

Diaphragm type chemical seal with large volume

Process connection: thread
or flange to DIN 2 501
or flange to ANSI B 16.5



Description

Chemical seals are used when media can falsify the pressure measurements due to high temperature, high viscosity (media in paste form) or their propensity to crystallise.

Chemical seals transmit the process pressure to the measuring instrument, with the diaphragm forming a hermetic seal between the medium and measuring instrument.

Because of its various connection possibilities the chemical seal with large volume is especially suited for pressure gauges or transducers with diaphragm or bellow.

The parts in contact with the medium are standardly manufactured in stainless steel. In connection with a pressure gauge or transducer the chemical seal is suitable for ranges of 0 ... 100 mbar to 0 ... 40 bar.

The parts in contact with the medium can be manufactured in special materials for particular service conditions.

Features

- o Various process connections
- o For measuring gauges with large working volume
- o Special materials for extreme service requirements
- o For media up to 400°C
- o Mountable on instrumentation and control equipment

Ranges

0 ... 100 mbar to 0 ... 40 bar

Rated pressure


max. PN 40

Applications

Plant and apparatus construction;
Process engineering
Chemical and petrochemical industries.

Model: P3009

Technical data

Model	P3009		Options
Symbol			
Process connection	G 1/2 B or 1/2 NPT	Flange to DIN 2501 Flange to ANSI B 16.5	Others on request
Sealing faces		DIN 2526 form D ANSI B 16.5 RF	DIN 2526 form E or C DIN 2512 groove/ring ANSI B 16.5 RFSF
Instrument connection	Capillary of 1.4571 with gauge adaptor G1/2 to DIN 16 288		capillary with free welding end; axial welded connection thread to DIN 16 288 (for direct mounting); Cooling element (with direct mounting and temperature > 100°C)
Upper flange	Stainless steel 1.4571		Stainless steel 1.4404; 1.4435; 1.4541; Monel;
Diaphragm	Stainless steel 1.4571, welded with upper flange		Stainless steel 1.4404; 1.4435; 1.4541; Monel; PFA coating (to 260°C); ECTFE coating (to 150°C);
Sealing	PTFE		
Lower body	Stainless steel 1.4571		Stainless steel 1.4404; 1.4435; 1.4541; Monel; PFA coating (to 260°C); ECTFE coating (to 150°C);
Capillary	Stainless steel 1.4571, welded axial at body with trail handspike Standard extension: 1; 1.6; 2.5; 4; 6; 8; 10; 15 m; mimimum curve radius: 50 mm		Length extension: between 1 and 15 m
Protection hose	Stainless steel 1.4301		PE, smooth
Filling liquid	Silicone oil, FFL-No. 2		Others available in consideration of process conditions
Operating temperature	Tmin. -20°C Tmax. 200°C		Tmin. -90°C Tmax. 400°C

Important notes on the selection of chemical seals

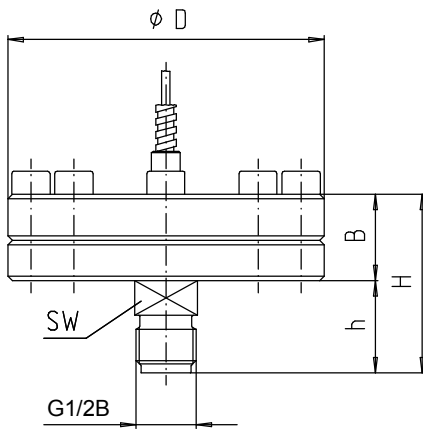
The process pressure to be measured is applied to the measuring instrument by the chemical seal with the aid of a liquid. The chemical seal and measuring instrument can be connected together by capillary lines (length up to max. 15 m) for system related reasons and in order to prevent the exposure of measuring instruments to impermissibly high temperatures. The temperature drop between the instrumentation and control unit and the chemical seal can be several 100° C. Measuring errors resulting from temperature are therefore possible and may be of a magnitude several times the accuracy of the measuring instrument. The particular operating conditions can be taken into account in the manufacture of I&C device-chemical seal combinations.

Matching of the chemical seal and pressure measuring instrument therefore requires expertise, and we shall be pleased to assist you. We recommend you to request our special questionnaire on service conditions and order data.

