

Diaphragm Seals Flange Type

Flange connection according to DIN EN, ASME or JIS
Membrane flush welded

MDM 7510v
MDM 7520v

Standard Version

Information on applications, properties, metrological influences such as temperature, level difference, floating time and others, can be found in model overview 7000. Furthermore, you will also find indications on other chemical seal versions.

Application

Diaphragm seals of the type series 75.. are suitable for aggressive, contaminated and hot media.

Numerous common pressure gauges of our supply programme can be equipped with these chemical seals, but also pressure switches, pressure transmitters and pressure transducers, depending on the nominal case size of the chemical seal up to PN 400 or Class 2500.

Construction

The diaphragm is welded free of dead space to the process side of the chemical seal.

Model 75..vd8 has an orifice d8 as instrument connection for welding to a pressure gauge with process connection d8x5, e.g. RCh 100 – 3vDW, cooling element or capillary line.

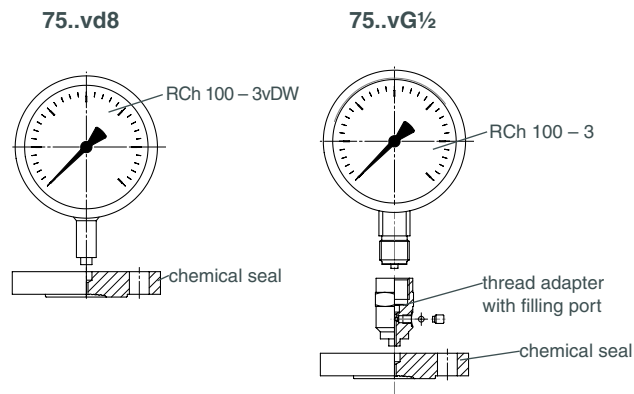
Leakage cannot occur at the welded connection of pressure gauge / upper part and the filling port, which is not accessible from the outside.

The parts can be easily cleaned externally.

Model 75..vG½ has a measuring instrument adapter with female thread for direct mounting to measuring instruments with male thread. The screwed connections pressure gauge / adapter and the filling port must not be loosened or opened at any time, or else filling fluid will leak and the measuring unit loses its efficiency.

NACE resp. Sour Gas Application

The material we use complies with the NACE MR 0175 standards (NACE 0103 upon request). Only material with test certification is used.



Chemical seal

Stainless steel 1.4404 (316 L)

Instrument Connection

75..vd8 : for welding to measuring instrument, capillary line or cooling element with welding connection (recommended for media temperatures higher than 100 °C (212 °F))

75..vG ½ : G ½ female (½" BSP)

Diaphragm

Sinus-shape, from DN 50 or 2" High Soft Membrane stainless steel 1.4435 (316 L) flush welded with chemical seal, He-leak detection up to 10⁻⁹ mbar l/s
Effective diaphragm diameter dM, see tables on page 3



Sealing Face

According to DIN EN 1092-1 Form B, sealing face B1, flange stamped B, Raised Face (RF) for ASME B 16.5

Nominal Pressure

See tables on page 3

Minimum Span Pressure Gauges

See tables on page 3

t_k-Value (mbar/10K) (Temperature Coefficient of the Chemical Seal)

See tables on page 3 (Silicone oil FA 1)

Accessories

Capillary line, cooling elements: see data sheet 7002
Process connection pieces and sealings do not belong to the standard supply programme, but are available upon request.

Construction / Filling / Certificates

Information on mounting, filling and certificates are available upon request.

Ordering Information Chemical Seals

Please note our detailed ordering information

- in model overview 7000
 - in the check lists for pressure measuring instruments with chemical seals and
 - in the data sheets of the requested pressure measuring instrument and add the information for the respective chemical seal:
 - Model : e.g. MDM 7510vd8, MDM 7520vG½
 - Nominal case size: e.g. NPS 2", DN 25
 - Nominal pressure: e.g. Class 300, PN 40
- if necessary, options: see page 2, e.g. wetted parts PTFE

The reference temperature is +20 °C (+68 °F). Please indicate, if an operating temperature (tA) deviating from +20 °C (+68 °F) max. is required (dial inscription tA...).

