

## 702/703 Flanged Diaphragm Seal

### FEATURES

- Large diaphragm provides ample displacement for low pressure applications

### TYPICAL USES

- Oil and Gas
- Refineries
- Chemical and Petrochemical
- Water and Wastewater
- NACE compliant Processes (Sour Gas Separation)
- Biogas and Biodiesel



**702-703**  
Flanged Seal



### SPECIFICATIONS

Connection Style:	702: Flanged 703: Flanged with flushing port
Process Connection Size:	½, ¾, 1, 1½, 2 or 3 NPS
Instrument Connection Size:	¼ or ½ NPT Female
Pressure Rating (MAWP):	Dictated by ASME flange ratings (see table 1 on page 2)
Added Tolerance:	±0.5% typical

### WETTED COMPONENTS

Diaphragm	Bottom Housing
316 SS, Tantalum, Titanium, Hastelloy® B, Hastelloy® C 276, K-Monel®	316SS, Tantalum, Titanium, Hastelloy® B, Hastelloy® C 276, Monel®, Carpenter® 20

### NON-WETTED COMPONENTS

Top Housing	Assembly Studs
316L SS	Carbon steel, 316 SS (optional)

### KEY BENEFITS

- Diaphragm welded to top housing eliminates the risk of fill fluid loss
- Large displacement to drive low pressure instrumentation
- Optimal for high-pressure, low-differential pressure applications

## 702/703 Flanged Diaphragm Seal

**TABLE 1 - FLANGE RATINGS**

CARBON STEEL FLANGE							STAINLESS STEEL FLANGE						
Maximum Allowable Pressure (psi)							Maximum Allowable Pressure (psi)						
Temp. (°F)	FLANGE CLASS						Temp. (°F)	FLANGE CLASS					
	150	300	600	900	1500	2500		150	300	600	900	1500	2500
<100	285	740	1480	2220	3705	6170	<100	275	750	1440	2160	3600	6000
200	260	675	1350	2025	3375	5625	200	230	600	1200	1800	3000	5000
300	230	655	1315	1970	3280	5470	300	205	540	1075	1615	2690	4480
400	200	635	1270	1900	3170	5280	400	190	495	995	1490	2485	4140
500	170	600	1200	1795	2995	4990	500	170	465	930	1395	2330	3880
600	140	550	1095	1640	2735	4560	600	140	440	885	1325	2210	3680
650	125	535	1075	1610	2685	4475	650	125	430	865	1295	2160	3600
700	110	535	1065	1600	2665	4440	700	110	420	845	1265	2110	3520
750	95	505	1010	1510	2520	4200	750	95	415	825	1240	2065	3440
800	80	410	825	1235	2060	3430	800	80	405	810	1215	2030	3380
850	65	270	535	805	1340	2230	850	65	395	790	1190	1980	3300
900	50	170	345	515	860	1430	900	50	390	780	1165	1945	3240
950	35	105	205	310	515	860	950	35	380	765	1145	1910	3180
1000	20	50	105	155	280	430	1000	20	355	710	1065	1770	2950

**TABLE 2 - FILL FLUIDS**

Fill Fluid	Temperature	Viscosity (cSt at 70°F (21°C))	Variation Code	Notes
Glycerin (food grade)	0°F to 400°F (-18°C to 204°C)	1,300	CG	Direct-mounting only. Not for use with vacuum service
50 cSt Silicone	-40°F to 500°F (-40°C to 260°C)	50	CK	
10 cSt Silicone	-40°F to 500°F (-40°C to 260°C)	10	DJ	
Halocarbon® 4.2	-70°F to 300°F (-57°C to 199°C)	4.2	CF	For use with oxygen/oxidizing process media
Slytherm® 800	-40°F to 750°F (-40°C to 400°C)	10	HA	High temperature applications
Syltherm® XLT	-150°F to 500°F (-100°C to 260°C)	1.4	CC	Low temperature applications
Calflo® AF	-20°F to 600°F (-29°C to 316°C)	60	KF	High temperature, silicone-free
Mineral Oil	10°F to 400°F (-12°C to 204°C)	75	MY	
Neobee® M-20 (food grade)	5°F to 400°F (-15°C to 204°C)	9.5	NM	
Silicone (food grade)	-40°F to 500°F (-40°C to 260°C)	350	CZ	
Distilled Water	40°F to 185°F (4°C to 85°C)	0.9	FJ	
50/50 Glycerin/Water	15°F to 200°F (-9°C to 93°C)	30	GH	
Propylene Glycol	-50°F to 325°F (-46°C to 163°C)	54	CV	
Ethylene Glycol	20°F to 325°F (-7°C to 163°C)	14	FK	
50/50 Ethylene Glycol/Water	-25°F to 190°F (-32°C to 88°C)	2.9	CT	
80/20 Glycerin/Water	15°F to 225°F (-9°C to 107°C)	270	GR	
95/5 Water/Propylene Glycol	40°F to 185°F (4°C to 85°C)	1.0	PY	

