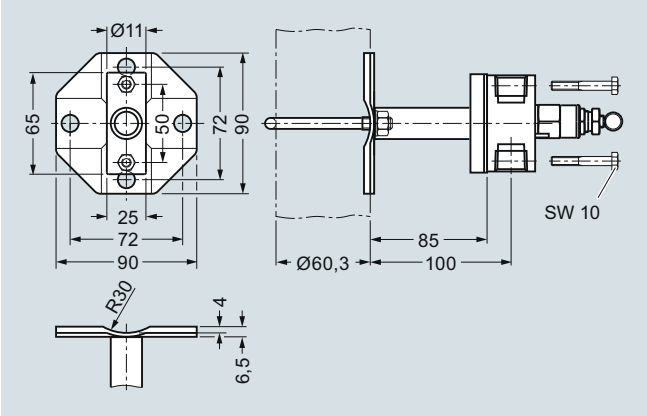
## Accessories for shut-off valves/double shut-off valves

### Overview

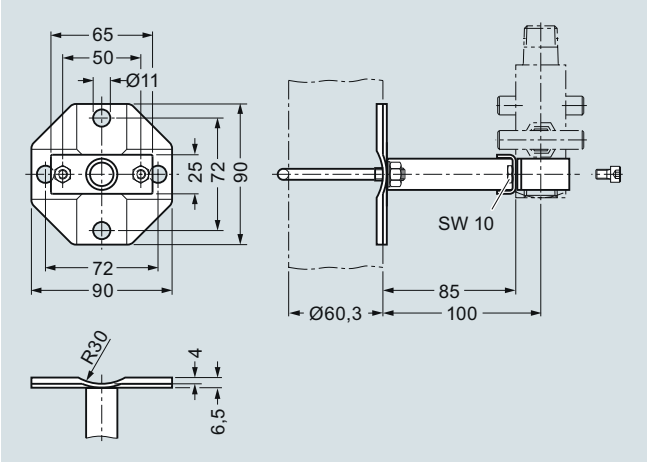
The mounting set is suitable for the double shut-off valves 7MF9011-4.A and for wall, rack and pipe mounting.

| Selection and Ordering data | Article No. |
|---|---|
| **Mounting set for shut-off valves** | |
| • 7MF9011-4DA and -4EA<br>made of stainless steel, scope of delivery:<br>1x mounting bracket,<br>2x hexagon screws M6x40,<br>1x mounting clip,<br>2x washers 8.4 to DIN 125;<br>2x hexagon nuts 8.4 to DIN EN 24032 | **7MF9011-8AB** |
| • 7MF9011-4FA, -4GA, 4HA, -4KA and -3HA<br>made of stainless steel, scope of delivery:<br>1x mounting bracket,<br>2x hexagon screws M6x10,<br>1x mounting clip,<br>2x washers 8.4 to DIN 125;<br>2x hexagon nuts 8.4 to DIN EN 24032 | **7MF9011-8AC** |

### Dimensional drawings




Mounting bracket (7MF9011-8AB) for shut-off valves 7MF9011-4DA and 7MF9011-4EA for wall, rack or pipe mounting, dimensions in mm




Mounting bracket (7MF9011-8AC) for shut-off valves 7MF9011-4FA and 7MF9011-4GA for wall, rack or pipe mounting, dimensions in mm

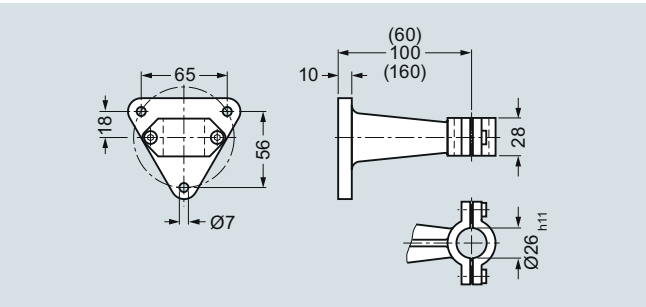
### Overview

The instrument brackets are needed to mount the following units:

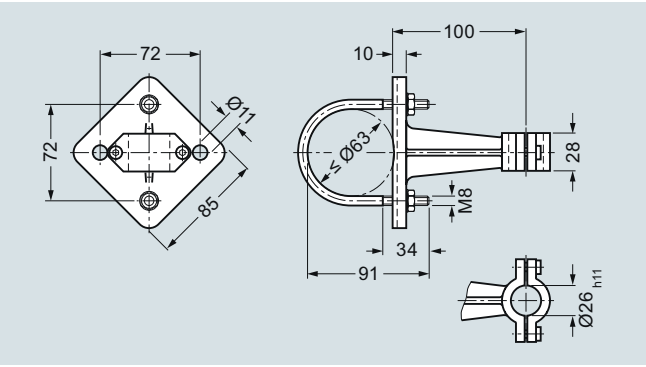
- Pressure gauges with threaded connection at the bottom
- Shut-off valves to DIN 16270, DIN 16271 and DIN 16272 (7MF9401-7.. and 7MF9401-8..)

| Selection and Ordering data | Article No. |
|---|---|
| **Instrument bracket, form H, DIN 16281**<br>(e.g. for gauge)<br>made of aluminium alloy, painted black,<br>**for wall mounting**, screw-type bracket cover | |
| • Projection length 60 mm | **M56340-A0046** |
| • Projection length 100 mm | **M56340-A0047** |
| **Instrument bracket, form A, DIN 16281**<br>(e.g. for transmitter)<br>made of annealed cast iron, galvanized and primed **for mounting on a wall** or rack or or on a sectional rail (horizontal/vertical);<br>Screw-type bracket cover | **M56340-A0053** |
| **Instrument bracket, form A, DIN 16281**<br>(e.g. for transmitter)<br>made of annealed cast iron, galvanized and primed with pipe clamp for **wall and pipe mounting** (horizotal/vertical)<br>Screw-type bracket cover | **M56340-A0079** |

### Dimensional drawings

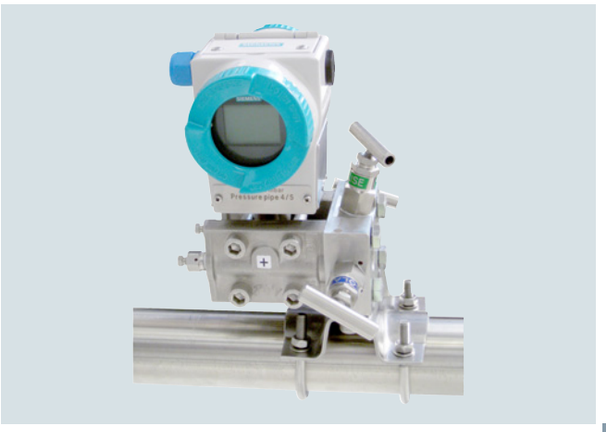



Instrument bracket form H, for wall mounting, M56340-A0046/-A0047, dimensions in mm




Instrument bracket form A, wall or pipe mounting, M56340-A0053/-A0079, dimensions in mm

## Overview



The 2-spindle, 3-spindle and 5-spindle valve manifolds 7MF9411-5.. are for pressure transmitters for absolute pressure or differential pressure.

The valve manifolds are used to shut off the differential pressure lines and to check the pressure transmitter zero.

The 2-spindle and the 5-spindle valve manifold enable in addition venting on the transmitter side and checking of the pressure transmitter characteristic.

## Benefits

- Max. working pressure 420 bar (6092 psi)
- Each available in version for oxygen

## Application

The spindle valve manifolds DN 5 are designed for liquids and gases.

Each is available in a version for oxygen on request.

## Design

All versions of the valve manifolds have a process connection ½-14 NPT. The connection for the pressure transmitter is always designed as a flange connection to IEC 61518/DIN EN 61518, form B . The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT.

The valves have an external spindle thread.

***Materials used***

| Component | Material | Mat. No. |
|---|---|---|
| Housing | X 2 CrNiMo 17 13 2 | 1.4404/316L |
| Cones | X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti |
| Spindles | X 2 CrNiMo 18 10 | 1.4404/316L |
| Head parts | X 5 CrNiMo 18 10 | 1.4401/316 |
| Packings | PTFE | - |

## Function

Functions of all valve manifolds:

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:

- Venting on the transmitter side
- Checking the pressure transmitter characteristic

| **Selection and Ordering data** | Article No. |
|---|---|
| **Valve manifolds DN 5** ↗ | **7MF9411-** ■■ **A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| for liquids and gases, for flanging to pressure transmitters for absolute and differential pressure, max. working pressure 420 bar (order accessory set with Order code), without certificate | |
| • 2-spindle valve manifold | **5 A** |
| • 3-spindle valve manifold | **5 B** |
| • 5-spindle valve manifold | **5 C** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| **Selection and Ordering data** | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** (connection between valve manifold and pressure transmitter) | | |
| for valve manifold 7MF9411-5A. | | |
| 2x screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1; chromized steel<br>1x gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K35** | **7MF9411-7DB** |
| 2x screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1; **stainless steel**<br>1x gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K45** | **7MF9411-7DC** |
| for valve manifolds 7MF9411-5B. and -5C. | | |
| 4x screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1; chromized steel<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K36** | **7MF9411-5DB** |
| 4x screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1; **stainless steel**<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K46** | **7MF9411-5DC** |
| **Accessory set to DIN**[2] (connection between valve manifold and pressure transmitter) | | |
| for valve manifold 7MF9411-5A. | | |
| 2x screws M10x45 to DIN EN 24014; chromized steel<br>2x washers Ø 10.5 mm to DIN 125;<br>1x gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K15** | **7MF9411-7BB** |
| 2x screws M10x45 to DIN EN 24014; **stainless steel**<br>2x washers Ø 10.5 mm to DIN 125, **stainless steel**;<br>1x gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K25** | **7MF9411-7BC** |

## 2-, 3- and 5-spindle valve manifolds DN 5

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| for valve manifolds 7MF9411-5B. and -5C. | | |
| 4x screws M10x45 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F)<br>Flange connection with M10 screws only permissible up to PN 160. | **K16** | **7MF9411-6BB** |
| 4x screws M10x45 to DIN EN 24014; **stainless steel**<br>4x washers Ø 10.5 mm to DIN 125, **stainless steel**;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F)<br>Flange connection with M10 screws only permissible up to PN 160. | **K26** | **7MF9411-6BC** |
| **Mounting plate** | | |
| • for valve manifold, made of electrogalvanized sheet-steel | | |
| - **for wall mounting** or for securing on rack (72 mm grid), weight 0.5 kg<br>Scope of delivery:<br>1 mounting plate with bolts for mounting on valve manifold | **M11** | **7MF9006-6EA** |
| - **for pipe mounting,** weight 0.7 kg<br>Scope of delivery:<br>1x mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm) and fastening screws for mounting on valve manifold | **M12** | **7MF9006-6GA** |
| • for valve manifold, made of **stainless steel 316L** | | |
| - **for wall mounting** or for securing on rack (72 mm grid), weight 0.5 kg<br>Scope of delivery:<br>1 mounting plate with bolts for mounting on valve manifold | **M21** | **7MF9006-6EC** |
| - **for pipe mounting,** weight 0.7 kg<br>Scope of delivery:<br>1x mounting plate M21, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm) | **M22** | **7MF9006-6GC** |
| **Valve manifold 100 bar** | | |
| Oil- and grease-free cleaning for oxygen applications, max. pressure PN 100 (1450 psi) and max. temperature 60 °C (140 °F) | | |
| • for 7MF9411-5A. | **S12** | |
| • for 7MF9411-5B. | **S13** | |
| • for 7MF9411-5C. | **S14** | |
| **NACE MR-0175-certified**<br>incl. acceptance test certificate 3.1 to EN 10204 | **D07** | |

1) When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Article No.
2) Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)!

### Accessories

***Accessory set for 2-, 3- and 5-spindle valve manifolds***

2-spindle valve manifold DN 5

- K35: 2 screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1, 1 flat gasket
- K15: 2 screws M10x45 to DIN EN 24014, 2 washers, 1 flat gasket

3-spindle and 5-way valve manifold DN 5

- K36: 4 screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1, 2 flat gaskets
- K16: 4 screws M10x45 to DIN EN 24014, 4 washers, 2 flat gaskets

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

**Note**: Flange connection with M10 screws only permissible up to PN 160!

***Mounting plate***

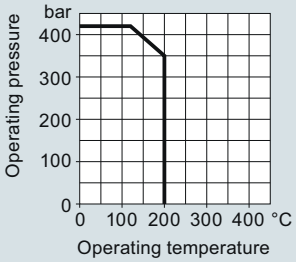
Made of electrogalvanized sheet-steel

- M11: For wall mounting or for securing on rack (72 mm grid)
  Scope of delivery:
  - 1 mounting plate with bolts for mounting on valve manifold
- M12: For pipe mounting
  Scope of delivery:
  - 1 mounting plate M11
  - 2 pipe brackets with nuts and washers for pipes with max. Ø 60.3 mm

***Valve manifold 100 bar, suitable for oxygen***

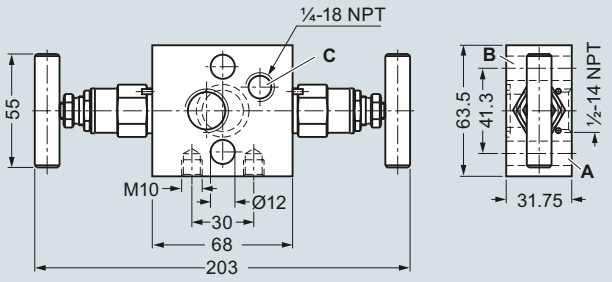
- S12: For 2-way valve manifold
- S13: For 3-way valve manifold
- S14: For 5-way valve manifold

### Characteristic curves



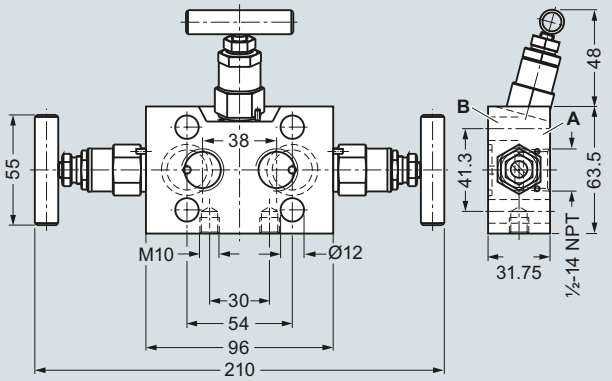

Valve manifolds PN 5 (7MF9411-5..), permissible working pressure as a function of the permissible working temperature

## Dimensional drawings



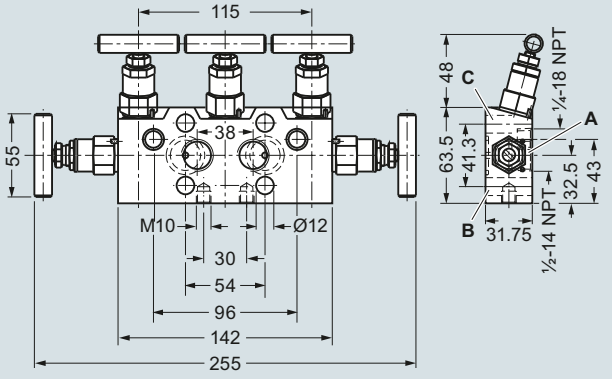

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to IEC 61518, form B
C Vent / test connection: ¼-18 NPT
Valve design: external spindle thread

2-spindle valve manifold DN 5 (7MF9411-5A.), dimensions in mm



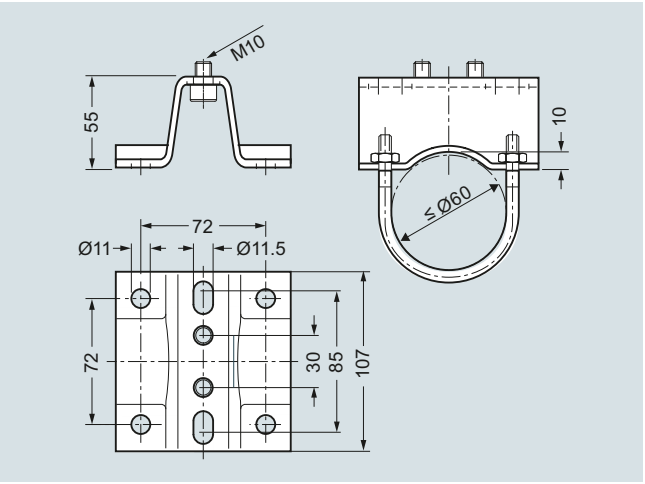

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to IEC 61518, form B
Valve design: external spindle thread

3-spindle valve manifold DN 5 (7MF9411-5B.), dimensions in mm



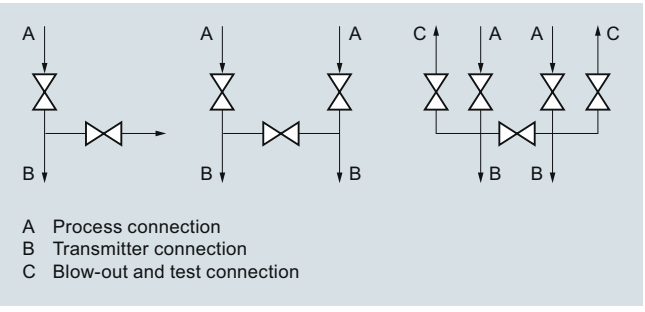

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to IEC 61518, form B
C Vent / test connection: ¼-18 NPT
Valve design: external spindle thread

5-spindle valve manifold DN 5 (7MF9411-5C.), dimensions in mm




Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm

## Schematics




A Process connection
B Transmitter connection
C Blow-out and test connection

2-spindle, 3-spindle and 5-spindle valve manifold DN 5, connections

## Multiway cocks PN 100

### Overview

Multiway cock PN 100 (1450 psi) (7MF9004-1P.) for differential pressure transmitters

The multiway cock PN 100 (1450 psi) can be flanged to pressure transmitters for differential pressure.

