

Model 100B

Diaphragm Seals for Flanged Off-Line Process Connections 1" (25.40mm) and Larger

Process Connection Sizes

1" through 3"

ASME/ANSI Flange Ratings Up to 2500 # (See Note 10)

Maximum Working Pressure

Conforms to Flange Pressure-Temperature Ratings per ASME/ANSI B16.5

Flange Faces (125 - 250 R_A Spiral Finish is Standard)

Raised Face

Flat Face

Ring Type Joint

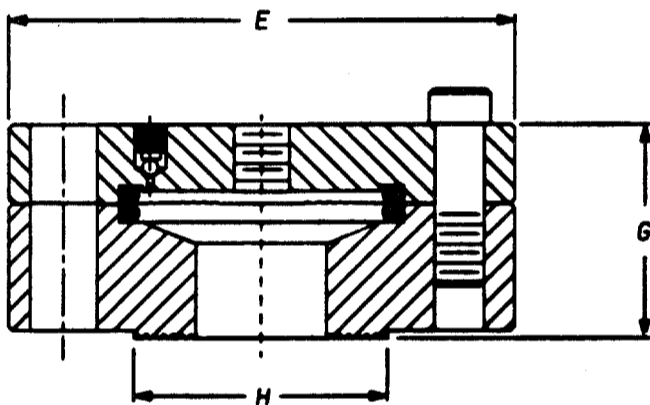
Special Flange Faces are available, Consult the Factory

Dimensional Data

Process Connection Sizes

	1"	1-1/2"	2"	3"
	150#	150#	150#	150#
E	4.00 (102)	5.00 (127)	6.00 (152)	7.50 (191)
G	1.06 (27)	1.19 (30)	1.28 (33)	1.38 (35)
H	2.00 (51)	3.31 (84)	4.00 (102)	5.00 (127)

() Dimensions in millimeters



Standard Features and Options

This flanged off-line seal has a replaceable diaphragm clamped between o-rings. These seals are designed for direct connection to standard ANSI flanges in 1" (25.40mm) through 3" (76.20mm) sizes and up to 2500 # ratings. Larger sizes are available upon request. The 100B Series Seals are designed to utilize a diaphragm that is field replaceable. This configuration allows for the use of metallic as well as elastomer diaphragm materials. The displacement capability of this series of diaphragm seal is 0.09 cubic inches. Due to the material strength of non-metallics, the maximum pressure and temperature rating for this series seal is 200 PSIG (1.38 MPa) at 140°F (60°C), when non-metallic lowers are required. Flushing connections in metallic lowers and seal-off features are optional.

Offerings

Lower Materials: All metallic and non-metallic

Upper Materials: Carbon Steel or 316 Stainless Steel

Diaphragm Materials: All metallic and elastomers

O-Rings: Buna-N, Teflon, Viton

Bolting: Carbon Steel or 300 Series Stainless Steel

CONTROL ENGINEERING DATA

A4S6 6 1 2 SL B C 0 C 0 N

(15) FILL LIQUID

N = (Standard)

(14) TEFLON COATINGS (See Note 11)

0 = None(Standard)

A = Teflon Coated Diaphragm Only

B = Teflon Coated Diaphragm and Lower Housing

(13) BOLTING

C = Carbon Steel Grade 5

S = 300 Series Stainless Steel

(12) FLUSH CONNECTION (See Note 6) (Not Shown)

0 = None

1 = 1/8" NPTF

2 = 1/4" NPTF

3 = 1/4" NPTF-DUAL

(11) UPPER HOUSING MATERIAL

C = Carbon Steel (Standard)

S = 316 Stainless Steel

(10) O-RING MATERIAL

B = Buna "N" (See Note 3)

T = Teflon-Virgin (See Notes 4 and 5)

V = Viton

(8-9) SEAL DIAPHRAGM MATERIAL

BN = Buna "N"

