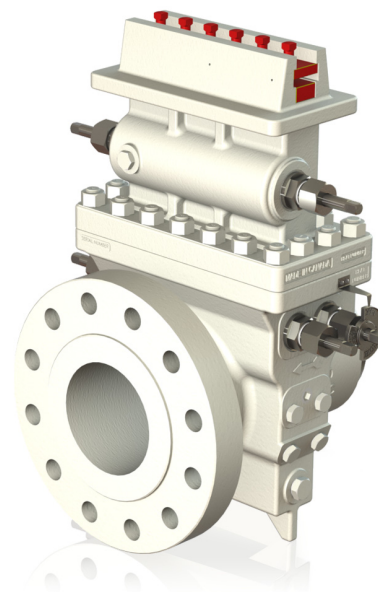


FPD212

Dual-chamber orifice fitting

Combining safety with convenience

Measurement made easy



Easy plate removal and replacement

— no need to shut down pipeline

High-pressure solution for up to ANSI 2500 rating

— rated to 10,000 psi (698 bar)

Maintenance can be performed at any time

— no need to wait for annual shutdown

FPD212

Dual-chamber orifice fitting

Introduction

ABB's FPD212 dual-chamber orifice is a proven system for safely and quickly inspecting and changing orifice plates.

The FPD212 is a high-quality fitting that is a pivotal component in an orifice measurement system. These dual-chamber orifice fittings are built to meet or exceed ASME & ANSI standards as well as ISO-5167, AGA-3/API-14.3. This is ideal for the Oil & Gas industry as well as any industry where accurate flow measurement is required.

Dual chamber orifice fittings such as the FPD212 have an extra chamber into which the orifice plate is first withdrawn; this chamber has a single isolation from the pipeline. This means that the flow in the pipeline does not have to be stopped to enable removal and refitting of the orifice plate and, although the second chamber must be vented, there is no requirement to vent the pipeline section.

Each fitting has been designed and optimized utilizing FEA (Finite Element Analysis). The fittings are also pressurized to 150 % of the specified working pressure.

The FPD212 is designed and manufactured in compliance with ASME 16.34 and ASME 16.5, ASTM specifications, AGA-3 Latest Edition and ISO-5167.

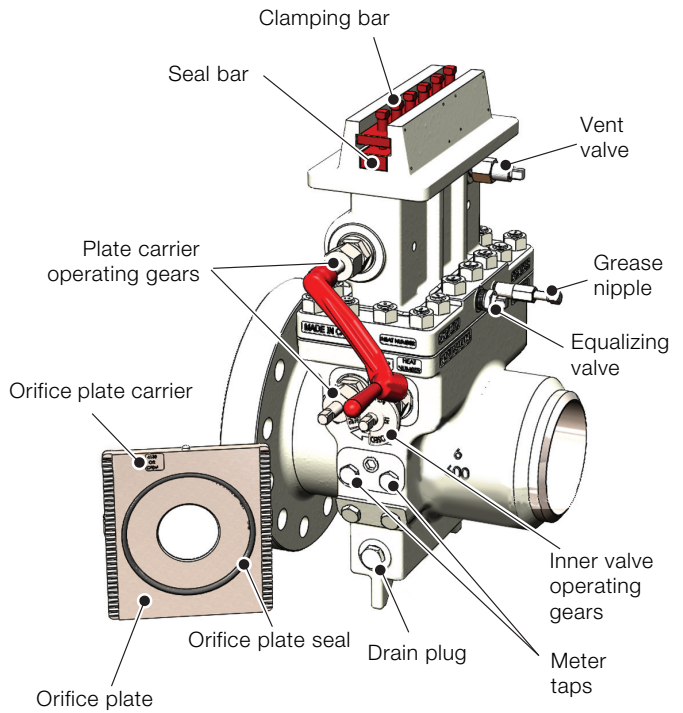


Fig. 1: Key operating parts

Specification

Body configuration

- Flange x flange
- Flange x weld
- Weld x weld

Flanges to FF, RF And RTJ are available in the following formats:

- ANSI 16.5 or 16.47
- Techlok and SPO
- Grayloc®
- API 6a
- or to specific client specification

Design codes

- ASME B31.8 Gas Transmission And Distribution Piping
- NACE Mr-01-75
- ASME B31.1 Power Piping
- ASME B31.3 Liquid Petroleum Transportation Piping Systems
- PED 97/23/EC – Pressure Equipment Directive

Measurement standards

- ISO 5167
- API MPMS 14.3.2 (AGA Report No. 3)

Standard materials of construction

Body casting

- ASTM A216 WCB, WCC
- ASTM A352 LCC
- ASTM A351 CF8M
- ASTM A995 Gr.4a, Gr.6a
- Other materials are available on request

Internal components

- Stainless steel 316 / 316L
- Stainless steel A351 CF8M
- Carbon steel AISI430

Pressure tappings

- 1 or 2 sets per side; 1/2 in. NPT female
- Flanged end pressure tappings available to suit ANSI rating of meter

External bolting

- ASTM A194 Gr.4 (zinc coated)
- ASTM A320 L7 (zinc coated)
- other materials are available on request, including optional coatings such as PTFE, Xylan And Xylar

Seals

Seal bar

HNBR O-ring (standard); gasket (optional)

Shafts

PTFE packing (standard); HNBR O-ring (optional)

Inner valves

- Grease seal (standard); HNBR O-ring (optional)

Orifice plate

- Type 'K' 2000 edition formed HNBR seal on a 316 SS retainer ring
- Dual ring HNBR O-rings standard on A 316 SS retainer ring
- PTFE snap seal two-piece virgin PTFE assembly

Orifice plates

Industry-standard orifice plate thicknesses as per the guidelines set out within ISO 5167 and API 14.3.

Maximizing performance

To ensure absolute metering accuracy, it is recommended that industry practice is followed and meter tubes are purchased and manufactured to complement the orifice fitting. This ensures concentricity between the pipe and the fitting and eliminates uncertainties associated with misalignment.

ABB can supply the following items for a complete metering solution:

- orifice fitting with meter tube including straightening vane / profiler
- DP transmitters and process transmitters
- flow computer and enclosure
- spare parts for service and commissioning
- product service training

Temperature rating

As ratings of material and flanges fitted

Pressure rating

Size in. (mm)	ANSI pressure class (fully-rated)
2 (50) to 12 (300)	150, 300, 600, 900, 1500, 2500
14 (350) to 24 (600)	150, 300, 600, 900, 1500