### Benefits

- Version available for aggressive liquids, gases and vapors
- Robust design
- Oil-free and grease-free version possible
- One-hand operation

### Application

The PN 100 (1450 psi) multiway cock is available in versions for aggressive and non-aggressive liquids, gases and vapors.

### Design

The multiway cock can be flanged with four screws to pressure transmitters for differential pressure.

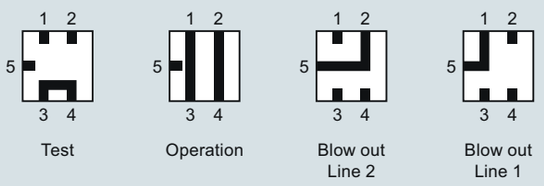
The PN 100 (1450 psi) has 2 process connections and one blow-out connection. A steel version of the multiway cock is available for non-aggressive media, and a stainless steel version for aggressive media. The housing is forged in one piece. The switching lever is removable.

Sealing can be improved during operation.

**Note**: An accessory set is always required for flanging of the multiway cock to a differential pressure transmitter.

### Function

- Shutting off the differential pressure lines
- Blowing out the differential pressure lines
- Testing the pressure transmitter zero




Cock positions; the symbols are printed on the cock

### Technical specifications

| Multiway cocks PN 100 | | |
|---|---|---|
| **Measured medium** | **Water, non-aggressive liquids and gases** | **Aggressive liquids, gases and vapors** |
| Material | P250GH, mat. No.: 1.0460 | X 6 CrNiMoTi 17 12 2, mat. No. 1.4571/316Ti |
| Connections | Steel, for pipe Ø 12 mm, L series | Stainless steel, for pipe Ø 12 mm, L series |
| • Process connection<br>• Connection for blowing out | 2 bulkhead glands<br>Pipe union with ferrule | |
| Max. permissible working temperature | 200 °C (392 °F) | |
| Max. permissible working pressure | 100 bar (1450 psi) (up to max. 60 °C (140 °F)) | |
| Weight | 2.5 kg | |

| Selection and Ordering data | Article No. |
|---|---|
| **Multiway cock PN 100 (1450 psi)** ↗ | **7MF9004 - ■■A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| for flanging to pressure transmitters, weight 2.5 kg (without accessory set), without certificate | |
| For water and non-aggressive gases and vapors | **1P** |
| For aggressive liquids, gases and vapors | **1Q** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1]<br>Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN**<br>(required for flanging, weight 0.2 kg)<br>4x screws $^{7}/_{16}$-20 UNF x 1 inch to ASME B18.2.1; chromized steel<br>2x gaskets made of PTFE, max. permissible temperature 80 °C (176 °F) | **L31** | **7MF9004-5CC** |
| **Accessory set to DIN**<br>(required for flanging, weight 0.2 kg)<br>4x screws M10x25 to DIN EN 24017; chromized steel, 4x washers Ø 10.5 mm to DIN 125; 2x gaskets made of PTFE, max. permissible temperature 80 °C (176 °F) | | |
| • Standard design<br>• Version for oxygen (together with Order code S11 | **L11**<br>**L15** | **7MF9004-6AD**<br>**7MF9004-6AE** |
| **Multiway cock in oil-free and grease-free design**<br>Oil- and grease-free cleaning for oxygen applications, max. pressure PN 100 (1450 psi) and max. temperature 60 °C (140 °F), BAM-tested lubricant, gasket suitable for oxygen measurement (only with Article No. 7MF9004–1Q.Z) | **S11** | |
| **Mounting bracket**<br>Required **for wall mounting** or for securing on rack (72 mm grid), made of electrogalvanized sheet-steel, weight 0.85 kg | **M13** | **7MF9004-6AA** |
| **NACE MR-0175-certified**<br>incl. acceptance test certificate 3.1 to EN 10204 (only available for version 7MF9004-1QA) | **D07** | |

[1] When ordering accessory set or mounting together with the multiway cock, please use Order code; otherwise use Article No.

## Accessories

***Accessory set for multiway cock PN 100***

- L31: 4 screws $^{7}/_{16}$-20 UNF x 1 inch, 2 flat gaskets
- L11: 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets
- L15 (suitable for oxygen): 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. permissible temperature 80 °C (176 °F)

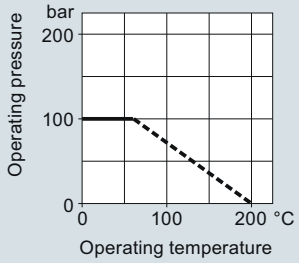
***Multiway cock in oil-free and grease-free design***

- S11 (only for aggressive liquids, gases and vapors (7MF9004-1Q.)): Max. PN 63 (914 psi) (instead of PN 100 (1450 psi)), BAM-tested lubricant, gasket suitable for oxygen

***Mounting brackets***

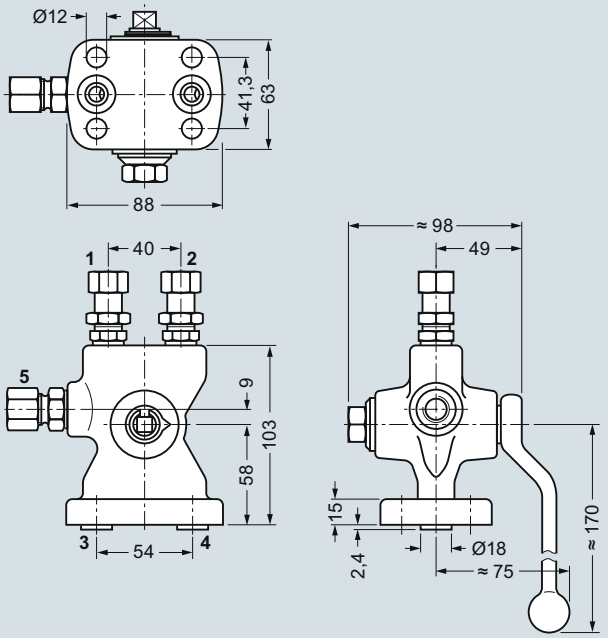
- M13: Required for wall mounting or for securing on rack (72 mm grid); made of electrogalvanized sheet-steel

## Characteristic curves



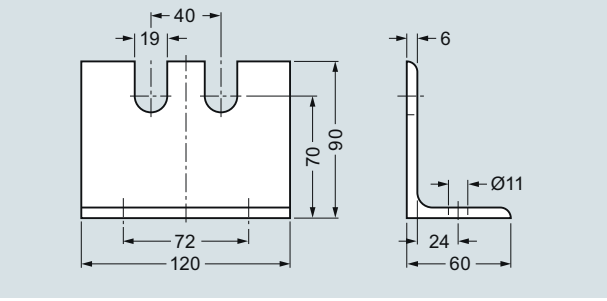

Multiway cock PN 100 (1450 psi), permissible operating pressure as a function of the permissible operating temperature

## Dimensional drawings




1 and 2 Process connections
3 and 4 Connections for transmitter (DIN EN 61518, form A)
5 Connections for blowing out

Multiway cock 7MF9004-1P. for flanging to pressure transmitters for differential pressure, dimensions in mm




Mounting bracket 7MF9004-6AA (M13), dimensions in mm

## 3-way and 5-way valve manifolds DN 5

### Overview

The three-spindle and five-spindle valve manifolds DN 5 (7MF9410-1../-3..) are used to shut off the differential pressure lines and to check the transmitter zero.

In addition, the five-way valve manifold permits blowing out of the differential pressure lines.

### Benefits

- Available for aggressive and non-aggressive liquids and gases
- Max. working pressure 420 bar (6092 psi), with version for oxygen max. 100 bar (1450 psi)

### Application

The 3-way and 5-way valve manifolds are available in versions for aggressive and non-aggressive liquids and gases.

Mounting plates are available for wall mounting, for securing to mounti ng racks or for pipe mounting.

### Design

The process connection of the 3-way and 5-way valve manifolds is a pipe union with ferrule.

Both valve manifolds have 2 flange connections for connecting a pressure transmitter.

In addition, the five-way valve manifold has 2 blow-out connections.

Depending on the version the valve manifold has either 3 or 5 valves, each with an internal spindle thread.

***Materials used***

| | For non-aggressive liquids and gases | | For aggressive liquids and gases | |
|---|---|---|---|---|
| **Component** | **Material** | **Mat. No.** | **Material** | **Mat. No.** |
| Housing | P250GH | 1.0460 | X 6 CrNiMoTi17 12 2 | 1.4571/ 316Ti |
| Head parts | C 35 | 1.0501 | | |
| Spindles | X 12 CrMoS 17 | 1.4104 | | |
| Cones | X 35 CrMo 17 hardened and tempered | 1.4122 | | |
| Valve seats | X 6 CrNiMoTi 17 12 2 | 1.4571/ 316Ti | | |
| Packings | PTFE | - | PTFE | - |

### Function

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero
- In addition, the five-way valve manifold permits blowing out of the differential pressure lines.

### Selection and Ordering data

| Selection and Ordering data | Article No. |
|---|---|
| **3-way valve manifold DN 5** ↗ | **7MF9410-▪▪A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| For flanging to pressure transmitters for differential pressure, process connection: Pipe union with ferrule, max. working pressure 420 bar (6092 psi), weight 2.9 kg (order accessory set and mounting plate with Order code), without certificate | |
| • for non-aggressive liquids and gases | **1 E** |
| • for aggressive liquids and gases | **1 F** |
| **5-way valve manifold DN 5** | |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| For flanging to pressure transmitters for differential pressure, process connection: Pipe union with ferrule, max. working pressure 420 bar (6092 psi), weight 4.4 kg (order accessory set and mounting plate with Order code), without certificate | |
| • for non-aggressive liquids and gases | **3 E** |
| • for aggressive liquids and gases | **3 F** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs[1]*** | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** | | |
| (required for flanging, weight 0.2 kg) | | |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **B31** | **7MF9010-5CC** |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **B34** | **7MF9410-5CA** |
| **Accessory set to DIN[2]** | | |
| (required for flanging, weight 0.2 kg) | | |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | | |
| • Standard design | **B11** | **7MF9010-6AD** |
| • Version for oxygen | **B15** | **7MF9010-6AE** |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **B16** | **7MF9010-6CC** |
| **Mounting plate** | | |
| for valve manifold, made of electrogalvanized sheet-steel | | |
| **for wall mounting** or for securing on rack (72 mm grid), weight 0.5 kg<br>Scope of delivery:<br>1 mounting plate with bolts for mounting on valve manifold | **M11** | **7MF9006-6EA** |
| **for pipe mounting**, weight 0.7 kg<br>Scope of delivery:<br>1x mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm) | **M12** | **7MF9006-6GA** |
| **valve manifold 100 bar** | | |
| suitable for oxygen | | |
| for 7MF9410-1F | **S13** | |
| for 7MF9410-3F | **S14** | |
| **NACE MR-0175-certified** | **D07** | |
| incl. acceptance test certificate 3.1 to EN 10204 (only available for version 7MF9410-1FA and -3FA) | | |

1) When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Article No.
2) Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)

## Accessories

***Accessory set for 3-way and 5-way valve manifold DN 5 for flanging***

- B31: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2.1, 2 flat gaskets
- B34: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2.1, 2 O-rings (FPM 90)
- B11: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 flat gaskets
- B15 (suitable for oxygen): 4 screws M10x55 to DIN EN 24014, 4 washers, 2 flat gaskets
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar (6092 psi), 120 °C (248 °F)

**Note**: M10 screws only permissible up to PN 160 (2320 psi)!

***Mounting plate***

Made of electrogalvanized sheet-steel

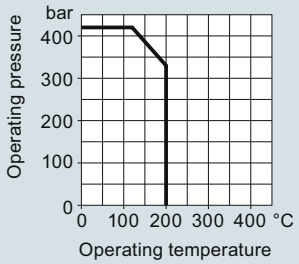
- M11: For wall mounting or for securing on rack (72 mm grid)
  Scope of delivery:
  - 1 mounting plate 7MF9006-6EA with bolts for mounting on valve manifold
- M12: For pipe mounting
  Scope of delivery:
  - 1 mounting plate M11
  - 2 pipe brackets with nuts and washers for pipes with max. Ø 60.3 mm

***Valve manifold 100 bar, suitable for oxygen***

S12: Only in combination with versions for aggressive liquids and gases

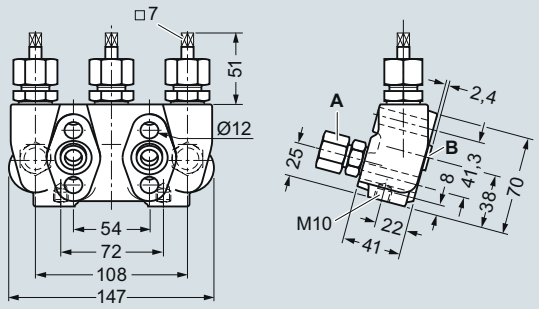
## 3-way and 5-way valve manifolds DN 5

### Characteristic curves



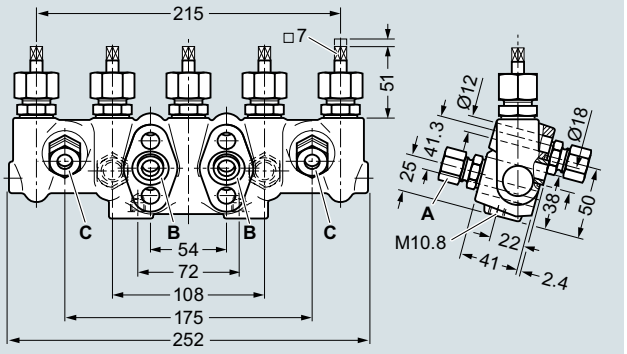

Permissible operating pressure as a function of the permissible operating temperature

### Dimensional drawings



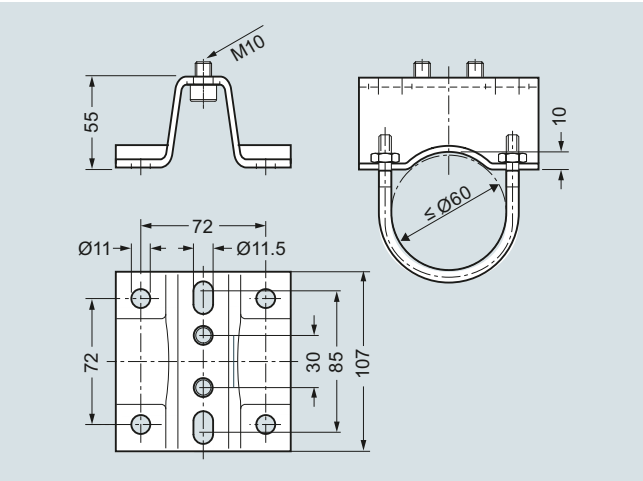

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to EN 61518, form A
Valve design: internal spindle thread

3-way valve manifold DN 5 (7MF9410-1..), dimensions in mm



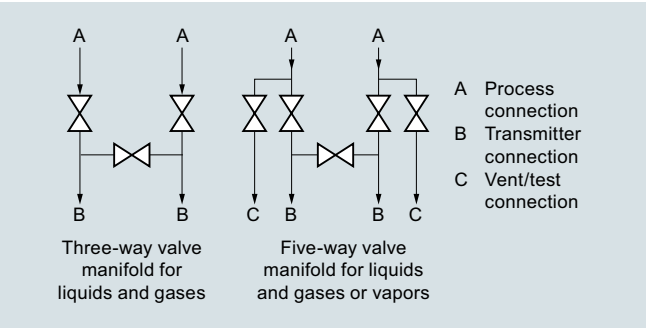

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to IEC 61518, form A
C Blow-out connection: Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
Valve design: internal spindle thread

5-way valve manifold DN 5 (7MF9410-3..), dimensions in mm




Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm

### Schematics




3-way and 5-way valve manifolds, connections

## Overview

The 3-way valve manifold DN 8 (7MF9416-1../-2..) is for pressure transmitters for differential pressure. It is used to shut off and blow out differential pressure lines and to test the pressure transmitter zero.

