

# Model 300BX

## Diaphragm Seals for Flanged Off-Line Process Connections 1-1/2" (38.10mm) and larger

### Process Connection Sizes

1-1/2" through 8"

ASME/ANSI flange ratings up to 2500#

### Maximum Working Pressure

Conforms to Flange Pressure-Temperature

Ratings per ASME/ANSI B16.5

### Flange Faces (125 - 250 R<sub>A</sub> Spiral Finish is Standard)

Raised Face, Flat Face, Ring Type Joint. Special flange faces are available, consult the factory.

### Dimensional Data

Refer to Tables and Cross Sectional Views on Next Page.

### Standard Features and Options

The 300BX Series are custom designed seals with a diaphragm welded on the end of an extension. This extension permits the diaphragm to be located at a point in the process pipe or vessel where the fluid remains liquid. This design allows for the use of diaphragm materials that are of a weldable grade. The displacement capability of this seal is determined by the diaphragm that will fit into the process pipe. These seals are designed for direct connection to standard ASME/ANSI flanges in 1-1/2" (38.20 mm) through 8" (203.20 mm) sizes and up to 2500# ratings. The seal-off feature is standard.

### Offerings

**Lower Materials:** All metallic (See Note 1)

**Upper Materials:** 316 Stainless Steel

**Diaphragm Materials:** All metallic

### CONTROL ENGINEERING DATA

D8 S6 81 2 1 H N

#### (10) FILL LIQUID

N = (Standard)

#### (9) SEAL DIAPHRAGM MATERIAL (See Note 1)

H = Hastelloy B3

D = Hastelloy C-276

M = Monel 400

J = 316 Stainless Steel

T = Tantalum

#### (8) SEAL INSTRUMENT CONNECTION

1 = 1/4" NPTF with bleed

2 = 1/2" NPTF with bleed

4 = 1/4" Aminco with bleed

#### (7) EXTENSION LENGTH (See Note 5)

2 = 2"

3 = 3"

4 = 4"

6 = 6"

#### (5-6) FLANGED PRESSURE RATING / DIAPHRAGM DIAMETER / EXTENSION DIAMETER

1-1/2"				2"			
CODE	PRESSURE RATING & FACE (2)	DIAPHRAGM DIAMETER INCH / MM (3)	EXTENSION DIAMETER INCH / MM (4)	CODE	PRESSURE RATING & FACE (2)	DIAPHRAGM DIAMETER INCH / MM (3)	EXTENSION DIAMETER INCH / MM (4)
81=	150# RF	1.40" / 35	1.44" / 36	91=	150# RF	1.90" / 48	1.95" / 49 (4)
8X=	150# FF			9X=	150# FF		
83=	150# RTJ	1.40" / 35	1.44" / 36	93=	150# RTJ	1.90" / 48	1.95" / 49 (4)
84=	300# RF			94=	300# RF		
8W=	300# FF	1.40" / 35	1.44" / 36	9W=	300# FF	1.90" / 48	1.95" / 49 (4)
86=	300# RTJ			96=	300# RTJ		
87=	600# RF	1.40" / 35	1.44" / 36	97=	600# RF	1.90" / 48	1.95" / 49 (4)
88=	600# FF			98=	600# FF		
89=	600# RTJ	1.40" / 35	1.44" / 36	99=	600# RTJ	1.90" / 48	1.95" / 49 (4)
8A=	900# RF			9A=	900# RF		
8D=	900# RTJ	1.40" / 35	1.44" / 36	9D=	900# RTJ	1.90" / 48	1.95" / 49 (4)
8B=	1500# RF			9B=	1500# RF		
8E=	1500# RTJ	1.40" / 35	1.44" / 36	9E=	1500# RTJ	1.90" / 48	1.95" / 49 (4)
85=	2500# RF			95=	2500# RF		
8F=	2500# RTJ			9F=	2500# RTJ		

FOR SCHEDULE 40 AND 80 PIPE, EXCEPT WHERE NOTED - SEE NOTE 6.