Example: Pressure gauge...,
Chemical seal: MDM 7510vd8, DN 25, PN 40, tA +80°C



Instruments To
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Ordering Information, Further Options

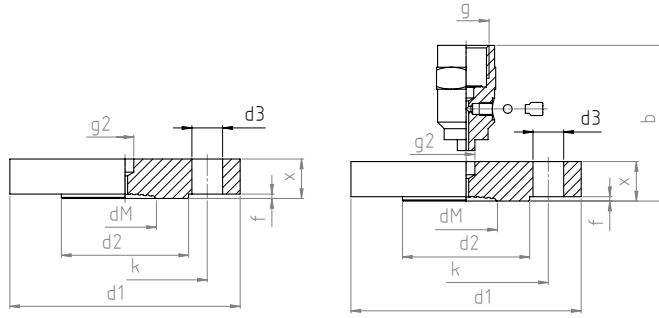
| Basic Models: | | Diaphragm Seals | | | MDM 75..v | |
|--|--|---|-----------------------|-----------------------|------------------------------|--|
| Instrument connection: | orifice d8 for direct welding to measuring instrument, with cooling element or with capillary line | | | | 75..vd8 | |
| | G ½ female (½" BSP) option: G ¼ female (¼" BSP) | | | | 75..vG ½ | |
| Chemical seal: | | Flange | Sealing Face | Diaphragm | | |
| | Flange: stainless steel 1.4404 (316 L) | Standard | | | | |
| | | Stainless steel 316 L | stainless steel 316 L | stainless steel 316 L | stainless steel 316 L | Stainless steel 316 L |
| | | Options wetted parts special material | | | | |
| | | Tantalum | stainless steel 316 L | Tantalum | Tantalum | Stainless steel 316 L / Tantalum |
| | | Hastelloy C276 | stainless steel 316 L | Hastelloy C276 | Hastelloy C276 | Stainless steel 316 L / Hastelloy C276 |
| | | Monel 400 | stainless steel 316 L | Monel 400 | Monel 400 | Stainless steel 316 L / Monel 400 |
| | | PTFE¹⁾ (0.25 mm) | stainless steel 316 L | PTFE | stainless steel 316 L / PTFE | Stainless steel 316 L / PTFE |
| | | Tantalum / PTFE¹⁾ (0.25 mm) | stainless steel 316 L | Tantalum | Tantalum / PTFE | Stainless steel 316 L / Tantalum / PTFE |
| | | Options solid made of special material | | | | |
| | | Titanium | Titanium | Titanium | Titanium | Titanium |
| | | Hastelloy C276 | Hastelloy C276 | Hastelloy C276 | Hastelloy C276 | Hastelloy C276 |
| Monel 400 | Monel 400 | Monel 400 | Monel 400 | Monel 400 | | |
| Process connection: | according to DIN EN 1092-1 or ASME | | | | | |
| Further options: | Form of sealing face sealing face according to DIN EN 1092-1 Form B2, stamped B2, A, C, D, E, F, G, ASME RJF-circular groove | | | | | |
| | Special material for diaphragm and sealing face | | | | | |
| | | 2.4617 | Hastelloy C2 | | | |
| | | 2.4610 | Hastelloy C4 | | | |
| | | 2.4602 | Hastelloy C22 | | | |
| | | 2.4816 | Inconel 600 | | | |
| | | 1.4462 | Duplex | | | |
| | Protection foil on diaphragm and sealing face | | | | | |
| | | PTFE (0.5 mm) ¹⁾ | | | | |
| | | silver foil (0.10 mm) ²⁾ | | | | |
| Coating on diaphragm and sealing face | | | | | | |
| | PFA | | | | | |
| | ECTFE | | | | | |
| | gold/rhodium (protection against hydrogen diffusion) | | | | | |
| | PTC | | | | | |
| Wetted parts | | | | | | |
| | electropolished | | | | | |
| Special versions: | other instrument connections upon request, whereas we do not recommend NPT female threads | | | | | |
| | other material combinations upon request | | | | | |
| | versions according to other standards (such as JIS), other sealing faces, shapes and nominal case sizes upon request | | | | | |
| | calculation of the temperature related additional error for the whole measuring unit | | | | | |

¹⁾ Temperature resistance max. 260 °C (500 °F), max. 400 bar, vacuum-resistant up to 260 °C (500 °F) - only if there is no penetration

²⁾ Temperature resistance max. 150 °C (302 °F), max. 100 bar, vacuum-resistant up to 80 °C (176 °F)

Dimensional Data (mm), Weight (kg), Minimum Span (bar) and t_k -Value (mbar/10K)

