

## Diaphragm type chemical seal "Combi"

**Process connection : female thread  
or male 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.

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

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 .. 0.6 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.

### Features

- o Various process connections
- o For media up to 400°C
- o Overload protection by diaphragm bed
- o Dismantling of the upper section does not alter the measurement characteristics
- o Special materials for extreme service requirements
- o Mountable on instrumentation and control equipment

### Pressure ranges

0 ... 0.6 bar to 0 ... 250 bar

### Rated pressure



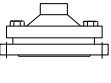
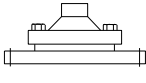
max. PN 250

### Applications

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

**Models : P3000, P3001, P3002, P3003**

## Technical data

Models	P3000	P3001	P3002	P3003	Options
Symbol					
Process connection	G 1/2 female or 1/2 NPT	G 1/2 male or 1/2 NPT	Flange to DIN 2501	Flange to ANSI B 16.5	Other connections on request
Sealing faces			DIN 2526 Form D	ANSI B16.5 RF	DIN 2526 Form E or C DIN 2512 groove/ring DIN 2513 spigot/socket ANSI groove-ring Form RJF
Instrument connection	G1/2 female thread to DIN 16 288				Capillary welded with upper body Cooling element (for directly mounted gauge when process temperature >100°C), Others on request
Upper body	Stainless steel 1.4571				Stainless steel 1.4404; 1.4435; 1.4541; or Titan
Diaphragm	Stainless steel 1.4571 welded with upper body				Stainless steel 1.4401; 1.4435; 1.4541; Hastelloy B2, C4, C276; Monel 400; Nickel; Inconel 600, Incoloy 825; Titan; Tantalum; Zirkonium (Upper body Titan); Silver foil (up to 150°C); PTFE-foil (up to 150°C, < 100 bar); PFA-coating (up to 260°C); ECTFE-coating (up to 150°C);
Sealing ring	FPM Viton (200°C maximum)				PTFE (up to 260°C, standard for special diaphragms) Metal (up to 400°C, 1.4571 silver plated, Inconel silver plated)
Lower body	Stainless steel 1.4571				Steel, zinc plated Special materials: lined, coated, Flushing connection, not with lining Open flange, heater jacket, special connection
Retainer flange	Steel zinc plated				Stainless steel 1.4571 (for temperatures > 250°C)
Bolts and nuts	Steel zinc plated (up to 200°C)				Stainless steel 1.4571, (up to 260°C); Steel, heat resistant, (up to 400°C)
Filling liquid	Silicon oil, FFL-Nr. 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

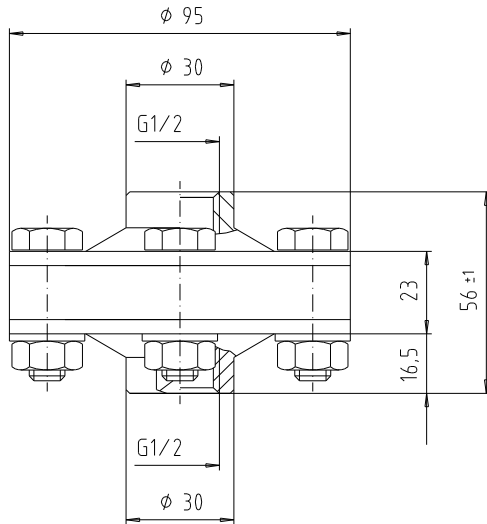
The process pressure to be measured is applied to the measuring instrument by the chemical seal with the aid of a liquid. The chemical seal and measuring instrument can be connected together by capillary lines (length up to max. 15 m) for system related reasons and in order to prevent the exposure of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

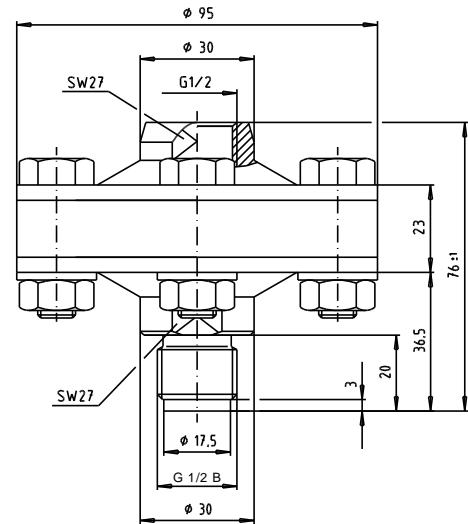
### Model P3000

Process connection, female thread



### Model P3001

Process connection, male thread

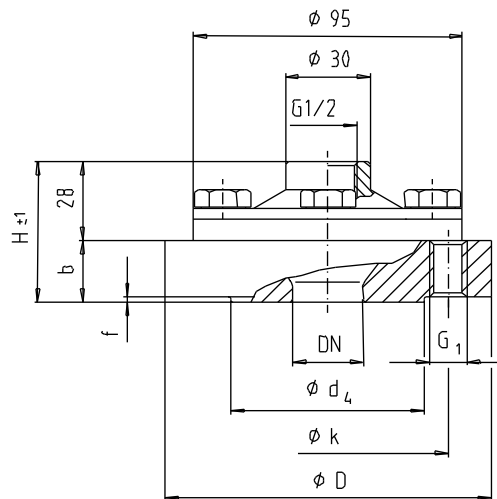


		Model		P3000	P3001
DN	PN	Effective diaphragm Ø (mm)	Number of bolt holes	Weight (kg)	
G½ or ½ NPT	25	52	4 x M10	1.4	1.6
	100	52	4 x M10	1.4	1.6
	250	52	8 x M10	3.0	3.2

## Dimensions (mm)

### Models P3002 / P3003

Flanged process connection



#### Model P3002

Thread to  
DIN 2501

DN	PN	Dimensions (mm)							Weight (kg)
		D	k	d 4	b	f	H	G 1	
15	10 / 40	95	65	45	28	2	56	4 x M12	1.56
	63 / 100	105	75	45	25	2	53	4 x M12	2.00
	160	105	75	45	25	2	53	4 x M12	2.13
	250	130	90	45	26	2	54	4 x M16	3.20
20	10 / 40	105	75	58	25	2	53	4 x M12	1.87
25	10 / 40	115	85	68	22	2	50	4 x M12	2.10
	63 / 100	140	100	68	24	2	52	4 x M16	3.20
	160	140	100	68	24	2	52	4 x M16	3.60
	250	150	105	68	28	2	56	4 x M20	4.00

Effective diaphragm Ø 52 mm.

#### Model P3003

Thread to  
ANSI B 16.5

DN	Class	Dimensions (mm)							G 1 (UNC)
		D	k	d 4	b	f	H		
1/2"	150	95	60.5	35	28	2	56	4 x 1/2"	
	300	95	66.5	35	28	2	56	4 x 1/2"	
	600	95	66.5	35	32	7	60	4 x 1/2"	
	1500	120	82.5	35	40	7	68	4 x 3/4"	
3/4"	150	100	70	43	28	2	56	4 x 1/2"	
	300	120	82.5	43	22	2	50	4 x 5/8"	
	600	120	82.5	43	25	7	53	4 x 5/8"	
	1500	130	89	43	32	7	60	4 x 3/4"	
1"	150	110	79.5	51	22	2	50	4 x 1/2"	
	300	125	89	51	22	2	50	4 x 5/8"	
	600	125	89	51	24.5	7	52.5	4 x 5/8"	
	1500	150	101.5	51	36	7	64	4 x 7/8"	

Effective diaphragm Ø 52 mm.

#### Ordering details :

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