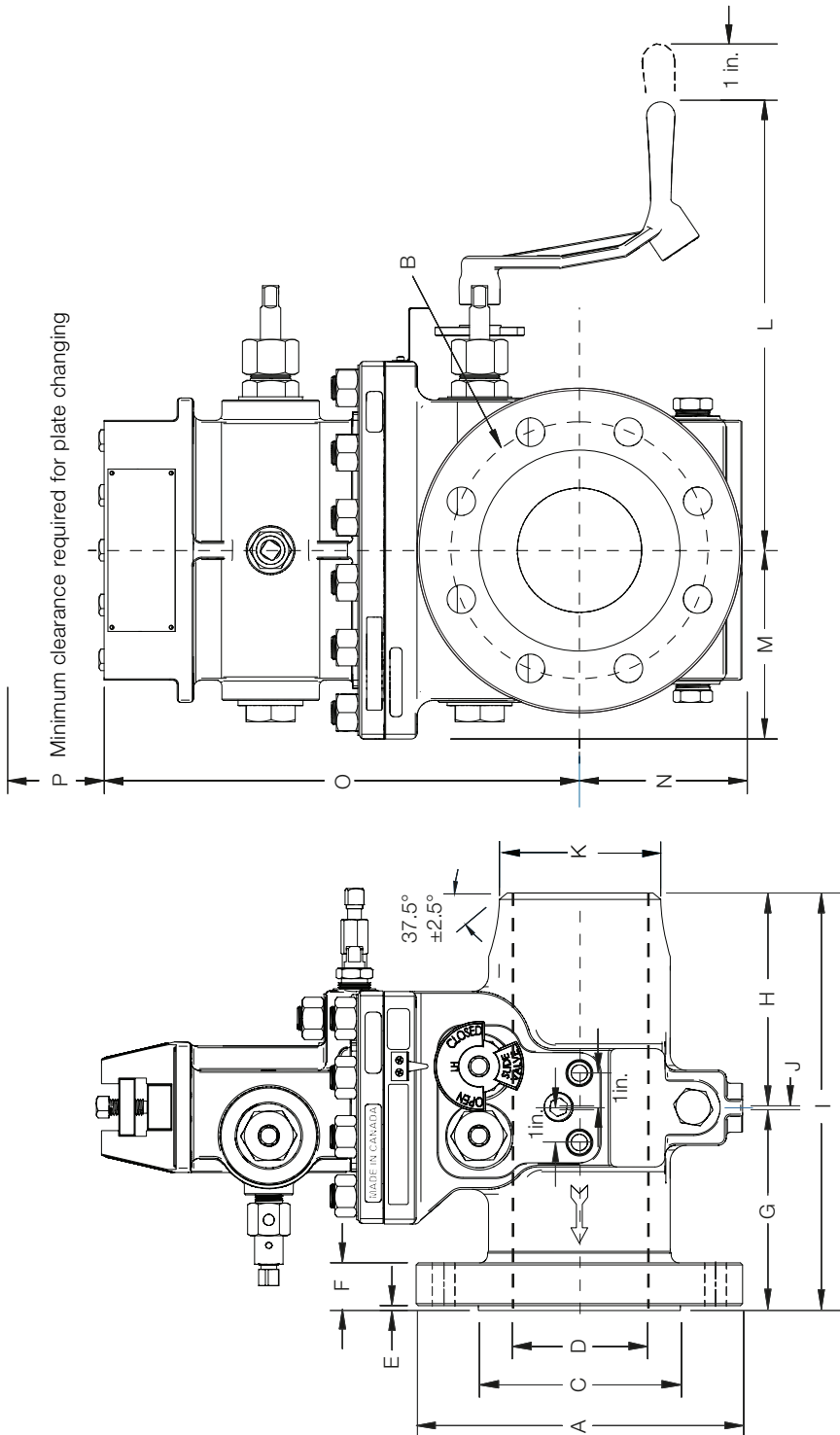
Note. For other sizes, contact ABB.

