

Diaphragm Seal Options

		SS Armed Capillary	SS Armed Capillary w/PVC Sleeve	Pipe Plug for Flushing Conn.	Top Housing 316 SS	Top Housing Monel	Top Housing Hastelloy C	SS Clamp/ Flange Rings Bolts Nuts	High Pressure Clamp Rings	Clamping Bolts 300 Series SS	Cleaning For Gaseous Oxygen or Strong Oxidizing Agents ^(d)	Inst. Welded to Seal	Positive Material Ident. (PMI)
SEAL TYPE	CODE	1115A	1115P	PU	YT	YM	HB	SE	HP	SB	6B	DU	MQ
TYPE NUMBER													
100	•	•			•			•	•(1)	•	•	•	•
101	•	•	•	•	•	•	•	•	•(1)	•	•	•	•
200	•	•	•		•	•	•	•	•(1)	•	•	•	•
201	•	•	•	•	•	•	•	•	•(1)	•	•	•	•
300	•	•			•			•	•(1)	•	•	•	•
301	•	•	•	•	•			•	•(1)	•	•	•	•
104	•	•			•						•	•	•
310	•	•			STD	STD ⁽³⁾	STD ⁽³⁾						
315	•	•											
311	•	•			STD								
312	•	•			STD								
330	•	•											
400	•	•			STD	STD ⁽³⁾	•	•	•(2)	•	•	•	•
401	•	•	•	•	STD	STD ⁽³⁾	•	•	•(1)	•	•	•	•
500	•	•			STD	STD ⁽³⁾	•				•	•	•
501	•	•	•	•	STD	STD ⁽³⁾	•				•	•	•
510	•	•			STD	STD ⁽³⁾			•(1)		•		STD
511	•	•			STD	STD ⁽³⁾					•		STD
740	•	•			STD	STD ⁽³⁾					•	•	•
741			•	STD	STD ⁽³⁾						•		•
FLANGED	102	•	•		•			•		•	•	•	•
	103	•	•	•	•	•		•		•	•	•	•
	202	•	•		•	•		•		•	•	•	•
	203	•	•	•	•	•		•		•	•	•	•
	302	•	•		•	•		•		•	•	•	•
	303	•	•	•	•	•		•		•	•	•	•
	106	•	•		•			•		•	•	•	•
	206	•	•		•			•		•	•	•	•
	402	•	•		STD	STD ⁽³⁾	•			•	•	•	•
	403	•	•	•	STD	STD ⁽³⁾	•			•	•	•	•
IN-LINE	702	•	•		STD	STD ⁽³⁾				•	•	•	•
	703	•	•	•	STD	STD ⁽³⁾				•	•	•	•
	105	•	•		•			•		•	•	•	•
	107	•	•		•			•		•	•	•	•
QUICK CONN.	108	•	•		•			•		•	•	•	•
	205	•	•		•			•		•	•	•	•
	207	•	•		•			•		•	•	•	•
	208	•	•		•			•		•	•	•	•
	320	•	•							•	•	•	•

HOW TO ORDER: (Refer To Table On Pages 2 & 3)

Typical ordering code: 10-102-SS-04T-XCGYT-150-RF

- ② – From process connection size (code 10 = 1")
- ① – From type number (code 102 = flanged seal with threaded diaphragm)
- ⑨ – From lower housing and diaphragm material (1st S = 316 st. st. diaphragm, 2nd S = 316 st. st. lower housing)
- ③ – From instrument connection size (code 04T = 1/4 NPT)
- ⑩ – Diaphragm seal assembly fill fluid & options; precede option code with 'X' (code CG from page 3 = glycerin instrument and seal fill, code YT from page 4 above = top housing 316 st. st.)
- ⑤ – If a flanged seal, select flange rating (code 150 = 150 ANSI B16.5 class flange)
- ⑥ – If for a flanged seal, select flange type (code RF = ANSI B16.5 raised face flange)

NOTES:

- (1) 5000 psi pressure rating
- (2) 9000 psi pressure rating
- (3) Standard with monel diaphragm
- (4) Fill must be XCF (Halocarbon)



Glycerin
Silicone
Halocarbon

Ten Steps to Select a Diaphragm Seal



1

SEAL TYPE

When determining a seal type, two requirements must be considered:

1. **Process Connection Type –**
A threaded design seal connects directly to the process with a female or male NPT connection.
A flanged design seal is attached to the process with a flange as specified in ASME B 16.5.
An in-line welded design seal is suitable for flow-thru applications.
2. **Type Number –**

2

PROCESS CONNECTION SIZE & TYPE

Select process connection size. If the requirement is for a threaded seal determine if a male or female connection is required.

