

Diaphragm Seals Flange Type

Flange connection according to DIN EN, ASME,
membrane flush welded

MDM 7510v
MDM 7520v

Information on applications, features, metrological influences such as temperature, level difference, floating time and others can be found in model overview 7000. Furthermore, you will find information 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 width 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/chemical seal and the filling port that is not accessible externally. The parts can be easily cleaned externally.

Model 75..vG½ has a gauge adapter with female thread for direct mounting to measuring instruments with male thread.

The screwed connections pressure gauge/adaptor and the filling port must not be loosened or opened as otherwise filling fluid leaks and the pressure measuring unit loses its functional capability.



Diaphragm

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

Minimum Span Pressure Gauges

See tables on pages 2 and 3

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

See tables on pages 2 and 3 (silicone oil FA 1)

Options

See page 4

Special Versions

- Other instrument connections upon request, whereas we do not recommend NPT female threads
- Other material combinations upon request
- Version according to other standards (such as JIS), other sealing faces, shapes and nominal widths upon request

Accessory

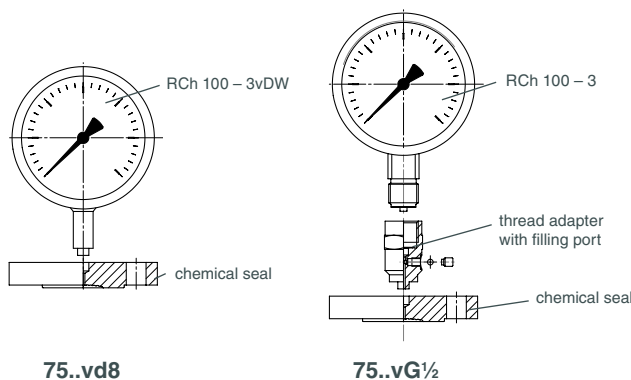
Capillary line, cooling elements: see data sheet 7.7002 and 7.7003
Other accessory: available upon request

Mounting/Filling/Certificates

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

Ordering Information Chemical Seals

See page 4



Standard Versions

NACE/Sour Gas Application

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

Chemical Seal

Stainless steel 316L (1.4404)

Instrument Connection

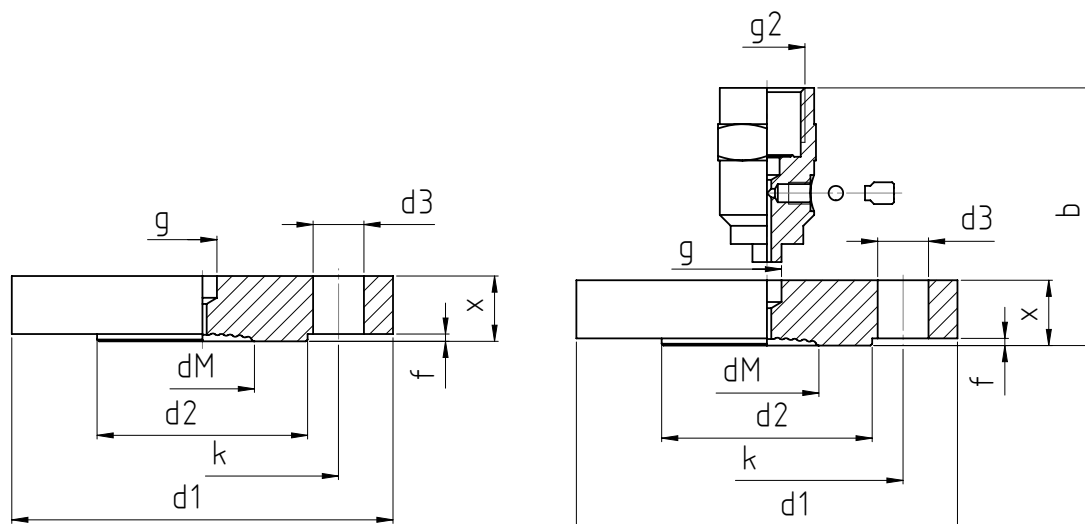
75..vd8: for welding to measuring instrument, capillary line or cooling element with welding connection (recommended for medium temperatures higher than 100 °C (212 °F))