FPD212

Dual-chamber orifice fitting

Dimensions

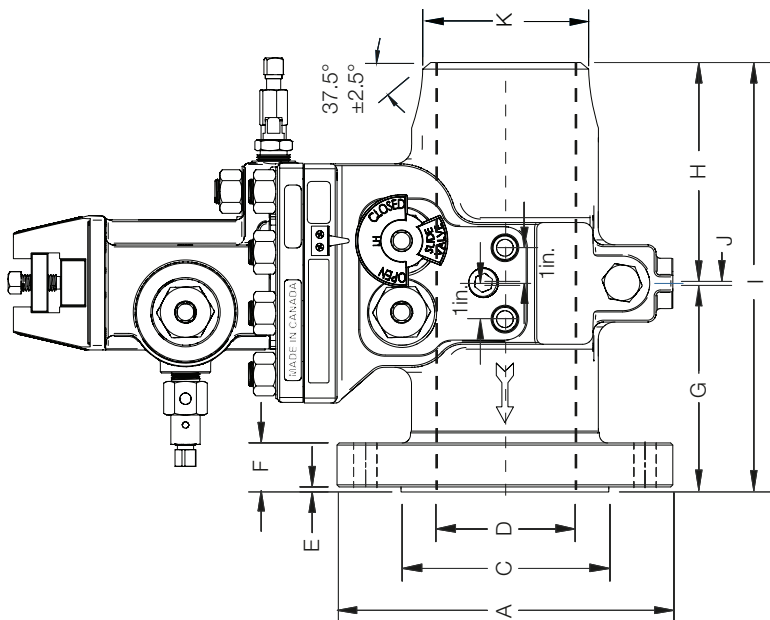
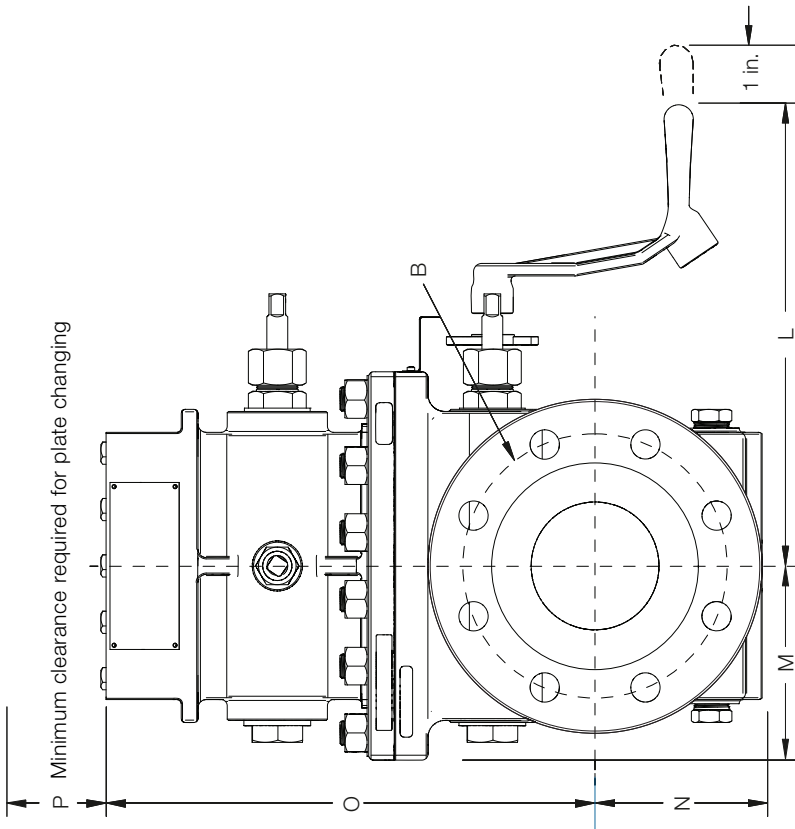
Line sizes 2 to 14 in. flangeneck design (weldneck upstream, flange downstream)



