

# Diaphragm seals threepart

Male Thread or Flange Connection, PN 250

MDM

7211v...

## Standard Version

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

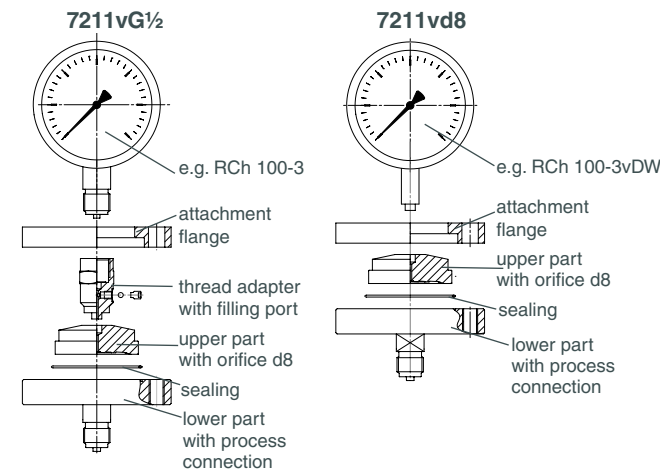
## Construction

The threepart construction (attachment flange, upper- and lower part) allows a combination of different materials and a selection of various process connections (male thread or flange connections), so that a wide range of application is given. The diaphragm is welded to the upper part.

Bourdon tube pressure gauges, pressure switches, pressure transmitters, pressure transducers and other pressure measuring instruments can be provided with diaphragm seals of this type series.

**Model 7211vG $\frac{1}{2}$**  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 respectively opened, as otherwise filling fluid leaks and the measuring unit loses its efficiency.

**Model 7211vd8** has an orifice d8 for welding to a pressure gauge with process connection d8x5 as instrument connection, e.g. RCh 100-3vDW, cooling element or capillary line. Leakage can not occur at the welded connection of pressure gauge / upper part and the filling port which is not accessible externally. The parts are easy to clean externally.



## Upper Part

1.4435 (316 L stainless steel)

## Instrument Connection

7211vG $\frac{1}{2}$ : G  $\frac{1}{2}$  female ( $\frac{1}{2}$ " BSP)

7211vd8: orifice d8

## Diaphragm

High-Soft diaphragm 1.4435 (316L stainless steel) welded with the upper part,

He-leak detection up to  $10^{-9}$  mbar l/s  
effective diaphragm diameter dM= 60 mm (2.36")

## Lower Part with Process Connection

316L (stainless steel), connection male thread G  $\frac{1}{2}$  B ( $\frac{1}{2}$ " BSP)  
material- and connection-options, see page 2

## Nominal Pressure

PN 250

## Attachment Flange and Screws

made of galvanised steel, 10 screws

## Minimum Span Pressure Gauges

0.6 bar (10 psi) for bourdon tube pressure gauges NCS 100 and below  
for other measuring instruments: upon request

## $t_k$ -value (mbar / 10K) (temperature coefficient of the chemical seal)

0.13 mbar / 10K (for silicone oil FA1)

## Special Versions among others

- Other instrument connections upon request, whereas we do not recommend NPT-female thread
- Other material combinations (process connection, diaphragm) than on page 2 upon request
- Calculation of temperature-related additional error for the whole measuring unit

## Accessory

Capillary line, cooling elements: see data sheet 7002  
Other accessory: available upon request

## Mounting / Filling / Certificates

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

## Ordering Information Chemical Seals

See page 2.

The reference temperature is +20 °C (68 °F).

Please specify, if a +20 °C (68 °F) deviating working temperature (tA) is required (dial inscription tA...).



