

DSU Diaphragm Seal Units

The fitting of a diaphragm seal unit to a pressure gauge is recommended where the medium to be measured is highly viscous or contains suspended solids or is potentially corrosive to the Bourdon Tube. Seal units are normally connected directly to the gauge, but connection may be made by flexible capillary, which makes them ideal for remote pressure indication. Flexible capillary can be used to facilitate the fitting of a gauge in a surface or panel mounting location. Maximum capillary length is 5 metres.

Pressure is transmitted from the diaphragm seal unit to the bourdon tube by a suitable filling medium, the selection of which will ensure compatibility with the process and process temperature. Where it is known that the instrument will be used on processes subject to extremes of temperature, the temperature at the tapping point should be advised at the time of ordering.

Diaphragm seal units can be fitted to Rototherm gauge types: SPG, RPG, DMC, SPGA and Turret gauges.

Diaphragm Seal Arrangements

Type A - Welded Construction

Type A seals are of fully welded construction and are hence most suited to applications that do not involve viscous fluids, suspended solids or crystallising liquids.

Maximum Working Pressures	5000 psi
Process Connections	Male screwed 3/8", 1/2" BSP, 1/2" BSPT, 1/2" NPT, 1" BSP and 1" BSPT. Other screwed connections on request.
Diaphragm Materials	Stainless steel - standard, Monel, Hastelloy and Tantalum PTFE coatings are available on most models
Materials of Construction	All stainless steel construction



Type B - Bolted Construction

Type B seals are of a bolted construction with the diaphragm welded to the top section enabling the seal to be easily disassembled and are particularly suited for applications in which periodic cleaning of the seal may be required.

Maximum Working Pressures	3000 psi
Process Connections	Male screwed 3/8", 1/2" BSP, 1/2" BSPT, 1/2" NPT, 1" BSP and 1" BSPT. Other screwed connections on request.
Diaphragm Materials	Stainless steel - standard, Monel, Hastelloy and Tantalum PTFE coatings are available on most models
Materials of Construction	304 Stainless steel tops - bases are available in 304 and 316 stainless steel, PTFE lined, Monel and Hastelloy - others are available on request.



Type C - Welded Diaphragm Bolted to Flange Construction

Type C seals use similar construction to the Type B, but are flange mounted and are most suitable for viscous product applications. Type C seals require a flange with a nominal bore of at least 2"; for applications requiring smaller bore flanges please refer to details on Rototherm extended flange seals Types 4 and 6 - see page 12

Maximum Working Pressures	Refer to flange maximum pressure rating table
Process Connections	Flange mounted seals - see table
Diaphragm Materials	Stainless steel - standard, Monel, Hastelloy and Tantalum PTFE coatings are available on most models
Materials of Construction	316 stainless steel tops - bases are available in 316 stainless steel, PTFE lined, Monel and Hastelloy - others are available on request.



Flange Rating & Sizes

Flanges to ANSI B16.5

Flange Size	Rating					
	150	300	600	900	1500	2500
2"	150	300	600	900	1500	2500
2.5"	150	300	600	900	1500	2500
3"	150	300	600	900	1500	2500
3.5"	150	300	600	900		
4"	150	300	600	900	1500	2500

