

## Type 300 Clamped Diaphragm Seal



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 for diaphragm seals include:

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

### FEATURES

- An elastomeric or Teflon® 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® diaphragm offers corrosion resistance to most acids, caustics, alkalis, ketones, hydrocarbons and alcohols.
- Available Viton® 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, 304

**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

316 stainless steel top housing

Stainless steel clamp rings and flanged ring – includes 300 stainless steel clamping bolts (1500 psi max)

300 series stainless steel clamping bolts (max pressure is 1500 psi)

Pipe plugs for flushing connections – pipe plugs are available in the same materials as bottom housings per Table C

5000 psi pressure rating – (Type 100 only) threaded inlet only, no flushing connection (metal diaphragm only)

Welded instrument to diaphragm seal

Dual flushing connections (½ NPT) (Limited to 2" thru 3" flanged seals)

Ring joint (Flanged seal only)

Flat face (Flanged seal only)

Clean for gaseous oxygen or strong oxidizing agent applications.

### Code

YT

SE

SB

PU

HP

DU

DB

RJ

FF

6B

### 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., 1/4 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, 1 NPT



### Type 303 – Raised Face Flanged

1½, 2, 3 (raised face only)

1 piece with and without flushing connection



### Type 304 – In-line Threaded

¼, ½, ¾, 1 NPT



Table A – Process Connection/Type Number

Process Connection	Process Connection Size/Code—Inches										Type Number	
	Size Code	¼	½	¾	1	1½	2	3	4	6		8
Threaded—female NPT	•	•	•	•	•	•						100
Threaded—female NPT (with flushing conn.)	•	•	•	•	•	•						101
Flanged <sup>(1)</sup>		•	•	•	•	•	•					102
Flanged (with flushing conn.)		•	•	•	•	•	•					103
In-line—threaded NPT	•	•	•	•	•	•						104
Saddle								•	AND LARGER			105
In-line—butt weld		•	•	•	•	•	•					108
In-line—flanged <sup>(2)</sup>		•	•	•	•	•	•	•	•	•	•	106
In-line—socket weld		•	•	•	•	•	•					107

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 – Bottom 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>(8)</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	-40/600	CK
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

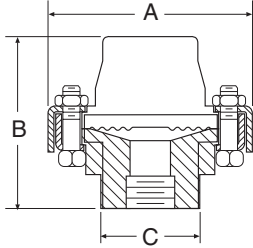
### Notes:

- (1) 150, 300, 600, 900, 1500 & 2500 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

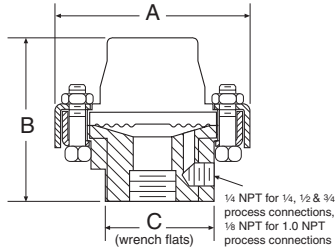
### DIMENSIONS

**Type 300 – Threaded**  
 $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 NPT



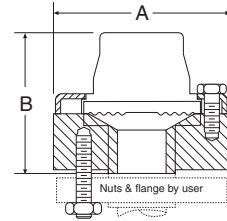
A		B		C	
in	mm	in	mm	in	mm
3/4"	(95)	2 7/8"	(73)	1 13/16"	(46)

**Type 301 – Threaded**  
 $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 NPT (with flushing connection)



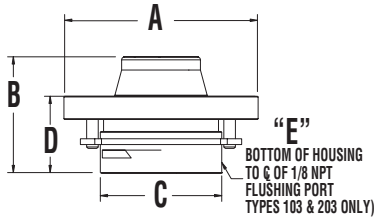
A		B		C	
in	mm	in	mm	in	mm
3/4"	(95)	2 7/8"	(73)	1 13/16"	(46)

**Type 302 – Flanged**  
 $\frac{1}{2}$ ", 2", 3"



Flange Size	Rating #	A		B	
		in	mm	in	mm
150		3 1/2"	(89)	2 15/16"	(75)
1/2"	300 or 600	3 3/4"	(95)	3"	(76)
	900 or 1500	4 3/4"	(121)	3 3/16"	(81)
3/4"	150	3 7/8"	(98)	2 13/16"	(71)
	300 or 600	4 5/8"	(117)	3"	(76)
	900 or 1500	5 1/8"	(130)	3 3/16"	(81)

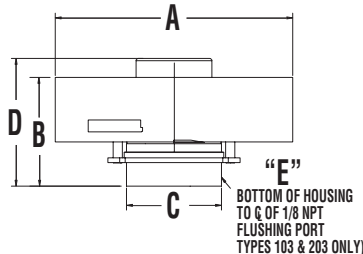
**Type 302 – Flanged 1"** (raised face only)  
 one piece bottom housing, with and without flushing connection



