         | 20x2,0   | für M8        | 1,5                     | 88   | -    | 142  | 117  | 8,5  | 0,100                    | 1       | 0430810  |
| 90                                         | 20x2,0   | für M8        | 1,5                     | 98   | -    | 152  | 127  | 8,5  | 0,110                    | 1       | 0430910  |
| 100                                        | 20x2,0   | für M8        | 1,5                     | 109  | -    | 163  | 138  | 8,5  | 0,120                    | 1       | 0431010  |
| 112                                        | 20x2,0   | für M8        | 1,5                     | 121  | -    | 175  | 150  | 8,5  | 0,132                    | 1       | 0431130  |
| 125                                        | 20x2,0   | für M8        | 1,5                     | 134  | -    | 188  | 163  | 8,5  | 0,145                    | 1       | 0431260  |
| 140                                        | 20x2,0   | für M8        | 1,5                     | 149  | -    | 203  | 178  | 8,5  | 0,160                    | 1       | 0431410  |
| 150                                        | 20x2,0   | für M8        | 1,5                     | 159  | -    | 213  | 188  | 8,5  | 0,170                    | 1       | 0431510  |
| 160                                        | 20x2,0   | für M8        | 1,5                     | 169  | -    | 223  | 198  | 8,5  | 0,180                    | 1       | 0431610  |
| 180                                        | 20x2,5   | für M8        | 2,0                     | 189  | -    | 243  | 218  | 8,5  | 0,250                    | 1       | 0431810  |
| 200                                        | 20x2,5   | für M8        | 2,0                     | 209  | -    | 263  | 238  | 8,5  | 0,274                    | 1       | 0432010  |
| 224                                        | 20x2,5   | für M8        | 2,0                     | 233  | -    | 287  | 262  | 8,5  | 0,304                    | 1       | 0432250  |
| 250                                        | 20x2,5   | für M8        | 2,0                     | 259  | -    | 313  | 288  | 8,5  | 0,336                    | 1       | 0432510  |
| 280                                        | 25x2,5   | für M8        | 2,0                     | 291  | -    | 345  | 320  | 8,5  | 0,466                    | 1       | 0432810  |
| 300                                        | 25x2,5   | für M8        | 2,0                     | 313  | -    | 367  | 342  | 8,5  | 0,500                    | 1       | 0433010  |
| 315                                        | 25x2,5   | für M8        | 2,0                     | 328  | -    | 382  | 357  | 8,5  | 0,523                    | 1       | 0433160  |
| 355                                        | 25x2,5   | für M8        | 2,0                     | 368  | -    | 422  | 397  | 8,5  | 0,585                    | 1       | 0433560  |
| 400                                        | 25x2,5   | für M8        | 2,0                     | 413  | -    | 467  | 442  | 8,5  | 0,676                    | 1       | 0434010  |
| 450                                        | 25x2,5   | für M8        | 2,0                     | 463  | -    | 517  | 492  | 8,5  | 0,731                    | 1       | 0434510  |
| 500                                        | 25x2,5   | für M8        | 2,0                     | 513  | -    | 567  | 542  | 8,5  | 0,808                    | 1       | 0435010  |
| 560                                        | 25x2,5   | für M8        | 2,0                     | 573  | -    | 627  | 602  | 8,5  | 0,906                    | 1       | 0435610  |
| 600                                        | 25x2,5   | für M8        | 2,0                     | 610  | -    | 665  | 640  | 8,5  | 0,955                    | 1       | 0436010  |
| 630                                        | 25x3,0   | für M10       | 2,0                     | 645  | -    | 699  | 674  | 10,5 | 1,214                    | 1       | 0436310  |
| 710                                        | 25x3,0   | für M10       | 2,0                     | 725  | -    | 779  | 754  | 10,5 | 1,362                    | 1       | 0437110  |
| 800                                        | 25x3,0   | für M10       | 2,0                     | 816  | -    | 870  | 845  | 10,5 | 1,530                    | 1       | 0438010  |
| 900                                        | 30x3,0   | für M10       | 2,0                     | 916  | -    | 970  | 945  | 10,5 | 2,067                    | 1       | 0439010  |
| 1000                                       | 30x3,0   | für M10       | 2,0                     | 1018 | -    | 1072 | 1047 | 10,5 | 2,294                    | 1       | 0440010  |
| 1120                                       | 30x3,0   | für M10       | 2,0                     | 1138 | -    | 1192 | 1167 | 10,5 | 2,562                    | 1       | 0441210  |
| 1250                                       | 30x3,0   | für M10       | 2,0                     | 1268 | -    | 1292 | 1267 | 10,5 | 2,852                    | 1       | 0442510  |

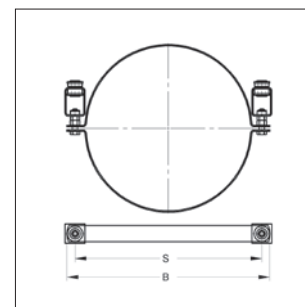
## Ventilation pipe clamp with sound absorption element



Ventilation pipe clamp with  
sound absorption element DHL



Ventilation pipe clamp with two  
sound absorption elements DHL



### Specification:

|                     |                       |
|---------------------|-----------------------|
| Closure:            | nut / closure-screw   |
| Construction:       | two-part              |
| Nominal width [DN]: | 150 up to 1600        |
| Connection:         | thread M8, M10        |
| Sound insulation:   | according to DIN 4109 |

### Technical data:

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

|                                   |                                                   |          |
|-----------------------------------|---------------------------------------------------|----------|
| <b>Scope of delivery 1 x DHL:</b> | threaded pin M8/20                                | 1 piece  |
|                                   | nut M8                                            | 1 piece  |
|                                   | sound absorption element DHL M8,<br>pre-assembled | 1 piece  |
| <b>Scope of delivery 2 x DHL:</b> | closure-screws M8/35 M10/35                       | 2 pieces |
|                                   | nuts M8, M10 (from DN 900)                        | 4 pieces |
|                                   | sound absorption elements<br>DHL M8/M10, enclosed | 2 pieces |



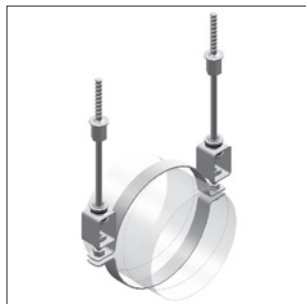
### With 1 sound absorption element DHL

| Dimension<br>[DN] | OD<br>[mm] | Material<br>[mm] | max. load<br>[kN] | H<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[pc.] | Part-No. |
|-------------------|------------|------------------|-------------------|-----------|-----------|-----------|-----------|--------------------|------------------|----------|
| 150               | 155        | 20x2,0           | 1,5               | 237,0     | 80        | 213       | -         | 0,314              | 1                | 0448150  |
| 160               | 165        | 20x2,0           | 1,5               | 247,0     | 80        | 223       | -         | 0,324              | 1                | 0448160  |
| 180               | 185        | 20x2,5           | 2,0               | 267,5     | 80        | 243       | -         | 0,394              | 1                | 0448180  |
| 200               | 205        | 20x2,5           | 2,0               | 287,5     | 80        | 263       | -         | 0,418              | 1                | 0448200  |
| 224               | 229        | 20x2,5           | 2,0               | 311,5     | 80        | 287       | -         | 0,448              | 1                | 0448224  |
| 250               | 255        | 20x2,5           | 2,0               | 337,5     | 80        | 313       | -         | 0,480              | 1                | 0448250  |
| 280               | 285        | 25x2,5           | 2,0               | 367,5     | 80        | 345       | -         | 0,610              | 1                | 0448280  |
| 300               | 307        | 25x2,5           | 2,0               | 389,5     | 80        | 367       | -         | 0,644              | 1                | 0448300  |
| 315               | 322        | 25x2,5           | 2,0               | 404,5     | 80        | 382       | -         | 0,667              | 1                | 0448315  |
| 355               | 362        | 25x2,5           | 2,0               | 444,5     | 80        | 422       | -         | 0,729              | 1                | 0448355  |
| 400               | 407        | 25x2,5           | 2,0               | 489,5     | 80        | 467       | -         | 0,798              | 1                | 0448400  |
| 450               | 457        | 25x2,5           | 2,0               | 539,5     | 80        | 517       | -         | 0,875              | 1                | 0448450  |
| 500               | 507        | 25x2,5           | 2,0               | 589,5     | 80        | 567       | -         | 0,952              | 1                | 0448500  |
| 560               | 567        | 25x2,5           | 2,0               | 649,5     | 80        | 627       | -         | 1,046              | 1                | 0448560  |

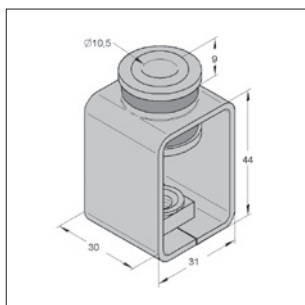
### With 2 sound absorption elements DHL

| Dimension<br>[DN] | OD<br>[mm] | Material<br>[mm] | max. load<br>[kN] | H<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | Weight<br>[Kg/pc.] | Packing<br>[pc.] | Part-No. |
|-------------------|------------|------------------|-------------------|-----------|-----------|-----------|-----------|--------------------|------------------|----------|
| 600               | 609        | 25x2,5           | 2,0               | -         | -         | 671       | 640       | 1,039              | 1                | 0448600  |
| 630               | 639        | 25x3,0           | 2,0               | -         | -         | 705       | 674       | 1,384              | 1                | 0448630  |
| 710               | 719        | 25x3,0           | 2,0               | -         | -         | 785       | 754       | 1,532              | 1                | 0448710  |
| 800               | 810        | 25x3,0           | 2,0               | -         | -         | 876       | 845       | 1,700              | 1                | 0448800  |
| 900               | 910        | 30x3,0           | 2,0               | -         | -         | 922       | 891       | 2,237              | 1                | 0448909  |
| 1000              | 1012       | 30x3,0           | 2,0               | -         | -         | 1078      | 1047      | 2,464              | 1                | 0448910  |
| 1120              | 1132       | 30x3,0           | 2,0               | -         | -         | 1198      | 1167      | 2,732              | 1                | 0448911  |
| 1250              | 1262       | 30x3,0           | 2,0               | -         | -         | 1298      | 1267      | 3,022              | 1                | 0448912  |
| 1400              | 1412       | 30x3,0           | 2,0               | -         | -         | 1478      | 1447      | 3,464              | 1                | 0448914  |
| 1600              | 1612       | 30x3,0           | 2,0               | -         | -         | 1678      | 1647      | 3,908              | 1                | 0448916  |

## ■ Sound absorption element DHL



Ventilation pipe clamp with  
sound absorption element DHL



Sound absorption element DHL



### Specification:

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

### Technical data:

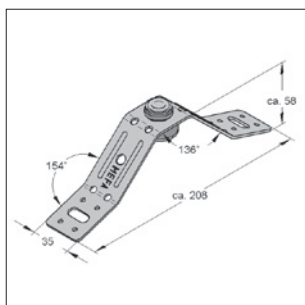
Material: steel  
Material type: S235JR  
Surface: galvanized  
  
Sound insulation: SBR lining  
Temperature resistance: - 35 °C up to + 100 °C

| Identification               | Thread | max. load<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|------------------------------|--------|-------------------|--------------------|-------------------|----------|
| Sound absorption element DHL | M8     | 2,5               | 0,090              | 50                | 0783301  |
| Sound absorption element DHL | M10    | 3,0               | 0,096              | 50                | 0783302  |

## ■ Ducting strap with sound absorption



Ducting strap with sound  
absorption with ventilation pipe



Ducting strap with sound  
absorption



### Specification:

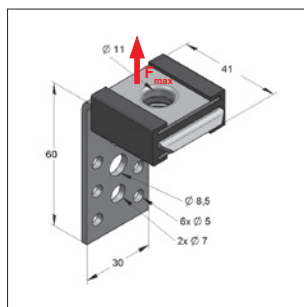
Connection: for M8, M10  
Sound insulation: according to DIN 4109

### Technical data:

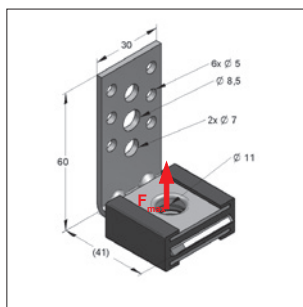
Material: steel  
Material type: S235JR  
Surface: galvanized  
  
Sound insulation: SBR lining  
Temperature resistance: - 35 °C up to + 100 °C

| Identification                      | Material<br>[mm] | max. load<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------------------|------------------|-------------------|--------------------|-------------------|----------|
| Ducting strap with sound absorption | 35 x 2,0         | 0,9               | 0,135              | 50                | 9998349  |

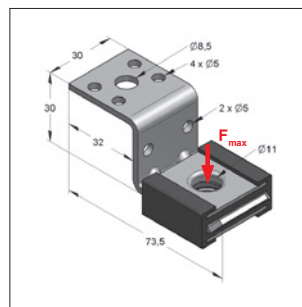
## Duct holder soundproofed



Duct holder L hanging



Duct holder L standing



Duct holder Z hanging



### Specification:

Application area: mounting of ventilation ducts  
 Connection: threaded rod M8, M10  
 Sound insulation: according to DIN 4109

### Technical data:

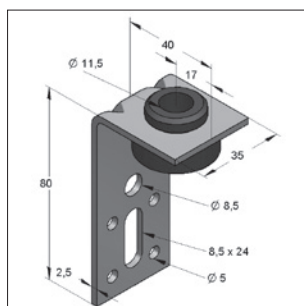
Material: steel  
 Material type: DC01  
 Surface: galvanized  
 Sound insulation: EPDM lining  
 Temperature resistance: - 35 °C up to + 100 °C

### Duct holder L

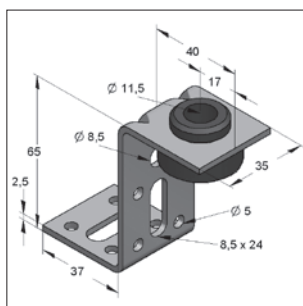
| Identification | Length | Height | Sound absorption elements | Material | max. load<br>$F_{max}$<br>hanging | $F_{max}$<br>standing | Weight   | Packing | Part-No. |
|----------------|--------|--------|---------------------------|----------|-----------------------------------|-----------------------|----------|---------|----------|
|                | [mm]   | [mm]   |                           | [mm]     | [kN]                              | [kN]                  | [kg/pc.] | [pcs.]  |          |
| Duct holder L  | 41,0   | 60,0   | stuck                     | 30 x 2,5 | 0,7                               | 0,5                   | 0,080    | 50      | 05900200 |

### Duct holder Z

|               |      |      |       |          |     |   |       |    |          |
|---------------|------|------|-------|----------|-----|---|-------|----|----------|
| Duct holder Z | 73,5 | 30,0 | stuck | 30 x 2,5 | 0,7 | - | 0,082 | 50 | 05900280 |
|---------------|------|------|-------|----------|-----|---|-------|----|----------|



L-duct holder



Z-duct holder



### Specification:

Application area: mounting of ventilation ducts  
 Connection: threaded rod M8, M10  
 Sound insulation: according to DIN 4109

### Technical data:

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

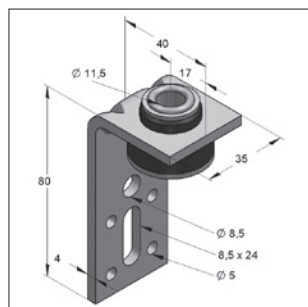
### L-duct holder

| Identification | Length | Sound absorption element | Material | max. load | Weight   | Packing | Part-No. |
|----------------|--------|--------------------------|----------|-----------|----------|---------|----------|
|                | [mm]   |                          | [mm]     | [kN]      | [kg/pc.] | [pcs.]  |          |
| SD-LL          | 80     | stuck                    | 35 x 2,5 | 0,3       | 0,085    | 50      | 0590022  |

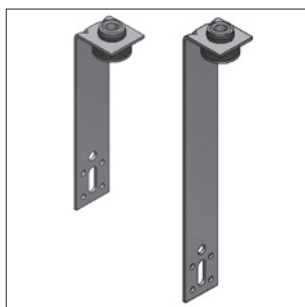
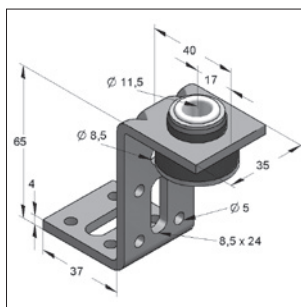
### Z-duct holder

|       |    |       |          |     |       |    |         |
|-------|----|-------|----------|-----|-------|----|---------|
| SD-ZL | 65 | stuck | 35 x 2,5 | 0,3 | 0,094 | 50 | 0590027 |
|-------|----|-------|----------|-----|-------|----|---------|

## Duct holder, soundproofed



L-duct holder

duct holder SD-LLN 165  
duct holder SD-LLN 255

Z-duct holder



### Specification:

Application area: mounting of ventilation ducts  
 Connection: threaded rod M8, M10  
 Sound insulation: according to DIN 4109

### Technical data:

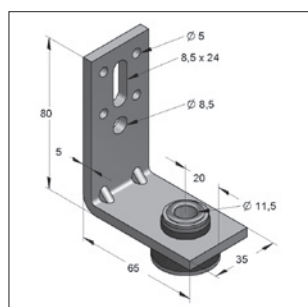
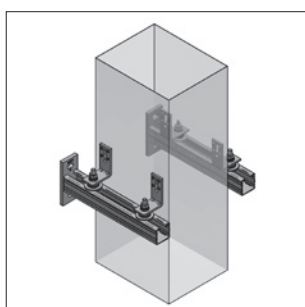
Material: steel  
 Material type: S235JR  
 Surface: galvanized  
 Sound insulation: SBR lining  
 Temperature resistance: - 35 °C up to + 100 °C

### L-duct holder

| Identification | Length<br>[mm] | Sound absorption<br>element | Material<br>[mm] | max. load<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|----------------|-----------------------------|------------------|-------------------|--------------------|-------------------|----------|
| SD-LSN         | 80             | riveted                     | 35 x 4,0         | 1,8               | 0,135              | 50                | 0590011  |
| SD-LLN         | 165            | riveted                     | 35 x 2,5         | 0,9               | 0,159              | 50                | 9998373  |
| SD-LLN         | 255            | riveted                     | 35 x 2,5         | 0,9               | 0,221              | 50                | 9998372  |

### Z-duct holder

|        |    |         |          |     |       |    |         |
|--------|----|---------|----------|-----|-------|----|---------|
| SD-ZSN | 65 | riveted | 35 x 4,0 | 1,8 | 0,131 | 50 | 9998370 |
|--------|----|---------|----------|-----|-------|----|---------|

L-duct holder  
for riserVentilation duct with  
duct holder

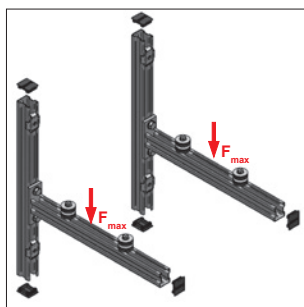
### Remark:

Duct holder type SD-LSK has been especially designed for riser. The duct holder SD-LSK can bear loads up to max. 3,2 kN in case of 4 mounted duct holders at every mounting plane.

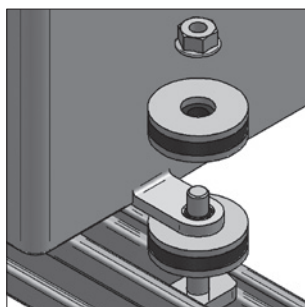
### L-duct holder for riser

| Identification | Length<br>[mm] | Sound absorption<br>element | Material<br>[mm] | max. load<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|----------------|-----------------------------|------------------|-------------------|--------------------|-------------------|----------|
| SD-LSK         | 80             | riveted                     | 35 x 5,0         | 0,8               | 0,175              | 50                | 9998376  |

## ■ Console-set, soundproofed



Console-set soundproofed



Insulation element, mounted



### Specification:

Application area: mounting of air  
air conditioning units  
Sound insulation: according to DIN 4109

### Scope of delivery:

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

### Technical data:

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

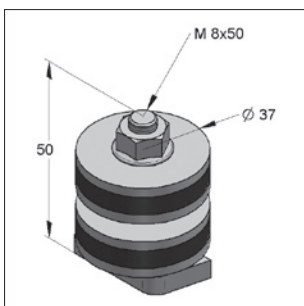
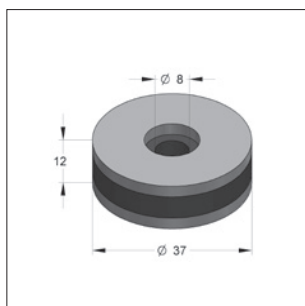
### Remark:

\* max. allowable load per cantilever. Differing load situation see on page 2/6

\*\* Console-set without insulating elements available on demand.

| Identification | Length<br>[mm] | max. load*<br>$F_{max}$<br>[kN] | maximum<br>total load<br>[kN] | Stex  | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|----------------|----------------|---------------------------------|-------------------------------|-------|--------------------|------------------|------------|
| Console-set 1  | 450            | 1,39                            | 2,78                          | 35/42 | 4,76               | 1                | 0813500450 |
| Console-set 2  | 525            | 1,19                            | 2,38                          | 35/42 | 5,00               | 1                | 0813500526 |
| Console-set 3  | 600            | 1,04                            | 2,08                          | 35/42 | 5,25               | 1                | 0813500600 |

## ■ Sound absorption element

Sound absorption element  
with hammer head

Insulation element, single



### Specification:

Application area: sound absorption element for direct mounting on  
consoles C for noise decoupled mounting  
Load capacity: 1,3 kN (at deformation 1 mm)

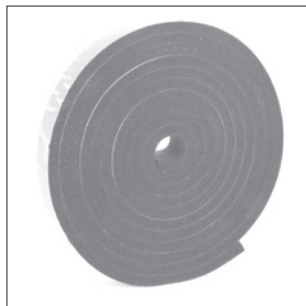
Sound insulation: according to DIN 4109

### Technical data:

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

| Identification              | for C-Profile              | Hammer head   | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|-----------------------------|----------------------------|---------------|--------------------|------------------|----------|
| Sound absorption element 35 | 35/21, 36/40, STEX 35      | M8x50 - 38x17 | 0,152              | 1                | 0783395  |
| Sound absorption element 45 | 45/26, 45/45, 45/60, 45/75 | M8x50 - 40x22 | 0,187              | 1                | 0783396  |
| Insulation element, single  |                            |               | 0,052              | 1                | 07833908 |

## ■ Insulating coat LK, self-adhesive



Insulating coat LK

**Specification:**

Application area: Sound insulation for suspensions of ventilation ducts according to DIN 4109

Sound insulation: according to DIN 4102: B2

Building material class according to DIN 4102: B2

ÖNORM 8 3800/T1: B1

**Technical data:**

Material: closed-cell, synthetic rubber

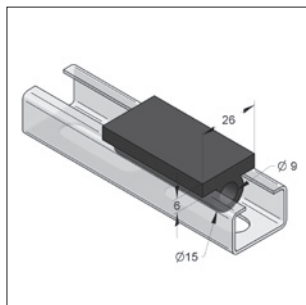
Temperature resistance: - 40 °C up to + 105 °C

Insulation thickness: 13 mm

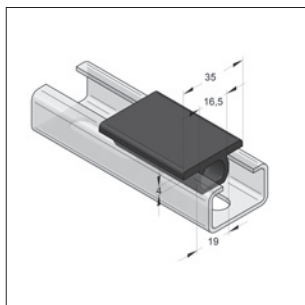
Thermal conductivity according to 52613: 0,040 W/mk

| Identification     | Dimension<br>width x thickness<br>[mm] | Packing<br>[m/roll] | Part-No. |
|--------------------|----------------------------------------|---------------------|----------|
| Insulating coat LK | 25 x 13                                | 7                   | 7250025  |
| Insulating coat LK | 35 x 13                                | 7                   | 7250035  |
| Insulating coat LK | 45 x 13                                | 7                   | 7250045  |

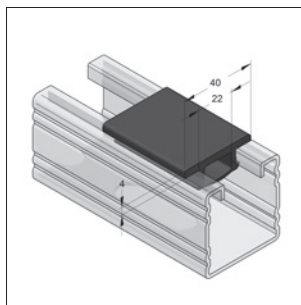
## ■ C-profile lining



C-profile lining 27/18



C-profile lining 35



C-profile lining 45


**Specification:**

Sound insulation: according to DIN 4109

**Technical data:**

Material: TPE

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

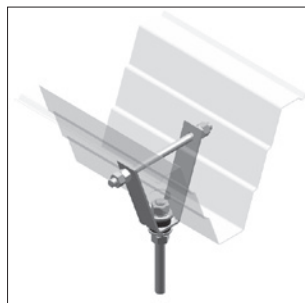
| Identification                  | suitable for<br>threaded rod | Weight<br>[kg/m] | Packing   | Part-No.  |
|---------------------------------|------------------------------|------------------|-----------|-----------|
| C-profile lining KG 27/18       | M8                           | 0,290            | 20        | 7100019   |
| C-profile lining KG 35          | -                            | 0,287            | 20        | 710003501 |
| C-profile lining KG 45          | -                            | 0,295            | 10        | 710004501 |
| STEX-rail rubber                | M8                           | 0,302            | 20        | 1272019   |
| STEX-rail rubber, section 50 mm | M8                           | 0,016            | 50 pieces | 1272020   |

allocation table profile rails see on following page

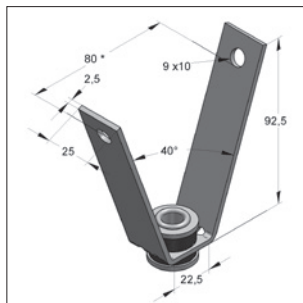
## Allocation table for profile rails: C-profile lining EPDM - insulating coats

| Profile rails          | C-profile lining EPDM |       |       | STEX-<br>rail rubber | Insulating coat |          |          |
|------------------------|-----------------------|-------|-------|----------------------|-----------------|----------|----------|
|                        | KG 27                 | KG 35 | KG 45 |                      | LK 25x13        | LK 35x13 | LK 45x13 |
| <b>STEX 35</b>         |                       |       |       | •                    |                 | •        |          |
| <b>27/18</b>           | •                     |       |       |                      | •               |          |          |
| <b>35/21</b>           |                       | •     |       |                      |                 | •        |          |
| <b>36/40</b>           |                       | •     |       |                      |                 |          |          |
| <b>45/26</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/45</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/52</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/60</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/75</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/90</b>           |                       |       | •     |                      |                 |          | •        |
| <b>45/120</b>          |                       |       | •     |                      |                 |          | •        |
| <b>45/150</b>          |                       |       | •     |                      |                 |          | •        |
| <b>Stainless steel</b> |                       |       |       |                      |                 |          |          |
| <b>45/40</b>           |                       |       |       | •                    |                 |          | •        |
| <b>45/80</b>           |                       |       |       | •                    |                 |          | •        |

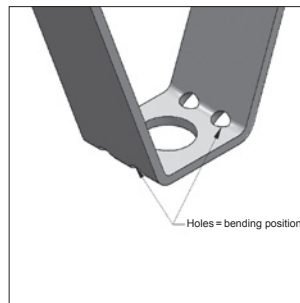
## Trapeze hanger, soundproofed



Trapeze hanger  
(mounting example)



Trapeze hanger  
soundproofed



can bend open  
up to 120 mm approx.



08

### Specification:

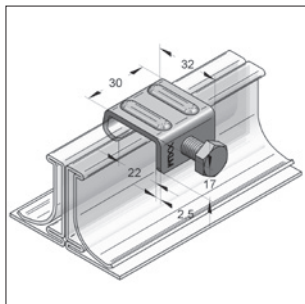
Connection: thread M8, M10  
Sound insulation: according to DIN 4109

### Technical data:

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

| Identification             | Material | max. load | Weight   | Packing | Part-No. |
|----------------------------|----------|-----------|----------|---------|----------|
|                            | [mm]     | [kN]      | [kg/pc.] | [pcs.]  |          |
| <b>Trapeze hanger LL A</b> | 25 x 2,5 | 0,8       | 0,123    | 100     | 0783840  |

## ■ Duct clamp



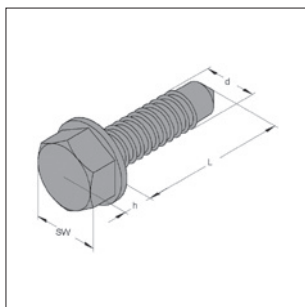
Duct clamp

**Technical data:**

|                |            |
|----------------|------------|
| Material:      | steel      |
| Material type: | S235JR     |
| Surface:       | galvanized |

| Identification    | Material<br>w x t<br>[mm] | fastening torque<br>[Nm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------|---------------------------|--------------------------|--------------------|-------------------|----------|
| <b>Duct clamp</b> | 30 x 2,5                  | 4,0                      | 0,048              | 50                | 0593001  |

## ■ Drilling screw DIN 7504 K



Drilling screw

**Technical data:**

|           |            |
|-----------|------------|
| Material: | steel      |
| Surface:  | galvanized |

| Dimension d x L<br>[mm] | h<br>[mm] | Wrench size<br>SW | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------|-----------|-------------------|--------------------|-------------------|----------|
| <b>4,2 x 13</b>         | 4         | 7                 | 0,0016             | 500               | 3700413  |
| <b>4,2 x 16</b>         | 4         | 7                 | 0,0018             | 500               | 3700416  |
| <b>4,2 x 19</b>         | 4         | 7                 | 0,0022             | 500               | 3700419  |

## ■ Duct sealing tape



Duct sealing tape

### Specification:

Application  
area: sealing of ventilation ducts  
Attributes: - onesided self-adhesive  
- no triangular bond  
- chemical and weather proofed  
- no pull-off foil  
- building material class B2 (acc. DIN 4102)

### Technical data:

Material: cell closed PE  
Bulk density: approx. 33 kg/ m<sup>3</sup> (according to 54320)  
Tensile strength: 0,42 N/mm<sup>2</sup> (according to 53571)  
Shelf life: 1 year (at + 18 °C)  
Temperature resistance: - 30 °C up to + 80 °C  
Processing temperature: min. + 5 °C

| Identification<br>[mm] | Width<br>[mm] | Insulation thickness<br>[mm] | Length<br>[m] | Packing<br>[rolls] | Part-No.  |
|------------------------|---------------|------------------------------|---------------|--------------------|-----------|
| Duct sealing tape 9x4  | 9             | 4                            | 20            | 5                  | 725110904 |
| Duct sealing tape 12x4 | 12            | 4                            | 20            | 5                  | 725111204 |
| Duct sealing tape 15x4 | 15            | 4                            | 20            | 5                  | 725111504 |

## ■ Duct sealing compound



Duct sealing compound

### Specification:

Application  
area: sealing of ventilation shafts  
Attributes: - sealing of ventilation ducts and similar components  
- special sealing compound on dispersion base  
- solvent-free  
- suitable for canteen kitchen exhaust ducts

### Technical data:

Fire performance: B1 (flame resistant/DIN 4102)  
Colour: grey  
Processing temperature: + 5 °C up to + 40 °C  
Temperature resistance: - 20 °C up to + 75 °C  
Shelf life, unopened: approx. 18 months  
at an stock temperature: + 5 °C up to + 25 °C

| Identification        | Capacity<br>[ml] | Packaging | Packing<br>[pcs.] | Part-No.  |
|-----------------------|------------------|-----------|-------------------|-----------|
| Duct sealing compound | 310              | cartridge | 20                | 725100310 |

## ■ Cold shrink tape



Cold shrink tape

### Specification:

Application  
area: sealing of ventilation ducts and folded spiral-seam pipe  
Colour: grey  
Attributes: - cold self-adhesive butyl rubber glue  
- coated with a stretchy PE foil

### Technical data:

Adhesive power of steel during detach 90°: approx. 9 N/cm<sup>2</sup>  
Adhesive power of concrete during detach 90°: approx. 9 N/cm<sup>2</sup>  
Water vapour permeability: approx. 4 g/m<sup>2</sup>/24h  
Temperature resistance: - 30 °C up to + 80 °C  
Processing temperature: + 5 °C up to + 40 °C

| Identification   | Width<br>[mm] | Length<br>[m] | Packing<br>[rolls] | Part-No.  |
|------------------|---------------|---------------|--------------------|-----------|
| Cold shrink tape | 50            | 15            | 1                  | 725120050 |
| Cold shrink tape | 75            | 15            | 1                  | 725120070 |
| Cold shrink tape | 100           | 15            | 1                  | 725120100 |

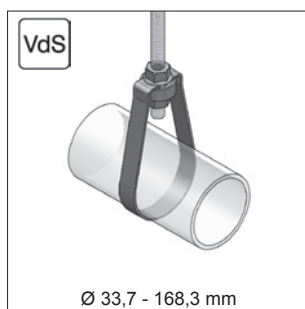
## ■ Weights for Ventilation ducts

Weight of the duct (kg/m) of galvanized metal ducts, **without** insulation  
(Dimension of the duct Width x Height mm)

| metal 0,75 mm |     |     | metal 0,88 mm |     |      |      |      |      |      | metal 1,0 mm |      |      |      |      |      |      | metal 1,13 mm |      |      |      |      |      |       | metal 1,25 mm |        |      |      | s |
|---------------|-----|-----|---------------|-----|------|------|------|------|------|--------------|------|------|------|------|------|------|---------------|------|------|------|------|------|-------|---------------|--------|------|------|---|
| 200           | 224 | 250 | 280           | 315 | 355  | 400  | 450  | 500  | 560  | 630          | 710  | 800  | 900  | 1000 | 1120 | 1250 | 1400          | 1600 | 1800 | 2000 | 2240 | 2500 | 2800  | 3150          | B<br>H |      |      |   |
| 4,9           | 5,2 | 5,6 | 7,0           | 7,5 | 8,1  | 8,7  | 9,4  | 10,2 | 12,5 | 13,7         | 15,0 | 16,5 | 18,1 | 19,8 | 24,6 | 27,0 | 29,8          | 33,5 | 37,3 | 41,0 | 50,3 | 55,6 | 61,8  | 69,0          |        | 200  |      |   |
|               | 5,5 | 5,9 | 7,3           | 7,8 | 8,4  | 9,1  | 9,8  | 10,5 | 12,9 | 14,1         | 15,4 | 16,9 | 18,5 | 20,2 | 25,0 | 27,5 | 30,3          | 34,0 | 37,7 | 41,4 | 50,8 | 56,1 | 62,3  | 69,5          |        | 224  |      |   |
|               |     | 6,2 | 7,7           | 8,2 | 8,8  | 9,4  | 10,2 | 10,9 | 13,4 | 14,5         | 15,8 | 17,3 | 19,0 | 20,6 | 25,5 | 27,9 | 30,7          | 34,5 | 38,2 | 41,9 | 51,3 | 56,7 | 62,8  | 70,1          |        | 250  |      |   |
|               |     |     | 8,1           | 8,6 | 9,2  | 9,9  | 10,6 | 11,3 | 13,8 | 15,0         | 16,3 | 17,8 | 19,5 | 21,1 | 26,1 | 28,5 | 31,3          | 35,0 | 38,7 | 42,5 | 51,9 | 57,3 | 63,5  | 70,7          |        | 280  |      |   |
|               |     |     |               | 9,1 | 9,7  | 10,4 | 11,1 | 11,8 | 14,4 | 15,6         | 16,9 | 18,4 | 20,0 | 21,7 | 26,7 | 29,2 | 31,9          | 35,7 | 39,4 | 43,1 | 52,6 | 58,0 | 64,2  | 71,4          |        | 315  |      |   |
|               |     |     |               |     | 10,3 | 11,0 | 11,7 | 12,4 | 15,1 | 16,2         | 17,6 | 19,0 | 20,7 | 22,3 | 27,5 | 29,9 | 32,7          | 36,4 | 40,1 | 43,9 | 53,5 | 58,8 | 65,0  | 72,2          |        | 355  |      |   |
|               |     |     |               |     |      | 11,6 | 12,3 | 13,1 | 15,8 | 17,0         | 18,3 | 19,8 | 21,4 | 23,1 | 28,3 | 30,7 | 33,5          | 37,3 | 41,0 | 44,7 | 54,4 | 59,8 | 65,9  | 73,2          |        | 400  |      |   |
|               |     |     |               |     |      |      | 13,1 | 13,8 | 16,6 | 17,8         | 19,1 | 20,6 | 22,3 | 23,9 | 29,2 | 31,7 | 34,5          | 38,2 | 41,9 | 45,6 | 55,4 | 60,8 | 67,0  | 74,2          |        | 450  |      |   |
|               |     |     |               |     |      |      |      | 14,5 | 17,5 | 18,6         | 19,9 | 21,4 | 23,1 | 24,7 | 30,2 | 32,6 | 35,4          | 39,1 | 42,8 | 46,6 | 56,5 | 61,8 | 68,0  | 75,2          |        | 500  |      |   |
|               |     |     |               |     |      |      |      |      | 18,5 | 19,6         | 20,9 | 22,4 | 24,1 | 25,7 | 31,3 | 33,7 | 36,5          | 40,2 | 44,0 | 47,7 | 57,7 | 63,1 | 69,2  | 76,4          |        | 560  |      |   |
|               |     |     |               |     |      |      |      |      |      | 20,8         | 22,1 | 23,6 | 25,2 | 26,9 | 32,6 | 35,0 | 37,8          | 41,5 | 45,3 | 49,0 | 59,1 | 64,5 | 70,7  | 77,9          |        | 630  |      |   |
|               |     |     |               |     |      |      |      |      |      |              | 23,4 | 24,9 | 26,5 | 28,2 | 34,1 | 36,5 | 39,3          | 43,0 | 46,8 | 50,5 | 60,8 | 66,1 | 72,3  | 79,5          |        | 710  |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      | 26,4 | 28,0 | 29,7 | 35,8 | 38,2 | 41,0          | 44,7 | 48,4 | 52,2 | 62,6 | 68,0 | 74,2  | 81,4          |        | 800  |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      | 29,7 | 31,3 | 37,6 | 40,1 | 42,8          | 46,6 | 50,3 | 54,0 | 64,7 | 70,1 | 76,2  | 83,5          |        | 900  |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      | 33,0 | 39,5 | 41,9 | 44,7          | 48,4 | 52,2 | 55,9 | 66,8 | 72,1 | 78,3  | 85,5          |        | 1000 |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      | 41,7 | 44,1 | 46,9          | 50,7 | 54,4 | 58,1 | 69,2 | 74,6 | 80,8  | 88,0          |        | 1120 |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      | 46,6 | 49,4          | 53,1 | 56,8 | 60,5 | 71,9 | 77,3 | 83,5  | 90,7          |        | 1250 |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      | 52,2          | 55,9 | 59,6 | 63,3 | 75,0 | 80,4 | 86,5  | 93,8          |        | 1400 |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               | 59,6 | 63,3 | 67,1 | 79,1 | 84,5 | 90,7  | 97,9          |        | 1600 |      |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      | 67,1 | 70,8 | 83,2 | 88,6  | 94,8          | 102,0  |      | 1800 |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      |      | 74,5 | 87,4 | 92,7  | 98,9          | 106,1  |      | 2000 |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      |      |      | 92,3 | 97,7  | 103,9         | 111,1  |      | 2240 |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      |      |      |      | 103,0 | 109,2         | 116,4  |      | 2500 |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      |      |      |      |       | 115,4         | 122,6  |      | 2800 |   |
|               |     |     |               |     |      |      |      |      |      |              |      |      |      |      |      |      |               |      |      |      |      |      |       |               | 129,8  |      | 3150 |   |

## ■ MEFA mounting systems for Sprinkler

### VdS-approved products for water extinguishing systems



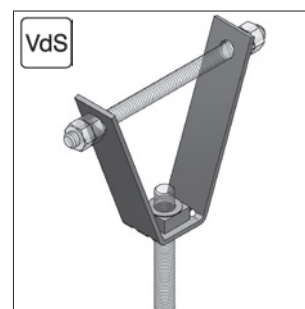
Sprinkler pipe loop "S"  
Page 12/3



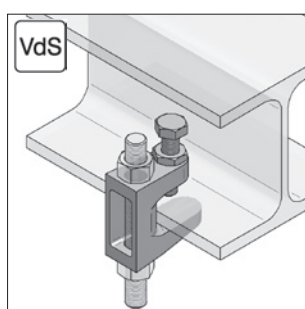
Sprinkler pipe loop "R"  
Page 12/5



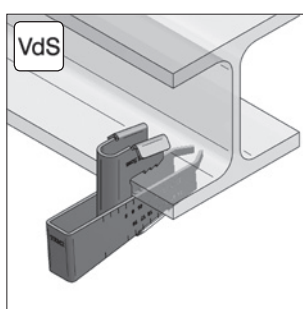
U-bolt  
See chapter 1



Trapeze hanger  
See chapter 5

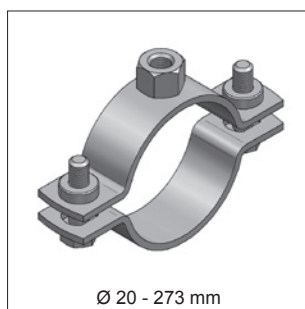


Girder clamp, cast iron  
See chapter 5



Girder clamp TKM  
See chapter 5

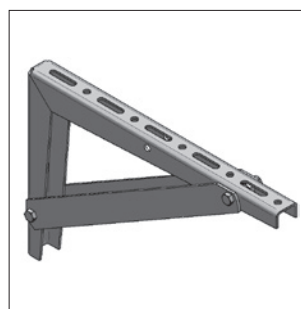
### Pipe supports and components acc. to VdS CEA-guidelines for sprinkler systems VdS CEA 4001 "planning and installation"



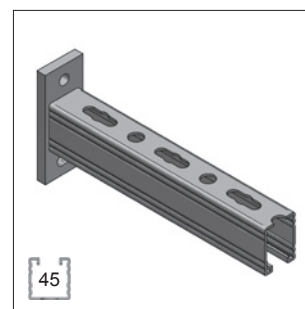
Sprinkler pipe clamp "SP"  
Page 12/4



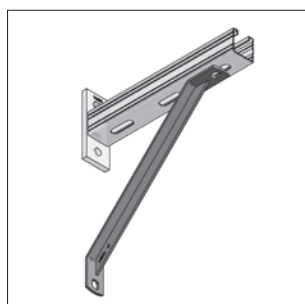
U-bolt  
See chapter 1



Consoles with brace  
See chapter 2

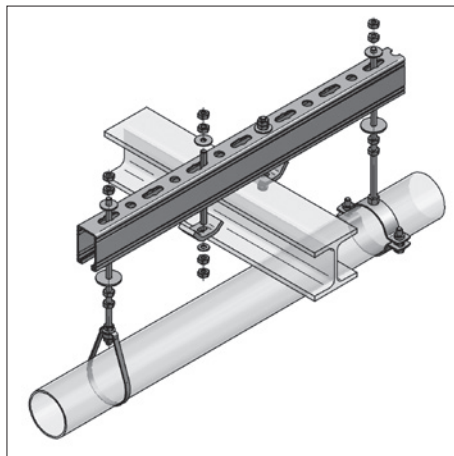


Consoles  
Page 12/6

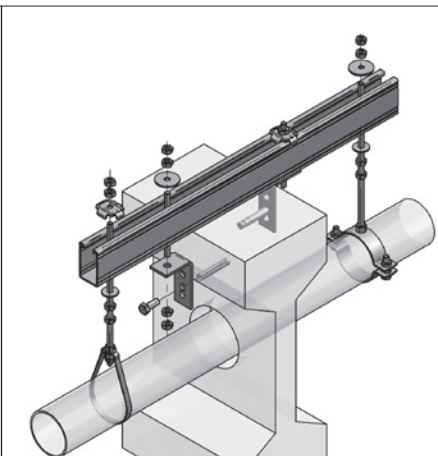


Brace 45° T-profile  
See chapter 2

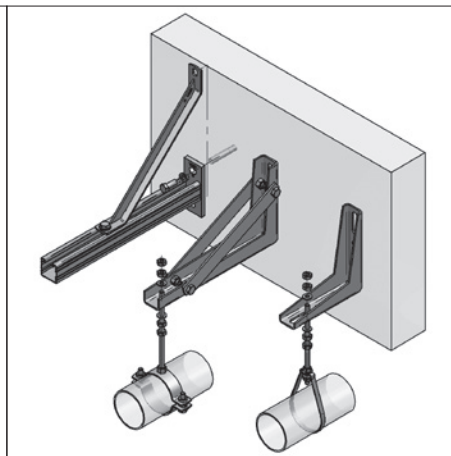
## ■ Assembly examples



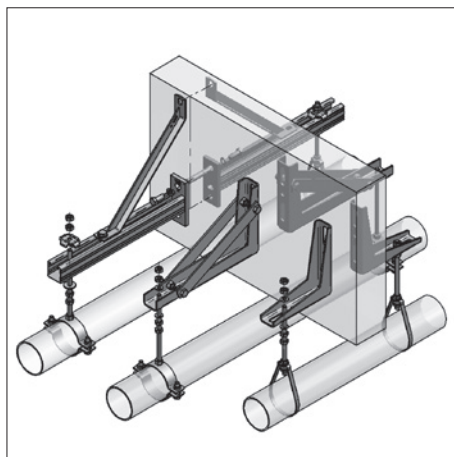
with steel girder



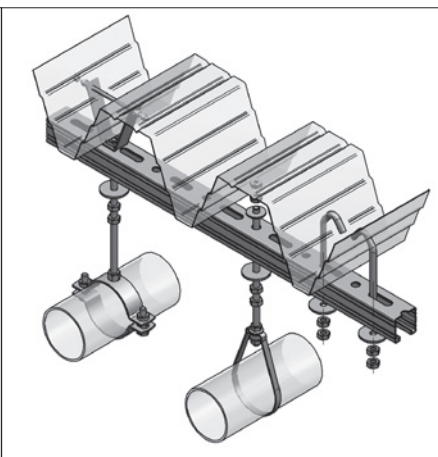
with reinforced concrete girder



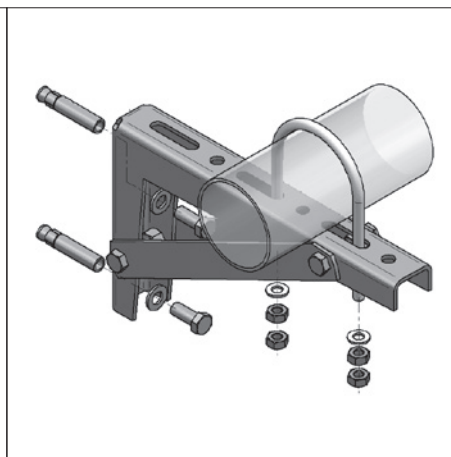
one-way projecting



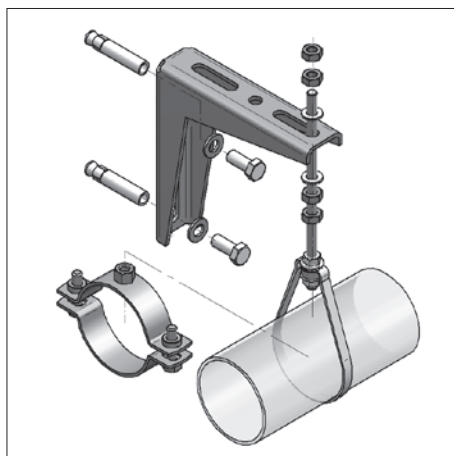
two-way projecting



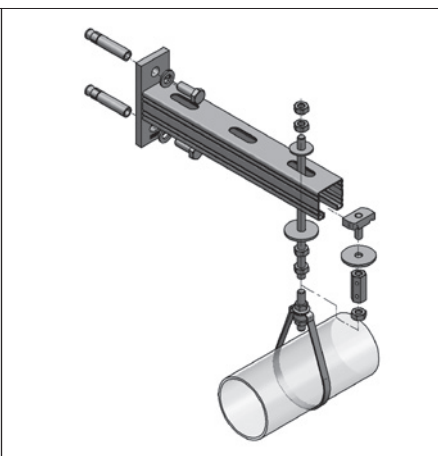
on trapeze sheet



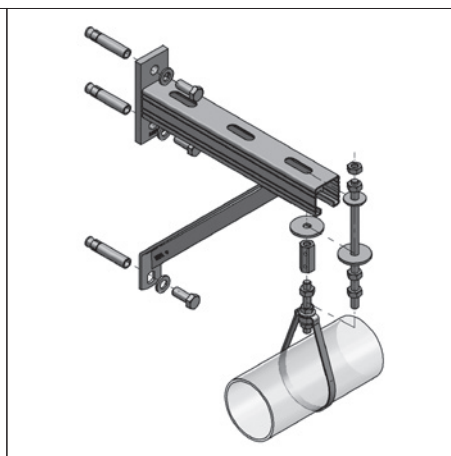
U-bolt on console



Universal console

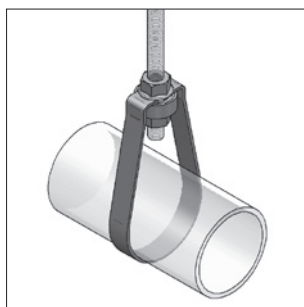


Console C-Profile

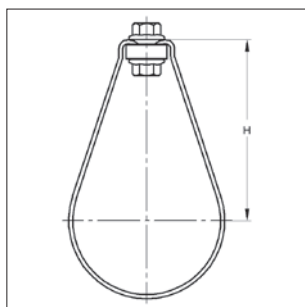


Console C-Profile with brace

## ■ Sprinkler pipe loop "S"



Sprinkler pipe loop „S“



G 404 0051

### Specification:

Application area:

- for stationary fire-protection in fixed water-extinguishing-systems
- sprinkler plant engineering
- deluge installation
- CO<sub>2</sub> extinguishing system
- halon fire extinguishing system
- foam extinguishing system
- powder fire extinguishing system

### Technical data:

Material: steel  
Material type: S235JR  
Surface: galvanized

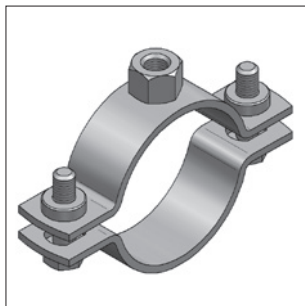
Delivery form: not mounted, flange nuts and rings enclosed  
Loads: according to VdS specifications

### Construction according to VdS guidelines

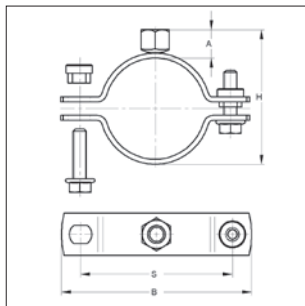
| Identification          | Pipe<br>[Inch]   | max. load<br>[kN] | Connection<br>thread | Pipe-<br>OD | H<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-------------------------|------------------|-------------------|----------------------|-------------|-----------|--------------------|-------------------|----------|
| Sprinkler pipe loop "S" | 1                | 2,0               | M8                   | 33,7        | 57,0      | 0,040              | 100               | 4700034  |
| Sprinkler pipe loop "S" | 1 <sup>1/4</sup> | 2,0               | M8                   | 42,4        | 57,0      | 0,058              | 50                | 4700042  |
| Sprinkler pipe loop "S" | 1 <sup>1/2</sup> | 2,0               | M8                   | 48,3        | 62,0      | 0,060              | 50                | 4700048  |
| Sprinkler pipe loop "S" | 2                | 3,5               | M8                   | 60,3        | 71,0      | 0,065              | 50                | 4700060  |
| Sprinkler pipe loop "S" | 1                | 2,0               | M10                  | 33,7        | 57,0      | 0,075              | 100               | 4701034  |
| Sprinkler pipe loop "S" | 1 <sup>1/4</sup> | 2,0               | M10                  | 42,4        | 57,0      | 0,078              | 50                | 4701042  |
| Sprinkler pipe loop "S" | 1 <sup>1/2</sup> | 2,0               | M10                  | 48,3        | 62,0      | 0,080              | 50                | 4701048  |
| Sprinkler pipe loop "S" | 2                | 3,5               | M10                  | 60,3        | 71,0      | 0,086              | 50                | 4701060  |
| Sprinkler pipe loop "S" | 2 <sup>1/2</sup> | 3,5               | M10                  | 76,1        | 87,5      | 0,112              | 25                | 4700076  |
| Sprinkler pipe loop "S" | 3                | 3,5               | M10                  | 88,9        | 102,5     | 0,124              | 25                | 4700089  |
| Sprinkler pipe loop "S" | 4                | 3,5               | M10                  | 114,3       | 132,5     | 0,142              | 25                | 4700114  |
| Sprinkler pipe loop "S" | 5                | 5,0               | M12                  | 139,7       | 147,0     | 0,139              | 25                | 4700140  |
| Sprinkler pipe loop "S" | 6                | 8,5               | M12                  | 168,3       | 175,0     | 0,205              | 25                | 4700165  |

 assembly instructions see chapter 15

## ■ Sprinkler pipe clamp "SP"



Sprinkler pipe clamp "SP"



max. load according to VdS

| nominal width<br>of pipe | cross section       | max. load |
|--------------------------|---------------------|-----------|
| ≤ DN 50                  | 75 mm <sup>2</sup>  | 2,0 kN    |
| > DN 50 ≤ DN 100         | 90 mm <sup>2</sup>  | 3,5 kN    |
| > DN 100 ≤ DN 150        | 90 mm <sup>2</sup>  | 5,0 kN    |
| > DN 150 ≤ DN 200        | 250 mm <sup>2</sup> | 8,5 kN    |
| > DN 200 ≤ DN 250        | 250 mm <sup>2</sup> | 10,0 kN   |

**Specification:**

- Application area:
- for Sprinkler systems (choice and application according to VdS guidelines for Sprinkler systems VdS CEA 4001, planning and installation)
- Version:
- pipe clamp with pendulum stick nut and two closure-screws
  - connection thread resistance press-welded, from dimension 50x5 circular welded
  - for double mounting thru flange holes on request

**Technical data:**

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



Meeting VdS guidelines for Sprinkler systems VdS CEA 4001, planning and installation

\* similar closure screws as Titan HD clamp  
(see chapter 1)

**Connection: Thread M8 DN ≤ 50**

| Identification | Clamping<br>range<br>[mm] | [Inch] | Material<br>[mm] | Closure-<br>screws | H<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|----------------|---------------------------|--------|------------------|--------------------|-----------|-----------|-----------|-----------|--------------------|-------------------|----------|
| Type "SP"      | 20 - 23                   | 1/2    | 25x3,0           | M8                 | 38-41     | 15        | 73        | 49        | 0,169              | 50                | 0473022  |
| Type "SP"      | 25 - 29                   | 3/4    | 25x3,0           | M8                 | 43-47     | 15        | 80        | 56        | 0,179              | 50                | 0473027  |
| Type "SP"      | 30 - 35                   | 1      | 25x3,0           | M8                 | 50-53     | 15        | 87        | 63        | 0,191              | 50                | 0473034  |
| Type "SP"      | 41 - 46                   | 1 1/4  | 25x3,0           | M8                 | 59-64     | 15        | 98        | 74        | 0,209              | 50                | 0473042  |
| Type "SP"      | 48 - 55                   | 1 1/2  | 25x3,0           | M8                 | 66-73     | 15        | 107       | 83        | 0,223              | 50                | 0473048  |
| Type "SP"      | 57 - 61                   | 2      | 25x3,0           | M8                 | 75-79     | 15        | 114       | 90        | 0,239              | 50                | 0473060  |

**Connection: Thread M10 DN ≤ 50**

|           |         |       |        |    |       |    |     |    |       |    |         |
|-----------|---------|-------|--------|----|-------|----|-----|----|-------|----|---------|
| Type "SP" | 20 - 23 | 1/2   | 25x3,0 | M8 | 40-43 | 17 | 73  | 49 | 0,169 | 50 | 0474022 |
| Type "SP" | 25 - 28 | 3/4   | 25x3,0 | M8 | 45-48 | 17 | 80  | 56 | 0,179 | 50 | 0474027 |
| Type "SP" | 30 - 35 | 1     | 25x3,0 | M8 | 52-55 | 17 | 87  | 63 | 0,191 | 50 | 0474034 |
| Type "SP" | 41 - 46 | 1 1/4 | 25x3,0 | M8 | 61-66 | 17 | 98  | 74 | 0,209 | 50 | 0474042 |
| Type "SP" | 48 - 55 | 1 1/2 | 25x3,0 | M8 | 68-75 | 17 | 107 | 93 | 0,223 | 50 | 0474048 |
| Type "SP" | 57 - 61 | 2     | 25x3,0 | M8 | 77-81 | 17 | 114 | 90 | 0,233 | 50 | 0474060 |

**Connection: Thread M10 DN > 50 ≤ 100**

|           |           |       |        |     |         |    |     |     |       |    |         |
|-----------|-----------|-------|--------|-----|---------|----|-----|-----|-------|----|---------|
| Type "SP" | 70 - 76   | 2 1/2 | 25x3,0 | M8  | 90-96   | 17 | 129 | 105 | 0,265 | 50 | 0474076 |
| Type "SP" | 84 - 90   | 3     | 30x3,0 | M10 | 104-110 | 17 | 151 | 124 | 0,388 | 25 | 0475089 |
| Type "SP" | 106 - 112 |       | 30x3,0 | M10 | 125-132 | 17 | 172 | 145 | 0,434 | 25 | 0475108 |
| Type "SP" | 114 - 118 | 4     | 30x3,0 | M10 | 134-138 | 17 | 179 | 152 | 0,452 | 25 | 0475114 |

**Connection: Thread M12 DN > 100 ≤ 150**

|           |           |   |        |     |         |    |     |     |       |    |         |
|-----------|-----------|---|--------|-----|---------|----|-----|-----|-------|----|---------|
| Type "SP" | 132 - 137 |   | 30x3,0 | M10 | 154-159 | 19 | 198 | 171 | 0,712 | 25 | 0476133 |
| Type "SP" | 139 - 144 | 5 | 30x3,0 | M10 | 161-166 | 19 | 205 | 178 | 0,726 | 25 | 0476140 |
| Type "SP" | 157 - 162 |   | 30x3,0 | M10 | 179-184 | 19 | 223 | 196 | 0,806 | 25 | 0476159 |
| Type "SP" | 164 - 168 | 6 | 30x3,0 | M10 | 186-190 | 19 | 229 | 202 | 0,828 | 25 | 0476168 |

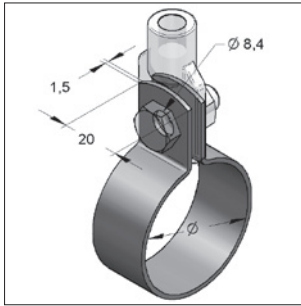
**Connection: Thread M16 DN > 150 ≤ 200**

|           |       |   |        |     |     |    |     |     |       |   |         |
|-----------|-------|---|--------|-----|-----|----|-----|-----|-------|---|---------|
| Type "SP" | 219 * | 8 | 50x5,0 | M12 | 249 | 25 | 297 | 268 | 1,724 | 1 | 0477219 |
|-----------|-------|---|--------|-----|-----|----|-----|-----|-------|---|---------|

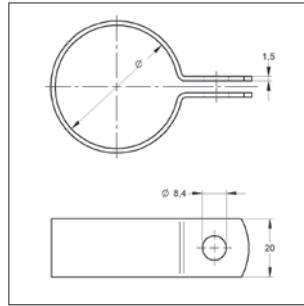
**Connection: Thread M20 DN > 200 ≤ 250**

|           |       |    |        |     |     |    |     |     |       |   |         |
|-----------|-------|----|--------|-----|-----|----|-----|-----|-------|---|---------|
| Type "SP" | 273 * | 10 | 50x5,0 | M12 | 300 | 22 | 351 | 322 | 2,100 | 1 | 0478273 |
|-----------|-------|----|--------|-----|-----|----|-----|-----|-------|---|---------|

## ■ Sprinkler pipe loop "R"



Sprinkler pipe loop "R"



G 494 0028

### Specification:

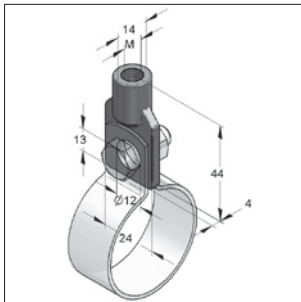
- Application area:
- one-part
  - pipe clamps without closure-screws
  - sprinkler pipe loop "R" may be mounted only in connection with adapter-mounting eye
- Needed accessory:
- required closure-screws M8 according to DIN EN ISO 4017
  - nuts according to DIN EN ISO 4032

### Technical data:

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

| Identification                 | Pipe<br>[Inch] | Pipe-<br>OD | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No |
|--------------------------------|----------------|-------------|--------------------|------------------|---------|
| <b>Sprinkler pipe loop "R"</b> | <b>1/2</b>     | 21,3        | 0,024              | 1                | 0340014 |
| <b>Sprinkler pipe loop "R"</b> | <b>3/4</b>     | 26,9        | 0,028              | 1                | 0340022 |
| <b>Sprinkler pipe loop "R"</b> | <b>1</b>       | 33,7        | 0,032              | 1                | 0340030 |

## ■ Eye adaptor



Eye adaptor

### Specification:

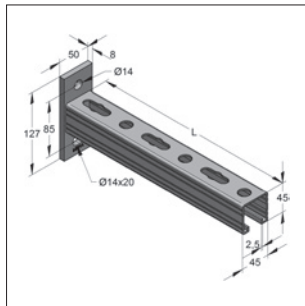
- Application area:
- for sprinkler pipe loop "R"
- Needed accessory:
- required closure-screws M8 according to DIN EN ISO 4017,
  - nuts according to DIN EN ISO 4032

### Technical data:

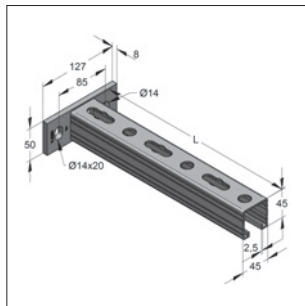
- Material: malleable cast iron
- Surface: galvanized

| Identification              | female-<br>thread<br>[M] | max. load<br>according to VdS<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. |
|-----------------------------|--------------------------|---------------------------------------|--------------------|-------------------|----------|
| <b>Eye adaptor BO 25-8</b>  | M8                       | 2,0                                   | 0,028              | 50                | 0350152  |
| <b>Eye adaptor BO 25-10</b> | M10                      | 3,5                                   | 0,025              | 50                | 0350174  |

## ■ Console C-profile 45/45/2,5 mm



Sprinkler- Console 45/45/2,5  
lengthwise



Sprinkler- Console 45/45/2,5  
crosswise

### Technical data: galvanized

Material type plate: S355J2,  $f_y = 355 \text{ N/mm}^2$   
 Material type profile rails: S235JR,  $f_y = 235 \text{ N/mm}^2$   
 Surface: galvanized  
 Material: steel  
 global safety coefficient: 1,54

dimensions plate: 127 x 50 x 8,0 mm  
 dimensions profile rails: 45 x 45 x 2,5 mm

\* on request

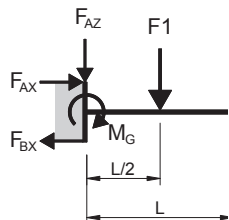
### Console 45/45/2,5 lengthwise

| Identification    | Length<br>L<br>[mm] | max. load                      |                                |                                  | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No |
|-------------------|---------------------|--------------------------------|--------------------------------|----------------------------------|--------------------|------------------|---------|
|                   |                     | load situation 1<br>F1<br>[kN] | load situation 2<br>F2<br>[kN] | load situation 3<br>q0<br>[kN/m] |                    |                  |         |
| Console 45/45/2,5 | 210*                | 4,98                           | 2,49                           | 23,70                            | 0,99               | 1                | 9992222 |
| Console 45/45/2,5 | 315                 | 3,32                           | 1,66                           | 10,53                            | 1,30               | 15               | 9992306 |
| Console 45/45/2,5 | 420                 | 2,49                           | 1,24                           | 5,92                             | 1,61               | 10               | 9992307 |
| Console 45/45/2,5 | 525                 | 1,99                           | 1,00                           | 3,79                             | 1,92               | 10               | 9992308 |
| Console 45/45/2,5 | 630                 | 1,66                           | 0,83                           | 2,63                             | 2,24               | 5                | 9992309 |
| Console 45/45/2,5 | 735                 | 1,42                           | 0,68                           | 1,93                             | 2,55               | 5                | 9992310 |

### Console 45/45/2,5 crosswise

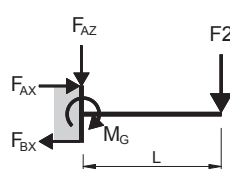
|                   |      |      |      |       |      |    |         |
|-------------------|------|------|------|-------|------|----|---------|
| Console 45/45/2,5 | 210* | 3,68 | 1,84 | 17,52 | 0,99 | 1  | 9992218 |
| Console 45/45/2,5 | 315  | 2,45 | 1,23 | 7,78  | 1,30 | 15 | 9992219 |
| Console 45/45/2,5 | 420  | 1,84 | 0,92 | 4,38  | 1,61 | 10 | 9992220 |
| Console 45/45/2,5 | 525* | 1,48 | 0,74 | 2,80  | 1,92 | 10 | 9992221 |

#### load situation 1



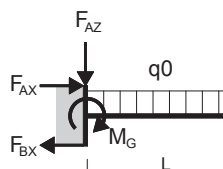
$$F_{AZ} = F1 \quad M_G = \frac{F1 \cdot L}{2}$$

#### load situation 2



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

#### load situation 3



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

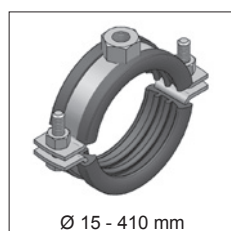
#### Notice:

All load capacities excessive refer to static loads

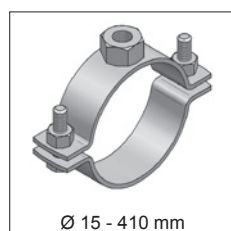
## ■ Stainless steel



Pipe clamp Inoxina  
Page 13/2



Pipe clamp stainless steel  
Page 13/3



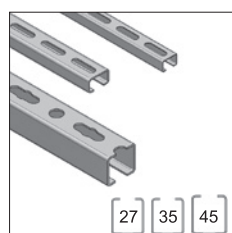
Pipe clamp stainless steel  
Page 13/5



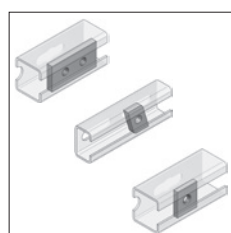
Ventilation pipe clamp  
Page 13/7



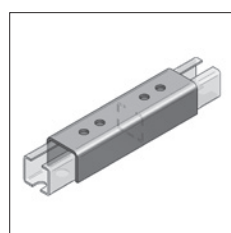
U-bolt  
Page 13/8



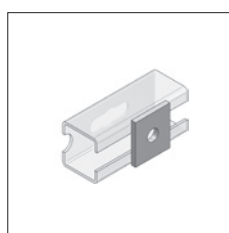
Profile rails  
Page 13/9



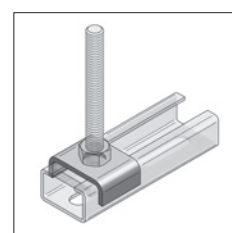
Threaded plate  
Page 13/10



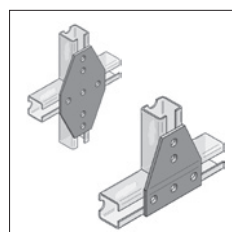
Connector 45/40  
Page 13/11



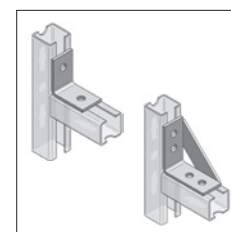
Perforated plate  
Page 13/12



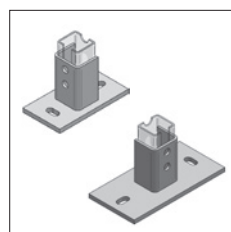
Profile holder  
Page 13/13



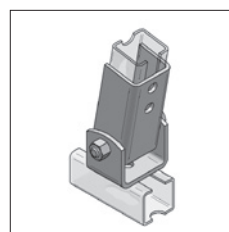
Lugs  
Page 13/13



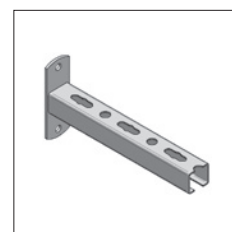
Angle 40/5  
Page 13/14



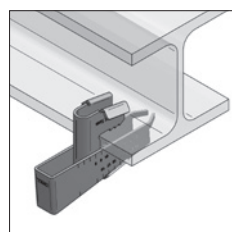
Holder  
Page 13/15



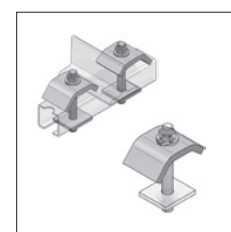
Joint holder  
Page 13/15



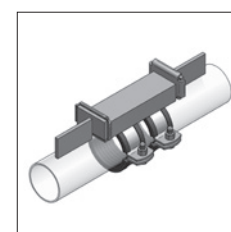
Consoles and braces  
Page 13/16



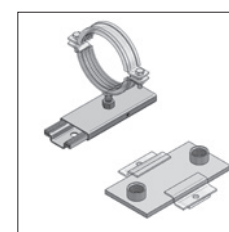
Girder clamp  
Page 13/18



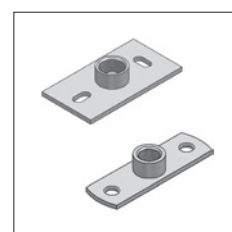
Clamping claws  
Page 13/19



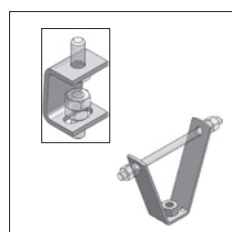
Fixpoint  
Page 13/20



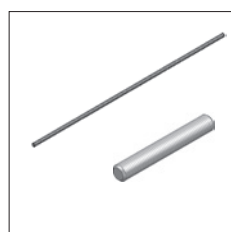
Sliding element  
Page 13/21



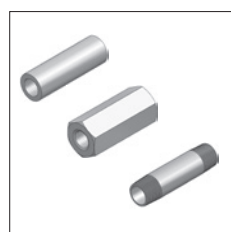
Base plates  
Page 13/23



Suspended bracket  
Trapeze hanger  
Page 13/24



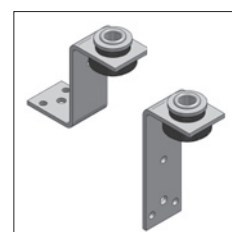
Threaded rods and pins  
Page 13/25



Threaded couplings,  
reducers  
Page 13/26



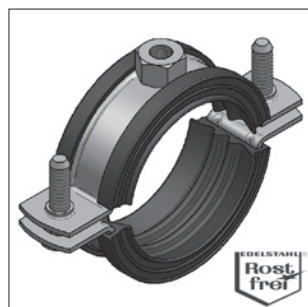
Screws, nuts and washers  
Page 13/27



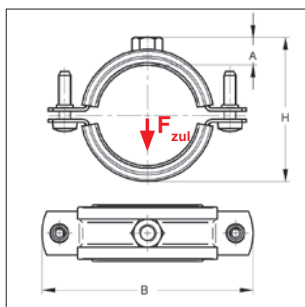
Duct holder  
Page 13/29

❗ Stainless steel anchors see chapter 07

## Pipe clamp Inoxina



Pipe clamp Inoxina


**Specification:**

Closure: snap-in closure  
 Construction method: two-part  
 OD: 15 - 116 mm  
 Connection: M8 SW 13, M10 SW 17  
 Sound insulation: according to DIN 4109

**Technical data:**

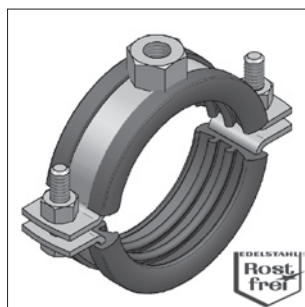
Material: Stainless steel  
 Material type: V4A  
 Sound insulation lining: EPDM  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 4,0 mm

| Connection: Thread M8 |          |               |                          |                   | with sound insulation lining rubber |      |         |         |          | V4A       |
|-----------------------|----------|---------------|--------------------------|-------------------|-------------------------------------|------|---------|---------|----------|-----------|
| Dimension             | Material | Closure-screw | max. load                | H                 | A                                   | B    | Weight  | Packing | Part-No. |           |
| [mm]                  | [Zoll]   | [mm]          | F <sub>zul</sub><br>[kN] | (min-max)<br>[mm] | [mm]                                | [mm] | [kg/St] | [St]    |          |           |
| 15 - 19               | 3/8      | 20x1,25       | M6                       | 0,90              | 39                                  | 12   | 64      | 0,046   | 100      | 051001018 |
| 20 - 23               | 1/2      | 20x1,25       | M6                       | 0,90              | 42                                  | 12   | 67      | 0,050   | 100      | 051001023 |
| 25 - 28               | 3/4      | 20x1,25       | M6                       | 0,90              | 47                                  | 12   | 72      | 0,053   | 100      | 051001029 |
| 31 - 35               | 1        | 20x1,25       | M6                       | 0,90              | 55                                  | 12   | 80      | 0,062   | 100      | 051001035 |
| 40 - 43               | 1 1/4    | 20x1,25       | M6                       | 0,90              | 62                                  | 13   | 87      | 0,072   | 50       | 051001043 |
| 47 - 51               | 1 1/2    | 20x1,25       | M6                       | 0,90              | 71                                  | 13   | 96      | 0,081   | 50       | 051001051 |
| 52 - 56               |          | 20x1,25       | M6                       | 0,90              | 75                                  | 13   | 100     | 0,081   | 50       | 051001056 |
| 57 - 63               | 2        | 20x1,25       | M6                       | 0,90              | 83                                  | 13   | 108     | 0,088   | 50       | 051001063 |

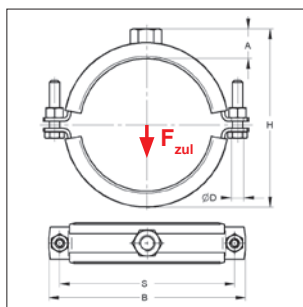
  

| Connection: Thread M10 |       |        |    |      |     |    |     |       |    |           |
|------------------------|-------|--------|----|------|-----|----|-----|-------|----|-----------|
| 64 - 67                |       | 20x2,0 | M6 | 1,35 | 89  | 15 | 109 | 0,129 | 25 | 051002067 |
| 70 - 76                | 2 1/2 | 20x2,0 | M6 | 1,35 | 98  | 15 | 118 | 0,138 | 25 | 051002076 |
| 86 - 91                | 3     | 20x2,0 | M6 | 1,35 | 109 | 15 | 130 | 0,160 | 25 | 051002091 |
| 108 - 116              | 4     | 20x2,5 | M6 | 1,71 | 137 | 15 | 158 | 0,224 | 25 | 051002116 |

## ■ Pipe clamp stainless steel, lined



Pipe clamp stainless steel  
lined



### Specification:

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| Closure:                             | screwed closure                       |
| Construction method:                 | two-part                              |
| OD:                                  | 15 - 410 mm                           |
| Connection:                          | M8, M10, M12, M16, without connection |
| Sound insulation:                    | according DIN 4109                    |
| Variant demand:                      | on request                            |
| Delivery time<br>for variant demand: | 5 working days, ex works              |

### Technical Data:

|                          |                                                                            |
|--------------------------|----------------------------------------------------------------------------|
| Material:                | Stainless steel                                                            |
| Material type:           | V4A<br>V2A                                                                 |
| Sound insulation lining: | TPE <span style="color: red;">Silicone (on request)</span>                 |
| Temperature resistance:  | -35 °C up to +100 °C <span style="color: red;">-60 °C up to +250 °C</span> |
| Insulation thickness:    |                                                                            |
| Clamp OD ≤ 45 mm         | 3,5 mm                                                                     |
| Clamp OD ≥ 47 mm         | 6,0 mm                                                                     |

- other sizes and connection threads on request -

| Connection: Thread M8  |          |          |                          |                   |           | with sound insulation lining rubber |      |      |          |         |    | V4A      | V2A      |
|------------------------|----------|----------|--------------------------|-------------------|-----------|-------------------------------------|------|------|----------|---------|----|----------|----------|
| Dimension              | Material | Closure- | max. load                | H                 | A         | B                                   | S    | ØD   | Weight   | Packing |    | Part-No. | Part-No. |
| [mm] [Inch] [mm]       |          | screw    | F <sub>zul</sub><br>[kN] | (min-max)<br>[mm] | [mm]      | [mm]                                | [mm] | [mm] | [kg/pc.] | [pc.]   |    |          |          |
| 15 - 20                | 3/8      | 20x1,5   | M6                       | 0,97              | 31 - 35   | 11                                  | 56   | 43   | 6,5      | 0,060   | 50 | 0498174  | 0468174  |
| 21 - 25                | 1/2      | 20x1,5   | M6                       | 0,97              | 36 - 40   | 11                                  | 61   | 48   | 6,5      | 0,065   | 50 | 0498175  | 0468175  |
| 26 - 30                | 3/4      | 20x1,5   | M6                       | 0,97              | 41 - 45   | 11                                  | 66   | 53   | 6,5      | 0,069   | 50 | 0498176  | 0468176  |
| 31 - 34                | 1        | 20x1,5   | M6                       | 0,97              | 46 - 50   | 11                                  | 72   | 59   | 6,5      | 0,073   | 50 | 0498177  | 0468177  |
| 35 - 40                |          | 20x1,5   | M6                       | 0,97              | 51 - 56   | 11                                  | 78   | 65   | 6,5      | 0,079   | 50 | 0498178  | 0468178  |
| 41 - 45                | 1 1/4    | 20x1,5   | M6                       | 0,97              | 58 - 65   | 11                                  | 86   | 73   | 6,5      | 0,086   | 50 | 0498179  | 0468179  |
| Connection: Thread M10 |          |          |                          |                   |           | with sound insulation lining rubber |      |      |          |         |    |          |          |
| 47 - 52                | 1 1/2    | 20x2,0   | M6                       | 1,78              | 69 - 74   | 16                                  | 96   | 82   | 6,5      | 0,129   | 50 | 0498210  | 0468210  |
| 53 - 57                |          | 20x2,0   | M6                       | 1,78              | 75 - 79   | 16                                  | 101  | 88   | 6,5      | 0,135   | 50 | 0498211  | 0468211  |
| 58 - 64                | 2        | 20x2,0   | M6                       | 1,78              | 80 - 86   | 16                                  | 108  | 94   | 6,5      | 0,142   | 50 | 0498212  | 0468212  |
| 65 - 70                |          | 20x2,0   | M6                       | 1,78              | 87 - 92   | 16                                  | 114  | 101  | 6,5      | 0,146   | 50 | 0498213  | 0468213  |
| 72 - 80                | 2 1/2    | 20x2,0   | M6                       | 1,78              | 94 - 102  | 16                                  | 123  | 110  | 6,5      | 0,160   | 50 | 0498214  | 0468214  |
| 82 - 90                | 3        | 20x2,0   | M6                       | 1,78              | 104 - 112 | 16                                  | 134  | 120  | 6,5      | 0,170   | 50 | 0498215  | 0468215  |
| 93 - 100               |          | 20x2,0   | M6                       | 1,78              | 115 - 122 | 16                                  | 144  | 130  | 6,5      | 0,180   | 50 | 0498216  | 0468216  |
| 102 - 107              |          | 20x2,0   | M6                       | 1,78              | 124 - 129 | 16                                  | 152  | 138  | 6,5      | 0,187   | 50 | 0498217  | 0468217  |
| 108 - 116              | 4        | 20x2,0   | M6                       | 1,78              | 130 - 138 | 16                                  | 160  | 147  | 6,5      | 0,210   | 50 | 0498218  | 0468218  |

## Pipe clamp stainless steel, lined

| Connection: Thread M12 |        |          |               |                          | with sound insulation lining rubber |      |      |      |      |          |         | V4A      | V2A      |
|------------------------|--------|----------|---------------|--------------------------|-------------------------------------|------|------|------|------|----------|---------|----------|----------|
| Dimension              |        | Material | Closure-screw | max. load                | H                                   | A    | B    | S    | ØD   | Weight   | Packing | Part-No. | Part-No. |
| [mm]                   | [Inch] | [mm]     |               | F <sub>zul</sub><br>[kN] | (min-max)<br>[mm]                   | [mm] | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]   |          |          |
| 102 - 107              |        | 25x3,0   | M8            | 2,61                     | 129-134                             | 20   | 171  | 150  | 9    | 0,373    | 50      | 0490317  | 0460317  |
| 108 - 116              | 4      | 25x3,0   | M8            | 2,61                     | 135-143                             | 20   | 179  | 158  | 9    | 0,389    | 50      | 0490318  | 0460318  |
| 119 - 127              |        | 25x3,0   | M8            | 2,61                     | 146-154                             | 20   | 190  | 169  | 9    | 0,407    | 50      | 0496319  | 0466319  |
| 128 - 132              |        | 25x3,0   | M8            | 2,61                     | 155-159                             | 20   | 197  | 176  | 9    | 0,423    | 50      | 0496320  | 0466320  |
| 133 - 141              | 5      | 25x3,0   | M8            | 2,61                     | 160-168                             | 20   | 205  | 184  | 9    | 0,430    | 50      | 0496321  | 0466321  |
| 142 - 149              |        | 25x3,0   | M8            | 2,61                     | 169-176                             | 20   | 213  | 192  | 9    | 0,453    | 50      | 0496322  | 0466322  |
| 150 - 158              |        | 25x3,0   | M8            | 2,61                     | 177-185                             | 20   | 222  | 201  | 9    | 0,456    | 50      | 0496323  | 0466323  |
| 159 - 163              |        | 25x3,0   | M8            | 2,61                     | 186-190                             | 20   | 228  | 207  | 9    | 0,463    | 50      | 0496324  | 04663241 |
| 164 - 168              | 6      | 25x3,0   | M8            | 2,61                     | 191-195                             | 20   | 233  | 212  | 9    | 0,470    | 50      | 0496325  | 04663242 |

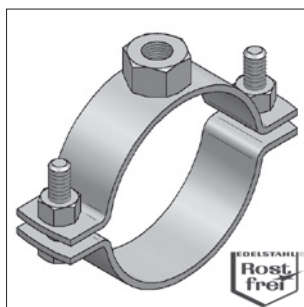
  

| Connection: Thread M16 |    |        |     |      | with sound insulation lining rubber |    |     |     |    |       |   |         |         |
|------------------------|----|--------|-----|------|-------------------------------------|----|-----|-----|----|-------|---|---------|---------|
| 174 - 182              |    | 35x4,0 | M10 | 5,00 | 204-212                             | 24 | 265 | 236 | 11 | 0,918 | 1 | 0490426 | 0462426 |
| 192 - 200              |    | 35x4,0 | M10 | 5,00 | 222-230                             | 24 | 285 | 255 | 11 | 0,960 | 1 | 0490428 | 0462428 |
| 201 - 205              |    | 35x4,0 | M10 | 5,00 | 231-235                             | 24 | 290 | 261 | 11 | 0,972 | 1 | 0490429 | 0462429 |
| 206 - 214              |    | 35x4,0 | M10 | 5,00 | 236-244                             | 24 | 298 | 269 | 11 | 0,991 | 1 | 0490430 | 0462430 |
| 215 - 225              | 8  | 35x4,0 | M10 | 5,00 | 255-265                             | 24 | 309 | 280 | 11 | 1,015 | 1 | 0490431 | 0462431 |
| 241 - 248              |    | 35x4,0 | M10 | 5,00 | 281-288                             | 24 | 332 | 303 | 11 | 1,060 | 1 | 0492434 | 0462434 |
| 250 - 257              |    | 35x4,0 | M10 | 5,00 | 280-287                             | 24 | 341 | 312 | 11 | 1,076 | 1 | 0492435 | 0462435 |
| 272 - 277              | 10 | 35x4,0 | M10 | 5,00 | 302-307                             | 24 | 362 | 333 | 11 | 1,110 | 1 | 0492438 | 0462438 |

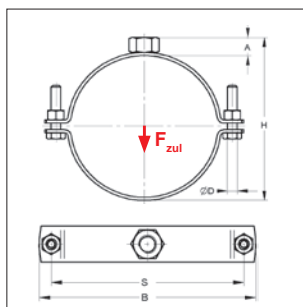
  

| Without connection, closurescrew |    |        |   |      | with sound insulation lining rubber |   |     |     |    |       |   |         |         |
|----------------------------------|----|--------|---|------|-------------------------------------|---|-----|-----|----|-------|---|---------|---------|
| 321 - 325                        | 12 | 50x5,0 | - | 9,00 | 341-345                             | - | 414 | 382 | 17 | 1,936 | 1 | 0494046 | 0464046 |
| 351 - 360                        | 14 | 50x5,0 | - | 9,00 | 371-380                             | - | 448 | 416 | 17 | 2,010 | 1 | 0494051 | 0464051 |
| 361 - 370                        |    | 50x5,0 | - | 9,00 | 389-390                             | - | 458 | 426 | 17 | 2,028 | 1 | 0494052 | 0464052 |
| 401 - 410                        | 16 | 50x5,0 | - | 9,00 | 421-430                             | - | 498 | 466 | 17 | 2,085 | 1 | 0494056 | 0464056 |

## ■ Pipe clamp stainless steel



Pipe clamp stainless steel


**Specification:**

Closure: screwed closure  
 Construction method: two-part  
 OD: 15 up to 410 mm  
 Connection: M8, M10, M12, M16, without connection  
 Variant demand: on request  
 Delivery time  
 for variant demand: 5 working days, ex works

**Technical data:**

Material: stainless steel  
 Material type: V4A  
 V2A

- other sizes and connection threads on request -

**Connection: Thread M8**

| Dimension |        | Material | Closure-screw | max. load<br>$F_{zul}$<br>[kN] | H<br>(min-max)<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | ØD<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-----------|--------|----------|---------------|--------------------------------|------------------------|-----------|-----------|-----------|------------|--------------------|------------------|-----------------|-----------------|
| [mm]      | [Inch] | [mm]     |               |                                |                        |           |           |           |            |                    |                  |                 |                 |
| 15 - 20   | 3/8    | 20x1,5   | M6            | 0,97                           | 25 - 30                | 8         | 49        | 36        | 6,5        | 0,052              | 50               | 0499175         | 0469175         |
| 21 - 25   | 1/2    | 20x1,5   | M6            | 0,97                           | 31 - 35                | 8         | 56        | 43        | 6,5        | 0,056              | 50               | 0499176         | 0469176         |
| 26 - 30   | 3/4    | 20x1,5   | M6            | 0,97                           | 36 - 40                | 8         | 61        | 48        | 6,5        | 0,059              | 50               | 0499177         | 0469177         |
| 31 - 35   | 1      | 20x1,5   | M6            | 0,97                           | 41 - 45                | 8         | 66        | 53        | 6,5        | 0,063              | 50               | 0499178         | 0469178         |
| 36 - 40   |        | 20x1,5   | M6            | 0,97                           | 46 - 50                | 8         | 72        | 59        | 6,5        | 0,066              | 50               | 0499171         | 0469171         |
| 41 - 46   | 1 1/4  | 20x1,5   | M6            | 0,97                           | 51 - 56                | 8         | 78        | 65        | 6,5        | 0,069              | 50               | 0499179         | 0469170         |

**Connection: Thread M10**

|           |       |        |    |      |           |    |     |     |     |       |    |         |         |
|-----------|-------|--------|----|------|-----------|----|-----|-----|-----|-------|----|---------|---------|
| 48 - 55   | 1 1/2 | 20x2,0 | M6 | 1,78 | 60 - 67   | 10 | 87  | 74  | 6,5 | 0,101 | 50 | 0499210 | 0469210 |
| 57 - 62   | 2     | 20x2,0 | M6 | 1,78 | 69 - 74   | 10 | 96  | 82  | 6,5 | 0,107 | 50 | 0499212 | 0469212 |
| 63 - 67   |       | 20x2,0 | M6 | 1,78 | 75 - 79   | 10 | 101 | 88  | 6,5 | 0,111 | 50 | 0499211 | 0469211 |
| 68 - 74   |       | 20x2,0 | M6 | 1,78 | 80 - 86   | 10 | 108 | 94  | 6,5 | 0,116 | 50 | 0499213 | 0469213 |
| 75 - 80   | 2 1/2 | 20x2,0 | M6 | 1,78 | 87 - 92   | 10 | 114 | 101 | 6,5 | 0,121 | 50 | 0499214 | 0469214 |
| 82 - 90   | 3     | 20x2,0 | M6 | 1,78 | 94 - 102  | 10 | 113 | 110 | 6,5 | 0,129 | 50 | 0499215 | 0469215 |
| 92 - 100  |       | 20x2,0 | M6 | 1,78 | 104 - 112 | 10 | 134 | 120 | 6,5 | 0,136 | 50 | 0499216 | 0469216 |
| 103 - 110 |       | 20x2,0 | M6 | 1,78 | 115 - 122 | 10 | 144 | 131 | 6,5 | 0,144 | 50 | 0499217 | 0469217 |
| 112 - 117 | 4     | 20x2,0 | M6 | 1,78 | 124 - 129 | 10 | 152 | 138 | 6,5 | 0,149 | 50 | 0499218 | 0469218 |

**Connection: Thread M12**

|           |   |        |    |      |           |    |     |     |     |       |    |         |         |
|-----------|---|--------|----|------|-----------|----|-----|-----|-----|-------|----|---------|---------|
| 103 - 110 |   | 25x3,0 | M8 | 2,61 | 120 - 127 | 14 | 163 | 142 | 9,0 | 0,306 | 50 | 0491317 | 0461317 |
| 112 - 117 | 4 | 25x3,0 | M8 | 2,61 | 129 - 134 | 14 | 171 | 150 | 9,0 | 0,315 | 50 | 0491318 | 0461318 |
| 118 - 126 |   | 25x3,0 | M8 | 2,61 | 135 - 143 | 14 | 179 | 158 | 9,0 | 0,327 | 50 | 0497319 | 0467319 |
| 129 - 137 |   | 25x3,0 | M8 | 2,61 | 146 - 154 | 14 | 190 | 169 | 9,0 | 0,341 | 50 | 0497320 | 0467320 |
| 138 - 142 | 5 | 25x3,0 | M8 | 2,61 | 155 - 159 | 14 | 197 | 176 | 9,0 | 0,348 | 50 | 0497321 | 0467321 |
| 143 - 151 |   | 25x3,0 | M8 | 2,61 | 160 - 168 | 14 | 205 | 184 | 9,0 | 0,359 | 50 | 0497322 | 0467322 |
| 152 - 159 |   | 25x3,0 | M8 | 2,61 | 169 - 176 | 14 | 213 | 192 | 9,0 | 0,368 | 50 | 0497323 | 0467323 |
| 160 - 168 | 6 | 25x3,0 | M8 | 2,61 | 177 - 185 | 14 | 222 | 201 | 9,0 | 0,393 | 50 | 0497324 | 0467324 |

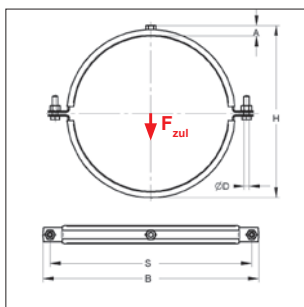
## Pipe clamp stainless steel

| Connection: Thread M16           |        |           |               |                                       |                        |           |           |           |            |                    |                  | V4A      | V2A      |
|----------------------------------|--------|-----------|---------------|---------------------------------------|------------------------|-----------|-----------|-----------|------------|--------------------|------------------|----------|----------|
| Dimension                        |        | Material  | Closure-screw | max. load<br>F <sub>zul</sub><br>[kN] | H<br>(min-max)<br>[mm] | A<br>[mm] | B<br>[mm] | S<br>[mm] | ØD<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. | Part-No. |
| [mm]                             | [Inch] | [mm]      |               |                                       |                        |           |           |           |            |                    |                  |          |          |
| 169                              | - 173  | 35x4,0    | M10           | 5,00                                  | 192-196                | 19        | 247       | 218       | 11,0       | 0,760              | 1                | 04934251 | 04634251 |
| 174                              | - 178  | 35x4,0    | M10           | 5,00                                  | 197-201                | 19        | 252       | 223       | 11,0       | 0,776              | 1                | 04934252 | 04634252 |
| 193                              | - 200  | 35x4,0    | M10           | 5,00                                  | 216-223                | 19        | 274       | 245       | 11,0       | 0,821              | 1                | 0493428  | 0463428  |
| 202                              | - 210  | 35x4,0    | M10           | 5,00                                  | 225-233                | 19        | 284       | 255       | 11,0       | 0,840              | 1                | 0493429  | 0463429  |
| 211                              | - 215  | 35x4,0    | M10           | 5,00                                  | 234-238                | 19        | 290       | 261       | 11,0       | 0,849              | 1                | 0493430  | 0463430  |
| 216                              | - 224  | 8 35x4,0  | M10           | 5,00                                  | 239-247                | 19        | 298       | 269       | 11,0       | 0,865              | 1                | 0493431  | 0463431  |
| 244                              | - 250  | 35x4,0    | M10           | 5,00                                  | 267-273                | 19        | 324       | 295       | 11,0       | 0,909              | 1                | 0493434  | 0463434  |
| 251                              | - 258  | 35x4,0    | M10           | 5,00                                  | 274-281                | 19        | 332       | 303       | 11,0       | 0,922              | 1                | 0493435  | 0463435  |
| 272                              | - 280  | 10 35x4,0 | M10           | 5,00                                  | 295-303                | 19        | 354       | 325       | 11,0       | 0,953              | 1                | 0493438  | 0463438  |
| Without connection, closurescrew |        |           |               |                                       |                        |           |           |           |            |                    |                  |          |          |
| 321                              | - 325  | 12 50x5,0 | -             | 9,00                                  | 331-335                | -         | 404       | 372       | 17,0       | 1,664              | 1                | 0495046  | 0465046  |
| 356                              | - 360  | 14 50x5,0 | -             | 9,00                                  | 366-370                | -         | 439       | 407       | 17,0       | 1,991              | 1                | 0495051  | 0465051  |
| 361                              | - 370  | 50x5,0    | -             | 9,00                                  | 371-380                | -         | 448       | 416       | 17,0       | 2,010              | 1                | 0495052  | 0465052  |
| 401                              | - 410  | 16 50x5,0 | -             | 9,00                                  | 411-420                | -         | 488       | 456       | 17,0       | 2,073              | 1                | 0495056  | 0465056  |

## ■ Pipe clamp stainless steel for ventilation



Pipe clamp stainless steel  
for ventilation



### Specification:

Closure: screwed closure  
Construction method: two-part  
Nominal width: 63 - 400 mm  
Connection: M8  
Sound insulation: according to DIN 4109  
Variant demand: on request  
Delivery time for variant demand: 5 working days, ex works

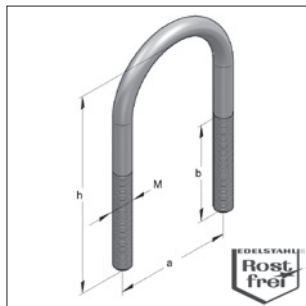
### Technical data:

Material: Stainless steel  
Material type: V2A  
Sound insulation lining: TPE Silicone (on request)  
Temperature resistance: -35 °C up to +100 °C - 60 °C bis + 250 °C  
Insulation thickness: 6 mm 6 mm

- other sizes and connection threads on request -

| Connection: Thread M8 |      |          |               |                             | with sound insulation lining rubber |      |      |      |      |          |         | V2A      |
|-----------------------|------|----------|---------------|-----------------------------|-------------------------------------|------|------|------|------|----------|---------|----------|
| Typ                   | OD   | Material | Closure-screw | max. zul. Last<br>$F_{zul}$ | H                                   | A    | B    | S    | ØD   | Weight   | Packing | Part-No. |
| [DN]                  | [mm] | [mm]     |               | [kN]                        | [mm]                                | [mm] | [mm] | [mm] | [mm] | [kg/pc.] | [pc.]   |          |
| 63                    | 67   | 20x2,0   | M6            | 1,0                         | 91                                  | 15,0 | 117  | 104  | 6,5  | 0,139    | 50      | 0468113  |
| 71                    | 75   | 20x2,0   | M6            | 1,0                         | 99                                  | 15,0 | 126  | 113  | 6,5  | 0,155    | 50      | 0468114  |
| 80                    | 84   | 20x2,0   | M6            | 1,0                         | 108                                 | 15,0 | 135  | 122  | 6,5  | 0,166    | 50      | 0468115  |
| 90                    | 94   | 20x2,0   | M6            | 1,0                         | 118                                 | 15,0 | 146  | 133  | 6,5  | 0,185    | 50      | 0468116  |
| 100                   | 105  | 20x2,0   | M6            | 1,0                         | 129                                 | 15,0 | 156  | 143  | 6,5  | 0,191    | 50      | 0468117  |
| 112                   | 117  | 20x2,0   | M6            | 1,0                         | 141                                 | 15,0 | 168  | 155  | 6,5  | 0,207    | 50      | 0468118  |
| 125                   | 130  | 20x2,0   | M8            | 1,0                         | 154                                 | 15,0 | 201  | 181  | 8,4  | 0,258    | 50      | 0468120  |
| 140                   | 145  | 20x2,0   | M8            | 1,0                         | 169                                 | 15,0 | 216  | 196  | 8,4  | 0,279    | 50      | 0468122  |
| 150                   | 155  | 20x2,0   | M8            | 1,0                         | 179                                 | 15,0 | 226  | 206  | 8,4  | 0,305    | 50      | 0468123  |
| 160                   | 165  | 20x2,0   | M8            | 1,0                         | 189                                 | 15,0 | 236  | 216  | 8,4  | 0,316    | 50      | 0468124  |
| 180                   | 185  | 20x2,0   | M8            | 1,0                         | 209                                 | 15,0 | 256  | 236  | 8,4  | 0,350    | 1       | 0468127  |
| 200                   | 205  | 20x2,0   | M8            | 1,0                         | 229                                 | 15,0 | 281  | 261  | 8,4  | 0,385    | 1       | 0468129  |
| 224                   | 229  | 20x2,0   | M8            | 1,0                         | 253                                 | 15,0 | 302  | 282  | 8,4  | 0,393    | 1       | 0468132  |
| 250                   | 255  | 20x2,0   | M8            | 1,0                         | 279                                 | 15,0 | 328  | 308  | 8,4  | 0,453    | 1       | 0468135  |
| 280                   | 285  | 20x2,0   | M8            | 1,0                         | 309                                 | 15,0 | 358  | 338  | 8,4  | 0,468    | 1       | 0468140  |
| 300                   | 307  | 20x2,0   | M8            | 1,0                         | 331                                 | 15,0 | 378  | 358  | 8,4  | 0,513    | 1       | 0468143  |
| 315                   | 322  | 20x2,0   | M8            | 1,0                         | 346                                 | 15,0 | 386  | 366  | 8,4  | 0,503    | 1       | 0468146  |
| 355                   | 362  | 20x2,0   | M8            | 1,0                         | 386                                 | 15,0 | 433  | 413  | 8,4  | 0,574    | 1       | 0468152  |
| 400                   | 407  | 20x2,0   | M8            | 1,0                         | 431                                 | 15,0 | 481  | 461  | 8,4  | 0,630    | 1       | 0468156  |

## ■ U-bolt, without nuts



U-bolt

**Specification:**

- for direct installation of piping onto steel girder
- suitable for sprinkler and VdS-systems
- suitable for the push-through-assembling into profile rails
- bearing should be used with 2 nuts and 2 washers
- fixed bearing should be used with 4 nuts and 4 washers

**Technical data:**

Material: stainless steel  
Material type: V4A

Required accessories: washers and nuts

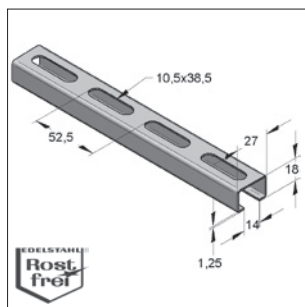
**For max. profile rail height 40 mm**

| Description | Nominal<br>width<br>[DN] | Thread<br>M | OD   |        | a<br>[mm] | h<br>[mm] | b<br>[mm] | OD<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|-------------|--------------------------|-------------|------|--------|-----------|-----------|-----------|------------|--------------------|------------------|----------|
|             |                          |             | [mm] | [Inch] |           |           |           |            |                    |                  |          |
| U-bolt      | 15                       | M8          | 21,3 | 1/2    | 30        | 80        | 65        | 22         | 0,052              | 1                | 0506022  |
| U-bolt      | 20                       | M8          | 25,0 | 3/4    | 35        | 80        | 65        | 27         | 0,065              | 1                | 0506027  |
|             |                          |             | 26,9 |        |           |           |           |            |                    |                  |          |
| U-bolt      | 25                       | M8          | 30,0 | 1      | 42        | 90        | 65        | 34         | 0,074              | 1                | 0506034  |
|             |                          |             | 33,7 |        |           |           |           |            |                    |                  |          |
| U-bolt      | 32                       | M8          | 38,0 | 1 1/4  | 51        | 100       | 70        | 43         | 0,086              | 1                | 0506042  |
|             |                          |             | 42,4 |        |           |           |           |            |                    |                  |          |
| U-bolt      | 40                       | M8          | 44,5 | 1 1/2  | 57        | 105       | 70        | 49         | 0,090              | 1                | 0506048  |
|             |                          |             | 48,3 |        |           |           |           |            |                    |                  |          |
| U-bolt      | 50                       | M10         | 57,0 | 2      | 71        | 120       | 70        | 61         | 0,176              | 1                | 0506060  |
|             |                          |             | 60,3 |        |           |           |           |            |                    |                  |          |
| U-bolt      | 65                       | M10         | 76,1 | 2 1/2  | 87        | 135       | 70        | 77         | 0,209              | 1                | 0506076  |
| U-bolt      | 80                       | M10         | 88,9 | 3      | 100       | 150       | 70        | 90         | 0,235              | 1                | 0506089  |

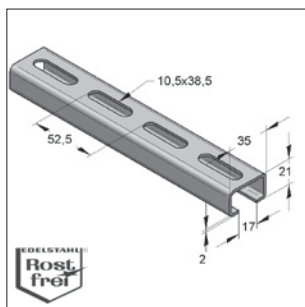
**For max. profile rail height 60 mm**

|        |     |     |       |   |     |     |    |     |       |   |         |
|--------|-----|-----|-------|---|-----|-----|----|-----|-------|---|---------|
| U-bolt | 100 | M12 | 108,0 |   | 121 | 190 | 95 | 109 | 0,416 | 1 | 0506108 |
| U-bolt | 100 | M12 | 114,3 | 4 | 126 | 195 | 95 | 114 | 0,432 | 1 | 0506114 |
| U-bolt | 125 | M12 | 133,0 |   | 146 | 215 | 95 | 134 | 0,485 | 1 | 0506133 |
| U-bolt | 125 | M12 | 139,7 | 5 | 152 | 220 | 95 | 140 | 0,506 | 1 | 0506140 |
| U-bolt | 150 | M12 | 159,0 |   | 172 | 240 | 95 | 160 | 0,561 | 1 | 0506159 |
| U-bolt | 150 | M12 | 168,3 | 6 | 180 | 250 | 95 | 168 | 0,589 | 1 | 0506168 |
| U-bolt | 200 | M12 | 219,1 | 8 | 233 | 300 | 95 | 221 | 0,758 | 1 | 0506219 |

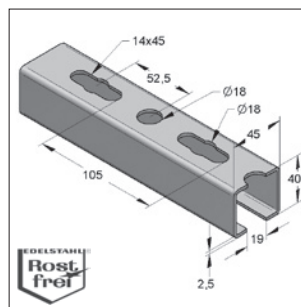
## ■ Profile rails nontoothed, perforated



Profile rails 27/18



Profile rails 35/21



Profile rails 45/40

### Specification:

- double rails are perforated and welded

Protecting cap see chapter 2

### Technical data:

Material: Stainless steel

Material type: V4A

V2A

### Type 27/18

| Identification | Weight<br>[Kg/m] | Length<br>[m] | Packing<br>[m] | V4A      | V2A      |
|----------------|------------------|---------------|----------------|----------|----------|
|                |                  |               |                | Part-No. | Part-No. |
| 27/18/1,25     | 0,61             | 2             | 2              | 0800150  | 0800050  |

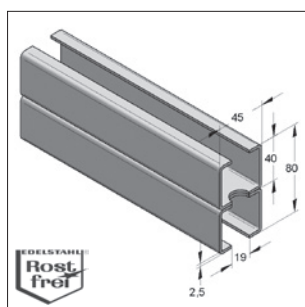
### Type 35/21

|           |      |   |   |         |         |
|-----------|------|---|---|---------|---------|
| 35/21/2,0 | 1,21 | 3 | 3 | 0800151 | 0800051 |
|-----------|------|---|---|---------|---------|

### Type 45/40

|           |      |   |   |         |         |
|-----------|------|---|---|---------|---------|
| 45/40/2,5 | 2,56 | 6 | 6 | 0800155 | 0800055 |
|-----------|------|---|---|---------|---------|

## ■ Profile rails, double nontoothed, perforated



Profile rails, double 45/80

### Specification:

- double rails are perforated and welded

Protecting cap see chapter 2

### Technical data:

Material: Stainless steel

Material type: V4A

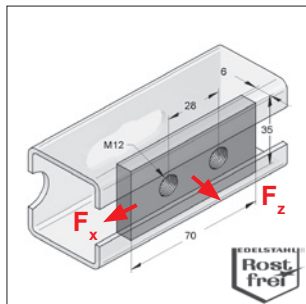
V2A

### Type 45/80

| Identification | Weight<br>[Kg/m] | Length<br>[m] | Packing<br>[m] | V4A      | V2A      |
|----------------|------------------|---------------|----------------|----------|----------|
|                |                  |               |                | Part-No. | Part-No. |
| D 45/80/2,5    | 5,12             | 6             | 6              | 0800170  | 0800070  |

technical overview for profile rails stainless steel see on page 13/30

## 2-hole threaded plate



2-hole threaded plate

**Specification:**

Profile rail type: rail system 45  
 Mounting method: glide fast connections and shear hole haunch connections  
 Application area: connecting parts, can be mounted on bottom of profile  
 Required accessories: hexagon screw, washer and hexagon nut

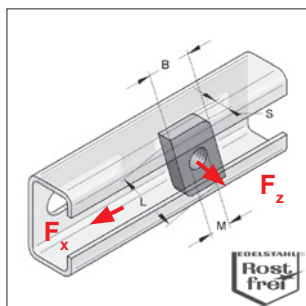
application loads see on page 13/12

**Technical data:**

Material: stainless steel  
 Material type: V2A  
 V4A

| Identification        | Dimension<br>LxBxS<br>[mm] | Thread | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-----------------------|----------------------------|--------|--------------------|------------------|-----------------|-----------------|
|                       |                            |        |                    |                  |                 |                 |
| 2-hole threaded plate | 35x70x6,0                  | M12    | 0,108              | 1                | 0481610         | 0480610         |

## Threaded plate



Threaded plate

**Specification:**

Profile rail type: 27/18, 35/21, 45/40, 45/80  
 Mounting method: glide fast connections and shear hole haunch connections  
 Required accessories: hexagon screw, threaded pin or- rod, washer and hexagon nut

\* application loads see on page 13/12

**Technical data:**

Material: stainless steel  
 Material type: V4A

**For profile rail 27/18**

| Identification | Dimension<br>LxBxS<br>[mm] | Thread<br>M | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. |
|----------------|----------------------------|-------------|--------------------|------------------|-----------------|
|                |                            |             |                    |                  |                 |
| Threaded plate | 28x15                      | M8          | 0,007              | 50               | 07507508        |

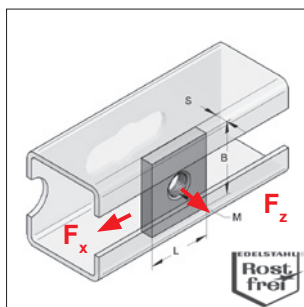
**For profile rail 35/21**

|                |       |     |       |    |          |
|----------------|-------|-----|-------|----|----------|
| Threaded plate | 38x17 | M8  | 0,025 | 50 | 07507708 |
| Threaded plate | 38x17 | M10 | 0,019 | 50 | 07507710 |
| Threaded plate | 38x17 | M12 | 0,023 | 50 | 07507712 |

**For profile rail 45/40, 45/80**

|                |        |     |       |    |          |
|----------------|--------|-----|-------|----|----------|
| Threaded plate | 40x22  | M8  | 0,040 | 50 | 07507908 |
| Threaded plate | 40x22* | M10 | 0,039 | 50 | 07507910 |
| Threaded plate | 40x22* | M12 | 0,038 | 50 | 07507912 |

## ■ Threaded square plate



4-Kt-Threadplatte

### Specification:

Profile rail type: 27/18, 35/21, rail system 45  
 Mounting method: glide fast connections and shear hole haunch connections  
 Application area: connecting parts, can be mounted on the bottom of the profile  
 Required accessories: hexagon screw, threaded pin or- rod, washer and hexagon nut

### Technical data:

Material: stainless steel  
 Material type: V4A  
 V2A

\* application loads see on page 13/12

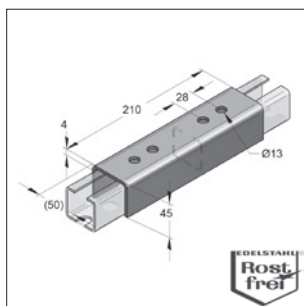
### For profile rail width 27 and 35 mm

| Identification        | Dimension<br>LxBxS<br>[mm] | Thread<br>G | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-----------------------|----------------------------|-------------|--------------------|------------------|-----------------|-----------------|
| Threaded square plate | 30x22x5,0                  | M8          | 0,025              | 100              | 0750838         | 0750818         |
| Threaded square plate | 30x22x5,0                  | M10         | 0,024              | 100              | 0750840         | 0750820         |
| Threaded square plate | 30x22x5,0                  | M12         | 0,021              | 100              | 0750842         | 0750822         |

### For profile rail width 35 and 45 mm

|                       |            |     |       |    |         |         |
|-----------------------|------------|-----|-------|----|---------|---------|
| Threaded square plate | 35x30x6,0  | M8  | 0,043 | 50 | 0481611 | 0480611 |
| Threaded square plate | 35x30x6,0* | M10 | 0,049 | 50 | 0481612 | 0480612 |
| Threaded square plate | 35x30x6,0* | M12 | 0,046 | 50 | 0481613 | 0480613 |
| Threaded square plate | 35x30x6,0  | M16 | 0,043 | 50 | 0481614 | 0480614 |

## ■ Connector 45/40



Connector  
for stainless steel profile rails

### Specification:

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

### Technical data:

Material: stainless steel  
 Material type: V2A

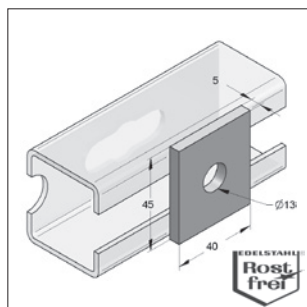
Recommended accessory: 2 x 2-hole threaded plate  
 4 x hexagon screw M12 x 25  
 4 x washer 13,0 x 24,0 x 2,5

Remark: connecting of double profile rails with two connectors 45/40

### For profile rail width 45

| Identification  | Height<br>[mm] | Width<br>[mm] | Length<br>[mm] | Material thickness<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | V2A<br>Part-No. |
|-----------------|----------------|---------------|----------------|----------------------------|--------------------|-------------------|-----------------|
| Connector 45/40 | 41             | 54            | 210            | 4                          | 0,81               | 1                 | 0480620         |

## Perforated plate



Perforated plate

**Specification:**

Profile rail type: rail system 45

**Technical data:**

Material: stainless steel

Material type: V4A

V2A

| Identification   | Dimension<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|------------------|-------------------|--------------------|------------------|----------|----------|
|                  |                   |                    |                  | Part-No. | Part-No. |
| Perforated plate | 45x40x5           | 0,067              | 1                | 0481401  | 0480401  |

## Admissible loading

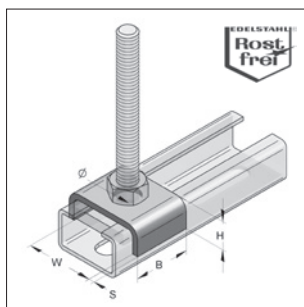
in combination with 2-hole threaded plate V2A/V4A, threaded plate V4A, Threaded square plate V2A/V4A  
global safety coefficient  $\gamma = 2$

| Profile rail V2A/V4A | 2-hole threaded plate V2A/V4A |               |                           |
|----------------------|-------------------------------|---------------|---------------------------|
|                      |                               |               | M12                       |
|                      | $F_z$<br>[kN]                 | $F_x$<br>[kN] | tightening torque<br>[Nm] |
| 45/40/2,5            | 14,00                         | 2,10          | 60                        |
| 45/80/2,5 D          | 14,00                         |               |                           |

| Profile rail V2A/V4A | Threaded plate 40x22 V4A |               |                           |                           |
|----------------------|--------------------------|---------------|---------------------------|---------------------------|
|                      |                          |               | M10                       | M12                       |
|                      | $F_z$<br>[kN]            | $F_x$<br>[kN] | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/40/2,5            | 9,00                     | 1,40          | 50                        | 60                        |
| 45/80/2,5 D          | 9,00                     |               |                           |                           |

| Profile rail V2A/V4A | Threaded square plate 35x30x6 V2A/V4A |               |                           |                           |
|----------------------|---------------------------------------|---------------|---------------------------|---------------------------|
|                      |                                       |               | M10                       | M12                       |
|                      | $F_z$<br>[kN]                         | $F_x$<br>[kN] | tightening torque<br>[Nm] | tightening torque<br>[Nm] |
| 45/40/2,5            | 7,00                                  | 1,00          | 50                        | 60                        |
| 45/80/2,5 D          | 7,00                                  |               |                           |                           |

## ■ Profile holder



Profile holder

**Specification:**

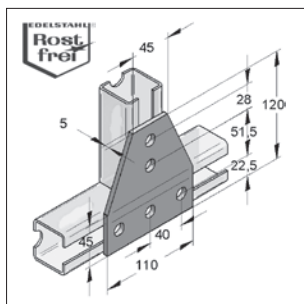
For profile rail type: rail system 27, 35 and 45  
Application area: suitable for connection of profile rails

**Technical data:**

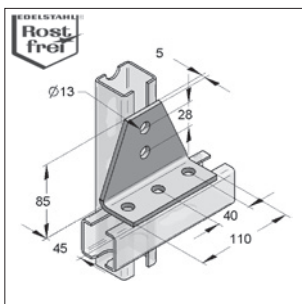
Material: stainless steel  
Material type: V4A  
V2A

| Identification | profile rail width [mm] | W [mm] | B [mm] | Ø D [mm] | H [mm] | S [mm] | Weight [kg/pc.] | Packing [pc.] | V4A      | V2A      |
|----------------|-------------------------|--------|--------|----------|--------|--------|-----------------|---------------|----------|----------|
|                |                         |        |        |          |        |        |                 |               | Part-No. | Part-No. |
| Profile holder | 27                      | 28     | 20     | 10,5     | 8      | 2      | 0,013           | 1             | 0809514  | 0809513  |
| Profile holder | 35                      | 36     | 30     | 13,0     | 12     | 3      | 0,043           | 1             | 0809512  | 0809511  |
| Profile holder | 45                      | 46     | 35     | 13,0     | 15     | 4      | 0,080           | 1             | 0481629  | 0480629  |

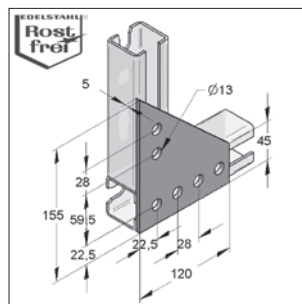
## ■ T-lug / Cross strap



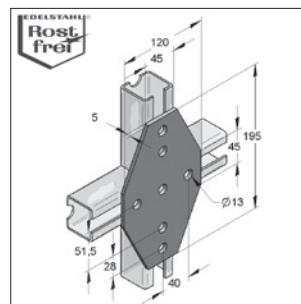
T-lug



T-lug 90°, angled



Corner plate



Cross strap

**Specification:**

For profile rail type: rail system 45

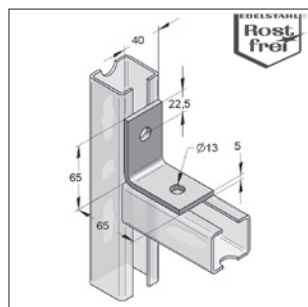
Remark: max. load depending on type of connection (see table page 13/12)

**Technical data:**

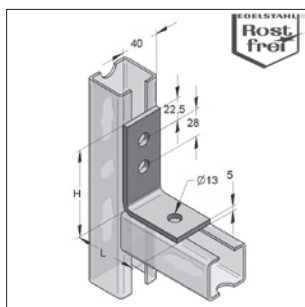
Material: stainless steel  
Material type: V4A  
V2A

| Identification   | Hole-Ø [mm] | Weight [kg/pc.] | Packing [pc.] | V4A      | V2A      |
|------------------|-------------|-----------------|---------------|----------|----------|
|                  |             |                 |               | Part-No. | Part-No. |
| T-Lug            | 13          | 0,405           | 1             | 0481657  | 0480657  |
| T-Lug 90° angled | 13          | 0,405           | 1             | 0481687  | 0480687  |
| Corner plate     | 13          | 0,415           | 1             | 0481659  | 0480659  |
| Cross strap      | 13          | 0,610           | 1             | ---      | 0480658  |

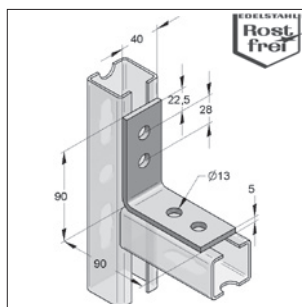
## Angle 40/5



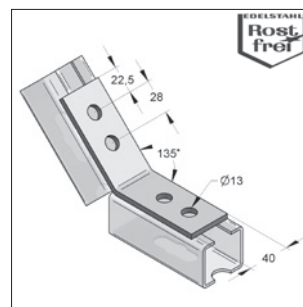
Angle 40/5 2-hole



Angle 40/5 3-hole L and K



Angle 40/5 4-hole 90°



Angle 40/5 4-hole 135°

**Specification:**

For profile rail type: rail system 45

Remark: Max. load depending on type of connection  
(see table page 13/12)

**Technical data:**

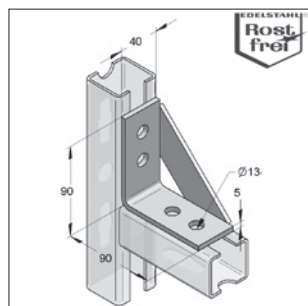
Material: stainless steel

Material type: V4A

V2A

| Identification         | Dimension<br>LxHxS<br>[mm] | Hole-Ø<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|------------------------|----------------------------|----------------|--------------------|------------------|-----------------|-----------------|
|                        |                            |                |                    |                  |                 |                 |
| Angle 40/5 2-hole      | 65x65x5,0                  | 13             | 0,185              | 1                | 0481402         | 0480402         |
| Angle 40/5 3-hole L    | 65x90x5,0                  | 13             | 0,220              | 1                | 0481403         | 0480403         |
| Angle 40/5 3-hole K    | 45x90x5,0                  | 13             | 0,200              | 1                | 0481404         | 0480404         |
| Angle 40/5 4-hole 90°  | 90x90x5,0                  | 13             | 0,259              | 1                | 0481405         | 0480405         |
| Angle 40/5 4-hole 135° | 90x90x5,0                  | 13             | 0,259              | 1                | 0481406         | 0480406         |

## Knot triangle 40/5 4-hole



Knot triangle 40/5 4-hole

**Specification:**

For profile rail type: rail system 45

Remark: max. load depending on type of  
connection (see table page 13/12)

**Technical data:**

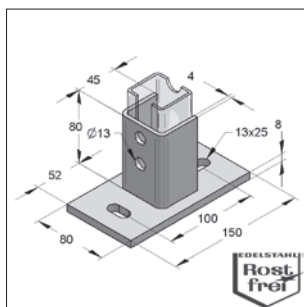
Material: stainless steel

Material type: V4A

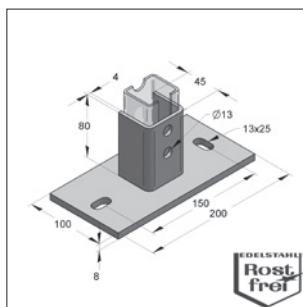
V2A

| Identification            | Hole-Ø<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|---------------------------|----------------|--------------------|------------------|-----------------|-----------------|
|                           |                |                    |                  |                 |                 |
| Knot triangle 40/5 4-hole | 13             | 0,348              | 1                | 0481407         | 0480407         |

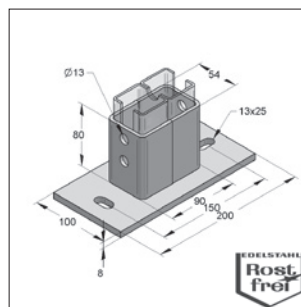
## Holder



Holder with base plate vertical



Holder with base plate horizontal



Holder for double C-profile rail

### Specification:

Profile rail type: rail system 45  
 Required accessories: 2-hole-thread plate M12  
 hexagon screw M12x25  
 Remark: max. load depending on type of connection  
 (see table page 13/12)

### Technical data:

Material: stainless steel  
 Material type: V4A  
 V2A

### Identification

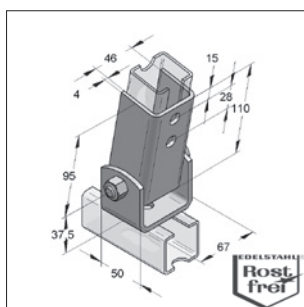
Holder C-profile rail vertical  
 Holder C-profile rail horizontal  
 Holder for double C-profile rail

Weight  
[kg/pc.]

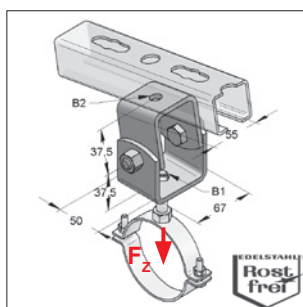
Packing  
[pc.]

| V4A      | V2A      |
|----------|----------|
| Part-No. | Part-No. |
| 0481201  | 0480201  |
| 0481204  | 0480204  |
| 0481209  | 0480209  |

## Joint holder



Joint holder



Joint holder with terminal hole

### Specification:

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

### Technical data:

Material: stainless steel  
 Material type: V4A  
 V2A

\* Loads are based on component, not connection

### Identification

for threaded rods  
B1 / B2

B1  
[mm]

B2  
[mm]

max. load\*  
F<sub>z</sub>  
[kN]

Weight  
[kg/pc.]

Packing  
[pc.]

| V4A      | V2A      |
|----------|----------|
| Part-No. | Part-No. |
| 0481206  | 0480206  |
| 0481207  | 0480207  |
| 0481208  | 0480208  |

### Joint holder

### Joint holder with terminal hole

### Joint holder with terminal hole

M8-M12 / M8-M12

M16 / M16

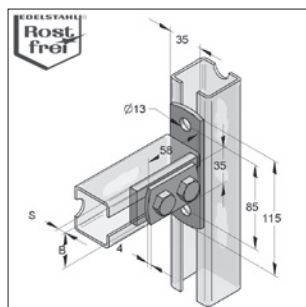
13 13 17 17

- 10 10

0,790 0,625 0,621

1 1 1

## Connector



Connector

**Specification:**

Profile rail type: rail system 35 and 45  
 Application area: suitable for connection of profile rails  
 Scope of delivery: hexagon screw M12x25

**Technical data:**

Material: stainless steel  
 Material type: V4A  
 V2A

Identification

s  
[mm]B  
[mm]Weight  
[kg/pc.]Packing  
[pc.]**Connector 35/21**

5

30

0,32

1

**Connector 45/40**

6

35

0,39

1

**V4A****V2A**

Part-No.

Part-No.

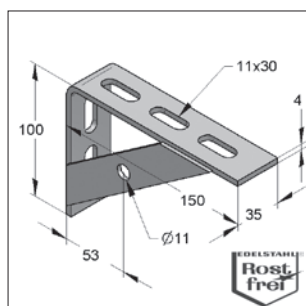
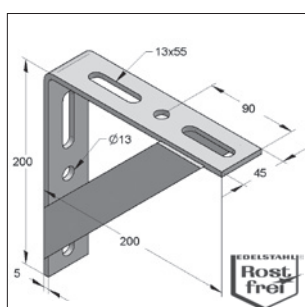
---

0480660

0481656

0480656

## Angle bracket

Knot console L  
with a braceAngle console  
with two braces
**Specification:**

Profile rail type: rail system 45  
 hole distance 105 mm

**Technical data:**

Material: stainless steel  
 Material type: V4A  
 V2A

Identification

max. load  
at L=120 mm  
[kN]Weight  
[kg/pc.]Packing  
[pc.]**Knot bracket L**

2,5

0,299

1

**Angle bracket**

5,0

1,080

1

**V4A****V2A**

Part-No.

Part-No.

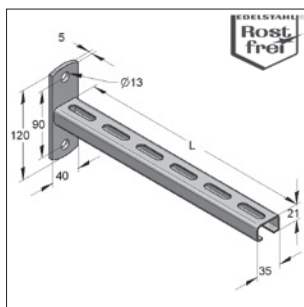
0803102

0803101

0481408

0480408

## ■ Console 35/21/2,0



Console 35/21/2,0

**Specification:**

Plate: 120 x 40 x 5 mm

Holes: Ø 13,0 mm

**Technical data:**

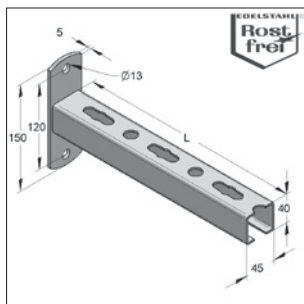
Material: stainless steel

Material type: V4A

V2A

| Identification       | Length<br>L<br>[mm] | max. load   |                        |                        |             |                        |                        | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|----------------------|---------------------|-------------|------------------------|------------------------|-------------|------------------------|------------------------|--------------------|------------------|----------|----------|
|                      |                     | q<br>[kN/m] | F <sub>1</sub><br>[kN] | F <sub>2</sub><br>[kN] | q<br>[kN/m] | F <sub>1</sub><br>[kN] | F <sub>2</sub><br>[kN] |                    |                  | Part-No. | Part-No. |
| <b>Console 35/21</b> | <b>262,5</b>        | 2,24        | 0,59                   | 0,29                   | 1,87        | 0,49                   | 0,25                   | 0,50               | 1                | 0582021  | 0582020  |
| <b>Console 35/21</b> | <b>315,0</b>        | 1,56        | 0,49                   | 0,25                   | 1,30        | 0,41                   | 0,20                   | 0,56               | 1                | 0583021  | 0583020  |
| <b>Console 35/21</b> | <b>420,0</b>        | 0,88        | 0,37                   | 0,18                   | 0,73        | 0,31                   | 0,15                   | 0,68               | 1                | 0584021  | 0584020  |

## ■ Console 45/40/2,5



Console 45/40/2,5

**Specification:**

Plate: 150 x 50 x 5 mm

Holes: Ø 13,0 mm

**Technical data:**

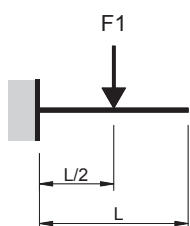
Material: stainless steel

Material type: V4A

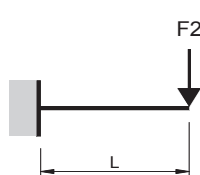
V2A

| Identification       | Length<br>L<br>[mm] | max. load   |                        |                        |             |                        |                        | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|----------------------|---------------------|-------------|------------------------|------------------------|-------------|------------------------|------------------------|--------------------|------------------|----------|----------|
|                      |                     | q<br>[kN/m] | F <sub>1</sub><br>[kN] | F <sub>2</sub><br>[kN] | q<br>[kN/m] | F <sub>1</sub><br>[kN] | F <sub>2</sub><br>[kN] |                    |                  | Part-No. | Part-No. |
| <b>Console 45/40</b> | <b>210,0</b>        | 5,04        | 1,06                   | 0,53                   | 4,20        | 0,88                   | 0,44                   | 0,84               | 1                | 0481331  | 0480331  |
| <b>Console 45/40</b> | <b>315,0</b>        | 2,24        | 0,71                   | 0,35                   | 1,87        | 0,59                   | 0,29                   | 1,11               | 1                | 0481330  | 0480330  |
| <b>Console 45/40</b> | <b>420,0</b>        | 1,26        | 0,53                   | 0,26                   | 1,05        | 0,44                   | 0,22                   | 1,38               | 1                | 0481333  | 0480333  |
| <b>Console 45/40</b> | <b>525,0</b>        | 0,81        | 0,42                   | 0,21                   | 0,67        | 0,35                   | 0,18                   | 1,65               | 1                | 0481335  | 0480335  |

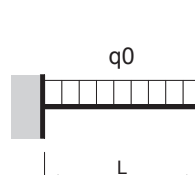
Loading condition 1 (LF1)



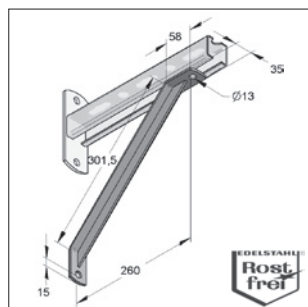
Loading condition 2 (LF2)



Loading condition 3 (LF3)



## ■ Brace 45°-T-profile



Brace 45° T-profile

**Specification:**

Holes: Ø 13,0 mm

**Technical data:**

Material: stainless steel  
Material type: V4A  
V2A

## Identification

Brace 45° T-profile

Weight  
[kg/pc.]

0,700

Packing  
[pc.]

1

**V4A**

Part-No.

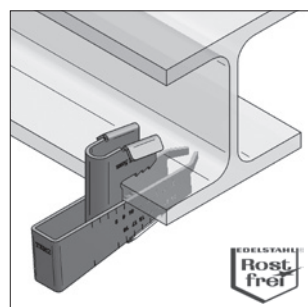
0481510

**V2A**

Part-No.

0480510

## ■ Girder clamp TKM



Girder clamp TKM



G 413 001

**Specification:**

**Application area:** fast and simple mounting at steel structures and profiles  
**Mounting:** Girder clamp for stroking by hammer (3 graduation marks).

**Technical data:**

Material: stainless steel  
Material type: V4A  
Approval: VdS and FM  
VdS G 413001

## Identification

Girder clamp TKM 2 M10

clamping range  
[mm]

8 - 20

for threaded

M10

max. load  
[kN]

3,5

Weight  
[Kg/pc.]

0,161

Packing  
[pc.]

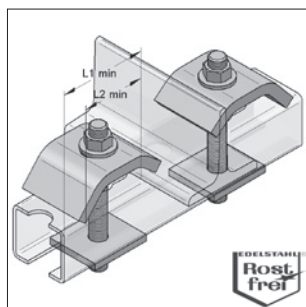
25

**V4A**

Part-No.

0481711

## ■ Clamping claw (set)



Clamping claw (set)

**Specification:**

Application area: for mounting  
C-profile rail on T-girder

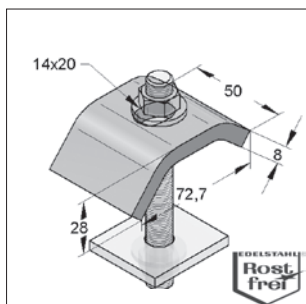
Scope of delivery: 2 clamping claws  
2 threaded pins M12/110  
4 hexagon nuts DIN 934  
2 perforated plates 45/40/5 mm  
2 washers DIN 125 13 mm

**Technical data:**

Material: stainless steel  
Material type: V4A  
V2A

| Identification            | max.<br>clamping thickness<br>[mm] | L1 min.<br>[mm] | L2 min.<br>[mm] | Weight<br>[kg/set] | Packing<br>[sets] | V4A      | V2A      |
|---------------------------|------------------------------------|-----------------|-----------------|--------------------|-------------------|----------|----------|
|                           |                                    |                 |                 |                    |                   | Part-No. | Part-No. |
| Clamping claw (set) 45/40 | 26                                 | 70              | 36-45           | 0,862              | 1                 | 0481652  | 0480652  |

## ■ Clamping claw



Clamping claw

**Specification:**

without accessories

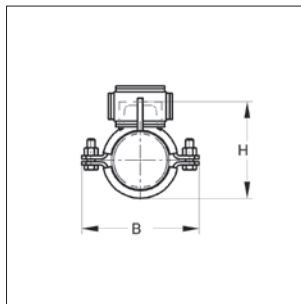
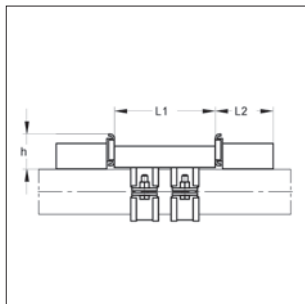
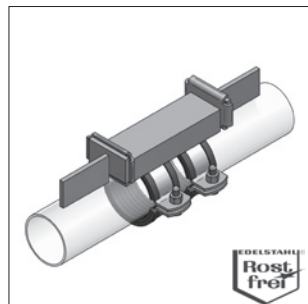
\* Loads are based on component, not connection

**Technical data:**

Material: stainless steel  
Material type: V4A  
V2A

| Identification | for threaded rod | tightening<br>torque<br>[Nm] | max. load*<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|----------------|------------------|------------------------------|--------------------|--------------------|------------------|----------|----------|
|                |                  |                              |                    |                    |                  | Part-No. | Part-No. |
| Clamping claw  | M12              | 5                            | 8,2                | 0,242              | 1                | 0481651  | 0480651  |

## Fixpoint type A (for welding)



Fixpoint type A  
(specification stainless steel)

### Specification:

Insulated fixpoint for high pressure loads, designed to avoid any metal connection of pipe and building.

Material Fixpoint: steel (S235JR)

Material Pressure pads: stainless steel V4A / V2A

Surface Fixpoint: galvanized

Sound insulation lining: TPE

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

Silicone

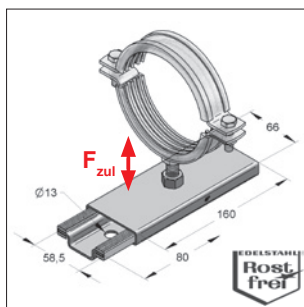
- 60 °C up to + 250 °C

Remark: Mounting clamps for fixation of pressure pads as well as further technical information see chapter 3a.

<sup>1)</sup> Due to safety reasons we recommend type B for diameters >DN80 (on demand).

| Fixpoint size I, T-steel (accessory: mounting clamp 1a) |                                |                 |       |     |            |            |           |           | Pressure pads V4A |                                                    |                    | Silicone         | Rubber   |          |
|---------------------------------------------------------|--------------------------------|-----------------|-------|-----|------------|------------|-----------|-----------|-------------------|----------------------------------------------------|--------------------|------------------|----------|----------|
| Clamping-range<br>[mm]                                  | Material<br>pipe clamp<br>[mm] | Sectional steel |       |     | L1<br>[mm] | L2<br>[mm] | h<br>[mm] | H<br>[mm] | B<br>[mm]         | max. axial <sup>1)</sup><br>reactive force<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. | Part-No. |
| 20 - 25                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 66 - 71    | 87        | 8,5       | 1,07              | 1                                                  | 9999384            | 9999370          |          |          |
| 26 - 30                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 72 - 76    | 92        | 8,5       | 1,10              | 1                                                  | 9999385            | 9999371          |          |          |
| 31 - 36                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 77 - 82    | 98        | 8,5       | 1,12              | 1                                                  | 9999386            | 9999372          |          |          |
| 38 - 45                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 84 - 91    | 107       | 8,5       | 1,16              | 1                                                  | 9999387            | 9999373          |          |          |
| 47 - 51                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 93 - 97    | 114       | 8,5       | 1,20              | 1                                                  | 9999388            | 9999374          |          |          |
| 53 - 57                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 99 - 102   | 120       | 8,5       | 1,23              | 1                                                  | 9999389            | 9999375          |          |          |
| Fixpoint size II, U-steel (accessory: mounting clamp 2) |                                |                 |       |     |            |            |           |           | Pressure pads V4A |                                                    |                    | Silicone         | Rubber   |          |
| 60,3                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 43         | 112,5      | 148       | 20        | 4,75              | 1                                                  | 9999390            | 9999376          |          |          |
| 76,1                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 131,5      | 166       | 20        | 4,99              | 1                                                  | 9999391            | 9999377          |          |          |
| 88,9                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 146,0      | 179       | 20        | 5,20              | 1                                                  | 9999392            | 9999378          |          |          |
| 108,0                                                   | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 165,0      | 198       | 20        | 5,47              | 1                                                  | 9999393            | 9999379          |          |          |
| 114,3                                                   | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 171,5      | 204       | 20        | 5,56              | 1                                                  | 9999394            | 9999380          |          |          |
| 133,0                                                   | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 191,0      | 223       | 20        | 6,6               | 1                                                  | 9999395            | 9999381          |          |          |
| 139,7                                                   | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 198,5      | 230       | 20        | 6,8               | 1                                                  | 9999396            | 9999382          |          |          |
| 159 - 160                                               | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 218 - 219  | 250       | 20        | 7,0               | 1                                                  | 9999397            | 9999383          |          |          |
| Fixpoint size I, T-steel (accessory: mounting clamp 1a) |                                |                 |       |     |            |            |           |           | Pressure pads V2A |                                                    |                    | Silicone         | Rubber   |          |
| 20 - 25                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 66 - 71    | 87        | 8,5       | 1,07              | 1                                                  | 9999746            | 9999530          |          |          |
| 26 - 30                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 72 - 76    | 92        | 8,5       | 1,10              | 1                                                  | 9999745            | 9999350          |          |          |
| 31 - 36                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 77 - 82    | 98        | 8,5       | 1,12              | 1                                                  | 9999524            | 9999351          |          |          |
| 38 - 45                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 84 - 91    | 107       | 8,5       | 1,16              | 1                                                  | 9999361            | 9999352          |          |          |
| 47 - 51                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 93 - 97    | 114       | 8,5       | 1,20              | 1                                                  | 9999744            | 9999353          |          |          |
| 53 - 57                                                 | 25 x 3                         | 30 x 30         | x 100 | 96  | 43         | 99 - 103   | 120       | 8,5       | 1,23              | 1                                                  | 9999362            | 9999354          |          |          |
| Fixpoint size II, U-steel (accessory: mounting clamp 2) |                                |                 |       |     |            |            |           |           | Pressure pads V2A |                                                    |                    | Silicone         | Rubber   |          |
| 60,3                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 43         | 112,5      | 148       | 20        | 4,75              | 1                                                  | 9999525            | 9999419          |          |          |
| 76,1                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 113,5      | 166       | 20        | 4,99              | 1                                                  | 9999363            | 9999355          |          |          |
| 88,9                                                    | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 146,0      | 179       | 20        | 5,20              | 1                                                  | 9999364            | 9999356          |          |          |
| 108,0                                                   | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 165,0      | 198       | 20        | 5,47              | 1                                                  | 9999365            | 9999357          |          |          |
| 114,3                                                   | 50 x 5                         | 65 x 42         | x 200 | 126 | 63         | 171,5      | 204       | 20        | 5,56              | 1                                                  | 9999366            | 9999358          |          |          |
| 133,0                                                   | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 191,0      | 223       | 20        | 6,6               | 1                                                  | 9999367            | 9999359          |          |          |
| 139,7                                                   | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 198,5      | 230       | 20        | 6,8               | 1                                                  | 9999368            | 9999429          |          |          |
| 159,0                                                   | 50 x 5                         | 80 x 45         | x 200 | 126 | 63         | 218 - 219  | 250       | 20        | 7,0               | 1                                                  | 9999369            | 9999360          |          |          |

## Slider GL 100



Slider GL 100

**Specification:**

|                       |                           |
|-----------------------|---------------------------|
| max. sliding way:     | 75 mm                     |
| max. pipe clamp size: | 1 x M10: 88,9 mm          |
|                       | 1 x M12: 114,3 mm         |
|                       | 2 x M12: 139,7 mm         |
|                       | 2 x sleeve 1/2": 219,1 mm |

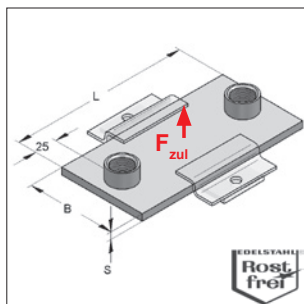
**Technical data:**

|                |                 |
|----------------|-----------------|
| Material:      | stainless steel |
| Material type: | V2A             |

Delivery time: 5 working days, ex works

|                |            |                  |                  |          |         | V2A      |
|----------------|------------|------------------|------------------|----------|---------|----------|
| Identification | Connection | max. load        |                  | Weight   | Packing | Part-No. |
|                |            | F <sub>zul</sub> | F <sub>zul</sub> |          |         |          |
|                |            | hanging          | standing         |          |         |          |
|                |            | [kN]             | [kN]             | [kg/pc.] | [pc.]   |          |
| Slider GL 100  | 1 x M10    | 0,8              | 1,1              | 0,412    | 1       | 0770540  |
| Slider GL 100  | 1 x M12    | 1,2              | 1,5              | 0,418    | 1       | 0770542  |
| Slider GL 100  | 2 x M12    | 2,0              | 2,4              | 0,436    | 1       | 0770543  |
| Slider GL 100  | 2 x 1/2"   | 3,5              | 4,0              | 0,466    | 1       | 0770544  |

## Sliding plates



Sliding plate

**Specification:**

|                       |                                          |
|-----------------------|------------------------------------------|
| Application area:     | absorption of<br>axial length extensions |
| Required accessories: | sliding stripe<br>Z-pressure pad         |

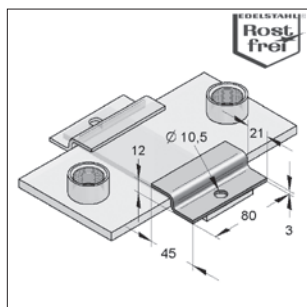
**Technical data:**

|                |                 |
|----------------|-----------------|
| Material:      | stainless steel |
| Material type: | V4A<br>V2A      |

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

| Identification           | Dimension<br>LxBxS<br>[mm] | Connection | max. sliding piece |                  | max. load<br>F <sub>zul</sub><br>[kN] | Accessory                       | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|--------------------------|----------------------------|------------|--------------------|------------------|---------------------------------------|---------------------------------|--------------------|------------------|----------|----------|
|                          |                            |            | hanging<br>[mm]    | standing<br>[mm] |                                       | sliding<br>stripe<br>[Part-No.] |                    |                  | Part-No. | Part-No. |
| Sliding plates 150x100x8 | 150x100x8                  | 2 x M16    | 20                 | 100              | 6,8                                   | 0779555                         | 1,00               | 1                | 0772831  | 0772808  |
| Sliding plates 200x100x8 | 200x100x8                  | 2 x M16    | 70                 | 150              | 4,5                                   | 0779555                         | 1,31               | 1                | 0772832  | 0772805  |
| Sliding plates 200x150x8 | 200x150x8                  | 2 x 1/2"   | 70                 | 150              | 6,8                                   | 0779567                         | 1,31               | 1                | 0772824  | 0772804  |
| Sliding plates 250x100x8 | 250x100x8                  | 2 x 1/2"   | 120                | 200              | 3,4                                   | 0779555                         | 1,60               | 1                | 0772823  | 0772803  |

## Z-pressure pad



Z-pressure pad

**Specification:**

Application area: for mounting of MEFA sliding plates on on-site supports

Required accessories: hexagon screw M10x25, threaded plate (related to profile rail)

**Technical data:**

Material: stainless steel

Material type: V4A  
V2A

Identification

Length  
[mm]Weight  
[kg/pc.]Packing  
[pc.]**V4A****V2A**

Part-No.

