

Diaphragm Seal Options

		SS Armored Capillary	SS Armored 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 ⁽⁴⁾	Inst. Welded to Seal	Positive Material Ident. (PMI)
	CODE	1115A	1115P	PU	YT	YM	HB	SE	HP	SB	6B	DU	MQ
SEAL TYPE	TYPE NUMBER												
THREADED	100	•	•		•			•	• ⁽¹⁾	•	•	•	•
	101	•	•	•	•			•	• ⁽¹⁾	•	•	•	•
	200	•	•		•	•		•	• ⁽¹⁾	•	•	•	•
	201	•	•	•	•	•		•	• ⁽¹⁾	•	•	•	•
	300	•	•		•			•	• ⁽¹⁾	•	•	•	•
	301	•	•	•	•			•	• ⁽¹⁾	•	•	•	•
	104	•	•		•						•	•	•
	310	•	•		STD	STD ⁽³⁾					•	•	•
	315	•	•		STD	STD ⁽³⁾					•	•	•
	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	•	•		•			•			•	•	•
	108	•	•		•			•			•	•	•
	205	•	•		•			•			•	•	•
QUICK CONN.	207	•	•		•						•	•	•
	208	•	•		•						•	•	•
QUICK CONN.	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 = ½ 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)

Ten Steps to Select a Diaphragm Seal



Metal diaphragm (750°) Teflon (-40/400°F)
Kalrez (30/212°F) Viton (-40/350°F)



- 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 ¼ NPT or ½ 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



1		2		3	4	5		6	7		8	9		10		
SEAL TYPE MODEL NUMBER		PROCESS CONNECTION SIZE (inches)		INST CONN. SIZE (NPTF)	DIAPH. DESIGN TYPE	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)				PSI	CLASS FLANGE ANSI B 16.5		DIAPHRAGM	LOWER HOUSING	MATERIALS	MATERIALS	PROCESS TEMP. LIMITS			
		1/4 (Code 25 (female), Code 02 (male) 1/2 (Code 50 (female), Code 04 (male) 3/4 (Code 75 (female), Code 06 (male) 1 (Code 10 (female), Code 08 (male) 1 1/2 (Code 15 (female) 2 (Code 20 (female) 3 (Code 30 (female) 4 (Code 40 (female) 6 (Code 60) 8 (Code 80)		1/4 (Code 02 (female) 1/2 (Code 04 (female)	Threaded (100 series) Welded or bonded elastomer Clamped (300 series)	75# (PVC lower housing) 200# (PVC or Kynar lower housing) 270# (Teflon lower housing) 500# 500# (Viton or Kalrez diaphragm) 750# 1000# 1500# 2500# (Teflon & metal diaphragms) 3000# 4400# 9000# (with XHP)	150 Class Flange 300 Class Flange 600 Class Flange 900 Class Flange 1500 Class Flange 2500 Class Flange	Raised Face (RF) Flat Face (FF) Ring Joint (RJ)	Metal (750°) Teflon (-40/400°F) Viton (-40/350°F) Kalrez (30/212°F)	Metal (750°F) PVC: (74°F), flanged (100°F) Teflon: (74°F), flanged (150°F) Kynar: (100°F)	Nickel plated carbon steel 316 SS (XYT when not standard) Monel (XYM when not standard) Titanium Hastelloy C276 (XHB)	304 SS (lower housing and/or diaph.) (code C diaph., code C lower housing) 316 SS (lower housing and/or diaph.) (code S diaph., code S lower housing) Monel 400 (lower housing and/or diaph.) (code P diaph., code M lower housing) Nickel (lower housing and/or diaph.) (code N diaph., code N lower housing) Carpenter 20 (lower housing and/or diaph.) (code D diaph., code D lower housing) Tantalum/Tantalum clad (lower housing & diaph.) (code U diaph., code SU lower housing) Hastelloy B (lower housing and/or diaph.) (code G diaph., code G lower housing) Hastelloy C 276 (lower housing and/or diaph.) (code H diaph., code H lower housing) Hastelloy C 22 (lower housing and/or diaph.) (code J diaph., code J lower housing) Titanium (lower housing and/or diaph.) (code TI diaph., code TI lower housing) Halar coated Monel (lower housing and/or diaph.) (code R diaph. code BH lower housing) Viton (diaphragm only) (code Y) Teflon (diaphragm only) (code T) Kalrez (diaphragm only) (code K) Steel (lower housing) (code B) Inconel (lower housing only) (code W) PVC (lower housing only) (code V) 1/4, 1/2 process conn. size only Teflon (lower only) (code T) 1/4, 1/2 process conn. size only Kynar (lower housing only) (code KY) 1/4, 1/2 process conn. size only	Glycerin (0/400°F, -18/204°C) direct mount only (Code CG) Silicone (-40/600°F, -40/315°C (code CK)) Food grade Silicone (-40/600°F, -40/315°C) (code CZ) Halocarbon ⁽⁷⁾ (-70/300°F, -56/149°C) (code CF) Syltherm (-40/750°F, -40/400°C) (code HA) Neobee M-20 (0/320°F, -17/160°C) (code NM)			
THREADED	100	F/M	F/M	F/M	F/M	•			•	•	•	•	•	•		
	101	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	200	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	201	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	300	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	301	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	104	F	F			•				•	•	•	•	•		
	310	F/M	F/M	M	M	•				•	•	•	•	•		
	315	F	F			•				•	•	•	•	•		
	311	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	312	F	F			•				•	•	•	•	•		
	330			M		•				•	•	•	•	•		
	400	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	401	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	500	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
FLANGED	501	F/M	F/M	F/M	F/M	•				•	•	•	•	•		
	510		M			•				•	•	•	•	•		
	511		M			•				•	•	•	•	•		
	740	F	F	F	F	•				•	•	•	•	•		
	741	F	F	F	F	•				•	•	•	•	•		
	102		•	•	•	•			•	•	•	•	•	•		
	103		•	•	•	•			•	•	•	•	•	•		
	202		•	•	•	•			•	•	•	•	•	•		
	203		•	•	•	•			•	•	•	•	•	•		
	302		•	•	•	•			•	•	•	•	•	•		
IN-LINE	104	•	•			•			•	•	•	•	•	•		
	105									•						
	107	•	•	•	•	•			•	•	•	•	•	•		
	108	•	•	•	•	•			•	•	•	•	•	•		
	204								•	•	•	•	•	•		
	205								•	•	•	•	•	•		
	207								•	•	•	•	•	•		
	208	•	•	•	•	•			•	•	•	•	•	•		
	QUICK CONNECT	320			•	•			•		•					ALL

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.