3

INSTRUMENT CONNECTION SIZE

Determine if a 1/4 NPT or 1/2 NPT is required

4

DIAPHRAGM TYPE

Is the requirement for the diaphragm configuration threaded, welded, bonded or clamped to the top housing. Design types are:

- Threaded Design:** ensures a positive sealing surface. The diaphragm can be replaced if damaged.
Welded or Bonded Design: Metallic Diaphragm- welded to top housing.
Elastomeric Diaphragm: bonded to top housing. Both ensure maximum leak integrity.
Clamped Design: available with elastomeric diaphragms only. Diaphragm is clamped between top and bottom housing.

5

MAXIMUM ALLOWABLE WORKING PRESSURE

Ensure the instrument full scale range does not exceed the rated pressure of the diaphragm seal. Flanged seal class ratings are in accordance with ASME B16.5. If the diaphragm seal will be used with a differential pressure instrument, the instrument static pressure should not exceed the rated pressure of the diaphragm seal.

6

FLANGE TYPE

If the requirement is for a flanged seal, determine if a raised face, flat face or ring joint flange is required

7

PROCESS TEMPERATURE LIMITS

When selecting the required system assembly fill fluid, lower housing and diaphragm material, ensure minimum and maximum temperature limits are compatible with the selected fill fluid, diaphragm and lower housing materials. When the requirement is for a flanged seal, refer to ASME B16.5 for pressure and temperature limits.

8

TOP HOUSING, FLANGE OR CLAMP RING MATERIAL, CLAMP BOLTS

Consider environmental compatibility when selecting.

Flanged Type Seals: Standard flange material is nickel plated carbon steel.

Threaded Type Seals: When a clamped ring is offered, standard material is black painted carbon steel.

Clamping Bolts: Standard bolt material is zinc plated carbon steel.

See Diaphragm Seal Options page 4 when the standard material is not compatible with environmental conditions.

9

LOWER HOUSING & DIAPHRAGM MATERIAL

Both the diaphragm and lower housing are 'wetted parts' and must be compatible with the process media. Refer to our Corrosion Data Guide under Technical Info at www.ashcroft.com for material compatibility. Process temperature limits and concentration are a requirement when selecting lower housing and diaphragm material.

10

FILL FLUID

Consider process temperature and process media compatibility when selecting the system fill fluid. A fill fluid other than glycerin is required for vacuum and compound gauge ranges. Glycerin fill is not available when capillary is required between the instrument and diaphragm seal.