Dimensions

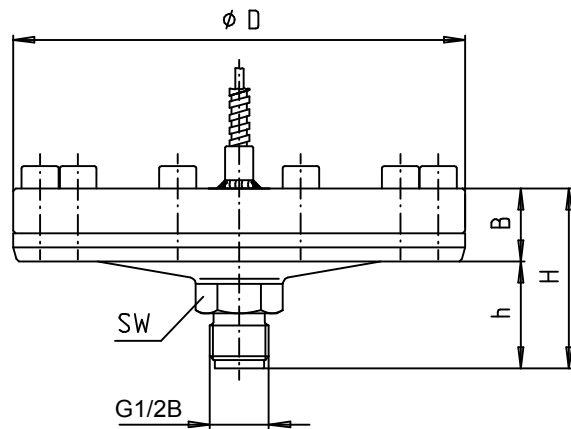
Model P3009 with thread

Type PN 40



effective diaphragm $d_M = 72$ mm

Type PN 16



effective diaphragm $d_M = 124$

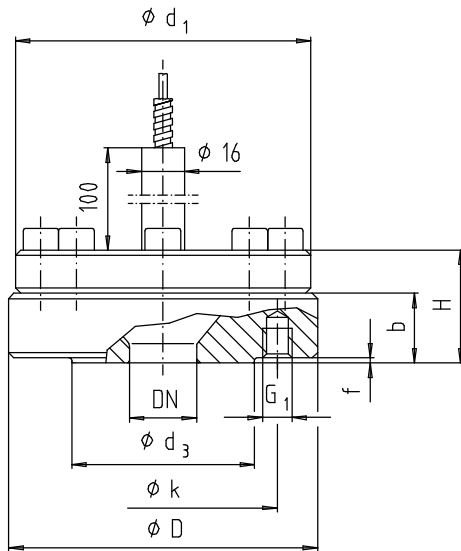
Model P3009 thread

PN	Dimensions (mm)					
	d_M	D	H	h	B	SW
40	72	110	62	37	30	22
16	124	160	64	38	24	27

Dimensions

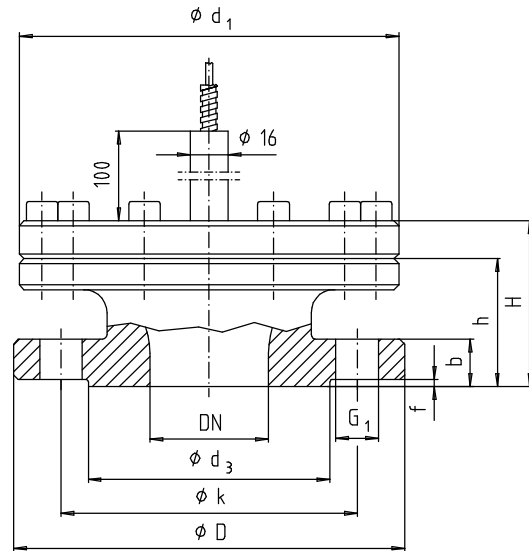
Model P3009 Flange connection

Type PN 40



effective diaphragm $d_M = 72$ mm

Type PN 16



effective diaphragm $d_M = 124$ mm

Model P3009 connection to DIN 2 501

DN	PN	Dimensions (mm)									thread/bore	
		d_M	D	d_1	d_3	k	H	h	b	f	G_1	number
15	40	72	110	110	45	65	48	-	32	2	M12	4
15	40	124	95	160	45	65	79	63	16	2	$\text{\O}14$	4
25	40	72	115	110	68	85	42	-	26	2	M12	4
50	40	72	165	110	102	125	44	-	28	3	M16	4
50	16	124	165	160	102	125	70	54	20	3	$\text{\O}18$	4

Model P3009 connection to ANSI B 16.5

DN	Class	Dimensions (mm)									thread/bore	
		d_M	D	d_1	d_3	k	H	h	b	f	G_1	number
1/2"	300	72	110	110	35	66.5	48	-	32	1.6	1/2"	4
1/2"	150	72	110	110	35	60.5	50	-	34	1.6	1/2"	4
1"	300	72	125	110	51	89	42	-	26	1.6	5/8"	4
2"	300	72	165	110	92	127	42	-	26	1.6	5/8"	8
2"	150	124	150	160	92	120.5	70	54	18	1.6	$\text{\O}20$	4

Ordering details :

Model / Process connection (Size / Norm) / Material (wetted parts) / Thread / Filling liquid / Installation to pressure gauge / Operating conditions according to special questionnaire.