

Rosemount 1199

FLUSH FLANGED (FFW) SEAL

Two-Piece Design (shown with flushing ring)

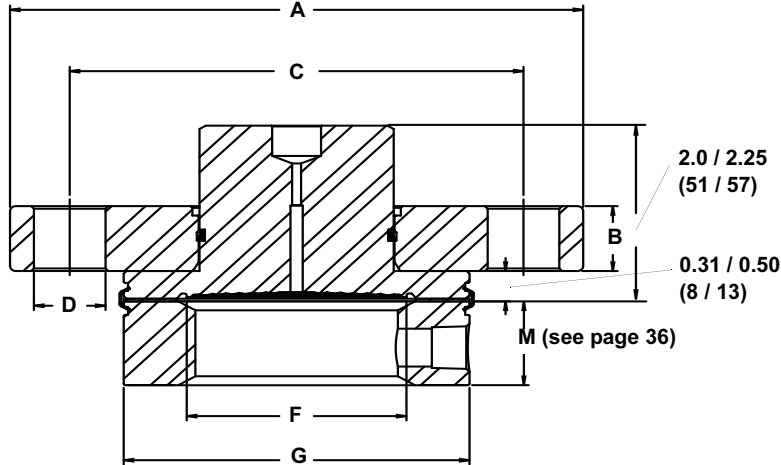


TABLE 10. Dimensional Table for Flush Flanged Raised Face Diaphragm Seals Two Piece (Upper Housing and Flange) Design
Measurement in inches (millimeters)

	Pipe Size	Class	Flange Diameter "A"	Flange Thickness "B"	Bolt Circle "C"	Bolts	Bolt Hole Diameter "D"	Standard Diaphragm Diameter "F"	Raised Face Diameter "G"
AnSI/ ASME/ JIS	2-in.	150 lb.	6.00 (152)	0.69 (18)	4.75 (121)	4	0.75 (19)	2.30 (58)	3.62 (92)
		300 lb.	6.50 (165)	0.82 (21)	5.00 (127)	8	0.75 (19)	2.30 (58)	3.62 (92)
		600 lb.	6.50 (165)	1.00 (25)	5.00 (127)	8	0.75 (19)	2.30 (58)	3.62 (92)
	3-in.	150 lb.	7.50 (191)	0.88 (22)	6.00 (152)	4	0.75 (19)	3.50 (89)	5.00 (127)
		300 lb.	8.25 (210)	1.07 (27)	6.62 (168)	8	0.88 (22)	3.50 (89)	5.00 (127)
		600 lb.	8.25 (210)	1.25 (32)	6.62 (168)	8	0.88 (22)	3.50 (89)	5.00 (127)
	4-in.	150 lb.	9.00 (229)	0.88 (22)	7.50 (191)	8	0.75 (19)	3.50 (89)	6.20 (157)
		300 lb.	10.0 (254)	1.19 (30)	7.88 (200)	8	0.88 (22)	3.50 (89)	6.20 (157)
		600 lb.	10.75 (273)	1.50 (38)	8.50 (216)	8	1.00 (25)	3.50 (89)	6.20 (157)
DIN	DN 50	PN 40	6.50 (165)	0.79 (20)	4.92 (125)	4	0.71 (18)	2.30 (58)	4.00 (102)
		PN 64	7.08 (180)	1.02 (26)	5.31 (135)	4	0.87 (22)	2.30 (58)	4.00 (102)
		PN 100	7.68 (195)	1.10 (28)	5.71 (145)	4	1.02 (26)	2.30 (58)	4.00 (102)
	DN 80	PN 40	7.87 (200)	0.94 (24)	6.30 (160)	8	0.71 (18)	3.50 (89)	5.43 (138)
		PN 64	8.46 (215)	1.10 (28)	6.69 (170)	8	0.88 (22)	3.50 (89)	5.43 (138)
		PN 100	9.06 (230)	1.26 (32)	7.09 (180)	8	1.02 (26)	3.50 (89)	5.43 (138)
	DN 100	PN 16	8.66 (220)	0.79 (20)	7.09 (180)	8	0.71 (18)	3.50 (89)	6.20 (157)
		PN 40	9.25 (235)	0.94 (24)	7.48 (190)	8	0.87 (22)	3.50 (89)	6.20 (157)
		PN 64	9.84 (250)	1.18 (30)	7.87 (200)	8	1.02 (26)	3.50 (89)	6.20 (157)

One-Piece Design (shown with flushing ring)

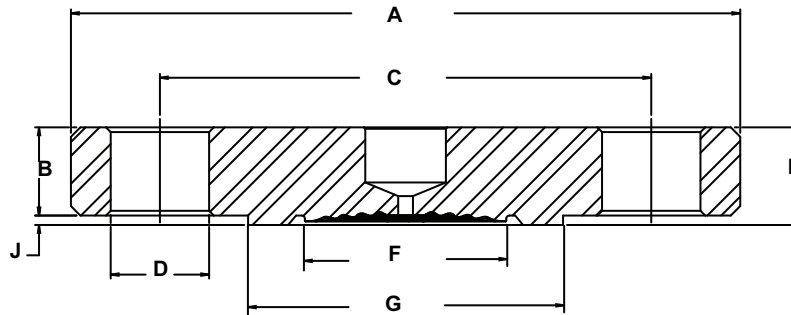


TABLE 11. Dimensional Table for Flush Flanged Diaphragm Seals One Piece (Upper Housing and Flange) Design (Option code E)

Measurement in inches (millimeters)