Ten Steps to Select an Ashcroft® Diaphragm Seal

ASHCROFT®

1	2	3	4	5	6	7	8	9	10				
SEAL TYPE	MODEL NUMBER	PROCESS CONNECTION SIZE (inches)		MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP) For process temperature <100°F)			FLANGE TYPE	PROCESS TEMP. LIMITS		TOP HOUSING	LOWER HOUSING & DIAPHRAGM		FILL FLUIDS
		FEMALE (F), MALE (M)	INST CONN. SIZE (NPTF)	DIAPH. DESIGN TYPE	PSI	CLASS FLANGE ANSI B 16.5		DIAPHRAGM	LOWER HOUSING		MATERIALS	MATERIALS	
THREADED	100	F/M F/M F/M F/M	8 (Code 80)	% (Code 02 (female))	500# (Viton or Kalrez diaphragm)	150 Class Flange	Metall (750°)	PVC: (-40/400°F)	Viton: (-40/350°F)	304 SS (lower housing and/or diaph.)	316 SS (lower housing and/or diaph.)	316 SS (lower housing and/or diaph.)	Glycerin (0/400°F, -18/204°C)
	101	F/M F/M F/M F/M		% (Code 04 (female))	750# (Viton or Kalrez diaphragm)	300 Class Flange	Teflon (74°F), flanged (100°F)			Monel 400 (lower housing and/or diaph.)	Monel 400 (lower housing and/or diaph.)	Monel 400 (lower housing and/or diaph.)	Silicone (-40/600°F, -40/315°C)
	200	F/M F/M F/M F/M		Threaded (100 series)	1000#	600 Class Flange	Viton (-40/350°F)			Nickel (lower housing and/or diaph.)	Nickel (lower housing and/or diaph.)	Nickel (lower housing and/or diaph.)	Food grade Silicone (-40/600°F, -40/315°C)
	201	F/M F/M F/M F/M		Welded or bonded elastomer	1500#	900 Class Flange	Kyne: (100°F)			Carpenter 20 (lower housing and/or diaph.)	Carpenter 20 (lower housing and/or diaph.)	Carpenter 20 (lower housing and/or diaph.)	Halocarbon™ (-70/300°F, -56/149°C)
	300	F/M F/M F/M F/M		Clamped (300 series)	2500# (Teflon & metal diaphragms)	1500 Class Flange	Metal (750°)			Tantalum/Tantulum clad (lower housing and/or diaph.)	Tantalum/Tantulum clad (lower housing and/or diaph.)	Tantalum/Tantulum clad (lower housing and/or diaph.)	Syltherm (-40/750°F, -40/400°C)
	301	F/M F/M F/M F/M			3000#	2500 Class Flange	Teflon (30/212°F)			Hastelloy C 276 (lower housing and/or diaph.)	Hastelloy C 276 (lower housing and/or diaph.)	Hastelloy C 276 (lower housing and/or diaph.)	Neobee M-20 (0/320°F, -17/160°C)
	104	F F			4400# (with XHP)	Flat Face (FF) Ring Joint (RJ)	Viton (30/212°F)			Monel (XYT when not standard)	Monel (XYT when not standard)	Monel (XYT when not standard)	Neobee M (0/320°F, -17/160°C)
	310	F/M F/M M M								Nickel plated carbon steel			
	315	F F								316 SS (XYT when not standard)			
	311	F/M F/M F/M F/M								Monel (XYT when not standard)			
	312	F F								Titanium			
	330	M								Hastelloy C 276 (lower housing and/or diaph.)			
	400	F/M F/M F/M F/M								304 SS (lower housing and/or diaph.)			
	401	F/M F/M F/M F/M								316 SS (lower housing and/or diaph.)			
	500	F/M F/M F/M F/M								Monel 400 (lower housing and/or diaph.)			
	501	F/M F/M F/M F/M								Nickel (lower housing and/or diaph.)			
FLANGED	510	M								Carpenter 20 (lower housing and/or diaph.)			
	511	M								Hastelloy B (lower housing and/or diaph.)			
	740	F F F F								Hastelloy C 22 (lower housing and/or diaph.)			
	741	F F F F								Hastelloy C 22 (lower housing and/or diaph.)			
	102									Hastelloy C 22 (lower housing and/or diaph.)			
	103									Hastelloy C 22 (lower housing and/or diaph.)			
	202									Hastelloy C 22 (lower housing and/or diaph.)			
	203									Hastelloy C 22 (lower housing and/or diaph.)			
	302									Hastelloy C 22 (lower housing and/or diaph.)			
	303									Hastelloy C 22 (lower housing and/or diaph.)			
IN-LINE	106									Hastelloy C 22 (lower housing and/or diaph.)			
	206									Hastelloy C 22 (lower housing and/or diaph.)			
	402									Hastelloy C 22 (lower housing and/or diaph.)			
	403									Hastelloy C 22 (lower housing and/or diaph.)			
	702									Hastelloy C 22 (lower housing and/or diaph.)			
	703									Hastelloy C 22 (lower housing and/or diaph.)			
	104									Hastelloy C 22 (lower housing and/or diaph.)			
	105									Hastelloy C 22 (lower housing and/or diaph.)			
QUICK CONNECT	107									Hastelloy C 22 (lower housing and/or diaph.)			
	108									Hastelloy C 22 (lower housing and/or diaph.)			
	204									Hastelloy C 22 (lower housing and/or diaph.)			
	205									Hastelloy C 22 (lower housing and/or diaph.)			
	207									Hastelloy C 22 (lower housing and/or diaph.)			
	208									Hastelloy C 22 (lower housing and/or diaph.)			
	320									Hastelloy C 22 (lower housing and/or diaph.)			
										Hastelloy C 22 (lower housing and/or diaph.)			

NOTES: (1) Standard when welded monel diaphragm is specified. (2) Standard when titanium diaphragm is specified. (3) 2" Triclamp size only. (4) Lower housing only. (5) Diaphragm only. (6) 1", 1½", 2" only. (7) For use with process media containing strong oxidizing agents. (8) Teflon only.