

## Type 300 Clamped Diaphragm Seal



Clamped Design ▶



TYPE 300 SHOWN

*When isolation of the process from an instrument is required, Ashcroft offers a comprehensive line of diaphragm seals. Seal types include threaded, flanged, in-line threaded, in-line flanged, in-line socket weld, in-line butt weld, saddle and sanitary seals. Also available is a complete offering of isolation or iso-rings and isolation or iso-spools.*

### APPLICATIONS

- Elevated process temperatures
- Corrosive service
- Isolation of the process for safety
- Suspended solids in the process
- Sanitary connections
- Replacement of process dead leg
- Ease of cleaning between batches

### FEATURES

- An elastomeric or Teflon<sup>®</sup> diaphragm is clamped securely between the top and bottom housing with clamp rings, ensuring a positive seal.
- A fill/bleed connection is standard, which permits filling the seal and instrument simultaneously after evacuation and allows the fill to flow into the completed unit.
- Available Teflon<sup>®</sup> diaphragm offers corrosion resistance to most acids, caustics, alkalies, keytones, hydrocarbons and alcohols.
- Available Viton<sup>®</sup> or Kalrez diaphragms for low pressure instruments from 10 inches of water.
- Rugged, flexible and fatigue resistant for superior service life.
- Continuous-duty design will prevent loss of process fluid if pressure instrument is removed or fails.

### SPECIFICATIONS

**Model Number:** Type 300, 301, 302, 303

**Process Connection Size:** See Table A

**Instrument Connection Size:** ¼", ½ NPT

**Diaphragm Material:** See Table B

**Bottom Housing Materials:** See Table C

**Filling Fluid:** See Table E

### OPTIONS

	<b>Code</b>
316 stainless steel top housing	<b>YT</b>
Stainless steel clamp rings and flanged ring – includes 300 stainless steel clamping bolts (1500 psi max)	<b>SE</b>
300 series stainless steel clamping bolts (max pres is 1500 psi)	<b>SB</b>
Pipe plugs for flushing connections – pipe plugs are available in the same materials as bottom housings per Table C	<b>PU</b>
5000 psi pressure rating – (Type 100 only) threaded inlet only, no flushing connection (metal diaphragm only)	<b>HP</b>
Welded instrument to diaphragm seal	<b>DU</b>
Dual flushing connections (½ NPT) (Limited to 2" thru 3" flanged seals)	<b>DB</b>
Ring joint (Flanged seal only)	<b>RJ</b>
Flat face (Flanged seal only)	<b>FF</b>
Clean for gaseous oxygen or strong oxidizing agent applications.	<b>6B</b>

### HOW TO ORDER:

1. From Table A...select TYPE NUMBER based on process connection, process connection size and diaphragm type/construction. (e.g., Threaded/1"/capsule-code-10-300)
2. From Table B...select DIAPHRAGM MATERIAL. (e.g., 316L stainless steel-code S)
3. From Table C...select BOTTOM HOUSING MATERIAL. (e.g., 316 stainless steel-code S)
4. From Table D...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT-code 02T)
5. From Table E...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin-code CG)

Coded order: 10-300TT-02T-CG

## Type 300 Clamped Diaphragm Seal

### TYPE 300 SERIES SEAL TYPES

#### Type 300 – Threaded

¼, ½, ¾, 1 NPT



#### Type 301 – Threaded with flushing connection

¼, ½, ¾, 1 NPT



#### Type 302 – Raised Face Flanged

½, ¾ NPT



#### Type 303 – Raised Face Flanged

1½, 2, 3 (raised face only)  
1 piece with and without flushing connection



**Table A – Process Connection/Type Number**

Process Connection	Process Connection Size/Code—Inches											Type Number
	Size	¼	½	¾	1	1½	2	3	4	6	8	
Threaded—female NPT	Code	25	50	75	10	15	20	30	40	60	80	300
Threaded—female NPT (with flushing conn.)		•	•	•	•	•						301
Flanged <sup>(1)</sup>			•	•		•	•	•				302
Flanged (with flushing conn.)			•	•	•	•	•	•				303

Pressure Ratings—All 2500 psi except flanged seals are per ASME B 16.5, temperature limit determined by diaphragm, bottom housing and/or filling fluid.