3"				4"			
CODE	PRESSURE RATING & FACE (2)	DIAPHRAGM DIAMETER INCH / MM (3)	EXTENSION DIAMETER INCH / MM (4)	CODE	PRESSURE RATING & FACE (2)	DIAPHRAGM DIAMETER INCH / MM (3)	EXTENSION DIAMETER INCH / MM (4)
B1=	150# RF	2.81" / 71	2.85" / 72	C1=	150# RF	3.70" / 93	3.74" / 95
BX=	150# FF			CX=	150# FF		
B3=	150# RTJ	2.81" / 71	2.85" / 72	C3=	150# RTJ	3.70" / 93	3.74" / 95
B4=	300# RF			C4=	300# RF		
BW=	300# FF	2.81" / 71	2.85" / 72	CW=	300# FF	3.70" / 93	3.74" / 95
B6=	300# RTJ			C6=	300# RTJ		
B7=	600# RF	2.81" / 71	2.85" / 72	C7=	600# RF	3.70" / 93	3.74" / 95
B8=	600# FF			C8=	600# FF		
B9=	600# RTJ	2.81" / 71	2.85" / 72	C9=	600# RTJ	3.70" / 93	3.74" / 95
BA=	900# RF			CA=	900# RF		
BD=	900# RTJ	2.81" / 71	2.85" / 72	CD=	900# RTJ	3.70" / 93	3.74" / 95
BB=	1500# RF			CB=	1500# RF		
BE=	1500# RTJ	2.81" / 71	2.85" / 72	CE=	1500# RTJ	3.70" / 93	3.74" / 95
B5=	2500# RF			C5=	2500# RF		
BF=	2500# RTJ			CF=	2500# RTJ		

#### (3-4) WETTED SURFACES (See Note 1)

HB = Hastelloy B-2

HC = Hastelloy C-276

M4 = Monel 400

SL = 316L Stainless Steel

S6 = 316 Stainless Steel

#### (1-2) DIAPHRAGM SEAL DESIGN

DB = Flanged Off-Line (Raised Face or Flat Face)

DM = Flanged Off-Line (Ring Type Joint)

DP = Flanged Off-Line (Customer to Specify Pipe Style)

### NOTES

- Other wetted materials are available, consult the factory.
  - The raised face portion of the flange is considered a wetted area.
  - Carbon Steel wetted materials are not offered in this design.
  - Non-metallic lower housings are not available for this series. The non-wetted portion is not available in carbon steel. The raised face portion is considered a wetted area.
- Special flange faces are available, consult the factory.
- Other diaphragm diameters are available, consult the factory.
- Other extension diameters are available, consult the factory.
- Standard extension lengths are listed. Any specified length can be provided.
- These extension diameters are not available for Schedule 80 Pipe sizes.

CATALOG NUMBERS AS RECEIVED FOR THE 300BX SERIES MUST CONTAIN TEN (10) CHARACTERS

**300BX DIAPHRAGM SEALS THAT CONFORM TO THE DIMENSIONS BELOW WILL NOT REQUIRE APPROVAL DRAWINGS PRIOR TO PROCESSING THE PURCHASE ORDER. DIMENSIONAL VARIATIONS FROM THE TABLES BELOW WILL REQUIRE SIGNED APPROVAL DRAWINGS PRIOR TO PROCESSING THE PURCHASE ORDER**