In the designs with a test connection, a test device can be connected to test the pressure transmitter characteristic.

## Benefits

- For aggressive and non-aggressive liquids and gases
- The maximum working pressure is 420 bar (6092 psi).

## Application

The 3-way valve manifold is available in versions for aggressive and non-aggressive liquids and gases.

Mounting plates are available for wall mounting, for securing to mounting racks or for pipe mounting.

## Design

For the process connection on the version for non-aggressive media it is possible to choose between a pipe union with ferrule and welding pins.

The version for aggressive media always has a pipe union with ferrule.

Both versions are available optionally with a test connection M20x1.5.

The valves have an internal spindle thread.

***Materials used***

| | **For non-aggressive liquids and gases** | | **For aggressive liquids and gases** | |
|---|---|---|---|---|
| Component | Material | Mat. No. | Material | Mat. No. |
| Housing | P250GH | 1.0460 | X 6 CrNiMoTi17 12 2 | 1.4571/ 316Ti |
| Head parts | C 35 | 1.0501 | | |
| Spindles | X 12 CrMoS 17 | 1.4104 | | |
| Cones | X 35 CrMo 17 hardened and tempered | 1.4122 | | |
| Valve seats | X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti | | |
| Packings | PTFE | - | PTFE | - |

## Function

The 3-way valve manifold DN 8 performs two functions as standard:

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

All versions are also available with a test connection, to which a test device for checking the pressure transmitter characteristic can be connected.

| **Selection and Ordering data** | Article No. |
|---|---|
| **3-way valve manifold DN 8** ↗ | **7MF9416 - ■■ A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| For flanging to pressure transmitters for differential pressure, max. working pressure 420 bar (6092 psi), (order accessory set and mounting plate with Order code), without certificate | |
| For non-aggressive liquids and gases procedss connection: Pipe union with ferrule Ø 12 mm | |
| • without test connection | **1 B** |
| • with test connection | **1 C** |
| For non-aggressive liquids and gases procedss connection: Welding pin Ø 14 x 2.5 | |
| • without test connection | **2 C** |
| • with test connection | **2 D** |
| For aggressive liquids and gases process connection: Pipe union with ferrule Ø 12 mm | |
| • without test connection | **1 D** |
| • with test connection | **1 E** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

## 3-way valve manifold DN 8

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** (required for flanging, weight 0.2 kg) | | |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **B31** | **7MF9010-5CC** |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar (6092 psi), 120 °C (248 °F) | **B34** | **7MF9410-5CA** |
| **Accessory set to DIN**[2] (required for flanging, weight 0.2 kg) | | |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **B11** | **7MF9010-6AD** |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar (6092 psi), 120 °C (248 °F) | **B16** | **7MF9010-6CC** |
| **Mounting plate** For valve manifold, made of electrogalvanized sheet-steel | | |
| **for wall mounting** or for securing on rack (72 mm grid), weight 0.5 kg<br>Scope of delivery:<br>1 mounting plate with bolts for mounting on valve manifold | **M11** | **7MF9006-6EA** |
| **for pipe mounting**, weight 0.7 kg<br>Scope of delivery:<br>1x mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm) | **M12** | **7MF9006-6GA** |
| **NACE MR-0175-certified** incl. acceptance test certificate 3.1 to EN 10204 (only available for version 7MF9416-1DA and -1EA) | **D07** | |

1) When ordering accessory set or mounting together with the valve manifold, please use Order code; otherwise use Article No.
2) Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)!

### Accessories

***Accessory set for 3-way valve manifold DN 8 for flanging***

- B31: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2.1, 2 flat gaskets
- B34: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2.1, 2 O-rings (FPM 90)
- B11: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 flat gaskets
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar (6092 psi), 120 °C (248 °F)

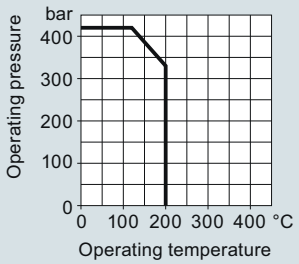
**Note**: M10 screws only permissible up to PN 160 (2320 psi)!

***Mounting plate***

Made of electrogalvanized sheet-steel

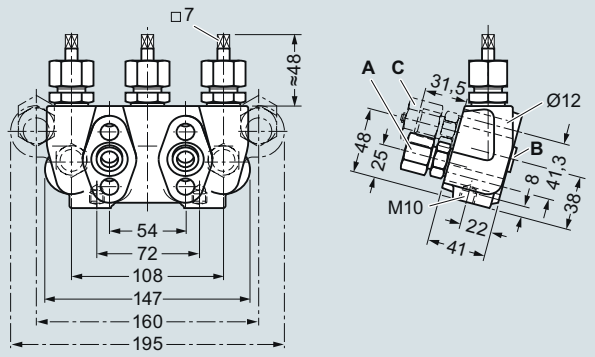
- M11: For wall mounting or for securing on rack (72 mm grid)
  Scope of delivery:
  - 1 mounting plate with bolts for mounting on valve manifold
- M12: For pipe mounting
  Scope of delivery:
  - 1 mounting plate M11
  - 2 pipe brackets with nuts and washers for pipes with max. Ø 60.3 mm

### Characteristic curves



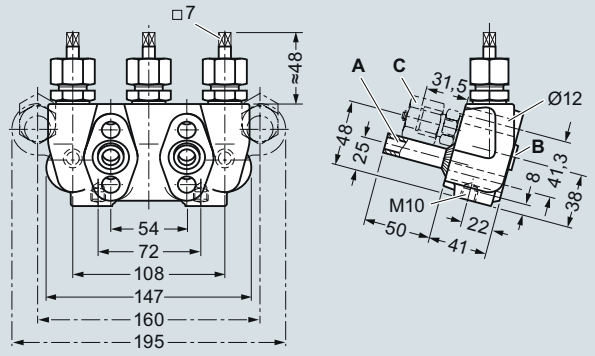

3-way valve manifold DN 8, permissible working pressure as a function of the permissible working temperature

## Dimensional drawings



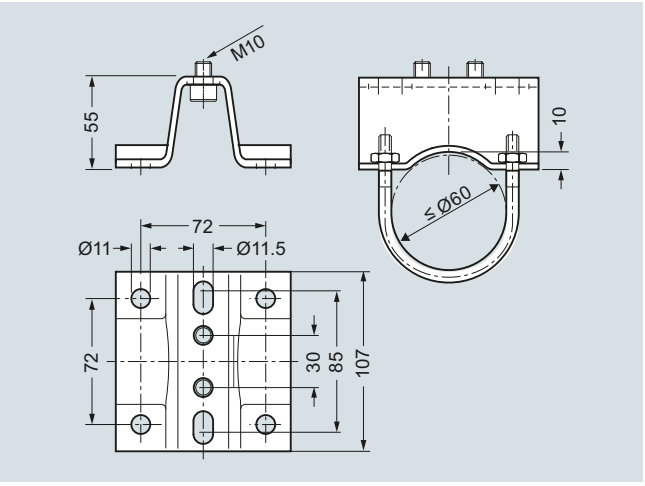

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to EN 61518, form A
C Test connection: M20 x 1,5
Valve design: internal spindle thread

3-way valve manifold DN 8 (7MF9416-1..) with pipe union, dimensions in mm



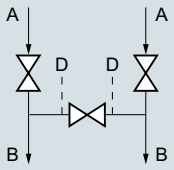

A Process connection (e.g. on primary device): Welding pin, diameter 14 x 2,5
B Transmitter connection: Flange connection to EN 61518, form A
C Test connection: M20 x 1,5
Valve design: internal spindle thread

3-way valve manifold DN 8 (7MF9416-2..) with welding pin, dimensions in mm




Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm

## Schematics



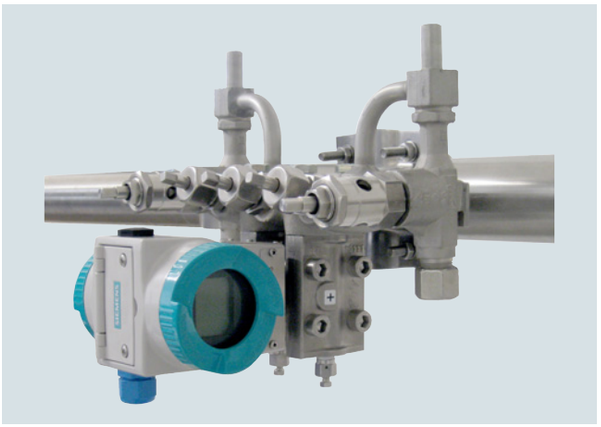

A Process connection
B Transmitter connection
D Vent/test connection

Three-way valve manifold for liquids and gases

3-way valve manifold DN 8, connections

## Valve manifold combination DN 5/DN 8

### Overview



The valve manifold combination DN 5/DN 8 (7MF9416-6..) is for pressure transmitters for differential pressure.

The combination is used to shut off and blow out differential pressure lines and to test the pressure transmitter zero.

In the designs with a test connection, a test device can be connected to test the pressure transmitter characteristic.

### Benefits

- Max. working pressure 420 bar (6092 psi)

### Application

The valve manifold combination DN 5/DN 8 is designed for vapors.

### Design

The valve manifold combination DN 5/DN 8 has a process connection with welding pins.

The connection for the pressure transmitter is designed as as flange connection, while the blow-out connection is designed as a pipe union with ferrule.

The manifold valves have an internal spindle thread, while the blow-out valves have an external spindle thread.

The optional test connections are M20x1.5.

***Materials used***

| | Valve manifold DN 5 | | Blow-out valves DN 8 | |
|---|---|---|---|---|
| **Component** | **Material** | **Mat. No.** | **Material** | **Mat. No.** |
| Housing | P250GH | 1.0460 | 16 Mo 3 | 1.5415 |
| Head parts | C 35 | 1.0501 | 21 CrMo V57 | 1.7709 |
| Spindles | X 12 CrMoS 17 | 1.4104 | X 20 Cr 13 | 1.4021 |
| Cones | X 35 CrMo 17 | 1.4122 | X 35 CrMo 17 hardened and tempered | 1.4122 |
| Valve seats | X 6 CrNiMoTi | 1.4571/316Ti | X 20 Cr 13 | 1.4021 |
| Packings | PTFE | - | Pure graphite | - |
| Welding pins | - | - | 16 Mo 3 | 1.5415 |

### Function

- Shutting off the differential pressure lines
- Blowing out the differential pressure lines
- Checking the pressure transmitter zero

As an option it is possible to order a version with a test connection, to which a test device for checking the transmitter characteristic can be connected.

| **Selection and Ordering data** | Article No. |
|---|---|
| **Valve manifold combination DN 5/DN 8 for vapors** ↗ | **7MF9416-6 ■ A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| For flanging to pressure transmitters for differential pressure, max. working pressure 420 bar (6092 psi), also available in stainless steel on request (order accessory set with Order code), without certificate | |
| • without test connection | **C** |
| • with test connection M20 × 1.5 | **D** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| **Selection and Ordering data** | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** (required for flanging, weight 0.2 kg) | | |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **B34** | **7MF9410-5CA** |
| **Accessory set to DIN**[2] (required for flanging, weight 0.2 kg) | | |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F);Flange connection to DIN 19213 only permissible up to PN 160! | **B16** | **7MF9010-6CC** |

[1] When ordering accessory set together with the valve manifold combination, please use Order code; otherwise use Article No.

[2] Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)

## Accessories

***Accessory set for valve manifold combination DN 5/DN 8 for flanging***

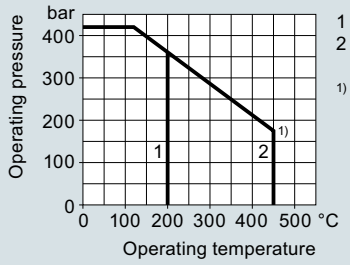
- B34: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2.1, 2 O-rings (FPM 90)
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125

O-ring to DIN 3771, 20 x 2.65 - S – FPM90, max. 420 bar (6092 psi), 120 °C (248 °F)

**Note**: M10 screws only permissible up to PN 160 (2321 psi)!

## Characteristic curves

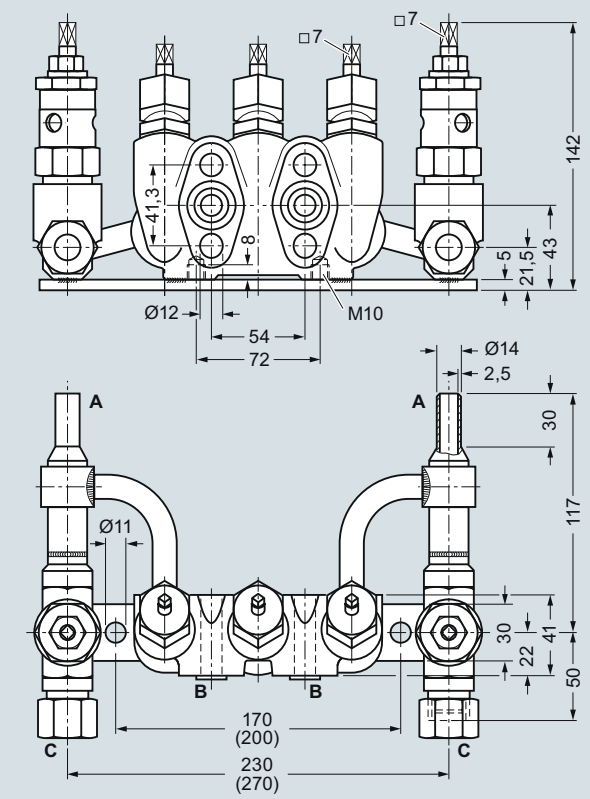



1 Valve manifold
2 Blow-out connection

1) According to DIN 19210 the design can be set approx. 100 °C (212 °F) lower than the media temperature.

Permissible operating pressure as a function of the permissible operating temperature

## Dimensional drawings

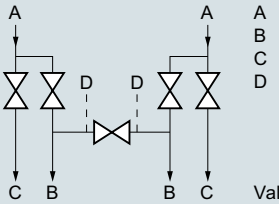



A Process connection (e.g. on primary device): Welding pin
B Transmitter connection: Flange connection to EN 61518, form A
C Blow-out connection: Pipe union with ferrule, diameter 14 mm, S series to DIN 2353

Valve design:
- Manifold valves: internal spindle thread
- Blow-out valves: external spindle thread

Valve manifold combination DN 5/DN 8 (7MF9416-6C.), dimensions in mm (deviating dimensions for 7MF9416-6D. shown in brackets)

## Schematics




A Process connection
B Transmitter connection
C Blow-out connection
D Test connection

Valve manifold combination for vapors

Valve manifold combination DN 5/DN 8, connections

1

## Valve manifold combination DN 8

### Overview

The valve manifold combination DN 8 (7MF9416-4..) is for pressure transmitters for differential pressure.

It is used to shut off and blow out the differential pressure lines and to check the pressure transmitter zero.

In the designs with a test connection, a test device can be connected to check the pressure transmitter characteristic.

### Benefits

- Max. working pressure 420 bar (6092 psi)

### Application

The valve manifold combination DN 8 is designed for vapors.

### Design

The valve manifold combination DN 8 has a process connection with welding pins.

The connection for the pressure transmitter is designed as as flange connection, while the blow-out connection is designed as a pipe union with ferrule.

The manifold valves have an internal spindle thread, while the blow-out valves have an external spindle thread.

The optional test connection is M20x1.5.

The valve manifold combination DN 8 is supplied with a mounting plate.