**Table B – Diaphragm Material**

Material	Code
Teflon <sup>(3)</sup>	T
Viton <sup>(6)</sup>	Y
Kalrez <sup>(10)</sup>	K

**Table C – Housing Materials**

Material	Code
Steel	B
304L stainless steel	C
316L stainless steel	S
Hastelloy B	G
Hastelloy C 22 <sup>(5)</sup>	J
Hastelloy C 276 <sup>(5)</sup>	H
Carpenter 20	D
Monel “400”	M
Inconel “600”	W
Nickel	N
PVC <sup>(6)(12)</sup>	V
Tantalum clad SS <sup>(7)</sup>	SU
Halar coated SS <sup>(8)</sup>	BH
Teflon flanged steel <sup>(9)</sup>	T
Kynar <sup>(11)(12)</sup>	KY
Titanium <sup>(6)</sup>	TI

**Table D – Instrument Connection**

Size – NPT	Code
¼	O2T
½	O4T

**Table E – Filling Fluid**

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	-40/500	CK, DJ
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	-70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	-40/750	HA

### Notes

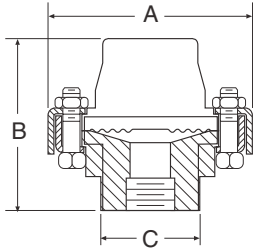
- (1) 150, 300, class flanges.
- (2) Viton diaphragm in Types 302 and 303 limited to 2”– 150 class flange.
- (3) Temp. Limits: -40/400°F
- (4) Maximum Press.: 500 psi, Temp. Limits: -40/350°F
- (5) Use on applications where NACE standard MR-01-75 2003 is specified.
- (6) Maximum Press./Temp. Threaded: 200 psi/74°F, 125 psi/125°F, 80 psi/150°F, Flanged: 75 psi/100°F
- (7) Type 302 only
- (8) Type 302 only – Temp. Limits: -40/300°F.
- (9) Only available in 1”, 1½”, & 2” 150 class, Type 302
- (10) Max. Press. 200 psi, Temp. Limits: -30/212°F
- (11) Maximum Pressure/Temp. 200 psi and 180°F
- (12) Type 300: ¼ or ½ NPT only. Larger sizes offered with solvent weld joint. N/A in 301 or 303 design

## Type 300 Clamped Diaphragm Seal

### DIMENSIONS

#### Type 300 – Threaded

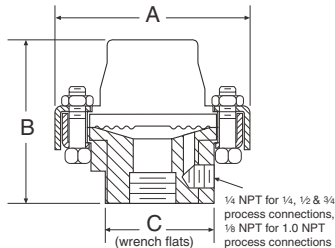
¼, ½, ¾, 1 NPT



A		B		C	
in	mm	in	mm	in	mm
¾"	(95)	2½"	(73)	1 13/16"	(46)

#### Type 301 – Threaded

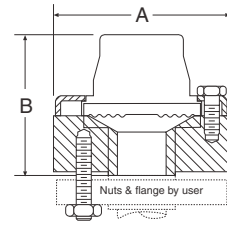
¼, ½, ¾, 1 NPT (with flushing connection)



A		B		C	
in	mm	in	mm	in	mm
¾"	(95)	2½"	(73)	1 13/16"	(46)

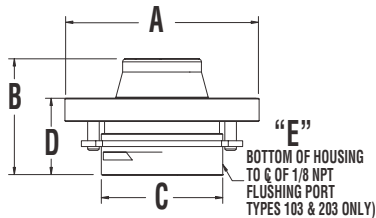
#### Type 302 – Flanged

½", ¾", 1"



Flange Size	Rating #	A		B	
		in	mm	in	mm
150		3½"	(89)	2 15/16"	(75)
½"	300 or 600	¾"	(95)	3"	(76)
	900 or 1500	4¾"	(121)	3 3/16"	(81)
150		¾"	(98)	2 13/16"	(71)
¾"	300 or 600	4½"	(117)	3"	(76)
	900 or 1500	5½"	(130)	3 3/16"	(81)

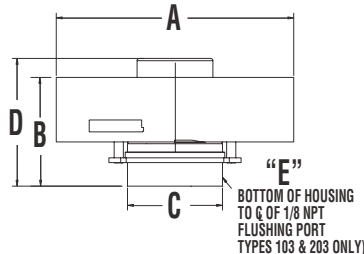
**Type 302 – Flanged 1" (raised face only)**  
one piece bottom housing, with and without flushing connection



Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
1	150	4-1/4"	(100)	2-9/16"	(65)	1-23/32"	(69)
	300 or 600	5"	(127)				

Flange		D		E	
Size	Rating #	in	mm	in	mm
1	300 or 600	1-5/8"	(41)	3/8"	(9)