C2 = Carpenter 20 CB-3

HB = Hastelloy B3

HC = Hastelloy C-276

I6 = Inconel 600

KF = Kel-F

M5 = Monel 400

N2 = Nickel 200

SL = 316L Stainless Steel (See Note 1)

TA = Tantalum

TI = Titanium - Grade 2

TF = Teflon-Virgin (See Note 2)

VI = Viton

(7) SEAL INSTRUMENT CONNECTION

1 = 1/4" NPTF with bleed

2 = 1/2" NPTF with bleed

(6) SEAL FLANGE PRESSURE RATING (See Note 10)

1 = 150#RF

2 = 150#FF

3 = 150#RTJ

4 = 300#RF

5 = 300#FF

6 = 300#RTJ

7 = 600#RF

8 = 600#FF

9 = 600#RTJ

A = 900#RF

D = 900#RTJ

B = 1500#RF

E = 1500#RTJ

C = 2500#RF

F = 2500#RTJ

(5) SEAL PROCESS CONNECTION

6 = 1"

7 = 1-1/4"

8 = 1 1/2"

9 = 2"

B = 3"

(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

KN = Kynar

PP = Polypropylene

PV = PVC

S4 = 304 Stainless Steel

S6 = 316 Stainless Steel

SF = 304L Stainless Steel

SL = 316L Stainless Steel

TC = Teflon-Carbon Filled

TG = Teflon-Glass Filled

TI = Titanium - Grade 4

TP = Tantalum Clad (Wetted Surface Only)(See Note 7)

(1-2) DIAPHRAGM SEAL DESIGN

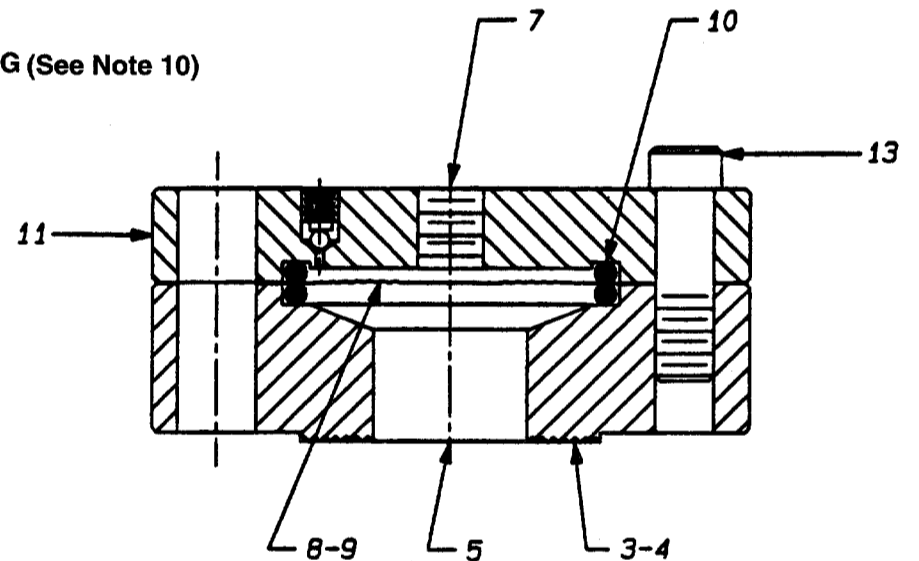
A4 = 100B- Flanged Off-Line

*A5 = 100BR Flanged Off-Line (Ring Type Joint)

*A6 = 100BZ Flanged Off-Line (Customer to specify pipe style)

*For metallic lower housings only.