	Pipe Size	Class	Flange Diameter "A"	Flange Thickness "B"	Bolt Circle "C"	Bolts	Bolt Hole Diameter "D"	Standard Diaphragm Diameter "E"	Raised Face Diameter "G"	Overall Height "H"	Raised Face Height "J"
ANSI / ASME / JIS	2-in.	150 lb.	6.00 (152)	0.69 (18)	4.75 (121)	4	0.75 (19)	2.30 (58)	3.62 (92)	0.75 (19)	0.06 (1.5)
		300 lb.	6.50 (165)	0.82 (21)	5.00 (127)	8	0.75 (19)	2.30 (58)	3.62 (92)	0.88 (22)	0.06 (1.5)
		600 lb.	6.50 (165)	1.00 (25)	5.00 (127)	8	0.75 (19)	2.30 (58)	3.62 (92)	1.25 (32)	0.25 (6.3)
	3-in.	150 lb.	7.50 (191)	0.88 (22)	6.00 (125)	4	0.75 (19)	3.50 (89)	5.00 (127)	0.94 (24)	0.06 (1.5)
		300 lb.	8.25 (210)	1.06 (27)	6.62 (168)	8	0.88 (22)	3.50 (89)	5.00 (127)	1.12 (28)	0.06 (1.5)
		600 lb.	8.25 (210)	1.25 (32)	6.62 (168)	8	0.88 (22)	3.50 (89)	5.00 (127)	1.50 (38)	0.25 (6.3)
4-in.	150 lb.	9.00 (229)	0.88 (22)	7.50 (191)	8	0.75 (19)	3.50 (89)	6.20 (157)	0.94 (24)	0.06 (1.5)	
	300 lb.	10.00 (254)	1.19 (30)	7.88 (200)	8	0.88 (22)	3.50 (89)	6.20 (157)	1.25 (32)	0.06 (1.5)	
	600 lb.	10.75 (273)	1.50 (38)	8.50 (216)	8	1.00 (25)	3.50 (89)	6.20 (157)	1.75 (44)	0.25 (6.3)	
DIN	DN 50	PN 40	6.50 (165)	0.79 (20)	4.92 (125)	4	0.71 (18)	2.30 (58)	4.00 (102)	0.91 (23)	0.12 (3)
		PN 64	7.08 (180)	1.02 (26)	5.31 (135)	4	0.87 (22)	2.30 (58)	4.00 (102)	1.14 (29)	0.12 (3)
		PN 100	7.68 (195)	1.10 (28)	5.71 (145)	4	1.02 (26)	2.30 (58)	4.00 (102)	1.22 (31)	0.12 (3)
	DN 80	PN 40	7.87 (200)	0.94 (24)	6.30 (160)	8	0.71 (18)	3.50 (89)	5.43 (138)	1.06 (27)	0.12 (3)
		PN 64	8.46 (215)	1.10 (28)	6.69 (170)	8	0.88 (22)	3.50 (89)	5.43 (138)	1.22 (31)	0.12 (3)
		PN 100	9.06 (230)	1.26 (32)	7.09 (180)	8	1.02 (26)	3.50 (89)	5.43 (138)	1.38 (35)	0.12 (3)
	DN 100	PN 16	8.66 (220)	0.79 (20)	7.09 (180)	8	0.71 (18)	3.50 (89)	6.20 (157)	0.91 (23)	0.12 (3)
		PN 40	9.25 (235)	0.94 (24)	7.48 (190)	8	0.87 (22)	3.50 (89)	6.20 (157)	1.06 (27)	0.12 (3)
		PN 64	9.84 (250)	1.18 (30)	7.87 (200)	8	1.02 (26)	3.50 (89)	6.20 (157)	1.30 (33)	0.12 (3)

Flushing Connection Ring (Lower Housing)

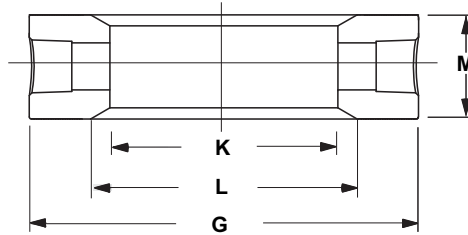


TABLE 12. Dimensional Table for Flushing Connection Ring (Lower Housing)

Measurement in inches (millimeters)

	Pipe Size	Outer Diameter "G"	Inner Diameter "K"	Beveled Edge "L"	Thickness with ¹ / ₄ -NPT F.C. "M"	Thickness with ¹ / ₂ -NPT F.C. "M"
ANSI/ ASME/ JIS	2-in.	3.62 (92)	2.12 (54)	2.48 (63)	0.97 (25)	1.31 (33)
	3-in.	5.00 (127)	3.60 (91)	—	0.97 (25)	1.31 (33)
	4-in.	6.20 (158)	3.60 (91)	—	0.97 (25)	1.31 (33)
DIN	DN 50	4.00 (102)	2.40 (61)	—	0.97 (25)	1.31 (33)
	DN 80	5.43 (138)	3.60 (91)	—	0.97 (25)	1.31 (33)