Part-No.

**Z-pressure pad****80**

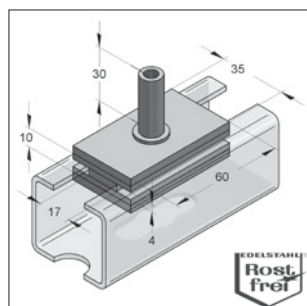
0,120

1

0779516

0779511

## Profile rail sliders 45



Profile rail slider 45

**Specification:**

For profile rail type: C-profile 45 mm

Application area: absorption of radial and axial length extensions of pipes. For standing, hanging or vertical passed pipes  
release of lateral shear force

**Technical data:**

Material: stainless steel

Material type: V4A  
V2A

Version V4A: hexagonal distance sleeve

Identification

Connection

max. recom.  
distances  
sliding body -  
pipe clamp  
[mm]

max. load  
hanging standing  
[kN] [kN]

Weight  
[kg/pc.]

Packing  
[pc.]

**V4A****V2A**

Part-No.

Part-No.

**Profile rail sliders****M8**

70

2,0

2,0

0,185

1

0770010

0770005

**Profile rail sliders****M10**

100

2,0

2,0

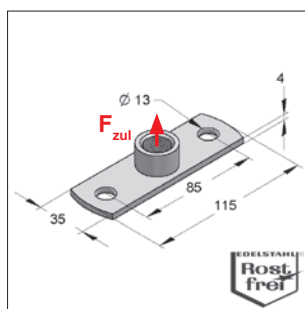
0,208

1

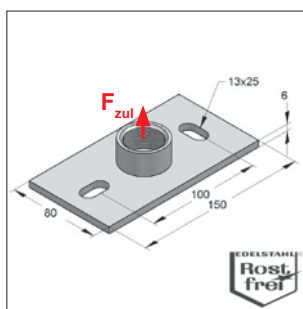
0770011

0770006

## ■ Base plates



Base plate type I



Base plate type III

### Specification:

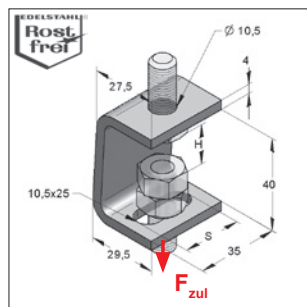
Application area: plates with threaded connection suitable for mounting on structure or profile rails.  
applicable for pipe clamp connections via threaded pin/- rod or distance tube

### Technical data:

Material: stainless steel  
Material type: V4A  
V2A

| Identification                    | Dimension plate |               |                   | max. load<br>suspension<br>$F_{zul}$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|-----------------------------------|-----------------|---------------|-------------------|----------------------------------------------|--------------------|------------------|----------|----------|
|                                   | length<br>[mm]  | width<br>[mm] | thickness<br>[mm] |                                              |                    |                  | Part-No. | Part-No. |
| <b>Base plate type I / M8</b>     | 115             | 35            | 4                 | 1,35                                         | 0,138              | 1                | 0598479  | 0599479  |
| <b>Base plate type I / M10</b>    | 115             | 35            | 4                 | 1,35                                         | 0,130              | 1                | 0598495  | 0599495  |
| <b>Base plate type I / M12</b>    | 115             | 35            | 4                 | 1,35                                         | 0,143              | 1                | 0598061  | 0599061  |
| <b>Base plate type I / M16</b>    | 115             | 35            | 4                 | 1,35                                         | 0,158              | 1                | 0598088  | 0599088  |
| <b>Base plate type I / 1/2"</b>   | 115             | 35            | 4                 | 1,35                                         | 0,158              | 1                | 0598045  | 0599045  |
| <b>Base plate type III / M16</b>  | 150             | 80            | 6                 | 5,9                                          | 0,570              | 1                | 0598601  | 0599601  |
| <b>Base plate type III / 1/2"</b> | 150             | 80            | 6                 | 5,9                                          | 0,630              | 1                | 0598602  | 0599602  |
| <b>Base plate type III / 3/4"</b> | 150             | 80            | 6                 | 5,9                                          | 0,665              | 1                | 0598599  | 0599599  |
| <b>Base plate type III / 1"</b>   | 150             | 80            | 6                 | 5,9                                          | 0,619              | 1                | 0598600  | 0599600  |

## ■ Suspended bracket type L



Suspended bracket type L

**Specification:**

Application area: for single fixation with threaded rods

Required accessories: 1 threaded bolt M8/M10  
2 hexagon nuts M8/M10

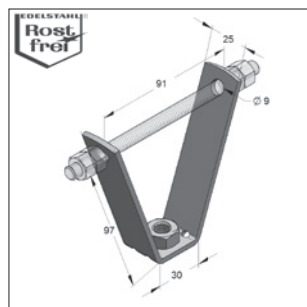
**Technical data:**

Material: stainless steel

Material type: V4A  
V2A

| Identification                             | Thread | Adjustable height<br>H<br>[mm] | Sliding piece<br>S<br>[mm] | max. load<br>$F_{zul}$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|--------------------------------------------|--------|--------------------------------|----------------------------|--------------------------------|--------------------|------------------|-----------------|-----------------|
|                                            |        |                                |                            |                                |                    |                  |                 |                 |
| <b>Suspended bracket type L M8 and M10</b> |        | 20/16                          | 15-17                      | 2,0                            | 0,089              | 1                | 0781002         | 0781001         |

## ■ Trapeze hanger



Trapeze hanger

**Specification:**

Application area: trapeze hanger with threaded rod  
should be mounted via lateral holes.  
For mounting pipelines and ventilation ducts directly under trapeze sheeting

Required accessories: 1 threaded bolt M8  
4 hexagon nuts M8

**Technical data:**

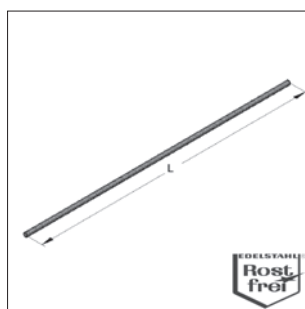
Material: stainless steel

Material type: V4A  
V2A

13

| Identification        | Thread     | max. load<br>[kN] | Weight<br>[kg/pc.] | VPE<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-----------------------|------------|-------------------|--------------------|--------------|-----------------|-----------------|
|                       |            |                   |                    |              |                 |                 |
| <b>Trapeze hanger</b> | <b>M8</b>  | 2,0               | 0,106              | 1            | 0783971         | 0783961         |
| <b>Trapeze hanger</b> | <b>M10</b> | 2,0               | 0,108              | 1            | 0783972         | 0783962         |

## Threaded rods



Threaded rod

| Admissible load* on bending |              |      |               |      |               |      |               |      | <div>* V4A<br/>f<sub>y</sub>=240 N/mm<sup>2</sup><br/>safety factor=1,5<br/>E-module=200.000 N/mm<sup>2</sup><br/><br/>* V2A<br/>f<sub>y</sub>=220 N/mm<sup>2</sup><br/>safety factor=1,5<br/>E-module=200.000 N/mm<sup>2</sup><br/><br/>max. deflection<br/>f = L/150 related to tensile stress area</div> |
|-----------------------------|--------------|------|---------------|------|---------------|------|---------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | V4A          | V2A  | V4A           | V2A  | V4A           | V2A  | V4A           | V2A  |                                                                                                                                                                                                                                                                                                             |
| Distance L<br>[mm]          | M8<br>F [kN] |      | M10<br>F [kN] |      | M12<br>F [kN] |      | M16<br>F [kN] |      |                                                                                                                                                                                                                                                                                                             |
| 50                          | 0,10         | 0,09 | 0,20          | 0,18 | 0,35          | 0,32 | 0,89          | 0,81 |                                                                                                                                                                                                                                                                                                             |
| 100                         | 0,04         | 0,04 | 0,10          | 0,09 | 0,17          | 0,16 | 0,44          | 0,41 |                                                                                                                                                                                                                                                                                                             |
| 150                         | 0,02         | 0,02 | 0,05          | 0,05 | 0,10          | 0,10 | 0,30          | 0,27 |                                                                                                                                                                                                                                                                                                             |
| 200                         | 0,01         | 0,01 | 0,03          | 0,03 | 0,06          | 0,06 | 0,20          | 0,20 |                                                                                                                                                                                                                                                                                                             |
| 250                         |              |      | 0,02          | 0,02 | 0,04          | 0,04 | 0,13          | 0,13 |                                                                                                                                                                                                                                                                                                             |
| 300                         |              |      | 0,01          | 0,01 | 0,03          | 0,03 | 0,09          | 0,09 |                                                                                                                                                                                                                                                                                                             |
| 350                         |              |      |               |      | 0,02          | 0,02 | 0,06          | 0,06 |                                                                                                                                                                                                                                                                                                             |
| 400                         |              |      |               |      |               |      | 0,05          | 0,05 |                                                                                                                                                                                                                                                                                                             |

### Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12, M16

Length: 1000 mm

### Technical data:

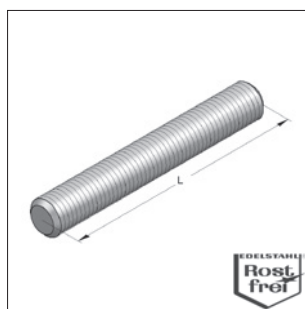
Material: stainless steel

Material type: V4A

V2A

| Identification | Thread | Limited tractive force max.<br>V4A / V2A<br>[kN] | Weight<br>[kg/m] | Packing<br>[pc.] | V4A      | V2A      |
|----------------|--------|--------------------------------------------------|------------------|------------------|----------|----------|
|                |        |                                                  |                  |                  | Part-No. | Part-No. |
| Threaded rod   | M8     | 12,08                                            | 0,333            | 1                | 0738508  | 0738006  |
| Threaded rod   | M10    | 19,14                                            | 0,520            | 1                | 0738510  | 0738009  |
| Threaded rod   | M12    | 27,82                                            | 0,749            | 1                | 0738512  | 0738012  |
| Threaded rod   | M16    | 51,81                                            | 1,331            | 1                | 0738516  | 0738016  |

## Threaded bolts



Threaded pin

### Specification:

according to DIN EN ISO 976-1

Thread: M8, M10, M12

Length: 30 up to 110 mm

### Technical data:

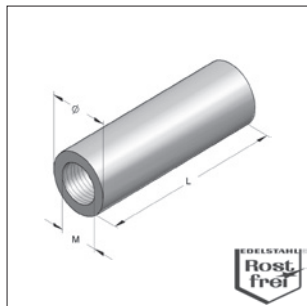
Material: stainless steel

Material type: V4A

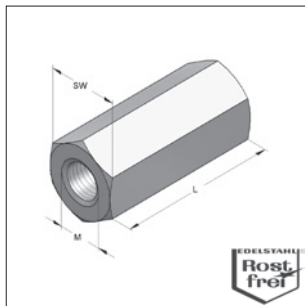
V2A

| Identification | Thread | Length<br>L<br>[mm] | Limited tractive force max.<br>V4A / V2A<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A      | V2A      |
|----------------|--------|---------------------|--------------------------------------------------|--------------------|------------------|----------|----------|
|                |        |                     |                                                  |                    |                  | Part-No. | Part-No. |
| Threaded bolt  | M8     | 30                  | 12,08                                            | 0,010              | 100              | ---      | 0732130  |
| Threaded bolt  | M8     | 50                  | 12,08                                            | 0,017              | 100              | ---      | 0732150  |
| Threaded bolt  | M8     | 70                  | 12,08                                            | 0,024              | 100              | ---      | 0732170  |
| Threaded bolt  | M8     | 110                 | 12,08                                            | 0,037              | 100              | ---      | 0732210  |
| Threaded bolt  | M10    | 50                  | 19,14                                            | 0,026              | 100              | ---      | 0732350  |
| Threaded bolt  | M10    | 70                  | 19,14                                            | 0,037              | 100              | ---      | 0732370  |
| Threaded bolt  | M10    | 110                 | 19,14                                            | 0,057              | 50               | ---      | 0732410  |
| Threaded bolt  | M12    | 50                  | 27,82                                            | 0,038              | 50               | 0734550  | 0732550  |
| Threaded bolt  | M12    | 110                 | 27,82                                            | 0,083              | 50               | 0734610  | 0732610  |

## Threaded coupling



Threaded coupling



Threaded coupling hexagon

**Specification:**

Thread: M8, M10, M12, M16  
Length: 30 up to 50 mm

**Technical data:**

Material: stainless steel  
Material type: V4A  
V2A

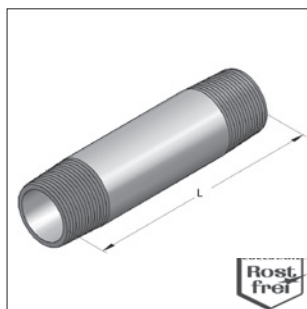
**Round**

| Identification    | Female thread<br>M | Length L<br>V4A<br>[mm] | Length L<br>V2A<br>[mm] | OD<br>[mm] | SW  | Weight<br>[kg/pc.] | Packing<br>[pcs.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-------------------|--------------------|-------------------------|-------------------------|------------|-----|--------------------|-------------------|-----------------|-----------------|
| Threaded coupling | M8                 | ---                     | 30                      | 11         | --- | 0,01               | 100               | ---             | 0700025         |
| Threaded coupling | M10                | ---                     | 40                      | 13         | --- | 0,02               | 50                | ---             | 0700026         |
| Threaded coupling | M12                | ---                     | 40                      | 15         | --- | 0,03               | 50                | ---             | 0700027         |
| Threaded coupling | M16                | ---                     | 50                      | 22         | --- | 0,08               | 25                | ---             | 0700028         |

**Hexagon**

|                   |     |    |    |     |    |      |     |         |         |
|-------------------|-----|----|----|-----|----|------|-----|---------|---------|
| Threaded coupling | M8  | 30 | 30 | --- | 13 | 0,02 | 100 | 0702880 | 0702830 |
| Threaded coupling | M10 | 30 | 40 | --- | 17 | 0,06 | 50  | 0702883 | 0702835 |
| Threaded coupling | M12 | 30 | 40 | --- | 19 | 0,07 | 50  | 0702888 | 0702840 |
| Threaded coupling | M16 | 40 | 40 | --- | 24 | 0,12 | 25  | 0702894 | 0702844 |

## Double nipple



Double nipple

**Specification:**

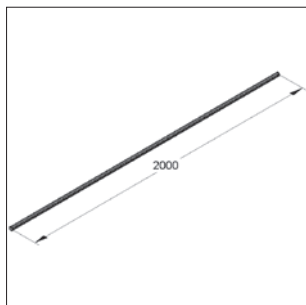
Length: 30 up to 140 mm

**Technical data:**

Material: stainless steel  
Material type: V4A

| Identification | Thread | Length<br>L<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. |
|----------------|--------|---------------------|--------------------|------------------|-----------------|
| Double nipple  | 1/2"   | 30                  | 0,028              | 1                | 0701803         |
| Double nipple  | 1/2"   | 45                  | 0,048              | 1                | 0701804         |
| Double nipple  | 1/2"   | 60                  | 0,066              | 1                | 0701806         |
| Double nipple  | 1/2"   | 100                 | 0,115              | 1                | 0701810         |
| Double nipple  | 1/2"   | 125                 | 0,136              | 1                | 0701812         |
| Double nipple  | 1/2"   | 140                 | 0,166              | 1                | 0701612         |

## Distance tube



Distance tube

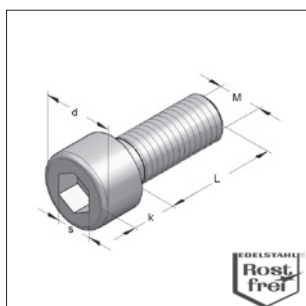
**Specification:**

Version: tube with male thread

**Technical data:**
Material: stainless steel  
Material type: V4A

| Identification | Thread | Length<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[m] | V4A<br>Part-No. |
|----------------|--------|----------------|--------------------|----------------|-----------------|
| Distance tube  | 1/2"   | 2000           | 1,906              | 2              | 0737002A4       |
| Distance tube  | 1"     | 2000           | 4,300              | 2              | 0737004A4       |

## Allen head cap screw, DIN EN ISO 4762

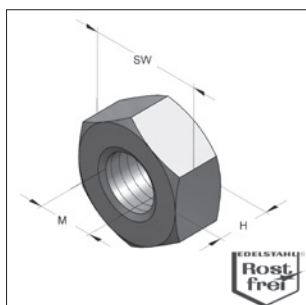


Allen head screw

**Specification:**
with hexagon socket  
according to DIN EN ISO 4762  
Thread: M8, M10, M12  
Length: 20 up to 30 mm
**Technical data:**
Material: stainless steel  
Material type: V4A  
V2A

|                  |             |           |           |           |           |                    |                   | V4A      | V2A      |
|------------------|-------------|-----------|-----------|-----------|-----------|--------------------|-------------------|----------|----------|
| Identification   | Thread<br>M | L<br>[mm] | d<br>[mm] | k<br>[mm] | s<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. | Part-No. |
| Allen head screw | M8          | 20        | 13        | 8         | 6         | 0,014              | 100               | 3445220  | 3445201  |
| Allen head screw | M10         | 30        | 16        | 10        | 8         | 0,028              | 50                | 3445230  | 3445231  |
| Allen head screw | M12         | 25        | 18        | 12        | 10        | 0,051              | 50                | 3445225  | 3445226  |

## Hexagon nut, DIN EN ISO 4032

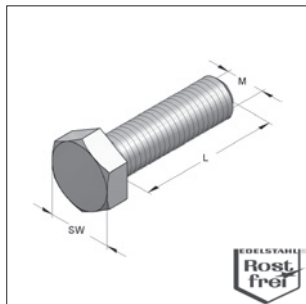


Hexagon nut

**Specification:**
according to DIN EN ISO 4032  
Thread: M6, M8, M10, M12, M16  
Wrench size: 10, 13, 17, 19, 24
**Technical data:**
Material: stainless steel  
Material type: V4A  
V2A

| Hexagon nut    |             |                |                   |                    |                   | V4A      | V2A      |
|----------------|-------------|----------------|-------------------|--------------------|-------------------|----------|----------|
| Identification | Thread<br>M | Height<br>[mm] | Wrench size<br>SW | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. | Part-No. |
| Hexagon nut    | M6          | 5,0            | 10                | 0,003              | 100               | 4128006  | 4128106  |
| Hexagon nut    | M8          | 6,5            | 13                | 0,005              | 100               | 4128108  | 4128008  |
| Hexagon nut    | M10         | 8,0            | 17                | 0,013              | 100               | 4128110  | 4128010  |
| Hexagon nut    | M12         | 10,0           | 19                | 0,017              | 100               | 4128112  | 4128012  |
| Hexagon nut    | M16         | 13,0           | 24                | 0,040              | 100               | 4128116  | 4128016  |

## Hexagon screw, DIN EN ISO 4017



Hexagon screw

**Specification:**

according to DIN EN ISO 4017

Thread: M8, M10, M12

Length: 20 up to 60 mm

**Technical data:**

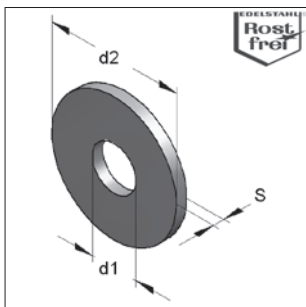
Material: stainless steel

Material type: V4A

V2A

| Identification | Thread<br>M | Length<br>L<br>[mm] | Wrench size<br>SW | Weight<br>[kg/pc.] | Packing<br>[pcs.] | V4A<br>Part-No. | V2A<br>Part-No. |
|----------------|-------------|---------------------|-------------------|--------------------|-------------------|-----------------|-----------------|
|                |             |                     |                   |                    |                   |                 |                 |
| Hexagon screw  | M8          | 20                  | 13                | 0,014              | 100               | 3206621         | 3206620         |
| Hexagon screw  | M8          | 30                  | 13                | 0,018              | 100               | 3206631         | 3206630         |
| Hexagon screw  | M10         | 25                  | 17                | 0,027              | 100               | 3206702         | 3206701         |
| Hexagon screw  | M10         | 40                  | 17                | 0,039              | 50                | 3206741         | 3206740         |
| Hexagon screw  | M10         | 60                  | 17                | 0,049              | 50                | 3206761         | 3206760         |
| Hexagon screw  | M12         | 25                  | 19                | 0,035              | 50                | 3206802         | 3206801         |
| Hexagon screw  | M12         | 40                  | 19                | 0,053              | 50                | 3206826         | 3206825         |
| Hexagon screw  | M12         | 60                  | 19                | 0,071              | 50                | 3206836         | 3206835         |

## Washer



Washer

**Specification:**

according to DIN EN ISO 7089 and DIN EN ISO 7093-1

reinforced washer with enlarged outer diameter,  
enlarged surface and improved pressure distribution**Technical data:**

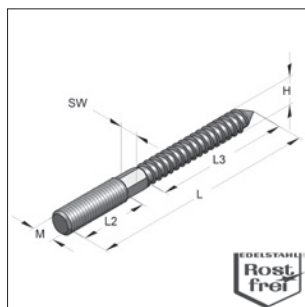
Material: stainless steel

Material type: V4A

V2A

| Identification | Dimension  |   |            |   |           | DIN EN<br>ISO | Weight<br>[kg/pc.] | Packing<br>[pcs.] | Part-No. | Part-No. |
|----------------|------------|---|------------|---|-----------|---------------|--------------------|-------------------|----------|----------|
|                | d1<br>[mm] | x | d2<br>[mm] | x | s<br>[mm] |               |                    |                   |          |          |
| Washer         | 8,4        | x | 16         | x | 1,6       | 7089          | 0,002              | 100               | 4338118  | 4338108  |
| Washer         | 10,5       | x | 20         | x | 2,0       | 7089          | 0,003              | 100               | 4338120  | 4338110  |
| Washer         | 13,0       | x | 24         | x | 2,5       | 7089          | 0,007              | 100               | 4338123  | 4338113  |
| Washer         | 8,4        | x | 25         | x | 2,0       | 7093-1        | 0,006              | 100               | 4338208  | 4338008  |
| Washer         | 10,5       | x | 30         | x | 2,5       | 7093-1        | 0,011              | 100               | 4338210  | 4338010  |
| Washer         | 13,0       | x | 37         | x | 3,0       | 7093-1        | 0,019              | 100               | 4338213  | 4338013  |
| Washer         | 17,0       | x | 50         | x | 3,0       | 7093-1        | 0,037              | 50                | 4338217  | 4338017  |
| Washer         | 10,5       | x | 40         | x | 3,0       | -             | 0,028              | 100               | 43385103 | -        |

## Hanger bolt



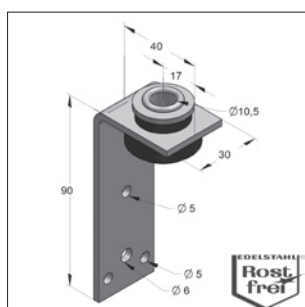
Hanger bolt

**Specification:**  
with wood- and metric thread

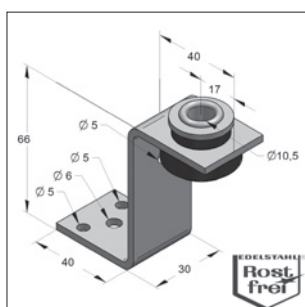
**Technical data:**  
Material: stainless steel  
Material type: V4A  
V2A

| Identification | Thread<br>M | L<br>[mm] | H<br>[mm] | L2<br>[mm] | L3<br>[mm] | SW | Suited<br>anchor K2 | Weight<br>[kg/pc.] | Packing<br>[pcs.] | V4A<br>Part-No. | V2A<br>Part-No. |
|----------------|-------------|-----------|-----------|------------|------------|----|---------------------|--------------------|-------------------|-----------------|-----------------|
|                |             |           |           |            |            |    |                     |                    |                   |                 |                 |
| Hanger bolt    | M8          | 60        | 7,0       | 20         | 30         | 6  | 10 x 44             | 0,016              | 100               | 3600037         | 3600035         |
| Hanger bolt    | M8          | 80        | 7,0       | 30         | 37         | 6  | 10 x 44             | 0,021              | 100               | 3600045         | 3600043         |
| Hanger bolt    | M8          | 100       | 7,0       | 40         | 47         | 6  | 10 x 44             | 0,027              | 100               | 3600072         | 3600070         |
| Hanger bolt    | M10         | 80        | 8,9       | 20         | 47         | 8  | 12 x 60             | 0,035              | 50                | ---             | 3609083         |
| Hanger bolt    | M10         | 100       | 8,9       | 30         | 57         | 8  | 12 x 60             | 0,042              | 50                | ---             | 3609105         |

## Duct holder sound proofed



Duct holder LLN



Duct holder ZLN

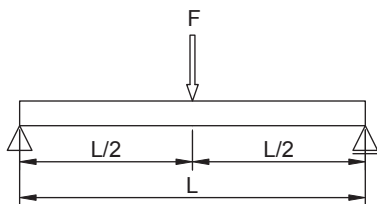


|                       |                                                                                                       |                         |                        |
|-----------------------|-------------------------------------------------------------------------------------------------------|-------------------------|------------------------|
| <b>Specification:</b> |                                                                                                       | <b>Technical data:</b>  |                        |
| Application area:     | for mounting of air ducts, suitable for M8 and M10                                                    | Material:               | stainless steel        |
|                       |                                                                                                       | Material type:          | V4A<br>V2A             |
| Product features:     | guiding rivet in sound insulation element<br>integrated washer in sound insulation element for type L | Sound insulation:       | SBR lining             |
|                       |                                                                                                       | Temperature resistance: | - 35 °C up to + 100 °C |

| Identification  | Length | Material<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | V4A<br>Part-No. | V2A<br>Part-No. |
|-----------------|--------|------------------|--------------------|------------------|-----------------|-----------------|
|                 |        |                  |                    |                  |                 |                 |
| Duct holder LLN | 90 mm  | 30x3,0           | 0,107              | 1                | 0590004         | 0590003         |
| Duct holder ZLN | 66 mm  | 30x3,0           | 0,109              | 1                | 0590039         | 0590038         |

## ■ Loads profile rails, stainless steel

### maximum loads for 1 x F



| Profile rails stainless steel |             |            |           |           |           |           |           |           |
|-------------------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                               | 27/18/1,25  | 27/18/1,25 | 35/21/2,0 | 35/21/2,0 | 45/40/2,5 | 45/40/2,5 | 45/80/2,5 | 45/80/2,5 |
| Surface                       | V2A         | V4A        | V2A       | V4A       | V2A       | V4A       | V2A       | V4A       |
| $\frac{F}{L}$                 | [kN]        | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      |
| [mm]                          | max. load F |            |           |           |           |           |           |           |
| 250                           | 0,75        | 0,78       | 1,77      | 1,85      | 6,69      | 6,98      | 11,84     | 11,84     |
| 500                           | 0,37        | 0,39       | 0,89      | 0,92      | 3,34      | 3,49      | 9,86      | 10,29     |
| 750                           | 0,25        | 0,25       | 0,59      | 0,62      | 2,23      | 2,32      | 6,57      | 6,85      |
| 1000                          | 0,15        | 0,14       | 0,4       | 0,4       | 1,67      | 1,74      | 4,91      | 5,13      |
| 1250                          |             |            | 0,25      | 0,25      | 1,33      | 1,39      | 3,92      | 4,09      |
| 1500                          |             |            | 0,17      | 0,17      | 1,1       | 1,15      | 3,26      | 3,4       |
| 1750                          |             |            | 0,12      | 0,12      | 0,87      | 0,87      | 2,78      | 2,9       |
| 2000                          |             |            |           |           | 0,66      | 0,66      | 2,42      | 2,53      |
| 2250                          |             |            |           |           | 0,51      | 0,51      | 2,14      | 2,24      |
| 2500                          |             |            |           |           | 0,4       | 0,4       | 1,92      | 2         |
| 2750                          |             |            |           |           | 0,32      | 0,32      | 1,73      | 1,81      |
| 3000                          |             |            |           |           | 0,26      | 0,26      | 1,57      | 1,65      |
| 3250                          |             |            |           |           | 0,21      | 0,21      | 1,4       | 1,4       |
| 3500                          |             |            |           |           | 0,17      | 0,17      | 1,19      | 1,19      |
| 3750                          |             |            |           |           | 0,14      | 0,14      | 1,01      | 1,01      |
| 4000                          |             |            |           |           | 0,11      | 0,11      | 0,87      | 0,87      |
| 4250                          |             |            |           |           |           |           | 0,75      | 0,75      |
| 4500                          |             |            |           |           |           |           | 0,65      | 0,65      |
| 4750                          |             |            |           |           |           |           | 0,56      | 0,56      |
| 5000                          |             |            |           |           |           |           | 0,48      | 0,48      |
| 5250                          |             |            |           |           |           |           | 0,42      | 0,42      |
| 5500                          |             |            |           |           |           |           | 0,36      | 0,36      |
| 5750                          |             |            |           |           |           |           | 0,3       | 0,3       |
| 6000                          |             |            |           |           |           |           | 0,26      | 0,26      |

#### Calculation according

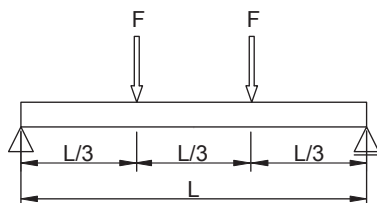
Safety  $\chi = 1,54$

max. bending  $\delta_{zul} = L/200$

module of elasticity  $E = 200.000 \text{ N/mm}^2$

## ■ Loads profile rails, stainless steel

### maximum loads for 2xF



| Profile rails stainless steel |             |            |           |           |           |           |           |           |
|-------------------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                               | 27/18/1,25  | 27/18/1,25 | 35/21/2,0 | 35/21/2,0 | 45/40/2,5 | 45/40/2,5 | 45/80/2,5 | 45/80/2,5 |
| Surface                       | V2A         | V4A        | V2A       | V4A       | V2A       | V4A       | V2A       | V4A       |
| $\frac{F}{L}$                 | [kN]        | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      |
| [mm]                          | max. load F |            |           |           |           |           |           |           |
| 250                           | 0,56        | 0,58       | 1,33      | 1,39      | 5,02      | 5,24      | 5,92      | 5,92      |
| 500                           | 0,28        | 0,29       | 0,67      | 0,69      | 2,51      | 2,62      | 5,92      | 5,92      |
| 750                           | 0,16        | 0,15       | 0,42      | 0,42      | 1,67      | 1,74      | 4,93      | 5,14      |
| 1000                          |             |            | 0,24      | 0,24      | 1,25      | 1,3       | 3,69      | 3,85      |
| 1250                          |             |            | 0,15      | 0,15      | 1         | 1,02      | 2,94      | 3,07      |
| 1500                          |             |            | 0,1       | 0,1       | 0,7       | 0,7       | 2,44      | 2,55      |
| 1750                          |             |            |           |           | 0,51      | 0,51      | 2,09      | 2,18      |
| 2000                          |             |            |           |           | 0,39      | 0,39      | 1,82      | 1,9       |
| 2250                          |             |            |           |           | 0,3       | 0,3       | 1,61      | 1,68      |
| 2500                          |             |            |           |           | 0,24      | 0,24      | 1,44      | 1,45      |
| 2750                          |             |            |           |           | 0,19      | 0,19      | 1,18      | 1,18      |
| 3000                          |             |            |           |           | 0,16      | 0,16      | 0,98      | 0,98      |
| 3250                          |             |            |           |           | 0,13      | 0,13      | 0,83      | 0,83      |
| 3500                          |             |            |           |           | 0,1       | 0,1       | 0,7       | 0,7       |
| 3750                          |             |            |           |           |           |           | 0,6       | 0,6       |
| 4000                          |             |            |           |           |           |           | 0,51      | 0,51      |
| 4250                          |             |            |           |           |           |           | 0,44      | 0,44      |
| 4500                          |             |            |           |           |           |           | 0,38      | 0,38      |
| 4750                          |             |            |           |           |           |           | 0,33      | 0,33      |
| 5000                          |             |            |           |           |           |           | 0,28      | 0,28      |
| 5250                          |             |            |           |           |           |           | 0,25      | 0,25      |
| 5500                          |             |            |           |           |           |           | 0,21      | 0,21      |
| 5750                          |             |            |           |           |           |           | 0,18      | 0,18      |
| 6000                          |             |            |           |           |           |           | 0,15      | 0,15      |

#### Calculation according

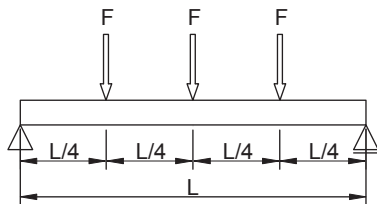
Safety  $\chi = 1,54$

max. bending  $\delta_{zul} = L/200$

module of elasticity  $E = 200.000 \text{ N/mm}^2$

## ■ Loads profile rails, stainless steel

### maximum loads for 3xF



| Profile rails stainless steel |             |            |           |           |           |           |           |           |
|-------------------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                               | 27/18/1,25  | 27/18/1,25 | 35/21/2,0 | 35/21/2,0 | 45/40/2,5 | 45/40/2,5 | 45/80/2,5 | 45/80/2,5 |
| Surface                       | V2A         | V4A        | V2A       | V4A       | V2A       | V4A       | V2A       | V4A       |
| $\frac{F}{L}$                 | [kN]        | [kN]       | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      | [kN]      |
| [mm]                          | max. load F |            |           |           |           |           |           |           |
| 250                           | 0,38        | 0,39       | 0,89      | 0,93      | 3,35      | 3,49      | 3,95      | 3,95      |
| 500                           | 0,19        | 0,2        | 0,45      | 0,46      | 1,67      | 1,75      | 3,95      | 3,95      |
| 750                           | 0,11        | 0,11       | 0,3       | 0,3       | 1,12      | 1,16      | 3,29      | 3,43      |
| 1000                          |             |            | 0,17      | 0,17      | 0,84      | 0,87      | 2,46      | 2,57      |
| 1250                          |             |            | 0,11      | 0,11      | 0,67      | 0,7       | 1,96      | 2,05      |
| 1500                          |             |            |           |           | 0,51      | 0,51      | 1,63      | 1,7       |
| 1750                          |             |            |           |           | 0,37      | 0,37      | 1,39      | 1,45      |
| 2000                          |             |            |           |           | 0,28      | 0,28      | 1,21      | 1,27      |
| 2250                          |             |            |           |           | 0,22      | 0,22      | 1,07      | 1,12      |
| 2500                          |             |            |           |           | 0,17      | 0,17      | 0,96      | 1         |
| 2750                          |             |            |           |           | 0,14      | 0,14      | 0,85      | 0,85      |
| 3000                          |             |            |           |           | 0,11      | 0,11      | 0,71      | 0,71      |
| 3250                          |             |            |           |           |           |           | 0,59      | 0,59      |
| 3500                          |             |            |           |           |           |           | 0,5       | 0,5       |
| 3750                          |             |            |           |           |           |           | 0,43      | 0,43      |
| 4000                          |             |            |           |           |           |           | 0,37      | 0,37      |
| 4250                          |             |            |           |           |           |           | 0,32      | 0,32      |
| 4500                          |             |            |           |           |           |           | 0,28      | 0,28      |
| 4750                          |             |            |           |           |           |           | 0,24      | 0,24      |
| 5000                          |             |            |           |           |           |           | 0,21      | 0,21      |
| 5250                          |             |            |           |           |           |           | 0,18      | 0,18      |
| 5500                          |             |            |           |           |           |           | 0,15      | 0,15      |
| 5750                          |             |            |           |           |           |           | 0,13      | 0,13      |
| 6000                          |             |            |           |           |           |           | 0,11      | 0,11      |

#### Calculation according

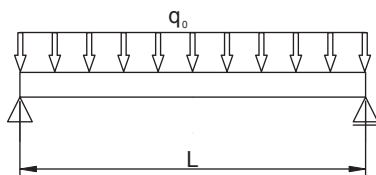
Safety  $\chi = 1,54$

max. bending  $\delta_{zul} = L/200$

module of elasticity  $E = 200.000 \text{ N/mm}^2$

## ■ Loads profile rails, stainless steel

### maximum loads for distributed load

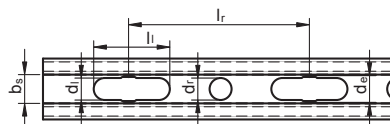
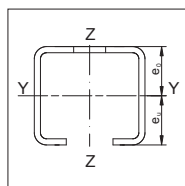


| Profile rails stainless steel |             |            |           |           |           |           |           |           |
|-------------------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                               | 27/18/1,25  | 27/18/1,25 | 35/21/2,0 | 35/21/2,0 | 45/40/2,5 | 45/40/2,5 | 45/80/2,5 | 45/80/2,5 |
| Surface                       | V2A         | V4A        | V2A       | V4A       | V2A       | V4A       | V2A       | V4A       |
| $\frac{q_0}{L}$               | [kN/m]      | [kN/m]     | [kN/m]    | [kN/m]    | [kN/m]    | [kN/m]    | [kN/m]    | [kN/m]    |
| [mm]                          | max. load F |            |           |           |           |           |           |           |
| 250                           | 5,93        | 6,18       | 14,14     | 14,75     | 53,51     | 55,83     | 47,34     | 47,34     |
| 500                           | 1,48        | 1,54       | 3,53      | 3,68      | 13,36     | 13,94     | 23,67     | 23,67     |
| 750                           | 0,55        | 0,53       | 1,52      | 1,52      | 5,93      | 6,19      | 15,78     | 15,78     |
| 1000                          | 0,23        | 0,22       | 0,64      | 0,64      | 3,33      | 3,47      | 9,82      | 10,25     |
| 1250                          | 0,12        | 0,11       | 0,32      | 0,32      | 2,12      | 2,21      | 6,27      | 6,55      |
| 1500                          |             |            | 0,18      | 0,18      | 1,27      | 1,27      | 4,34      | 4,53      |
| 1750                          |             |            | 0,11      | 0,11      | 0,79      | 0,79      | 3,18      | 3,32      |
| 2000                          |             |            |           |           | 0,53      | 0,53      | 2,42      | 2,53      |
| 2250                          |             |            |           |           | 0,36      | 0,36      | 1,9       | 1,99      |
| 2500                          |             |            |           |           | 0,26      | 0,26      | 1,53      | 1,58      |
| 2750                          |             |            |           |           | 0,19      | 0,19      | 1,17      | 1,17      |
| 3000                          |             |            |           |           | 0,14      | 0,14      | 0,89      | 0,89      |
| 3250                          |             |            |           |           | 0,11      | 0,11      | 0,69      | 0,69      |
| 3500                          |             |            |           |           |           |           | 0,55      | 0,55      |
| 3750                          |             |            |           |           |           |           | 0,44      | 0,44      |
| 4000                          |             |            |           |           |           |           | 0,35      | 0,35      |
| 4250                          |             |            |           |           |           |           | 0,29      | 0,29      |
| 4500                          |             |            |           |           |           |           | 0,23      | 0,23      |
| 4750                          |             |            |           |           |           |           | 0,19      | 0,19      |
| 5000                          |             |            |           |           |           |           | 0,16      | 0,16      |
| 5250                          |             |            |           |           |           |           | 0,13      | 0,13      |
| 5500                          |             |            |           |           |           |           | 0,11      | 0,11      |
| 5750                          |             |            |           |           |           |           |           |           |
| 6000                          |             |            |           |           |           |           |           |           |

#### Calculation according

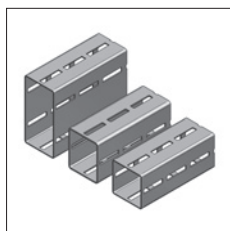
Safety  $\chi = 1,54$   
 max. bending  $\delta_{zul} = L/200$   
 module of elasticity  $E = 200.000 \text{ N/mm}^2$

## Profile rail overview stainless steel

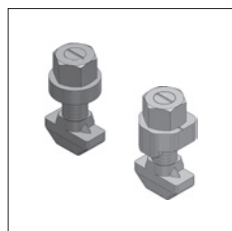


| Profile rail                                   |                  |                   | stainless steel |           |           |           |
|------------------------------------------------|------------------|-------------------|-----------------|-----------|-----------|-----------|
|                                                |                  |                   | 27/18/1,25      | 35/21/2,0 | 45/40/2,5 | 45/80/2,5 |
| <b>V2A</b>                                     |                  |                   |                 |           |           |           |
| Material                                       |                  |                   | 1.4301          | 1.4301    | 1.4301    | 1.4301    |
| Elastic limit                                  | $f_y$            | N/mm <sup>2</sup> | 230             | 230       | 230       | 230       |
| Weight/ meter                                  | G/m              | kg/m              | 0,61            | 1,21      | 2,56      | 5,12      |
| <b>V4A</b>                                     |                  |                   |                 |           |           |           |
| Material                                       |                  |                   | 1.4571          | 1.4571    | 1.4571    | 1.4571    |
| Elastic limit                                  | $f_y$            | N/mm <sup>2</sup> | 240             | 240       | 240       | 240       |
| Weight/ meter                                  | G/m              | kg/m              | 0,61            | 1,21      | 2,56      | 5,12      |
| Delivery length                                | $l$              | m                 | 2,00            | 3,00      | 6,00      | 6,00      |
| Area (least cross section of the profile rail) | $A_k$            | cm <sup>2</sup>   | 0,67            | 1,44      | 2,79      | 5,59      |
| Slot width                                     | $b_s$            | mm                | 14,0            | 17,0      | 19,0      | 19,0      |
| Grid dimension                                 | $l_r$            | mm                | 52,5            | 52,5      | 105,0     | 105,0     |
| Diameter round hole                            | $d_r$            | mm                | -               | -         | 18        | 18        |
| Diameter elongated hole x length               | $d_l \times l_l$ | mm x mm           | 10,5x38,5       | 10,5x38,5 | 14x45     | 14x45     |
| Extension diameter elongated hole              | $d_e$            | mm                | -               | -         | 18        | 18        |
| <b>Characteristic values YY-axis</b>           |                  |                   |                 |           |           |           |
| Axial angular impulse                          | $I_y$            | cm <sup>4</sup>   | 0,29            | 0,84      | 5,68      | 33,02     |
| Section modulus                                | $W_y$            | cm <sup>3</sup>   | 0,31            | 0,74      | 2,80      | 8,26      |
| Centroid distance                              | $e_o$            | cm                | 0,85            | 0,97      | 1,97      | 4,00      |
| Centroid distance                              | $e_u$            | cm                | 0,95            | 1,13      | 2,03      | 4,00      |
| Radius of inertia                              | $i_y$            | cm                | 0,66            | 0,76      | 1,43      | 2,43      |
| <b>Characteristic values ZZ-axis</b>           |                  |                   |                 |           |           |           |
| Axial angular impulse                          | $I_z$            | cm <sup>4</sup>   | 0,89            | 2,94      | 10,40     | 20,80     |
| Section modulus z-axis                         | $W_z$            | cm <sup>3</sup>   | 0,66            | 1,68      | 4,62      | 9,24      |
| Centroid distance                              | $e_z$            | cm                | 1,35            | 1,75      | 2,25      | 2,25      |
| Radius of inertia                              | $i_z$            | cm                | 1,15            | 1,43      | 1,93      | 1,93      |

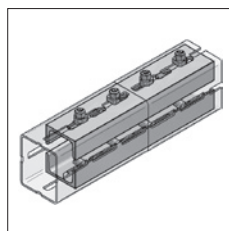
# **CENTUM® - components list**



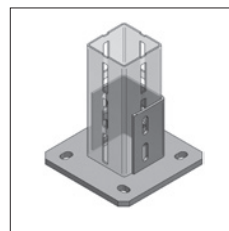
CENTUM Square profile  
Page 14/4



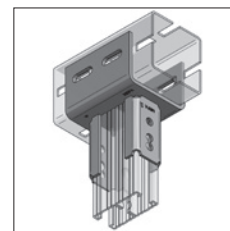
CENTUM Connection  
system  
Page 14/5



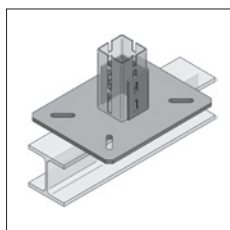
CENTUM Connector-set  
Page 14/6



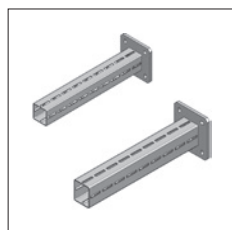
CENTUM Holder  
Page 14/7



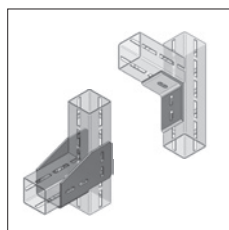
CENTUM Adaptor  
Page 14/7



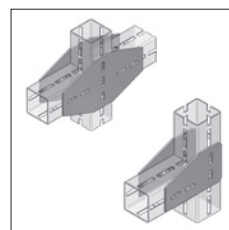
CENTUM Girder fixation  
Page 14/8



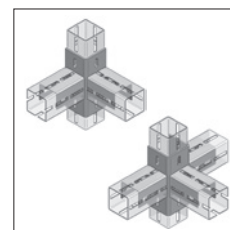
CENTUM Consoles  
Page 14/9



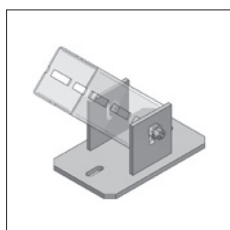
CENTUM Angles  
Page 14/10



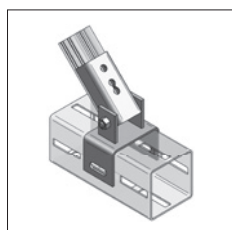
CENTUM Fittings  
Page 14/10



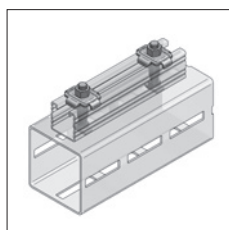
CENTUM Angle coupler  
Page 14/11



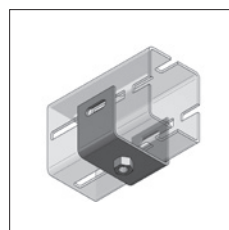
CENTUM Joint holder  
Page 14/11



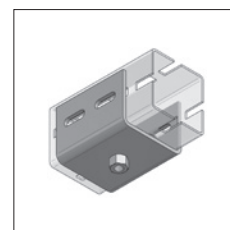
CENTUM Joint connection  
Page 14/12



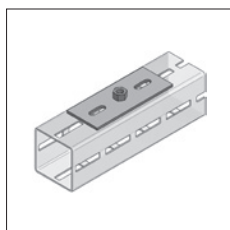
CENTUM C-profile  
connector  
Page 14/12



