

# Model 300L

## Diaphragm Seals for Butt Welded In-Line Process Connections Standard Pressure Rating with Metal Lower Housing

### Process Connection Sizes

1/4" through 1"

All Pipe Schedules per ASME/ANSI B36.10 or B36.19

### Maximum Working Pressure

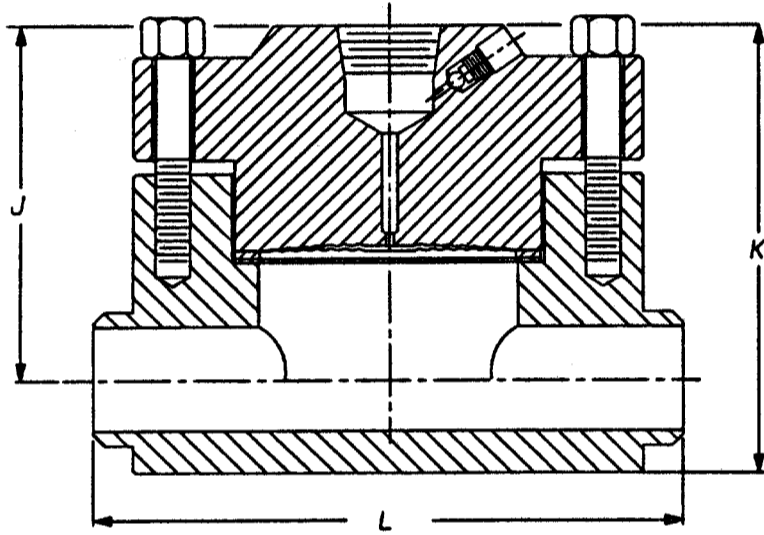
Conforms to Pipe Schedule Ratings as calculated by ASME B31.1 Equation "4" @ 100°F (38°C) (See Notes 4, 5, 6 and 9)

### Dimensional Data

#### Pressure Connection Size

	1/4"	1/2"	3/4"	1"
J	2.00 (51)	2.12 (54)	3.38 (60)	2.50 (64)
K	2.59 (66)	2.78 (71)	3.25 (83)	3.38 (86)
L(11)	4.25 (108)	4.25 (108)	4.25 (1.08)	4.25 (108)

( ) Dimensions in millimeters



### Standard Features and Options

This butt weld connection, in-line seal utilizes a diaphragm that is welded to the upper housing. This design allows for the use of diaphragm materials that are of a weldable grade. The displacement capability of this series of diaphragm seal is 0.05 cubic inches utilizing a 2.4" (60.96mm) diaphragm. Recommended for applications that require a continuous flow of process across the diaphragm to insure that pressure sensing is not inhibited by solids buildup. The upper housing can be removed from the lower housing for welding of lower, inspection, or cleaning of the diaphragm without loss of fill fluid.

The seal-off feature is standard. A model 300J3 upper only assembly can be purchased to fit existing lowers welded in line.

### Offerings

**Lower Materials:** All metallic

**Upper Materials:** Carbon Steel or 316 Stainless Steel

Optional materials are Carpenter 20, Titanium and Monel - Refer to Control Engineering Data for Details.

**Diaphragm Materials:** All metallic

**Bolting:** Carbon Steel or 300 Series Stainless Steel (See Notes 4, 5, 6 and 9)

### CONTROL ENGINEERING DATA

DCS64 K 2 E B T 0 H 0 0 N

CATALOG NUMBERS AS RECEIVED FOR THE 300L SERIES MUST CONTAIN FIFTEEN (15) CHARACTERS

#### (15) FILL LIQUID

N = (Standard)

#### (14) PLATING OPTION

0 = None (Standard)

G = Gold Plating Diaphragm Only (See Note 10)

#### (13) TEFLON COATINGS (See Note 12)

0 = None (Standard)

A = Teflon Coated Diaphragm Only

#### (12) BOLTING

0 = None

C = Carbon Steel - Grade 5 (See Note 4)

S = 300 Series Stainless Steel (See Note 5)

H = 300 Series Stainless Steel (Hi-Strength) (See Note 6)

#### (11) FUTURE OPTIONS

0 = Not Applicable

#### (10) UPPER HOUSING MATERIAL

B = Carbon Steel - N.A.C.E. (No Weld Ring)

F = 316 Stainless Steel - N.A.C.E. (No Weld Ring)

N = Monel - N.A.C.E. (No Weld Ring)

C = Carbon Steel (Standard)

S = 316 Stainless Steel

M = Monel (See Note 7)

2 = Carpenter 20 CB-3 (See Notes 2 and 7)

T = Titanium (See Notes 2 and 7)

#### (9) SEAL GASKET MATERIAL

0 = None

B = Buna N

G = Grafoil

T = Teflon (See Note 3)

V = Viton

S = CGR2750 (Standard)

#### (8) SEAL DIAPHRAGM MATERIAL

C = Carpenter 20 CB-3 (See Notes 2 and 7)