Flanges to BS4504

Flange Size	Rating		
		PN10	PN16
DN40		PN10	PN16
DN50	PN6	PN10	PN16

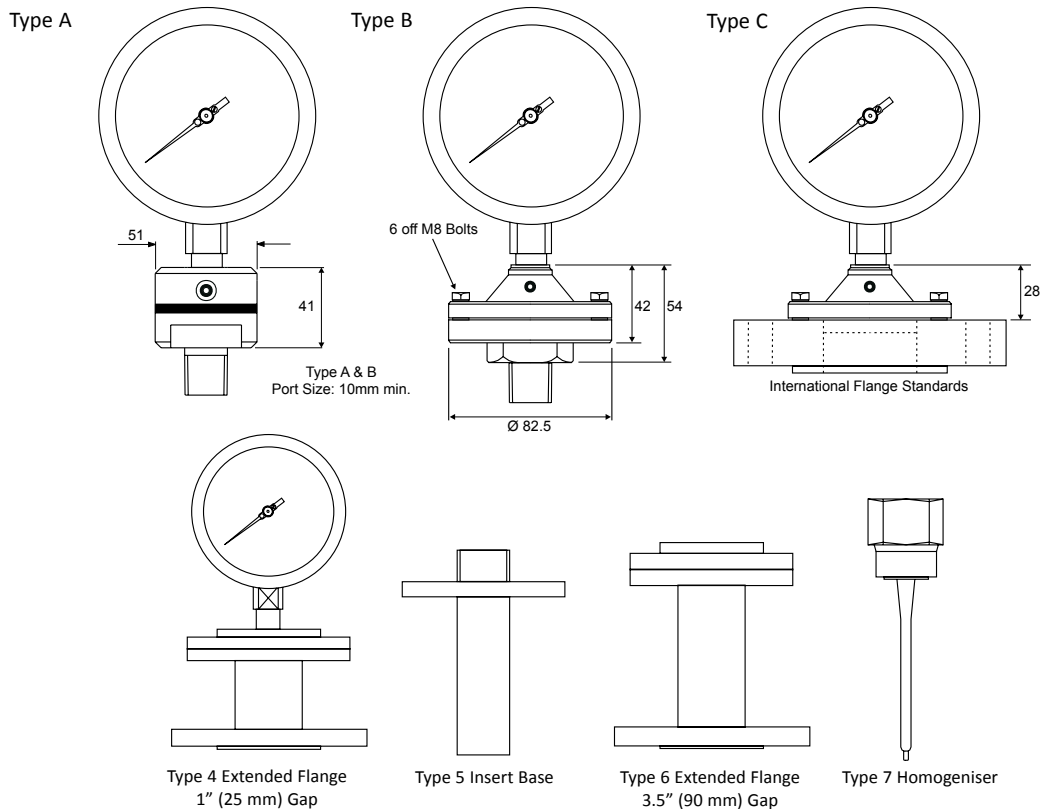
Flanges to BS10

Flange Size	Rating			
	Table D	Table E	Table F	Table H
2"	Table D	Table E	Table F	Table H

Filling Fluids Available

Filling Fluid	Process Temperatures	Recommended Usage
Mineral Oil (Diala DX) Standard filling	-40 to +120°C	Standard applications NOT suitable for food
Lockheed	-20 to +35°C	As above
Galdon DO5	-20 to +150°C	Most higher than ambient applications
Glycerine / Water	0 to +30°C	Food systems
silicone 200/100	-20 to +160°C	Higher temperatures NOT suitable for food
Silicone 704	+80 to +300°C	As above
Fluorolube FS5	0 to +250°C	Higher temperature applications

Diaphragm Seal Arrangements



Schaffer Diaphragm Pressure Gauges

Schaffer gauges are designed for measuring the pressure or vacuum of substances avoiding the use of bourdon tube instruments. These gauges particularly suit applications where corrosive products or liquids containing suspended solids are present. The measuring element is a steel diaphragm, connected via a rod and ball joint to an adjustable movement.

These gauges should not be used on pressures over 25 bar or on pulsating processes - for these applications diaphragm seal gauges should be used.

Case & Bezel

Black DMC or stainless steel.

Pressure Element

Diaphragm, 316 stainless steel for vacuum and pressure ranges up to 2.5 bar. EN56D steel for pressures 0 to 4 bar up to 25 bar.

Diaphragm Protection

Stainless steel (4 to 25 bar), PTFE, Tantalum, Monel 400, Hastelloy "C" and Silver

Connections

Screwed male, female or flanged.

Accuracy

1.5% of scale to BS EN837-3





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