Diaphragm Seals

Male Thread or Flange Connection

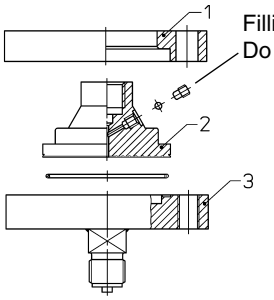
PN 40 (600 lb/sq.in.), PN 100 (1,500 lb/sq.in.)

Model **MDM 7210**

Application
Chemical seals model MDM 7210 are suitable for aggressive, thick or viscous fluids or hot media**.** Different materials can be combined, and different connection types and sizes. This way our diaphragm seals series MDM 72.. are available in suitable variations for innumerable applications and media. Pressure gauges can be attached, but also pressure switches or transmitters with pressure ranges between 0-0.6 to 0-40 bar (10 to 600 psi). For pressure ranges up to 100 bar (1,500 psi) a version with strengthened attachement flange is available at option. For pressure ranges higher than 100 bar (> 1,500 psi) see data sheets 7211 (MDM 7211) and 7280 (MDM 7280).

Further details about advantages and performances of chemical seals, and important explanations about the required ordering information are on general information leaflet 7000, where you will also find an overview of other chemical seal models.
Please note especially the explanations about temperature influences and other special process conditions.

Construction
The membrane is welded to the upper housing. The diaphragm seals are provided with a filling port in the upper part to simplify the filling of the complete measuring system after mounting and evacuation of the system. A special screw closes the filling port afterwards. This screw may not be opened. The lower housing with process connection (male thread connection or flange) and the upper housing are tied together by an attachement flange and 6 bolts M 8.



Filling Port
Do not open!

1. Attachement Flange
2. Upper Housing
3. Lower Housing

Standard Configuration

Upper Housing with Instrument Connection
316 L (1.4435), G½ (½" BSP) female

Membrane
316 L (1.4435) welded to the upper housing;
effective Ø of the membrane 64 mm (2.52")

Pressure Ranges (for Attached Pressure Gauges)
0-0.6 bar to 0-40 bar (10 psi to 600 psi),
also vacuum and compound ranges
(Pressure ranges for other instruments upon request.)

Lower Housing with Process Connection
Carbon steel zinc plated, process connection G ½ B (½" BSP male)

Gasket
Perbunan (NBR, "buna N")

Attachment Flange and Bolts with Nuts
Carbon steel zinc plated, 6 bolts and nuts M8

Filling Fluid
Silicone oil

Reference Temperature
+20 °C (**68 °F**)

Optional Special Configurations

- **Instrument connection** (female) M 20x1.5, G ¼ (¼" BSP), ¼" NPT, ½" NPT
- **Process connection** male thread M20x1.5, ¼" NPT, ½" NPT or others; flanges according to DIN EN or ASME; flanges acc. DIN 2526 upon request
- Version with male thread connection: **PN 100** with strengthened attachement flange, 12 bolts with nuts; PN 63, PN100 for open flange connection upon request
- **Membrane** tantalum, hastelloy B2, C4 or C 276, Monel metal (400), titanum or others, welded to the upper housing
- **Protection foil** PTFE, fine silver or others
- **Wetted parts** (others upon request):
  – Lower housing 316 L (1.4435), gasket viton;
  – Lower housing carbon steel/PTFE -lining, membrane stainl. steel/PTFE-foil;
  – Lower housing 316 L (1.4435)/PTFE-lining, membrane stainl. steel/PTFE-foil;
  – Lower housing hastelloy C4, membrane hastelloy C276, gasket PTFE;
  – Lower housing Monel metal, membrane monel metal, gasket PTFE
- **Attachement flange** 316 L (1.4435) and bolts 316 (1.4401)
- Other **calibration temperatures** than +20 °C (**+68 °F**)
  [Please state the exact working conditions!
  Max. 200 °C (**392 °F**) adjustable at the diaphragm seal. Use a cooling element or capillary line (see below) to keep away the temperature from the instrument, compare general information leaflet 7000.]
- **Capillary line** between diaphragm seal and instrument
  (A mounting device for the measuring instrument is required, such as a rear flange or a front flange for pressure gauges, or a gauge holder bracket. The allowed length and configuration has to be suitable to pressure range and filling fluid; details upon request.)
- **Cooling element** (for various pressure gauges strongly recommended in case that the medium temperatures are +100 °C [+212 °F] and up, and the diaphragm seal shall be mounted to the gauge without capillary line)
- **Filling fluid** glycerine, Halocarbon oil, or others

How to Order:

Please note the detailed information about how to order on our general information leaflet 7000 and on the data sheet for the measuring instrument that shall be attached.