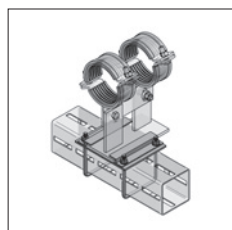
CENTUM Thread  
connector  
Page 14/13



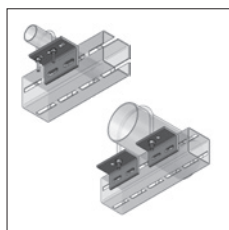
CENTUM Massive  
connector  
Page 14/13



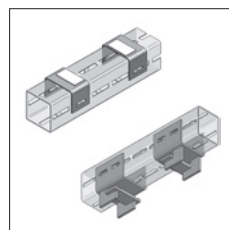
CENTUM Base plate  
Page 14/14



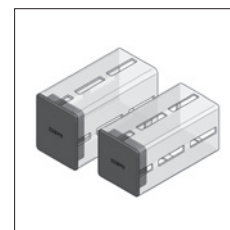
CENTUM Z-pressure pad  
Set with U-bolt  
Page 14/15



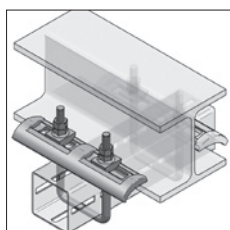
CENTUM Pipe holder  
Page 14/16



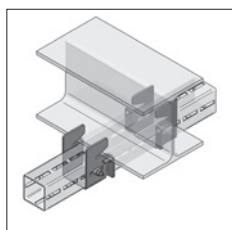
CENTUM Sliding base  
Page 14/16



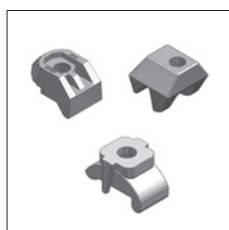
CENTUM Protection cap  
Page 14/17



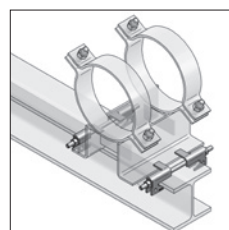
CENTUM Clamping bow  
Page 14/18



CENTUM clamping shoe  
Page 14/19



CENTUM Girder clamps  
Page 14/20



CENTUM Guiding  
clamp-set  
Page 14/25



Pipe clamp Form A  
Page 14/25

## CENTUM® - components list



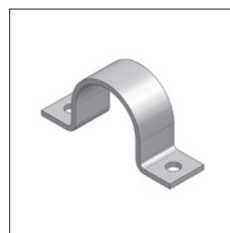
Pipe clamp Form C  
Page 14/25



Pipe clamp Form A  
Maxima/Titan HD  
Page 14/24



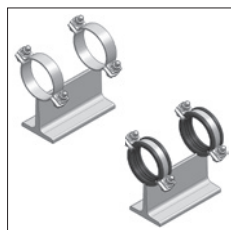
Pipe clamp Form A  
type TGA  
Page 14/26



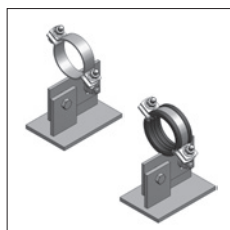
Stirrup clamp  
Page 14/27



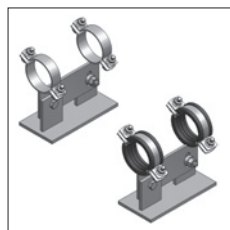
U-Bolt  
Page 14/27



Sliding support T  
Page 14/28



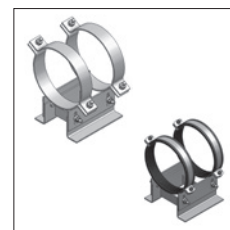
Sliding support T HV,  
1 Pipe clamp  
Page 14/29



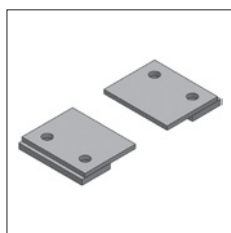
Sliding support T HV,  
2 Pipe clamps  
Page 14/30



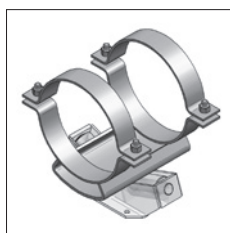
Sliding sledge  
Page 14/31



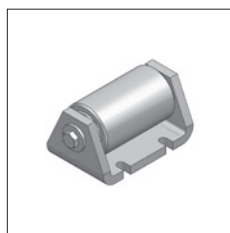
Sliding sledge HV  
Page 14/32



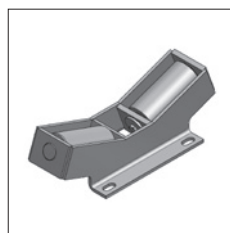
Pressure pad  
Page 14/32



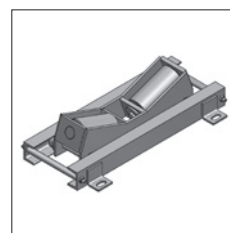
Isolation saddle for roller  
bearings  
Page 14/33



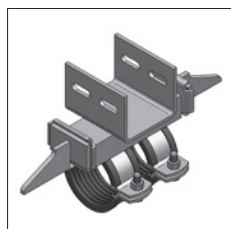
Single-roller-bearing  
Page 14/33



Double roller bearing, axial  
Page 14/33



Double roller bearing,  
radial-axial  
Page 14/33



Fixpoint type A / typ B  
with CENTUM Massive  
connector  
Page 14/34

## ■ 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®:

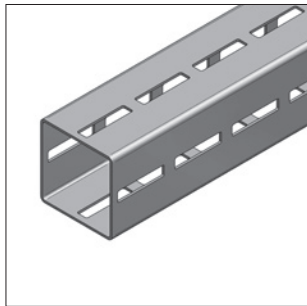
- Saving time and labour costs
- Stepless positioning of system components
- Unique, shape-fitting screw connection system with a max. load capacity of 10 kN per connection
- Dismantlement at any time
- Compatible interface for MEFA-profile channels
- All parts are hot-dip galvanized or zinc-nickel coated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



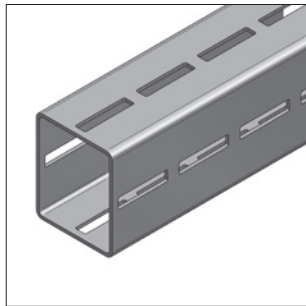
Approval/  
calculation base:

- RAL-GZ-655-B+C+D+E
- DIN EN 13480-3
- VGB-R 510 L
- DIN EN 1998-4 (Seismic)
- DIN EN ISO 9001
- DIN EN 1993

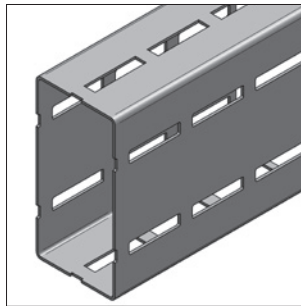
## CENTUM® Square profile



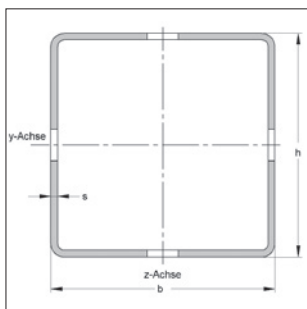
CENTUM® profile XL 100



CENTUM® profile XL 120



CENTUM® profile XL 200



### Description of system:

- modular system
- 4-sided w/o raster in connection with mounting parts
- torsion stiffness
- high load capacity

\* Not tested according to RAL

\*\* At 8 m delivery length special delivery conditions

### Technical data:

|                        |                                                 |
|------------------------|-------------------------------------------------|
| Material:              | steel                                           |
| Material type XL 100:  | S275J2H                                         |
| Material type XL 120   | S235JRH                                         |
| Material type XL 120s: | S235JRH                                         |
| Material type XL 200:  | S275J2H                                         |
| Surface:               | hot-dip galvanized according to DIN EN ISO 1461 |

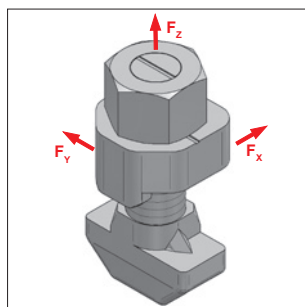
| Identification                     | Dimensions<br>h x b<br>[mm] | Profile thickness<br>s<br>[mm] | perforation | Length<br>L<br>[m] | Weight<br>[kg/m] | Packing<br>[m] | Part-No. |
|------------------------------------|-----------------------------|--------------------------------|-------------|--------------------|------------------|----------------|----------|
| <b>CENTUM® profile XL 100</b>      | 100 x 100                   | 3                              | 4-sided     | 6                  | 8,46             | 6              | 16010060 |
| <b>CENTUM® profile XL 120</b>      | 120 x 100                   | 4                              | 4-sided     | 6                  | 12,20            | 6              | 16012060 |
| <b>CENTUM® profile XL 120s*</b>    | 120 x 100                   | 5                              | 4-sided     | 6                  | 14,83            | 6              | 16012061 |
| <b>CENTUM® profile XL 200*</b>     | 200 x 100                   | 5                              | 4-sided     | 6                  | 20,46            | 6              | 16020060 |
| <b>CENTUM® profile XL 200 WST*</b> | 200 x 100                   | 5                              | 4-sided     | 8**                | 20,46            | 8              | 16020080 |

### CENTUM® overview technical values

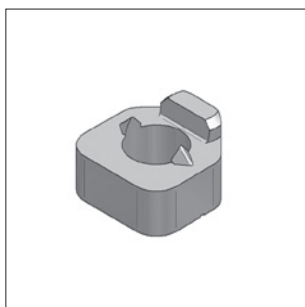
| Identification  | cross-section<br>area<br>$A_k$<br>cm <sup>2</sup> | Section modulus<br>of torsion<br>$W_t$<br>cm <sup>3</sup> | Geometrical moment<br>of inertia<br>$I_{y-y}$ $I_{z-z}$<br>cm <sup>4</sup> |        | Section<br>modulus<br>$W_{y-y}$ $W_{z-z}$<br>cm <sup>3</sup> |       | gyration<br>radius<br>$i_y$ $i_z$<br>cm |      |
|-----------------|---------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|--------|--------------------------------------------------------------|-------|-----------------------------------------|------|
| Profile XL 100  | 9,73                                              | 56,40                                                     | 157,14                                                                     | 157,14 | 31,43                                                        | 31,43 | 4,02                                    | 4,02 |
| Profile XL 120  | 14,45                                             | 89,10                                                     | 310,55                                                                     | 237,23 | 51,76                                                        | 47,44 | 4,64                                    | 4,05 |
| Profile XL 120s | 17,55                                             | 109,25                                                    | 372,76                                                                     | 284,42 | 62,12                                                        | 56,88 | 4,61                                    | 4,03 |
| Profile XL 200  | 24,15                                             | 185,25                                                    | 1255,68                                                                    | 433,47 | 125,56                                                       | 86,69 | 7,21                                    | 4,24 |

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

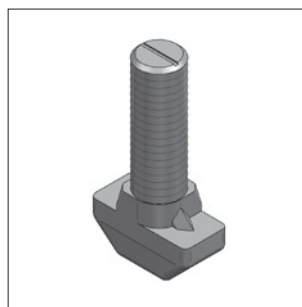
## CENTUM® T-lock head, toothed



CENTUM® T-lock head



CENTUM® Lock washer



CENTUM® T-lock bolt



### Specification:

For profile type: XL 100 and XL 120  
 Features: immovable and form-locking connection  
 max. load:  $F_x$  10 kN    $F_y$  10kN    $F_z$  3kN  
 Safety  $\gamma$ : 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.      |
|--------------------------------------------------|----------------|------------------------------------|-----------------|----------------|---------------|
| <b>CENTUM® T-lock head M12x40, toothed</b>       | 10.9           | 120                                | 0,120           | 50             | 1610011000    |
| consisting of:                                   |                |                                    |                 |                |               |
| <b>CENTUM® Lock washer</b>                       | 10             | --                                 | 0,031           | 100            | 1610019000/zn |
| <b>CENTUM® T-lock bolt, toothed</b>              | 10.9           | 120                                | 0,064           | 50             | 1610012100/zn |
| <b>CENTUM® hex nut M12 FK10, DIN EN ISO 4032</b> | 10             | --                                 | 0,017           | 100            | 8989995/zn    |

## Assembly instruction for T-lock head

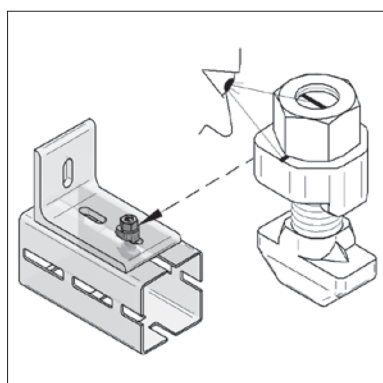


Figure 1

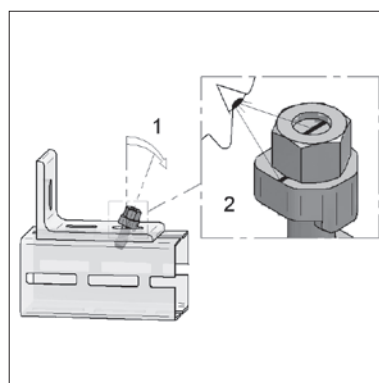


Figure 2

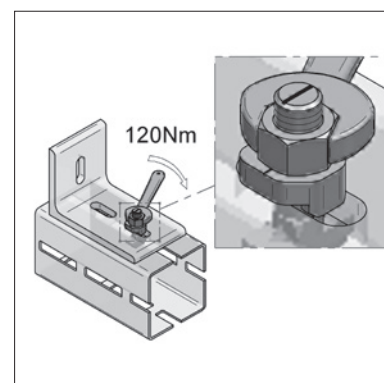


Figure 3

### Positioning:

Locate T-lock head into mounting part like shown in Figure 1.

### Adjustment:

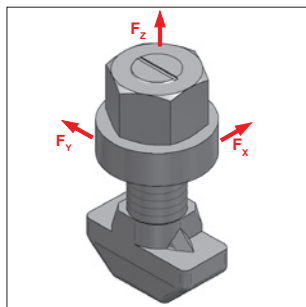
Turn T-lock head around 90 degrees, so that T-lock bolt stands diagonally to long hole (see 1).

Tilt forward T-lock head, so that guide wedge of Lock washer snaps in long hole (see 2).

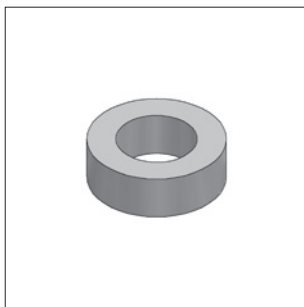
### Fixation:

Tighten tilted T-lock with 120 Nm. T-lock head after dismounting non-reusable.

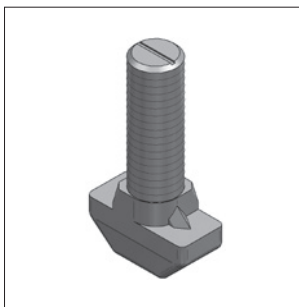
## CENTUM® T-bolt, with steel disk



CENTUM® T-bolt



CENTUM® steel disk



CENTUM® T-lock bolt, toothed

### Specification:

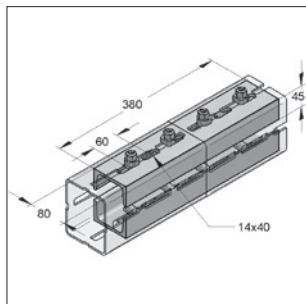
For profile type: XL 100 and XL 120  
 Features: frictional connection  
 max. load:  $F_x$   $F_y$   $F_z$   
                   3 kN   10 kN   3 kN  
 Safety  $\gamma$ : 2  
 Application: C-profile connector

### Technical data:

Material: steel  
 Surface: zinc-nickel

| Identification                                       | Property class | recommended tightening torque [Nm] | Weight [kg/pc.] | Packing [pcs.] | Part-No.      |
|------------------------------------------------------|----------------|------------------------------------|-----------------|----------------|---------------|
| <b>CENTUM® T-bolt M12x40</b>                         | 10.9           | 120                                | 0,100           | 50             | 1610012000    |
| consisting of:                                       |                |                                    |                 |                |               |
| <b>CENTUM® steel disk</b>                            | 4.6            | --                                 | 0,019           | 100            | 1610019100/zn |
| <b>CENTUM® T-lock bolt, toothed</b>                  | 10.9           | 120                                | 0,064           | 50             | 1610012100/zn |
| <b>CENTUM® Hexagon nut M12 FK10, DIN EN ISO 4032</b> | 10             | --                                 | 0,017           | 100            | 8989995/zn    |

## CENTUM® Connector



CENTUM® Connector

### Specification:

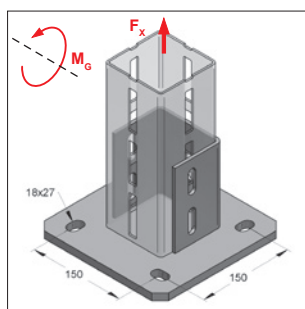
For profile type: XL 100 and XL 120  
 Scope of supply: mounting accessories, loose insert  
                           (8x T-lock head, toothed, M 12/40)  
 Function: connection of XL 100 and XL 120

### Technical data:

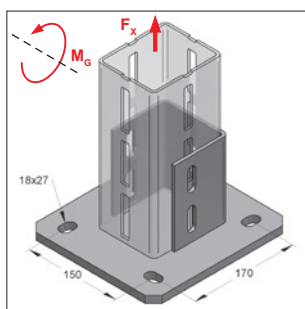
Material: steel  
 Surface: hot-dip galvanized

| Identification               | Limit moment $M_G$ [kNm] | Length [mm] | Weight [kg/pc.] | Packing [pc.] | Part-No.   |
|------------------------------|--------------------------|-------------|-----------------|---------------|------------|
| <b>CENTUM® Connector-Set</b> | 2                        | 380         | 7,90            | 1             | 1640005010 |

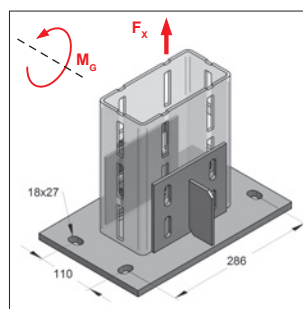
## CENTUM® Holder



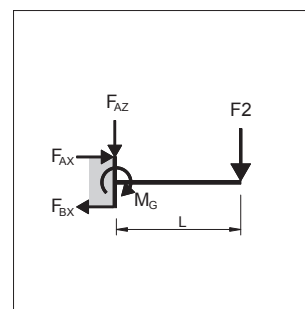
CENTUM® Holder XL 100



CENTUM® Holder XL 120



CENTUM® Holder XL 200



$$M_G = F_2 \times L$$

### Specification:

For profile type: XL 100 and XL 120  
Scope of supply: T-lock head, toothed, M12/40

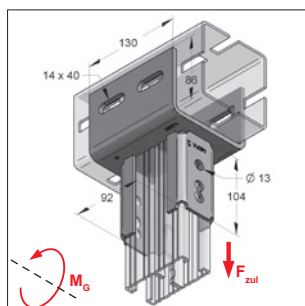
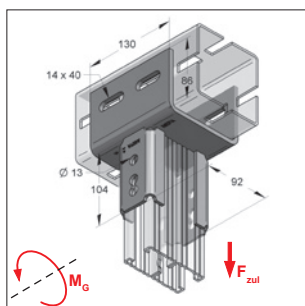
\* at utilization of all bolt holes

### Technical data:

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

| Identification               | max. load*<br>$F_x$<br>[kN] | maximum torque<br>$M_G^*$<br>[kNm] | Plate-width<br>[mm] | Plate-length<br>[mm] | Plate-thickness<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|------------------------------|-----------------------------|------------------------------------|---------------------|----------------------|-------------------------|--------------------|------------------|------------|
| <b>CENTUM® Holder XL 100</b> | 40                          | 5,2                                | 220                 | 220                  | 12                      | 6,15               | 1                | 1621001000 |
| <b>CENTUM® Holder XL 120</b> | 40                          | 5,2                                | 220                 | 240                  | 12                      | 6,71               | 1                | 1621201000 |
| <b>CENTUM® Holder XL 200</b> | 40                          | 5,2                                | 220                 | 340                  | 12                      | 9,57               | 1                | 1622001000 |

## CENTUM® Adaptor

CENTUM® Adaptor  
verticalCENTUM® Adaptor  
horizontal

### Specification:

For profile type: XL 100, 45/90  
Application: to connect C-profile rails 45/90  
Needed accessory: threaded square plate  
hexagon screw  
t-lock head

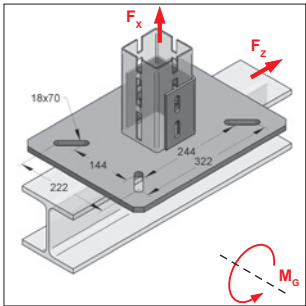
### Technical data:

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

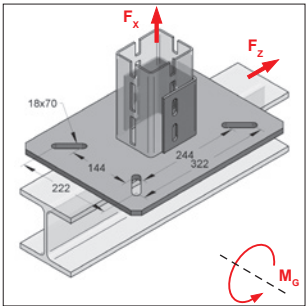
\* loads referring to component, not to connection

| Identification                    | max. load*<br>$F_{zul}$<br>[kN] | maximum torque<br>$M_G$<br>[kNm]<br>fbv fsv | Length<br>[mm] | Thickness<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|-----------------------------------|---------------------------------|---------------------------------------------|----------------|-------------------|--------------------|------------------|------------|
| <b>CENTUM® Adaptor vertical</b>   | 12                              | 0,80 0,35                                   | 130            | 6                 | 2,32               | 1                | 1621005011 |
| <b>CENTUM® Adaptor horizontal</b> | 12                              | 0,80 0,35                                   | 130            | 6                 | 2,32               | 1                | 1621005021 |

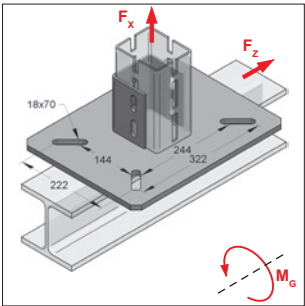
CENTUM® Girder fixation



Girder fixation XL 100, vertical



Girder fixation XL 120, vertical



Girder fixation XL 120, horizontal

Specification:

For profile type: XL 100 and XL 120  
needed accessory: T-lock head, toothed, M12/40  
clamping claw AF/LR

Technical data:

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

\* at utilization of all bolt holes

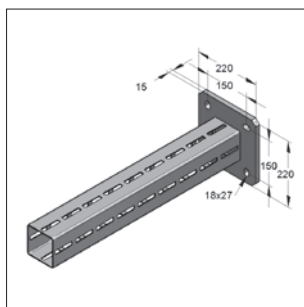
| Identification                             | Plate-width | Plate-length | Plate-thickness | maximum torque<br>$M_G$ | Weight   | Packing | Part-No.   |
|--------------------------------------------|-------------|--------------|-----------------|-------------------------|----------|---------|------------|
|                                            | [mm]        | [mm]         | [mm]            | [kNm]                   | [kg/pc.] | [pc.]   |            |
| CENTUM® Girder fixation XL 100, vertical   | 320         | 420          | 12              | 5,2                     | 14,56    | 1       | 1621002001 |
| CENTUM® Girder fixation XL 120, vertical   | 320         | 420          | 12              | 5,2                     | 14,67    | 1       | 1621202001 |
| CENTUM® Girder fixation XL 120, horizontal | 420         | 320          | 12              | 5,2                     | 14,67    | 1       | 1621203001 |

Table: Loads are related to clamping claws for adaption to steel girder, galvanized incl. screws class 8.8 and washer.

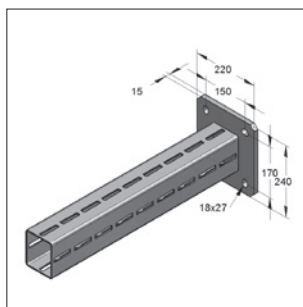
| Clamping claws | max. load**                                    |                                        |
|----------------|------------------------------------------------|----------------------------------------|
|                | Pulling force <sub>F<sub>x</sub></sub><br>[kN] | Shear <sub>F<sub>z</sub></sub><br>[kN] |
| Typ AF M16     | 40,0                                           | 20,0                                   |
| Typ LR M16     | 34,0                                           | 3,4                                    |

\*\* in combination with 4x AF/LR connections

# CENTUM® Console



CENTUM® Console XL 100



CENTUM® Console XL 120

**Specification:**

For profile type: XL 100 and 120

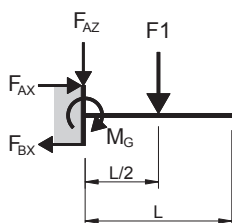
**Technical data:**

Material: steel  
Material type: S235JR  
Surface: hot-dip galvanized  
Safety factor: 1,35

\* Delivery time on request, variant demand possible

| Identification                 | Length | max. load 1<br>F1 | max. load 2<br>F2 | max. load 3<br>q <sub>0</sub> | Weight   | Packing | Part-No.   |
|--------------------------------|--------|-------------------|-------------------|-------------------------------|----------|---------|------------|
|                                | [mm]   | [kN]              | [kN]              | [kN/m]                        | [kg/pc.] | [pc.]   |            |
| <b>CENTUM® Console XL 100</b>  | 720    | 16,17             | 8,08              | 22,45                         | 11,92    | 1       | 1631000720 |
| <b>CENTUM® Console XL 100</b>  | 960    | 12,13             | 6,06              | 12,63                         | 13,62    | 1       | 1631000960 |
| <b>CENTUM® Console XL 100</b>  | 1440   | 8,08              | 4,58              | 5,61                          | 18,02    | 1       | 1631001440 |
| <b>CENTUM® Console XL 120*</b> | 720    | 25,02             | 12,51             | 34,75                         | 15,17    | 1       | 1631200720 |
| <b>CENTUM® Console XL 120*</b> | 960    | 18,77             | 9,38              | 19,55                         | 18,10    | 1       | 1631200960 |
| <b>CENTUM® Console XL 120*</b> | 1440   | 12,51             | 6,26              | 8,69                          | 23,96    | 1       | 1631201440 |

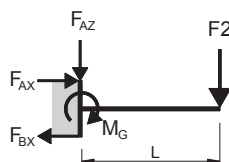
max. load 1 (LF1)



$$F_{AZ} = F1$$

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

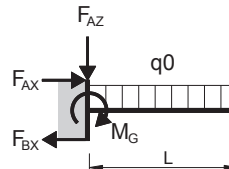
max. load 2 (LF2)



$$F_{AZ} = F2$$

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

max. load 3 (LF3)



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

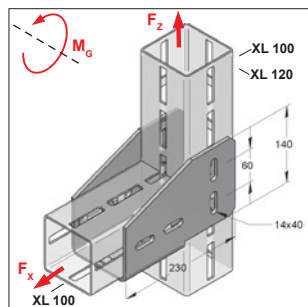
$$F_{AZ} = q0 * L \quad M_G = \frac{q0 * L^2}{2}$$

Limit moment  $M_G$ : 9.008,0 Nm  
Support reaction force  $F_{AX}$ : 53,0 kN  
Support reaction force  $F_{BX}$ : 53,0 kN

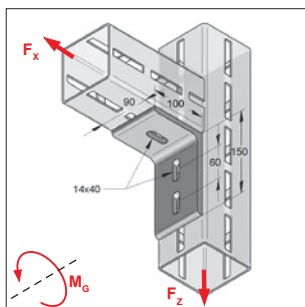
**Notice:**

All load capacities excessive refer to static loads.

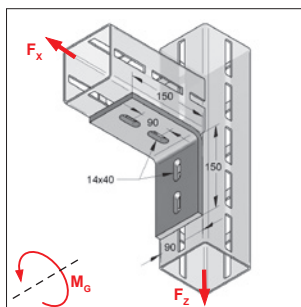
## CENTUM® Angles



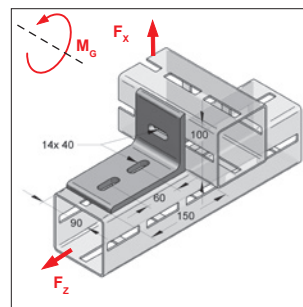
CENTUM® Angle-shoe XL



CENTUM® 3-hole angle



CENTUM® 4-hole angle

CENTUM® 3-hole angle  
horizontal

### Specification:

For profile type: XL 100 and XL 120  
Required accessory: T-lock head, toothed, M12/40

\* by using of all screw holes

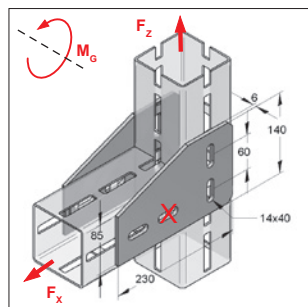
### Technical data:

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

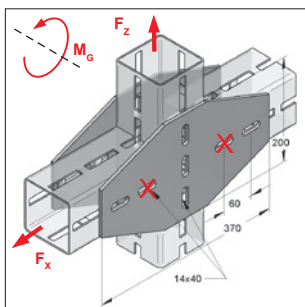
Remark: align always elongated holes of components in direction of elongated holes of CENTUM profile.

| Identification                                       | max. load     |               | max. limited torque | Weight | Packing | Part-No.   |
|------------------------------------------------------|---------------|---------------|---------------------|--------|---------|------------|
|                                                      | $F_x$<br>[kN] | $F_z$<br>[kN] | $M_G^*$<br>[kNm]    |        |         |            |
| <b>CENTUM® Angle-shoe XL 100</b>                     | 40            | 40            | 1,2                 | 3,58   | 1       | 1641002010 |
| <b>CENTUM® 3-hole angle</b>                          | 6             | 20            | 0,6                 | 1,74   | 1       | 1640001010 |
| <b>CENTUM® 4-hole angle</b>                          | 6             | 20            | 0,5                 | 2,02   | 1       | 1640001020 |
| <b>CENTUM® 3-hole angle, horizontal (for XL 100)</b> | 6             | 20            | 0,6                 | 1,74   | 1       | 1640001012 |

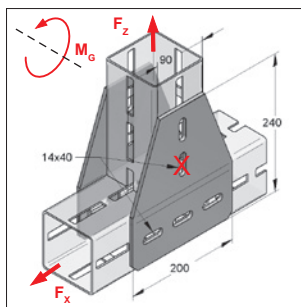
## CENTUM® Fittings



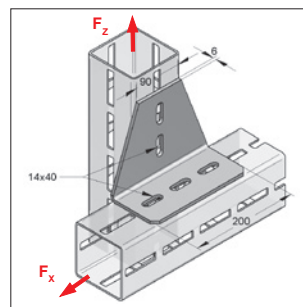
CENTUM® Corner plate L



CENTUM® Cross plate



CENTUM® T-plate



CENTUM® T-plate, angled

### Specification:

For profile type: XL 100, XL 120 and XL 200  
Required accessory: T-lock head, toothed, M12/40

\* by using of all screw holes

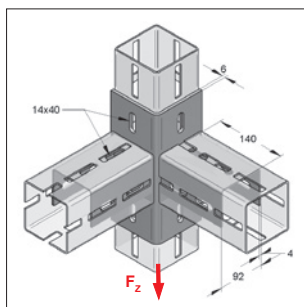
Notice: for  $M_G = 0$  only one screw per side at X

### Technical data:

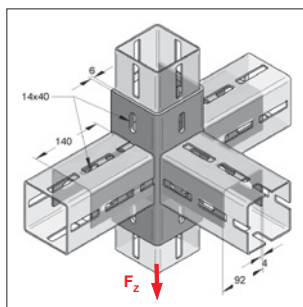
Material: steel  
Material type: S235JR  
Surface: hot-dip galvanized  
Safety factor: 1,54

| Identification                               | max. load     |               | max. limited torque | Weight | Packing | Part-No.   |
|----------------------------------------------|---------------|---------------|---------------------|--------|---------|------------|
|                                              | $F_x$<br>[kN] | $F_z$<br>[kN] | $M_G^*$<br>[kNm]    |        |         |            |
| <b>CENTUM® Corner plate L (use in pairs)</b> | 40            | 40            | 1,2                 | 1,38   | 1       | 1640003010 |
| <b>CENTUM® Cross plate (use in pairs)</b>    | 40            | 40            | 1,2                 | 2,89   | 1       | 1640003020 |
| <b>CENTUM® T-plate (use in pairs)</b>        | 40            | 40            | 1,2                 | 1,97   | 1       | 1640001030 |
| <b>CENTUM® T-plate, angled</b>               | 20            | 9             | -                   | 1,97   | 1       | 1640001040 |

## CENTUM® Angle coupler



CENTUM® Angle coupler 90°



CENTUM® Angle coupler 180°

### Specification:

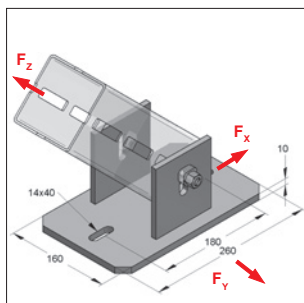
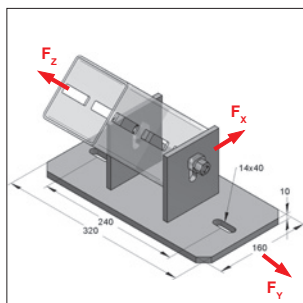
For profile type: XL 100  
Required accessory: T-lock head, toothed, M12/40

### Technical data:

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

| Identification             | max. load<br>$F_z$<br>[kN] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|----------------------------|----------------------------|--------------------|------------------|------------|
| CENTUM® Angle coupler 90°  | 20                         | 4,72               | 1                | 1641006010 |
| CENTUM® Angle coupler 180° | 20                         | 7,12               | 1                | 1641006020 |

## CENTUM® Joint holder

CENTUM® Joint holder  
XL 100 verticalCENTUM® Joint holder  
XL 100 horizontal

### Specification:

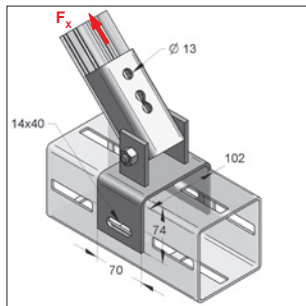
For profile type: XL 100 or XL 120  
Required accessory: T-bolt, with steel disk, M12/40  
Tightening torque: 60 Nm  
Delivery time: on request

### Technical data:

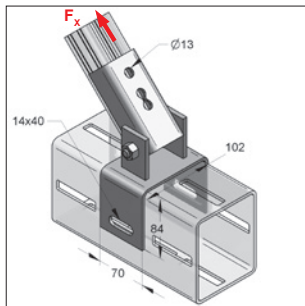
Material: steel  
Material type: S235JR  
Surface: hot-dip galvanized  
Safety factor: 1,54

| Identification                         | max. load     |               |               | center hole<br>Plate | Dimension<br>Plate<br>L x B x S | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|----------------------------------------|---------------|---------------|---------------|----------------------|---------------------------------|--------------------|------------------|------------|
|                                        | $F_x$<br>[kN] | $F_z$<br>[kN] | $F_y$<br>[kN] |                      |                                 |                    |                  |            |
| CENTUM® Joint holder XL 100 vertical   | 6,3           | 20            | 11            | 180                  | 260 x 160 x 10                  | 4,89               | 1                | 1641004010 |
| CENTUM® Joint holder XL 100 horizontal | 6,3           | 20            | 11            | 240                  | 320 x 160 x 10                  | 5,72               | 1                | 1641004020 |

## CENTUM® Joint connection



Joint connection XL 100



Joint connection XL 120

**Specification:**

For profile type: XL 100 and XL 120  
in combination with C-profile rails 45

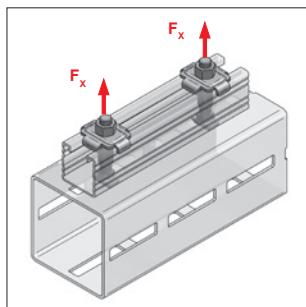
**Technical data:**

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

<sup>1)</sup> loads referring to component, not to connection

| Identification                  | max. load <sup>1)</sup><br>$F_x$<br>[kN] | Hole-Ø<br>[mm] | Elongated<br>hole-Ø<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|---------------------------------|------------------------------------------|----------------|-----------------------------|--------------------|------------------|------------|
| CENTUM® Joint connection XL 100 | 7,0                                      | 13             | 14 x 40                     | 1,26               | 1                | 1641014110 |
| CENTUM® Joint connection XL 120 | 7,0                                      | 13             | 14 x 40                     | 1,31               | 1                | 1641214110 |

## CENTUM® C-profile connector



CENTUM® C-profile connector

**Specification:**

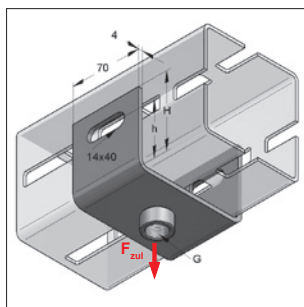
For profile type: XL 100 and XL 120  
Application: to connect profile rails

**Technical data:**

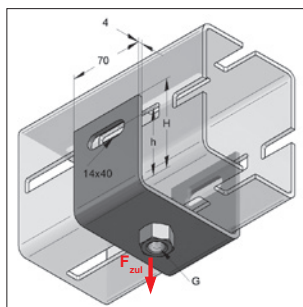
Material: steel  
Material type: S235JR  
Surface: galvanized

| Identification              | for profile-height<br>[mm] | max. load<br>$F_x$<br>[kN] | tightening torque<br>[Nm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|-----------------------------|----------------------------|----------------------------|---------------------------|--------------------|------------------|------------|
| CENTUM® C-profile connector | 40-45                      | 2,0                        | 10                        | 0,160              | 50               | 1640017040 |
| CENTUM® C-profile connector | 60                         | 2,0                        | 10                        | 0,170              | 50               | 1640017060 |

## CENTUM® Thread connector



CENTUM® Thread connector  
XL 100 1/2"



CENTUM® Thread connector  
XL 120 M16

### Specification:

For profile type: XL 100 or XL 120

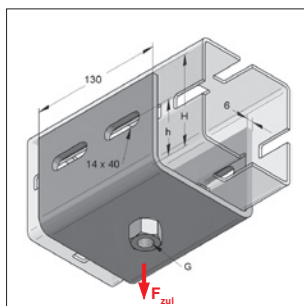
Required: T-lock head, toothed, M12/40

### Technical data:

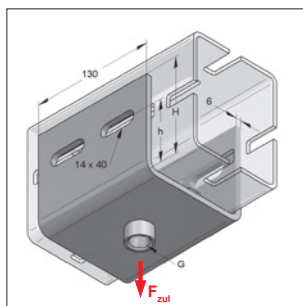
Material: steel  
Material type: S235JR  
Surface: zinc-nickel  
Safety factor: 1,54

| Identification                  | Profile type | thread<br>G | max. load<br>$F_{zul}$<br>[kN] | H<br>[mm] | h<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|---------------------------------|--------------|-------------|--------------------------------|-----------|-----------|--------------------|------------------|------------|
| CENTUM® Thread connector XL 100 | XL 100       | M12         | 5,0                            | 74        | 50        | 0,550              | 1                | 1641018006 |
| CENTUM® Thread connector XL 100 | XL 100       | M16         | 5,0                            | 74        | 50        | 0,557              | 1                | 1641018007 |
| CENTUM® Thread connector XL 100 | XL 100       | 1/2"        | 5,0                            | 74        | 50        | 0,557              | 1                | 1641018008 |
| CENTUM® Thread connector XL 100 | XL 100       | 1"          | 5,0                            | 74        | 50        | 0,610              | 1                | 1641018010 |
| CENTUM® Thread connector XL 120 | XL 120       | M16         | 5,0                            | 84        | 60        | 0,620              | 1                | 1641218007 |
| CENTUM® Thread connector XL 120 | XL 120       | 1/2"        | 5,0                            | 84        | 60        | 0,610              | 1                | 1641218008 |
| CENTUM® Thread connector XL 120 | 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 or XL 120

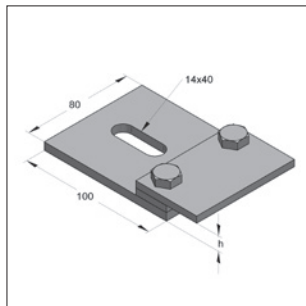
Required: T-lock head, toothed, M12/40

### Technical data:

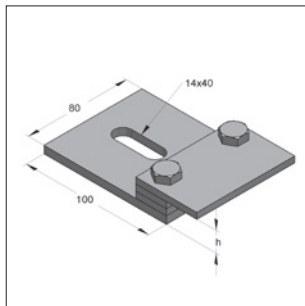
Material: steel  
Material type: S235JR  
Surface: zinc-nickel  
Safety factor: 1,54

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

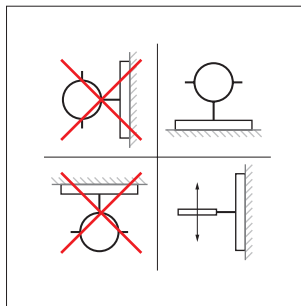
## CENTUM® Z-pressure pad



CENTUM® Z-pressure pad  
clamping strength 11 mm



CENTUM® Z-pressure pad  
clamping strength 16 mm



Mounting recommendation

### Specification:

For profile type: XL100, XL120 and XL 200  
set of 2 pcs.  
Mounting instruction: suitable for standing assembly, only  
Required accessory: sliding stripe PA 6 (see chapter 4)  
T-bolt with steel disk, M12/40

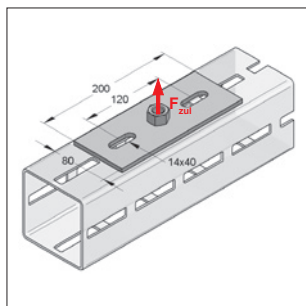
### Technical data:

Material: steel  
Material type: S235JRG  
Surface: zinc-nickel

| suitable sliding stripe for use with CENTUM® Z-pressure pad set: | Length [mm] | Width [mm] | Thickness [mm] | elongated hole-Ø [mm] | sliding element width [mm] | Weight [kg/pc.] | Packing [pc.] | Part-No. |
|------------------------------------------------------------------|-------------|------------|----------------|-----------------------|----------------------------|-----------------|---------------|----------|
| sliding stripe PA 100/5 2-hole                                   | 310         | 100        | 5              | 14 x 40               | ≤ 100                      | 0,172           | 1             | 9992458  |
| sliding stripe PA 100/5 2-hole                                   | 355         | 100        | 5              | 14 x 40               | ≤ 150                      | 0,198           | 1             | 9992200  |
| sliding stripe PA 100/5 2-hole                                   | 410         | 100        | 5              | 14 x 40               | ≤ 200                      | 0,230           | 1             | 9992459  |

| Identification             | Length [mm] | Width [mm] | clamping strength h [mm] | Thickness [mm] | elongated hole-Ø [mm] | Weight [kg/set] | Packing [set] | Part-No.   |
|----------------------------|-------------|------------|--------------------------|----------------|-----------------------|-----------------|---------------|------------|
| CENTUM® Z-pressure pad s11 | 100         | 80         | 11                       | 6              | 14 x 40               | 1,31            | 1             | 1650015011 |
| CENTUM® Z-pressure pad s16 | 100         | 80         | 16                       | 6              | 14 x 40               | 1,48            | 1             | 1650015016 |

## CENTUM® Base plate



CENTUM® Base plate M12

### Specification:

For profile type: XL100, XL120 and XL 200

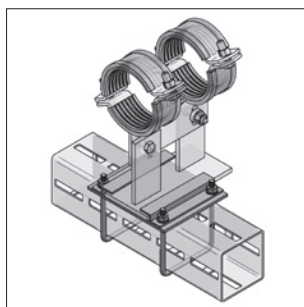
Required accessory: T-lock head, toothed, M12/40 or  
T-bolt with steel disk, M12/40

### Technical data:

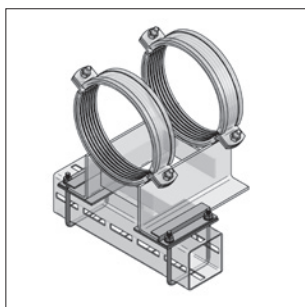
Material: steel  
Material type: S235JRG2  
Surface: zinc-nickel  
Safety factor: 1,54

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

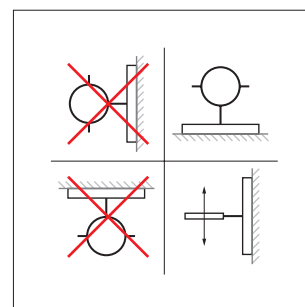
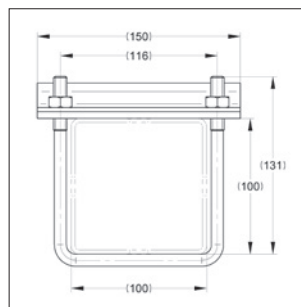
## ■ CENTUM® Z-pressure pad Set with U-bolt



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



CENTUM® Z-pressure pad Set  
for sliding sledge and sliding plate  
above 140 mm width



Mounting recommendation

### Specification:

|                    |                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------|
| Application:       | Fixing of sliding element on<br>CENTUM XL 100 or square pipe 100                                 |
| scope of delivery: | 2 x U-bolt 116/131 M10                                                                           |
| (Set for 100 mm)   | 2 x Z-pressure pad 150 mm 2-hole<br>1 x sliding stripe PA6 2-hole (150 x 100 x 5)<br>4 x nut M10 |
| scope of delivery: | 2 x U-bolt 116/131 M10                                                                           |
| (Set above 140 mm) | 2 x Z-pressure pad 150 mm 2-hole<br>2 x sliding stripe PA6 2-hole (150 x 100 x 5)<br>4 x nut M10 |

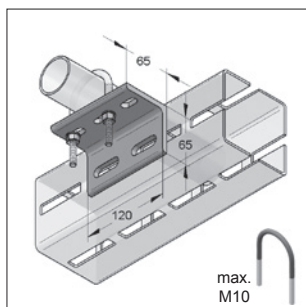
### Technical data:

|                           |                        |
|---------------------------|------------------------|
| Material:                 | steel                  |
| Material type:            | S235JR                 |
| Surface:                  |                        |
| - U-bolt, Z-pressure pad: | zinc-nickel            |
| - nut:                    | hot-dip galvanized     |
| Material sliding stripe:  | PA6                    |
| static friction factor:   | 0,2 - 0,3              |
| sliding friction factor:  | 0,15 - 0,25            |
| Temperature resistance:   | - 30° C up to + 110° C |

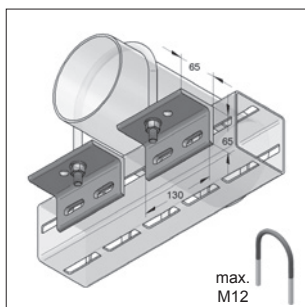
### Identification

|                                                                 | for pipe /<br>CENTUM | max. thickness<br>sliding eleme | lifting stress /<br>set | Weight   | Packing | Part-No.-Nr. |
|-----------------------------------------------------------------|----------------------|---------------------------------|-------------------------|----------|---------|--------------|
|                                                                 | [mm]                 | [mm]                            | [kN]                    | [kg/Set] | [Set]   |              |
| <b>Z-pressure pad Set for sliding sledge with 100 mm width</b>  | 100 x 100            | 16                              | 4,5                     | 1,060    | 1       | 14799100     |
| <b>Z-pressure pad Set for sliding sledge above 140 mm width</b> | 100 x 100            | 16                              | 4,5                     | 1,090    | 1       | 14799140     |