H = Hastelloy B3

D = Hastelloy C-276

I = Inconel 600

M = Monel 400 (See Note 7)

N = Nickel 200

J = 316L Stainless Steel (See Note 1)

T = Tantalum (See Note 2)

E = Titanium - Grade 2 (See Notes 2 and 7)

#### (7) SEAL INSTRUMENT CONNECTION

1 = 1/4" NPTF with bleed

2 = 1/2" NPTF with bleed

#### (6) SEAL PRESSURE (PIPE SCHEDULE) RATING @ 100°F (38°C) (See Notes 4, 5, 6 and 9)

H = Schedule 5

I = Schedule 10

J = Schedule 40 (Standard)

K = Schedule 80

L = Schedule 160

#### (5) SEAL PROCESS CONNECTION

2 = 1/4"

4 = 1/2"

5 = 3/4"

6 = 1"

#### (3-4) LOWER HOUSING MATERIAL (WETTED)

C2 = Carpenter 20 CB-3

CS = Carbon Steel

HB = Hastelloy B3

HC = Hastelloy C-276

I6 = Inconel 600

M4 = Monel 400

N2 = Nickel 200

S4 = 304 Stainless Steel

S6 = 316 Stainless Steel

SF = 304L Stainless Steel

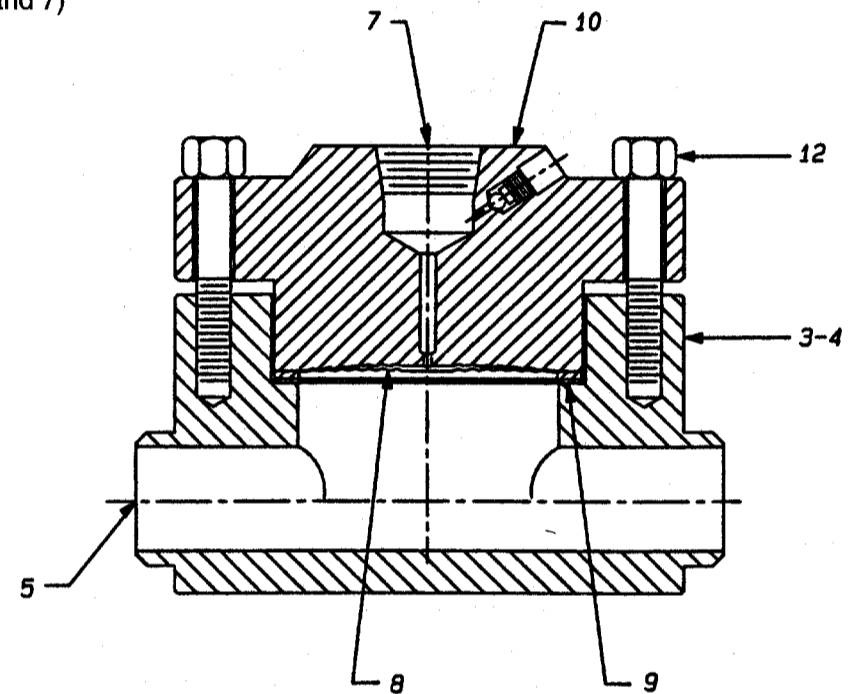
SL = 316L Stainless Steel

TI = Titanium - Grade 4

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

DC = 300L- Butt Welded In-Line

(For coding of upper housing only, refer to 300J3 Series Seal, page 40.)



### Notes:

- Standard diaphragm material is 316L Stainless Steel for seals with lower housing manufactured of CS, S4, S6, SL and SF.
- Standard diaphragm material is Tantalum for seals with lower housing manufactured of C2 and TI.
- Teflon gaskets are standard for seals with lower housing manufactured of C2 and TI.
- Using Grade 5 bolts will maintain the pressure rating calculated from Pipe Schedule Specified in Option 6.
- When using 300 Series Stainless Steel bolts, the maximum pressure rating calculated will be reduced by 50% when the pipe schedule is greater than 40 as specified in Option 6.
- Pipe schedules greater than 40 will be supplied with high-strength stainless steel bolting to maintain seal pressure rating when stainless steel bolts are required.
- When a Monel, Carpenter 20 or Titanium diaphragm is chosen in Position 8, then an equivalent upper housing is required.
- N.A.C.E. - Welded diaphragm seals with Hastelloy C-276 or Monel wetted materials of construction will meet the requirements of N.A.C.E. International Document MR-0175-1995. 316 Stainless Steel construction will NOT BE offered in a welded design as meeting N.A.C.E. MR-0175-1995 requirements as the weld area of the diaphragm seal will not meet the maximum hardness specifications within this document.
- Refer to Miscellaneous Data Section for ASME B31.1 Equation "4."
- Tantalum and Titanium materials cannot be gold plated.
- End-to-end dimension "L" conforms to ASME B16.9 straight tee dimensions for 1-1/2" and larger pipe sizes. For pipe sizes smaller than 1-1/2", "L" dimension is 4.25" (104 mm).
- Teflon-S® Coating (FEP Grade).