Model code:	**MDM 7210**
Instrument connection:	**½" BSP female** (standard)
Material of wetted parts:	**Carbon steel** zinc plated (standard), others see above
Process connection:	**½" BSP male** (standard) others see above
Material of attachement flange and screws:	**Carbon steel** zinc plated (standard), others see above
Special options:	see above

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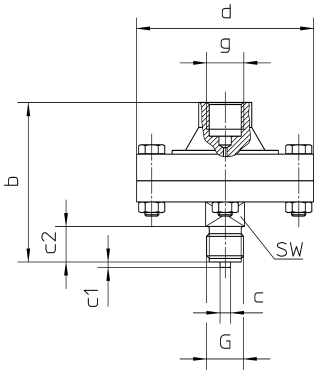
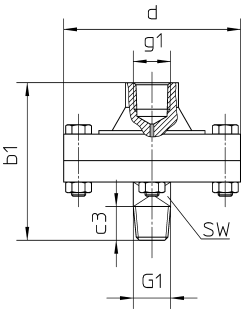
Dimensional Data and Weight

Male thread process connection

G ½ B (½" BSP)



½" NPT

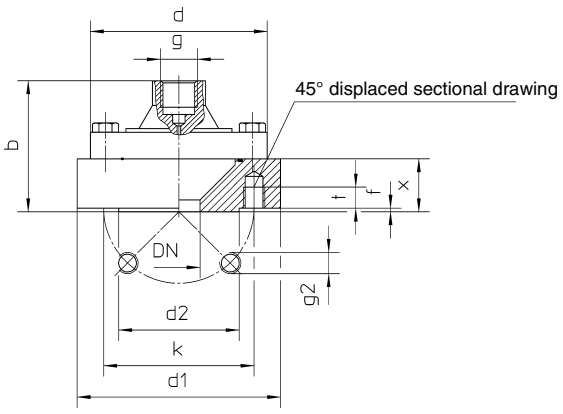


Dimensions (mm **/ inches) and Weight (**kg **/ lb)**

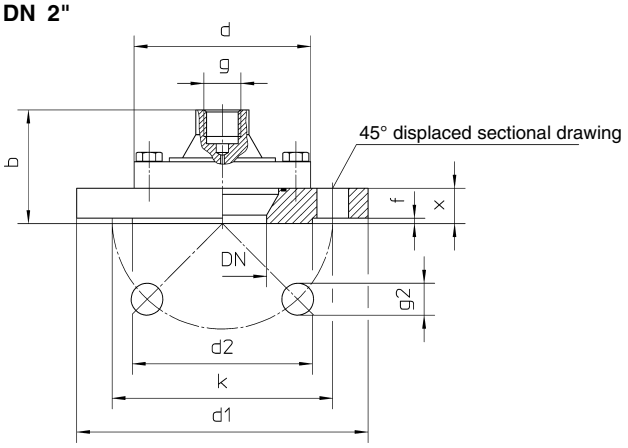
b ±2	b1 ±2	c	c1	c2	c3	d	g	g1	G	G1	SW	Weight (approx.)
90 **3.54**	89 **3.50**	6 **.24**	3 **.12**	20 **.79**	19 **.75**	99 **3.9**	G ½ **½" BSP-F**	½" NPT-F	G ½ B **½" BSP-M**	½" NPT-M	22 **.87**	1.43 **3.15**

Flange connection **DIN-flange** Sealing face DIN EN 1092-1 form B1, PN 40
ASME-flange Sealing face ASME B 16.5 RF 150...600 lb/sq.in.

DN 15, 20, 25
DN ½", 1"



DN 50
DN 2"



Flanges acc. to DIN EN 1092-1, Dimensions (mm **/ inches) and Weight (**kg **/ lb)**

DN	b ±2	d	d1	d2	f	g	g2	k	t	x	Weight (approx.)
15 **.59**	69 **2.72**	99 **3.9**	99 **3.9**	45 **1.77**	2 **.08**	G ½ **½" BSP-F**	4 x M 12[1)]	65 **2.56**	12 **.47**	25 **.98**	1.85 **4.08**
20 **.79**			105 **4.13**	58 **2.28**				75 **2.95**			1.95 **4.30**
25 **.98**	66 **2.6**		115 **4.53**	68 **2.68**				85 **3.35**		22 **.87**	2.00 **4.41**
50 **1.97**	64 **2.52**		165 **6.50**	102 **4.02**			4 x Ø 18 **4 x Ø .71**	125 **4.92**	–	20 **.79**	3.35 **7.39**

Flanges acc. to ASME, Dimensions (mm **/ inches) and Weight (**kg **/ lb)**

DN	b ±2 150 300 lb/sq.in.[3)]	d	d1 150 lb/sq.in.	d1 300 600 lb/sq.in.	d2	f 150 300 lb/sq.in.	f 600 lb/sq.in.	g	g2 4xUNF 2B	k 150 lb/sq.in.	k 300 600 lb/sq.in.	t	x 150 lb/sq.in.	x 300 lb/sq.in.	x 600 lb/sq.in.	Weight (approx.) 300 lb/sq.in.
½"	74 **2.91**	99 **3.9**	99 **3.9**		34.9 **1.37**	1.6 **.06**	6.4 **.25**	G ½ **½" BPS-F**	½ – 20	60.3 **2.37**	66.7 **2.63**	15 **.59**	30 **1.18**		35 **1.38**	2.00 **4.41**
1"			108 **4.25**	124 **4.88**	50.8 **2**				$^5/_8$ – 18[2)]	79.4 **3.13**	88.9 **3.5**					3.00 **6.61**
2"	66.4 **2.61**		152 **5.98**	165 **6.5**	92.1 **3.63**				$^5/_8$ – 18[4)]	121 **4.76**	127 **5**	–	19.1 **.75**	22.2 **.87**	32 **1.26**	3.75 **8.27**

[1)] on request with bolts M 12 x 45
[2)] ½–20 UNF–2B for 150 lb/sq.in.
[3)] small differences for 600 lb/sq.in. (compare dimension x)
[4)] 8 x Ø 19 (**.75"**) for 300 resp. 600 lb/sq.in.

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.