# Diaphragm seal with flange connection
# With flush diaphragm
# Model 990.27



## Applications

- Aggressive, highly viscous, crystallising or hot media
- Process industry
- Machine building and automation

## Special features

- Flange with flush welded diaphragm
- Common standards and nominal widths available
- Wide variety of different materials and material combinations

**Diaphragm seal with flange connection, model 990.27**

## Description

Diaphragm seals are used to protect pressure measuring instruments in demanding applications under difficult conditions. These diaphragm seal systems, consisting of a process transmitter, pressure sensor, pressure gauge or pressure switch with diaphragm seal, can be combined individually for each customer application. For this, a wide range of different designs, process connections, mounting methods and wetted materials are available.

Diaphragm seal models with flange connections are available with flush or internal diaphragms, in tubular design or as in-line diaphragm seals. The diaphragm seals mentioned are also available in a cell-type design.

The model 990.27 diaphragm seal with flush flange connection is assembled from the upper body of a diaphragm seal and the wetted parts (sealing face and diaphragm). This diaphragm seal model is optimised for applications in the chemical, petrochemical and the oil and gas industries and is therefore available in a wide range of dimensions based on the standards common in these markets.

Through the high number of possible combinations and aided by the individual checking of the operating conditions, it is ensured that the ideal customer solution for a diaphragm seal system can be found with the model 990.27.

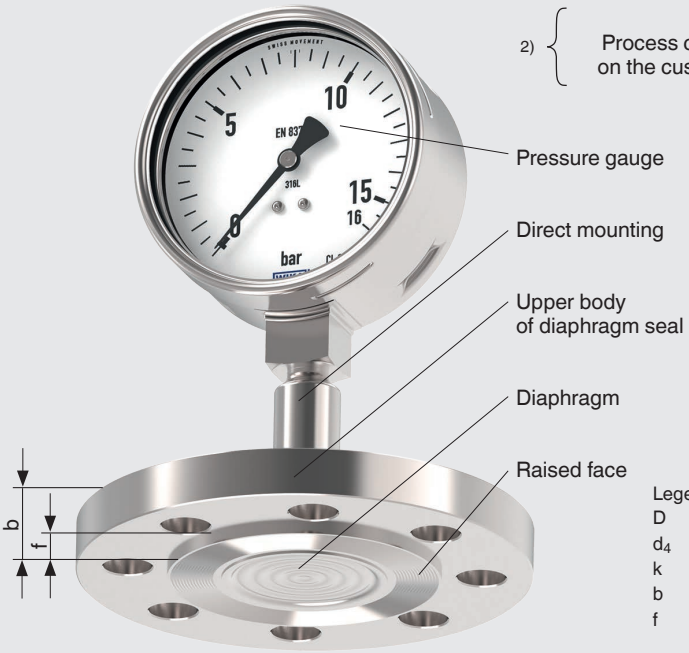


Data sheets showing similar products:
Flange connection, with internal diaphragm; model 990.26; see data sheet DS 99.26
Diaphragm seal system with pressure gauge per EN 837-1; model DSS27M; see data sheet DS 95.12
Diaphragm seal system with high-quality pressure sensor; model DSS27T; see data sheet DS 95.13

## Installation example

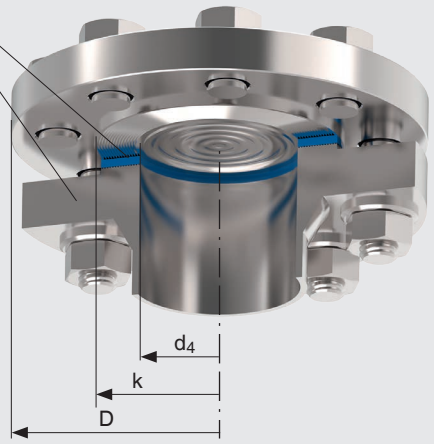
**Model 990.27 with directly mounted pressure gauge**

**Diaphragm seal system**




Flange in line with DIN EN 1092-1

**Mounting situation** [1)]




Legend:

| | |
|---|---|
| D | Outer diameter of diaphragm seal |
| $d_4$ | Raised face diameter |
| k | Pitch circle diameter |
| b | Flange thickness |
| f | Height of raised face |

1) Illustration example of the mounting situation. The operator is responsible for ensuring that the installation complies with the standards.
2) Not included in delivery

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### Diaphragm seal system

Diaphragm seal systems are mounted to existing connections, which are welded to a pipeline, a process reactor or a tank. A diaphragm made of the appropriate material separates the medium from the measuring instrument. The internal space between the diaphragm and the measuring instrument is completely filled with a system fill fluid.

### Measuring element

The pressure of the medium is transferred via the elastic diaphragm to the system fill fluid and then on to the measuring instrument. A diaphragm seal and its components are perfectly matched to each other to ensure a reliable measurement.

### Mounting type

Mounting of the diaphragm seal to the measuring instruments may be made via a direct connection, for high temperatures via a cooling element or via a flexible capillary.

**Direct mounting via axial connection adapter**

**Capillary (example)**

**Heat sink (examples)**

## Technical information

| Data sheet number | Title |
|---|---|
| **IN 00.06** | Diaphragm seals and diaphragm seal systems, application - functionality - design |
| **IN 00.25** | Diaphragm seal systems for vacuum processes |
| **IN 00.21** | General information about NACE standards for sour gas applications |
| **IN 00.41** | Specifications of oil- and grease-free instruments |

→ See download on the WIKA website

## Specifications

| Basic information for diaphragm seal systems | |
|---|---|
| **Version** | Diaphragm seal with flange connection |
| **Other versions** | ■ Per NACE [1] MR0175 / ISO 15156, use in $H_2S$-containing environments in oil and gas production<br>■ Per NACE [1] MR0103 / ISO 17945, metals resistant to hydrogen sulphide stress cracking<br>■ With pre-volume deflagration flame arrester [2] for mounting to zone 0 (EPL Ga); model 910.21; see data sheet AC 91.02 |
| **Pressure range** | The maximum pressure range depends on the selection of the process connection and instrument<br>→ See PN nominal pressure/class in the tables from page 6 |
| **Connection to the instrument** | ■ Axial connection adapter for welded connection<br>■ Suitable connection adapter to the instrument (e.g. G ½, G ¼, ½ NPT or ¼ NPT) |
| **Mounting type [3]** | ■ Direct mounting<br>■ Capillary<br>■ Heat sink |
| **Vacuum service [4]** | ■ Basic service<br>■ Advanced service<br>■ Premium service |