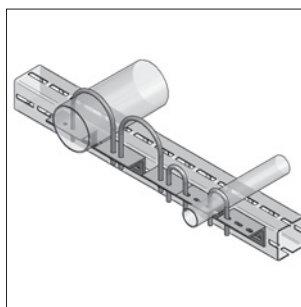
## CENTUM® Pipe holder



CENTUM® Ø 21,3 - 76,1



CENTUM® Ø 88,9 - 219,1



combined exemplar

### Specification:

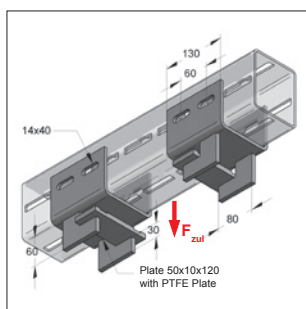
For pipe diameter: Ø 21,3 - 219,1 mm  
 Mounting instruction: pipe must overlie  
 Advantage: installation of different pipe diameter  
 Required accessory: T-lock head and U-bolt  
 Delivery time: on request

### Technical data:

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

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

## CENTUM® Sliding base, hanging



CENTUM® Sliding base, hanging

### Specification:

For profile type: XL 100, XL 120 or XL 200  
 Required accessory: T-lock head, toothed, M12/40

Remark: shipment in pairs

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

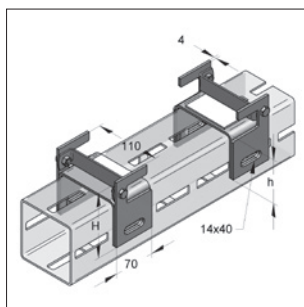
### Technical data:

Material sliding base: steel  
 Material type: S235JR  
 Surface: hot-dip galvanized  
 Material sliding body: PTFE  
 max. sliding plate thickness: ≤ 16 mm  
 Temperature resistance: -20°C up to +200°C  
 Safety factor: 1,54

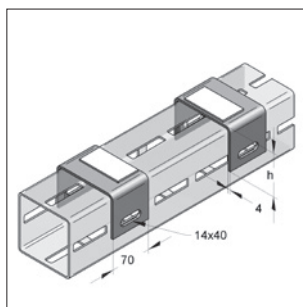
\* Loads refer to pair

| Identification       | Profile type    | Alignment                | max. load*<br>F <sub>zul</sub><br>[kN] | Weight<br>[kg/pc.] | Packing<br>[set] | Part-No.   |
|----------------------|-----------------|--------------------------|----------------------------------------|--------------------|------------------|------------|
| CENTUM® Sliding base | XL 100 / XL 200 | hanging                  | 15,0                                   | 5,33               | 1                | 1651002000 |
| CENTUM® Sliding base | XL 120          | hanging, profile upright | 15,0                                   | 5,60               | 1                | 1651202010 |

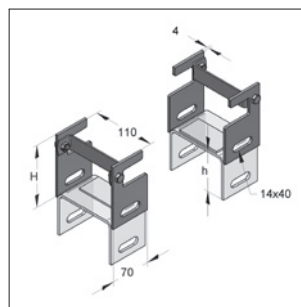
## CENTUM® Sliding base, standing



CENTUM® Sliding base, standing  
with lift lock



CENTUM® Sliding base, standing  
without lift lock



lift lock (set)

### Specification:

For profile type: XL 100, XL 120 and XL 200  
Required accessory: T-lock head, toothed, M12/40 or  
T-bolt with steel disk, M12/40

Remark: shipment in pairs

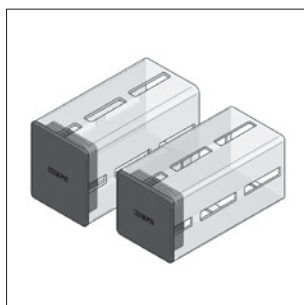
\* Loads refer to pair

### Technical data:

Material Sliding base: steel  
Material type: S235JR  
Surface: hot-dip galvanized  
max. sliding plate thickness: ≤ 16 mm  
Material sliding body: PE - UHMW  
static friction factor: 0,2  
slide friction factor: 0,15  
Temperature resistance: - 200 °C up to + 80 °C  
Safety factor: 1,54

| Identification                        | Profile type    | Alignment                 | max. load *<br>$F_{zul}$<br>[kN] | H<br>[mm] | h<br>[mm] | Weight<br>[kg/set] | Packing<br>[set] | Part-No.   |
|---------------------------------------|-----------------|---------------------------|----------------------------------|-----------|-----------|--------------------|------------------|------------|
| <b>Sliding base with lift lock</b>    | XL 100 / XL 200 | standing                  | 40                               | 110       | 74        | 2,13               | 1                | 1651001020 |
| <b>Sliding base without lift lock</b> | XL 100 / XL 200 | standing                  | 40                               | -         | 74        | 1,07               | 1                | 1651001010 |
| <b>lift lock</b>                      | XL 100 / XL 200 | standing                  | 40                               | 110       | 74        | 0,95               | 1                | 1651001011 |
| <b>Sliding base with lift lock</b>    | XL 120          | standing, profile upright | 40                               | 120       | 84        | 2,23               | 1                | 1651201050 |
| <b>Sliding base without lift lock</b> | XL 120          | standing, profile upright | 40                               | -         | 84        | 1,28               | 1                | 1651201030 |
| <b>lift lock</b>                      | XL 120          | standing, profile upright | 40                               | 120       | 84        | 1,07               | 1                | 1651201031 |

## CENTUM® Protecting cap



CENTUM® Protecting cap

### Specification:

For profile type: XL 100 or XL 120

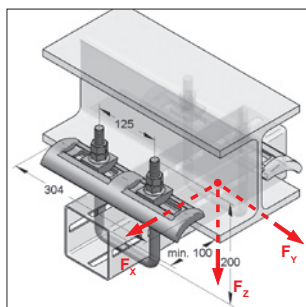
### Technical data:

Material: plastic  
Material type: PE  
Colour: black

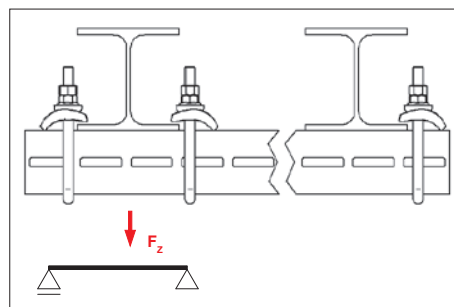
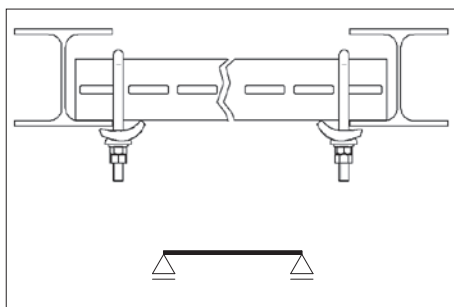
14

| Identification                       | Weight<br>[kg/pc.] | Packing<br>[set] | Part-No. |
|--------------------------------------|--------------------|------------------|----------|
| <b>CENTUM® Protecting cap XL 100</b> | 0,092              | 20               | 1670100  |
| <b>CENTUM® Protecting cap XL 120</b> | 0,064              | 20               | 1670120  |

## CENTUM® Clamping bow massive



CENTUM® Clamping bow massive



### Specification:

For profile rail type: 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® clamping rail FC 1 pc.  
CENTUM® conical spring washer FC 2 pcs.  
Flange nuts M16 2 pcs.  
Nuts M16 2 pcs.

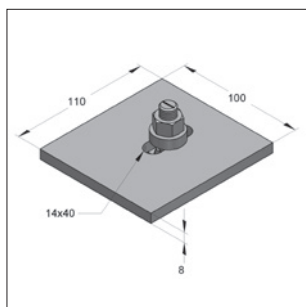
### Technical data:

Material: steel  
Material type: S235JR  
Surface:  
U-bolt: zinc-nickel  
CENTUM® clamping rail FC: galvanized (JS 500)  
CENTUM® conical spring-washer FC: galvanized (JS 500)  
Flange nuts M16: zinc-nickel  
Nuts M16: zinc-nickel  
Safety factor: 5:1

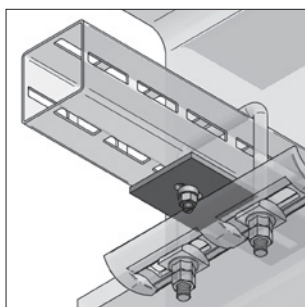
Remark: max. loads refer according to a clamping bow set please notice max. loads of CENTUM® profile rails

| Identification               | Thread<br>U-bolt | max. load<br>$F_x$ $F_y$ $F_z$<br>[kN] |     |      | tightening<br>torque<br>[Nm] | max. clamping<br>strength<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|------------------------------|------------------|----------------------------------------|-----|------|------------------------------|-----------------------------------|--------------------|------------------|------------|
| CENTUM® Clamping bow massive | M16              | 1,9                                    | 2,7 | 20,0 | 25                           | 5 - 19                            | 3,08               | 1                | 1660011020 |

## CENTUM® Spacer plate for clamping bows



CENTUM® Spacer plate  
for clamping bows  
T-bolt, with steel disk



CENTUM® spacer plate combined  
with CENTUM® clamping bow

### Specification:

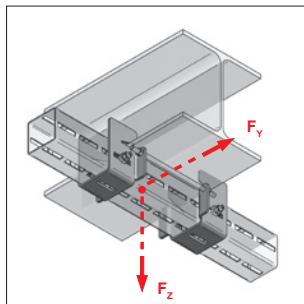
Application area: to raise clamping thickness of CENTUM clamping bow  
Mounting instruction: with space plate clamping thickness can be increased by 8 mm  
Required accessory: T-bolt, with steel disk, M12/40  
Delivery time: on request

### Technical data:

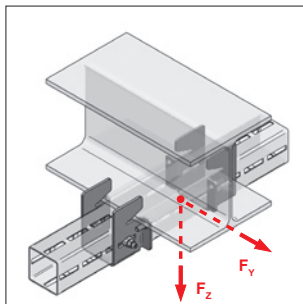
Material: steel  
Surface: hot-dip galvanized

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

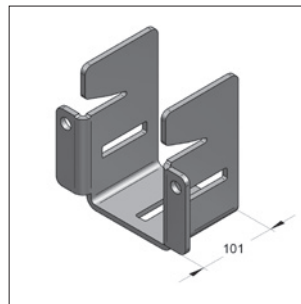
## CENTUM® clamping shoe



CENTUM® clamping shoe mounted



CENTUM® clamping shoe mounted



CENTUM® clamping shoe single

### Specification:

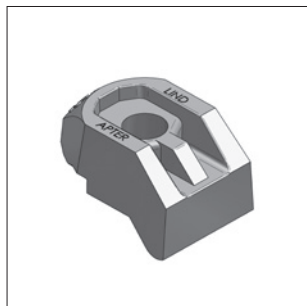
Application area: Attaching CENTUM® profiles to steel girder  
 Installation advise: Evenly tightening of threaded rods with 15 Nm  
 Torque for CENTUM® T-lock head 120 Nm  
 Required accessory: 4 x T-lock head, toothed M12/40  
 2 x threaded rods M12 (length = width of steel girder)  
 4 x nut M12  
 Scope of delivery: Sold in pairs

### Technical data:

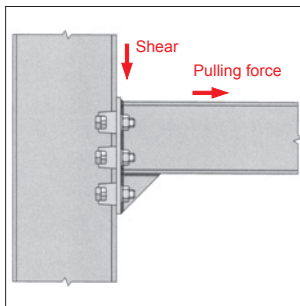
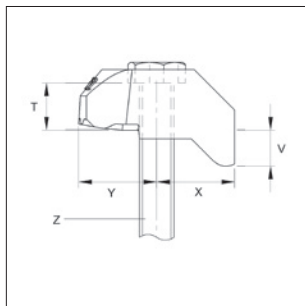
Material: steel  
 Material type: S235JR  
 Surface: hot-dip galvanized  
 Safety factor: 1,54

| Identification        | Profile type | for girders |         |         |         |         | max. load              |                        | Weight | Packing | Part-No.   |
|-----------------------|--------------|-------------|---------|---------|---------|---------|------------------------|------------------------|--------|---------|------------|
|                       |              | HEA         | HEAA    | HEB     | IPE     | IPEa    | F <sub>z</sub><br>[kN] | F <sub>y</sub><br>[kN] |        |         |            |
| CENTUM® clamping shoe | XL 100       | -           | -       | -       | 160-180 | -       | 22,5                   | 4,2                    | 4,24   | 1       | 1661002010 |
| CENTUM® clamping shoe | XL 100       | 100-280     | 140-400 | 100-160 | 200-360 | 220-400 | 22,5                   | 4,2                    | 4,40   | 1       | 1661003010 |
| CENTUM® clamping shoe | XL 100       | 280-400     | 400-900 | 160-300 | 400-600 | 450-600 | 22,5                   | 4,2                    | 4,56   | 1       | 1661004010 |
| CENTUM® clamping shoe | XL 120       | -           | -       | -       | 160-180 | -       | 22,5                   | 4,2                    | 4,78   | 1       | 1661202010 |
| CENTUM® clamping shoe | XL 120       | 100-280     | 140-400 | 100-160 | 200-360 | 220-400 | 22,5                   | 4,2                    | 4,94   | 1       | 1661203010 |
| CENTUM® clamping shoe | XL 120       | 280-400     | 400-900 | 160-300 | 400-600 | 450-600 | 22,5                   | 4,2                    | 5,08   | 1       | 1661204010 |
| CENTUM® clamping shoe | XL 200       | 280-400     | 400-900 | 160-300 | 400-600 | 450-600 | 22,5                   | 4,2                    | 7,22   | 1       | 1662004010 |

## CENTUM® Clamping claw - type AF



Clamping Claw AF



### Specification:

Application:

- flange up to inclination of 10°
- absorption of high shearing forces by clamping girder fixation at vertical girder

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

Delivery time: on request

### Technical data:

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

### Required accessory:

hexagon bolt h.-d. galv. FK 8.8 / threaded rod  
washers DIN EN ISO 7089 h.-d. galv.  
hexagon nuts h.-d. galv.

\* in conjunction with property class 8.8

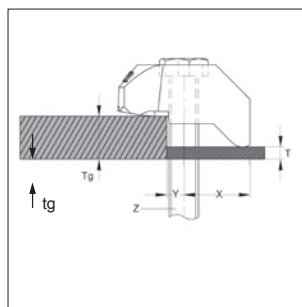
\*\* for shear force value is valid for two screws couplings

\*\*\* on request

| Type               | Dimensions |      |      | V             | Width | Needed screw | Property class screw | Tightening torque | Pulling force | max. load* |                   | Weight   | Packing | Part-No.     |
|--------------------|------------|------|------|---------------|-------|--------------|----------------------|-------------------|---------------|------------|-------------------|----------|---------|--------------|
|                    | Y          | X    | T    |               |       |              |                      |                   |               | Shear**    | Girder            |          |         |              |
|                    | [mm]       | [mm] | [mm] | [mm]          | [mm]  |              |                      | [Nm]              | [kN]          | [kN]       | coated galvanized | [kg/pc.] | [pc.]   |              |
| <b>AF M12</b>      | 29,0       | 27,0 | 17,0 | 12,5 (medium) | 39,0  | M12 x 80     | 8.8                  | 90                | 8,5           | 3,4        | 3,9               | 0,244    | 1       | 1660004012   |
| <b>AF M16</b>      | 35,0       | 37,0 | 22,0 | 15,0 (medium) | 48,5  | M16 x 80     | 8.8                  | 240               | 16,0          | 8,0        | 10,0              | 0,460    | 1       | 1660004016   |
| <b>AF M12 k***</b> | 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 |
| <b>AF M16 k***</b> | 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 14/22.

## ■ CENTUM® Washer component AF



Washer component AF

### Specification:

Application: should only be used in combination with clamping claw - type AF

Product feature: for raising clamping thickness, allows assembly at different flange thickness

Delivery time: on request

Installation advise: T = thickness of the washer component  
V = cam lift of clamping claw - type AF (see page clamping claw - type AF)  
tg = flange thickness  
Thickness of washer component is calculated with help of formula:  $T = tg - V$

### Technical Data:

Material: steel

Surface: hot-dip galvanized

| Identification | Needed screw<br>Z | Dimension |           |           | Width<br>[mm] | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No. |
|----------------|-------------------|-----------|-----------|-----------|---------------|--------------------|------------------|----------|
|                |                   | Y<br>[mm] | X<br>[mm] | T<br>[mm] |               |                    |                  |          |
| AF 12 CW       | M12               | 7         | 33        | 2         | 40            | 0,023              | 1                | 0576012  |
| AF 12 P1       | M12               | 7         | 33        | 5         | 40            | 0,062              | 1                | 0576082  |
| AF 12 P2       | M12               | 7         | 33        | 10        | 40            | 0,111              | 1                | 0576112  |
| AF 16 CW       | M16               | 8         | 40        | 2         | 50            | 0,035              | 1                | 0576016  |
| AF 16 P1       | M16               | 8         | 42        | 5         | 52            | 0,097              | 1                | 0576114  |
| AF 16 P2       | M16               | 8         | 42        | 10        | 52            | 0,172              | 1                | 0576116  |



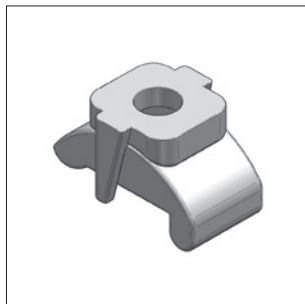
selection chart for clamping claw AF page 14/22.

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

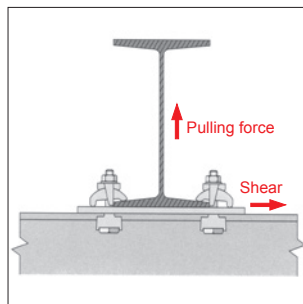
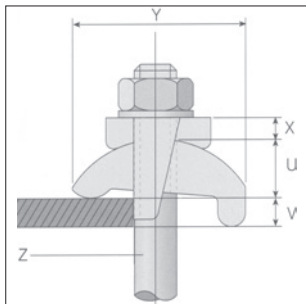
| flange thickness | M12                  |              |              |              | M16                  |              |              |              |
|------------------|----------------------|--------------|--------------|--------------|----------------------|--------------|--------------|--------------|
|                  | clamping claw Typ AF | Washer AF CW | Washer AF P1 | Washer AF P2 | clamping claw Typ AF | Washer AF CW | Washer AF P1 | Washer AF P2 |
| [mm]             | [cam height V]       | [pc.]        | [pc.]        | [pc.]        | [cam height V]       | [pc.]        | [pc.]        | [pc.]        |
| 5                | short*               | -            | -            | -            | -                    | -            | -            | -            |
| 6                | short*               | -            | -            | -            | -                    | -            | -            | -            |
| 7                | short*               | 1            | -            | -            | short*               | -            | -            | -            |
| 8                | short*               | 1            | -            | -            | short*               | -            | -            | -            |
| 9                | short*               | 2            | -            | -            | short*               | -            | -            | -            |
| 10               | short*               | -            | 1            | -            | short*               | 1            | -            | -            |
| 11               | short*               | 3            | -            | -            | short*               | 1            | -            | -            |
| 12               | short*               | 1            | 1            | -            | short*               | 2            | -            | -            |
| 13               | medium               | -            | -            | -            | short*               | -            | 1            | -            |
| 14               | medium               | 1            | -            | -            | short*               | 3            | -            | -            |
| 15               | short*               | -            | -            | 1            | medium               | -            | -            | -            |
| 16               | medium               | 2            | -            | -            | medium               | -            | -            | -            |
| 17               | medium               | -            | 1            | -            | medium               | 1            | -            | -            |
| 18               | medium               | -            | 1            | -            | short*               | -            | -            | 1            |
| 19               | medium               | 1            | 1            | -            | medium               | -            | 1            | -            |
| 20               | short*               | -            | 1            | 1            | medium               | -            | 1            | -            |
| 21               | medium               | 2            | 1            | -            | medium               | -            | 1            | -            |
| 22               | medium               | 2            | 1            | -            | medium               | 1            | 1            | -            |
| 23               | medium               | -            | -            | 1            | medium               | 1            | 1            | -            |
| 24               | medium               | 1            | -            | 1            | medium               | -            | -            | 1            |
| 25               | short*               | -            | -            | 2            | medium               | -            | -            | 1            |
| 26               | medium               | 2            | -            | 1            | medium               | -            | -            | 1            |
| 27               | medium               | -            | 1            | 1            | medium               | 1            | -            | 1            |
| 28               | medium               | -            | 1            | 1            | short*               | -            | -            | 2            |
| 29               | medium               | 1            | 1            | 1            | medium               | -            | 1            | 1            |
| 30               | short*               | -            | 1            | 2            | medium               | -            | 1            | 1            |
| 31               | medium               | 2            | 1            | 1            | medium               | -            | 1            | 1            |
| 32               | medium               | -            | -            | 2            | medium               | 1            | 1            | 1            |
| 33               | medium               | -            | -            | 2            | medium               | 1            | 1            | 1            |
| 34               | medium               | 1            | -            | 2            | medium               | -            | -            | 2            |
| 35               | short*               | -            | -            | 3            | medium               | -            | -            | 2            |

\*clamping claw AF with short cam height on request available.

## CENTUM® Clamping claw - type LR



Clamping claw LR



### Specification:

Application: - girder with parallel and up to 15° inclined flanges.  
- Horizontal connection of girder fixation at girder.

Delivery time: on request

### 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.

<sup>1)</sup> checked for dynamic loads

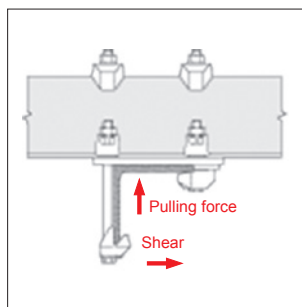
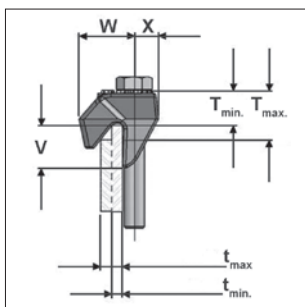
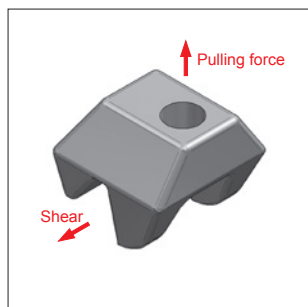
<sup>2)</sup> larger flange thickness can be clamped with washer components (P1 and P2 on request)

<sup>3)</sup> in conjunction with property class 8.8

<sup>4)</sup> for shear force value is valid for two screws couplings

| Typ                        | Dimensions |           |           | V <sup>2)</sup><br>[mm] | Width<br>[mm] | needed<br>Screw Z | Tightening<br>torque<br>[Nm] | max. load <sup>3)</sup> |                             | Weight<br>[kg/pc.] | Packing<br>[pc.] | Part-No.   |
|----------------------------|------------|-----------|-----------|-------------------------|---------------|-------------------|------------------------------|-------------------------|-----------------------------|--------------------|------------------|------------|
|                            | Y<br>[mm]  | U<br>[mm] | X<br>[mm] |                         |               |                   |                              | Pulling force<br>[kN]   | Shear <sup>4)</sup><br>[kN] |                    |                  |            |
| <b>LR M12</b>              | 56,0       | 18,5      | 7,0       | 3-12                    | 39,0          | M12               | 69                           | 4,5                     | 0,9                         | 0,172              | 1                | 1660003012 |
| <b>LR M16<sup>1)</sup></b> | 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:

### Technical data:

Material: cast iron  
Surface: hot-dip galvanized  
Safety factor: 2,0

### Required accessory:

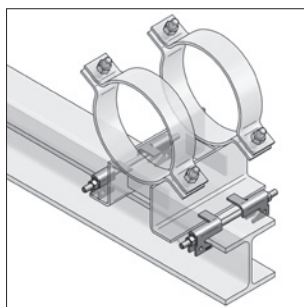
1 x hexagon bolt h.-d. galv. FK 8.8 / threaded rod  
1 x washer DIN EN ISO 7089 h.-d. galv.  
1 x hexagon nut h.-d. galv.

\* in conjunction with property class 8.8

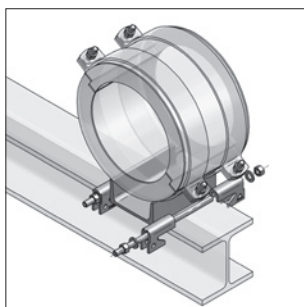
\*\* for shear force value is valid for two screws couplings

| Type          | Dimensions |      |      | Width | min.-max.<br>clamping size<br>t | min.-max.<br>projection<br>T | Tightening<br>torque | max. load      |         | Weight   | Packing | Part-No.   |
|---------------|------------|------|------|-------|---------------------------------|------------------------------|----------------------|----------------|---------|----------|---------|------------|
|               | X          | V    | W    |       |                                 |                              |                      | Pulling force* | Shear** |          |         |            |
|               | [mm]       | [mm] | [mm] | [mm]  | [mm]                            | [mm]                         | [Nm]                 | [kN]           | [kN]    | [kg/pc.] | [pc.]   |            |
| <b>CF M12</b> | 14         | 25   | 32   | 46    | 6-13                            | 21-29                        | 90                   | 8,5            | 3,9     | 0,222    | 1       | 1660002012 |
| <b>CF M16</b> | 18         | 32   | 44   | 56    | 8-16                            | 25-33                        | 240                  | 16,0           | 10,0    | 0,428    | 1       | 1660002016 |

## ■ Guiding Clamp-Set



Guiding Clamp-Set Typ A  
(assembled)



Guiding Clamp-Set Typ B  
(assembled)

### Specification:

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

Type A with lift lock for guide bearing  
Type B without lift lock for floating bearing

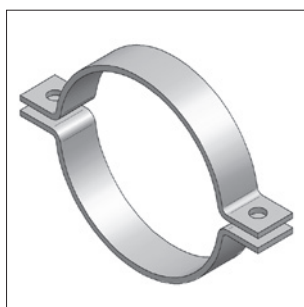
### Technical data:

Material: steel  
Material type: S235JR

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

 Assembly instructions see chapter 15

## ■ Pipe clamp Form A, DIN 3567



Pipe clamp Form A, DIN 3567

### Specification:

Closure: Hexagon nut/ closure-screw  
Model: 2-parts  
OD: 25 up to 521 mm  
Connection: without connection  
Delivery time: on request

### Technical data:

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

## ■ Pipe clamp Form C, DIN 3567



Rohrschelle Form C, DIN 3567

### Specification:

Closure: Hexagon nut/ closure screw  
Model: 2-parts  
OD: 115 up to 356 mm  
Connection: without connection  
Delivery time: on request

### Technical data:

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

## ■ Pipe clamp Form A, type Maxima / Titan HD clamp



Pipe clamp Form A  
type Maxima / Titan HD  
clamp

**Specification:**

Closure: Hexagon nut/ closure screw  
Model: 2-parts  
OD: 20 up to 368 mm  
Connection: without connection  
Delivery time: on request

**Technical data:**

Material: steel  
Material type: S235JR  
Surface: galvanized

## ■ Pipe clamp Form A, type Maxima / Titan HD clamp



Pipe clamp Form A  
type Maxima / Titan HD  
clamp

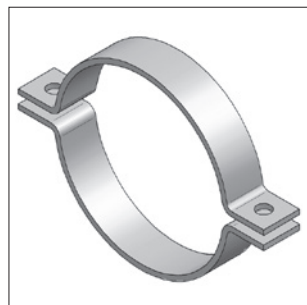

**Specification:**

Closure: Hexagon nut/ closure screw  
Model: 2-parts  
OD: 22 up to 368 mm  
Connection: without connection  
Sound insulation: according to DIN 4109  
Delivery time: on request

**Technical data:**

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

## ■ Pipe clamp Form A, type TGA



Pipe clamp Form A, type TGA

**Specification:**

Closure: Hexagon nut/ closure screw  
Model: 2-parts  
OD: 219 up to 1220 mm  
Connection: without connection  
Delivery time: on request

**Technical data:**

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

## ■ Pipe clamp Form A, type TGA



Pipe clamp Form A, type TGA

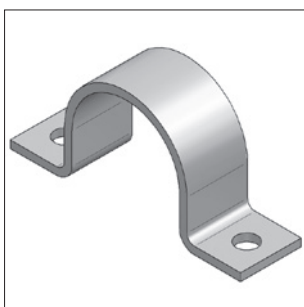

**Specification:**

Closure: Hexagon nut/ closure screw  
 Model: 2-parts  
 OD: 219 up to 1220 mm  
 Connection: without connection  
 Sound insulation: according to DIN 4109  
 Delivery time: on request

**Technical data:**

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

## ■ Stirrup clamp according to DIN 1593

Stirrup clamp according to  
DIN 1593
**Specification:**

Closure: Hexagon nut / closure screw  
 Model: one-piece  
 OD: 20 up to 219 mm  
 Connection: without connection  
 Delivery time: on request

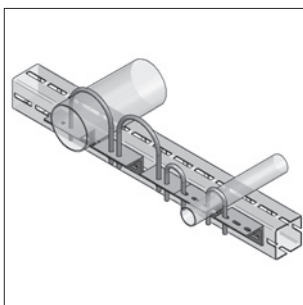
**Technical data:**

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

## ■ U-bolt pipe hanger



U-bolt pipe hanger



Pipe holder see page 14/16

**Remark:**  
 U-bolts galvanized  
 see catalogue  
 chapter 1

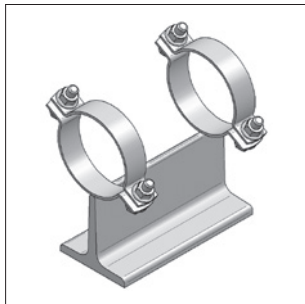
**Specification:**

OD: 60,3 up to 324 mm  
 Connection: M10, M12, M20  
 Delivery time: on request

**Technical data:**

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

## ■ Sliding support T



Sliding support T

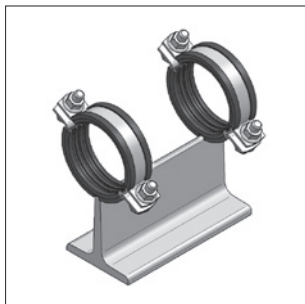
**Specification:**

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

**Technical data:**

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

## ■ Sliding support T, sound insulated



Sliding support T, sound insulated

**Specification:**

Closure: Hexagon nut / closure screw  
 Model: T-support  
 OD: 20 up to 219 mm  
 Sound insulation: according to DIN 4109

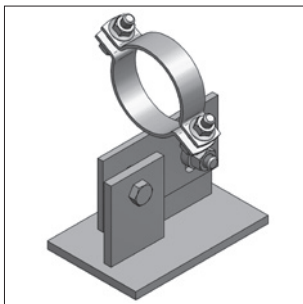
Delivery time: on request

**Technical data:**

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

Sound insulation lining: EPDM  
 (ceramic lining on request)  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 6 mm

## ■ Sliding support T 100/150, height-adjustable, with 1 pipe clamp



Sliding support T 100/150

**Specification:**

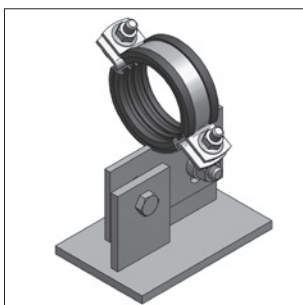
|                     |                                      |
|---------------------|--------------------------------------|
| Closure:            | Hexagon nut / closure screw          |
| Model:              | T-support                            |
| Support width:      | 100                                  |
| Support length:     | 150                                  |
| OD:                 | 20 up to 219 mm                      |
| Height, adjustable: | 100 up to 125 mm<br>125 up to 150 mm |

**Technical data:**

|                |                                  |
|----------------|----------------------------------|
| Material:      | steel                            |
| Material type: | S235JR                           |
| Surface:       | galvanized<br>hot-dip galvanized |

Delivery time: on request

## ■ Sliding support T 100/150, height-adjustable, with 1 pipe clamp, sound insulated



Sliding support T 100/150

**Specification:**

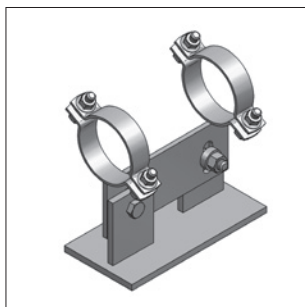
|                     |                                      |
|---------------------|--------------------------------------|
| Closure:            | Hexagon nut / closure screw          |
| Model:              | T-support                            |
| Support width:      | 100                                  |
| Support length:     | 150                                  |
| OD:                 | 20 up to 219 mm                      |
| Sound insulation:   | according to DIN 4109                |
| Height, adjustable: | 100 up to 125 mm<br>125 up to 150 mm |

**Technical data:**

|                          |                                     |
|--------------------------|-------------------------------------|
| Material:                | steel                               |
| Material type:           | S235JR                              |
| Surface:                 | galvanized,<br>hot-dip galvanized   |
| Sound insulation lining: | EPDM<br>(ceramic lining on request) |
| Temperature resistance:  | - 35 °C up to + 100 °C              |
| Insulation thickness:    | 6 mm                                |

Delivery time: on request

## ■ Sliding support T 100/200 and T 100/300, height-adjustable, with 2 pipe clamps



Sliding support T 100/200

**Specification:**

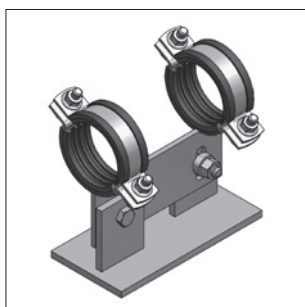
|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Closure:            | Hexagon nut / closure screw                              |
| Model:              | T-support                                                |
| Support width:      | 100                                                      |
| Support length:     | 200/300                                                  |
| OD:                 | 20 up to 219 mm                                          |
| Height, adjustable: | 100 up to 125 mm<br>125 up to 150 mm<br>150 up to 175 mm |

**Technical data:**

|                |                                  |
|----------------|----------------------------------|
| Material:      | steel                            |
| Material type: | S235JR                           |
| Surface:       | galvanized<br>hot-dip galvanized |

Delivery time: on request

## ■ Sliding support T 100/200 and T 100/300, height-adjustable, with 2 pipe clamps, sound insulated



Sliding support T 100/200

**Specification:**

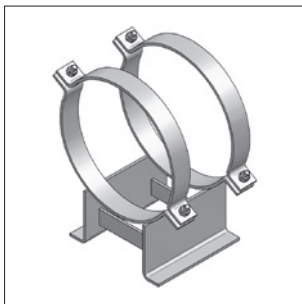
|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Closure:            | Hexagon nut / closure screw                              |
| Model:              | T-support                                                |
| Support width:      | 100                                                      |
| Support length:     | 200/300                                                  |
| OD:                 | 20 up to 219 mm                                          |
| Sound insulation:   | according to DIN 4109                                    |
| Height, adjustable: | 100 up to 125 mm<br>125 up to 150 mm<br>150 up to 175 mm |

**Technical data:**

|                          |                                     |
|--------------------------|-------------------------------------|
| Material:                | steel                               |
| Material type:           | S235JR                              |
| Surface:                 | galvanized<br>hot-dip galvanized    |
| Sound insulation lining: | EPDM<br>(ceramic lining on request) |
| Temperature resistance:  | - 35 °C up to + 100 °C              |

Delivery time: on request

## ■ Sliding sledge



Sliding sledge

**Specification:**

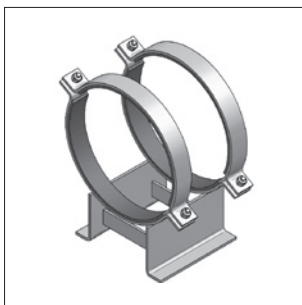
Closure: Hexagon nut / closure screw  
 Model: Double-L-support  
 OD: 219 up to 813 mm

Delivery time: on request

**Technical data:**

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

## ■ Sliding sledge, sound insulated



Sliding sledge, sound insulated


**Specification:**

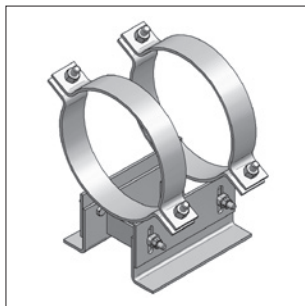
Closure: Hexagon nut / closure screw  
 Model: Double-L-support  
 OD: 219 up to 813 mm  
 Sound insulation: according to DIN 4109

Delivery time: on request

**Technical data:**

Material: steel  
 Material type: S235JR  
 Surface: galvanized  
 hot-dip galvanized  
 Sound insulation lining: EPDM  
 (ceramic lining on request)  
 Temperature resistance: - 35 °C up to + 100 °C  
 Insulation thickness: 6 mm

## ■ Sliding sledge, height adjustable



Sliding sledge, height adjustable

**Specification:**

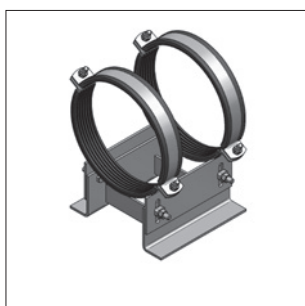
|                     |                                      |
|---------------------|--------------------------------------|
| Closure:            | Hexagon nut / closure screw          |
| Model:              | Double-L-support                     |
| OD:                 | 219 up to 813 mm                     |
| Height, adjustable: | 100 up to 150 mm<br>150 up to 200 mm |

**Technical data:**

|                |                                       |
|----------------|---------------------------------------|
| Material:      | steel                                 |
| Material type: | S235JR                                |
| Surface:       | raw, galvanized<br>hot-dip galvanized |

Delivery time: on request

## ■ Sliding sledge, height adjustable, sound insulated



Sliding sledge, sound insulated


**Specification:**

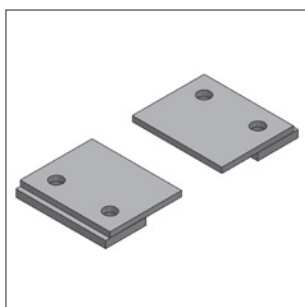
|                     |                                      |
|---------------------|--------------------------------------|
| Closure:            | Hexagon nut / closure screw          |
| Model:              | Double-L-support                     |
| OD:                 | 219 up to 813 mm                     |
| Sound insulation:   | according to DIN 4109                |
| Height, adjustable: | 100 up to 150 mm<br>150 up to 200 mm |

**Technical data:**

|                          |                                  |
|--------------------------|----------------------------------|
| Material:                | steel                            |
| Material type:           | S235JR                           |
| Surface:                 | galvanized<br>hot-dip galvanized |
| Sound insulation lining: | EPDM (ceramic lining on request) |
| Temperature resistance:  | - 35 °C up to + 100 °C           |
| Insulation thickness:    | 6 mm                             |

Delivery time: on request

## 14 ■ Fixation plate for Sliding sledge

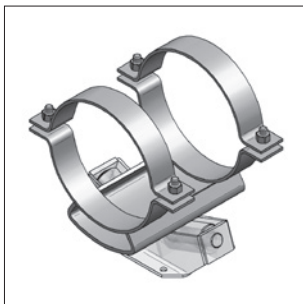


Fixation plate for Sliding sledge

**Technical data:**

|                |                                       |
|----------------|---------------------------------------|
| Material:      | steel                                 |
| Material type: | S235JR                                |
| Surface:       | raw, galvanized<br>hot-dip galvanized |
| Delivery time: | on request                            |

## ■ Insulation-saddle for roller-bearing



Insulation-saddle for roller-bearing

### Specification:

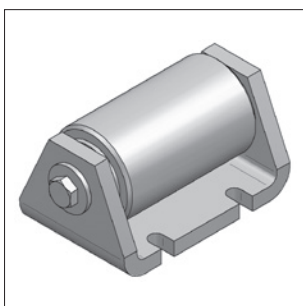
Closure: Hexagon nut / closure screw  
OD: 219 up to 813 mm

Delivery time: on request

### Technical data:

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

## ■ Single-roller-bearing



Single-roller-bearing

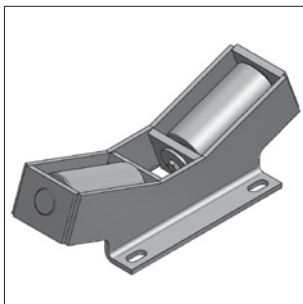
### Specification:

Delivery time: on request

### Technical data:

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

## ■ Double-roller-bearing, axial

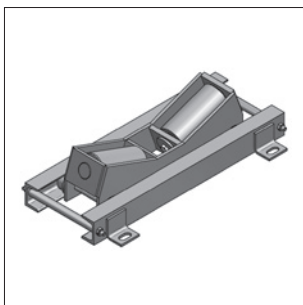


Double-roller-bearing, axial

### Technical data:

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

## ■ Double-roller-bearing, radial-axial

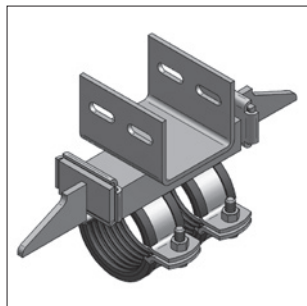


Double-roller-bearing  
radial-axial

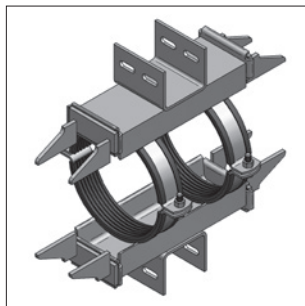
### Technical data:

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

## ■ Fixpoint with CENTUM® Massive connector



Fixpoint type A with CENTUM®  
Massive connector



Fixpoint type B with CENTUM®  
Massive connector



### Specification:

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

**Sound insulation:** according to DIN 4109

**Accessory:** T-lock head, toothed, M12x40

### Technical data:

**Material:** Steel

**Material type:** S235JR

**Surface:** galvanized

**Pressure piece:** raw

**Sound insulation lining:** EPDM/ Silicon

**Temperature resistance:** -35°C up to +100°C/ -60°C bis +250°C

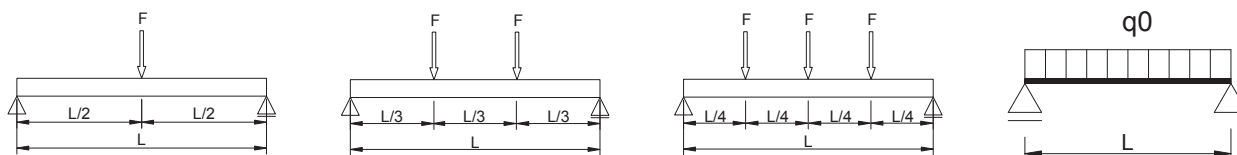
Remark: for further informations regarding dimensions, loads and assembly please contact our application engineering.

# Load values CENTUM® profile rails XL 100 / XL 120

|                 | XL 100 <sup>1)</sup> |                  |                  |                    | XL 120 <sup>2)</sup> |                  |                  |                    |
|-----------------|----------------------|------------------|------------------|--------------------|----------------------|------------------|------------------|--------------------|
| bearing spacing | single load 1xF1     | double load 2xF2 | three loads 3xF3 | distributed load q | single load 1xF1     | double load 2xF2 | three loads 3xF3 | distributed load q |
|                 | fbv                  | fbv              |                  |                    | fbv                  | fbv              | fbv              | fbv                |
| [mm]            | [kN]                 | [kN]             | [kN]             | [kN/m]             | [kN]                 | [kN]             | [kN]             | [kN/m]             |
| 500             | 44,88                | 33,66            | 22,44            | 162,54             | 63,16                | 47,37            | 31,58            | 217,40             |
| 750             | 29,91                | 22,43            | 14,96            | 79,74              | 42,09                | 31,57            | 21,05            | 112,22             |
| 1000            | 22,41                | 16,81            | 11,21            | 44,82              | 31,54                | 23,66            | 15,77            | 63,07              |
| 1250            | 17,91                | 13,44            | 8,96             | 28,66              | 25,21                | 18,91            | 12,61            | 40,33              |
| 1500            | 14,91                | 11,18            | 7,46             | 19,88              | 20,98                | 15,73            | 10,49            | 27,97              |
| 1750            | 12,76                | 9,57             | 6,38             | 14,58              | 17,95                | 13,47            | 8,98             | 20,52              |
| 2000            | 11,15                | 8,36             | 5,58             | 11,15              | 15,68                | 11,76            | 7,84             | 15,68              |
| 2250            | 9,89                 | 7,42             | 4,95             | 8,79               | 13,91                | 10,44            | 6,96             | 12,37              |
| 2500            | 8,88                 | 6,66             | 4,44             | 7,11               | 12,49                | 9,37             | 6,25             | 10,00              |
| 2750            | 8,05                 | 6,04             | 4,03             | 5,86               | 11,33                | 8,50             | 5,67             | 8,24               |
| 3000            | 7,36                 | 5,08             | 3,64             | 4,62               | 10,36                | 7,77             | 5,18             | 6,91               |
| 3250            | 6,78                 | 4,31             | 3,09             | 3,61               | 9,53                 | 7,15             | 4,77             | 5,87               |
| 3500            | 6,27                 | 3,69             | 2,65             | 2,88               | 8,82                 | 6,62             | 4,41             | 5,04               |
| 3750            | 5,44                 | 3,20             | 2,29             | 2,32               | 8,21                 | 6,16             | 4,11             | 4,38               |
| 4000            | 4,75                 | 2,79             | 2,00             | 1,90               | 7,66                 | 5,57             | 3,83             | 3,80               |
| 4250            | 4,17                 | 2,45             | 1,76             | 1,57               | 7,18                 | 4,90             | 3,52             | 3,15               |
| 4500            | 3,68                 | 2,16             | 1,55             | 1,31               | 6,76                 | 4,34             | 3,12             | 2,63               |
| 4750            | 3,27                 | 1,92             | 1,38             | 1,10               | 6,37                 | 3,87             | 2,78             | 2,22               |
| 5000            | 2,91                 | 1,71             | 1,23             | 0,94               | 5,89                 | 3,46             | 2,48             | 1,89               |
| 5250            | 2,61                 | 1,53             | 1,10             | 0,80               | 5,29                 | 3,11             | 2,23             | 1,62               |
| 5500            | 2,34                 | 1,37             | 0,99             | 0,68               | 4,77                 | 2,80             | 2,01             | 1,39               |
| 5750            | 2,10                 | 1,24             | 0,89             | 0,59               | 4,31                 | 2,53             | 1,82             | 1,20               |
| 6000            | 1,89                 | 1,11             | 0,80             | 0,51               | 3,90                 | 2,29             | 1,65             | 1,04               |
| 6250            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 6500            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 6750            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 7000            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 7250            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 7500            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 7750            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |
| 8000            | -                    | -                | -                | -                  | -                    | -                | -                | -                  |

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

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



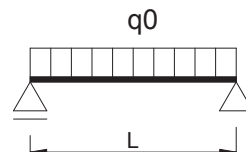
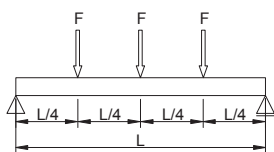
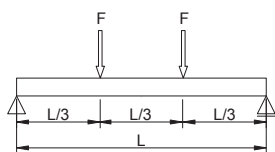
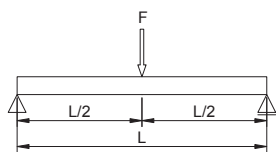
# ■ Load values CENTUM® profile rails XL 120s / XL 200

|                 | XL 120s <sup>2)</sup> |                  |                  |                    | XL 200 <sup>1)</sup> |                  |                  |                    |
|-----------------|-----------------------|------------------|------------------|--------------------|----------------------|------------------|------------------|--------------------|
| bearing spacing | single load 1xF1      | double load 2xF2 | three loads 3xF3 | distributed load q | single load 1xF1     | double load 2xF2 | three loads 3xF3 | distributed load q |
|                 | fbv                   | fbv              | fbv              | fbv                | fsv                  | fbv              | fsv              | fbv                |
| [mm]            | [kN]                  | [kN]             | [kN]             | [kN/m]             | [kN]                 | [kN]             | [kN]             | [kN/m]             |
| 500             | 75,80                 | 56,85            | 37,90            | 268,32             | 179,33               | 129,69           | 86,46            | 518,76             |
| 750             | 50,51                 | 37,88            | 25,26            | 134,68             | 119,51               | 89,63            | 59,76            | 318,69             |
| 1000            | 37,85                 | 28,39            | 18,93            | 75,69              | 89,59                | 67,19            | 44,80            | 179,18             |
| 1250            | 30,25                 | 22,69            | 15,13            | 48,39              | 71,63                | 53,72            | 35,82            | 114,60             |
| 1500            | 25,17                 | 18,88            | 12,59            | 33,56              | 59,64                | 44,73            | 29,82            | 79,52              |
| 1750            | 21,54                 | 16,16            | 10,77            | 24,62              | 51,08                | 38,31            | 25,54            | 58,37              |
| 2000            | 18,82                 | 14,11            | 9,41             | 18,82              | 44,65                | 33,49            | 22,33            | 44,65              |
| 2250            | 16,69                 | 12,52            | 8,35             | 14,84              | 39,64                | 29,73            | 19,82            | 35,24              |
| 2500            | 14,99                 | 11,24            | 7,50             | 11,99              | 35,63                | 26,72            | 17,82            | 28,50              |
| 2750            | 13,59                 | 10,20            | 6,80             | 9,89               | 32,34                | 24,26            | 16,17            | 23,52              |
| 3000            | 12,43                 | 9,32             | 6,22             | 8,29               | 29,60                | 22,20            | 14,80            | 19,73              |
| 3250            | 11,44                 | 8,58             | 5,72             | 7,04               | 27,27                | 20,46            | 13,64            | 16,79              |
| 3500            | 10,58                 | 7,94             | 5,29             | 6,05               | 25,28                | 18,96            | 12,64            | 14,45              |
| 3750            | 9,84                  | 7,38             | 4,92             | 5,25               | 23,54                | 17,66            | 11,77            | 12,56              |
| 4000            | 9,19                  | 6,68             | 4,60             | 4,56               | 22,03                | 16,52            | 11,02            | 11,02              |
| 4250            | 8,62                  | 5,88             | 4,22             | 3,78               | 20,68                | 15,51            | 10,34            | 9,73               |
| 4500            | 8,10                  | 5,21             | 3,74             | 3,16               | 19,48                | 14,61            | 9,74             | 8,66               |
| 4750            | 7,64                  | 4,64             | 3,33             | 2,66               | 18,41                | 13,81            | 9,21             | 7,75               |
| 5000            | 7,07                  | 4,15             | 2,98             | 2,26               | 17,44                | 13,08            | 8,72             | 6,98               |
| 5250            | 6,34                  | 3,73             | 2,67             | 1,94               | 16,56                | 12,42            | 8,28             | 6,31               |
| 5500            | 5,72                  | 3,36             | 2,41             | 1,67               | 15,76                | 11,82            | 7,88             | 5,73               |
| 5750            | 5,16                  | 3,03             | 2,18             | 1,44               | 15,03                | 10,82            | 7,52             | 5,13               |
| 6000            | 4,68                  | 2,75             | 1,97             | 1,25               | 14,35                | 9,88             | 7,09             | 4,49               |
| 6250            | -                     | -                | -                | -                  | 13,73                | 9,05             | 6,50             | 3,95               |
| 6500            | -                     | -                | -                | -                  | 13,15                | 8,32             | 5,97             | 3,49               |
| 6750            | -                     | -                | -                | -                  | 12,61                | 7,66             | 5,50             | 3,10               |
| 7000            | -                     | -                | -                | -                  | 12,04                | 7,07             | 5,07             | 2,76               |
| 7250            | -                     | -                | -                | -                  | 11,14                | 6,54             | 4,69             | 2,46               |
| 7500            | -                     | -                | -                | -                  | 10,32                | 6,06             | 4,35             | 2,20               |
| 7750            | -                     | -                | -                | -                  | 9,57                 | 5,62             | 4,03             | 1,98               |
| 8000            | -                     | -                | -                | -                  | 8,89                 | 5,22             | 3,75             | 1,78               |

14

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

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



## ■ Technical data for planning and calculation



The following data inform you about practical planning, construction and static calculation.