75..vG½: G ½ female

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

Flange Connection Similar to DIN EN 1092-1 Form B1

MDM 7510v



DN	PN	b	d1	d2	d3	dM	f	g	g2	k	x	Minimum span	t_k -value	(approx.) weight	
														vd8	vG $\frac{1}{2}$
25	10/40	61	115	68	4 x Ø 14	28	2	G $\frac{1}{2}$	Ø 8	85	18	0 - 2.5 ²⁾	2.30	1.27	1.40
	63/100	67	140		4 x Ø 18					100	24			2.37	2.50
	160	71	150		4 x Ø 22					105	28			2.97	3.10
	250	77	160		4 x Ø 26					115	34			4.57	4.70
	320	81	180		130					38	6.27			6.40	
	400	81	180		130					38	7.07			7.20	
32	10/40	61	140	78	4 x Ø 18	34	3	G $\frac{1}{2}$	Ø 8	100	18	0 - 1 ²⁾	1.20	2.17	2.30
40	10/40	61	150	88	4 x Ø 18	38				110	18			0.80	2.37

High-Soft Membrane

50	25/40	63	165	102	4 x Ø 18	57	3	G $\frac{1}{2}$	Ø 8	125	20	0 - 1 ¹⁾	0.09	2.87	3.00
	63	69	180		4 x Ø 22					135	26			4.47	4.60
	100	71	195		4 x Ø 26					145	28			5.57	5.70
	160	73	210		8 x Ø 26					160	42			6.02	6.15
	250	81	200		8 x Ø 30					150	38			7.57	7.70
	320	85	210		160					42	9.37			9.50	
65	25/40	65	185	138	8 x Ø 18	84	3	G $\frac{1}{2}$	Ø 8	145	22	0 - 0.6 ¹⁾	0.04	4.37	4.50
	10/16	63	200		8 x Ø 22					160	24			4.22	4.35
	25/40	67	215		8 x Ø 26					170	28			5.12	5.25
	63	71	230		8 x Ø 30					180	32			6.82	6.95
	100	75	255		200					46	8.72			8.85	
	160	79	230		180					36	9.92			10.05	
80	25/40	63	220	162	8 x Ø 18	84	3	G $\frac{1}{2}$	Ø 8	180	20	0 - 0.6 ¹⁾	0.04	15.57	15.70
	10/16	63	235		8 x Ø 22					190	24			4.62	4.75
	25/40	67	250		8 x Ø 26					200	30			6.52	6.65
	63	73	265		8 x Ø 30					210	36			10.37	10.50
	100	79	265		210					40	13.87			14.00	
	160	83	300		235					54	14.47			14.60	
100	250	97	300	8 x Ø 33	235	54									

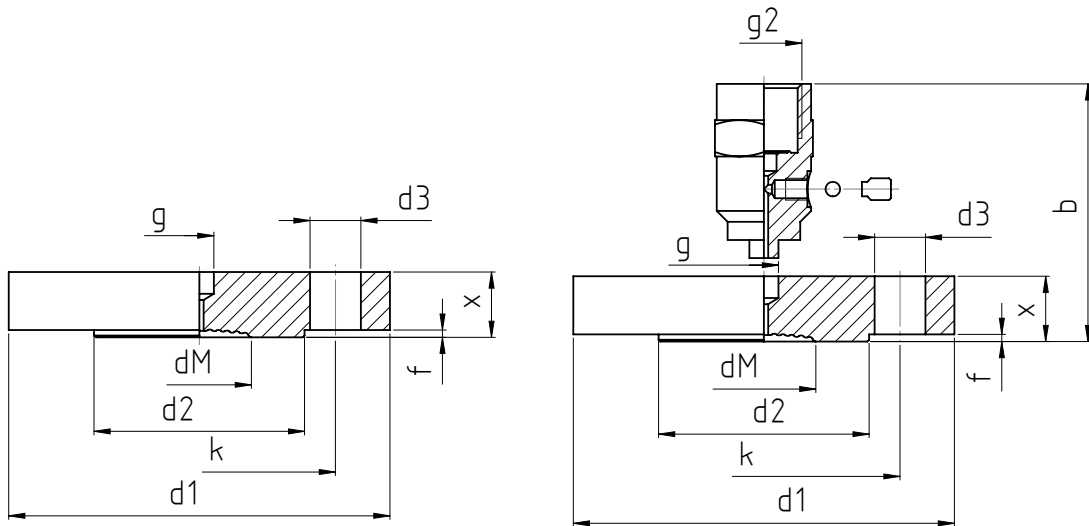
¹⁾ for Bourdon tube pressure gauges NCS 100

²⁾ for Bourdon tube pressure gauges RCh / RChG 100 - 3 without limit switch contact assembly