## 702/703 Flanged Diaphragm Seal

ORDERING CODE	Example:	50	703	S	S	02T	XCK	PU	150	RF
<b>Process Connection Size</b>										
50 - ½ NPS		50								
75 - ¾ NPS										
10 - 1 NPS										
15 - 1½ NPS										
20 - 2 NPS										
30 - 3 NPS										
<b>Seal Type</b>										
702 - High displacement seal, flanged process connection										
703 - High displacement seal, flanged process connection with flushing connection			703							
<b>Diaphragm Material</b>										
S - 316L Stainless steel (Supplied Standard)				S						
P - Monel® 400										
U - Tantalum										
G - Hastelloy® B										
H - Hastelloy® C-276										
Ti - Titanium										
<b>Bottom Housing Material</b>										
S - 316L Stainless steel					S					
M - Monel® 400										
D - Carpenter 20®										
G - Hastelloy® B										
H - Hastelloy® C-276										
J - Hastelloy® C-22										
TI - Titanium										
B - Steel										
<b>Instrument Connection Size</b>										
02T - ¼ NPT Female						02T				
04T - ½ NPT Female										
<b>Options (if choosing option(s) must include an "X")</b>										
							X__			
<b>Fill Fluid (See Table 2 on page 2 for more available fluids)</b>										
CK - 50 cSt Silicone							CK			
<b>Optional Features</b>										
PU - Pipe plug for flushing connection (703 only)								PU		
DU - Welded to top housing										
SB - Stainless steel bolts and studs										
6B - Cleaned for oxygen service										
<b>Flange Rating</b>										
150 - 150 class ASME									150	
300 - 300 class ASME										
600 - 600 class ASME										
<b>Flange Types (contact Ashcroft for alternate flange types)</b>										
RF - Raised Face										RF
RJ - Ring Joint										
FF - Flat Face										

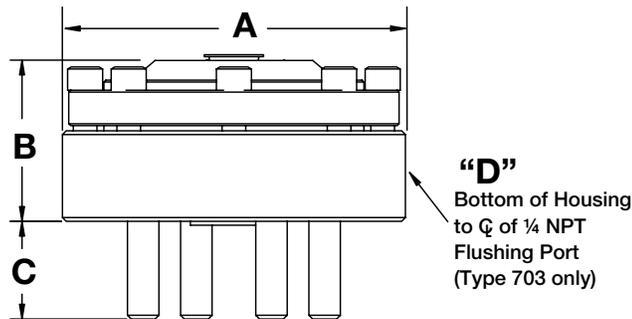
When selecting an instrument, refer to the [Min/Max Guide](#) for compatibility with this diaphragm seal or scan the QR code to the right.



## 702/703 Flanged Diaphragm Seal

**DIMENSIONS** in [ ] are millimeters

For reference only, consult Ashcroft for specific dimensional drawings



150 Class Flange Rating				
Size	A	B	C	D
½"	5.94 [135]	2.56 [65]	1.47 [37]	1.06 [27]
¾"	5.94 [135]	2.56 [65]	1.47 [37]	1.06 [27]
1"	5.94 [135]	2.50 [64]	1.47 [37]	1.00 [25]
1½"	5.94 [135]	2.50 [64]	1.47 [37]	1.00 [25]
2"	6.00 [152]	2.63 [67]	2.06 [52]	1.13 [29]
2½"	7.50 [191]	2.50 [64]	2.06 [52]	1.00 [25]
3"	7.50 [191]	2.38 [60]	2.06 [52]	1.06 [27]

300 Class Flange Rating				
Size	A	B	C	D
½"	5.94 [135]	2.56 [65]	1.47 [37]	1.06 [27]
¾"	5.94 [135]	2.75 [70]	2.06 [52]	1.06 [27]
1"	5.94 [135]	2.75 [70]	2.06 [52]	1.00 [25]
1½"	6.50 [165]	2.75 [70]	2.69 [68]	1.00 [25]
2"	6.50 [165]	2.63 [67]	2.06 [52]	1.13 [29]
2½"	7.50 [191]	2.63 [67]	2.69 [68]	1.00 [25]
3"	8.50 [216]	2.63 [67]	2.69 [68]	1.06 [27]

600 Class Flange Rating				
Size	A	B	C	D
½"	5.94 [135]	2.75 [70]	2.69 [68]	1.06 [27]
¾"	5.94 [135]	2.75 [70]	2.69 [68]	1.06 [27]
1"	5.94 [135]	2.75 [70]	2.69 [68]	1.00 [25]
1½"	6.50 [165]	2.75 [70]	2.69 [68]	1.00 [25]
2"	6.50 [165]	2.63 [67]	2.06 [52]	1.13 [29]
2½"	7.50 [191]	2.63 [67]	2.06 [52]	1.00 [25]
3"	8.50 [216]	2.63 [67]	2.06 [52]	1.06 [27]