**PROCESS FLANGE DIMENSIONAL DATA - FOR RAISED FACE PROCESS CONNECTIONS ONLY**

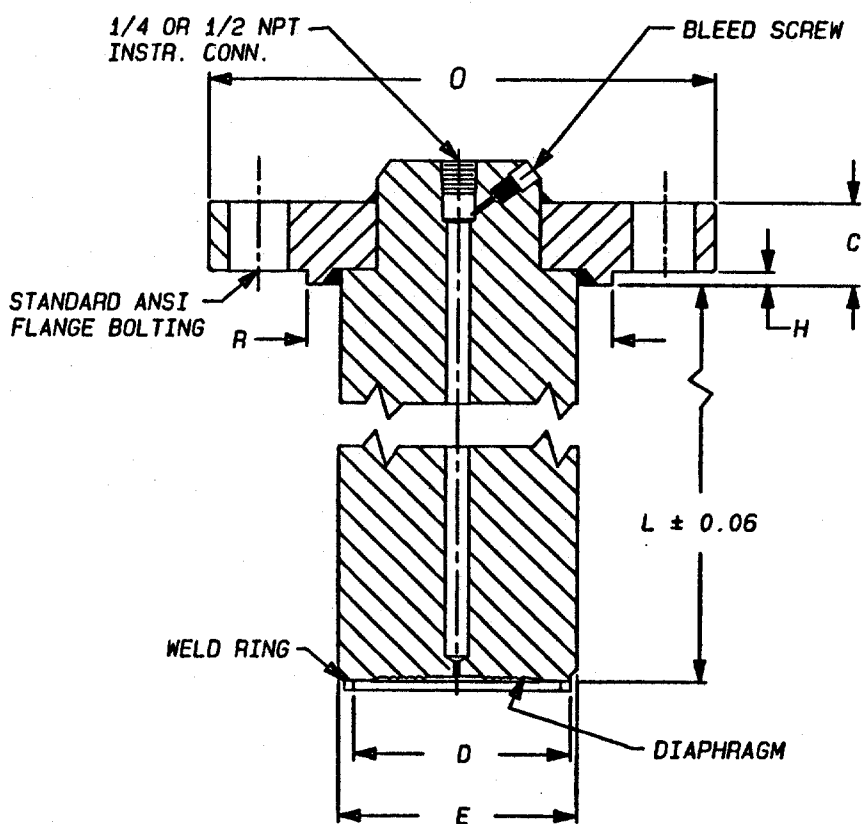
PROCESS FLANGE SIZE	PROCESS FLANGE RATING	NUMBER OF BOLT HOLES	BOLT HOLE DIAMETER inch/mm	BOLT CIRCLE DIAMETER inch/mm	CODE "O" = PROCESS FLANGE DIAMETER inch/mm	CODE "C" = PROCESS FLANGE THICKNESS inch/mm	CODE "H" = PROCESS FLANGE RAISED FACE THICKNESS inch/mm	CODE "R" = PROCESS FLANGE RAISED FACE DIAMETER inch/mm
1-1/2"	150#	4	0.62 / 16	3.88 / 99	5.00 / 127	0.69 / 18	0.06 / 2	2.88 / 73
2"		4	0.75 / 19	4.75 / 121	6.00 / 152	0.75 / 19		3.62 / 92
3"		4	0.75 / 19	6.00 / 152	7.50 / 191	0.94 / 24		5.00 / 127
4"		8	0.75 / 19	7.50 / 191	9.00 / 229	0.94 / 24		6.19 / 157
1-1/2"	300#	4	0.88 / 22	4.50 / 114	6.12 / 156	0.81 / 21	0.06 / 2	2.88 / 73
2"		8	0.75 / 19	5.00 / 127	6.50 / 165	0.88 / 23		3.62 / 92
3"		8	0.88 / 22	6.62 / 168	8.25 / 210	1.12 / 29		5.00 / 127
4"		8	0.88 / 22	7.88 / 200	10.00 / 254	1.25 / 32		6.19 / 157
1-1/2"	600#	4	0.88 / 22	4.50 / 114	6.12 / 156	0.88 / 23	0.25 / 6	2.88 / 73
2"		8	0.75 / 19	5.00 / 127	6.50 / 165	1.00 / 25		3.62 / 92
3"		8	0.88 / 22	6.62 / 168	8.25 / 210	1.25 / 32		5.00 / 127
4"		8	1.00 / 25	8.50 / 216	10.75 / 273	1.50 / 38		6.19 / 157
1-1/2"	900#	4	1.12 / 29	4.88 / 124	7.00 / 178	1.25 / 32	0.25 / 6	2.88 / 73
2"		8	1.00 / 25	6.50 / 165	8.50 / 216	1.50 / 38		3.62 / 92
3"		8	1.00 / 25	7.50 / 191	9.50 / 241	1.50 / 38		5.00 / 127
4"		8	1.25 / 32	9.25 / 235	11.50 / 292	1.75 / 45		6.19 / 157
1-1/2"	1500#	4	1.12 / 29	4.88 / 124	7.00 / 178	1.25 / 32	0.25 / 6	2.88 / 73
2"		8	1.00 / 25	6.50 / 165	8.50 / 216	1.50 / 38		3.62 / 92
3"		8	1.25 / 32	8.00 / 203	10.50 / 267	1.88 / 48		5.00 / 127
4"		8	1.38 / 35	9.50 / 241	12.25 / 311	2.12 / 54		6.19 / 157
1-1/2"	2500#	4	1.25 / 32	5.75 / 146	8.00 / 203	1.75 / 45	0.25 / 6	2.88 / 73
2"		8	1.12 / 29	6.75 / 172	9.25 / 235	2.00 / 51		3.62 / 92
3"		8	1.38 / 35	9.00 / 229	12.00 / 305	2.62 / 67		5.00 / 127
4"		8	1.62 / 41	10.75 / 273	14.00 / 356	3.00 / 76		6.19 / 157