CATALOG NUMBERS AS RECEIVED FOR THE 100B SERIES MUST CONTAIN FIFTEEN (15) CHARACTERS



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 Teflon for seals with lower housing manufactured of KN, PP, PV, TC and TG.
- Standard o-ring material for all metallic seals is Buna "N".
- Standard o-ring material for seals with lower housing manufactured of non-metallic material is Teflon.
- Teflon o-rings cannot be used on seals with pressure ratings above 2000 PSIG (13.80 MPa).
- Flushing connections are not available with lower housings manufactured of a non-metallic material.
- Tantalum clad lower housings will be supplied with a raised face-smooth flange face-no serrations. Tantalum plated lowers cannot be supplied with flush connections.
- N.A.C.E. - Non-welded diaphragm seals with 316 Stainless Steel, Hastelloy C-276 or Monel wetted materials of construction will meet the requirements of N.A.C.E. International Document MR-0175-1995.
- Non-metallic lower housings are not available for flange ratings greater than 300 #. The maximum temperature and pressure rating for non-metallic lowers is 200 PSIG (1.38 MPa) and 140°F (60°C), regardless of the mating flange size.
- Refer to Miscellaneous Data Section for Pressure-Temperature Ratings Guide.
- Teflon-S® Coating (FEP Grade)

Model 100B

Diaphragm Seals for Flanged Off-Line Process Connections Less than 1" (25.40mm)

Process Connection Sizes

1/2" and 3/4"

ASME/ANSI Flange Ratings Up to 2500 #

Maximum Working Pressure

Conforms to Flange Pressure-Temperature Ratings per ASME/ANSI B16.5 (See Notes 7, 8, 9, 12 and 13)

Flange Faces (125 - 250R_A Spiral Finish is Standard)

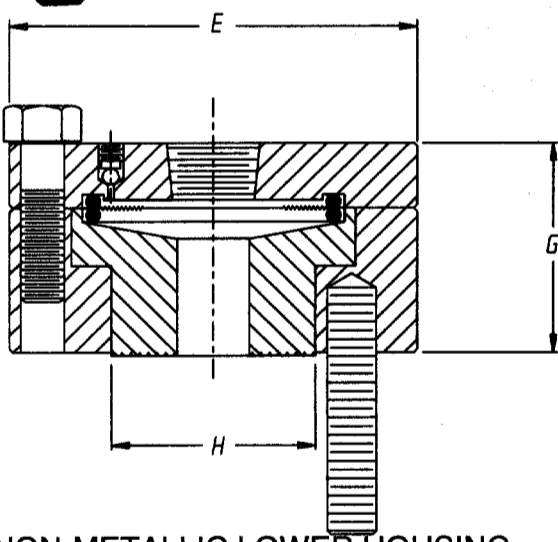
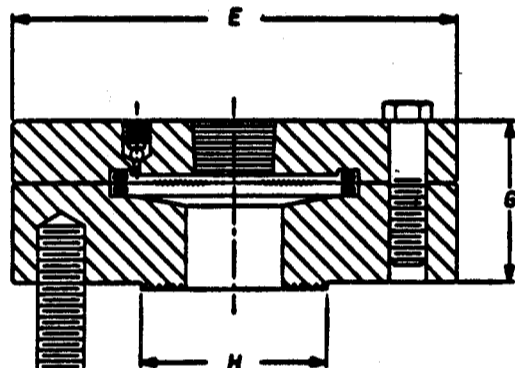
Raised Face, Flat Face, Ring Type Joint, and Special Flange Faces are available, Consult the Factory.

Dimensional Data

Process Connection Sizes

	1/2"	3/4"	1/2"	3/4"
	150#	150#	300/600#	300/600#
E	3.50 (89)	4.00 (102)	3.50 (89)	4.00 (102)
G	1.44 (37)	1.44 (37)	1.44 (37)	1.44 (37)
H	1.38 (35)	1.69 (43)	1.38 (35)	1.69 (43)