Our application engineering dept. will be at your command with the latest calculations programs and the, only for our customers created software, MEFA static.

Our scope of service includes creating of detailed technical certificates as well as a competent service on site.

Please contact our application engineering dept.:

Phone +49 7944 64-0  
Fax +49 7944 64-38  
technik@mefa.de

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## ■ Weight- and pipe schedule for medium-weight tubes

Medium-weight tubes according to DIN EN 10255 (DIN 2440)

Heat insulation: density 120 kg/m<sup>3</sup>

| DN  | connecting width<br>of the fittings<br>[mm] | OD<br>[mm] | Wall<br>thickness<br>s<br>[mm] | Weight in kg/m |            |                                     |                                      | Pipe dimension with insulation                         |                                 |      |
|-----|---------------------------------------------|------------|--------------------------------|----------------|------------|-------------------------------------|--------------------------------------|--------------------------------------------------------|---------------------------------|------|
|     |                                             |            |                                | empty          | with water | with water<br>and 50%<br>insulation | with water<br>and 100%<br>insulation | Insulation<br>thickness in<br>mm at 100%<br>insulation | OD in mm at an<br>insulation of |      |
|     |                                             |            |                                |                |            |                                     |                                      |                                                        | 50%                             | 100% |
| 8   | 1/4"                                        | 13,5       | 2,3                            | 0,64           | 0,71       | 1,39                                | 1,90                                 | 20                                                     | 40                              | 60   |
| 10  | 3/8"                                        | 17,2       | 2,3                            | 0,84           | 0,98       | 1,74                                | 2,26                                 | 20                                                     | 40                              | 60   |
| 15  | 1/2"                                        | 21,3       | 2,6                            | 1,21           | 1,42       | 2,26                                | 2,80                                 | 20                                                     | 40                              | 60   |
| 20  | 3/4"                                        | 26,9       | 2,6                            | 1,56           | 1,95       | 2,91                                | 3,47                                 | 20                                                     | 50                              | 70   |
| 25  | 1"                                          | 33,7       | 3,2                            | 2,41           | 3,02       | 4,41                                | 5,37                                 | 30                                                     | 60                              | 90   |
| 32  | 1 1/4"                                      | 42,4       | 3,2                            | 3,10           | 4,15       | 5,74                                | 6,75                                 | 30                                                     | 70                              | 100  |
| 40  | 1 1/2"                                      | 48,3       | 3,2                            | 3,56           | 4,98       | 7,03                                | 8,54                                 | 40                                                     | 90                              | 130  |
| 50  | 2"                                          | 60,3       | 3,6                            | 5,03           | 7,31       | 10,03                               | 12,16                                | 50                                                     | 110                             | 160  |
| 65  | 2 1/2"                                      | 76,1       | 3,6                            | 6,42           | 10,24      | 13,80                               | 16,72                                | 60                                                     | 140                             | 200  |
| 80  | 3"                                          | 88,9       | 4,0                            | 8,36           | 13,60      | 18,47                               | 23,01                                | 80                                                     | 170                             | 250  |
| 100 | 4"                                          | 114,3      | 4,5                            | 12,20          | 20,89      | 27,70                               | 34,41                                | 100                                                    | 210                             | 310  |
| 125 | 5"                                          | 139,7      | 5,0                            | 16,60          | 29,40      | 37,13                               | 44,32                                | 100                                                    | 240                             | 340  |
| 150 | 6"                                          | 165,1      | 5,0                            | 19,80          | 38,13      | 46,78                               | 54,44                                | 100                                                    | 270                             | 370  |

- weights can differ

- Please note pipe manufacturer's specifications

## ■ Weight- and pipe schedule for welded steel pipes

Welded steel pipes according to DIN EN 10220 (DIN 2458) - light version

Heat insulation: density 120 kg/m<sup>3</sup>

| DN  | OD [mm] | Wall thickness s [mm] | Weight in kg/m |            |                               |                                | Pipe dimension with insulation                |                              |      |
|-----|---------|-----------------------|----------------|------------|-------------------------------|--------------------------------|-----------------------------------------------|------------------------------|------|
|     |         |                       | empty          | with water | with water and 50% insulation | with water and 100% insulation | Insulation thickness in mm at 100% insulation | OD in mm at an insulation of |      |
|     |         |                       |                |            |                               |                                |                                               | 50%                          | 100% |
| 8   | 13,5    | 1,80                  | 0,52           | 0,60       | 1,28                          | 1,78                           | 20                                            | 30                           | 50   |
|     | 16,0    | 1,80                  | 0,63           | 0,75       | 1,48                          | 2,00                           | 20                                            | 40                           | 60   |
| 10  | 17,2    | 1,80                  | 0,68           | 0,83       | 1,59                          | 2,11                           | 20                                            | 40                           | 60   |
| 15  | 21,3    | 2,00                  | 0,95           | 1,19       | 2,03                          | 2,57                           | 20                                            | 40                           | 60   |
| 20  | 26,9    | 2,00                  | 1,23           | 1,64       | 2,60                          | 3,16                           | 20                                            | 50                           | 70   |
|     | 31,8    | 2,00                  | 1,47           | 2,08       | 3,42                          | 4,37                           | 30                                            | 60                           | 90   |
| 25  | 33,7    | 2,00                  | 1,56           | 2,26       | 3,64                          | 4,61                           | 30                                            | 60                           | 90   |
| 32  | 42,4    | 2,30                  | 2,27           | 3,40       | 4,98                          | 6,00                           | 30                                            | 70                           | 100  |
|     | 44,5    | 2,30                  | 2,39           | 3,64       | 5,60                          | 7,08                           | 40                                            | 90                           | 130  |
| 40  | 48,3    | 2,30                  | 2,61           | 4,11       | 6,16                          | 7,67                           | 40                                            | 90                           | 130  |
|     | 51,0    | 2,30                  | 2,76           | 4,45       | 6,57                          | 8,10                           | 40                                            | 90                           | 130  |
| 50  | 57,0    | 2,30                  | 3,10           | 5,26       | 7,89                          | 10,00                          | 50                                            | 110                          | 160  |
|     | 60,3    | 2,30                  | 3,29           | 5,73       | 8,45                          | 10,58                          | 50                                            | 110                          | 160  |
|     | 63,5    | 2,30                  | 3,47           | 6,20       | 9,00                          | 11,17                          | 50                                            | 110                          | 160  |
|     | 70,0    | 2,60                  | 4,32           | 7,62       | 11,01                         | 13,85                          | 60                                            | 130                          | 190  |
| 65  | 76,1    | 2,60                  | 4,71           | 8,66       | 12,22                         | 15,14                          | 60                                            | 140                          | 200  |
| 80  | 88,9    | 2,90                  | 6,15           | 11,57      | 16,45                         | 20,98                          | 80                                            | 170                          | 250  |
|     | 101,6   | 2,90                  | 7,06           | 14,27      | 20,62                         | 27,09                          | 100                                           | 200                          | 300  |
|     | 108,0   | 2,90                  | 7,52           | 15,72      | 22,30                         | 28,89                          | 100                                           | 210                          | 310  |
| 100 | 114,3   | 3,20                  | 8,77           | 17,91      | 24,72                         | 31,43                          | 100                                           | 210                          | 310  |
|     | 127,0   | 3,20                  | 9,77           | 21,19      | 28,46                         | 35,41                          | 100                                           | 230                          | 330  |
|     | 133,0   | 3,60                  | 11,49          | 23,92      | 31,40                         | 38,46                          | 100                                           | 230                          | 330  |
| 125 | 139,7   | 3,60                  | 12,08          | 25,87      | 33,60                         | 40,78                          | 100                                           | 240                          | 340  |
|     | 152,4   | 4,00                  | 14,64          | 31,02      | 39,20                         | 46,63                          | 100                                           | 260                          | 360  |
|     | 159,0   | 4,00                  | 15,29          | 33,20      | 41,62                         | 49,17                          | 100                                           | 260                          | 360  |
| 150 | 168,3   | 4,00                  | 16,21          | 36,39      | 45,15                         | 52,87                          | 100                                           | 270                          | 370  |
|     | 177,8   | 4,50                  | 19,23          | 41,61      | 50,71                         | 58,62                          | 100                                           | 280                          | 380  |
|     | 193,7   | 4,50                  | 21,00          | 47,79      | 57,47                         | 65,67                          | 100                                           | 300                          | 400  |
| 200 | 219,1   | 4,50                  | 23,82          | 58,48      | 69,08                         | 77,76                          | 100                                           | 320                          | 420  |
| 225 | 244,5   | 5,00                  | 29,53          | 72,72      | 84,23                         | 93,39                          | 100                                           | 340                          | 440  |
| 250 | 273,0   | 5,00                  | 33,05          | 87,37      | 99,91                         | 109,61                         | 100                                           | 370                          | 470  |
| 300 | 323,9   | 5,60                  | 43,96          | 120,76     | 135,13                        | 145,79                         | 100                                           | 425                          | 525  |
| 350 | 355,6   | 5,60                  | 48,34          | 141,49     | 157,02                        | 168,27                         | 100                                           | 460                          | 560  |
| 400 | 406,4   | 6,30                  | 62,16          | 183,96     | 201,32                        | 213,53                         | 100                                           | 510                          | 610  |
| 450 | 457,0   | 6,30                  | 70,02          | 225,13     | 244,32                        | 257,49                         | 100                                           | 560                          | 660  |
| 500 | 508,0   | 6,30                  | 77,95          | 270,70     | 293,06                        | 308,91                         | 110                                           | 620                          | 730  |
| 550 | 559,0   | 6,30                  | 85,87          | 320,35     | 346,09                        | 364,88                         | 120                                           | 680                          | 800  |
| 600 | 610,0   | 6,30                  | 93,80          | 374,09     | 401,86                        | 421,80                         | 120                                           | 730                          | 850  |
| 650 | 660,0   | 7,10                  | 114,32         | 441,88     | 471,64                        | 492,71                         | 120                                           | 780                          | 900  |

- weights can differ

- Please note pipe manufacturer's specifications

## ■ Weight- and pipe schedule for seamless steel pipes

Seamless steel pipes according to DIN EN 10220 (DIN 2448) - heavy version

Heat insulation: density 120 kg/m<sup>3</sup>

| DN  | OD [mm] | Wall thickness s [mm] | Weight in kg/m |            |                               |                                | Pipe dimension with insulation                |                              |      |
|-----|---------|-----------------------|----------------|------------|-------------------------------|--------------------------------|-----------------------------------------------|------------------------------|------|
|     |         |                       | empty          | with water | with water and 50% insulation | with water and 100% insulation | Insulation thickness in mm at 100% insulation | OD in mm at an insulation of |      |
|     |         |                       |                |            |                               |                                |                                               | 50%                          | 100% |
| 8   | 13,5    | 1,80                  | 0,52           | 0,60       | 1,28                          | 1,78                           | 20                                            | 30                           | 50   |
|     | 16,0    | 1,80                  | 0,63           | 0,75       | 1,48                          | 2,00                           | 20                                            | 40                           | 60   |
| 10  | 17,2    | 1,80                  | 0,68           | 0,83       | 1,59                          | 2,11                           | 20                                            | 40                           | 60   |
| 15  | 21,3    | 2,00                  | 0,95           | 1,19       | 2,03                          | 2,57                           | 20                                            | 40                           | 60   |
| 20  | 26,9    | 2,30                  | 1,40           | 1,79       | 2,75                          | 3,31                           | 20                                            | 50                           | 70   |
|     | 31,8    | 2,60                  | 1,87           | 2,43       | 3,77                          | 4,72                           | 30                                            | 60                           | 90   |
| 25  | 33,7    | 2,60                  | 1,99           | 2,63       | 4,02                          | 4,98                           | 30                                            | 60                           | 90   |
| 32  | 42,4    | 2,60                  | 2,55           | 3,64       | 5,23                          | 6,24                           | 30                                            | 70                           | 100  |
|     | 44,5    | 2,60                  | 2,69           | 3,90       | 5,86                          | 7,34                           | 40                                            | 90                           | 130  |
| 40  | 48,3    | 2,60                  | 2,93           | 4,39       | 6,44                          | 7,95                           | 40                                            | 90                           | 130  |
|     | 51,0    | 2,60                  | 3,10           | 4,75       | 6,87                          | 8,40                           | 40                                            | 90                           | 130  |
| 50  | 57,0    | 2,90                  | 3,87           | 5,93       | 8,56                          | 10,67                          | 50                                            | 110                          | 160  |
|     | 60,3    | 2,90                  | 4,11           | 6,44       | 9,16                          | 11,30                          | 50                                            | 110                          | 160  |
|     | 63,5    | 2,90                  | 4,33           | 6,95       | 9,75                          | 11,92                          | 50                                            | 110                          | 160  |
|     | 70,0    | 2,90                  | 4,80           | 8,04       | 11,42                         | 14,27                          | 60                                            | 130                          | 190  |
| 65  | 76,1    | 2,90                  | 5,24           | 9,12       | 12,68                         | 15,59                          | 60                                            | 140                          | 200  |
| 80  | 88,9    | 3,20                  | 6,76           | 12,11      | 16,98                         | 21,51                          | 80                                            | 170                          | 250  |
|     | 101,6   | 3,60                  | 8,70           | 15,70      | 22,05                         | 28,52                          | 100                                           | 200                          | 300  |
|     | 108,0   | 3,60                  | 9,27           | 17,25      | 23,83                         | 30,42                          | 100                                           | 210                          | 310  |
| 100 | 114,3   | 3,60                  | 9,83           | 18,84      | 25,65                         | 32,35                          | 100                                           | 210                          | 310  |
|     | 127,0   | 4,00                  | 12,13          | 23,26      | 30,52                         | 37,47                          | 100                                           | 230                          | 330  |
|     | 133,0   | 4,00                  | 12,73          | 25,00      | 32,48                         | 39,54                          | 100                                           | 230                          | 330  |
| 125 | 139,7   | 4,00                  | 13,39          | 27,01      | 34,73                         | 41,92                          | 100                                           | 240                          | 340  |
|     | 152,4   | 4,50                  | 16,41          | 32,56      | 40,75                         | 48,17                          | 100                                           | 260                          | 360  |
|     | 159,0   | 4,50                  | 17,15          | 34,82      | 43,24                         | 50,79                          | 100                                           | 260                          | 360  |
| 150 | 168,3   | 4,50                  | 18,18          | 38,11      | 46,87                         | 54,59                          | 100                                           | 270                          | 370  |
|     | 177,8   | 5,00                  | 21,31          | 43,42      | 52,52                         | 60,43                          | 100                                           | 280                          | 380  |
|     | 193,7   | 5,60                  | 25,98          | 52,14      | 61,81                         | 70,02                          | 100                                           | 300                          | 400  |
| 200 | 219,1   | 6,30                  | 33,06          | 66,55      | 77,15                         | 85,83                          | 100                                           | 320                          | 420  |
| 225 | 244,5   | 6,30                  | 37,01          | 79,25      | 90,76                         | 99,92                          | 100                                           | 340                          | 440  |
| 250 | 273,0   | 6,30                  | 41,44          | 94,69      | 107,23                        | 116,93                         | 100                                           | 370                          | 470  |
| 300 | 323,9   | 7,10                  | 55,47          | 130,80     | 145,18                        | 155,84                         | 100                                           | 425                          | 525  |
| 350 | 355,6   | 8,00                  | 68,58          | 159,16     | 174,68                        | 185,94                         | 100                                           | 460                          | 560  |
| 400 | 406,4   | 8,80                  | 86,29          | 205,01     | 222,37                        | 234,58                         | 100                                           | 510                          | 610  |
| 450 | 457,2   | 10,00                 | 110,29         | 260,41     | 279,60                        | 292,77                         | 100                                           | 560                          | 660  |
| 500 | 508,0   | 11,00                 | 134,82         | 320,33     | 342,69                        | 358,54                         | 110                                           | 620                          | 730  |
| 550 | 559,0   | 12,50                 | 168,47         | 392,43     | 418,17                        | 436,95                         | 120                                           | 680                          | 800  |
| 600 | 610,0   | 12,50                 | 184,19         | 452,97     | 480,74                        | 500,68                         | 120                                           | 730                          | 850  |
| 650 | 660,0   | 14,20                 | 226,15         | 539,46     | 569,23                        | 590,30                         | 120                                           | 780                          | 900  |

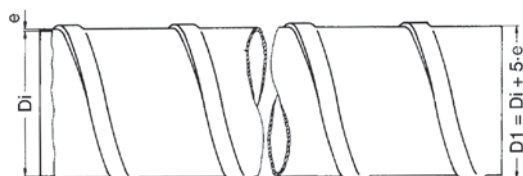
- weights can differ

- Please note pipe manufacturer's specifications

## ■ General pipe weights, general

| DN<br>Inside- Ø Di                                                | Wall thickness<br>e<br>[mm] | Pipe-<br>weight<br>[kg/m] |
|-------------------------------------------------------------------|-----------------------------|---------------------------|
| <b>Ventilation pipelines<br/>acc. to DIN EN 12237 (DIN 24145)</b> |                             |                           |
| 71                                                                | 0,4                         | 0,70                      |
| 80                                                                | 0,4                         | 0,79                      |
| 90                                                                | 0,4                         | 0,88                      |
| 100                                                               | 0,6                         | 1,47                      |
| 112                                                               | 0,6                         | 1,65                      |
| 125                                                               | 0,6                         | 1,84                      |
| 140                                                               | 0,6                         | 2,06                      |
| 150                                                               | 0,6                         | 2,21                      |
| 160                                                               | 0,6                         | 2,36                      |
| 180                                                               | 0,6                         | 2,65                      |
| 200                                                               | 0,6                         | 2,95                      |
| 224                                                               | 0,6                         | 3,31                      |
| 250                                                               | 0,6                         | 3,69                      |
| 280                                                               | 0,6                         | 4,13                      |
| 300                                                               | 0,8                         | 5,90                      |
| 315                                                               | 0,8                         | 6,20                      |
| 355                                                               | 0,8                         | 6,99                      |
| 400                                                               | 0,8                         | 7,88                      |
| 450                                                               | 0,8                         | 8,86                      |
| 500                                                               | 0,8                         | 9,85                      |
| 560                                                               | 0,8                         | 11,03                     |
| 600                                                               | 1,0                         | 14,77                     |
| 630                                                               | 1,0                         | 15,51                     |
| 710                                                               | 1,0                         | 17,49                     |
| 800                                                               | 1,0                         | 19,70                     |
| 900                                                               | 1,0                         | 22,17                     |
| 1000                                                              | 1,2                         | 29,56                     |
| 1120                                                              | 1,2                         | 33,11                     |
| 1250                                                              | 1,2                         | 36,96                     |
| 1400                                                              | 1,5                         | 51,73                     |
| 1600                                                              | 1,5                         | 59,13                     |
| 1800                                                              | 1,5                         | 66,53                     |
| 2000                                                              | 1,5                         | 73,93                     |

| OD<br>[mm]                                             | Wall-<br>thickness<br>[mm] | Pipe weight<br>empty<br>[kg/m] | Pipe weight<br>water-<br>filled<br>[kg/m] | insulated<br>[kg/m] | Fastening<br>distances<br>[m] |
|--------------------------------------------------------|----------------------------|--------------------------------|-------------------------------------------|---------------------|-------------------------------|
| <b>Type copper pipe acc. to DIN EN 1057 (DIN 1786)</b> |                            |                                |                                           |                     |                               |
| 8,0                                                    | 1,0                        | 0,20                           | 0,22                                      | 0,40                | 0,60                          |
| 10,0                                                   | 1,0                        | 0,25                           | 0,30                                      | 0,50                | 1,00                          |
| 12,0                                                   | 1,0                        | 0,31                           | 0,39                                      | 0,60                | 1,25                          |
| 15,0                                                   | 1,0                        | 0,39                           | 0,52                                      | 0,70                | 1,25                          |
| 18,0                                                   | 1,0                        | 0,48                           | 0,68                                      | 0,90                | 1,50                          |
| 22,0                                                   | 1,0                        | 0,59                           | 0,90                                      | 1,20                | 2,00                          |
| 28,0                                                   | 1,5                        | 1,11                           | 1,60                                      | 2,20                | 2,25                          |
| 35,0                                                   | 1,5                        | 1,41                           | 2,21                                      | 2,90                | 2,75                          |
| 42,0                                                   | 1,5                        | 1,70                           | 2,90                                      | 3,90                | 3,00                          |
| 54,0                                                   | 2,0                        | 2,91                           | 4,87                                      | 6,50                | 3,50                          |
| 64,0                                                   | 2,0                        | 3,47                           | 6,29                                      | 8,70                | 4,00                          |
| 76,1                                                   | 2,0                        | 4,14                           | 8,23                                      | 11,3                | 4,25                          |
| 88,9                                                   | 2,0                        | 4,86                           | 10,52                                     | 14,5                | 4,75                          |
| 108,0                                                  | 2,5                        | 7,37                           | 15,71                                     | 21,8                | 5,00                          |
| 133,0                                                  | 3,0                        | 10,90                          | 23,57                                     | 30,7                | 5,00                          |
| 159,0                                                  | 3,0                        | 13,09                          | 31,47                                     | 37,3                | 5,00                          |



- weights can differ  
- Please note pipe manufacturer's specifications

## ■ General pipe weights

| DN                                                                             | OD   | Wall-<br>thickness<br>[mm] | Pipe weight     |                       | Fastening distances<br>[m]                                                                                                                                        |       |
|--------------------------------------------------------------------------------|------|----------------------------|-----------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|                                                                                | [mm] |                            | empty<br>[kg/m] | waterfilled<br>[kg/m] |                                                                                                                                                                   |       |
| Type drainpipe cast iron - acc. to DIN EN 877 (DIN 19522)                      |      |                            |                 |                       |                                                                                                                                                                   |       |
| 40                                                                             | 48   | 3,0                        | 3,10            | 4,50                  | approx. 1,50<br>According to the<br>statements of the<br>manufacturer, every<br>pipe should be<br>supported twice at<br>least; additionally<br>every shaped piece |       |
| 50                                                                             | 58   | 3,5                        | 4,30            | 6,40                  |                                                                                                                                                                   |       |
| 70                                                                             | 78   | 3,5                        | 5,90            | 9,90                  |                                                                                                                                                                   |       |
| 80                                                                             | 83   | 3,5                        | 6,30            | 10,90                 |                                                                                                                                                                   |       |
| 100                                                                            | 110  | 3,5                        | 8,50            | 16,80                 |                                                                                                                                                                   |       |
| 125                                                                            | 135  | 4,0                        | 11,90           | 24,60                 |                                                                                                                                                                   |       |
| 150                                                                            | 160  | 4,0                        | 14,20           | 32,40                 |                                                                                                                                                                   |       |
| 200                                                                            | 210  | 5,0                        | 23,40           | 54,80                 |                                                                                                                                                                   |       |
| 250                                                                            | 274  | 5,5                        | 33,60           | 88,00                 |                                                                                                                                                                   |       |
| 300                                                                            | 326  | 6,0                        | 43,70           | 121,20                |                                                                                                                                                                   |       |
| Type drainpipe PE (Geberit) - acc. to DIN EN 12056 (DIN 1986)                  |      |                            |                 |                       |                                                                                                                                                                   |       |
| 30                                                                             | 32   | 3,0                        | 0,26            | 0,79                  | 0,8                                                                                                                                                               | ≤ 20° |
| 40                                                                             | 40   | 3,0                        | 0,33            | 1,23                  | 0,8                                                                                                                                                               |       |
| 50                                                                             | 50   | 3,0                        | 0,42            | 1,94                  | 0,8                                                                                                                                                               |       |
| 56                                                                             | 56   | 3,0                        | 0,47            | 2,43                  | 0,8                                                                                                                                                               |       |
| 70                                                                             | 75   | 3,0                        | 0,65            | 4,38                  | 0,8                                                                                                                                                               |       |
| 90                                                                             | 90   | 3,5                        | 0,91            | 6,32                  | 0,9                                                                                                                                                               |       |
| 100                                                                            | 110  | 4,3                        | 1,35            | 9,42                  | 1,1                                                                                                                                                               |       |
| 125                                                                            | 125  | 4,9                        | 1,75            | 12,20                 | 1,3                                                                                                                                                               |       |
| 150                                                                            | 160  | 6,2                        | 2,84            | 19,95                 | 1,6                                                                                                                                                               |       |
| 200                                                                            | 200  | 6,2                        | 3,58            | 31,22                 | 2,0                                                                                                                                                               |       |
| 250                                                                            | 250  | 7,8                        | 5,63            | 48,78                 | 2,0                                                                                                                                                               |       |
| 300                                                                            | 315  | 9,8                        | 8,92            | 77,45                 | 2,0                                                                                                                                                               |       |
| Typ drainpipe PVC, hard - acc. to DIN 8062 (line 3)                            |      |                            |                 |                       |                                                                                                                                                                   |       |
| 40                                                                             | 50   | 1,8                        | 0,40            | 2,09                  | 0,8                                                                                                                                                               | ≤ 40° |
| 50                                                                             | 63   | 1,9                        | 0,53            | 3,29                  | 1,0                                                                                                                                                               |       |
| 70                                                                             | 75   | 2,2                        | 0,73            | 4,65                  | 1,2                                                                                                                                                               |       |
| 80                                                                             | 90   | 2,7                        | 1,08            | 6,70                  | 1,35                                                                                                                                                              |       |
| 100                                                                            | 110  | 3,2                        | 1,57            | 10,00                 | 1,5                                                                                                                                                               |       |
| 125                                                                            | 125  | 3,7                        | 2,06            | 12,92                 | 1,6                                                                                                                                                               |       |
| 150                                                                            | 160  | 4,7                        | 3,35            | 21,16                 | 1,8                                                                                                                                                               |       |
| PP-pipe (pressure stage PN10 - SDR11) - acc. to DIN EN ISO 15874 (DIN 8077/78) |      |                            |                 |                       |                                                                                                                                                                   |       |
| 15                                                                             | 20   | 1,9                        | 0,11            | 0,32                  | 0,6                                                                                                                                                               | ≤ 20° |
| 20                                                                             | 25   | 2,3                        | 0,17            | 0,50                  | 0,75                                                                                                                                                              |       |
| 25                                                                             | 32   | 2,9                        | 0,27            | 0,80                  | 0,9                                                                                                                                                               |       |
| 32                                                                             | 40   | 3,7                        | 0,41            | 1,25                  | 1,0                                                                                                                                                               |       |
| 40                                                                             | 50   | 4,6                        | 0,64            | 1,95                  | 1,2                                                                                                                                                               |       |
| 50                                                                             | 63   | 5,8                        | 1,01            | 3,09                  | 1,4                                                                                                                                                               |       |
| -                                                                              | 75   | 6,8                        | 1,42            | 4,36                  | 1,5                                                                                                                                                               |       |
| 65                                                                             | 90   | 8,2                        | 2,03            | 6,28                  | 1,6                                                                                                                                                               |       |
| 80                                                                             | 110  | 10,0                       | 3,01            | 9,37                  | 1,8                                                                                                                                                               |       |
| 100                                                                            | 125  | 11,4                       | 3,90            | 12,10                 | 1,9                                                                                                                                                               |       |

- weights can differ

- Please note pipe manufacturer's specifications

## ■ General pipe weights

| DN                                                                                   | OD   | Wall-<br>thickness<br>[mm] | Pipe weight     |                       | Fastening distances<br>[m] |
|--------------------------------------------------------------------------------------|------|----------------------------|-----------------|-----------------------|----------------------------|
|                                                                                      | [mm] |                            | empty<br>[kg/m] | waterfilled<br>[kg/m] |                            |
| C-steel system pipe (type Mapress) - steel, galvanized (in- and outside)             |      |                            |                 |                       |                            |
| 10                                                                                   | 12   | 1,2                        | 0,32            | 0,39                  | 1,25                       |
| 12                                                                                   | 15   | 1,2                        | 0,41            | 0,53                  | 1,25                       |
| 15                                                                                   | 18   | 1,2                        | 0,50            | 0,69                  | 1,50                       |
| 20                                                                                   | 22   | 1,5                        | 0,76            | 1,04                  | 2,00                       |
| 25                                                                                   | 28   | 1,5                        | 0,98            | 1,47                  | 2,25                       |
| 32                                                                                   | 35   | 1,5                        | 1,24            | 2,04                  | 2,75                       |
| 40                                                                                   | 42   | 1,5                        | 1,50            | 2,69                  | 3,00                       |
| 50                                                                                   | 54   | 1,5                        | 1,94            | 3,99                  | 3,50                       |
| 65                                                                                   | 76,1 | 2,0                        | 3,66            | 7,74                  | 4,25                       |
| 80                                                                                   | 88,9 | 2,0                        | 4,29            | 9,95                  | 4,75                       |
| 100                                                                                  | 108  | 2,0                        | 5,23            | 13,72                 | 5,00                       |
| Stainless steel system pipe (type Mapress) - grade 1.4401                            |      |                            |                 |                       |                            |
| 10                                                                                   | 12   | 1,0                        | 0,28            | 0,36                  | 1,25                       |
| 12                                                                                   | 15   | 1,0                        | 0,35            | 0,48                  | 1,25                       |
| 15                                                                                   | 18   | 1,0                        | 0,43            | 0,63                  | 1,50                       |
| 20                                                                                   | 22   | 1,2                        | 0,63            | 0,93                  | 2,00                       |
| 25                                                                                   | 28   | 1,2                        | 0,81            | 1,32                  | 2,25                       |
| 32                                                                                   | 35   | 1,5                        | 1,26            | 2,06                  | 2,75                       |
| 40                                                                                   | 42   | 1,5                        | 1,52            | 2,72                  | 3,00                       |
| 50                                                                                   | 54   | 1,5                        | 1,97            | 4,02                  | 3,50                       |
| 65                                                                                   | 76,1 | 2,0                        | 3,72            | 7,80                  | 4,25                       |
| 80                                                                                   | 88,9 | 2,0                        | 4,36            | 10,02                 | 4,75                       |
| 100                                                                                  | 108  | 2,0                        | 5,32            | 13,81                 | 5,00                       |
| Composite system pipe (type Mepla) - Alu/PE (expansion coefficient a = 0,026mm/(mK)) |      |                            |                 |                       |                            |
| 12                                                                                   | 16   | 2,25                       | 0,14            | 0,24                  | 1,50                       |
| 15                                                                                   | 20   | 2,5                        | 0,19            | 0,36                  | 1,50                       |
| 20                                                                                   | 26   | 3,0                        | 0,30            | 0,61                  | 1,50                       |
| 25                                                                                   | 32   | 3,0                        | 0,42            | 0,95                  | 2,00                       |
| 32                                                                                   | 40   | 3,5                        | 0,60            | 1,45                  | 2,00                       |
| 40                                                                                   | 50   | 4,0                        | 0,84            | 2,23                  | 2,50                       |
| 50                                                                                   | 63   | 4,5                        | 1,10            | 3,40                  | 2,50                       |
| 65                                                                                   | 75   | 4,7                        | 1,45            | 4,83                  | 2,50                       |

- weights can differ
- Please note pipe manufacturer's specifications

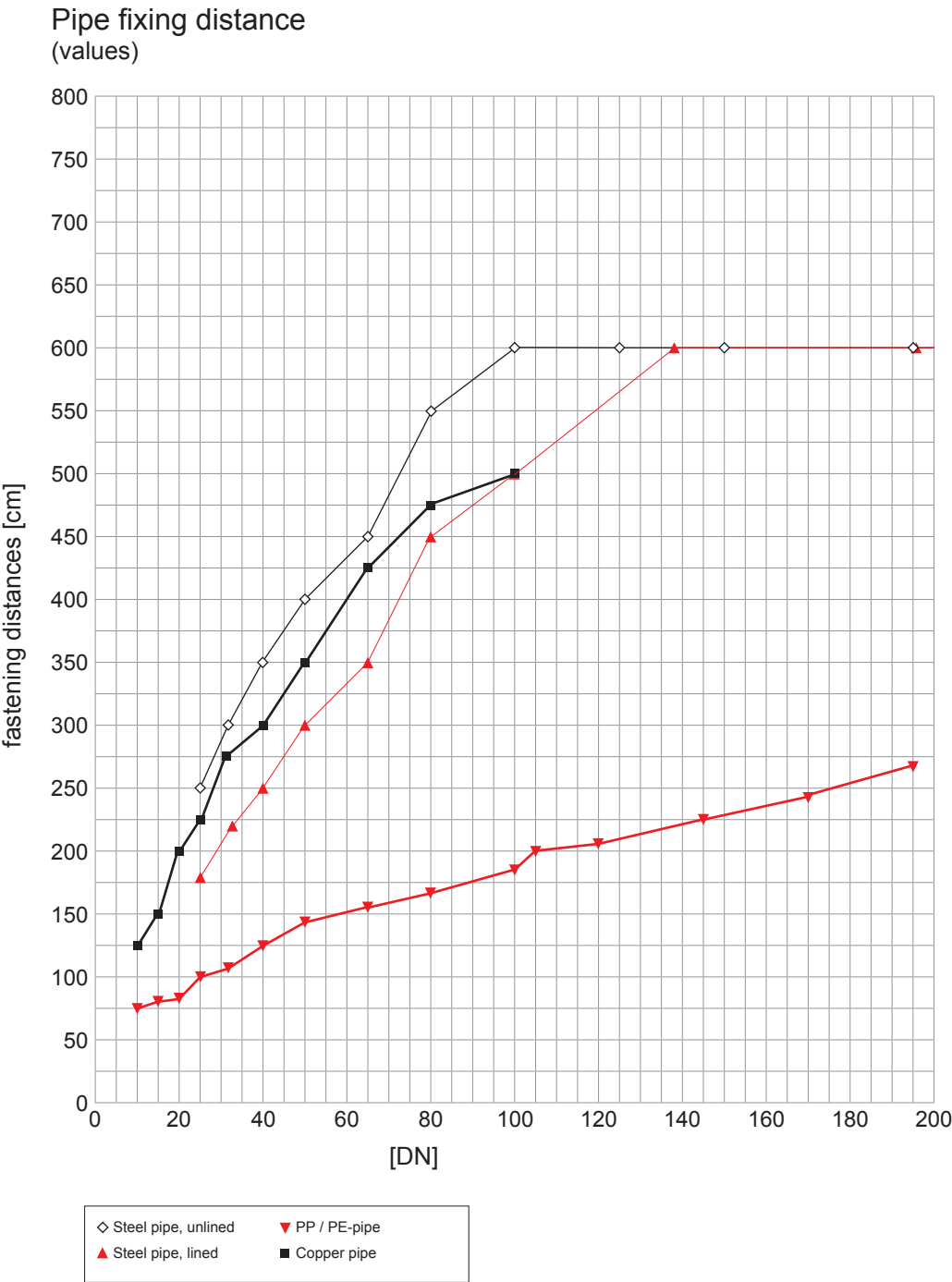
# Fastening distance

Preface:

Pipe supports of pipes, pipeline elements or e.g. fittings have to be mounted according to constructional facts, service conditions and environmental effects.

Distance of pipe clamps depending on weights and wall thickness of the conduit pipe, as well as of flow medium density and operating temperature.

Stated fastening distances are only recommended values and should be estimated for every static case of operation.



- Please note pipe manufacturer's specifications

## Pipe expansion

When calculating, due to thermal fluctuation, elongations of pipes, following information should be noticed:

1. Mounting- or rather installation temperature (e.g. environmental effects)
2. Temperature of medium in pipeline

### Determination of elongation

The elongation can be determined by:

$\Delta L$  = elongations mm

$L$  = length of calculated pipe m

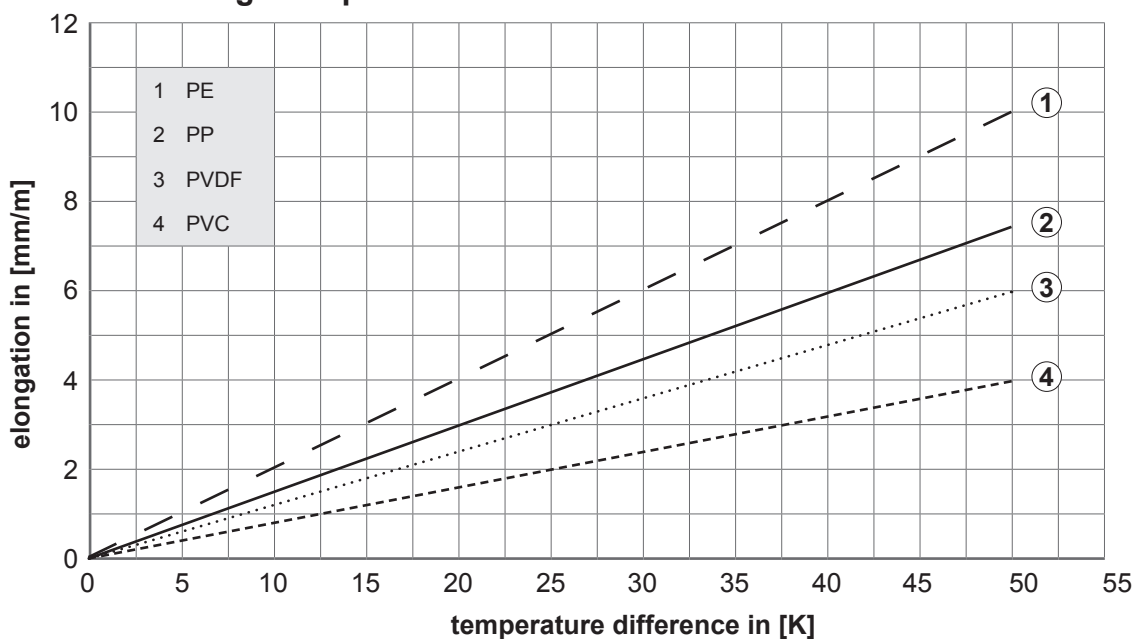
$\Delta T$  = temperature difference between medium- and installation temperature K

$\alpha$  = coefficient of linear expansion mm/m \* K

Formula:

$$\Delta L = L \times \Delta T \times \alpha$$

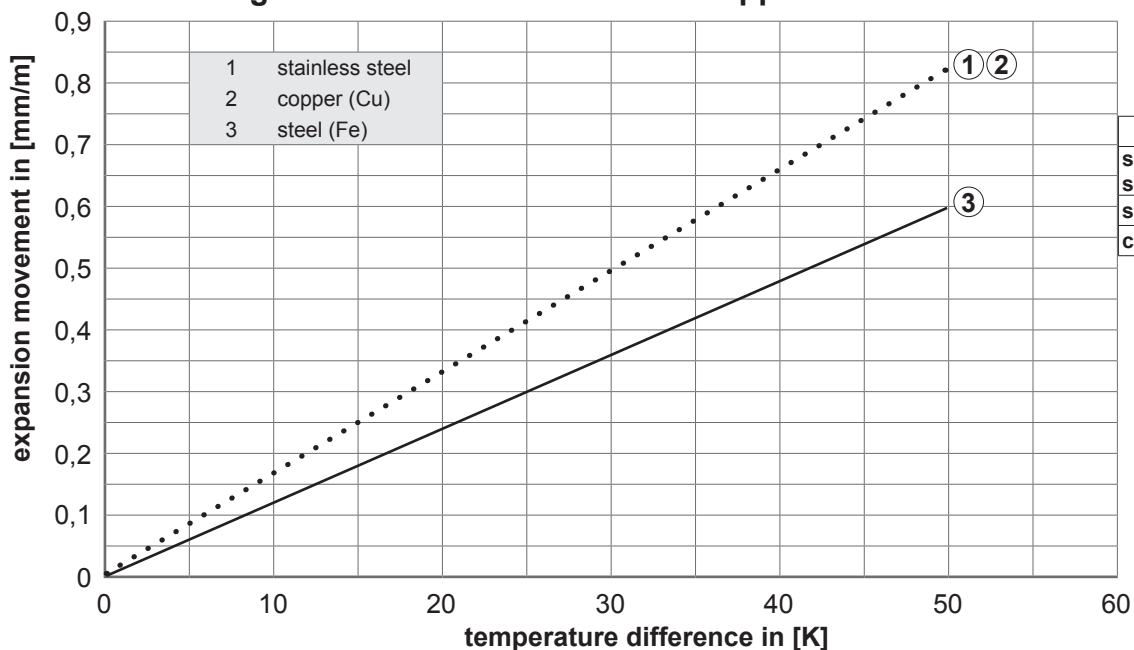
### Strain diagram - plastics



tool specific expansion coefficients (rec. values)

|      | mm/mK  |
|------|--------|
| PVC  | 0,0800 |
| PE   | 0,2000 |
| PP   | 0,1500 |
| PVDF | 0,1200 |

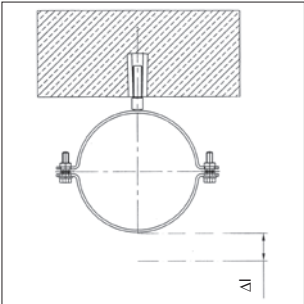
### Strain diagram - stainless steel / steel / copper



tool specific expansion coefficients

|                 | mm/mK  |
|-----------------|--------|
| stainless steel | 0,0165 |
| steel (Fe)      | 0,0120 |
| copper (Cu)     | 0,0166 |

■ Maximum fire load for pipe clamps Omnia MB



Δl = elongation



| Identification             | Diameter range<br>[mm] |
|----------------------------|------------------------|
| Pipe clamp Omnia MB, lined | 15 - 125               |

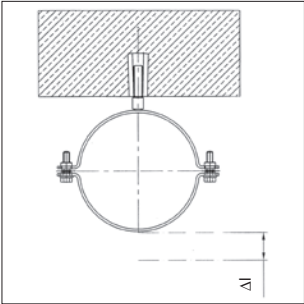
Summary: Admissible fire loads (RAL GZ 656)

Admissible loads  $F_{zul, Rd}$  and elongation  $\Delta l$  for Omnia MB pipe clamp (ceiling-mounted)

| Diameter range Pipe<br>[mm] | fire resistance period |                    |                       |                    |                       |                    |
|-----------------------------|------------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
|                             | 30 min                 |                    | 60 min                |                    | 90 min                |                    |
|                             | $F_{zul, Rd}$<br>[kN]  | $\Delta l$<br>[mm] | $F_{zul, Rd}$<br>[kN] | $\Delta l$<br>[mm] | $F_{zul, Rd}$<br>[kN] | $\Delta l$<br>[mm] |
| 15 bis 35                   | 0,20                   | 30                 | 0,11                  | 30                 | 0,08                  | 30                 |
| 38 bis 83                   | 0,35                   | 27                 | 0,23                  | 46                 | 0,17                  | 46                 |
| 84 bis 125                  | 0,62                   | 47                 | 0,36                  | 47                 | 0,25                  | 47                 |

$F_{zul, Rd}$  = max. admissible central tensile load on Omnia MB pipe clamp  
 $\Delta l$  = vertical elongation of Omnia MB pipe clamp