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)				

103 & 203 only					
Flange Size	Rating #	D		E	
		in	mm	in	mm
1	150	1-5/8"	(41)	3/8"	(9)
	300 or 600				

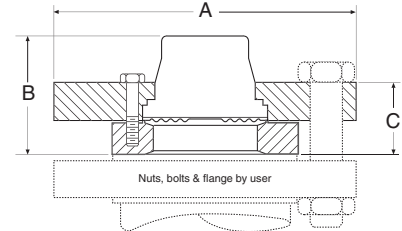
**Type 302 – Flanged 1"** (raised face only)  
 one piece bottom housing, with and without flushing connection



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)				

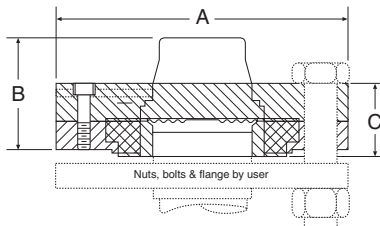
103 & 203 only					
Flange Size	Rating #	D		E	
		in	mm	in	mm
1	900 or 1500	3-3/8"	(86)	3/8"	(9)
	2500				

**Type 302 – Flanged** (raised face only)  
 $\frac{1}{2}$ ", 2", 3" one piece bottom housing - all materials except PVC, Teflon and Kynar



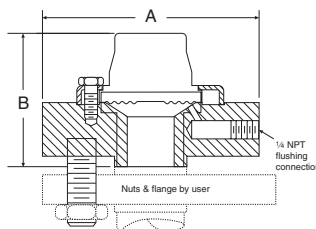
Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
150		5"	(127)	1 1/2"	(38)		
1 1/2"	300 or 600	6 1/4"	(159)	2 3/8"	(61)	1 1/2"	(38)
	900 or 1500	7"	(178)			1 1/2"	(38)
150		6"	(152)	1 3/8"	(35)		
2"	300 or 600	6 1/2"	(165)	1 15/16"	(49)	1 1/2"	(38)
	900 or 1500	8 1/2"	(216)			2 1/8"	(54)
150		7 1/2"	(191)	2"	(51)	1 3/8"	(41)
3"	300 or 600	8 1/4"	(206)	2 1/4"	(52)	1 7/8"	(47)
	900 or 1500	10 1/2"	(267)	2 11/16"	(68)	3 1/4"	(82)

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



Flange Size	Rating #	A		B		C	
		in	mm	in	mm	in	mm
1 1/2"	150	5"	(127)	2 5/16"	(59)	1 13/32"	(39)
2"	150	6"	(152)	2 1/8"	(54)	1 9/16"	(40)

**Type 303 – Flanged**  
 $\frac{1}{2}$ ", 3/4" (with flushing connection)



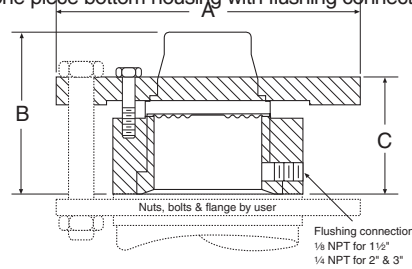
Flange Size	Rating #	A		B	
		in	mm	in	mm
150		3 1/2"	(89)	2 15/16"	(75)
1/2"	300 or 600	3 3/4"	(95)	3"	(76)
	900 or 1500	4 3/4"	(121)	3 3/16"	(81)
150		3 7/8"	(98)	2 13/16"	(71)
3/4"		4 5/8"	(117)	3"	(76)

## Type 300 Clamped Diaphragm Seal

### DIMENSIONS

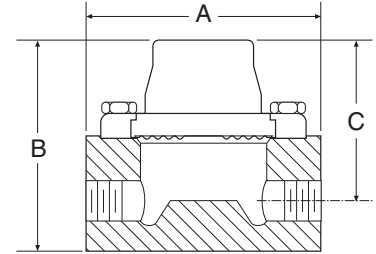
**Type 303 – Flanged 1½", 2", 3" (raised face only)**

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)	2¾/16	(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
¼ NPT	4	2¾ (67)	2½ (54)
½ NPT		3¾ (92)	2¾ (70)
¾ NPT		3¾ (98)	3 (76)
1 NPT		3¾ (98)	3 (76)