Product Data Sheet

00813-0100-4016, Rev HA
January 2008

Rosemount 1199

TABLE 13. Flush Flanged (FFW) Seal – Ordering Information⁽¹⁾

Code		Industry Standards		
A		ANSI / ASME B16.5 (American Standards Institute / American Society of Mechanical Engineering)		
D		DIN 2401 and 2501 (Deutsches Institut für Normung)		
J		JIS B2238 (Japanese Industrial Standards)		
Code		Process Connection Style		
FFW		Flanged, flush surface		
Code		Process Connection Size		
		<i>ANSI</i>	<i>DIN</i>	
G		2-in.	DN 50	
7		3-in.	—	
J		—	DN 80	
9		4-in.	DN 100	
		<i>JIS</i>		
			50 A	
			80 A	
			100 A	
Code		Maximum Working Pressure (Flange Rating)		
		<i>ANSI</i>	<i>DIN</i>	
1		Class 150	—	
2		Class 300	—	
4		Class 600	—	
G		—	PN 40	
5		Class 900	—	
6		Class 1500	—	
7		Class 2500	—	
E		—	PN 10/16	
H		—	PN 64	
J		—	PN 100	
		<i>JIS</i>		
			10K	
			20K	
			40K	
Code		Diaphragm and Wetted Parts Material ⁽²⁾	Upper Housing Material ⁽²⁾	Mounting Flange ⁽³⁾
CA ⁽⁴⁾⁽⁵⁾		316L SST	316L SST	Carbon Steel
DA ⁽⁵⁾		316L SST	316L SST	316 SST
CB ⁽⁴⁾⁽⁶⁾		Hastelloy C-276, seam welded	316L SST	Carbon Steel
DB ⁽⁶⁾		Hastelloy C-276, seam welded	316L SST	316 SST
MB ⁽⁴⁾⁽⁵⁾		Hastelloy C-276, solid faceplate	Hastelloy C-276 / 316L SST	Carbon Steel
KB ⁽⁴⁾⁽⁵⁾		Hastelloy C-276, solid faceplate	Hastelloy C-276 / 316L SST	316 SST
CC ⁽⁴⁾		Tantalum, seam welded	316L SST	Carbon Steel
DC		Tantalum, seam welded	316L SST	316 SST
C3 ⁽⁴⁾⁽⁵⁾⁽⁶⁾⁽⁷⁾		Tantalum, brazed	316L SST	Carbon Steel
D3 ⁽⁴⁾⁽⁵⁾⁽⁶⁾⁽⁷⁾		Tantalum, brazed	316L SST	316 SST
DJ		Hastelloy B	316L SST	316 SST
CJ ⁽⁴⁾		Hastelloy B	316L SST	Carbon Steel
DF		304L SST	316L SST	316 SST
CF ⁽⁴⁾		304L SST	316L SST	Carbon Steel
DP		Nickel 201	316L SST	316 SST
CP ⁽⁴⁾		Nickel 201	316L SST	Carbon Steel
DV		<i>Monel</i> 400	316L SST	316 SST
CV ⁽⁴⁾		<i>Monel</i> 400	316L SST	Carbon Steel
RH ⁽⁵⁾		Titanium GR-4	Titanium GR.4	316 SST
DH ⁽⁸⁾		Titanium GR.4	316L SST	316 SST
CH ⁽⁸⁾		Titanium GR.4	316L SST	Carbon Steel
DM ⁽⁸⁾		Titanium GR.2	316L SST	316 SST
WW ⁽⁵⁾⁽⁹⁾		316Ti SST (WNR 1.4571)	316Ti SST (WNR 1.4571)	316Ti SST (WNR 1.4571)
D4		Hastelloy C-22	316L SST	316 SST
C5 ⁽⁴⁾		Duplex 2507 SST	316L SST	Carbon Steel
D5		Duplex 2507 SST	316L SST	316 SST
DE		<i>Inconel</i> 600	316L SST	316 SST
DZ ⁽⁸⁾		Zirconium	316L SST	316 SST

Rosemount 1199

TABLE 13. Flush Flanged (FFW) Seal – Ordering Information⁽¹⁾

Code	Flushing Connection Ring Material (Lower Housing)
0	No flushing ring required
A	316L SST
B	Hastelloy C-276
D	Plated Carbon Steel
2	Duplex 2205 SST
E	Inconel 600
H	Titanium Gr. 4
3	Titanium Gr. 2
J	Hastelloy B
6	Nickel 201
V	Monel 400
W	316Ti SST (WNR 1.4571)
Code	Flushing Options
0	No flushing ring required
1	One 1/4-18 NPT flushing connection
3	Two 1/4-18 NPT flushing connection
7	One 1/2-14 NPT flushing connection
9	Two 1/2-14 NPT flushing connection
Code	Options (Multiple Selections)
E	One piece design
B	Extra fill for cold temperature applications
C	150 µm (0.006-in.) diaphragm thickness (available with 316L SST, Hastelloy C-276, Nickel 201, and 2507 Duplex SST diaphragms only, abrasive applications)
D	Hastelloy plug(s) for flushing connection(s)
G	SST plug(s) for flushing connection(s)
H	SST vent/drain for flushing connections
J	PTFE gasket (for use with flushing connection ring)
7 ⁽¹⁰⁾	50 µm (0.002-in.) diaphragm thickness
V ⁽¹⁰⁾	PTFE coated diaphragm for nonstick purposes only
N	Grafoil gasket (for use with flushing connection ring)
K	Barium sulfate-filled PTFE gasket in lower housing
U	25 µm (0.001 in) Gold plated diaphragm
T ⁽¹¹⁾	NACE MR0175/ISO 15156, MR0103
2 ⁽⁹⁾	Radial Capillary Connection
4 ⁽⁹⁾	Flat Face, Flush Flange

(1) Shaded areas indicate special orders. Consult a local Emerson Process Management, Rosemount division sales representative for availability, performance effects, and lead time.

(2) When ordering special diaphragm materials, the upper housing material is 316L SST unless otherwise noted.

(3) The mounting flange and upper housing are a single item for the one-piece design, option code E.

(4) Only available with two piece design.

(5) For use with spiral wound metallic gaskets.

(6) Not available with option code C.

(7) Only available in Process Connection Size code G and 7.

(8) Operating temperature limited to 150 °C (302 °F).

(9) Only available with one-piece design, option code E.

(10) Available with 316L SST and Hastelloy C-276 diaphragms only.

(11) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

FLUSH FLANGED (FCW) SEAL – RING TYPE JOINT (RTJ) GASKET SURFACE

Two-Piece Design (shown with flushing ring)

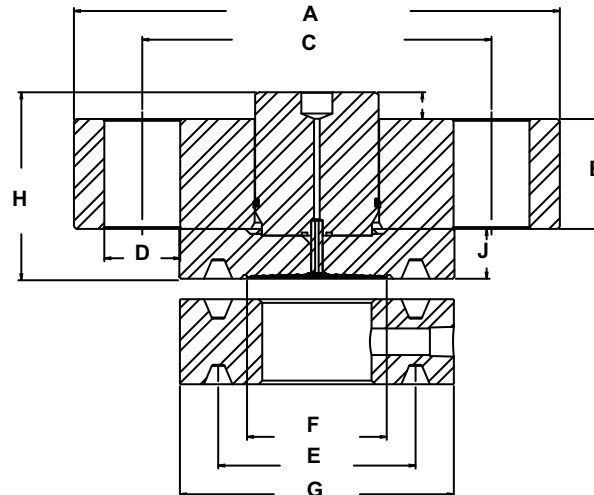


TABLE 14. Dimensional Table for FCW 2-Piece Flange Type Flush Diaphragm Seal
 Measurement in inches (millimeters)