() Dimensions in millimeters



NON-METALLIC LOWER HOUSING

Standard Features and Options

This flanged off-line seal has a replaceable diaphragm clamped between o-rings. These seals are designed for direct connection to standard ASME/ANSI flanges in 1/2" (12.70mm) and 3/4" (19.05mm) sizes and up to 2500# ratings. The upper housing is bolted to the lower housing with sufficient load to maintain ASME/ANSI B16.5 pressure and temperature ratings (See Notes 7, 8, 9, 12 and 13). Because of the bolt circle location, as defined by ASME/ANSI B16.5, threaded flange studs are provided. The 100B Series Seals utilize a diaphragm that is field replaceable. This configuration allows for the use of metallic as well as elastomer diaphragm materials. The displacement capability of this series of diaphragm seal is 0.09 cubic inches and incorporates a 2.5" (63.50mm) diaphragm. Due to the material strength of non-metals, the maximum pressure and temperature rating for this series seal is 200 PSIG (1.38 MPa) at 140°F (60°C), when non-metallic lowers are required. Flushing connections in metallic lowers and seal-off features are optional.

Offerings

Lower Materials: All metallic and non-metallic (See Note 12)

Upper Materials: Carbon Steel or 316 Stainless Steel

Diaphragm Materials: All metallic and elastomers

O-Rings: Buna-N, Teflon, Viton

Bolting: Carbon Steel or 300 Stainless Steel (See Notes 7, 8, 9 and 12)

CONTROL ENGINEERING DATA

A4S6 5 1 2 T F T C 0 C 0 N

(15) FILL LIQUID

N = (Standard)

(14) TEFLON COATINGS (See Note 14)

0 = None (Standard)

A = Teflon Coated Diaphragm Only

B = Teflon Coated Diaphragm and Lower Housing

(13) BOLTING

C = Carbon Steel Grade 5 (See Note 7)

S = 300 Series Stainless Steel (See Note 8)

H = 300 Series Stainless Steel (Hi-Strength) (See Note 9)

(12) FLUSH CONNECTION (See Note 6)(Not Shown)

0 = None

1 = 1/8" NPTF

2 = 1/4" NPTF

3 = 1/4" NPTF-DUAL

(11) UPPER HOUSING MATERIAL

C = Carbon Steel (Standard)

S = 316 Stainless Steel

(10) O-RING MATERIAL

B = Buna "N" (See Note 3)

T = Teflon-Virgin (See Notes 4 and 5)

V = Viton

(8-9) SEAL DIAPHRAGM MATERIAL

BN = Buna "N"

C2 = Carpenter 20 CB-3

HB = Hastelloy B3

HC = Hastelloy C-276

I6 = Inconel 600

KF = Kel-F

M5 = Monel 400

N2 = Nickel 200

SL = 316L Stainless Steel (See Note 1)

TA = Tantalum

TI = Titanium - Grade 2

TF = Teflon-Virgin (See Note 2)

VI = Viton

(7) SEAL INSTRUMENT CONNECTION

1 = 1/4" NPTF with bleed

2 = 1/2" NPTF with bleed

(6) SEAL FLANGE PRESSURE RATING

(See Note 12)

1 = 150#RF

2 = 150#FF

3 = 150#RTJ

4 = 300#RF

5 = 300#FF

6 = 300#RTJ

7 = 600#RF

8 = 600#FF

9 = 600#RTJ

A = 900#RF

B = 1500#RF

C = 2500#RF

D = 900#RTJ

E = 1500#RTJ

F = 2500#RTJ

(5) SEAL PROCESS CONNECTION

4 = 1/2"

5 = 3/4"

(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

KN = Kynar

PP = Polypropylene

PV = PVC

S4 = 304 Stainless Steel

S6 = 316 Stainless Steel

SF = 304L Stainless Steel

SL = 316L Stainless Steel

TC = Teflon-Carbon Filled

TG = Teflon-Glass Filled

TI = Titanium - Grade 4

TP = Tantalum Clad (Wetted Surface Only)(See Note 10)

