

## Diaphragm type chemical seal "Compact"

Process connection: 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. With various process connection systems, the chemical seals of type "**Compact**" are especially suitable for general process engineering applications.

The flanges of the diaphragm type chemical seal "Compact" match the dimensions of standardised flanges. The diaphragm is either internal or flush at the front, depending on the design.

For  $\leq$  DN 25 and 1": open flange with internal diaphragm.

For  $\geq$  DN 40 and 1½": flush diaphragm at the front.

The medium wetted parts of these chemical seals are manufactured in stainless steel as standard. In connection with a Bourdon tube pressure gauge or an transducer, they are suitable for pressure ranges from 0 .. 25 bar to 0..250 bar.

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

When the permissible rated pressure is exceeded, a specially designed diaphragm prevents damage to the chemical seal.

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- o Compact design with internal diaphragm for  $\leq$  DN 25 and 1"
- o Flush diaphragm at the front for  $\geq$  DN 40 and 1½"
- o Overload protection by diaphragm bed
- o Diaphragms in special materials metallicly bonded
- o Special materials for extreme service requirements
- o For media up to 400°C
- o Mountable on instrumentation and control equipment

### Pressure ranges

0 ... 25 mbar to 0 ... 250 bar

### Rated pressure

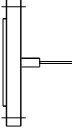
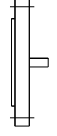
max. PN 250

### Applications

Plant and apparatus construction,  
Process engineering,  
Chemical and petrochemical industries

Models : P3005 , P3006

## Technical data

Models	P3005	P3006	Options
			
Process connection	Flange to DIN 2501	Flange to ANSI B 16.5	Other on request
Sealing faces	DIN 2526 Form D	ANSI B 16.5 RF	DIN 2526 Form E or C DIN 2512 groove/ring DIN 2513 spigot/socket ANSI B 16.5 RFSF ANSI groove-ring Form RJF Not with all special materials (please ask for)
Instrument connection	Capillary, s.s. 1.4571 with gauge adaptor G1/2 female to DIN 16 288		Capillary with free welding end; axial welded connection thread to DIN 16288; Square tube or L-bow 90°; Cooling element (with direct mounting and temperature > 100°C) Flame proof throttle approved for "Zone 0"
Flange body	Stainless steel, 1.4571		Special materials on request
Diaphragm	Stainless steel, 1.4571, welded with body		Stainless steel 1.4401; 1.4435; 1.4541; Hastelloy B2, C4, C276; Monel 400; Nickel; Inconel 600, Incoloy 825; Titan; Tantalum; these materials are for DN ≥ 40 and 1½" metallicly bonded with flange body, s.s. 1.4571 (up to 400°C); Silver-foil (up to 150°C); 25 micron gold plating; PTFE-foil (up to 150°C, < 100 bar); PFA-coating (up to 260°C); ECTFE-coating (up to 150°C);
Capillary	Stainless steel, 1.4571, axial welded with body, DN 50 and 2" and above: with trail handspike Standard extension: 1; 1.6; 2.5; 4; 6; 8; 10; 15 m; minimum curve radius: 50 mm		Capillary entry: radial Length extension: between 1 and 15 m
Protection hose	Stainless steel, 1.4301		PE, smooth
Filling liquid	Silicon 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

**Installation** : Gasket to DIN 2690, 2698 resp. ANSI B 16.5 (gasket not inclusive)

### Important notes on the selection of chemical seals

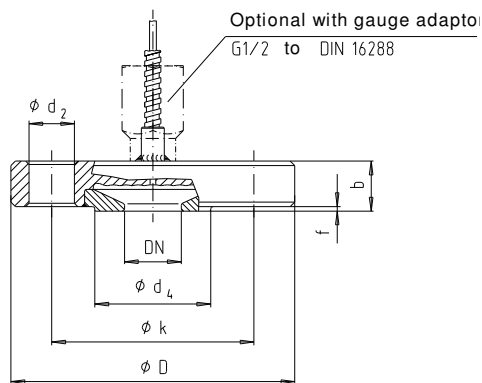
The process pressure to be measured is applied to the measuring instrument by the chemical seal with the aid of a liquid. The chemical seal and measuring instrument can be connected together by capillary lines (length up to max. 15 m) for system related reasons and in order to prevent the exposure of 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.