Pipe Size	Class	Flange Diameter "A"	Flange Thickness "B"	Bolt Circle Diameter "C"	Bolt Hole Diameter "D"	RTJ Diameter "E"	Standard Diaphragm Diameter "F"	Raised Face Diameter "G"	Overall Height "H"	Raised Face Height "J"
1 ¹ / ₂ -in.	150 lb.	5.00 (127)	0.63 (16)	3.88 (99)	0.62 (16)	2.562 (65)	1.90 (48.3)	3.25 (83)	2.47 (62.7)	0.68 (17.3)
	300 lb.	6.12 (156)	0.75 (19)	4.50 (114)	0.88 (22)	2.688 (68)	2.30 (58.4)	3.56 (90)	2.47 (62.7)	0.68 (17.3)
	600 lb.	6.12 (156)	0.88 (22)	4.50 (114)	0.88 (22)	2.688 (68)	2.30 (58.4)	3.56 (90)	2.47 (62.7)	0.68 (17.3)
	1500 lb	7.00 (178)	1.25 (32)	4.88 (124)	1.12 (28)	2.688 (68)	2.30 (58.4)	3.62 (92)	2.61 (66.3)	0.82 (20.8)
	2500 lb	8.00 (203)	1.75 (44)	5.75 (146)	1.25 (32)	3.250 (83)	2.30 (58.4)	4.50 (114)	3.14 (79.8)	0.82 (20.8)
2-in.	150 lb.	6.00 (152)	0.69 (18)	4.75 (121)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.00 (102)	2.47 (62.7)	0.68 (17.3)
	300 lb.	6.50 (165)	0.82 (21)	5.00 (127)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.25 (108)	2.47 (62.7)	0.68 (17.3)
	600 lb.	6.50 (165)	1.00 (25)	5.00 (127)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.25 (108)	2.47 (62.7)	0.68 (17.3)
	1500 lb	8.50 (216)	1.50 (38)	6.50 (165)	1.00 (25)	3.750 (95)	2.30 (58.4)	4.88 (124)	2.61 (66.3)	0.82 (20.8)
	2500 lb	9.25 (235)	2.00 (51)	6.75 (171)	1.12 (28)	4.000 (102)	3.50 (88.9)	5.25 (133)	3.94 (100.1)	0.82 (20.8)
3-in.	150 lb.	7.50 (191)	0.88 (22)	6.00 (168)	0.75 (19)	4.500 (114)	3.50 (88.9)	5.25 (133)	2.47 (62.7)	0.68 (17.3)
	300 lb.	8.25 (210)	1.07 (27)	6.62 (168)	0.88 (22)	4.875 (124)	3.50 (88.9)	5.75 (146)	2.47 (62.7)	0.68 (17.3)
	600 lb.	8.25 (210)	1.25 (32)	6.62 (168)	0.88 (22)	4.875 (124)	3.50 (88.9)	5.75 (146)	2.47 (62.7)	0.68 (17.3)
	900 lb	9.50 (241)	1.50 (38)	7.50 (191)	1.00 (25)	4.875 (124)	3.50 (88.9)	6.12 (155)	2.61 (66.3)	0.82 (20.8)
	1500 lb	10.50 (267)	1.88 (48)	8.00 (203)	1.25 (32)	5.375 (137)	3.50 (88.9)	6.62 (168)	3.81 (96.8)	0.82 (20.8)
4-in.	2500 lb	12.00 (305)	2.62 (67)	9.00 (229)	1.38 (35)	5.000 (127)	3.50 (88.9)	6.62 (168)	3.94 (100.1)	0.82 (20.8)
	150 lb.	9.00 (229)	0.88 (22)	7.50 (191)	0.75 (19)	5.875 (149)	3.50 (88.9)	6.75 (171)	2.47 (62.7)	0.68 (17.3)
	300 lb.	10.00 (254)	1.19 (30)	7.88 (200)	0.88 (22)	5.875 (149)	3.50 (88.9)	6.88 (175)	2.47 (62.7)	0.68 (17.3)
	600 lb.	10.75 (273)	1.50 (38)	8.50 (216)	1.00 (25)	5.875 (149)	3.50 (88.9)	6.88 (175)	2.47 (62.7)	0.68 (17.3)

Rosemount 1199

One-Piece Design

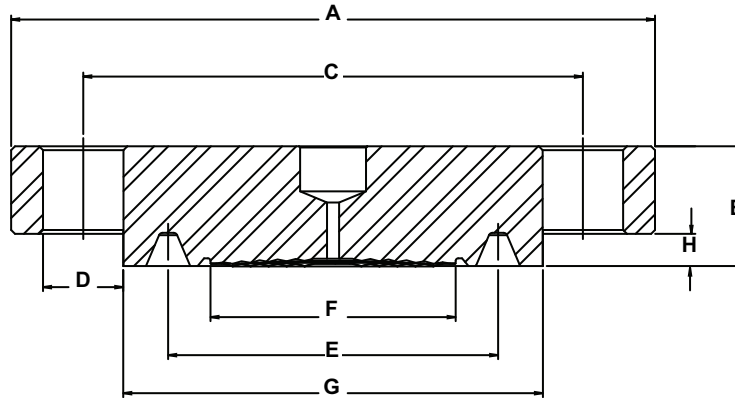


TABLE 15. Dimensional Table for FCW 1-Piece Flange Type Flush Diaphragm Seal

Measurement in inches (millimeters)