(1-2) DIAPHRAGM SEAL DESIGN

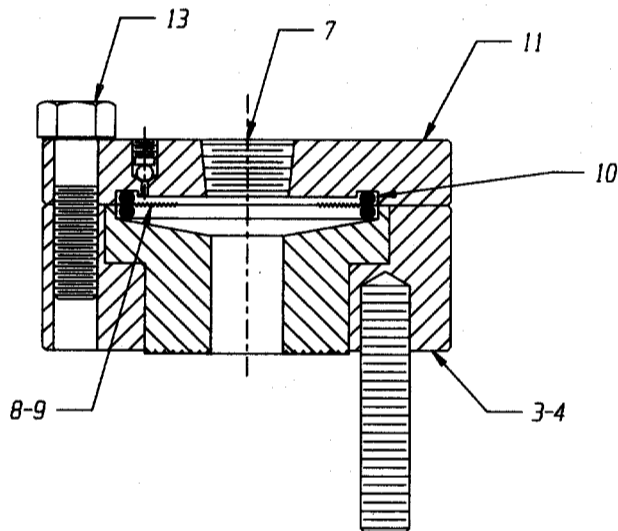
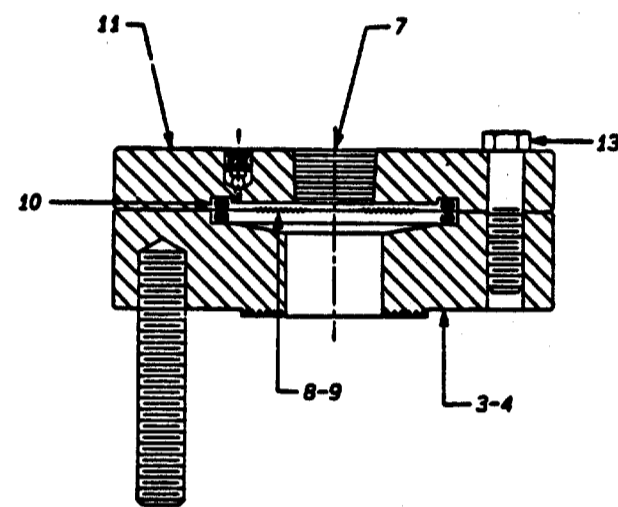
A4 = 100B- Flanged Off-Line

*A5 = 100BR Flanged Off-Line (Ring Type Joint)

*A6 = 100BZ Flanged Off-Line (Customer to specify pipe style)

•For metallic lower housings only.

CATALOG NUMBERS AS RECEIVED FOR THE 100B SERIES MUST CONTAIN FIFTEEN (15) CHARACTERS



NON-METALLIC LOWER HOUSING

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 Teflon for seals with lower housings manufactured of KN, PP, PV, TC and TG.
- Standard o-ring material for all metallic seals is Buna "N".
- Standard o-ring material for seals with lower housing manufactured of non-metallic material is Teflon.
- Teflon o-rings cannot be used on seals with pressure ratings above 2000 PSIG (13.80 MPa).
- Flushing connections are not available with lower housings manufactured of a non-metallic material.
- Using Grade 5 bolts and Grade 5 nuts will maintain the pressure rating chosen in Option 6.
- When using 300 Series Stainless Steel bolts and nuts, the pressure rating specified in Option 6 will be reduced by 50% when seal flange rating is 600# and higher.
- Flange ratings 600# and higher will be supplied with high-strength stainless steel bolting to maintain ASME/ANSI pressure rating when 300 Series Stainless Steel bolts are required.
- Tantalum clad lower housings will be supplied with a raised face-smooth flange face-no serrations. Tantalum plated lowers cannot be supplied with flush connections.
- N.A.C.E. - Non-welded diaphragm seals with 316 Stainless Steel, Hastelloy C-276 or Monel wetted materials of construction will meet the requirements of N.A.C.E. International Document MR-0175-1995.
- Non-metallic lower housings are not available for flange ratings greater than 300#. The maximum temperature and pressure rating for non-metallic lowers is 200 PSIG (1.38 MPa) and 140°F (60°C), regardless of the mating flange size.
- Refer to Miscellaneous Data Section for Pressure-Temperature Rating Guide.
- Teflon-S® Coating (FEP Grade)