■ Maximum fire load for pipe clamps Titan HD



Δl = elongation



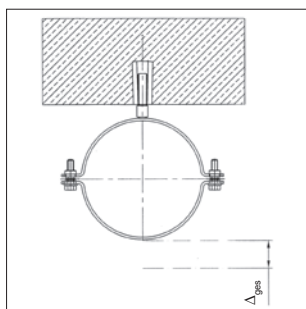
| Identification               | Diameter range<br>[mm] |
|------------------------------|------------------------|
| Pipe clamp Titan HD, lined   | 64 - 368               |
| Pipe clamp Titan HD, unlined | 64 - 368               |

Summary: Admissible fire loads (RAL GZ 656)

Admissible loads  $F_{zul, Rd}$  and elongation  $\Delta l$  for Omnia MB pipe clamp (ceiling-mounted)

| Diameter range pipe<br>[mm] | fire resistance period |                    |                       |                    |                       |                    |
|-----------------------------|------------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
|                             | 30 min                 |                    | 60 min                |                    | 90 min                |                    |
|                             | $F_{zul, Rd}$<br>[kN]  | $\Delta l$<br>[mm] | $F_{zul, Rd}$<br>[kN] | $\Delta l$<br>[mm] | $F_{zul, Rd}$<br>[kN] | $\Delta l$<br>[mm] |
| 64 bis 168                  | 2,49                   | 45                 | 1,57                  | 88                 | 1,16                  | 88                 |
| 177 bis 368                 | 3,01                   | 40                 | 1,88                  | 75                 | 1,39                  | 75                 |

# Maximum fire load for pipe clamps Maxima PSM



| Identification                 | Diameter range [mm] |
|--------------------------------|---------------------|
| Pipe clamp Maxima PSM, lined   | 15 - 275            |
| Pipe clamp Maxima PSM, unlined | 15 - 275            |

$\Delta_{ges}$  = elongation of system (pipe clamp and hanger)

## Summary: Admissible loads (as per MPA test report 901 1118 000 /La/PK)

Table 1 Admissible loads  $F_{zul}$  and elongation  $\Delta l$  for Maxima PSM pipe clamp (ceiling-mounted)

| Diameter range pipe [mm] | fire resistance period 30 min |                   |
|--------------------------|-------------------------------|-------------------|
|                          | $F_{zul}$ [kN]                | $\Delta l_s$ [mm] |
| 15 bis 64                | 1,25                          | <b>50</b>         |
| 65 bis 117               | 1,25                          | <b>50</b>         |
| 120 bis 223              | 2,60                          | <b>55</b>         |
| 225 bis 275              | 2,60                          | <b>70</b>         |

Table 4 Admissible loads  $F_{zul}$  and elongation  $\Delta l$  for Maxima PSM pipe clamp (suspended with threaded rod)

| Diameter range pipe [mm] | thread rod-length [mm] | fire resistance period 30 min |                   |
|--------------------------|------------------------|-------------------------------|-------------------|
|                          |                        | $F_{zul}$ [kN]                | $\Delta l_s$ [mm] |
| 65 bis 117               | $\leq 500$             | 1,25                          | <b>57</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>64</b>         |
| 120 bis 223              | $\leq 500$             | 1,80                          | <b>62</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>69</b>         |
| 225 bis 275              | $\leq 500$             | 1,80                          | <b>77</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>84</b>         |

Table 2 Admissible loads  $F_{zul}$  and elongation  $\Delta l$  for Maxima PSM pipe clamp (suspended with threaded rod)

| Diameter range pipe [mm] | thread rod-length [mm] | Feuerwiderstandsdauer 30 min |                   |
|--------------------------|------------------------|------------------------------|-------------------|
|                          |                        | $F_{zul}$ [kN]               | $\Delta l_s$ [mm] |
| 15 bis 64                | $\leq 500$             | 0,80                         | <b>57</b>         |
|                          | $> 500/ \leq 1000$     |                              | <b>64</b>         |

Table 5 Admissible loads  $F_{zul}$  and elongation  $\Delta l$  for Maxima PSM pipe clamp (suspended with threaded rod)

| Diameter range pipe [mm] | thread rod-length [mm] | fire resistance period 30 min |                   |
|--------------------------|------------------------|-------------------------------|-------------------|
|                          |                        | $F_{zul}$ [kN]                | $\Delta l_s$ [mm] |
| 102 bis 117              | $\leq 500$             | 1,25                          | <b>57</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>64</b>         |
| 120 bis 223              | $\leq 500$             | 2,60                          | <b>62</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>69</b>         |
| 225 bis 275              | $\leq 500$             | 2,60                          | <b>77</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>84</b>         |

Table 3 Admissible loads  $F_{zul}$  and elongation  $\Delta l$  for Maxima PSM pipe clamp (suspended with threaded rod)

| Diameter range pipe [mm] | thread rod-length [mm] | fire resistance period 30 min |                   |
|--------------------------|------------------------|-------------------------------|-------------------|
|                          |                        | $F_{zul}$ [kN]                | $\Delta l_s$ [mm] |
| 15 bis 64                | $\leq 500$             | 1,20                          | <b>57</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>64</b>         |
| 65 bis 117               | $\leq 500$             | 1,20                          | <b>57</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>64</b>         |
| 120 bis 223              | $\leq 500$             | 1,20                          | <b>62</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>69</b>         |
| 225 bis 275              | $\leq 500$             | 1,20                          | <b>77</b>         |
|                          | $> 500/ \leq 1000$     |                               | <b>84</b>         |

$F_{zul}$  = max. admissible central tensile load on Maxima PSM pipe clamp

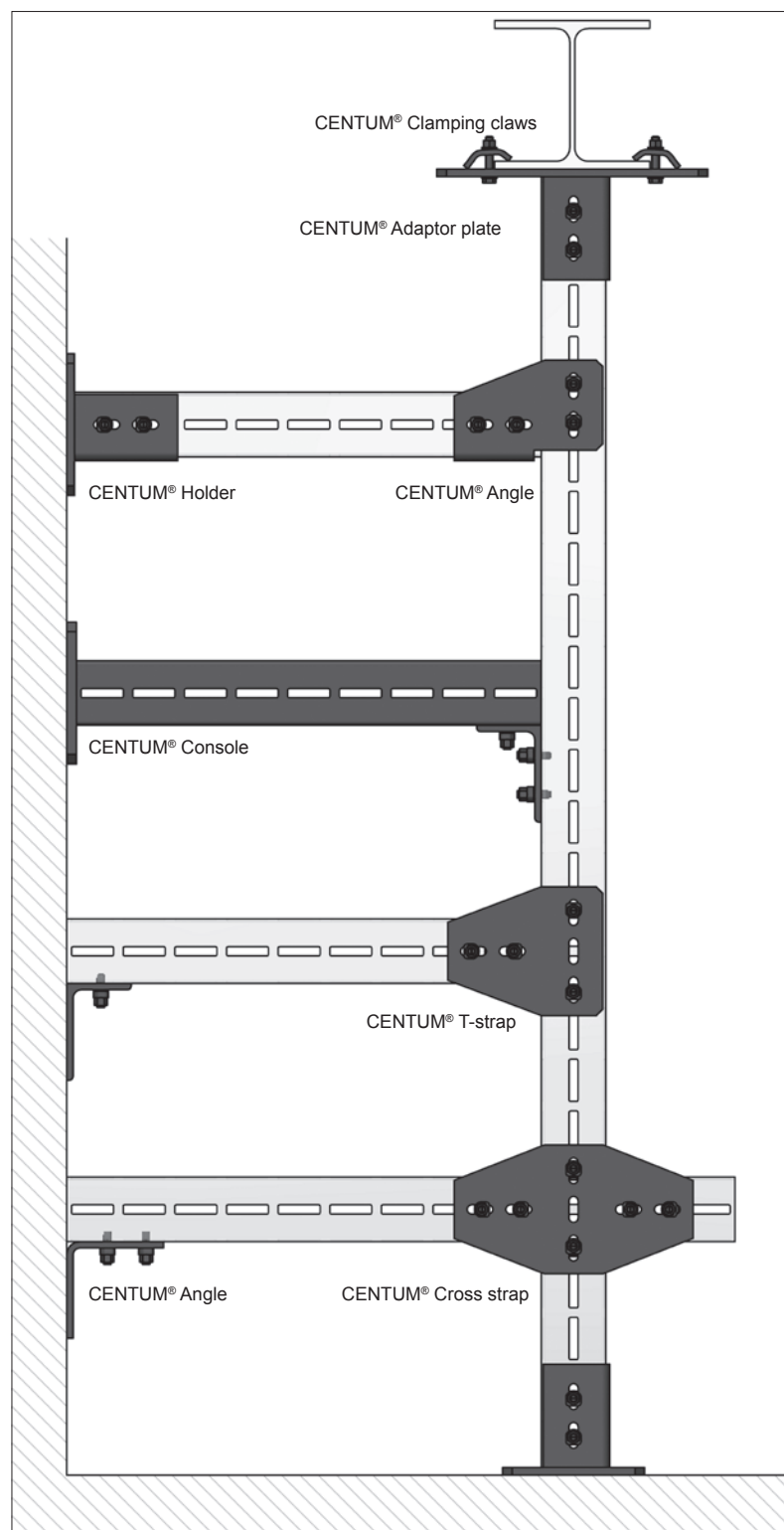
$\Delta l_s$  = vertical elongation of Maxima PSM pipe clamp

$\Delta l_{ges}$  = vertical elongation of Maxima PSM pipe clamp incl. Suspension

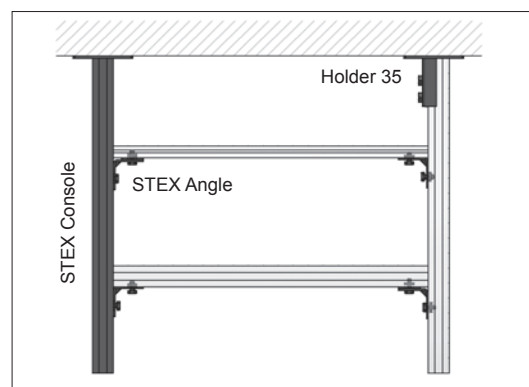
## Construction examples for pipe installations

With application of MEFA profile rail system pipe bridges, frame- and supporting structures can be designed easily and in a short time on site. Due to the flexibility of the system all tolerances on site can be balanced. All units are galvanized or hot-dip galvanized.

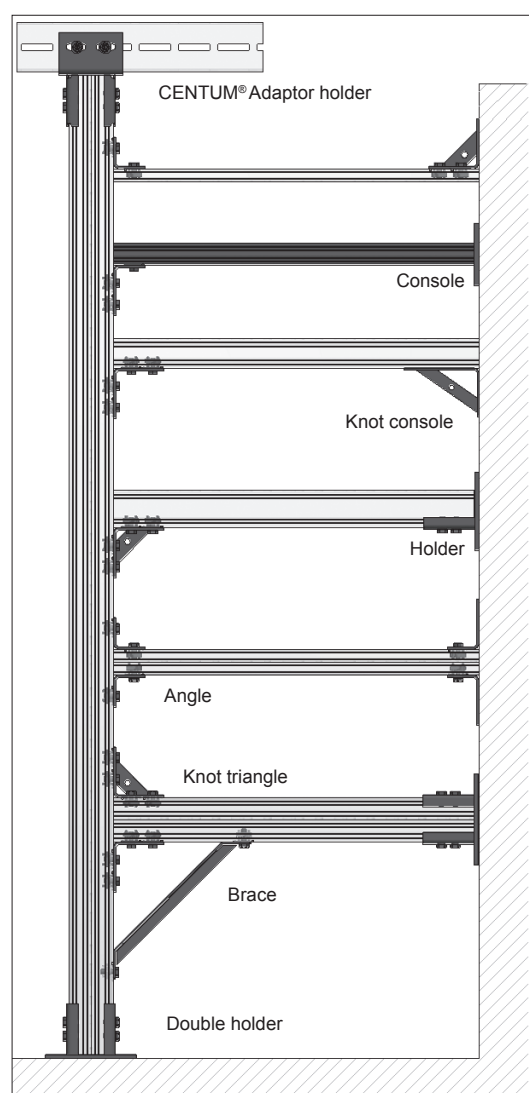
If there are any problems, MEFA guarantees to find the best solution to resolve and present suitable suggestions for occurred problem.



Construction example CENTUM



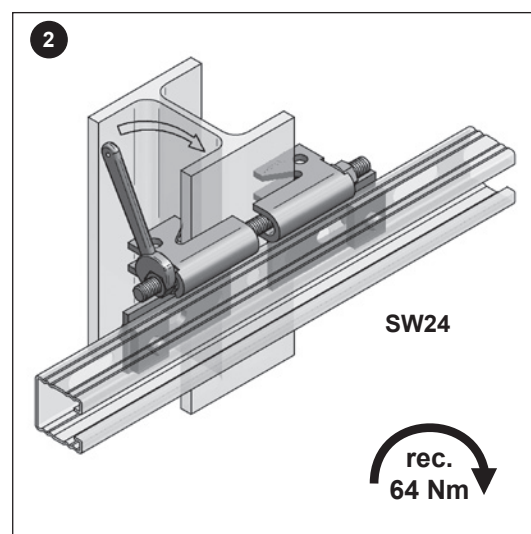
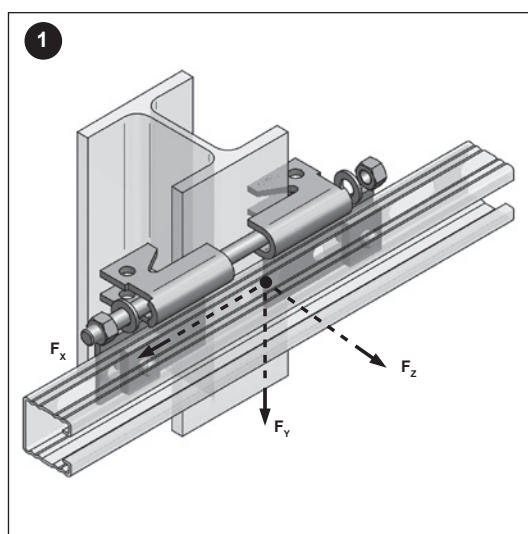
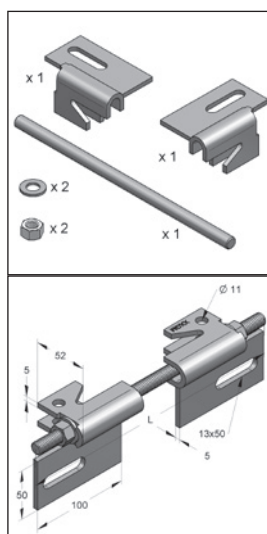
Construction example STEX 35



Construction example STEX 45

## ■ Assembly instructions Girder connection vertical

Resilient, vertical clamping connection of c-profile rails to steel girder



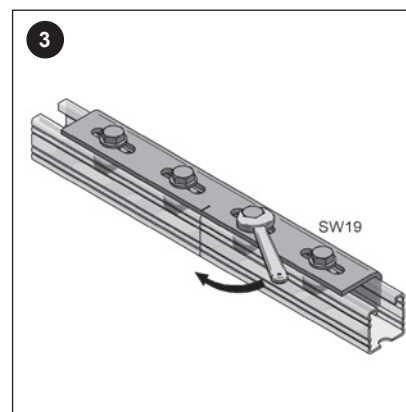
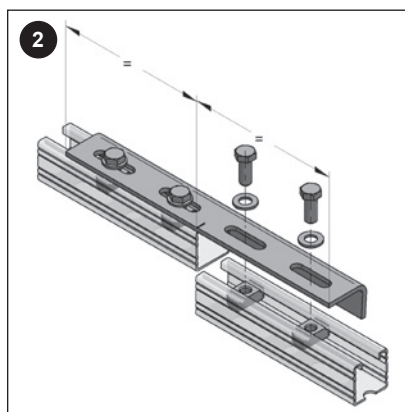
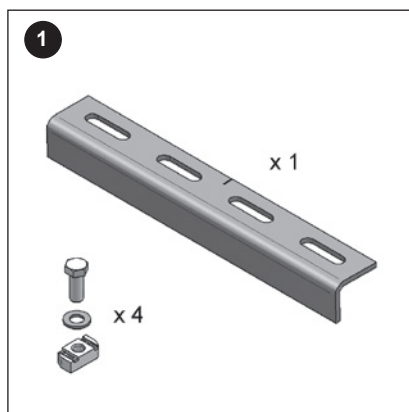
| Identification                        | max. load |       |       | for girder |         | Weight   | Part-No. |
|---------------------------------------|-----------|-------|-------|------------|---------|----------|----------|
|                                       | $F_x$     | $F_y$ | $F_z$ | HEA        | HEB     |          |          |
|                                       | [kN]      | [kN]  | [kN]  |            |         | [kg/pc.] |          |
| Girder connection vertical type D III | 4,0       | 4,0   | 4,0   | 100-220    | 100-200 | 1,10     | 08146103 |
| Girder connection vertical type D IV  | 4,0       | 4,0   | 4,0   | 280-360    | 160-300 | 1,99     | 08146104 |

### Important:

Please note recommended torques!

## ■ Assembly instructions connector 45

Element to connect profile rails system 45



**Accessory:**  
Connector 45

**Accessory (not included):**

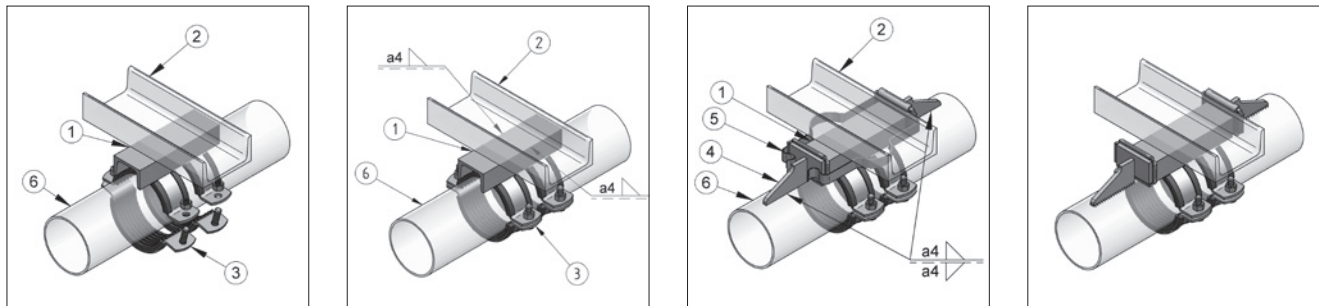
- 4 x tooth plate S M12 or Stex MP/MTB M12
- 4 x hexagon screw M12 x 25
- 4 x washer DIN 7089-12

Center connector element between both ends of profile rails (consider central mark).  
To reach similar load capacity like a complete rail, mount connector on top of rail (equal if slot is on top or bottom side).  
For double profile rails two connectors shall be taken.

Please consider recommended torques of tooth plates / stex elements (see MEFA catalogue).  
No gap may exist between rails.

| Identification | H<br>[mm] | B<br>[mm] | L<br>[mm] | Weight<br>[kg/Set] | Part-No.    |
|----------------|-----------|-----------|-----------|--------------------|-------------|
| Connector 45   | 39,7      | 50        | 350       | 1,05               | 08162001    |
| Connector 45   | 39,7      | 50        | 350       | 1,05               | 08162001/zn |

## ■ Assembly instructions of fixpoints



### Version I: Pipe not installed yet

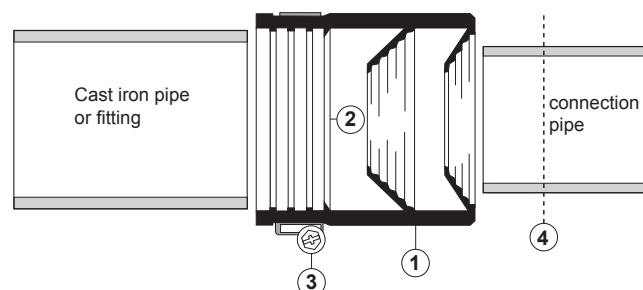
1. Mount body material of fixpoint (1) on supporting structure (2) (e.g. by welding)
2. When installing pipe, fix pipe (6) in fixpoint clamps (3).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

### Version II: Pipe is installed yet

1. Screw fixpoint clamps (3) of fixpoint structure (1) on pipe (6).
2. Straight body material of fixpoint (1) and fix with supporting structure (2) (e.g. by welding).
3. Put pressure pads (4) on body material of fixpoint (1) and fix pairwise with mounting clamps (5).
4. Weld pressure pads (4) with pipe (6).
5. After successful welding remove mounting clamps (5). These are reusable.

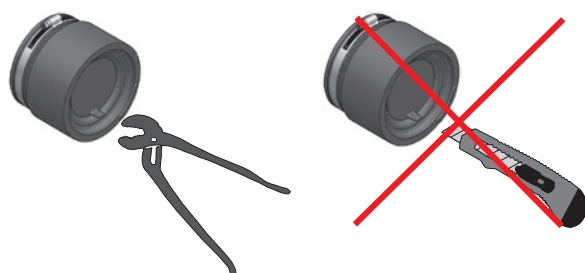
① mounting clamps for fixing pressure pads have to be ordered separately

## ■ Assembly instructions SIMA-CON



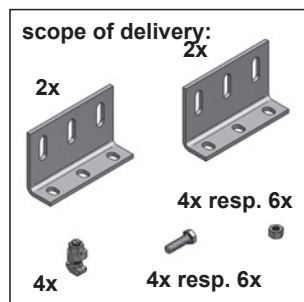
1. Put completely delivered SIMA-CON (1) onto tube end or fitting up to distance ring (2). Fix with tensioning strap (3) (cross slot, SW 7, rec. torque 2 Nm).
2. Sign connecting pipe for required plug-in module depth (4), if necessary use lubricant for insection.

15 **⚠ Attention:** Do not use sharp-edged items. To pull out opening pin just use gripper.

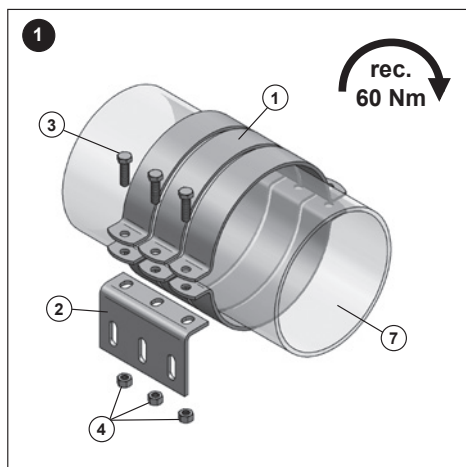


## ■ Assembly instructions fixpoint bracket HV

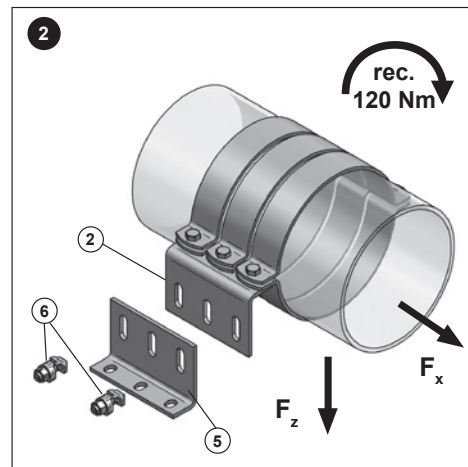
for height adjustable bracket of pipes, without sound insulation



Technical data see catalogue chapter 3a.



1.) Fix suitable MEFA fixpoint clamp (1) on pipe (7). Mount side part (2) under straps of pipe clamp. Attract screws (3) and nuts (4) with torque of 60 Nm.

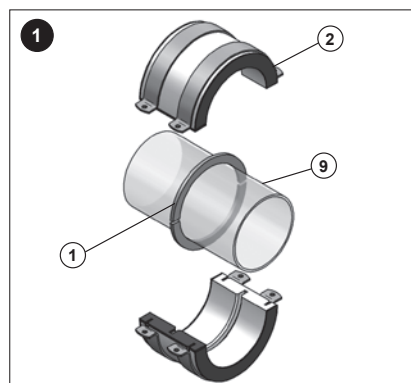
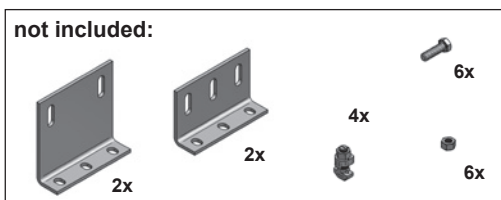
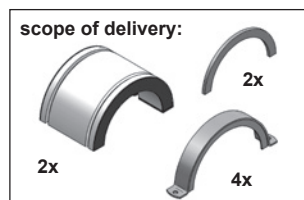


2.) Install stilt (5) using T-lock heads (6) on side panel (2). Adjust desired height and attract with torque of 120 Nm. Fix entire construction on any suitable substructure (e.g. C-profile rail, CENTUM, steel girder).

### **Important:**

Please note recommended torque!

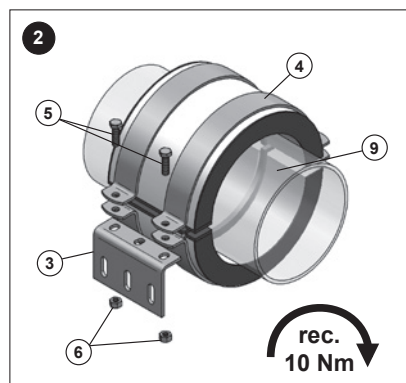
## ■ Assembly instructions insulated fixpoint



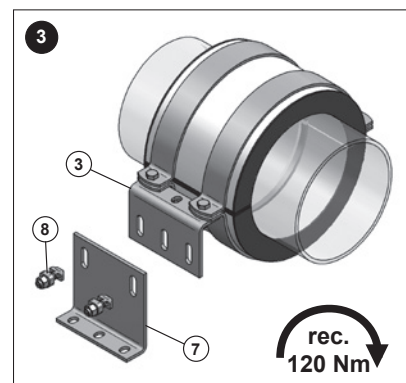
1.) Weld inner split rings (1) of insulated fixpoint to steel pipe (9).

- Ø 76,1 to Ø 114,3 per split ring with 3 segments a3 60 mm alternated weld
- Ø139,7 to Ø 406,4 per split ring with 4 segments a3 60 mm alternated weld

Raw parts e.g. inner split rings, should be coated after welding. Stick PU-halfshell (2) across inner split ring (1).

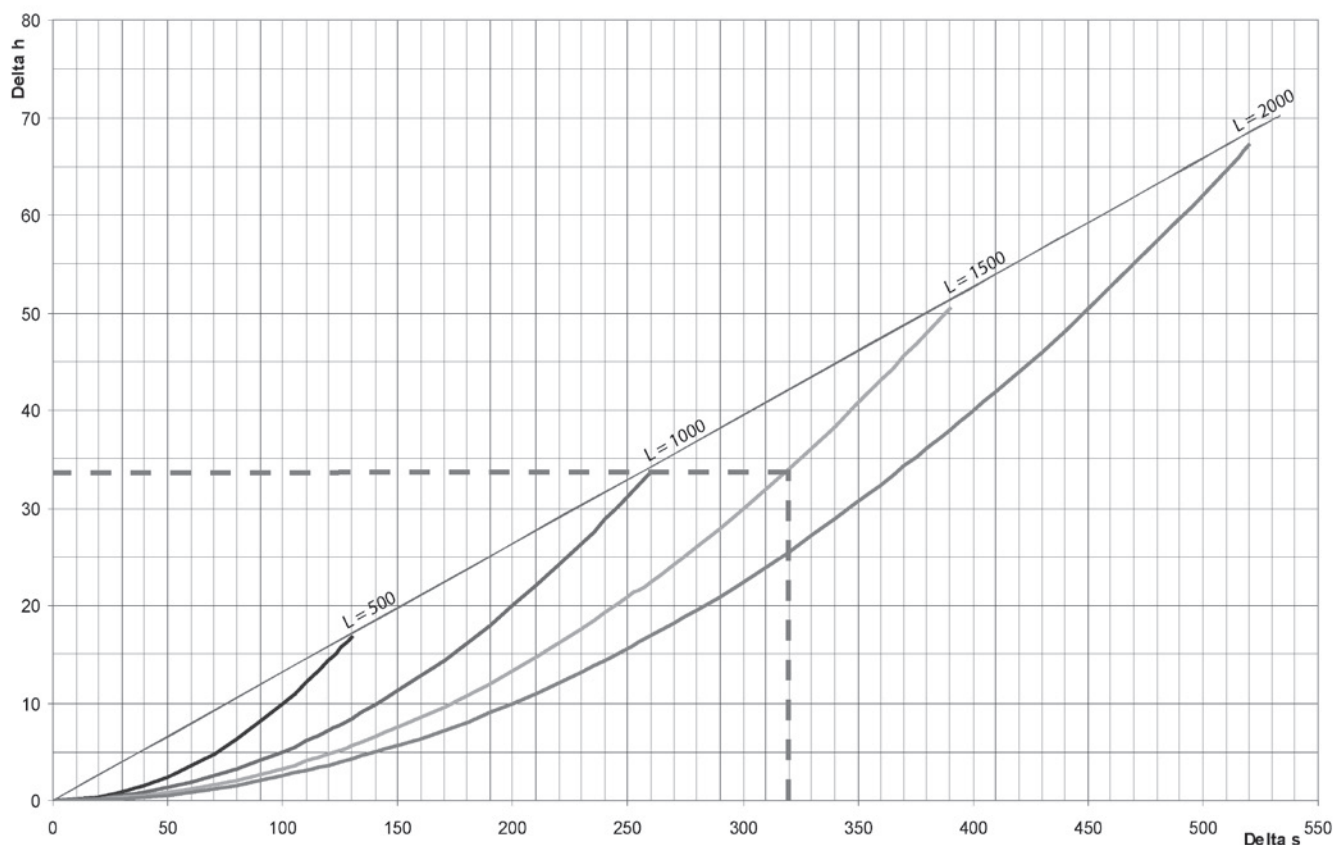


2.) Mount Side part (3) of recommended Fixpoint bracket HV under straps of outer split ring (4). Attract screws (5) and nuts (6) with torque of 10 Nm.



3.) Install stilt (7) using T-lock heads (8) on side panel (3). Adjust desired height and attract with torque of 120 Nm. Fix entire construction on any suitable substructure (e.g. C-profile rail, CENTUM, steel girder).

## Max. absorptional pipe expansion of pendular pin joint

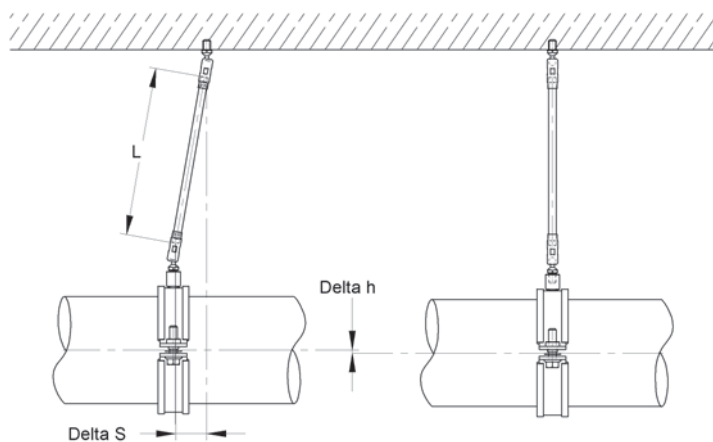


### Example:

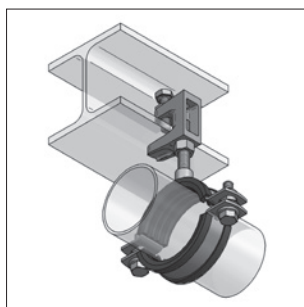
With threaded rod length of 1500 mm and pipe expansion of 320 mm, pipe is lifted about 34 mm. That means that the pendular stick joint can achieve the lifting, as no angle came up to  $\geq 15^\circ$ .

— Length threaded rod L = 500 mm  
 — Length threaded rod L = 1000 mm  
 — Length threaded rod L = 1500 mm  
 — Length threaded rod L = 2000 mm  
 — max. amplitude =  $15^\circ$

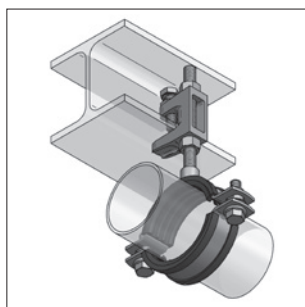
Example



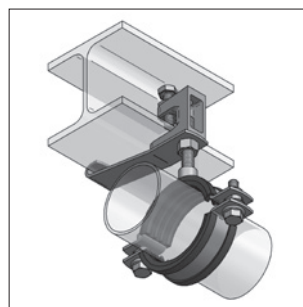
## Construction examples girder clamps



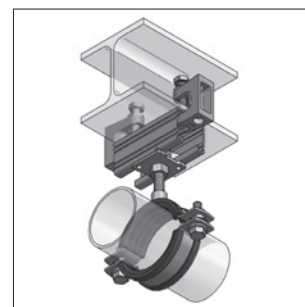
Single fixation of girder clamp underneath



Single fixation of girder clamp underneath with pass hole



girder clamp with safety lug



girder clamps combined with profile channel



### Notice for mounting of girder clamp on girder:

Tighten screw of girder clamp manual; then tighten with open-end wrench by a half turn

For stationary sprinkler systems according to VdS, a safety lug has to be used in connection with a girder clamp for fixation on pipes > DN 50 mm. It should be noticed that girder clamps, suitable for pipes above DN 65 only can be mounted on girder with a bearing area, differing less than 10° of horizontal.

Clamps may only be loaded by vertical tension.

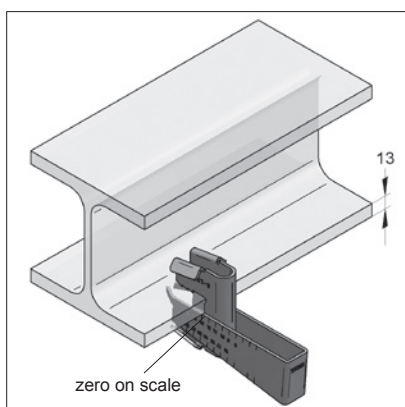
Clamping screws have to grip on inclined surface of girder.

| Nominal pipe diameter (mm) | Safety lug |
|----------------------------|------------|
| ≤ DN 50                    | -          |
| > DN 50 ≤ 100              | S 3        |
| > DN 100 ≤ 150             | S 5        |

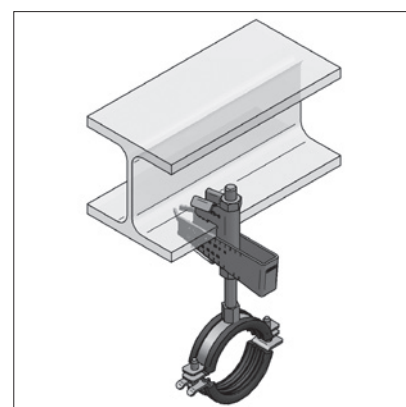
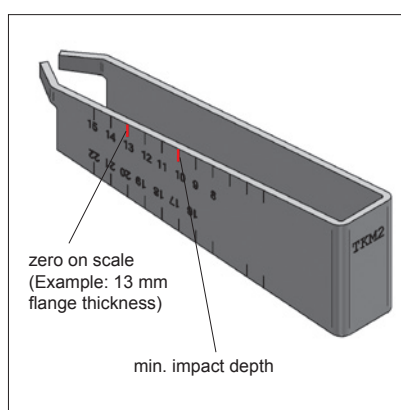


Construction examples are valid for girder clamps of cast iron and steel

## Assembly instructions girder clamp TKM

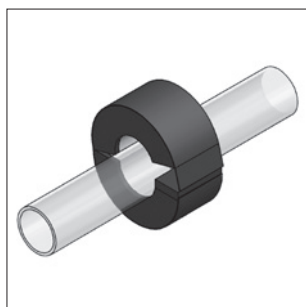


Girder clamp on girder

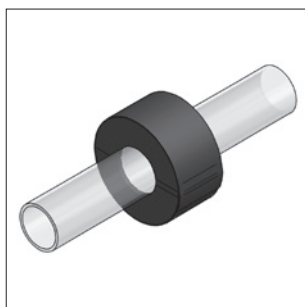


- Girder clamp suitable for clamp with parallel and inclined flanges (max. 14% inclination). For different thickness of flanges (8-15 mm or rather 16-22 mm) may turn girder clamp by 180°.
- Press clamp onto girder by hand until scaling is corresponding to flange thickness. Flange thickness = zero point. Wedge must be always placed underneath.
- Tap in with hammer (approx. 500 g) 3 units on scale.
- Girder clamp may only be loaded 90° to girder.

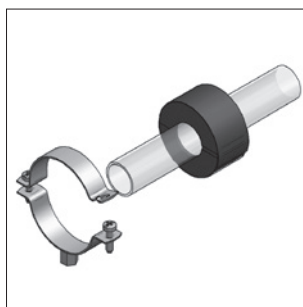
## ■ Assembly instructions HUSKY



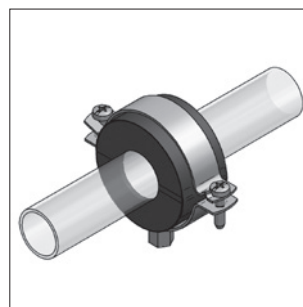
Position insulation body on pipe



Close insulation body and press overlap\*

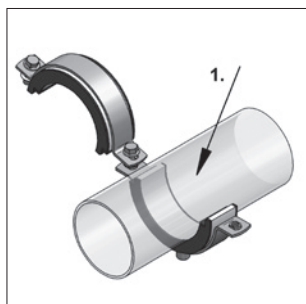


Position insulation body on pipe to pipe

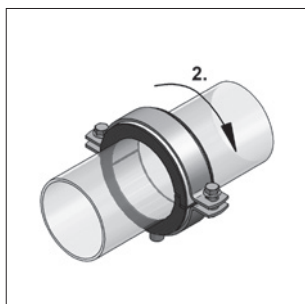


Close clamp and adjust closings in parallel

## ■ Assembly instructions POLAR plus insulated pipe clamp



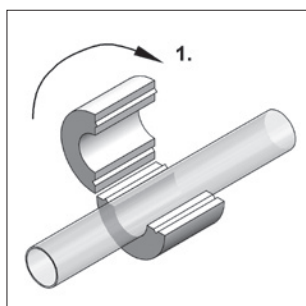
Position pipe in insulated pipe clamp



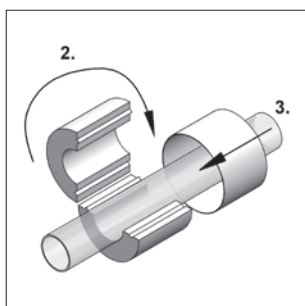
Close insulated pipe clamp\*

\* Bonding of shell and pipe is not necessary

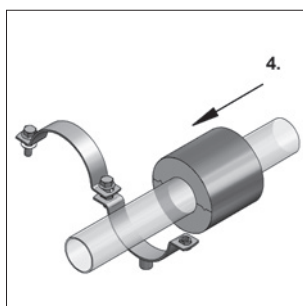
## ■ Assembly instructions ALU/PU >80< insulated pipe clamp



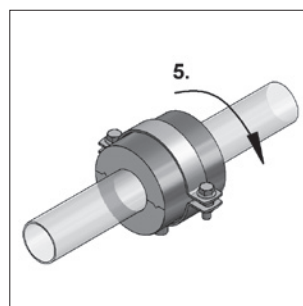
Enclose insulation body on pipe and close



Position insulation body on pipe.\*  
optional: cover joining surface with sheet jacket



Position insulation body on pipe to pipe.  
optional: with insulation.  
protection shield



Close clamp and adjust closings parallel

### MEFA-asurement: Insulated pipe clamp with insulated connection interface

Glueing of insulated pipe clamps with sound proofing, made of synthetic rubber or closed cell PE material can be executed easily with "MEFA assembling glue" see chapter 6 (with test report K 970373) or 'MEFA special adhesive' see chapter 9.

#### Notice:

**1. MEFA special glue** corresponds in its properties to the common solvent-based adhesives for insulating material of closed-cell synthetic rubber or closed-cell PE-material. The resulting glued surface is having a high water vapor diffusion resistance.

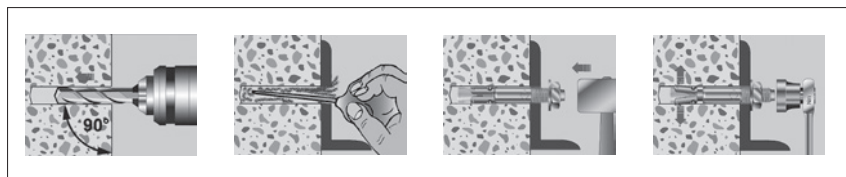
**2. Insulated pipe clamp ALU/PU 80:** less insulation thickness is recommended for glueing with insulated connection interface

**a)** sealing via applying front-sides completely with assembling glue or

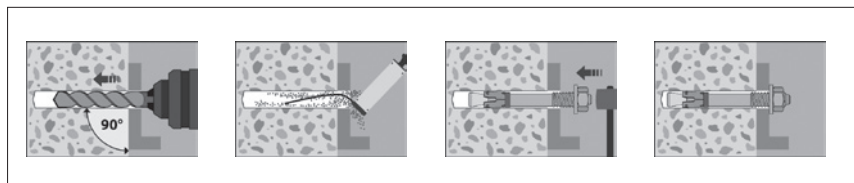
**b)** buildup insulation at connection field with fitted insulation strips to insulation thickness of PUR-field.

## ■ Assembly instructions anchor

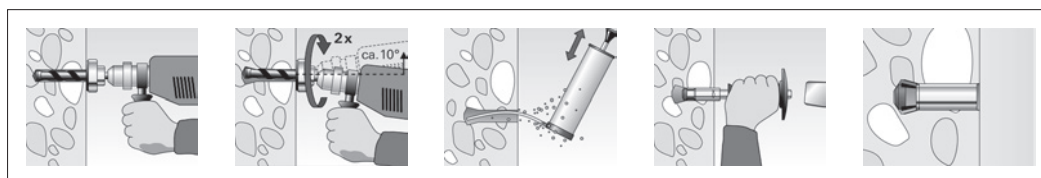
### Bolt anchor BZ plus and BZ plus A4



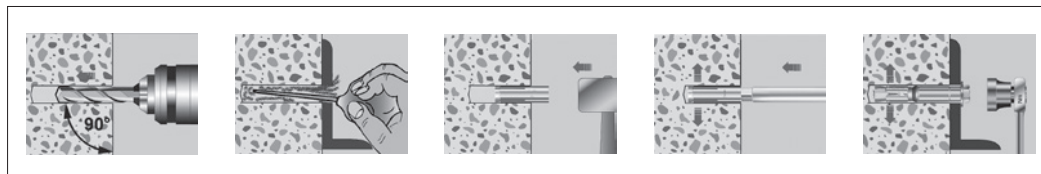
### Nail anchor N and N-M



### Zykon hammer-set anchor FZEA II

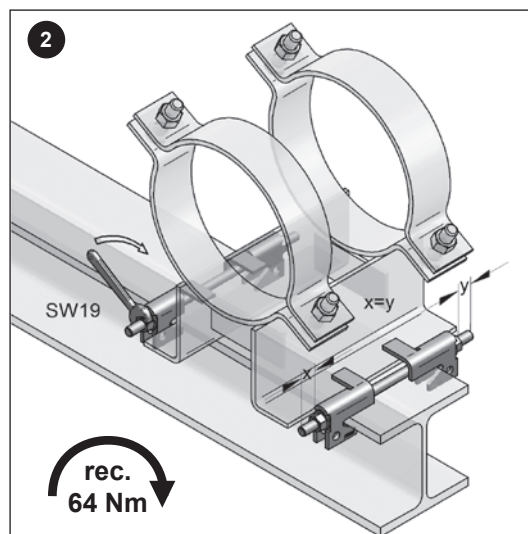
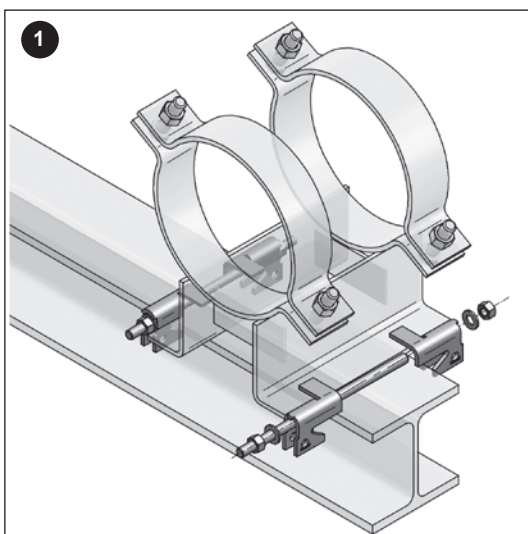
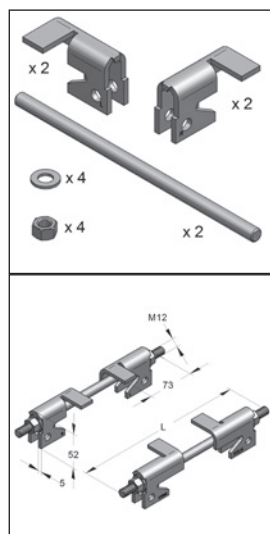


### Impact anchor E and E A4



## ■ Assembly instructions Guiding Clamp Type A

For lateral guidance of sliding supports and sliding sledges on steel girder

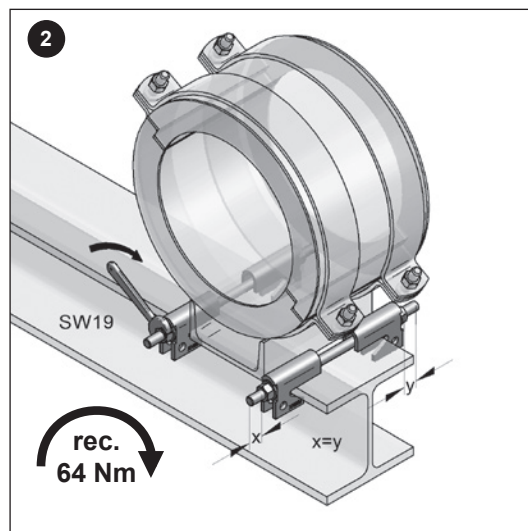
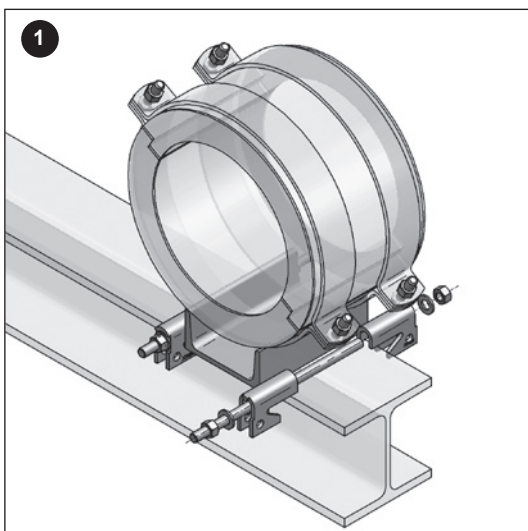
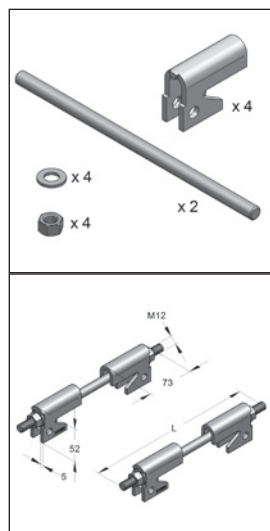


**Important:**

Please note the recommended tightening torques!

## ■ Assembly instructions Guiding Clamp Type B

For lateral guidance of sliding supports and sliding sledges (U-form) on steel girder



**Important:**

Please note the recommended tightening torques!