Flange Connection Similar to DIN EN 1092-1 Form B1 / ASME B16.5



MDM 7510v DIN EN 1092-1

| DN | PN | b | d1 | d2 | d3 | dM | f | g | g2 | k | x | Minimum span | t_k -value | Weight (approx.) | |
|-----|--------|-----|-----|------|-------|----|---|-----------------|-----|-----|------|-----------------------|--------------|------------------|------------------|
| | | | | | | | | | | | | | | vd8 | vG $\frac{1}{2}$ |
| 25 | 10/40 | 61 | 115 | 68 | 4xØ14 | 28 | 2 | G $\frac{1}{2}$ | Ø 8 | 85 | 18 | 0 – 2.5 ²⁾ | 2.30 | 1.27 | 1.40 |
| | 63/100 | 67 | 140 | | 4xØ18 | | | | | 100 | 24 | | | 2.37 | 2.50 |
| | 160 | | | | 105 | | | | | 28 | 2.97 | | | 3.10 | |
| | 250 | | | | 115 | | | | | 34 | 4.57 | | | 4.70 | |
| | 320 | | | | 130 | | | | | 38 | 6.27 | | | 6.40 | |
| 400 | 180 | 110 | 18 | 7.07 | 7.20 | | | | | | | | | | |
| 32 | 10/40 | 61 | 140 | 78 | 4xØ18 | 34 | 3 | G $\frac{1}{2}$ | Ø 8 | 100 | 18 | 0 – 1 ²⁾ | 1.20 | 2.17 | 2.30 |
| 40 | 10/40 | | 150 | 88 | 4xØ18 | 38 | | | | 110 | 18 | | | | |

High Soft Membrane

| | | | | | | | | | | | | | | | |
|-----|-------|-----|-------|-------|-------|-------|-------|-----------------|------|-------|-------|-----------------------|------|-------|------|
| 50 | 25/40 | 63 | 165 | 102 | 4xØ18 | 57 | 3 | G $\frac{1}{2}$ | Ø 8 | 125 | 20 | 0 – 1 ¹⁾ | 0.09 | 2.87 | 3.00 |
| | 63 | 69 | 180 | | 4xØ22 | | | | | 135 | 26 | | | 4.47 | 4.60 |
| | 100 | 71 | 195 | | 4xØ26 | | | | | 145 | 28 | | | 5.57 | 5.70 |
| | 160 | 73 | | | | | | | | 150 | 30 | | | 6.02 | 6.15 |
| | 250 | 81 | | | | | | | | 150 | 38 | | | 7.57 | 7.70 |
| | 320 | 85 | | | | | | | | 160 | 42 | | | 9.37 | 9.50 |
| 400 | 95 | 235 | 8xØ30 | 180 | 52 | 14.57 | 14.70 | | | | | | | | |
| 65 | 25/40 | 65 | 185 | 122 | 8xØ18 | 72 | 3 | G $\frac{1}{2}$ | Ø 8 | 145 | 22 | 0 – 0.6 ¹⁾ | 0.04 | 4.37 | 4.50 |
| 80 | 10/16 | 63 | 200 | 138 | | | | | | 8xØ22 | 160 | | | 20 | 4.22 |
| | 25/40 | 67 | | | 8xØ26 | 170 | 24 | 5.12 | 5.25 | | | | | | |
| | 63 | 71 | | | 215 | 8xØ30 | 180 | 28 | 6.82 | 6.95 | | | | | |
| | 100 | 75 | | | 230 | 8xØ30 | 180 | 32 | 8.72 | 8.85 | | | | | |
| | 160 | 79 | | | 255 | 8xØ30 | 200 | 36 | 9.92 | 10.05 | | | | | |
| 100 | 10/16 | 63 | 220 | 158 | 8xØ18 | 84 | 3 | G $\frac{1}{2}$ | Ø 8 | 180 | 20 | 0 – 0.6 ¹⁾ | 0.04 | 4.62 | 4.75 |
| | 25/40 | 67 | 235 | 8xØ22 | 190 | | | | | 24 | 6.52 | | | 6.65 | |
| | 63 | 73 | 250 | 8xØ26 | 200 | | | | | 30 | 10.37 | | | 10.50 | |
| | 100 | 79 | 265 | 8xØ30 | 210 | | | | | 36 | 13.87 | | | 14.00 | |
| | 160 | 83 | 300 | 8xØ30 | 210 | | | | | 40 | 14.47 | | | 14.60 | |
| | 250 | 97 | 300 | 8xØ33 | 235 | | | | | 54 | 21.17 | | | 21.30 | |