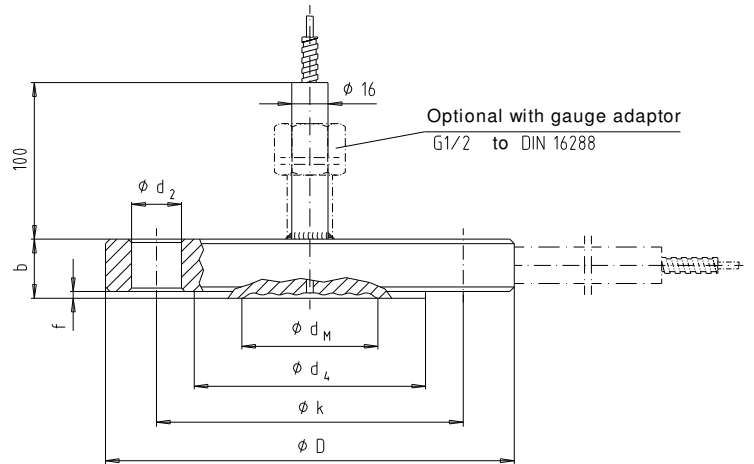
## Dimensions (mm)

### Model P3005

Type DN ≤ 25



Type DN ≥ 40



### Model P3005

Thread to  
DIN 2501

DN	PN	Dimensions (mm)								Weight (kg)
		$d_M$	D	b	$d_2$	k	Raised portion		x	
15	10 / 40	40	95	22	14	65	2	45	4	1.00
20	10 / 40	40	105	22	14	75	2	58	4	1.30
25	10 / 40	52	115	22	14	85	2	68	4	1.50
40	10 / 40	48	150	18	18	110	3	88	4	2.10
	63 / 100	48	170	26	22	125	3	88	4	4.00
	160	48	170	28	22	125	3	88	4	4.30
50	250	48	185	34	26	135	3	88	4	6.30
	10/40	59	165	20	18	125	3	102	4	3.30
	63	59	180	26	22	135	3	102	4	5.10
	100	59	195	28	26	145	3	102	4	6.50
80	160	59	195	30	26	145	3	102	4	7.00
	250	59	200	38	26	150	3	102	8	9.30
	10/16	89	200	20	18	160	3	138	8	4.90
	25/40	89	200	24	18	160	3	138	8	5.80
	63	89	215	28	22	170	3	138	8	7.90
100	100	89	230	32	26	180	3	138	8	10.40
	160	89	230	36	26	180	3	138	8	11.70
	250	89	255	46	30	200	3	138	8	18.40
	10/16	89	220	20	18	180	3	158	8	5.90
	25/40	89	235	24	22	190	3	162	8	8.10
125	63	89	250	30	26	200	3	162	8	11.50
	100	89	265	36	30	210	3	162	8	15.50
	160	89	265	40	30	210	3	162	8	17.30
	250	89	300	54	33	235	3	162	8	29.90
	10/16	124	250	22	18	210	3	188	8	8.40
125	25/40	124	270	26	26	220	3	188	8	11.60
	63	124	295	34	30	240	3	188	8	14.70
	100	124	315	40	33	250	3	188	8	24.40
	160	124	315	44	33	250	3	188	8	26.90
	250	124	340	60	33	275	3	188	12	42.70