***Materials used***

| | Valve manifold | | Blow-out valves | |
|---|---|---|---|---|
| **Component** | **Material** | **Mat. No.** | **Material** | **Mat. No.** |
| Housing | P250GH | 1.0460 | 16 Mo 3 | 1.5415 |
| Head parts | C 35 | 1.0501 | 21 CrMo V57 | 1.7709 |
| Spindles | X 12 CrMoS 17 | 1.4104 | X 20 Cr 13 | 1.4021 |
| Cones | X 35 CrMo 17 | 1.4122 | X 35 CrMo 17 hardened and tempered | 1.4122 |
| Valve seats | X 6 CrNiMoTi | 1.4571/316Ti | X 20 Cr 13 | 1.4021 |
| Packings | PTFE | - | Pure graphite | - |
| Welding pins | - | - | 16 Mo 3 | 1.5415 |

### Function

- Shutting off the differential pressure lines
- Blowing out the differential pressure lines
- Checking the pressure transmitter zero

As an option it is possible to order a version with a test connection, to which a test device for checking the pressure transmitter characteristic can be connected.

| **Selection and Ordering data** | Article No. |
|---|---|
| **Valve manifold combination DN 8 for vapors** ↗ | **7MF9416-■■A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| for flanging to pressure transmitters for differential pressure, with mounting plate, max. working pressure 420 bar (6092 psi), also available in stainless steel on request (order accessory set with Order code), without certificate | |
| • without test connection | **4C** |
| • with test connection M20 × 1.5 | **4D** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| **Selection and Ordering data** | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** (required for flanging, weight 0.2 kg) | | |
| 4x screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B18.2; chromized steel<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **B34** | **7MF9410-5CA** |
| **Accessory set to DIN**[2] (required for flanging, weight 0.2 kg) | | |
| 4x screws M10x55 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F)<br>Flange connection to DIN 19 213 only permissible up to PN 160! | **B16** | **7MF9010-6CC** |

1) When ordering accessory set together with the valve manifold combination, please use Order code; otherwise use Article No.
2) Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)

### Accessories

***Accessory set for valve manifold combination DN 8 for flanging***

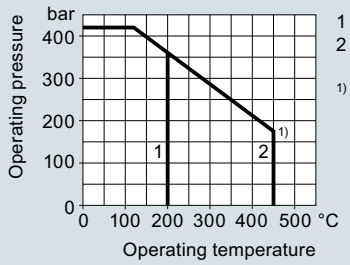
- B34: 4 screws $^{7}/_{16}$-20 UNF x $2^{1}/_{8}$ inch to ASME B 18.2.1, 2 O-rings (FPM 90)
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125

O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar (6092 psi), 120 °C (248 °F)

**Note**: M10 screws only permissible up to PN 160 (2321 psi)!

## Characteristic curves

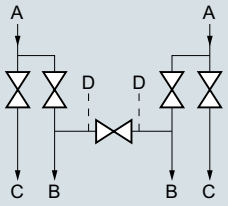



1 Valve manifold
2 Blow-out connection

1) According to DIN 19210 the design can be such that the temperatures for the differential pressure line can be set approx. 100 °C (212 °F) lower than the media temperature.

Permissible operating pressure as a function of the permissible operating temperature

## Schematics

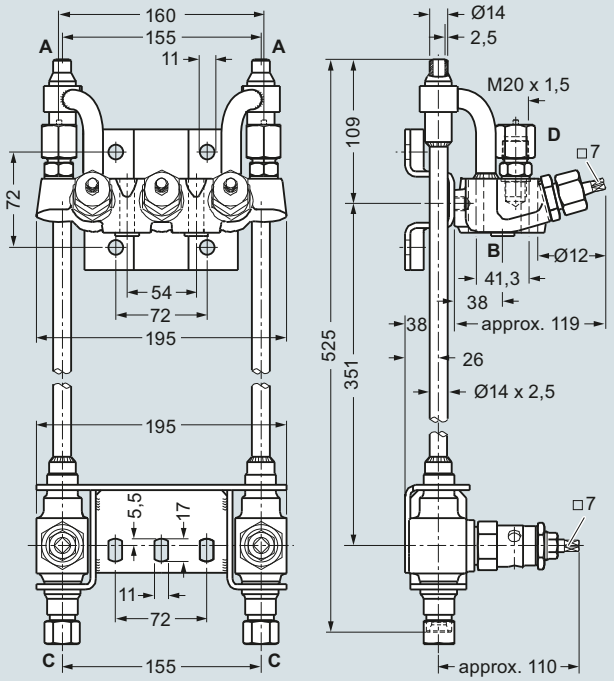



A Process connection
B Transmitter connection
C Blow-out connection
D Test connection

Valve manifold combination for vapors

Valve manifold combination DN 8, connections

## Dimensional drawings



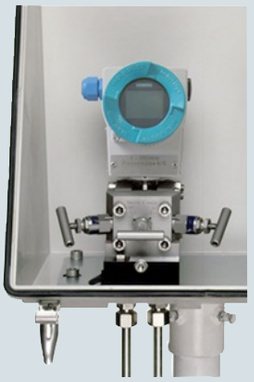

A Process connection (e.g. on primary device): Welding pin
B Transmitter connection: Flange connection to EN 61518, form A
C Blow-out connection: Pipe union with ferrule, diameter 14 mm, S series to DIN 2353
D Test connection (only with Article No. 7MF9416-4D.): M20 x 1,5
Valve design:
- Manifold valves: internal spindle thread
- Blow-out valves: external spindle thread

Valve manifold combination DN 8 (7MF9416-4..), dimensions in mm

1

## 2-, 3- and 5-spindle valve manifolds for installing in protective boxes

### Overview



The 2-spindle, 3-spindle and 5-spindle valve manifolds (7MF9412-1..) are used to shut off the differential pressure lines and to check the transmitter zero.

The five-spindle valve manifold permits venting on the transmitter side and checking of the transmitter characteristic.

These valve manifolds are preferentially used when mounting in protective boxes. In addition, they can also be used for wall, frame or pipe mounting together with the mounting bracket.

Transmitters of the DS series can be operated and read from the front when using these valve manifolds.

### Application

The valve manifolds DN 5 are designed for liquids and vapors and for installing in protective boxes.

Each is available in a version for oxygen on request

### Design

All versions of the spindle manifolds have a process connection ½-14 NPT.

The connection for the pressure transmitter is always designed as a flange connection to IEC 61518/DIN EN 61518, Form A.

The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT.

The valves have an external spindle thread.

***Materials used***

| Components | Material | Mat. No. |
|---|---|---|
| Housing | X 2 CrNiMo 17 13 2 | 1.4404/316L |
| Cones | X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti |
| Spindles | X 2 CrNiMo 18 10 | 1.4404/316L |
| Head parts | X 5 CrNiMo 18 10 | 1.4401/316 |
| Packings | PTFE | - |

### Functions

Functions of all valve manifolds:

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:

- Venting on the transmitter side
- Checking the pressure transmitter characteristic

| Selection and Ordering data | Article No. |
|---|---|
| **Valve manifolds DN 5 for mounting in protective boxes** ↗ | **7MF9412- ■■ A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| for liquids and gases<br>for flanging to pressure transmitters for absolute and differential pressure<br>Material: stainless steel, mat. No: 1.4404/316L<br>max. working pressure 420 bar (6092 psi)<br>(order accessory set with Order code),<br>without certificate | |
| • 2-spindle valve manifold with rotatng sleeve G½ | **1 B** |
| • 2-spindle valve manifold with flange connection | **1 C** |
| • 3-spindle valve manifold | **1 D** |
| • 5-spindle valve manifold | **1 E** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN**<br>(connection between valve manifold and pressure transmitter) | | |
| for valve manifold 7MF9412–1C. | | |
| 2x screws $^{7}/_{16}$-20 UNF x 2 inch to ASME B18.2.1; chromized steel<br>1x O-ring to DIN 3771,<br>20 x 2.65 - S - FPM90,<br>max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **F32** | **7MF9412-6CA** |
| 2x screws $^{7}/_{16}$-20 UNF x 2 inch to ASME B18.2.1; chromized steel<br>1x gasket made of PTFE,<br>max. permissible 420 bar (6092 psi), 80 °C (176 °F)[2] | **F35** | **7MF9412-6DA** |
| for valve manifold 7MF9412–1D and -1E. | | |
| 4x screws $^{7}/_{16}$-20 UNF x 2 inch to ASME B18.2.1; chromized steel<br>2x O-rings to DIN 3771,<br>20 x 2.65 - S - FPM90,<br>max. permissble 420 bar (6092 psi), 120 °C (248 °F)[2] | **F34** | **7MF9412-6GA** |
| 4x screws $^{7}/_{16}$-20 UNF x 2 inch to ASME B18.2.1; chromized steel<br>2x flat gaskets made of PTFE,<br>max. permissible 420 bar (6092 psi), 80 °C (176 °F)[2] | **F36** | **7MF9412-6HA** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| *Further designs*[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to DIN** (connection between valve manifold and pressure transmitter) | | |
| For valve manifold 7MF9412–1C. | | |
| 2x screws M10x50 to DIN EN 24014; chromized steel<br>2x washers Ø 10.5 mm to DIN 125;<br>1x O-ring to DIN 3771,<br>20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F)[2] | **F12** | **7MF9412-6AA** |
| 2x screws M10x50 to DIN EN 24014; chromized steel<br>2x washers Ø 10.5 mm to DIN 125;<br>1x gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F)[2] | **F15** | **7MF9412-6BA** |
| For valve manifold 7MF9412–1D and -1E. | | |
| 4x screws M10x50 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x O-rings to DIN 3771,<br>20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F)[2] | **F14** | **7MF9412-6EA** |
| 4x screws M10x50 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F)[2] | **F16** | **7MF9412-6FA** |
| **Mounting bracket** required for wall mounting or for securing to mounting rack, with bolts for mounting on valve manifold | | |
| • for valve manifolds 7MF9412-1B. and -1C. | **M14** | **7MF9006-6LA** |
| • for valve manifold 7MF9412-1D. | **M17** | **7MF9006-6NA** |
| • for valve manifold 7MF9412-1E. | **M18** | **7MF9006-6PA** |
| **Mounting clip** | | |
| 2 off, to secure mounting bracket to pipe | **M16** | **7MF9006-6KA** |
| **Valve manifold 100 bar** | | |
| Oil- and grease-free cleaning for oxygen applications, max. pressure PN 100 (1450 psi) and max. temperature 60 °C (140 °F) | | |
| • for valve manifolds 7MF9412-1B. and -1C. | **S12** | |
| • for valve manifold 7MF9412-1D. | **S13** | |
| • for valve manifold 7MF9412-1E. | **S14** | |
| **NACE MR-0175-certified** incl. acceptance test certificate 3.1 to EN 10204 | **D07** | |

1) When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Article No.
2) Flange connections with M10 screws only permissible up to PN 160 (2321 psi)!

## Accessories

***Accessory set for 2-, 3- and 5-spindle valve manifolds (Connection between valve manifold and transmitter)***

2-spindle valve manifold DN 5 with flange connection

- F32: 2 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 1 O Ring (FPM90)
- F35: 2 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 1 flat-gasket
- F12: 2 screws M10x50 to DIN EN 24014, 2 washers, 1 O-ring (FPM90)
- F15: 2 screws M10x50 to DIN EN 24014, 2 washers, 1 flat gasket

3-spindle and 5-way valve manifold DN 5

- F34: 4 screws 7/16 20 UNF x 2 inch toASME B 18.2.1, 2 O-rings (FPM90)
- F36: 4 screws 7/16 20 UNF x 2 inch toASME B 18.2.1, 2 flat-gaskets
- F14: 4 screws M10x50 to DIN EN 24014, 4 washers, 2 O-rings (FPM90)
- F16: 4 screws M10x50 to DIN EN 24014, 4 washers, 2 flat-gaskets

Washers Ø 10.5 to DIN 125

Flat-gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

O-ring to DIN 3771, 20 x 2.65 - S - FPM90; max.420 bar (6092 psi), 120 °C (248 °F)

**Note:**
Flange connections with M10 screws only permissible up to PN 160 (2321 psi)!

***Mounting bracket for wall mounting or for securing to mounting rack***

With bolds for mounting on valve manifold

- M14: For 2-spindle valve manifold DN 5
- M17: For 3-spindle valve manifold DN 5
- M18: For 5-spindle valve manifold DN 5

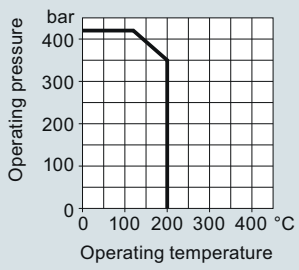
***Mounting clips (2 off)***

- M16: For securing the mounting brackets M14, M17 and M18 to pipe

***Valve manifold 100 bar, suitable for oxygen***

- S12: For 2-spindle valve manifold DN 5
- S13: For 3-spindle valve manifold DN 5
- S14: For 5-spindle valve manifold DN 5

## Characteristic curves

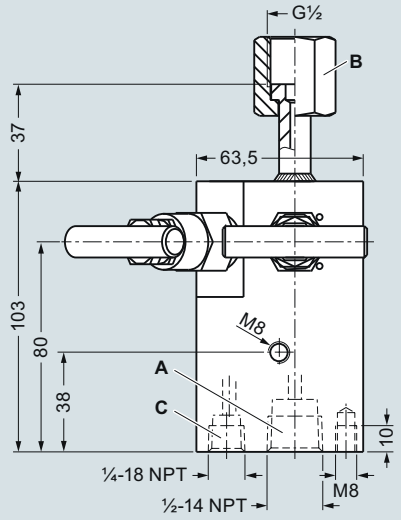



420 bar (6092 psi) at 120 °C (248 °F)
350 bar (5076 psi) at 200 °C (392 °F)

Permissible operating pressure as a function of the permissible operating temperature

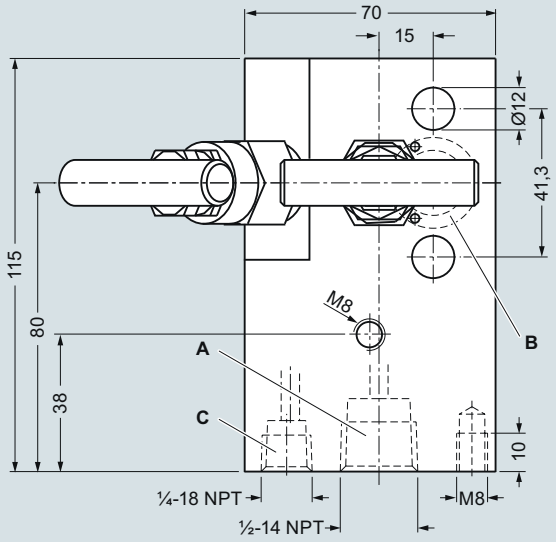
## 2-, 3- and 5-spindle valve manifolds for installing in protective boxes

### Dimensional drawings



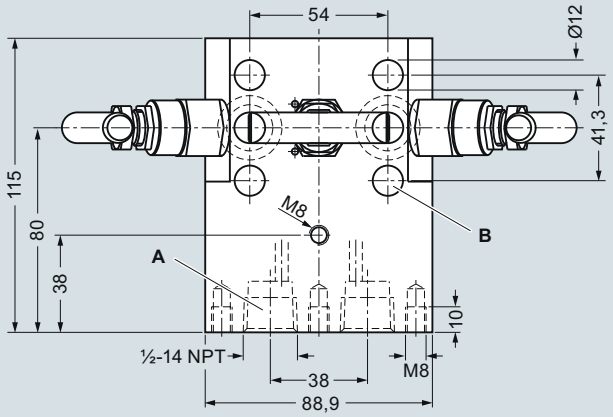

A Process connection: ½-14 NPT
B Transmitter connection: Nipple to DIN 16284, G½, SW 27
C Vent / test connection: ¼-18 NPT

2-spindle valve manifold DN 5 (7MF9412-1B..) with rotating sleeve, dimensions in mm



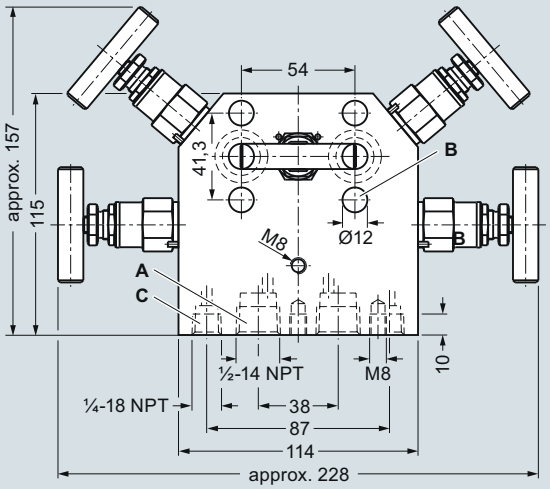

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to EN 61518, form A
C Vent / test connection: ¼-18 NPT
Valve design: external spindle thread