1) General information about NACE standards; see data sheet IN 00.21
2) Only for instruments with Ex approval
3) For possible mounting methods, see page 2
4) Diaphragm seal systems for vacuum processes; see data sheet IN 00.25

| Process connection | | | | |
|---|---|---|---|---|
| **Standard** | ■ In line with DIN EN 1092-1<br>■ In line with ASME B16.5-2017<br>■ In line with GOST 33259<br>■ In line with API 6A<br>■ In line with JIS B2220 | | | |
| **Size** | | | | |
| In line with DIN EN 1092-1 | ■ DN 25<br>■ DN 80 | ■ DN 40<br>■ DN 100 | ■ DN 50<br>■ DN 125 | ■ DN 65 |
| In line with ASME B16.5-2017 | ■ 1"<br>■ 3" | ■ 1 ½"<br>■ 4" | ■ 2"<br>■ 5" | ■ 2 ½" |
| In line with GOST 33259 | ■ DN 25<br>■ DN 80 | ■ DN 40<br>■ DN 100 | ■ DN 50<br>■ DN 125 | ■ DN 65 |
| In line with API 6A | ■ 1 1/8" | ■ 1 1/16" | ■ 1 13/16" | ■ 2 1/16" |
| In line with JIS B2220 | ■ DN 25A<br>■ DN 100A | ■ DN 40A | ■ DN 50A | ■ DN 80A |

| Process connection | | |
|---|---|---|
| **Sealing face** | | |
| In line with DIN EN 1092-1 | ■ Form B1<br>■ Form A<br>■ Form B2<br>■ Form C (tongue) | ■ Form D (groove)<br>■ Form E (spigot)<br>■ Form F (recess) |
| In line with ASME B16.5-2017 | ■ RF 125 ... 250 AA<br>■ RFSF<br>■ Flat face<br>■ Small tongue<br>■ Small male face<br>■ Small groove | ■ Small female face<br>■ Large tongue<br>■ Large male face<br>■ Large groove<br>■ Large female face<br>■ RJF groove |
| In line with GOST 33259 | ■ Type B<br>■ Type A (flat face)<br>■ Type C (tongue) | ■ Type D (groove)<br>■ Type E (spigot, male face)<br>■ Type F (recess, female face) |
| In line with API 6A | Ring-joint groove | |
| In line with JIS B2220 | RF | |
| **Wetted parts** | Diaphragm and raised face<br>→ See following tables for material selection | |
| **Origin of wetted parts** | ■ International<br>■ Exclusively from EU, CH, GB, US, CA | |
| **Level of cleanliness of wetted parts** | ■ Oil- and grease-free per WIKA specification (< 1,000 mg/m²)<br>■ Oil- and grease-free per ASTM G93-03 level D (< 220 mg/m²)<br>■ Oil- and grease-free per ASTM G93-03 level C (< 66 mg/m²) | |

1) Specifications of oil- and grease-free instruments; see data sheet IN 00.41

Other process connections on request

| Material combination | | Maximum permissible operating temperature [1] in °C [°F] |
|---|---|---|
| **Upper body of diaphragm seal** | **Wetted parts** | |
| **Stainless steel 1.4404 (316L)** | Stainless steel 1.4404 / 1.4435 (316L) | 400 [752] |
| | Hastelloy C22 (2.4602) [2] | 260 [500] |
| | Hastelloy C276 (2.4819) [2] [3] | 400 [752] |
| | Inconel 600 (2.4816) [2] | 400 [752] |
| | Inconel 625 (2.4856) [2] | 400 [752] |
| | Incoloy 825 (2.4858) [2] | 400 [752] |
| | Monel 400 (2.4360) [2] | 400 [752] |
| | Nickel 200 (2.4066) [2] | 260 [500] |
| | Nickel 201 (2.4068) [2] | 260 [500] |
| | Titanium grade 2 (3.7035) [2] | 150 [302] |
| | Titanium grade 11 (3.7225) [2] | 250 [482] |
| | Tantalum [2] [3] | 300 [572] |
| **Titan Grade 7 (3.7235)** | Titan Grade 7 (3.7235) | 250 [482] |
| | Titan Grade 11 (3.7225) | 250 [482] |

1) The maximum permissible operating temperature of the diaphragm seal system is limited by the joining method, by the system fill fluid and by the measuring instrument.
2) Material combination only possible with form B2 and RFSF sealing faces
3) Material combination additionally possible with the sealing faces form B1 and RF 125 … 250 AA for DN 50, DN 80 and also 2" and 3"

| Material<br>Upper body of diaphragm seal and wetted parts | Maximum permissible operating temperature [1] in °C [°F] |
|---|---|
| **Stainless steel 1.4435 (316L)** | 400 [752] |
| **Stainless steel 1.4539 (904L)** | 400 [752] |
| **Stainless steel 1.4541 (321)** | 400 [752] |
| **Stainless steel 1.4571 (316Ti)** | 400 [752] |
| **Superduplex 2507 (1.4410)** | 250 [482] |
| **Hastelloy C22 (2.4602)** | 400 [752] |
| **Hastelloy C276 (2.4819)** | 400 [752] |
| **Inconel 600 (2.4816)** | 400 [752] |
| **Inconel 625 (2.4856)** | 400 [752] |
| **Incoloy 825 (2.4558)** | 400 [752] |
| **Monel 400 (2.4360)** | 400 [752] |
| **Nickel 200 (2.4066)** | 300 [572] |
| **Nickel 201 (2.4068)** | 400 [752] |
| **Titanium grade 2 (3.7035)** | 300 [572] |

1) The maximum permissible operating temperature of the diaphragm seal system is limited by the joining method, by the system fill fluid and by the measuring instrument.

| Material of coating [1]<br>Wetted parts | Maximum permissible operating temperature [2] in °C [°F] |
|---|---|
| ECTFE | 150 [302] |
| PFA (perfluoroalkoxy), FDA | 260 [500] |
| PFA (perfluoroalkoxy), anti-static | 260 [500] |
| Gold | 400 [752] |
| Wikaramic® | 400 [752] |

1) The coated basic material is from stainless steel 1.4435 (316L)
2) The maximum permissible operating temperature of the diaphragm seal system is limited by the joining method, by the system fill fluid and by the measuring instrument.

Further materials for special process temperatures on request.