MDM 7520v ASME B16.5

| NPS | Class | b | d1 | d2 | d3 | dM | f | g | g2 | k | x | Minimum span | t_k -value | Weight (approx.) | |
|---------|----------|-------|---------|------|---------|----|-------|-----------------|-----|------|-------|-----------------------|--------------|------------------|------------------|
| | | | | | | | | | | | | | | vd8 | vG $\frac{1}{2}$ |
| 1" | 150 | 57.2 | 108 | 50.8 | 4xØ15.7 | 28 | 1.6 | G $\frac{1}{2}$ | Ø 8 | 79.2 | 14.2 | 0 – 2.5 ²⁾ | 2.30 | 1.77 | 1.90 |
| | 300 | 60.5 | 124 | | 4xØ19.1 | | | | | 88.9 | 17.5 | | | 2.97 | 3.10 |
| | 400/600 | 66.9 | 124 | | 4xØ25.4 | | 101.6 | | | 23.9 | 3.37 | | | 3.50 | |
| | 900/1500 | 77.8 | 149.4 | | | | 108 | | | 34.8 | 7.77 | | | 7.90 | |
| | 2500 | 84.5 | 158.8 | | | | 108 | | | 41.5 | 10.77 | | | 10.90 | |
| 1½" | 150 | 60.5 | 127 | 73.2 | 4xØ15.7 | 38 | 1.6 | G $\frac{1}{2}$ | Ø 8 | 98.6 | 17.5 | 0 – 1 ²⁾ | 0.80 | 3.27 | 3.40 |
| 300 | 63.6 | 155.4 | 4xØ22.4 | | 114.3 | | | | | 20.6 | 5.77 | | | 5.90 | |
| 400/600 | 71.8 | | | | 114.3 | | 28.8 | | | 7.07 | 7.20 | | | | |

High Soft Membrane

| | | | | | | | | | | | | | | | |
|----|----------|-------|-------|-------|---------|----|---------|-----------------|-----|-------|-------|-----------------------|------|-------|-------|
| 2" | 150 | 62.1 | 152.4 | 91.9 | 4xØ19.1 | 57 | 1.6 | G $\frac{1}{2}$ | Ø 8 | 120.7 | 19.1 | 0 – 1 ¹⁾ | 0.09 | 2.47 | 2.60 |
| | 300 | 65.4 | 165.1 | | 8xØ19.1 | | | | | 127 | 22.4 | | | 3.27 | 3.40 |
| | 400/600 | 74.8 | | | | | 165.1 | | | 31.8 | 4.17 | | | 4.30 | |
| | 900/1500 | 87.5 | | | | | 215.9 | | | 165.1 | 44.5 | | | 10.17 | 10.30 |
| | 2500 | 101.2 | | | | | 235 | | | 171.5 | 57.2 | | | 15.67 | 15.80 |
| 3" | 150 | 66.9 | 190.5 | 127 | 4xØ19.1 | 84 | 1.6 | G $\frac{1}{2}$ | Ø 8 | 152.4 | 23.9 | 0 – 0.6 ¹⁾ | 0.04 | 4.97 | 5.10 |
| | 300 | 71.4 | 209.6 | | 8xØ22.4 | | | | | 168.1 | 28.4 | | | 6.87 | 7.00 |
| | 400/600 | | | | | | 190.5 | | | 38.2 | 8.47 | | | 8.60 | |
| | 900 | 87.5 | 241.3 | | 8xØ25.4 | | 190.5 | | | 44.5 | 13.17 | | | 13.30 | |
| | 1500 | 97.2 | 266.7 | | 8xØ31.8 | | 203.2 | | | 54.2 | 19.17 | | | 19.30 | |
| | 2500 | 115.9 | 304.8 | | 8xØ35.1 | | 228.6 | | | 72.9 | 34.87 | | | 35.00 | |
| 4" | 150 | 66.9 | 228.6 | 157.2 | 8xØ19.1 | 84 | 1.6 | G $\frac{1}{2}$ | Ø 8 | 190.5 | 23.9 | 0 – 0.6 ¹⁾ | 0.04 | 7.07 | 7.20 |
| | 300 | 74.8 | 254 | | 8xØ22.4 | | | | | 200.2 | 31.8 | | | 11.57 | 11.70 |
| | 400 | 84.5 | | | | | 8xØ25.4 | | | 215.9 | 41.5 | | | 13.77 | 13.90 |
| | 600 | 87.5 | 273.1 | | 8xØ31.8 | | 215.9 | | | 44.5 | 17.37 | | | 17.50 | |
| | 900 | 93.8 | 292.1 | | 8xØ31.8 | | 234.9 | | | 50.8 | 26.97 | | | 27.10 | |
| | 1500 | 103.2 | 311.2 | | 8xØ35.1 | | 241.3 | | | 60.2 | 28.77 | | | 28.90 | |

¹⁾ for Bourdon tube pressure gauges NCS 100, ²⁾ for Bourdon tube pressure gauges RCh / RChG 100 – 3 without limit switch contact assembly