2-spindle valve manifold DN 5 (7MF9412-1C..), dimensions in mm



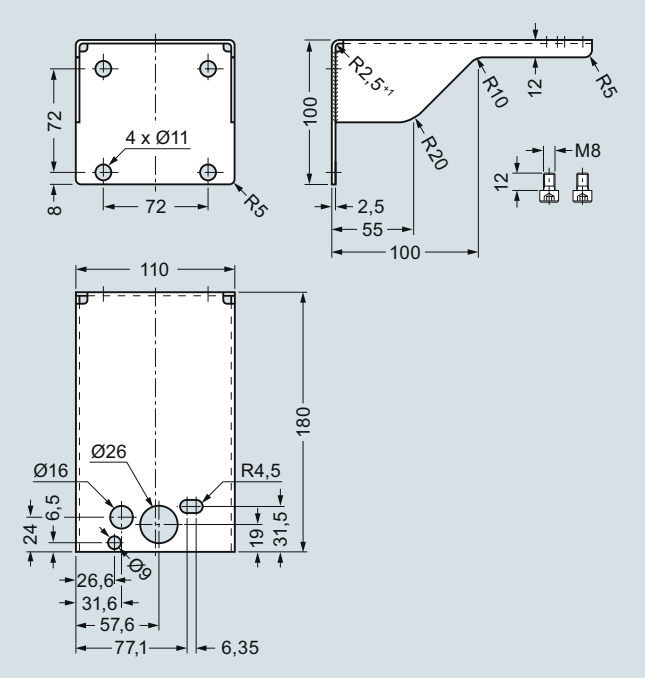

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection EN 61518, form A
Valve design: external spindle thread

3-spindle valve manifold DN 5 (7MF9412-1D..), dimensions in mm

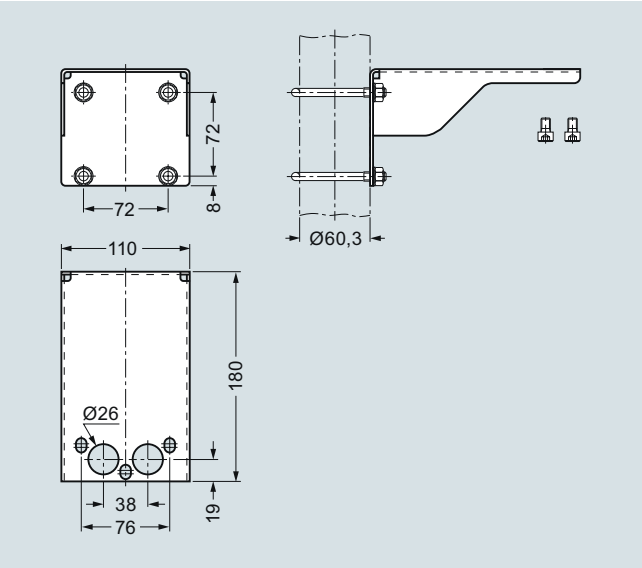



A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to EN 61518, form A
C Vent / test connection: ¼-18 NPT
Valve design: external spindle thread

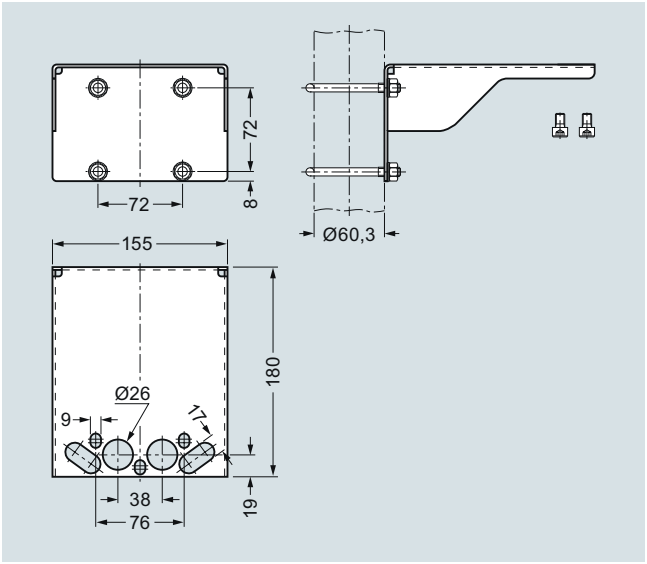
5-spindle valve manifold DN 5 (7MF9412-1E..), dimensions in mm




Mounting bracket (7MF9006-6LA)/(M14) for 2-spindle valve manifold, dimensions in mm

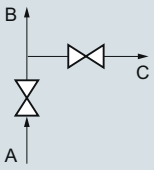



Mounting bracket (7MF9006-6NA)/(M17) for 3-spindle valve manifold, dimensions in mm



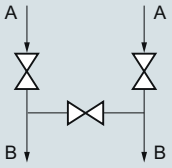

Mounting bracket (7MF9006-6PA)/(M18) for 5-spindle valve manifold, dimensions in mm

## Schematics



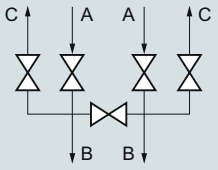

A Process connection
B Connection for pressure gauge or transmitter for pressure or absolute pressure
C Vent/test connection

2-spindle valve manifold DN 5 (with rotating sleeve G½ or flange connection), connections




A Process connection
B Transmitter connection

3-spindle valve manifold DN 5, connections



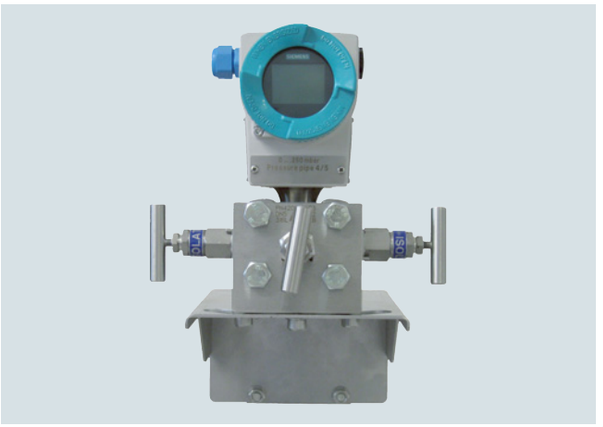

A Process connection
B Transmitter connection
C Vent/test connection

5-spindle valve manifold DN 5, connections

1

## 3- and 5-spindle valve manifolds for vertical angular differential pressure lines

### Overview



These 3-spindle and 5-spindle valve manifolds 7MF9413-1.. were developed specially for vertical differential pressure lines.

The valve manifolds are used to shut off the differential pressure lines and to check the pressure transmitter zero.

The 5-spindle valve manifold permits venting on the transmitter side and checking of the pressure transmitter characteristic.

### Benefits

- For vertical differential pressure lines
- Max. operating pressure 420 bar (6092 psi)
- Transmitters of the DS series can be operated and read from the front.

### Application

The 3-spindle and 5-spindle valve manifolds for vertical differential pressure lines are for liquids and gases. The valve manifolds are flanged on the pressure transmitter.

### Design

All versions of the spindle valve manifolds have a process connection ½-14 NPT.

The connection for the pressure transmitter is always designed as a flange connection to IEC 61518/DIN EN 61518, form B .

The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT.

Materials used:

| Component | Material | Mat. No. |
|---|---|---|
| Housing | X 2 CrNiMo 17 13 2 | 1.4404/316L |
| Cones | X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti |
| Spindles | X 2 CrNiMo 18 10 | 1.4404/316L |
| Head parts | X 5 CrNiMo 18 10 | 1.4401/316 |
| Packings | PTFE | - |

### Function

Functions of all valve manifolds:

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:

- Venting on the transmitter side
- Checking the pressure transmitter characteristic

| Selection and Ordering data | Article No. |
|---|---|
| **Valve manifolds for vertical differential pressure lines** ↗ | **7MF9413 - ■■ A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| for liquids and gases<br>for flanging to pressure transmitters for absolute and differential pressure<br>Material: stainless steel, mat. No: 1.4404/316L<br>max. working pressure 420 bar (6092 psi)<br>(order accessory set with Order code),<br>without certificate | |
| • 3-spindle valve manifold | **1 D** |
| • 5-spindle valve manifold | **1 E** |
| ***Accessories*** | |
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN**<br>(connection between valve manifold and pressure transmitter)<br>4x screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1; chromized steel<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **K36** | **7MF9411-5DB** |
| **Accessory set to DIN**[2]<br>(connection between valve manifold and pressure transmitter)<br>4x screws M10x45 to DIN EN 24014; chromized steel<br>4x washers Ø 10.5 mm to DIN 125;<br>2x flat gaskets made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F); Flange connection with M10 screws only permissible up to PN 160 (2321 psi). | **K16** | **7MF9411-6BB** |
| **Mounting bracket**<br>required **for wall mounting** or for securing to mounting rack, with bolts for mounting on valve manifold | | |
| • for valve manifold 7MF9413-1D. | **M17** | **7MF9006-6NA** |
| • for valve manifold 7MF9413-1E. | **M18** | **7MF9006-6PA** |
| required **for mounting on 2" standpipe**, with bolts for mounting on valve manifold | | |
| • for valve manifold 7MF9413-1D. | **M19** | **7MF9006-6QA** |
| **Mounting clip**<br>2 off, to secure mounting bracket to pipe | **M16** | **7MF9006-6KA** |
| **valve manifold 100 bar (1450 psi)**<br>suitable for oxygen | | |
| • for valve manifold 7MF9413-1D. | **S13** | |
| • for valve manifold 7MF9413-1E. | **S14** | |
| **NACE MR-0175-certified**<br>incl. acceptance test certificate 3.1 to EN 10204 | **D07** | |

[1] When ordering accessory set or mounting together with the multiway cock, please use Order code; otherwise use Article No.

[2] Flange connections to DIN 19213 only permissible up to PN 160 (2321 psi)!

## Accessories

***Accessory set (connection between valve manifold and transmitter)***

- K36: 4 screws $^{7}/_{16}$-20 UNF x 1¾ inch to ASME B18.2.1, 2 flat gaskets
- K16: 4 screws M10x45 to DIN EN 24014, 4 washers, 2 flat gaskets

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

**Note**: Flange connection with M10 screws only permissible up to PN 160 (2321 psi)!

***Mounting bracket for wall mounting or for securing to mounting rack***

With bolts for mounting on valve manifold

- M17: For 3-spindle valve manifold
- M18: For 5-spindle valve manifold

***Mounting bracket for mounting on 2" standpipe***

With bolts for mounting on valve manifold

- M19: For 3-spindle valve manifold

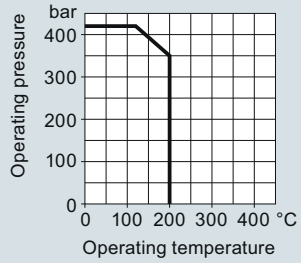
***Mounting clips (2 off)***

For securing the mounting brackets M17, M18 and M19 to pipe

***Valve manifold 100 bar, suitable for oxygen***

- For 3-spindle valve manifold
- For 5-spindle valve manifold

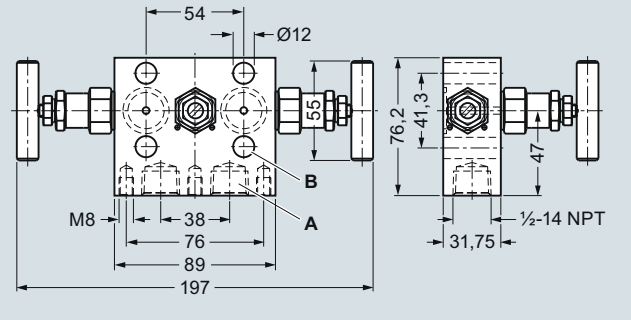
## Characteristic curves



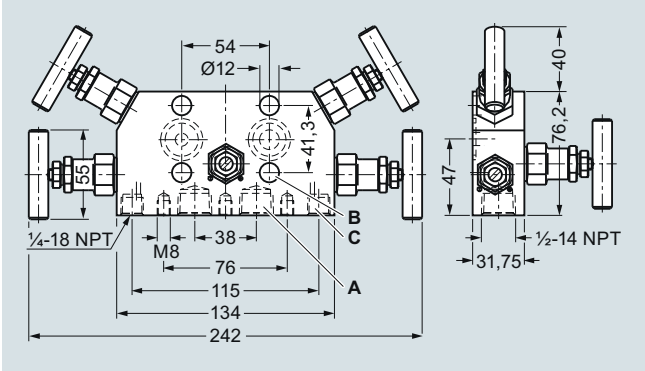

420 bar (6092 psi) at 120 °C (248 °F)
350 bar (5076 psi) at 200 °C (392 °F)

Permissible operating pressure as a function of the permissible operating temperature

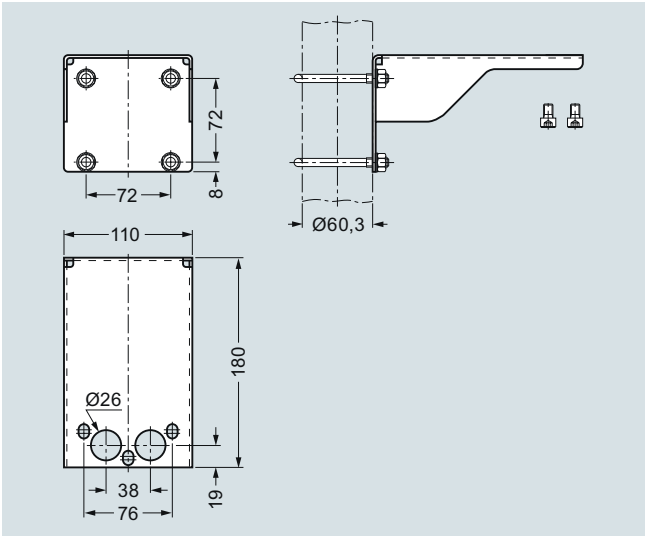
## Dimensional drawings



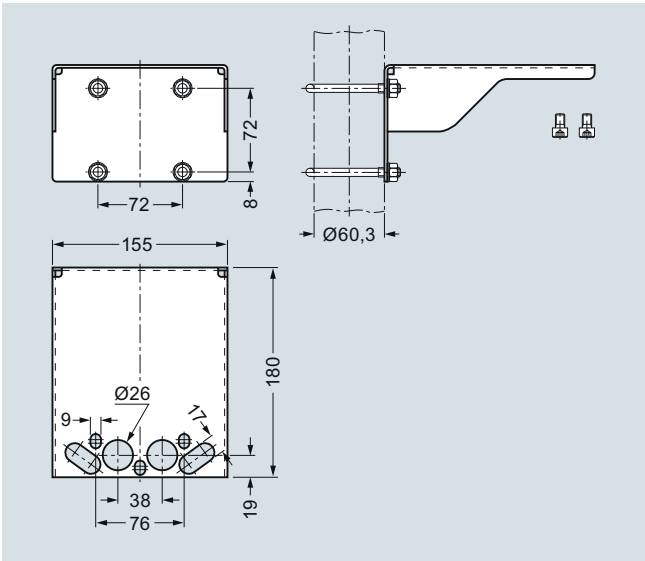

3-spindle valve manifold 7MF9413-1D. for vertical differential pressure lines, dimensions in mm




5-spindle valve manifold 7MF9413-1E. for vertical differential pressure lines, dimensions in mm

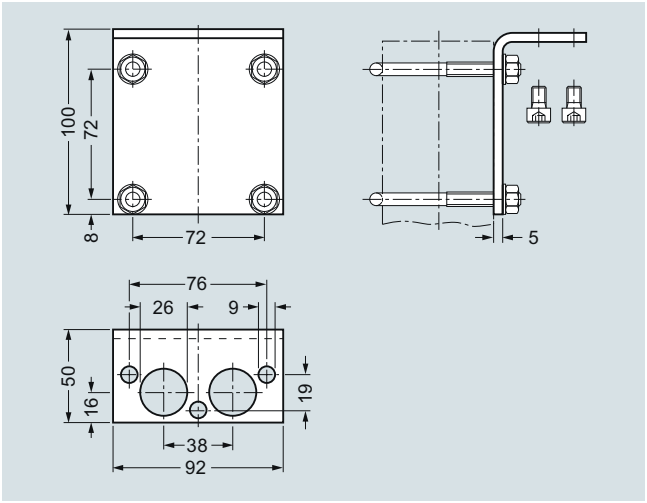



Mounting bracket (7MF9006-6NA)/(M17) for 3-spindle valve manifold, dimensions in mm



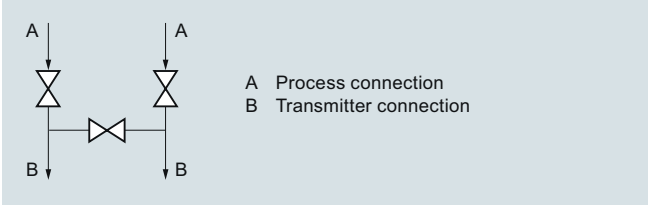

Mounting bracket (7MF9006-6PA)/(M18) for 5-spindle valve manifold, dimensions in mm

## 3- and 5-spindle valve manifolds for vertical angular differential pressure lines

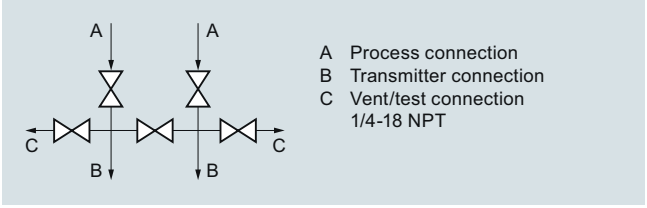



Mounting bracket (7MF9006-6QA)/(M19) for 3-spindle valve manifold, dimensions in mm

### Schematics




3-spindle valve manifold for vertical differential pressure lines, connections




5-spindle valve manifold for vertical differential pressure lines, connections

## Overview

The low-pressure multiway cock 7MF9004-4CA/-4DA can be flanged to pressure transmitters for differential pressure.