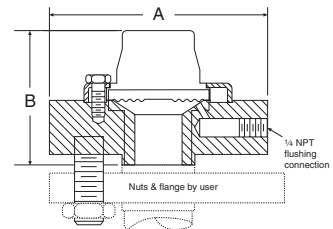
**Type 302 – Flanged 1" (raised face only)**  
one piece bottom housing, with and without flushing connection



Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
1	900 or 1500	5-7/8"	(149)	2-7/8"	(73)	2-1/4"	(57)
	2500	6-1/4"	(159)				

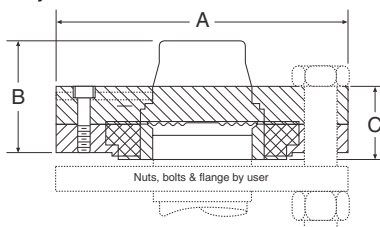
Flange		D		E	
Size	Rating #	in	mm	in	mm
1	900 or 1500	3-3/8"	(86)	3/8"	(9)
	2500				

**Type 302 – Flanged (raised face only)**  
1½", 2", 3" one piece bottom housing - all materials except PVC, Teflon and Kynar



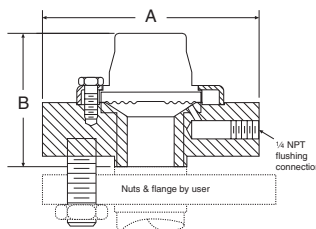
Flange Size	Rating #	A		B	
		in	mm	in	mm
150		3½"	(89)	2 15/16"	(75)
½"	300 or 600	¾"	(95)	3"	(76)
	900 or 1500	4¾"	(121)	3 3/16"	(81)
150		¾"	(98)	2 13/16"	(71)
¾"	300 or 600	4½"	(117)	3"	(76)

**Type 302 – Flanged 1" (raised face only)**  
two piece bottom housing, 1½", 2" - PVC, Teflon and Kynar



Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
1½"	150	5"	(127)	2 5/16"	(59)	1 13/32"	(39)
2"	150	6"	(152)	2½"	(54)	1 9/16"	(40)

**Type 303 – Flanged**  
½", ¾" (with flushing connection)

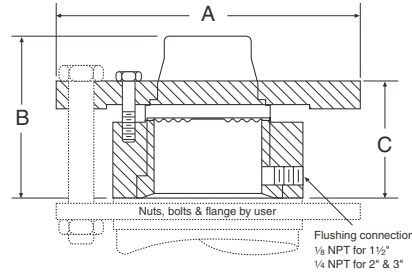


Flange Size	Rating #	A		B	
		in	mm	in	mm
150		3½"	(89)	2 15/16"	(75)
½"	300 or 600	¾"	(95)	3"	(76)
	900 or 1500	4¾"	(121)	3 3/16"	(81)
150		¾"	(98)	2 13/16"	(71)
¾"	300 or 600	4½"	(117)	3"	(76)

## Type 300 Clamped Diaphragm Seal

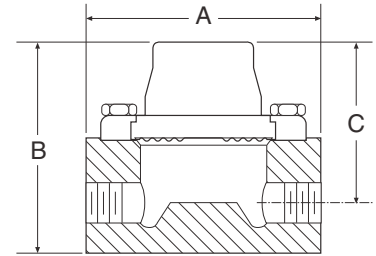
### DIMENSIONS

**Type 303 – Flanged 1½," 2," 3" (raised face only)**  
 one piece bottom housing with flushing connection



Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
1½"	150	5	(127)				
	300 or 600	6¼	(159)	3	(76)	2½/16	(52)
	900 or 1500	7	(178)				
2"	150	6	(152)				
	300 or 600	6½	(165)	3½/16	(84)	2¾	(60)
900 or 1500	8½	(215)					
3"	150	7½	(191)	3¾/16	(79)	2½/16	(56)
	300 or 600	8¼	(210)	3¾/16	(81)	2½/16	(57)
	900	9½	(241)				
	1500	10½	(267)	3²³/₃₂	(94)	2¾	(70)

**Type 304 – In-Line Threaded**  
 ¼, ½, ¾, 1 NPT



Process Connection	A		B		C	
	in	mm	in	mm	in	mm
¼ NPT	4	(102)	2⁵/₁₆	(67)	2½	(54)
½ NPT			3⁵/₁₆	(92)	2¾	(70)
¾ NPT			3⁷/₁₆	(98)	3	(76)
1 NPT			3⁷/₁₆	(98)	3	(76)