## Approvals

| Logo | Description | Country |
|---|---|---|
| - | **CRN**<br>Safety (e.g. electr. safety, overpressure, ...) | Canada |

### Optional approvals

| Logo | Description | Country |
|---|---|---|
| - | **MTSCHS**<br>Permission for commissioning | Kazakhstan |

## Manufacturer's information and certificates (option)

| Logo | Description |
|---|---|
| SIL | **SIL**<br>EXIDA report with SFF values from FMEDA analysis for functional safety assessment in accordance with IEC 61508 |

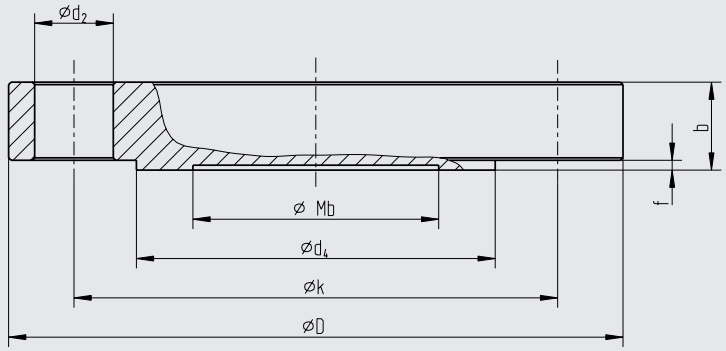
## Certificates (option)

| Certificates | |
|---|---|
| **Certificates** | ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy for diaphragm seal systems)<br>■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy for diaphragm seal systems) |

→ For approvals and certificates, see website

## Dimensions in mm [in]

**Flange connection in line with DIN EN 1092-1, form B**

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Legend:

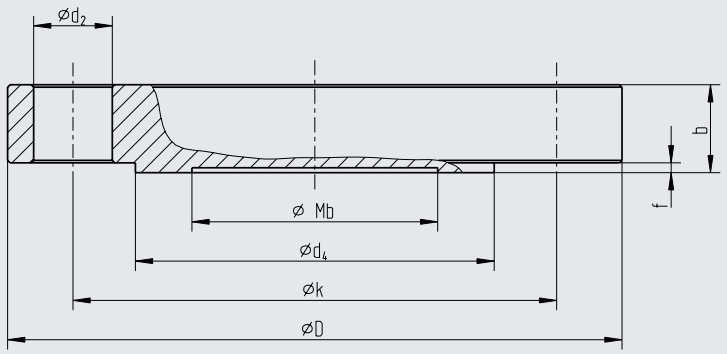
| | |
|---|---|
| Mb | Effective diameter of diaphragm |
| D | Outer diameter of diaphragm seal |
| b | Flange thickness |
| $d_2$ | Bore diameter |
| $d_4$ | Raised face diameter |
| f | Height of raised face |
| k | Pitch circle diameter |
| x | Number of bores |

| DN | PN in bar | Dimensions in mm [in] | | | | | | | x | Weight in kg [lbs] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mb | D | b | $d_2$ | k | f | $d_4$ | | |
| **25** | 10/40 | 32 [1.26] | 115 [4.528] | 18 [0.709] | 14 [0.551] | 85 [3.346] | 2 [0.079] | 68 [2.677] | 4 | 1.5 [3.3] |
| | 63/100 | 25 [0.984] | 140 [0.984] | 24 [0.945] | 18 [0.709] | 100 [3.937] | 2 [0.079] | 68 [2.677] | 4 | 2.5 [5.5] |
| **40** | 10/40 | 45 [1.772] | 150 [5.905] | 18 [0.709] | 18 [0.709] | 110 [4.331] | 2 [0.079] | 88 [3.465] | 4 | 2.6 [5.7] |
| | 63/100 | 45 [1.772] | 170 [6.693] | 26 [1.024] | 22 [0.866] | 125 [4.921] | 2 [0.079] | 88 [3.465] | 4 | 4.0 [8.8] |
| | 160 | 45 [1.772] | 170 [6.693] | 28 [1.102] | 22 [0.866] | 125 [4.921] | 2 [0.079] | 88 [3.465] | 4 | 4.3 [9.5] |
| | 250 | 45 [1.772] | 185 [2.283] | 34 [1.339] | 26 [1.024] | 135 [5.315] | 2 [0.079] | 88 [3.465] | 4 | 6.3 [13.9] |
| **50** | 10/40 | 59 [2.323] | 165 [6.496] | 20 [0.787] | 18 [0.709] | 125 [4.921] | 2 [0.079] | 102 [4.016] | 4 | 3.3 [7.3] |
| | 63 | 59 [2.323] | 180 [7.087] | 26 [1.024] | 22 [0.866] | 135 [5.315] | 2 [0.079] | 102 [4.016] | 4 | 5.1 [11.2] |
| | 100 | 59 [2.323] | 195 [7.677] | 28 [1.102] | 26 [1.024] | 145 [5.709] | 2 [0.079] | 102 [4.016] | 4 | 6.5 [14.3] |
| | 160 | 59 [2.323] | 195 [7.677] | 30 [1.181] | 26 [1.024] | 145 [5.709] | 2 [0.079] | 102 [4.016] | 4 | 7.0 [15.4] |
| | 250 | 59 [2.323] | 200 [7.874] | 38 [1.496] | 26 [1.024] | 150 [5.906] | 2 [0.079] | 102 [4.016] | 8 | 9.3 [20.5] |
| **80** | 10/16 | 89 [3.504] | 200 [7.874] | 20 [0.787] | 18 [0.709] | 160 [6.299] | 2 [0.079] | 138 [5.433] | 8 | 4.9 [10.8] |
| | 25/40 | 89 [3.504] | 200 [7.874] | 24 [0.945] | 18 [0.709] | 160 [6.299] | 2 [0.079] | 138 [5.433] | 8 | 5.8 [12.8] |
| | 63 | 89 [3.504] | 215 [8.465] | 28 [1.102] | 22 [0.866] | 170 [6.693] | 2 [0.079] | 138 [5.433] | 8 | 7.9 [17.4] |
| | 100 | 89 [3.504] | 230 [9.055] | 32 [1.26] | 26 [1.024] | 180 [7.087] | 2 [0.079] | 138 [5.433] | 8 | 10.4 [22.9] |
| | 160 | 89 [3.504] | 230 [9.055] | 36 [1.487] | 26 [1.024] | 180 [7.087] | 2 [0.079] | 138 [5.433] | 8 | 11.7 [25.8] |
| | 250 | 89 [3.504] | 255 [10.039] | 46 [1.811] | 30 [1.181] | 200 [7.874] | 2 [0.079] | 138 [5.433] | 8 | 18.4 [40.6] |
| **100** | 10/16 | 89 [3.504] | 220 [8.661] | 20 [0.787] | 18 [0.709] | 180 [7.087] | 2 [0.079] | 158 [6.22] | 8 | 5.9 [13] |
| | 25/40 | 89 [3.504] | 235 [9.252] | 24 [0.945] | 22 [0.866] | 190 [7.480] | 2 [0.079] | 162 [6.378] | 8 | 8.1 [17.9] |
| | 63 | 89 [3.504] | 250 [9.842] | 30 [1.181] | 26 [1.024] | 200 [7.874] | 2 [0.079] | 162 [6.378] | 8 | 11.5 [25.3] |
| | 100 | 89 [3.504] | 265 [10.433] | 36 [1.487] | 30 [1.181] | 210 [8.268] | 2 [0.079] | 162 [6.378] | 8 | 15.5 [34.2] |
| | 160 | 89 [3.504] | 265 [10.433] | 40 [1.575] | 30 [1.181] | 210 [8.268] | 2 [0.079] | 162 [6.378] | 8 | 17.3 [38.1] |
| | 250 | 89 [3.504] | 300 [11.811] | 54 [2.126] | 33 [1.299] | 235 [9.252] | 2 [0.079] | 162 [6.378] | 8 | 29.9 [65.9] |
| **125** | 10/16 | 124 [4.882] | 250 [9.842] | 22 [0.866] | 18 [0.709] | 210 [8.268] | 2 [0.079] | 188 [7.402] | 8 | 8.4 [18.5] |
| | 25/40 | 124 [4.882] | 270 [10.63] | 26 [1.024] | 26 [1.024] | 220 [8.661] | 2 [0.079] | 188 [7.402] | 8 | 11.6 [25.6] |
| | 63 | 124 [4.882] | 295 [11.614] | 34 [1.339] | 30 [1.181] | 240 [9.449] | 2 [0.079] | 188 [7.402] | 8 | 16.5 [36.4] |
| | 100 | 124 [4.882] | 315 [12.412] | 40 [1.575] | 33 [1.299] | 250 [9.842] | 2 [0.079] | 188 [7.402] | 8 | 24.4 [53.8] |
| | 160 | 124 [4.882] | 315 [12.412] | 44 [1.732] | 33 [1.299] | 250 [9.842] | 2 [0.079] | 188 [7.402] | 8 | 26.9 [59.3] |
| | 250 | 124 [4.882] | 340 [13.386] | 60 [2.342] | 33 [1.299] | 275 [10.827] | 2 [0.079] | 188 [7.402] | 12 | 42.7 [94.1] |