Pipe Size	Class	Flange Diameter "A"	Overall Height "B"	Bolt Circle Diameter "C"	Bolt Hole Diameter "D"	RTJ Diameter "E"	Standard Diaphragm Diameter "F"	Raised Face Diameter "G"	Raised Face Height "H"
1 1/2-in.	300 lb.	6.12 (156)	0.88 (22.4)	4.50 (114)	0.88 (22)	2.688 (68)	2.30 (58.4)	3.56 (90)	0.25 (6.4)
	600 lb.	6.12 (156)	0.88 (22.4)	4.50 (114)	0.88 (22)	2.688 (68)	2.30 (58.4)	3.56 (90)	0.25 (6.4)
	1500 lb.	7.00 (178)	1.25 (31.8)	4.88 (124)	1.12 (28)	2.688 (68)	2.30 (58.4)	3.62 (92)	0.25 (6.4)
	2500 lb.	8.00 (203)	1.75 (44.5)	5.75 (146)	1.25 (32)	3.250 (83)	2.30 (58.4)	4.50 (114)	0.312 (7.92)
2-in.	150 lb.	6.00 (152)	0.94 (23.9)	4.75 (121)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.00 (102)	0.25 (6.4)
	300 lb.	6.50 (165)	1.13 (28.7)	5.00 (127)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.25 (108)	0.312 (7.92)
	600 lb.	6.50 (165)	1.31 (33.3)	5.00 (127)	0.75 (19)	3.250 (83)	2.30 (58.4)	4.25 (108)	0.312 (7.92)
	1500 lb.	8.50 (216)	1.81 (46.0)	6.50 (165)	1.00 (25)	3.750 (95)	2.30 (58.4)	4.88 (124)	0.312 (7.92)
3-in.	2500 lb.	9.25 (235)	2.31 (58.7)	6.75 (171)	1.12 (28)	4.000 (102)	3.50 (88.9)	5.25 (133)	0.312 (7.92)
	150 lb.	7.50 (191)	1.13 (28.7)	6.00 (168)	0.75 (19)	4.500 (114)	3.50 (88.9)	5.25 (133)	0.25 (6.4)
	300 lb.	8.25 (210)	1.37 (34.8)	6.62 (168)	0.88 (22)	4.875 (124)	3.50 (88.9)	5.75 (146)	0.312 (7.92)
	600 lb.	8.25 (210)	1.56 (39.6)	6.62 (138)	0.88 (22)	4.875 (124)	3.50 (88.9)	5.75 (146)	0.312 (7.92)
	900 lb.	9.50 (241)	1.81 (46.0)	7.50 (191)	1.00 (25)	4.875 (124)	3.50 (88.9)	6.12 (155)	0.312 (7.92)
	1500 lb.	10.50 (267)	2.19 (55.6)	8.00 (203)	1.25 (32)	5.375 (137)	3.50 (88.9)	6.62 (168)	0.312 (7.92)
4-in.	2500 lb.	12.00 (305)	3.00 (76.2)	9.00 (229)	1.38 (35)	5.000 (127)	3.50 (88.9)	6.62 (168)	0.375 (9.52)
	150 lb.	9.00 (229)	1.13 (28.7)	7.50 (191)	0.75 (19)	5.875 (149)	3.50 (88.9)	6.75 (171)	0.25 (6.4)
	300 lb.	10.00 (254)	1.50 (38.1)	7.88 (200)	0.88 (22)	5.875 (149)	3.50 (88.9)	6.88 (175)	0.312 (7.92)
	600 lb.	10.75 (273)	1.81 (46.0)	8.50 (216)	1.00 (25)	5.875 (149)	3.50 (88.9)	6.88 (175)	0.312 (7.92)

RTJ Flushing Connection Ring (Lower Housing)

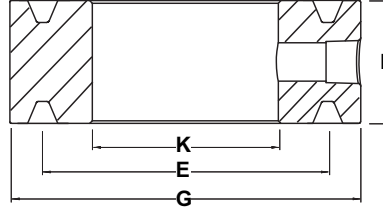


TABLE 16. Dimensional Table for Flushing Connection Ring (Lower Housing)
 Measurement in inches (millimeters)

	Pipe Size	Class	"E"	Outer Diameter "G"	Inner Diameter "K"	Thickness with 1/4-NPT F.C. "L"	Thickness with 1/2-NPT F.C. "L"
ANSI / ASME / JIS	1 1/2-in.	150 lb.	2.562 (65)	3.25 (83)	1.80 (46)	1.2 (30)	1.5 (38)
		300 lb.	2.688 (68)	3.56 (90)	1.80 (46)	1.2 (30)	1.5 (38)
		600 lb.	2.688 (68)	3.56 (90)	1.80 (46)	1.2 (30)	1.5 (38)
		1500 lb.	2.688 (68)	3.62 (92)	1.80 (46)	1.2 (30)	1.5 (38)
		2500 lb.	3.250 (83)	4.50 (114)	1.80 (46)	1.2 (30)	1.5 (38)
	2-in.	150 lb.	3.250 (83)	4.00 (102)	2.12 (54)	1.4 (36)	1.7 (43)
		300 lb.	3.250 (83)	4.25 (108)	2.12 (54)	1.4 (36)	1.7 (43)
		600 lb.	3.250 (83)	4.25 (108)	2.12 (54)	1.4 (36)	1.7 (43)
		1500 lb.	3.750 (95)	4.88 (124)	2.12 (54)	1.4 (36)	1.7 (43)
		2500 lb.	4.000 (102)	5.25 (133)	2.12 (54)	1.4 (36)	1.7 (43)
	3-in.	150 lb.	4.500 (114)	5.25 (133)	3.60 (91)	1.5 (38)	1.8 (46)
		300 lb.	4.875 (124)	5.75 (146)	3.60 (91)	1.5 (38)	1.8 (46)
		600 lb.	4.875 (124)	5.75 (146)	3.60 (91)	1.5 (38)	1.8 (46)
		900 lb.	4.875 (124)	6.12 (155)	3.60 (91)	1.5 (38)	1.8 (46)
		1500 lb.	5.375 (137)	6.62 (168)	3.60 (91)	1.5 (38)	1.8 (46)
	2500 lb.	5.000 (127)	6.62 (168)	3.60 (91)	1.5 (38)	1.8 (46)	

Rosemount 1199

TABLE 17. Flush Flanged (FCW) Seal – Ring Type Joint (RTJ) Gasket Surface Ordering Information ⁽¹⁾