**DIMENSIONAL DATA FOR RAISED FACE PROCESS CONNECTIONS ONLY**

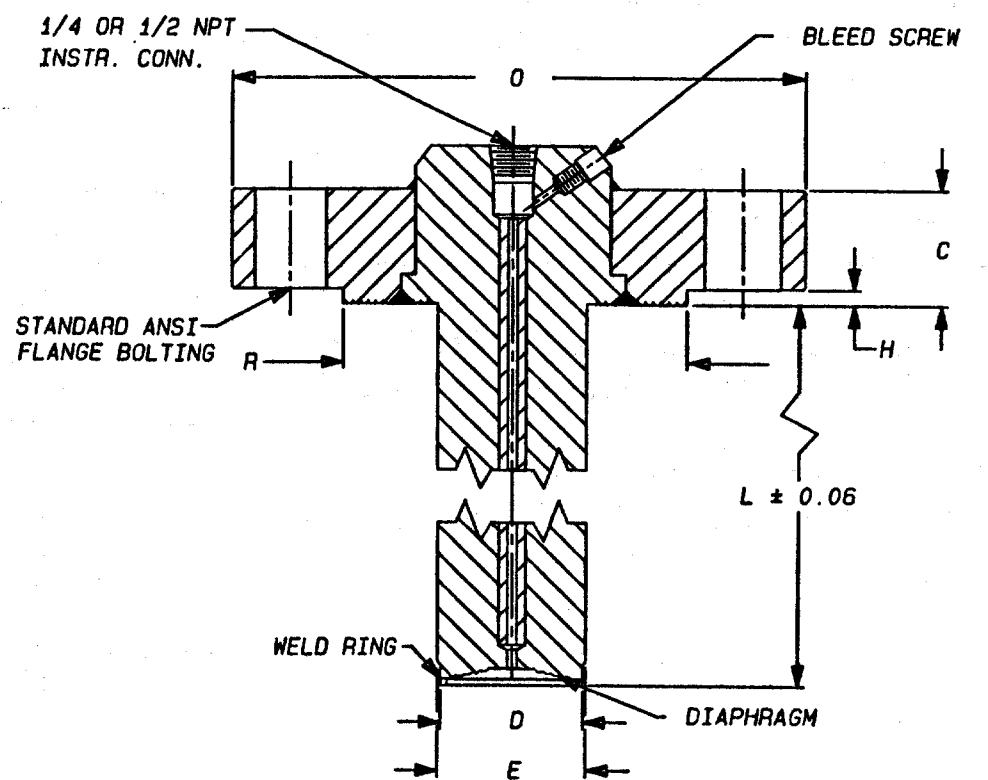
PROCESS FLANGE SIZE	PROCESS FLANGE RATING (2)	DIAPHRAGM DIAMETER CODE "D" (3)	EXTENSION DIAMETER CODE "E" (4) inch/mm	EXTENSION LENGTH CODE "L" (5) inch/mm
1-1/2"	150#	1.40 / 35	1.44 / 36 (6)	2" - 4" - 6"
2"		1.90 / 48	1.95 / 49 (6)	
3"		2.81 / 71	2.85 / 72	
4"		3.70 / 93	3.74 / 95	
1-1/2"	300# THRU 2500#	1.40 / 35	1.44 / 36 (6)	2" - 4" - 6"
2"		1.90 / 48	1.95 / 49 (6)	
3"		2.81 / 71	2.85 / 72	
4"		3.70 / 93	3.74 / 95	

COMPONENT	MATERIALS OF CONSTRUCTION		
DIAPHRAGM	316 Stainless Steel	Hastelloy C-276	Hastelloy B3
WELD RING	316 Stainless Steel	Hastelloy C-276	Hastelloy B3
EXTENSION AND RAISE FACE DIAMETER	316 Stainless Steel	Hastelloy C-276	Hastelloy B3
ALL NON-WETTED PARTS	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel

For Schedule 40 and 80 Pipe, Except Where Noted - See Note 6.



Diaphragm Seals with a 2.4" Diameter Diaphragm or Larger.



Diaphragm Seals with a 1.9" Diameter Diaphragm or Larger.