Further dimensions and higher nominal pressures on request

## Dimensions in mm [in]

**Flange connection in line with ASME B16.5-2017, RF**

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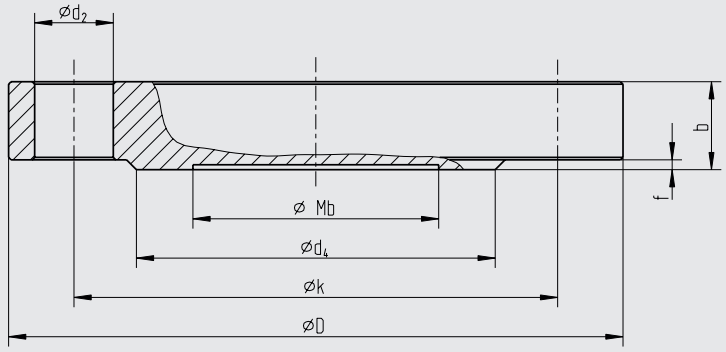
Legend:

| | |
|---|---|
| Mb | Effective diameter of diaphragm |
| D | Outer diameter of diaphragm seal |
| b | Flange thickness |
| $d_2$ | Bore diameter |
| $d_4$ | Raised face diameter |
| f | Height of raised face |
| k | Pitch circle diameter |
| x | Number of bores |