● Available
— Not available

Code		Industry Standards			
A	ANSI / ASME B16.5 (American National Standards Institute / American Society of Mechanical Engineers)				
Code		Process Connection Style			
FCW	Ring Type Joint Flanged, Flush Surface				
Code		Process Connection Size			
4	1 ¹ / ₂ -in.				
G	2-in.				
7	3-in.				
9	4-in.				
Code		Maximum Working Pressure (Flange Rating)			
1	Class 150	1 ¹ / ₂ -in.	2-in.	3-in.	4-in.
2	Class 300	●	●	●	●
4	Class 600	●	●	●	●
5	Class 900	●	●	●	—
6	Class 1500	●	●	●	—
7	Class 2500	●	●	●	—
Code		Diaphragm and Wetted Parts Material ⁽²⁾	Upper Housing Materials ⁽²⁾		Mounting Flange ⁽³⁾
CA ⁽⁴⁾	316L SST	316L SST	316L SST		Carbon Steel
DA	316L SST	316L SST	316 SST		316 SST
MB ⁽⁴⁾	Hastelloy C-276	Hastelloy C-276	316L SST		Carbon Steel
KB ⁽⁴⁾	Hastelloy C-276	Hastelloy C-276	316L SST		316 SST
KJ ⁽⁴⁾	Hastelloy B	Hastelloy B	316L SST		316 SST
MJ ⁽⁴⁾	Hastelloy B	Hastelloy B	316L SST		Carbon Steel
KF ⁽⁴⁾	304L SST	304L SST	316L SST		316 SST
MF ⁽⁴⁾	304L SST	304L SST	316L SST		Carbon Steel
KP ⁽⁴⁾	Nickel 201	Nickel 201	316L SST		316 SST
MP ⁽⁴⁾	Nickel 201	Nickel 201	316L SST		Carbon Steel
KV ⁽⁴⁾	Monel 400	Monel 400	316L SST		316 SST
MV ⁽⁴⁾	Monel 400	Monel 400	316L SST		Carbon Steel
RH ⁽⁴⁾	Titanium Gr. 4	Titanium Gr. 4	316L SST		316 SST
YM	Titanium Gr. 2	Titanium Gr. 2	316L SST		316 SST
WW ⁽³⁾	316Ti SST (WNR 1.4571)	316 Ti SST (WNR 1.4571)	316L SST		316 Ti SST (WNR 1.4571)
M5 ⁽⁴⁾	Duplex 2507 SST	Duplex 2205 SST	316L SST		Carbon Steel
K5	Duplex 2507 SST	Duplex 2205 SST	316L SST		316 SST
V1 ⁽³⁾	Hastelloy C-276 / Duplex 2205 SST	Duplex 2205 SST	316L SST		Duplex 2205 SST
VB ⁽⁴⁾	Hastelloy C-276	Hastelloy C-276 / Duplex 2205 SST	316L SST		Duplex 2205 SST
Code		Flushing Connection Ring Material (Lower Housing)			
0	No flushing ring required				
A	316L SST				
B	Hastelloy C-276				
D ⁽⁴⁾	Carbon Steel				
H	Titanium Gr. 4				
J	Hastelloy B				
6	Nickel 201				
V	Monel 400				
W ⁽³⁾	316Ti SST (WNR 1.4571)				
2	Duplex 2205 SST				

TABLE 17. Flush Flanged (FCW) Seal – Ring Type Joint (RTJ) Gasket Surface Ordering Information ⁽¹⁾

● Available
 — Not available

Code	Flushing Options
0	No flushing ring required
1	One 1/4-18 NPT flushing connection
3	Two 1/4-18 NPT flushing connection
7	One 1/2-14 NPT flushing connection
9	Two 1/2-14 NPT flushing connection
Code	Options (Multiple Selections)
E ⁽⁵⁾	One piece design
B	Extra fill for cold temperature applications
C	150 µm (0.006-in.) diaphragm thickness (available with 316L SST and Hastelloy C-276 diaphragms only, abrasive applications)
D	Hastelloy plug(s) for flushing connection(s)
G	SST plug(s) for flushing connection(s)
H	SST vent/drain for flushing connections
V ⁽⁶⁾	PTFE coated diaphragm for nonstick purposes only
7 ⁽⁶⁾	50 µm (0.002-in.) diaphragm thickness
U	25 µm (0.001 in) Gold plated diaphragm
T ⁽⁷⁾	NACE MR0175/ISO 15156, MR0103
2 ⁽³⁾	Radial Capillary Connection

(1) Shaded areas indicate special orders. Consult a local Emerson Process Management, Rosemount division sales representative for availability, performance, and lead time.

(2) When ordering special diaphragm materials, the upper housing material is 316L SST unless otherwise noted.

(3) Only available with one-piece design, option code E.

(4) Only available with two-piece design.

(5) The mounting flange and upper housing are a single item for the one-piece design, option code E.

(6) Available with 316L SST and Hastelloy C-276 diaphragms only.