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7211

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## Further Options regarding Ordering Information

Basic Models:		Diaphragm seals as threepart construction type PN 250				MDM 7211v
Instrument Connection:	G ½ female					7211vG ½
	option: G ¼ female					7211vG ¼
	orifice d8 for direct welding with measuring instrument, with cooling element or with capillary line					7211vd8
Chemical Seal:		Lower Part	Sealing	Diaphragm		
		with process connection				
Upper part: 1.4435 (316L stainless steel)	<b>Standard</b>					
	<b>316 L stainless steel</b>	316L stainless steel	FPM (Viton®) (-20 °C to +200 °C)	1.4435 (316L stainless steel)	<b>316L stainless steel, PN 250</b>	
Attachment flange and screws: steel galvanised (max. 200 °C / 392 °F)	<b>Options</b>					
	<b>Steel galvanised</b>	steel galvanised	NBR (Perbunan) (-30 °C to +100 °C / -22 °F to +212 °F)	1.4435 (316L stainless steel)	<b>Steel galvanised, PN 250</b>	
	<b>Monel</b>	Monel 400 2.4360	PTFE (-40 °C to +260 °C / +260 °C to +500 °F)	Monel 400 2.4360	<b>Monel, PN 250</b>	
	<b>Hastelloy</b>	Hastelloy C4 2.4610		Hastelloy C276 2.4819	<b>Hastelloy, PN 250</b>	
	<b>further options</b>					
	<b>316 L stain. steel</b> basic model 7211v for medium temperatures > 260 °C (500 °F), upper and lower part welded	316L stainless steel	-	1.4435 (316L stainless steel)	<b>e.g.7211vd8vA 316L stainless steel, PN 250</b> <small>(vA= welded version / drawing see page 3)</small>	
	<b>Steel / PTFE</b>	steel PTFE- lining	-	1.4435 (316L stainless steel) PTFE protection foil <sup>1)</sup>	<b>Steel / PTFE, PN 250</b>	
	<b>316L stainless steel / PTFE</b>	316L stainless steel PTFE- lining	-		<b>316L Stainl. steel / PTFE, PN 250</b>	
	<b>Titanium</b>	Titanium 3.7035	PTFE (-40 °C to +260 °C -40 °F to +500 °F)	Titanium 3.7035	<b>Titanium</b> <small>(drawing see page 3)</small>	
Process Connection	<b>Male Thread:</b>	standard thread	G ½ B (½" BSP)		<b>G ½ B (½" BSP)</b>	
		options:	½" NPT (for PTFE-lining not recommended) M 20x1.5		<b>½" NPT</b> <b>M 20x1.5</b>	
Flange:		<b>DN</b>	<b>PN</b>	<b>NPS</b>	<b>Class</b>	
		15	250	NPS ½" NPS ¾" NPS 1" NPS 2"	Class 900/1500	
		sealing face acc. to DIN EN 1092-1 Form B1 / DIN 2501 Form D			<b>DN15 PN 250</b>	
Further Options:	diaphragm made of	1.4571	Stainless steel		<i>(order at the moment still as cleartext)</i>	
		1.4539	Uranus B6			
	1.4462	Duplex				
	2.4610	Hastelloy C4				
	2.4819	Hastelloy C276				
	2.4856	Inconel 625				
	2.4360	Monel 400				
	2.4068	Nickel				
	-	Tantalum (≤ 250 °C / 482 °F)				
	3.7035	Titanium <sup>3)</sup>				
	others	upon request				
	other sealings, e. g. up to -60 °C (-76 °F)	upon request				
	protection foil for diaphragm fine silver <sup>1)</sup>					
	PTFE <sup>1)</sup>					
	orifice Ø 10 mm (0.4")	for thread connection (standard for PTFE-lining <sup>2)</sup> )				
	attachment flange and screws	stainless steel	PN 250			
	(max. 400 °C / +752 °F)					
	flanges for DIN EN 1092-1 / DIN 2501	sealing face Form B2 / Form E				
		nut or elastic element various forms				
	for ASME B16.5	male- and female face various forms				
		UNC-thread upon request				
		RJF-circular groove				
		according to other standards upon request				
	stud screws M 12 x 35 for open flanges according to DIN EN, DN 15, 25 or 50					

**Examples:** MDM 7211vG ½, steel galvanised, PN 250, G ½ B / MDM 7211vd8, 316L stainl. steel, PN 250, DN 50 PN 250

<sup>1)</sup> Temperature resistance max 260 °C (500 °F), max. 250 bar, for use under vacuum up to 100 °C (212 °F)