| DN | Class | Dimensions in mm [in] | | | | | | | x | Weight in kg [lbs] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mb | D | b | $d_2$ | k | f | $d_4$ | | |
| 1" | 150 | 32 [1.26] | 110 [4.331] | 14.7 [0.579] | 16 [0.63] | 79.4 [3.126] | 2 [0.079] | 51 [2.008] | 4 | 1.4 [3.1] |
| | 300 | 32 [1.26] | 125 [4.921] | 17.9 [0.705] | 19 [0.748] | 88.9 [3.5] | 2 [0.079] | 51 [2.008] | 4 | 1.7 [3.7] |
| 1 ½" | 150 | 45 [1.772] | 125 [4.921] | 17.9 [0.705] | 16 [0.63] | 98.4 [3.874] | 2 [0.079] | 73 [2.874] | 4 | 1.6 [3.5] |
| | 300 | 45 [1.772] | 155 [6.102] | 21.1 [0.831] | 22 [0.866] | 114.3 [4.5] | 2 [0.079] | 73 [2.874] | 4 | 2.5 [5.5] |
| | 600 | 45 [1.772] | 155 [6.102] | 29.3 [1.154] | 22 [0.866] | 114.3 [4.5] | 7 [0.276] | 73 [2.874] | 4 | 3.3 [7.2] |
| | 1,500 | 45 [1.772] | 180 [7.087] | 38.8 [1.528] | 29 [1.142] | 123.8 [4.874] | 7 [0.276] | 73 [2.874] | 4 | 5.9 [13] |
| | 2,500 | 45 [1.772] | 205 [8.071] | 51.5 [2.078] | 32 [1.26] | 146 [5.748] | 7 [0.276] | 73 [2.874] | 4 | 10.4 [22.9] |
| 2" | 150 | 59 [2.323] | 150 [5.905] | 19.5 [0.768] | 19 [0.748] | 120.7 [4.752] | 2 [0.079] | 92 [3.622] | 4 | 2.7 [6] |
| | 300 | 59 [2.323] | 165 [6.496] | 22.7 [0.894] | 19 [0.748] | 127 [5] | 2 [0.079] | 92 [3.622] | 8 | 3.7 [8.1] |
| | 600 | 59 [2.323] | 165 [6.496] | 32.4 [1.276] | 19 [0.748] | 127 [5] | 7 [0.276] | 92 [3.622] | 8 | 5.7 [12.6] |
| | 1,500 | 59 [2.323] | 215 [8.465] | 45.1[1.776] | 26 [1.024] | 165.1 [6.5] | 7 [0.276] | 92 [3.622] | 8 | 13.2 [29] |
| | 2,500 | 59 [2.323] | 235 [9.252] | 57.9 [2.28] | 29 [1.142] | 171.4 [6.748] | 7 [0.276] | 92 [3.622] | 8 | 19.8 [43.7] |
| 3" | 150 | 89 [3.504] | 190 [7.482] | 24.3 [0.957] | 19 [0.748] | 152.4 [6] | 2 [0.079] | 127 [5] | 4 | 5.3 [11.7] |
| | 300 | 89 [3.504] | 210 [8.268] | 29 [1.142] | 22 [0.866] | 168.3 [6.626] | 2 [0.079] | 127 [5] | 8 | 7.8 [17.2] |
| | 600 | 89 [3.504] | 210 [8.268] | 38.8 [1.528] | 22 [0.866] | 168.3 [6.626] | 7 [0.276] | 127 [5] | 8 | 11 [24.3] |
| | 900 | 89 [3.504] | 240 [9.449] | 45.1 [1.776] | 26 [1.024] | 190.5 [7.7] | 7 [0.276] | 127 [5] | 8 | 16.7 [36.8] |
| | 1,500 | 89 [3.504] | 265 [10.433] | 54.7 [1.799] | 32 [1.26] | 203.2 [8] | 7 [0.276] | 127 [5] | 8 | 24.5 [54] |
| | 2,500 | 89 [3.504] | 305 [12.007] | 73.7 [2.902] | 35 [1.378] | 228.6 [5.063] | 7 [0.276] | 127 [5] | 8 | 42.7 [94.1] |
| 4" | 150 | 89 [3.504] | 230 [9.055] | 24.3 [0.957] | 19 [0.748] | 190.5 [7.5] | 2 [0.079] | 157.2 [6.189] | 8 | 7.7 [17] |
| | 300 | 89 [3.504] | 255 [10.039] | 32.2 [1.268] | 22 [0.866] | 200 [7.874] | 2 [0.079] | 157.2 [6.189] | 8 | 12.7 [28] |
| | 400 | 89 [3.504] | 255 [10.039] | 42 [1.654] | 26 [1.024] | 200 [7.874] | 7 [0.276] | 157.2 [6.189] | 8 | 17.4 [38.4] |
| | 600 | 89 [3.504] | 275 [10,826] | 45.1 [1.776] | 26 [1.024] | 215.9 [8.5] | 7 [0.276] | 157.2 [6.189] | 8 | 21.5 [47.4] |
| | 900 | 89 [3.504] | 290 [11,417] | 51.5 [2.028] | 32 [1.26] | 235 [9.252] | 7 [0.276] | 157.2 [6.189] | 8 | 27.7 [61.1] |
| | 1,500 | 89 [3.504] | 310 [12.205] | 61 [2.402] | 35 [1.378] | 241.3 [9.5] | 7 [0.276] | 157.2 [6.189] | 8 | 37 [81.6] |
| | 2,500 | 89 [3.504] | 355 [13.976] | 83.2 [3.276] | 42 [1.654] | 273 [10.748] | 7 [0.276] | 157.2 [6.189] | 8 | 65.7 [144.8] |
| 5" | 150 | 124 [4.882] | 255 [10.039] | 24.3 [0.957] | 22 [0.866] | 215.9 [8.5] | 2 [0.079] | 185.7 [7.311] | 8 | 9.2 [20.3] |
| | 300 | 124 [4.882] | 280 [11.024] | 35.4 [1.394] | 22 [0.866] | 235 [9.25] | 2 [0.079] | 185.7 [7.311] | 8 | 16.3 [35.9] |
| | 400 | 124 [4.882] | 280 [11.024] | 45.1 [2.13] | 26 [1.024] | 235 [9.25] | 7 [0.276] | 185.7 [7.311] | 8 | 19.3 [42.5] |
| | 600 | 124 [4.882] | 330 [13] | 51.5 [2.028] | 29 [1.142] | 266.7 [10.5] | 7 [0.276] | 185.7 [7.311] | 8 | 30.5 [67.2] |
| | 900 | 124 [4.882] | 350 [13.78] | 57.8 [2.278] | 35 [1.378] | 279.4 [11] | 7 [0.276] | 185.7 [7.311] | 8 | 38 [83.8] |
| | 1,500 | 124 [4.882] | 375 [14.764] | 80.1 [3.154] | 42 [1.654] | 292.1 [11.5] | 7 [0.276] | 185.7 [7.311] | 8 | 60.1 [132.5] |
| | 2,500 | 124 [4.882] | 420 [16.535] | 99.1 [3.902] | 48 [1.189] | 323.8 [12.75] | 7 [0.276] | 185.7 [7.311] | 8 | 93.6 [206.4] |

Further dimensions and higher nominal pressures on request

## Flange connection in line with GOST 33259, type B




14237014.01

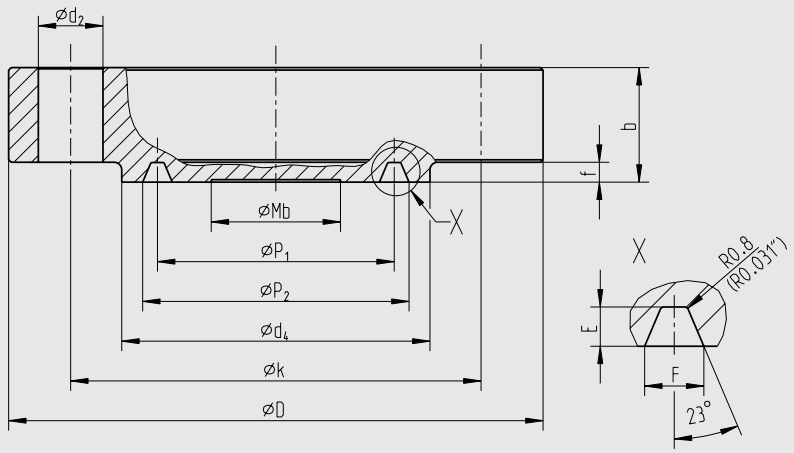
Legend:

| | |
|---|---|
| Mb | Effective diameter of diaphragm |
| D | Outer diameter of diaphragm seal |
| b | Flange thickness |
| $d_2$ | Bore diameter |
| $d_4$ | Raised face diameter |
| f | Height of raised face |
| k | Pitch circle diameter |
| x | Number of bores |