(7) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

Rosemount 1199

FLUSH FLANGED TYPE (FUW AND FVW) SEALS

FUW DIN 2512 Form N

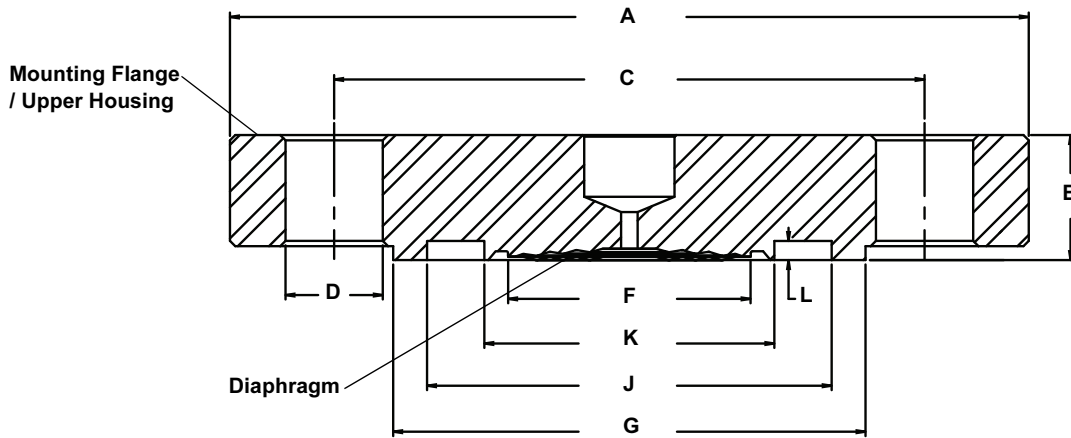


TABLE 18. FUW Flange Type Dimensions⁽¹⁾

Pipe Size	Class	Flange Diameter "A"	Flange Thickness "B"	Bolt Circle "C"	Bolt Diameter "D"	Bolts	Standard Diaphragm "F"	Raised Face Diameter "G"	Groove O.D. "J"	Groove I.D. "K"	Groove Depth "L"
DN 50	PN 40	6.50 (165)	0.79 (20)	4.92 (125)	0.71 (18)	4	2.30 (58)	4.00 (102)	3.46 (88)	2.83 (72)	0.10 (2.5)
	PN 64	7.09 (180)	1.02 (26)	5.31 (135)	0.87 (22)	4	2.30 (58)	4.00 (102)	3.46 (88)	2.83 (72)	0.10 (2.5)
	PN 100	7.68 (195)	1.10 (28)	5.71 (145)	1.02 (26)	4	2.30 (58)	4.00 (102)	3.46 (88)	2.83 (72)	0.10 (2.5)
	PN 160	7.68 (195)	1.18 (30)	5.71 (145)	1.02 (26)	4	2.30 (58)	4.00 (102)	3.46 (88)	2.83 (72)	0.10 (2.5)
DN 80	PN 40	7.87 (200)	0.94 (24)	6.30 (160)	0.71 (18)	8	3.50 (89)	5.43 (138)	4.76 (121)	4.13 (105)	0.10 (2.5)
	PN 64	8.46 (215)	1.10 (28)	6.69 (170)	0.87 (22)	8	3.50 (89)	5.43 (138)	4.76 (121)	4.13 (105)	0.10 (2.5)
	PN 100	9.06 (230)	1.26 (32)	7.09 (180)	1.02 (26)	8	3.50 (89)	5.43 (138)	4.76 (121)	4.13 (105)	0.10 (2.5)
	PN 160	9.06 (230)	1.42 (36)	7.09 (180)	1.02 (26)	8	3.50 (89)	5.43 (138)	4.76 (121)	4.13 (105)	0.10 (2.5)
DN 100	PN 16	8.66 (220)	0.79 (20)	7.08 (180)	0.71 (18)	8	3.50 (89)	6.22 (158)	5.91 (150)	5.04 (128)	0.12 (3.0)
	PN 40	9.25 (235)	0.94 (24)	7.48 (190)	0.87 (22)	8	3.50 (89)	6.37 (162)	5.91 (150)	5.04 (128)	0.12 (3.0)
	PN 64	9.84 (250)	1.18 (30)	7.87 (200)	1.02 (26)	8	3.50 (89)	6.37 (162)	5.91 (150)	5.04 (128)	0.12 (3.0)
	PN 100	10.43 (265)	1.42 (36)	8.27 (210)	1.18 (30)	8	3.50 (89)	6.37 (162)	5.91 (150)	5.04 (128)	0.12 (3.0)

(1) Measurement in inches (millimeters).