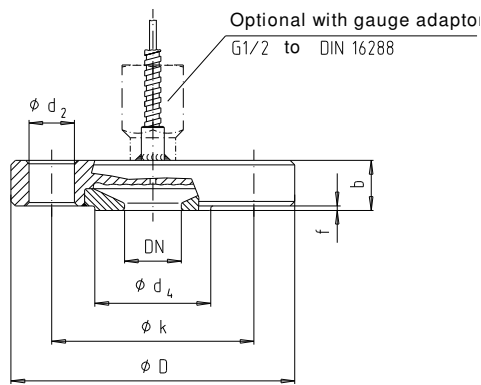
Effective diaphragm  $\phi = d_M$

Number of bolt holes = x

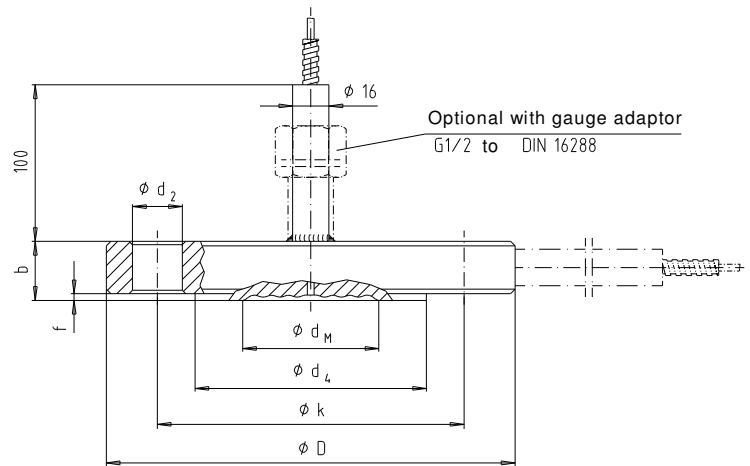
## Dimensions (mm)

### Model P3006

Type DN ≤ 1"



Type DN ≥ 1 1/2"



### Model P3006

Thread to  
ANSI B 16.5

DN	Class	Dimensions (mm)								Weight (kg)
		d <sub>M</sub>	D	b	d <sub>2</sub>	k	Raised portion		x	
1/2"	150	32	95	22	16	60.5	2	35	4	1.00
	300	40	95	22	16	66.5	2	35	4	1.00
3/4"	150	40	100	22	16	70	2	43	4	1.10
	300	40	120	22	20	82.5	2	43	4	1.60
1"	150	52	110	22	16	79.5	2	51	4	1.40
	300	52	125	22	20	89	2	51	4	1.70
1 1/2"	150	48	130	22	16	98.5	2	73	4	1.60
	300	48	155	22	22	114.5	2	73	4	2.50
	600	48	155	29.5	22	114.5	7	73	4	3.30
	1500	48	180	39	30	124	7	73	4	5.90
	2500	48	205	51.5	33	146	7	73	4	10.40
2"	150	59	150	20	20	120.5	1.6	92	4	2.70
	300	59	165	22.5	20	127	1.6	92	8	3.70
	600	59	165	32	20	127	6.4	92	8	5.70
	1500	59	215	45	26	165	6.4	92	8	13.20
	2500	59	235	57.5	30	171.5	6.4	92	8	19.80
3"	150	89	190	24	20	152.5	1.6	127	4	5.30
	300	89	210	29	22	168.5	1.6	127	8	7.80
	600	89	210	38.5	22	168.5	6.4	127	8	11.00
	900	89	240	45	26	190.5	6.4	127	8	16.70
	1500	89	270	54.5	33	203	6.4	127	8	24.50
	2500	89	305	73.5	36	228.5	6.4	127	8	42.70
4"	150	89	230	24	20	190.5	1.6	158	8	7.70
	300	89	255	32	22	200	1.6	158	8	12.70
	400	89	255	41.5	26	200	6.4	158	8	17.40
	600	89	275	45	26	216	6.4	158	8	21.50
	900	89	295	51	32	235	6.4	158	8	27.70
	1500	89	310	60.5	36	241.5	6.4	158	8	37.00
	2500	89	355	83	42	273	6.4	158	8	65.70

Effective diaphragm  $\phi = d_M$

Number of bolt holes = x

### Ordering details :

Model / process connection (Size / Norm) / Material (wetted parts) / Instrument connection / Filling liquid / Installation at pressure gauge / Process conditions as per questionnaire.