## Benefits

- Robust design
- For liquids and gases
- One-hand operation

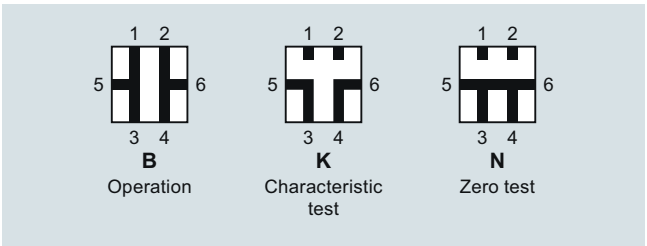
## Design

The multiway cock has 2 process connections and 2 test connections, which are available in 2 versions (with sealing screws $G^3/_8$ or quick-release couplings). The housing is made of hot-pressed brass CuZn39Pb3, CW 614N. Test connections with sealing screws or with self-sealing quick-release couplings.

**Note:** An accessory set is always required for flanging of the multiway cock to a differential pressure transmitter.

## Function

- Shutting off the differential pressure lines
- Testing the pressure transmitter zero
- Testing the pressure transmitter characteristic




Cock positions; the symbols are printed on the cock

| Selection and Ordering data | Article No. |
|---|---|
| **Low-pressure multiway cock** for liquids and gases, for flanging to pressure transmitters, max. working pressure 25 bar (363 psi), max. working temperature 60 °C (140 °F) (up to 80 °C (176 °F) for a short time), weight 1.75 kg (without accessory set) | |
| **Test connections** | |
| 2x sealing screws $G^3/_8$ | **7MF9004-4CA** |
| 2x quick-release couplings | **7MF9004-4DA** |
| ***Accessories*** | |
| Test report to EN 10204-3.1 | **7MF9000-8AB** |
| Material acceptance test certificate to EN 10204-3.1 | **7MF9000-8AD** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1] | | |
| Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** (required for flanging, weight 0.2 kg) | | |
| 4x screws $^7/_{16}$-20 UNF x 1 inch to ASME B18.2.1; chromized steel 2x gaskets made of PTFE, max. permissible temperature 80 °C (176 °F) | **L31** | **7MF9004-5CC** |
| **Accessory set to DIN** (required for flanging, weight 0.2 kg) | | |
| 4x screws M10x25 to DIN EN 24017; chromized steel 4x washers Ø 10.5 mm to DIN 125; 2x gaskets made of PTFE, max. permissible temperature 80 °C (176 °F) | | |
| • Standard design | **L11** | **7MF9004-6AD** |
| • Version for oxygen | **L15** | **7MF9004-6AE** |
| **Multiway cock in oil-free and grease-free design** BAM-tested lubricant, gasket suitable for oxygen | **S11** | |
| **Mounting bracket** required **for wall mounting** or for securing on rack (72 mm grid), made of electrogalvanized sheet-steel, weight 0.85 kg | **M13** | **7MF9004-6AA** |

[1] When ordering accessory set or mounting together with the multiway cock, please use Order code; otherwise use Article No.

## Low-pressure multiway cock

### Accessories

***Accessory set for low-pressure multiway cock***

- L31: 4 screws $^{7}/_{16}$-20 UNF x 1 inch, 2 flat gaskets
- L11: 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets
- L15 (suitable for oxygen): 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. permissible temperature 80 °C (176 °F)

***Multiway cock in oil-free and grease-free design***

- S11: BAM-tested lubricant, gasket suitable for oxygen

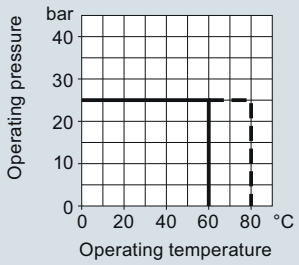
***Mounting brackets***

- M13: Required for wall mounting or for securing on rack (72 mm grid); made of electrogalvanized sheet-steel

### Options

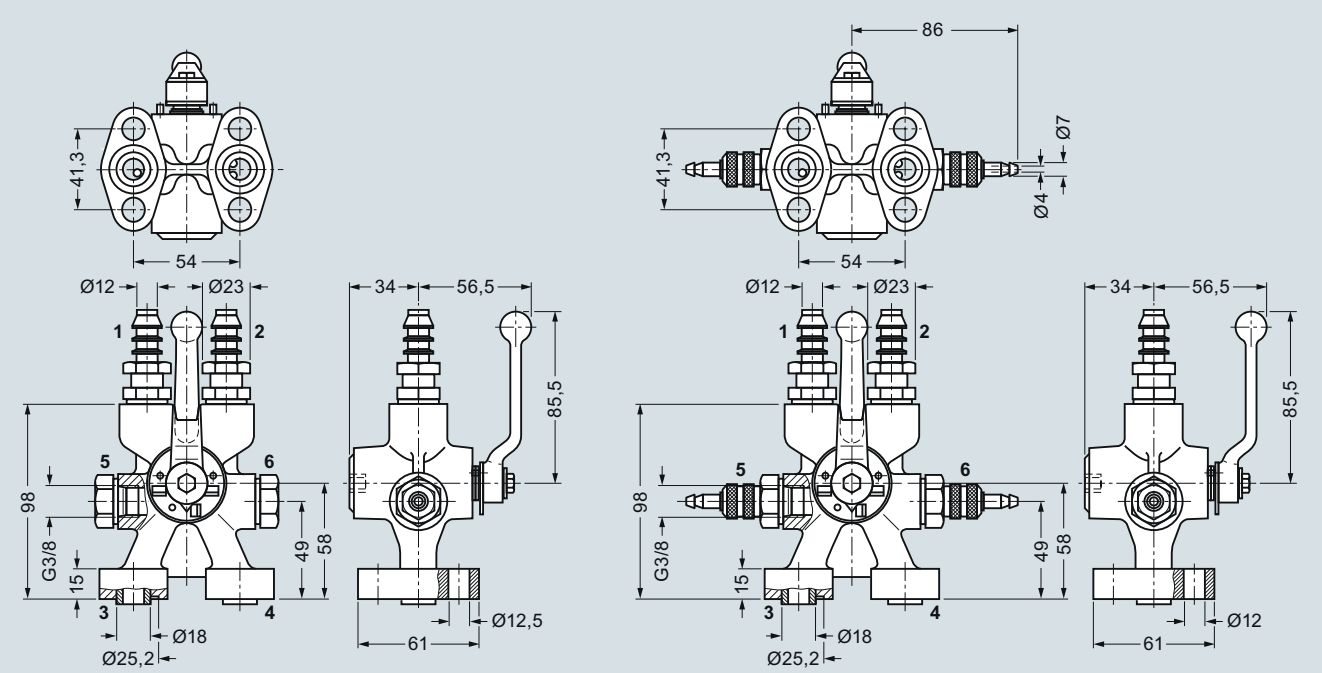
Test connections
- 2 sealing screws G$^{3}/_{8}$
- 2 quick-release couplings

### Characteristic curves



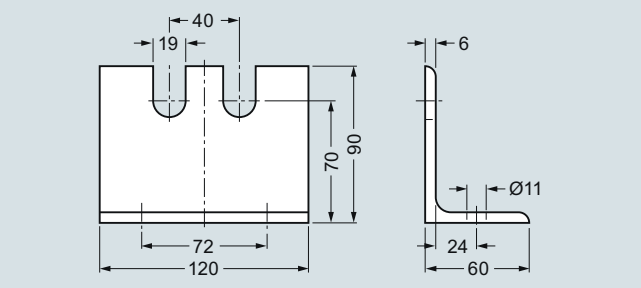

Low-pressure multiway cock, permissible operating pressure as a function of the permissible operating temperature

### Dimensional drawings




1 and 2 Process connections (hose sleeve, diameter 12 mm)
3 and 4 Transmitter connections (EN 61518, form A)
5 and 6 Text connections (with sealing screws G3/8 or with quick-release couplings

Low-pressure multiway cock 7MF9004-4CA/-4DA for direct flanging to pressure transmitters for differential pressure, dimensions in mm




Mounting bracket 7MF9004-6AA (M13), dimensions in mm

## Overview

The oval flange 7MF9408-2C. for pressure transmitters for absolute pressure and differential pressure has a ½-14 NPT female thread and is designed for max. operating pressure 400 bar (5800 psi).

## Accessories

***Accessory set for oval flange***

- E36: 2 screws $^{7}/_{16}$-20 UNF x 1½ inch to ASME B18.2.1, 1 flat gasket
- E34: 2 screws $^{7}/_{16}$-20 UNF x 1½ inch to ASME B18.3, 1 O-ring (FPM 90)
- E13: 2 screws M10x40 to DIN EN 4762, 2 washers, 1 O-ring (FPM 90)
- E16: 2 screws M10x40 to DIN EN ISO 4762, 2 washers, 1 flat gasket

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar (6092 psi), 80 °C (176 °F)

O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar (6092 psi), 120 °C (248 °F)

**Note**: M10 screws only permissible up to PN 160 (2321 psi)!

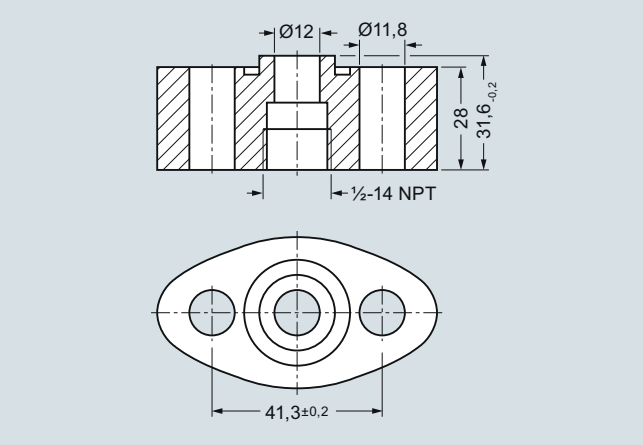
| Selection and Ordering data | Article No. |
|---|---|
| **Oval flange**<br>with female thread ½-14 NPT, max. working pressure 420 bar (6092 psi), flange connection to IEC 61518/DIN EN 61518, form A | |
| **Material** | |
| P250GH, mat. No.: 1.0460 | **7MF9408-2CE** |
| X 2 CrNiMo 17 13 2, mat. No. 1.4404/316L | **7MF9408-2CL** |

| Selection and Ordering data | Order code | Article No. |
|---|---|---|
| ***Further designs***[1]<br>Please add "**-Z**" to Article No. and specify Order code. | | |
| **Accessory set to EN** | | |
| 2x screws $^{7}/_{16}$-20 UNF x 1½ inch to ASME B 18.2.3; chromized steel<br>1x flat gasket made of PTFE, max. permissible 420 bar (6092 psi), 80 °C (176 °F) | **E36** | **7MF9408-5DA** |
| 2x screws $^{7}/_{16}$-20 UNF x 1½ inch to ASME B 18.2.3; chromized steel<br>1x O-ring to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 420 bar (6092 psi), 120 °C (248 °F) | **E34** | **7MF9408-5CA** |
| **Accessory set to DIN** | | |
| 2x screws M10x40 to DIN EN ISO 4762; chromized steel<br>2x washers Ø 10.5 mm to DIN 125;<br>1x O-ring to DIN 3771, 20 x 2.65 - S - FPM90, max. permissble 160 bar (2321 psi), 120 °C (248 °F)[2] | **E13** | **7MF9408-6AA** |
| 2x screws M10x40 to DIN EN ISO 4762; chromized steel<br>2x washers Ø 10.5 mm to DIN 125;<br>1x flat gasket made of PTFE, max. permissible 160 bar (2321 psi), 80 °C (176 °F)[2] | **E16** | **7MF9408-6BA** |
| **NACE MR-0175-certified**<br>incl. acceptance test certificate 3.1 to EN 10204 | **D07** | |

[1] When ordering accessory set together with the oval flange, please use Order code; otherwise use Article No.

[2] Flange connections with M10 screws only permissible up to PN 160 (2321 psi)

## Dimensional drawings




Oval flange 7MF9408-2C., dimensions in mm

## Overview

Adapters enable e.g. a transition from medium connections with NPT thread to shut-off valves to DIN 16270 ... 16272 or pipes in conjunction with a connection gland (e.g. 7MF9008).

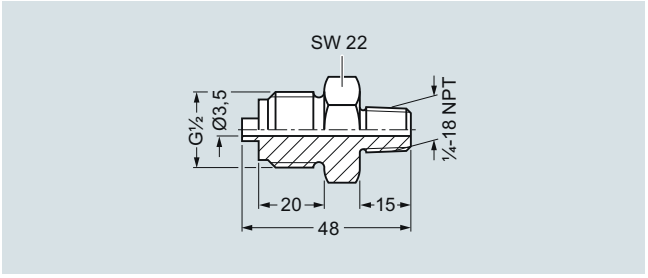
## Design

The connection pieces are made of X 6 CrNiMoTi 17 12 2, mat. No. 1.4571 and available in 3 versions

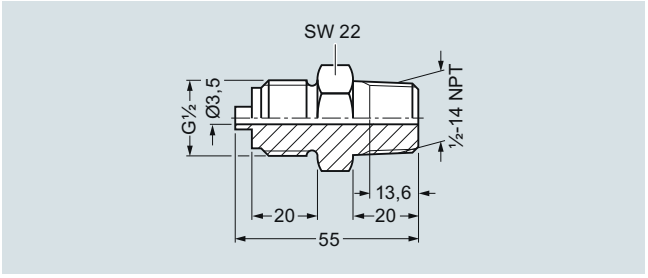
- Thread ¼-18 NPT and connection shank G½ to DIN EN 837-1
- Thread ½-14 NPT and connection shank G½ to DIN EN 837-1
- Thread ½-14 NPT and thread ½-14 NPT

| Selection and Ordering data | Article No. |
|---|---|
| **Mounting collar**<br>Max. operating pressure: 689 bar (10 000 psi), Weight: 0.2 kg | |
| with thread ¼-18 NPT – G½ | **7MF9001-1AA** |
| with thread ½-14 NPT – G½ | **7MF9001-1CA** |
| with thread ½-14 NPT – ½-14 NPT | **7MF9001-1DA** |
| with thread ½-14 NPT – M20 x 1.5 | **7MF9001-1EA** |
| with pipe union with ferrule 12 S, max. operating pressure 630 bar (9 100 psi), ∅ 12 mm – ½-14 NPT | |
| • 9 SMnPb 28, mat. No. 1.0718 | **7MF9008-1CA** |
| • X 6 CrNiMoTi 17 122, mat. No. 1.4571 | **7MF9008-1CB** |
| with pipe union with ferrule 14 S, max. operating pressure 630 bar (9 100 psi), ∅ 14 mm – ½-14 NPT | |
| • 9 SMnPb 28, mat. No. 1.0718 | **7MF9008-1CC** |
| • X 6 CrNiMoTi 17 122, mat. No. 1.4571 | **7MF9008-1CD** |