| DN | PN in bar | Dimensions in mm [in] | | | | | | | x | Weight in kg [lbs] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mb | D | b | $d_2$ | k | f | $d_4$ | | |
| **50** | 10/16 | 59 [2.323] | 160 [6.3] | 16 [0.63] | 18 [0.709] | 125 [4.921] | 3 [0.118] | 102 [4.016] | 4 | 2.4 [5.3] |
| | 25/40 | 59 [2.323] | 160 [6.3] | 20 [0.787] | 18 [0.709] | 125 [4.921] | 3 [0.118] | 102 [4.016] | 4 | 3 [6.6] |
| | 63 | 59 [2.323] | 175 [6.89] | 26 [1.024] | 22 [0.866] | 135 [5.315] | 3 [0.118] | 102 [4.016] | 4 | 4.5 [9.9] |
| | 100 | 59 [2.323] | 195 [7.677] | 28 [1.102] | 26 [1.024] | 145 [5.709] | 3 [0.118] | 102 [4.016] | 4 | 5.6 [12.3] |
| | 160 | 59 [2.323] | 195 [7.677] | 30 [1.181] | 26 [1.024] | 145 [5.709] | 3 [0.118] | 102 [4.016] | 4 | 6.4 [14.1] |
| | 200 | 59 [2.323] | 210 [8.268] | 40 [1.575] | 26 [1.024] | 160 [6.299] | 3 [0.118] | 102 [4.016] | 8 | 9.4 [20.7] |
| **80** | 10 | 89 [3.504] | 195 [7.677] | 18 [0.709] | 18 [0.709] | 160 [6.299] | 3 [0.118] | 133 [5.236] | 4 | 4 [8.8] |
| | 16 | 89 [3.504] | 195 [7.677] | 20 [0.787] | 18 [0.709] | 160 [6.299] | 3 [0.118] | 133 [5.236] | 4 | 4.5 [9.9] |
| | 25 | 89 [3.504] | 195 [7.677] | 22 [0.866] | 18 [0.709] | 160 [6.299] | 3 [0.118] | 133 [5.236] | 8 | 4.8 [10.6] |
| | 40 | 89 [3.504] | 195 [7.677] | 24 [0.945] | 18 [0.709] | 160 [6.299] | 3 [0.118] | 133 [5.236] | 8 | 5.2 [11.5] |
| | 63 | 89 [3.504] | 210 [7.677] | 30 [1.181] | 22 [0.866] | 170 [6.693] | 3 [0.118] | 133 [5.236] | 8 | 7.4 [16.3] |
| | 100 | 89 [3.504] | 230 [9.055] | 34 [1.339] | 26 [1.024] | 180 [7.087] | 3 [0.118] | 133 [5.236] | 8 | 9.8 [21.6] |
| | 160 | 89 [3.504] | 230 [9.055] | 36 [1.417] | 26 [1.024] | 180 [7.087] | 3 [0.118] | 133 [5.236] | 8 | 10.4 [22.9] |
| | 200 | 89 [3.504] | 290 [11.417] | 54 [2.126] | 33 [1.299] | 230 [9.055] | 3 [0.118] | 133 [5.236] | 8 | 24.7 [54.5] |
| **100** | 10/16 | 89 [3.504] | 215 [8.465] | 20 [0.787] | 18 [0.709] | 180 [7.087] | 3 [0.118] | 158 [6.22] | 8 | 5.3 [11.7] |
| | 25 | 89 [3.504] | 230 [9.055] | 24 [0.945] | 22 [0.866] | 190 [7.48] | 3 [0.118] | 158 [6.22] | 8 | 7.1 [15.7] |
| | 40 | 89 [3.504] | 230 [9.055] | 26 [1.024] | 22 [0.866] | 190 [7.48] | 3 [0.118] | 158 [6.22] | 8 | 7.8 [17.2] |
| | 63 | 89 [3.504] | 250 [9.842] | 32 [1.26] | 26 [1.024] | 200 [7.874] | 3 [0.118] | 158 [6.22] | 8 | 11.1 [24.5] |
| | 100 | 89 [3.504] | 265 [10.433] | 38 [1.496] | 30 [1.181] | 210 [8.268] | 3 [0.118] | 158 [6.22] | 8 | 14.5 [32] |
| | 160 | 89 [3.504] | 265 [10.433] | 40 [1.575] | 30 [1.181] | 210 [8.268] | 3 [0.118] | 158 [6.22] | 8 | 15.3 [33.7] |
| | 200 | 89 [3.504] | 360 [14.173] | 66 [2.598] | 39 [1.535] | 292 [11.496] | 3 [0.118] | 158 [6.22] | 8 | 47.2 [104.1] |
| **125** | 10/16 | 89 [3.504] | 245 [9.646] | 22 [0.866] | 18 [0.709] | 210 [8.268] | 3 [0.118] | 184 [7.244] | 8 | 7.7 [17] |
| | 25 | 89 [3.504] | 270 [10.63] | 26 [1.024] | 26 [1.024] | 220 [8.661] | 3 [0.118] | 184 [7.244] | 8 | 10.6 [23.4] |
| | 40 | 89 [3.504] | 270 [10.63] | 28 [1.102] | 26 [1.024] | 220 [8.661] | 3 [0.118] | 184 [7.244] | 8 | 11.4 [25.1] |
| | 63 | 89 [3.504] | 295 [11.614] | 36 [1.417] | 30 [1.181] | 240 [9.449] | 3 [0.118] | 184 [7.244] | 8 | 17.4 [38.4] |
| | 100 | 89 [3.504] | 310 [12.205] | 42 [1.654] | 33 [1.299] | 250 [9.842] | 3 [0.118] | 184 [7.244] | 8 | 22.3 [49.2] |
| | 160 | 89 [3.504] | 310 [12.205] | 44 [1.732] | 33 [1.299] | 250 [9.842] | 3 [0.118] | 184 [7.244] | 8 | 23.4 [51.6] |
| | 200 | 89 [3.504] | 385 [15.157] | 76 [2.992] | 39 [1.535] | 318 [12.52] | 3 [0.118] | 184 [7.244] | 8 | 63.2 [139.3] |

Further dimensions and higher nominal pressures on request

## Flange connection in line with API 6A, ring-joint groove




14237015.01

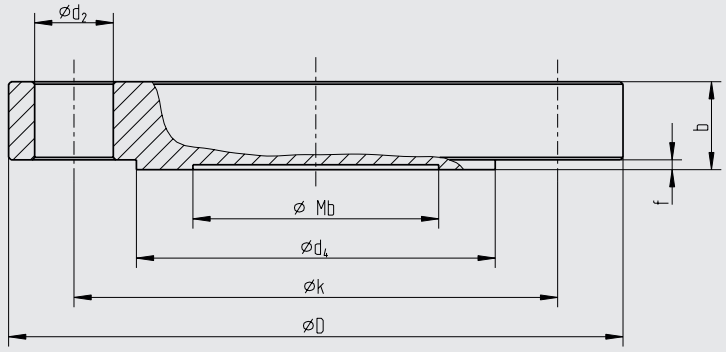
Legend:

| | |
|---|---|
| Mb | Effective diameter of diaphragm |
| D | Outer diameter of diaphragm seal |
| b | Flange thickness |
| $d_4$ | Raised face diameter |
| f | Height of raised face |
| k | Pitch circle diameter |
| x | Number of bores |
| $d_2$ | Bore diameter |
| F | Groove width |
| E | Groove depth |
| $P_1$ | Mid diameter, ring groove |
| $P_2$ | Outer diameter, ring groove |