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

Flange Connection Similar to ASME B16.5

MDM 7520v



NPS	Class	b	d1	d2	d3	dM	f	g	g2	k	x	Minimum span	t_k -value	(approx.) weight	
														vd8	vG $\frac{1}{2}$
1"	150	57.2	108	50.8	4 x Ø 15.7	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		8 x Ø 19.1					88.9	17.5			2.97	3.10
	400/600	66.9	124		4 x Ø 25.4		101.6			23.9	3.37			3.50	
	900/1500	77.8	149.4		108		41.5			7.77	7.90				
	2500	84.5	158.8		98.6		17.5			10.77	10.90				
1½"	150	60.5	127	73.2	4 x Ø 15.7	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		4 x Ø 22.4					114.3	20.6			5.77	5.90
	400/600	71.8								28.8	7.07			7.20	
High-Soft Membrane															
2"	150	62.1	152.4	91.9	4 x Ø 19.1	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		8 x Ø 19.1					127	22.4			3.27	3.40
	400/600	74.8			8 x Ø 25.4		165.1			44.5	4.17			4.30	
	900/1500	87.5	215.9		8 x Ø 28.4		171.5			57.2	10.17			10.30	
	2500	101.2	235		152.4		23.9			15.67	15.80				
3"	150	66.9	190.5	127	8 x Ø 19.1	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		8 x Ø 22.4					168.1	38.2			6.87	7.00
	400/600	87.5	241.3		8 x Ø 25.4		190.5			44.5	8.47			8.60	
	900	97.2	266.7		8 x Ø 31.8		203.2			54.2	13.17			13.30	
	1500	115.9	304.8		8 x Ø 35.1		228.6			72.9	19.17			19.30	
	2500	115.9	304.8		190.5		23.9			34.87	35.00				
4"	150	66.9	228.6	157.2	8 x Ø 19.1	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		8 x Ø 22.4					200.2	31.8			11.57	11.70
	400	84.5			8 x Ø 25.4		215.9			44.5	13.77			13.90	
	600	87.5	273.1		8 x Ø 31.8		234.9			50.8	17.37			17.50	
	900	93.8	292.1		8 x Ø 35.1		241.3			60.2	26.97			27.10	
	1500	103.2	311.2								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

Ordering Information, Further Options and Special Versions

Basic Model:		Diaphragm Seal			MDM 75..v
Please regard our detailed ordering information in model overview 7000 and in the check lists for pressure measuring instruments with chemical seal and in the respective data sheets of the required pressure measuring instrument and add the information for the respective chemical seal:					
Model	MDM 7510vd8, MDM 7520vG½				
Process connection	e.g. NPS 2", DN 25				
Nominal pressure	e.g. Class 300, PN 40				
Options, if necessary	e.g. wetted parts PTFE				
The reference temperature is +20 °C (+68 °F). Please specify if an operating temperature (t _A) deviating from +20 °C (+68 °F) is required (dial inscription t _A ...).					
Instrument connection:	orifice d8 for direct welding to measuring instrument (with cooling element or with capillary line)				75..vd8
	G ½ female thread				75..vG½
	option: G ¼ female				75..vG¼
Chemical seal:	flange	sealing face	diaphragm		
	stainless steel 316L	stainless steel 316L	stainless steel 316L	stainless steel 316L	stainless steel 316L
	options: wetted parts special material				
	tantalum	stainless steel 316L	tantalum	tantalum	stainless steel 316L / tantalum
	Hastelloy C276	stainless steel 316L	Hastelloy C276	Hastelloy C276	stainless steel 316L / Hastelloy C276
	Monel 400	stainless steel 316L	Monel 400	Monel 400	stainless steel 316L / Monel 400
	PTFE¹⁾	stainless steel 316L	PTFE	stainless steel 316L / PTFE	stainless steel 316L / PTFE
	tantalum/PTFE¹⁾	stainless steel 316L	tantalum	tantalum / PTFE	stainless steel 316L / tantalum / PTFE
	options: solid made of special material				
	titanium Grade 2	titanium Grade 2	titanium Grade 2	titanium Grade 2	titanium Grade 2
	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 see pages 2 and 3				
Further options:	form of the sealing face	sealing face according to DIN EN 1092-1 form B2, stamped B2, A, C, D, E, F, G, ASME RJF-circular groove			
	diaphragm and sealing face made of special material	2.4819	Hastelloy C276		
		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 (coating also on flange)			
		ECTFE			
gold/rhodium (protection against hydrogen diffusion)					
PTC					
wetted parts	electropolished				
calculation of the temperature-related additional error for the entire pressure measuring system					
Example:				MDM 7510vd8, DN 25, PN 40, t_A +80 °C	

¹⁾ Temperature resistance max. 260 °C (500 °F), max. 400 bar, vacuum-resistant up to 260 °C (500 °F) – only if there is no permeation
²⁾ Temperature resistance max. 150 °C (302 °F), max. 100 bar, vacuum-resistant up to 80 °C (176 °F)