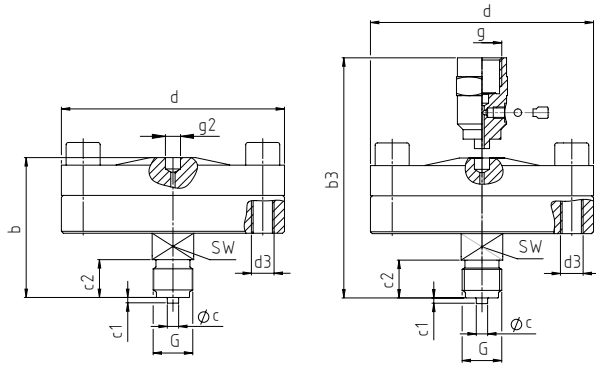
<sup>2)</sup> Orifice Ø 10 mm (0.4") outside of lining, with lining approx. Ø 7 mm (0.28")

<sup>3)</sup> Upper part and diaphragm Titanium

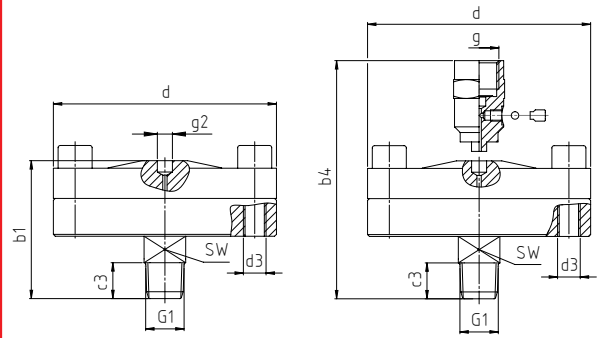
# Dimensional Data and Weights

## Male Thread Connections

G 1/2 B (1/2" BSP)



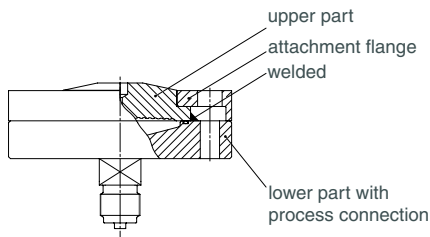
1/2 NPT



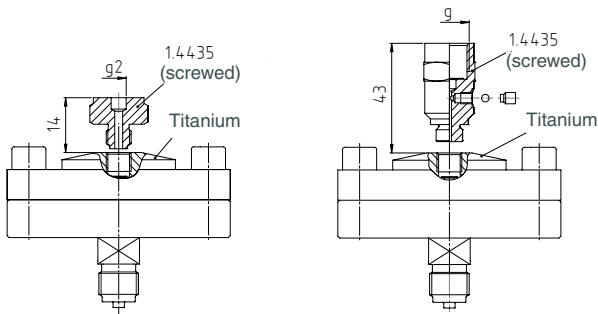
### Dimensional data (mm / inches) and weights (kg / lb)

PN	b <sup>±2</sup>	b1 <sup>±2</sup>	b3 <sup>±2</sup>	b4 <sup>±2</sup>	c	c1	c2	c3	d	d3	dM	g	g2	G	G1	SW	(approx.) weight vd8	vG 1/2
250	74 2.91	73 2.87	117 4.61	116 4.57	6 .24	3 .12	20 .79	19 .75	118 4.65	10 x M12	60 2.36	G 1/2 1/2" BSP	Ø 8 x 6 Ø 8x.24	G 1/2 B 1/2" BSP	1/2" NPT	22 .87	2.85 6.28	2.98 6.56

### 7211 vd8vA



### Titanium



Please use our "Check list for pressure measuring instruments with chemical seal" for ordering, to avoid disregarding important information (see PDF-Download area on our website). If desired, we will send you the check lists upon request.