| DN | PN in psi | Dimensions in mm [in] | | | | | | | x | Groove dimensions in mm [in] | | | | Weight in kg [lbs] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mb | D | $d_2$ | $d_4$ | f | b | k | | $P_1$ | $P_2$ | E | F | |
| **1 13/16"** | 10,000 | 40 [1.575] | 185 [7.283] | 23 [0.906] | 105 [4.134] | 4 [0.157] | 42.1 [1.657] | 146.1 [5.752] | 8 | - | 77.77 [3.062] | 5.56 [21.89] | 11.84 [0.466] | 7.7 [17] |
| | 15,000 | 40 [1.575] | 210 [8.268] | 26 [1.024] | 106 [4.173] | 4 [0.157] | 45.3 [1.783] | 160.3 [6.311] | 8 | - | 77.77 [3.062] | 5.56 [21.89] | 11.84 [0.466] | 10.5 [23.1] |
| | 20,000 | 40 [1.575] | 255 [10.039] | 29 [1.142] | 117 [4.606] | 4 [0.157] | 63.5 [2.5] | 203.2 [8] | 8 | - | 77.77 [3.062] | 5.56 [21.89] | 11.84 [0.466] | 22.3 [49.2] |
| **2 1/16"** | 2,000 | 52 [2.047] | 165 [6.496] | 20 [0.787] | 108 [4.252] | 8 [0.315] | 33.4 [1.315] | 127 [5] | 8 | 82.55 [3.25] | - | 7.9 [0.311] | 11.91 [0.469] | 4.6 [10.1] |
| | 3,000/ 5,000 | 52 [2.047] | 215 [8.465] | 26 [1.024] | 124 [4.882] | 8 [0.315] | 46.1 [1.815] | 165.1 [6.5] | 8 | 95.25 [3.75] | - | 7.9 [0.311] | 11.91 [0.469] | 10.7 [23.6] |
| | 10,000 | 52 [2.047] | 200 [7.874] | 23 [0.906] | 111 [4.370] | 4 [0.157] | 44.1 [1.736] | 158.8 [6.252] | 8 | - | 86.23 [3.395] | 5.95 [0.234] | 12.65 [0.498] | 9.5 [20.9] |
| | 15,000 | 52 [2.047] | 220 [8.661] | 26 [1.024] | 114 [4.488] | 4 [0.157] | 50.8 [2] | 174.6 [6.874] | 8 | - | 86.23 [3.395] | 5.95 [0.234] | 12.65 [0.498] | 13.2 [29.1] |
| | 20,000 | 52 [2.047] | 285 [11.22] | 32 [1.26] | 132 [5.197] | 4 [0.157] | 71.5 [2.815] | 230.2 [9.063] | 8 | - | 86.23 [3.395] | 5.95 [0.234] | 12.65 [0.498] | 31.6 [69.7] |
| **2 9/16"** | 2,000 | 59 [2.323] | 190 [7.48] | 23 [0.906] | 127 [5] | 8 [0.315] | 36.6 [1.441] | 149.2 [5.874] | 8 | 101.6 [4] | - | 7.9 [3.11] | 11.91 [0.469] | 6.7 [14.8] |
| | 3,000/ 5,000 | 59 [2.323] | 245 [9.656] | 29 [1.142] | 137 [5.394] | 8 [0.315] | 49.3 [1.941] | 190.5 [7.5] | 8 | 107.95 [2.25] | - | 7.9 [3.11] | 11.91 [0.469] | 15 [33.1] |
| | 10,000 | 59 [2.323] | 230 [9.055] | 26 [1.024] | 132 [5.197] | 4 [0.157] | 51.2 [2.016] | 184.2 [7.252] | 8 | - | 102.77 [4.046] | 6.75 [0.266] | 14.07 [0.579] | 14.7 [32.4] |
| | 15,000 | 59 [2.323] | 255 [10.039] | 29 [1.142] | 133 [5.236] | 4 [0.157] | 57.2 [2.055] | 200 [7.874] | 8 | - | 102.77 [4.046] | 6.75 [0.266] | 14.07 [0.579] | 20.1 [44.3] |
| | 20,000 | 59 [2.323] | 325 [12.795] | 35 [1.378] | 151 [5.945] | 4 [0.157] | 79.4 [3.126] | 261.9 [10.311] | 8 | - | 102.77 [4.046] | 6.75 [0.266] | 14.07 [0.579] | 46.3 [102] |
| **3 1/8"** | 2,000 | 89 [3.504] | 210 [8.268] | 23 [0.906] | 146 [5.748] | 7.9 [0.311] | 39.7 [1.563] | 168.3 [6.626] | 8 | 123.83 [4.875] | - | 7.9 [0.311] | 11.91 [0.469] | 9.2 [20.3] |
| | 3,000 | 89 [3.504] | 240 [9.449] | 26 [1.024] | 156 [6.142] | 8 [0.315] | 46.1 [1.815] | 190.5 [7.5] | 8 | 123.83 [4.875] | - | 7.9 [0.311] | 11.91 [0.469] | 13.9 [30.6] |
| | 5,000 | 89 [3.504] | 265 [10.433] | 32 [1.26] | 168 [6.614] | 7.9 [0.311] | 55.6 [2.189] | 203.2 [8] | 8 | 136.53 [5.375] | - | 7.9 [0.311] | 11.91 [0.469] | 20.2 [44.5] |

Further dimensions and higher nominal pressures on request

**Flange connection in line with JIS B 2220, RF**




1387979.04

Legend:

| | |
|---|---|
| Mb | Effective diameter of diaphragm |
| D | Outer diameter of diaphragm seal |
| b | Flange thickness |
| $d_2$ | Bore diameter |
| $d_4$ | Raised face diameter |
| f | Height of raised face |
| k | Pitch circle diameter |
| x | Number of bores |