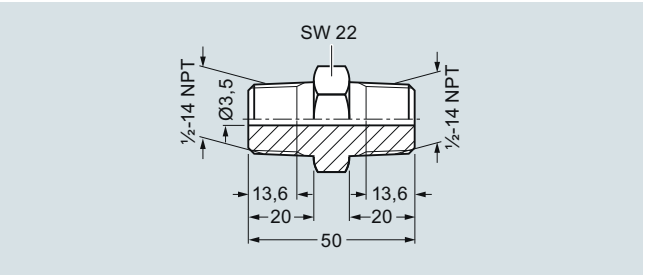
## Dimensional drawings



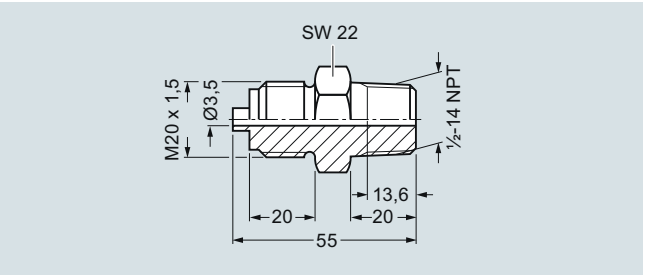

Connection piece with thread ¼-18 NPT and connection shank G½ (7MF9001-1AA), dimensions in mm



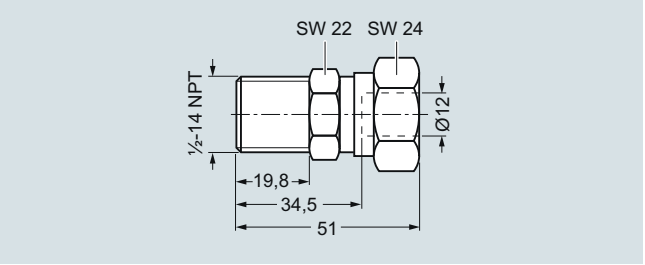

Connection piece with thread ½-14 NPT and connection shank G½ (7MF9001-1CA), dimensions in mm



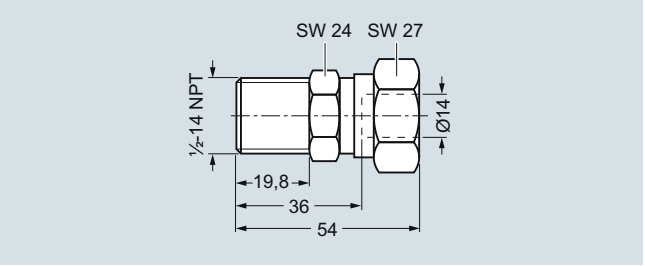

Connection piece with thread ½-14 NPT and thread ½-14 NPT (7MF9001-1DA), dimensions in mm




Connection piece with thread ½-14 NPT and connection shank M20 x 1.5 (7MF9001-1EA), dimensions in mm




Connection piece with pipe union with ferrule 12 S, ∅ 12 mm and thread ½-14 NPT (7MF9008-1CA and -1CB), dimensions in mm




Connection piece with pipe union with ferrule 14 S, ∅ 14 mm and thread ½-14 NPT (7MF9008-1CC and -1CD), dimensions in mm

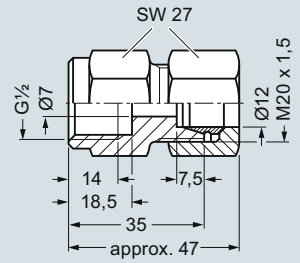
## Overview

Connection glands to connect medium or differential pressure lines to collars G½ to DIN EN 837-1

- For rated pressures up to PN 630 (9137psi)
- For oxygen only up to PN 250 (3626 psi)

| Selection and Ordering data | | Article No. |
|---|---|---|
| **Connection screwed gland for pipelines** (weight 0.2 kg) | | |
| Material | Design | |
| 11SMn30 (mat. No. 1.0715) | Standard | **7MF9008-1GA** |
| X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | Standard | **7MF9008-1GB** |
| X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | Grease-free | **7MF9008-1GC** |

## Dimensional drawings




Connection gland 7MF9008-1G., dimensions in mm

1

## Connection parts G 1/2

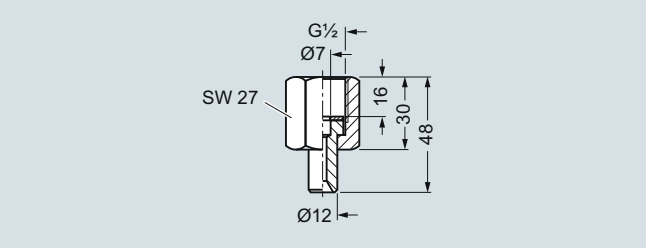
### Overview

Connection parts G½ for pressure gauges and shut-off fittings are available in 3 versions:

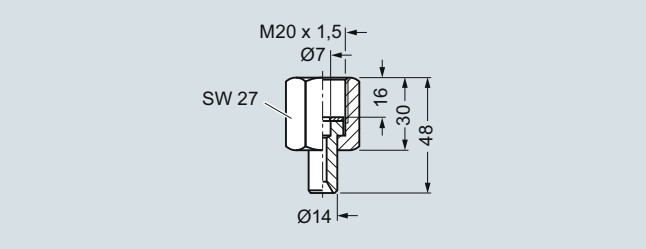
- Nipple connection
- Clamping sleeve
- Collar connection piece

| Selection and Ordering data | | Article No. |
|---|---|---|
| **Adapters G½** for pressure gauges and shut-off fittings | | |
| **Nipple connection** G½ to DIN 16284 (union nut with nipple and gasket); max. working pressure 400 bar (5802 psi); weight 0.1 kg; connection: G½ to DIN EN 837-1; Female thread G½ | | |
| Material | Mat. No. | |
| CuZn39Pb3 | CW 614N | **M56340-A0001** |
| Union nut<br>9 SMn 28 k<br>Nipple:<br>RSt 37-2 | <br>1.0715<br><br>1.0037 | **M56340-A0002** |
| Union nut<br>X 8 CrNiS 18 9<br>Nipple:<br>X 6 CrNiMoTi 17 12 2 | <br>1.4305<br><br>1.4571/316Ti | **M56340-A0003** |
| **Nipple connection** M20 x 1.5 to DIN 16284 (union nut with nipple and gasket); max. working pressure 400 bar (5802 psi); weight 0.1 kg; connection: M20 x 1.5 to DIN EN 837-1; Female thread M20 x 1.5 | | |
| Material | Mat. No. | |
| Union nut<br>X 8 CrNiS 18 9<br>Nipple:<br>X 6 CrNiMoTi 17 12 2 | <br>1.4305<br><br>1.4571/316Ti | **M56340-A0008** |
| **Clamping sleeve** G½ to DIN 16283; max. working pressure 400 bar (5802 psi); weight 0.1 kg; Connections: G½ to DIN EN 837-1; Female thread: G½ right-hand G½ left-hand | | |
| Material | Mat. No. | |
| CuZn39Pb3 | CW614N | **M56340-A0004** |
| 9 SMn 28 k | 1.0715 | **M56340-A0005** |
| **Collar-adapter** max. working pressure; weight 0.1 kg; Connections: G½ to DIN EN 837-1; Male thread: G½, G½ | | |
| Material | Mat. No. | |
| CuZn39Pb3 | CW614N | **M56340-A0006** |
| 9 SMn 28 k | 1.0715 | **M56340-A0007** |

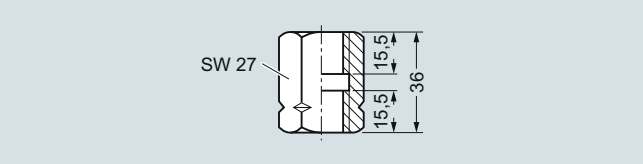
### Dimensional drawings



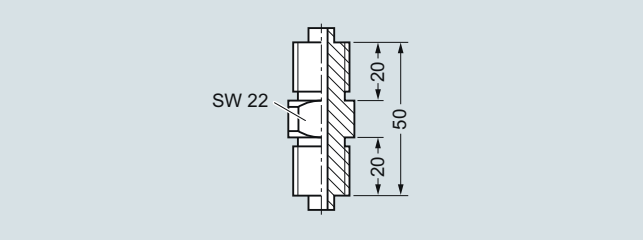

Nipple connection G½ (M56340-A0001 to -A0003), dimensions in mm




Nipple connection M20 x 1.5 (M56340-A0008), dimensions in mm




Clamping sleeve (M56340-A0004/-A0005), dimensions in mm




Collar connection piece (M56340-A0006/-A0007), dimensions in mm

## Overview

Water traps protect pressure gauges and shut-off fittings from heating up (e.g. by steam) by the water column produced by the water trap.

The max. working temperature is 120 °C (248 °F) at 100 bar (1450 psi), 300 °C (572 °F) at 80 bar (1160 psi) or 400 °C (752 °F) at 63 bar (914 psi). If the temperature of the measured medium is higher, a sufficiently long line has to be connected upstream of the trap to enable heat dissipation.

## Design

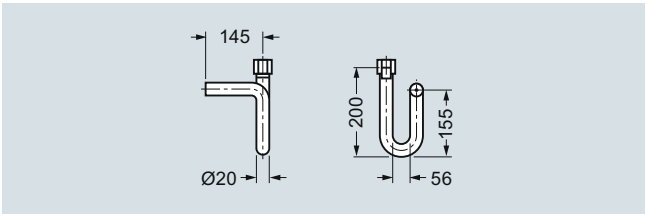
The water traps are available in U shape (type B) or circular shape (type D) to DIN 16282. They have a weld-on end Ø 20 mm × 2.6 mm on the measurement side. The connection on the device side is a clamping sleeve G½ to DIN 16283.

The water traps are made of steel (P250GH) or stainless steel (X 6 CrNiMoTi 17 12 2)

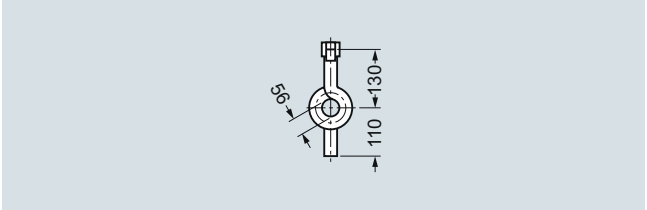
Water traps are designed as standard for max. operating temperature 120 °C (248 °F) at max. operating pressure 100 bar (1450 psi) (300 °C (572 °F) at 80 bar (1160 psi), 400 °C (752 °F) at 63 bar (914 psi). Water traps for higher operating pressures and temperatures are available on request.

| Selection and Ordering data | | Article No. |
|---|---|---|
| **Water traps**<br>for pressure gauges and pressure transmitters, max. working temperature 120 °C (248 °F), max. working pressure 100 bar (1450 psi) (or 300 °C (572 °F) at 80 bar (1160 psi), or 400 °C (752 °F) at 63 bar (914 psi)), weight 0.7 kg | | |
| **Water trap B to DIN 16282** | | |
| Material | Mat. No. | |
| P235GH | 1.0345 | **M56340-A0043** |
| X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti | **M56340-A0061** |
| **Water trap D to DIN 16282** | | |
| Material | Mat. No. | |
| P235GH | 1.0345 | **M56340-A0045** |
| X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti | **M56340-A0063** |

## Dimensional drawings




Water traps, type B, M56340-A0043/-A0061, dimensions in mm

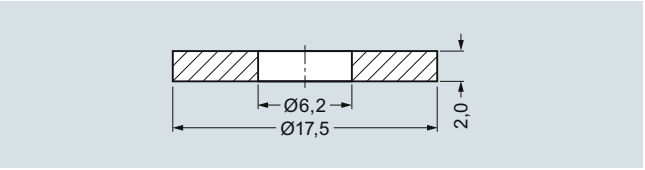



Water traps, type D, M56340-A0045/-A0063, dimensions in mm

## Overview

The sealing rings to EN 837-1 are required to seal measuring instruments for pressure with the process connection G½B.

## Dimensional drawings




Sealing ring 7MF9007-7A. to EN 837-1, dimensions in mm

| Selection and Ordering data | Article No. |
|---|---|
| **Sealing ring to EN 837-1 for thread G½ made of**<br>(packing unit 100 pcs) | |
| • Copper | **7MF9007-7AA** |
| • Soft iron | **7MF9007-7AB** |
| • Stainless steel, mat.-No. 1.4571 | **7MF9007-7AC** |
| • PTFE | **7MF9007-7AD** |
| ***Accessories*** | |
| Test report to EN 10204-3.1 | **7MF9000-8AB** |
| Material acceptance test certificate to EN 10204-3.1 | **7MF9000-8AD** |

1

## Pressure surge reducers

### Overview

The pressure surge reducer protects the pressure gauge against damage, premature wear and tear and inaccurate/fluctuating indications.

### Application

The pressure reducer is used when pulsations occur in the measured medium (e.g. in slow-running vapor engines, piston pumps and compressors), or if drastic fluctuations are likely to occur in the measured medium (e.g. in hydraulic presses and tensile testing machines).

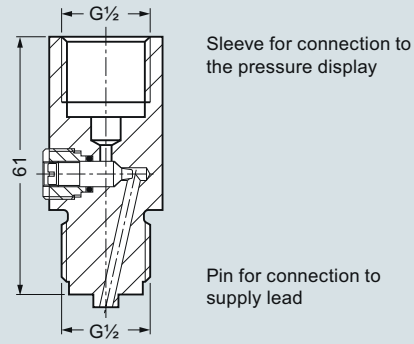
### Design

- Enclosure made of brass or stainless steel (mat. no. 1.4571)
- Adjustable nozzle
- Sleeve for connection to the measuring instrument
- Pin for connection to supply lead

### Selection and Ordering data

| | | | Article No. |
|---|---|---|---|
| **Pressure surge reducer**<br>Weight approx. 0.21 kg | | | |
| Material | Full-scale value | Weight approx. in kg | |
| Brass | 250 bar (3626 psi) | 0.21 | **M56340-A54** |
| Stainless steel | 600 bar (8702 psi) | 0.21 | **M56340-A59** |

### Dimensional drawings




Pressure surge reducer, dimensions in mm

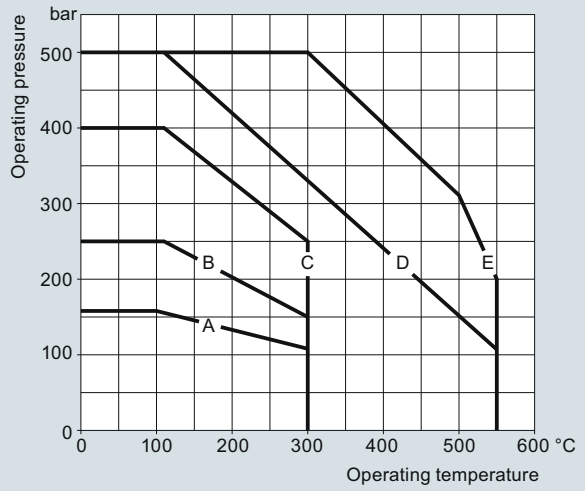
## Overview

Primary shut-off valves are available in the following versions:

- For non-corrosive liquids, gases and vapors
- For corrosive liquids and gases
- Grease-free for oxygen

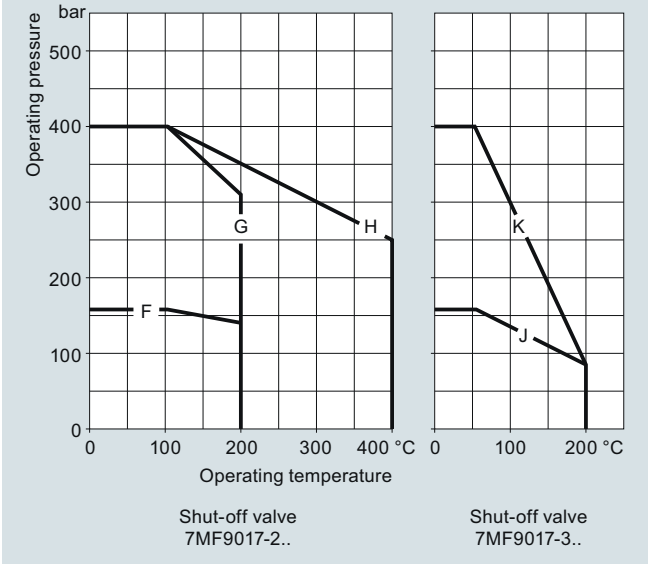
The shut-off valves are available in various materials and with various connections (see Selection and Ordering data)

## Characteristic curves




Shut-off valve 7MF9017-1..

Shut-off valve 7MF9017-1.., permissible working pressure as a function of the permissible working temperature

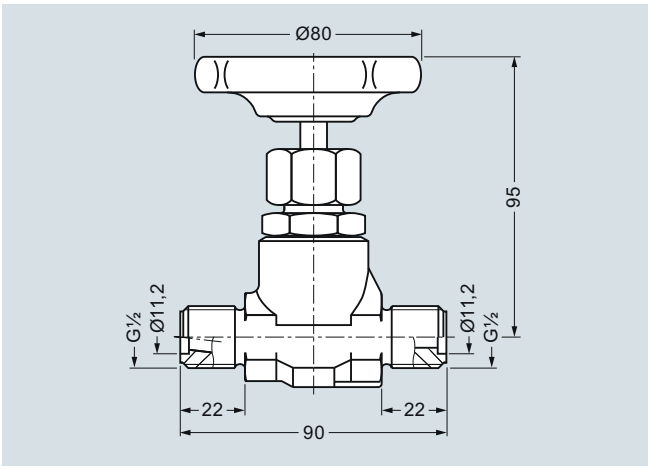



Shut-off valve 7MF9017-2..