FVW DIN 2512 Form F

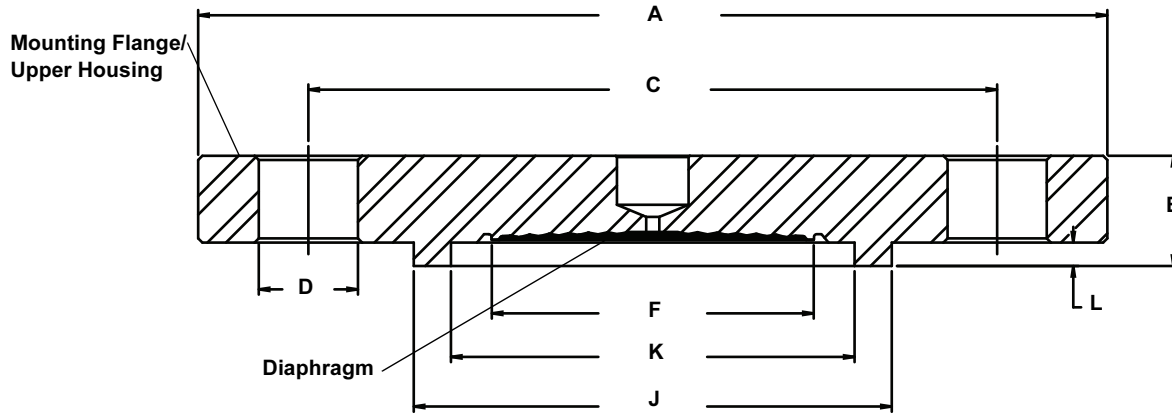


TABLE 19. FVW Flange Type Dimensions⁽¹⁾

Pipe Size	Class	Flange Diameter "A"	Flange Thickness "B"	Bolt Circle "C"	Bolt Diameter "D"	Bolts	Standard Diaphragm "F"	Raised Face Diameter "G"	Groove O.D. "J"	Groove I.D. "K"	Groove Depth "L"
DN 50	PN 40	6.50 (165)	0.79 (20)	4.92 (125)	0.71 (18)	4	2.30 (58)	4.00 (102)	3.43 (87)	2.87 (73)	0.16 (4.0)
	PN 64	7.08 (180)	1.02 (26)	5.31 (135)	0.87 (22)	4	2.30 (58)	4.00 (102)	3.43 (87)	2.87 (73)	0.16 (4.0)
	PN 100	7.68 (195)	1.10 (28)	5.71 (145)	1.02 (26)	4	2.30 (58)	4.00 (102)	3.43 (87)	2.87 (73)	0.16 (4.0)
	PN 160	7.68 (195)	1.18 (30)	5.71 (145)	1.02 (26)	4	2.30 (58)	4.00 (102)	3.43 (87)	2.87 (73)	0.16 (4.0)
DN 80	PN 40	7.87 (200)	0.94 (24)	6.30 (160)	0.71 (18)	8	3.50 (89)	5.43 (138)	4.72 (120)	4.17 (106)	0.16 (4.0)
	PN 64	8.46 (215)	1.10 (28)	6.69 (170)	0.87 (22)	8	3.50 (89)	5.43 (138)	4.72 (120)	4.17 (106)	0.16 (4.0)
	PN 100	9.06 (230)	1.26 (32)	7.09 (180)	1.02 (26)	8	3.50 (89)	5.43 (138)	4.72 (120)	4.17 (106)	0.16 (4.0)
	PN 160	9.06 (230)	1.42 (36)	7.09 (180)	1.02 (26)	8	3.50 (89)	5.43 (138)	4.72 (120)	4.17 (106)	0.16 (4.0)
DN 100	PN 16	8.66 (220)	0.79 (20)	7.08 (180)	0.71 (18)	8	3.50 (89)	6.22 (158)	5.87 (149)	5.08 (129)	0.18 (4.5)
	PN 40	9.25 (235)	0.94 (24)	7.48 (190)	0.87 (22)	8	3.50 (89)	6.37 (162)	5.87 (149)	5.08 (129)	0.18 (4.5)
	PN 64	9.84 (250)	1.18 (30)	7.87 (200)	1.02 (26)	8	3.50 (89)	6.37 (162)	5.87 (149)	5.08 (129)	0.18 (4.5)
	PN 100	10.43 (265)	1.42 (36)	8.27 (210)	1.02 (26)	8	3.50 (89)	6.37 (162)	5.87 (149)	5.08 (129)	0.18 (4.5)

(1) Measurement in inches (millimeters).

Rosemount 1199

FUW and FVW Connection Ring

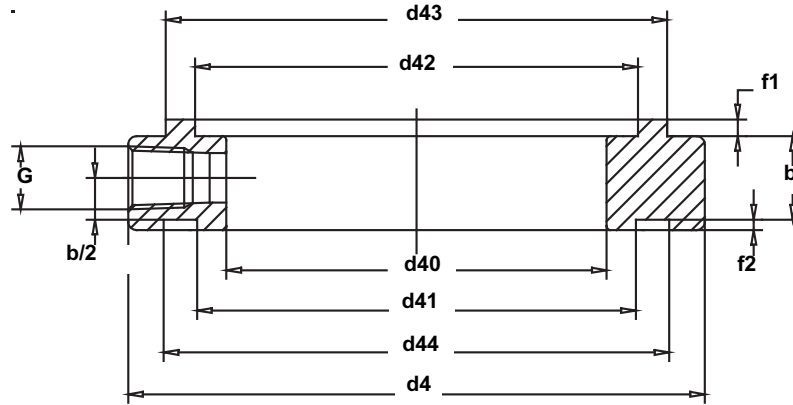


TABLE 20. Dimensional Table for FUW/FVW Connection Ring

Measurement in inches (millimeters)

DN	PN	d40	d4	d42	d43	f1	d41	d44	f2	b	g
50	10 - 100	54	102	73	87	4	72	88	2.5	20	1/4-18 NPT
80	10 - 100	82	138	106	120	4	105	121	2.5	20	1/4-18 NPT
100	10 - 100	107	162	129	149	4.5	128	150	3.0	2.4	1/4-18 NPT

Product Data Sheet

00813-0100-4016, Rev HA
January 2008

Rosemount 1199

TABLE 21. FUW and FVW Seal – DIN Ordering Information ⁽¹⁾

Code	Industry Standards	
D	DIN 2401 and 2501 (Deutsches Institut für Normung)	
Code	Process Connection Style	
FUW	Flange Type: Flush Remote Seal, DIN 2512 Form N Contact Surface – up to PN 160	
FVW	Flange Type: Flush Remote Seal, DIN 2512 Form F Contact Surface – up to PN 160	
Code	Process Connection Size	Diaphragm Diameter
G	DN50	2.3-in. (57 mm)
J	DN 80	3.5-in. (89 mm)
9	DN 100	3.5-in. (89 mm)
Code	Flange Pressure Rating	
G	PN 40	
E	PN 16 (DN 100 only)	
H	PN 64 (not available for DN 25 and DN 40)	
J	PN 100	
Code	Diaphragm and Wetted Parts Material ⁽²⁾	Upper Housing Materials (includes flange)
DA ⁽³⁾	316L SST	316 SST
WW ⁽³⁾	316Ti SST (WNR 1.4571)	316Ti SST (WNR 1.4571)
KB ⁽⁴⁾	Hastelloy C-276	316 SST
DC ⁽³⁾	Tantalum	316 SST
KV ⁽⁴⁾	Monel 400	316 SST
Code	Flushing Connection Ring Material (Lower Housing)	
0	No flushing ring required	
A	316L SST	
W	316Ti SST (WNR 1.4571)	
Code	Flushing Options	
0	No flushing ring required	
1	One 1/4-18 NPT flushing connection	
3	Two 1/4-18 NPT flushing connection	
7	One 1/2-14 NPT flushing connection	
9	Two 1/2-14 NPT flushing connection	
Code	Options (Multiple Selections)	
E	One piece design	
B	Extra fill for cold temperature applications	
C	150 µm (0.006-in.) diaphragm thickness (available with 316L SST and Hastelloy C-276 diaphragms only, abrasive applications)	
D	Hastelloy plug(s) for flushing connection(s)	
G	SST plug(s) for flushing connection(s)	
H	SST vent/drain for flushing connections	
V ⁽⁵⁾	PTFE coated diaphragm for nonstick purposes only	
7 ⁽⁵⁾	50 µm (0.002-in.) diaphragm thickness	
U	25 µm (0.001 in) Gold plated diaphragm	
T ⁽⁶⁾	NACE MR0175/ISO 15156, MR0103	
2 ⁽³⁾	Radial Capillary Connection	

(1) Shaded areas indicate special orders. Consult a local Emerson Process Management, Rosemount division sales representative for availability, performance, and lead time.

(2) When ordering special diaphragm materials, the upper housing material is 316L SST unless otherwise noted.

(3) Only available with one piece design, option code E.

(4) Only available with two-piece design.

(5) Available with 316L SST and Hastelloy C-276 diaphragms only.

(6) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.