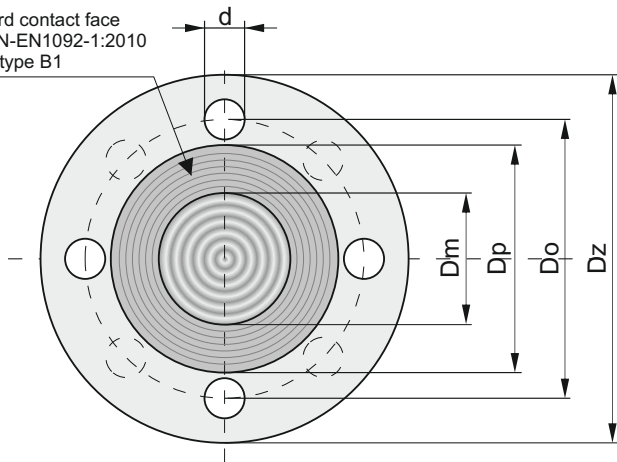
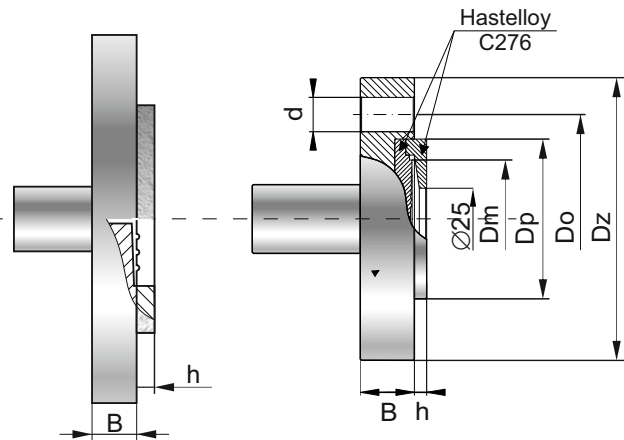


# Chemical flanged seals with flush diaphragm S-Ch

standard contact face  
acc. wg PN-EN1092-1:2010  
type B1



S-Ch DN25 - DN80



S-Ch - DN25(Ø48) Hastelloy

## Diaphragm seal dimensions acc. to DIN EN1092-1

Material of wetted parts	Version	Diaphragm diameter Dm	Contact face dia. Dp	Dia. of bolt circle Do	External diameter Dz	Thickness B	Thickness h	Diameter of holes d	Number of holes
Hastelloy	DN25(Ø48)PN40	48	65	85	115	22	5	14	4
Hastelloy	DN50PN40	59	98	125	165	18	7	18	4
	DN80PN40	89	132	160	200	22	7	18	8
Tantalum	DN25PN10/40*	32	68	85	115	16	2	14	4
	DN50PN10/40	57	102	125	165	16	2	18	4
	DN80PN25/40	88	138	160	200	22	2	18	8
Teflon	DN25PN10/40	35	68	85	115	16	2	14	4
	DN50PN10/40	59	102	125	165	18	7	18	4
	DN80PN25/40	89	138	160	200	22	7	18	8

\*only direct connection

## Diaphragm seal dimensions acc. to ANSI ASME B16.5 RF

Material of wetted parts	Version	Diaphragm diameter Dm	Contact face dia. Dp	Dia. of bolt circle Do	External diameter Dz	Thickness B	Thickness h	Diameter of holes d	Number of holes
Hastelloy	2" ANSI 150	59	92	120,5	150	18	7	20	4
	3" ANSI 150	89	123	152,5	190	22	7	20	4
Tantalum	2" ANSI 150	59	92	120,5	150	18	8	20	4
	3" ANSI 150	89	127	152,5	190	22	8	20	4
Teflon	1" ANSI 150	35	53	79,5	110	16	2	16	4
	2" ANSI 150	59	92	120,5	150	18	7	20	4
	3" ANSI 150	89	123	152,5	190	22	7	20	4

## Application

The diaphragm seal is a pressure-transmitting, diaphragm-type device. The pressure signal is transferred to the cooperating pressure measuring device (pressure transmitter, pressure gauge) through manometric liquid filling the space between the separating diaphragm of the seal and the pressure measuring device. The diaphragm seal function is to isolate the pressure measuring device from damaging impacts caused by either medium or installation:

- high corrosiveness;
- low or high temperature, increased viscosity, impurities;
- vibrations of the installation (remote diaphragm seal).

## Recommended minimum measuring range, depending on the type of the set: pressure measuring device - diaphragm seal

Pressure measuring device	Diaphragm seal type	Diaphragm seal version			
		DN25(Ø48)	DN25 / 1"ANSI	DN50 / 2"ANSI	DN80 / 3"ANSI
Transmitter	direct	0,6 bar	1 bar	0,4 bar	0,1 bar
	remote	1,5 bar	X	1 bar	0,4 bar
Gauge Ø100	direct	1 bar	6 bar	1 bar	1 bar
	remote	2,5 bar	X	2,5 bar	2,5 bar

### Recommendations

The essential metrological problem at diaphragm seals operational use is an absolute thermal zero error, resulting from the thermal expansion of the manometer liquid. The expansion effect must be compensated for with the separating diaphragm flexibility.

To minimise this effect, it is advisable to:

- use capillaries as short as possible, in this way the volume of manometer liquid will be reduced (maximum capillary length for DN25(Ø48) is 5m, for DN50 / 2" is 10m);
- use the greater diameter seals, in order to maximise the separating diaphragm flexibility;
- locate the capillaries in the places, in which the temperature fluctuations will be minimal.

### Available chemical-resistant materials

Diaphragm material	Contact face material	Over pressure limit
Hastelloy	Hastelloy	40 bar
Tantalum	Tantalum	40 bar
Teflon	Teflon	40 bar (10 bar for DN25 and 1")
Gold	Gold	40 bar

### Zero error from ambient temperature change

Diaphragm seal type	Absolute zero error per 10°C for the diaphragm seal			
	DN25(Ø48)	DN25 / 1"ANSI	DN50 / 2"ANSI	DN80 / 3"ANSI
direct	7 mbar	20 mbar	5 mbar	2 mbar
remote (2 m capillary)	15 mbar	X	10 mbar	4 mbar

An additional zero error, resulting from temperature fluctuations in a medium, depends on the temperature gradient in the oil-based diaphragm sealing system. The error value is, in any case, significantly smaller than the error value shown in the table.

### Special versions

#### Medium temperature range

- 30...180°C for remote diaphragm seal  
special versions up to 250°C
- 30...150°C for diaphragm seal

- Non-reactive filling liquid
- Direct diaphragm seal for a medium temp. over 150°C
- Gold plated wetted parts material- after consulting with Aplisens

### Ordering procedure

Model	Code	Description
S-Ch S-ChK		Direct diaphragm seal Remote diaphragm seal
flange size	/DN25 PN10/40.....	Acc. PN-EN-1092-1:2010 Type B1
	/DN25(Ø48) PN10/40.....	
	/DN50 PN10/40.....	
	/DN80PN25/40.....	
	/1" 150#.....	
	/2" 150#.....	Acc. ASME B16.5 type RF
	/3" 150#.....	
wetted parts material	/Hastelloy.....	not available for DN25(Ø48) not available for DN25(Ø48), not suitable for applications with underpressure
	/Tantalum.....	
	/Teflon.....	
capillary length for S-ChK	/K=.....	Input required capillary length in [m], max 5m for DN25(Ø48)
special versions	/.....	Description of required parameters

When ordering a diaphragm seal please state the type of medium and the expected ranges of concentration and temperature.