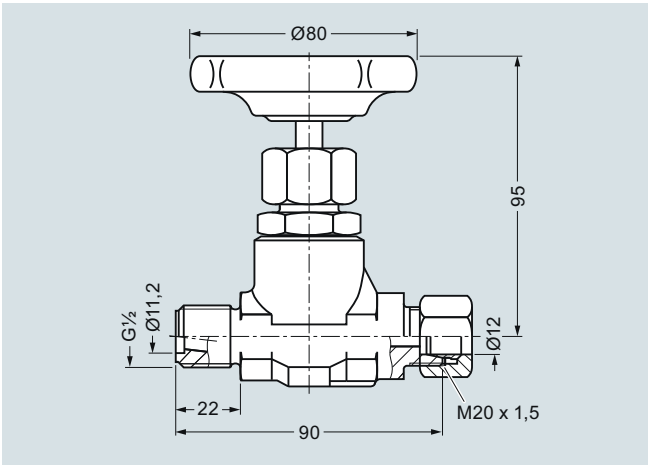
Shut-off valve 7MF9017-3..

Shut-off valve 7MF9017-2.. and -3.., permissible working pressure as a function of the permissible working temperature

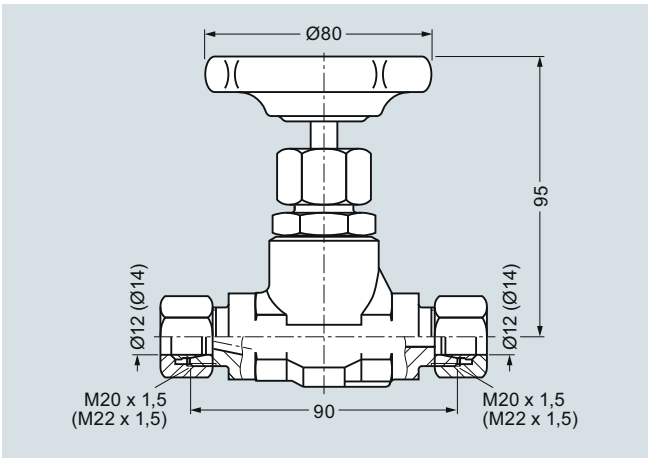
## Dimensional drawings




Shut-off valve 7MF9017–1A., dimensions in mm

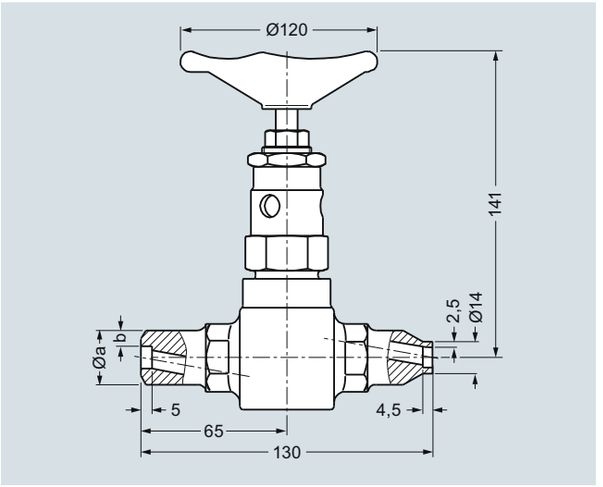



Shut-off valve 7MF9017-1B. and -2B., dimensions in mm




Shut-off valves 7MF9017-1C., -1D. and -2C., dimensions in mm

## Primary shut-off valves




Shut-off valves 7MF9017-, dimensions in mm

| Ø A x b | 7MF9017- |
|---|---|
| 14 mm x 2.5 mm | 1F. and 1G. |
| 21.3 mm x 6.3 mm | 1H. and 2H. |
| 24 mm x 7.1 mm | 1J., 1K. and 2J. |

### Selection and Ordering data

**Primary shut-off valves,** without certificate

| Max. working pressure | Charac-teristic[1] | Material | Mat. No. | Spindle thread | Connections | Approx. weight kg | Article No. | |
|---|---|---|---|---|---|---|---|---|
| **Shut-off valve for non-aggressive liquids, gases and vapors** | | | | | | | ↗ **7MF9017-1** | **A** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | | | | | | | |
| 160 bar (2321 psi) | A | P250GH | 1.0460 | Internal | Threaded socket G½ form R, DIN 19207 | 0.8 | | **A** |
| 160 bar (2321 psi) | A | P250GH | 1.0460 | Internal | Threaded socket G½ form R, DIN 19207 DIN 19207 and pipe union with ferrule for pipe Ø 12 mm, S series | 0.8 | | **B** |
| 400 bar (5800 psi) | C | P250GH | 1.0460 | Internal | Pipe union with ferrule for pipe Ø 12 mm, S series | 1 | | **C** |
| 400 bar (5800 psi) | C | P250GH | 1.0460 | Internal | Pipe union with ferrule for pipe Ø 14 mm, S series | 1 | | **D** |
| 500 bar (7252 psi) | D | 16 Mo 3 | 1.5415 | External | Welding sleeves Ø 14 mm × 2.5 mm | 1.6 | | **F** |
| 500 bar (7252 psi) | E | 11 CrMo 9 10 | 1.7383 | External | Welding sleeves Ø 14 mm × 2.5 mm | 1.6 | | **G** |
| 500 bar (7252 psi) | D | 16 Mo 3 | 1.5415 | External | Welding sleeves Ø 21.3 mm × 6.3 mm and Ø 14 mm × 2.5 mm | 1.6 | | **H** |
| 500 bar (7252 psi) | D | 16 Mo 3 | 1.5415 | External | Welding sleeves Ø 24 mm × 7.1 mm and Ø 14 mm × 2.5 mm | 1.6 | | **J** |
| 500 bar (7252 psi) | E | 11 CrMo 9 10 | 1.7383 | External | Welding sleeves Ø 24 mm × 7.1 mm and Ø 14 mm × 2.5 mm | 1.6 | | **K** |
| **Shut-off valve for aggressive liquids and gases** | | | | | | | ↗ **7MF9017-2** | **A** |
| 160 bar (2321psi) | F | X 6 CrNiMoTi 17 12 2 | 1.4571/ 316Ti | Internal | Threaded socket G½ form R, DIN 19207 DIN 19207 and pipe union with ferrule for pipe Ø 12 mm, S series | 0.8 | | **B** |
| 400 bar (5800 psi) | G | X 6 CrNiMoTi 17 12 2 | 1.4571/ 316Ti | Internal | Pipe union with ferrule for pipe Ø 12 mm, S series | 1 | | **C** |
| 400 bar (5800 psi) | H | X 6 CrNiMoTi 17 12 2 | 1.4571/ 316Ti | External | Welding sleeves Ø 21.3 mm × 6.3 mm and Ø 14 mm × 2.5 mm | 1.6 | | **H** |
| 400 bar (5800 psi) | H | X 6 CrNiMoTi 17 12 2 | 1.4571/ 316Ti | External | Welding sleeves Ø 24 mm × 7.1 mm and Ø 14 mm × 2.5 mm | 1.6 | | **J** |

***Accessories***

| | |
|---|---|
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

[1] See Figure "Permissible working pressure as a function of the permissible working temperature"

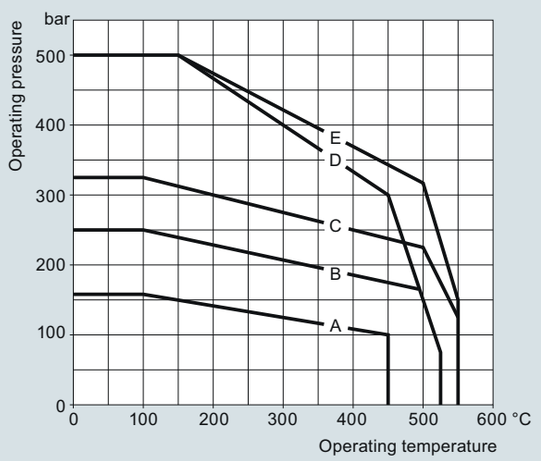
## Overview

The compensation vessels prevent the level difference which occurs with pressure changes in the pressure lines and which falsifies the measurement.

According to DIN 19211, the temperature in the compensation vessel must be assumed to be 50 K less than the steam temperature in the pipe when calculating the wall thicknesses. This is because the temperature in the compensation vessel during operation can only rise up to the saturated steam temperature.

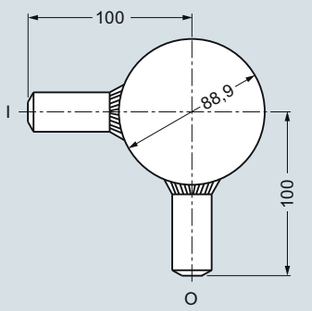
A material acceptance test certificate A to EN 10204-3.1 is available for the materials from which the compensation vessels are made.

## Characteristic curves



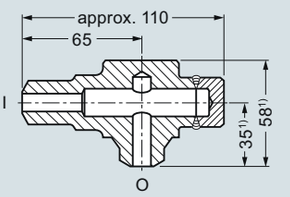

Permissible operating pressure as a function of the permissible operating temperature

## Dimensional drawings




I Input (see Ordering data for dimensions)
O Output (see Ordering data for dimensions)

Compensation vessel 7MF9015-1.., dimensions in mm




I Input (see Ordering data for dimensions)
O Output (see Ordering data for dimensions)
1) 30 mm longer with 7MF9015-5A.

Compensation vessel 7MF9015-5.., dimensions in mm

## Selection and Ordering data

**Compensation vessel,** without certificate

| Max. working pressure | Characteristic[1] | Material | Mat. No. | Connections Input | Output | Approx. contents cm³ | Approx. weight kg | Article No. 7MF9015- |
|---|---|---|---|---|---|---|---|---|
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | | | | | | | |
| 160 bar (2321 psi) | A | 16 Mo 3 | 1.5415 | Threaded socket G½, form R, DIN 19207 | Threaded socket G½, form V, DIN 19207 | 250 | 0.8 | 1 A |
| 250 bar (3626 psi) | B | 16 Mo 3 | 1.5415 | Welding sleeve ∅ 21.3 mm × 6.3 mm | Welding sleeve ∅ 21.3 mm × 6.3 mm | 250 | 0.8 | 1 B |
| 250 bar (3626 psi) | B | 16 Mo 3 | 1.5415 | Welding sleeve ∅ 24 mm × 7.1 mm | Welding sleeve ∅ 24 mm × 7.1 mm | 250 | 1 | 1 C |
| 500 bar (7252 psi) | E | 11 CrMo 9 10 | 1.7383 | Welding sleeve ∅ 24 mm × 7.1 mm | Welding sleeve ∅ 24 mm × 7.1 mm | 170 | 1 | 1 D |
| 250 bar (3626 psi) | B | 16 Mo 3 | 1.5415 | Welding sleeve ∅ 33.7 mm × 4.5 mm | Welding sleeve ∅ 24 mm × 7.1 mm | 700 | 0.7 | 1 E |
| 160 bar (2321 psi) | A | 16 Mo 3 | 1.5415 | Threaded socket G½, form R, DIN 19207 | Threaded socket G½, form V, DIN 19207 | 20 | 1.6 | 5 A |
| 500 bar (7252 psi) | D | 16 Mo 3 | 1.5415 | Welding sleeve ∅ 21.3 mm × 6.3 mm | Welding sleeve ∅ 21.3 mm × 6.3 mm | 20 | 1.6 | 5 B |
| 500 bar (7252 psi) | D | 16 Mo 3 | 1.5415 | Welding sleeve ∅ 24 mm × 7.1 mm | Welding sleeve ∅ 24 mm × 7.1 mm | 20 | 1.6 | 5 C |
| 500 bar (7252 psi) | E | 11 CrMo 9 10 | 1.7383 | Welding sleeve ∅ 24 mm × 7.1 mm | Welding sleeve ∅ 24 mm × 7.1 mm | 20 | 1.6 | 5 D |

***Accessories***

| | |
|---|---|
| Factory test certificate EN 10204–2.2 | **7MF9000-8AB** |
| Material acceptance test certificate EN 10204-3.1 | **7MF9000-8AD** |

1) See Figure "Permissible working pressure as a function of the permissible working temperature"

## Overview

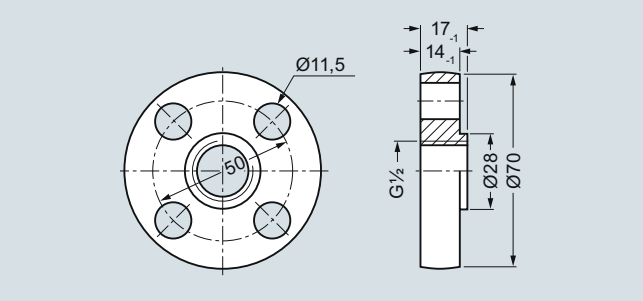
Connection parts are available in the following versions:

- Threaded flange pair G½ with stainless steel gasket
- Nipple G½ form V to DIN 19207
- Union nut G½ made of C 35 to DIN 16284
- Gasket B½ (grooved) to DIN 19207

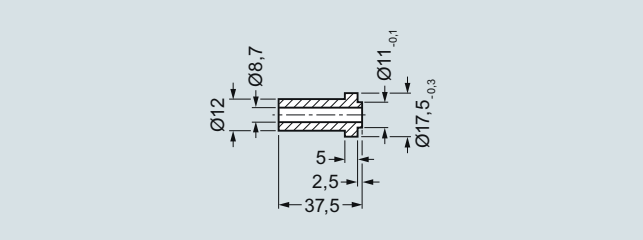
All connection parts are also available grease-free for oxygen.

| Selection and Ordering data | Article No. |
|---|---|
| **Threaded flange pair G½** | |
| • with stainless steel gasket | **7MF9007-4CA** |
| • grease-free for oxygen, with stainless steel gasket | **7MF9007-4DA** |
| Scope of delivery: | |
| 2x threaded flanges G½ to DIN 19207; material: P250GH (mat. No. 1.0460) | |
| 4x hexagon screws M10x45 to DIN EN 24014; Material: C35E (mat. No. 1.1181) | |
| 4x hexagon screws M10x50 to DIN EN 24032 | |
| 1x gasket G½ (7MF9007-6BA) grooved, to DIN 19207; Material: X 6 CrNiMoTi 17 12 2 (mat. No. 14571/316Ti) | |
| Only for 7MF9007-4CA! | |
| 1x gasket G½ (7MF9k007-6CA), grease-free for oxygen, grooved, to DIN 19207; Material: X 6 CrNiMoTi 17 12 2 (mat. No. 14571/316Ti) | |
| Only for 7MF9007-4DA! | |
| **Nipple G½** | |
| to DIN 19207 | |
| • Material: 16 Mo 3 (mat. No. 1.5415) | **7MF9007-4KA** |
| • grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | **7MF9007-4LA** |
| **Union nut G½** | |
| to DIN 16284 | |
| • Material: C35E (mat. No. 1.1181) | **7MF9007-4MA** |
| • grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | **7MF9007-4NA** |
| **Gasket G½** | |
| to DIN 19207, grooved | |
| • Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | **7MF9007-6BA** |
| • grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti) | **7MF9007-6CA** |

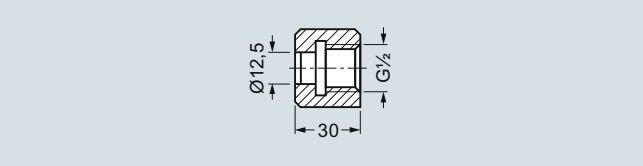
## Dimensional drawings



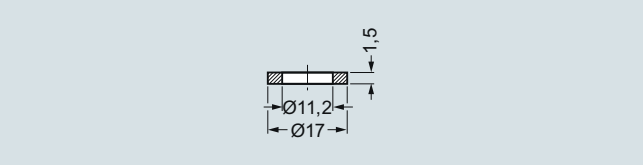

Threaded flange 7MF9007-4CA/-4DA, dimensions in mm




Nipple G½ 7MF9007-4KA/-4LA, dimensions in mm




Union nut G½ 7MF9007-4MA/-4NA, dimensions in mm




Gasket 7MF9007-6BA/-6CA, dimensions in mm