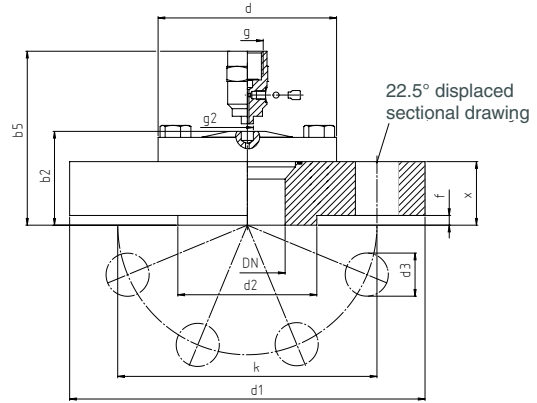
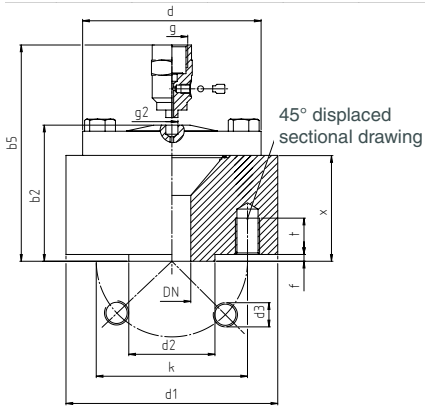
# Dimensional Data and Weights

## Flange Connections

DIN-flanges sealing face according to DIN EN 1092-1 / Form B1 / DIN 2501 Form D / ASME-flanges

DN 15, 25  
NPS ½", ¾", 1"

DN 50  
NPS 2"



Flanges according to DIN, dimensional data (mm / inches) and weights (kg / lb)

DN	PN	b2 <sup>±2</sup>	b5 <sup>±2</sup>	d	d1	d2	d3	f	g	g2	k	t	x	(approx.) weight	
														vd8	vG ½
15	250	90	133	118	130	45	4xM16	2	G ½	Ø 8x6	90	24	70	6.67	6.80
		<b>3.54</b>	<b>5.24</b>		<b>5.12</b>	<b>1.77</b>					<b>3.54</b>			<b>14.70</b>	<b>14.99</b>
25		150	68		4xM20	.08		105			8.46			8.59	
		<b>5.91</b>	<b>2.68</b>	<b>5.91</b>	<b>2.68</b>	<b>4.13</b>	<b>18.65</b>	<b>18.93</b>							
50		58	101	200	102	8xØ26	3	½" BSP	Ø 8x.24	150	.94	38	8.30	8.43	
		<b>2.28</b>	<b>3.98</b>	<b>7.87</b>	<b>4.02</b>	<b>8xØ 1.02</b>	<b>.12</b>			<b>5.91</b>		<b>1.5</b>	<b>18.3</b>	<b>18.58</b>	

Flanges according to ASME, dimensional data (mm / inches) and weights (kg / lb)

NPS	Class	b2 <sup>±2</sup>	b5 <sup>±2</sup>	d	d1	d2	d3	f	g	g2	k	t	x	(approx.) weight	
														vd8	vG ½
½"	900/ 1500	90	133	118	120.70	35.10	4x ¾"-16 UNF	6.40	G ½	Ø 8x6	82.60	24	70	5.61	5.74
					<b>4.75</b>	<b>1.38</b>					<b>3.25</b>			<b>12.37</b>	<b>12.65</b>
¾"					130	42.90					88.90			6.67	6.80
					<b>5.12</b>	<b>1.69</b>					<b>3.5</b>			<b>14.70</b>	<b>14.99</b>
1"				149.40	50.80	4x 7/8"-14 UNF	.25	½" BSP	Ø 8x.24	101.60	.94	44.50	8.46	8.59	
				<b>5.88</b>	<b>2</b>	<b>4</b>	<b>18.65</b>			<b>18.94</b>					
2"		64.50	107.50	215.90	91.90	8x Ø 25.4				165.10		1.75	10.84	10.97	
		<b>2.54</b>	<b>4.23</b>	<b>8.5</b>	<b>3.62</b>	<b>8x Ø 1</b>				<b>6.5</b>			<b>23.9</b>	<b>24.18</b>	