| DN | PN | Dimensions in mm [in] | | | | | | | x | Weight in kg [lbs] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mb | D | b | $d_2$ | k | f | $d_4$ | | |
| **25A** | 5K | 32 [1.26] | 95 [3.74] | 10 [0.394] | 12 [0.472] | 75 [2.953] | 1 [0.039] | 59 [2.323] | 4 | 0.7 [1.5] |
| | 10K | 32 [1.26] | 125 [4.921] | 14 [0.551] | 19 [0.748] | 90 [3.543] | 1 [0.039] | 67 [2.638] | 4 | 1.4 [3.1] |
| | 16K | 32 [1.26] | 125 [4.921] | 14 [0.551] | 19 [0.748] | 90 [3.543] | 1 [0.039] | 67 [2.638] | 4 | 1.4 [3.1] |
| | 20K | 32 [1.26] | 125 [4.921] | 16 [0.63] | 19 [0.748] | 90 [3.543] | 1 [0.039] | 67 [2.638] | 4 | 1.6 [3.5] |
| | 30K | 32 [1.26] | 130 [5.118] | 20 [0.787] | 19 [0.748] | 95 [3.740] | 1 [0.039] | 70 [2.756] | 4 | 2.1 [4.6] |
| | 40K | 25 [0.984] | 130 [5.118] | 22 [0.866] | 19 [0.748] | 95 [3.740] | 1 [0.039] | 70 [2.756] | 4 | 2.3 [5.1] |
| | 63K | 25 [0.984] | 140 [5.512] | 27 [1.063] | 23 [0.906] | 100 [3.967] | 1 [0.039] | 70 [2.756] | 4 | 3.1 [6.9] |
| **50A** | 5K | 59 [2.323] | 130 [5.118] | 14 [0.551] | 15 [0.591] | 105 [4.134] | 2 [0.079] | 85 [3.346] | 4 | 1.5 [3.3] |
| | 10K | 59 [2.323] | 155 [6.102] | 16 [0.63] | 19 [0.748] | 120 [4.724] | 2 [0.079] | 96 [3.78] | 4 | 2.3 [5.1] |
| | 16K | 59 [2.323] | 155 [6.102] | 16 [0.63] | 19 [0.748] | 120 [4.724] | 2 [0.079] | 96 [3.78] | 8 | 2.2 [4.9] |
| | 20K | 59 [2.323] | 155 [6.102] | 18 [0.709] | 19 [0.748] | 120 [4.724] | 2 [0.079] | 96 [3.78] | 8 | 2.4 [5.3] |
| | 30K | 59 [2.323] | 165 [6.496] | 22 [0.866] | 19 [0.748] | 130 [5.118] | 2 [0.079] | 105 [4.134] | 8 | 3.4 [7.5] |
| | 40K | 59 [2.323] | 165 [6.496] | 26 [1.024] | 19 [0.748] | 130 [5.118] | 2 [0.079] | 105 [4.134] | 8 | 4.0 [8.8] |
| | 63K | 59 [2.323] | 185 [7.83] | 34 [1.339] | 23 [0.906] | 145 [5.709] | 2 [0.079] | 105 [4.134] | 8 | 6.4 [14.1] |
| **80A** | 5K | 89 [3.504] | 180 [7.087] | 14 [0.551] | 19 [0.748] | 145 [5.709] | 2 [0.079] | 121 [4.764] | 4 | 2.7 [6] |
| | 10K | 89 [3.504] | 185 [7.83] | 18 [0.709] | 19 [0.748] | 150 [5.905] | 2 [0.079] | 126 [4.961] | 8 | 3.5 [7.7] |
| | 16K | 89 [3.504] | 200 [7.874] | 20 [0.787] | 23 [0.906] | 160 [6.299] | 2 [0.079] | 132 [5.197] | 8 | 4.5 [9.9] |
| | 20K | 89 [3.504] | 200 [7.874] | 22 [0.866] | 23 [0.906] | 160 [6.299] | 2 [0.079] | 132 [5.197] | 8 | 4.9 [10.8] |
| | 30K | 89 [3.504] | 210 [8.268] | 28 [1.102] | 23 [0.906] | 170 [6.693] | 2 [0.079] | 140 [5.512] | 8 | 7 [15.4] |
| | 40K | 89 [3.504] | 210 [8.268] | 32 [1.26] | 23 [0.906] | 170 [6.693] | 2 [0.079] | 140 [5.512] | 8 | 8 [17.6] |
| | 63K | 89 [3.504] | 230 [9.055] | 40 [1.575] | 25 [0.984] | 185 [7.83] | 2 [0.079] | 140 [5.512] | 8 | 11.9 [26.2] |
| **100A** | 5K | 89 [3.504] | 200 [7.874] | 16 [0.63] | 19 [0.748] | 165 [6.496] | 2 [0.079] | 141 [5.551] | 8 | 3.7 [8.2] |
| | 10K | 89 [3.504] | 210 [8.268] | 18 [0.709] | 19 [0.748] | 175 [6.89] | 2 [0.079] | 151 [5.945] | 8 | 4.6 [10.1] |
| | 16K | 89 [3.504] | 225 [8.858] | 22 [0.866] | 23 [0.906] | 185 [7.83] | 2 [0.079] | 160 [6.299] | 8 | 6.4 [14.1] |
| | 20K | 89 [3.504] | 225 [8.858] | 24 [0.945] | 23 [0.906] | 185 [7.83] | 2 [0.079] | 160 [6.299] | 8 | 6.9 [15.2] |
| | 30K | 89 [3.504] | 240 [9.449] | 32 [1.26] | 25 [0.984] | 195 [7.677] | 2 [0.079] | 160 [6.299] | 8 | 10.4 [22.9] |
| | 40K | 89 [3.504] | 250 [9.852] | 36 [1.417] | 25 [0.984] | 205 [8.071] | 2 [0.079] | 165 [6.496] | 8 | 12.8 [28.2] |
| | 63K | 89 [3.504] | 270 [10.63] | 44 [1.732] | 27 [1.063] | 220 [8.661] | 2 [0.079] | 165 [6.496] | 8 | 18.2 [40.1] |

Further dimensions and higher nominal pressures on request

## Accessories and spare parts

| Model | | Description | Order number |
|---|---|---|---|
|  | **910.27** | Flushing ring for flange-connection diaphragm seals<br>→ See data sheet AC 09.05 | On request |
|  | **IBF2, IBF3** | Monoblock with flange connection<br>→ See data sheet AC 09.25 | On request |
|  | **910.16** | Instrument mounting bracket form H per DIN 16281, 100 mm, aluminium, black | 9091858 |
| | | Instrument mounting bracket form H per DIN 16281, 100 mm, stainless steel | 9091882 |
| | | → See data sheet AC 09.05 | On request |

**Ordering information**

Diaphragm seal:

Diaphragm seal model / Process connection (standard, flange size, nominal pressure, sealing face) / Material combination (upper body of diaphragm seal, wetted parts) / Level of cleanliness of wetted parts / Origin of wetted parts / Design per NACE / Connection to the measuring instrument / Certificates / Flushing ring

Diaphragm seal system:

Diaphragm seal model / Pressure measuring instrument model (per data sheet) / Mounting (direct mounting, cooling element, capillary) / Material combination (upper body of diaphragm seal, wetted parts) / Min. and max. process temperature / Min. and max. ambient temperature / Vacuum service / System fill fluid / Certificates / Height difference / Level of cleanliness of wetted parts / Origin of wetted parts / Design per NACE / Diaphragm seal for mounting to zone 0 / Instrument mounting bracket / Process connection (standard, flange size, nominal pressure, sealing face) / Flushing ring





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