Size	Outside diameter of flange		Diameter of bolt pattern	Diameter of raised face	Standard pipe schedule	D	E	F	G	H	I	J	K	L	M	N	O	P	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)	
	A	B																				C
ANSI 150 – flangeneck – standard raised face																						
2	6.000	4.750	3.625	40, 80	0.063	0.063	0.750	5.313	5.188	10.625	0.125	2.375	12.875	4.250	4.250	4.250	13.000	5.563	4 – 0.625	3.250	0.500	100
3	7.500	6.000	5.000	40	0.063	0.063	0.938	6.375	7.125	13.625	0.125	3.500	13.750	5.313	4.875	4.875	14.000	6.063	4 – 0.625	3.500	0.500	145
4	9.000	7.500	6.188	40	0.063	0.063	0.938	5.750	6.500	12.375	0.125	4.500	14.125	5.813	5.313	5.313	15.500	7.000	8 – 0.625	3.500	0.750	240
6	11.000	9.500	8.500	40	0.063	0.063	1.000	6.813	8.000	14.938	0.125	6.625	15.500	7.000	7.500	7.500	19.000	9.000	8 – 0.750	4.000	0.750	345
8	13.500	11.750	10.625	40	0.063	0.063	1.125	7.312	8.375	15.937	0.250	8.625	16.000	8.000	8.625	8.625	22.000	11.000	8 – 0.750	4.250	0.750	520
10	16.000	14.250	12.750	40	0.063	0.063	1.188	6.563	9.375	16.188	0.250	10.750	17.375	9.000	10.063	10.063	25.000	13.125	12 – 0.875	4.500	0.750	610
12	19.000	17.000	15.000	40	0.063	0.063	1.250	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	11.750	27.875	15.000	12 – 0.875	4.750	0.750	1070
14	21.000	18.750	16.250	40	0.063	0.063	1.375	10.563	10.563	21.376	0.250	14.000	20.125	11.875	12.625	12.625	32.000	17.563	12 – 0.100	5.250	0.750	1287
ANSI 300 – flangeneck – standard raised face																						
2	6.500	5.000	3.625	40, 80	0.063	0.063	0.875	5.313	5.188	10.625	0.125	2.375	12.875	4.250	4.250	4.250	13.000	5.563	8 – 0.625	3.500	0.500	100
3	8.250	6.625	5.000	40	0.063	0.063	1.125	6.500	7.125	13.750	0.125	3.500	13.750	5.313	4.875	4.875	14.000	6.063	8 – 0.750	4.250	0.500	155
4	10.000	7.875	6.188	40	0.063	0.063	1.250	6.063	6.500	12.688	0.125	4.500	14.125	5.813	5.313	5.313	15.500	7.000	8 – 0.750	4.500	0.750	250
6	12.500	10.625	8.500	40, 80	0.063	0.063	1.438	7.250	8.000	15.375	0.125	6.625	15.500	7.000	7.500	7.500	19.000	9.000	12 – 0.750	4.750	0.750	365
8	15.000	13.000	10.625	40, 80	0.063	0.063	1.625	7.813	8.375	16.438	0.250	8.625	16.000	8.000	8.625	8.625	22.000	11.000	12 – 0.875	5.500	0.750	545
10	17.500	15.250	12.750	40, 80	0.063	0.063	1.875	7.250	9.375	16.875	0.250	10.750	17.375	9.000	10.063	10.063	25.000	13.125	16 – 1.000	6.250	0.750	650
12	20.500	17.750	15.000	40, 80	0.063	0.063	2.000	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	11.750	27.875	15.000	16 – 1.125	6.750	0.750	1130
14	23.000	20.250	16.250	40, 80	0.063	0.063	2.125	10.563	10.563	21.376	0.250	14.000	20.125	11.875	12.625	12.625	32.000	17.563	20 – 1.125	7.000	0.750	1350
ANSI 600 – flangeneck – standard raised face																						
2	6.500	5.000	3.625	40, 80, 160	0.250	0.250	1.250	5.313	5.188	10.625	0.125	2.375	12.875	4.250	4.250	4.250	13.000	5.563	8 – 0.625	4.250	0.500	105
3	8.250	6.625	5.000	40, 80	0.250	0.250	1.500	6.625	7.125	13.875	0.125	3.500	13.750	5.313	4.875	4.875	14.000	6.063	8 – 0.750	5.000	0.500	160
4	10.750	8.500	6.188	40, 80	0.250	0.250	1.750	6.563	6.563	13.250	0.125	4.500	14.125	5.813	5.313	5.313	15.500	7.000	8 – 0.825	5.750	0.750	265
6	14.000	11.500	8.500	40, 80	0.250	0.250	2.125	7.938	8.000	16.063	0.125	6.625	15.500	7.000	7.500	7.500	19.000	9.000	12 – 1.000	6.750	0.750	400
8	16.500	13.750	10.625	80	0.250	0.250	2.438	8.625	8.375	17.250	0.250	8.625	16.000	8.000	8.625	8.625	22.000	11.000	12 – 1.125	7.500	0.750	595
10	20.000	17.000	12.750	80	0.250	0.250	2.750	8.125	9.375	17.750	0.250	10.750	17.375	9.000	10.063	10.063	25.000	13.125	16 – 1.250	8.500	0.750	745
12	22.000	19.250	15.000	80	0.250	0.250	2.875	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	11.750	27.875	15.000	20 – 1.250	8.750	0.750	1215
14	23.750	20.750	16.250	80	0.250	0.250	3.000	10.562	10.562	21.374	0.250	14.000	20.125	11.875	12.625	12.625	32.000	17.563	20 – 1.375	9.250	0.750	1475

FPD212

Dual-chamber orifice fitting

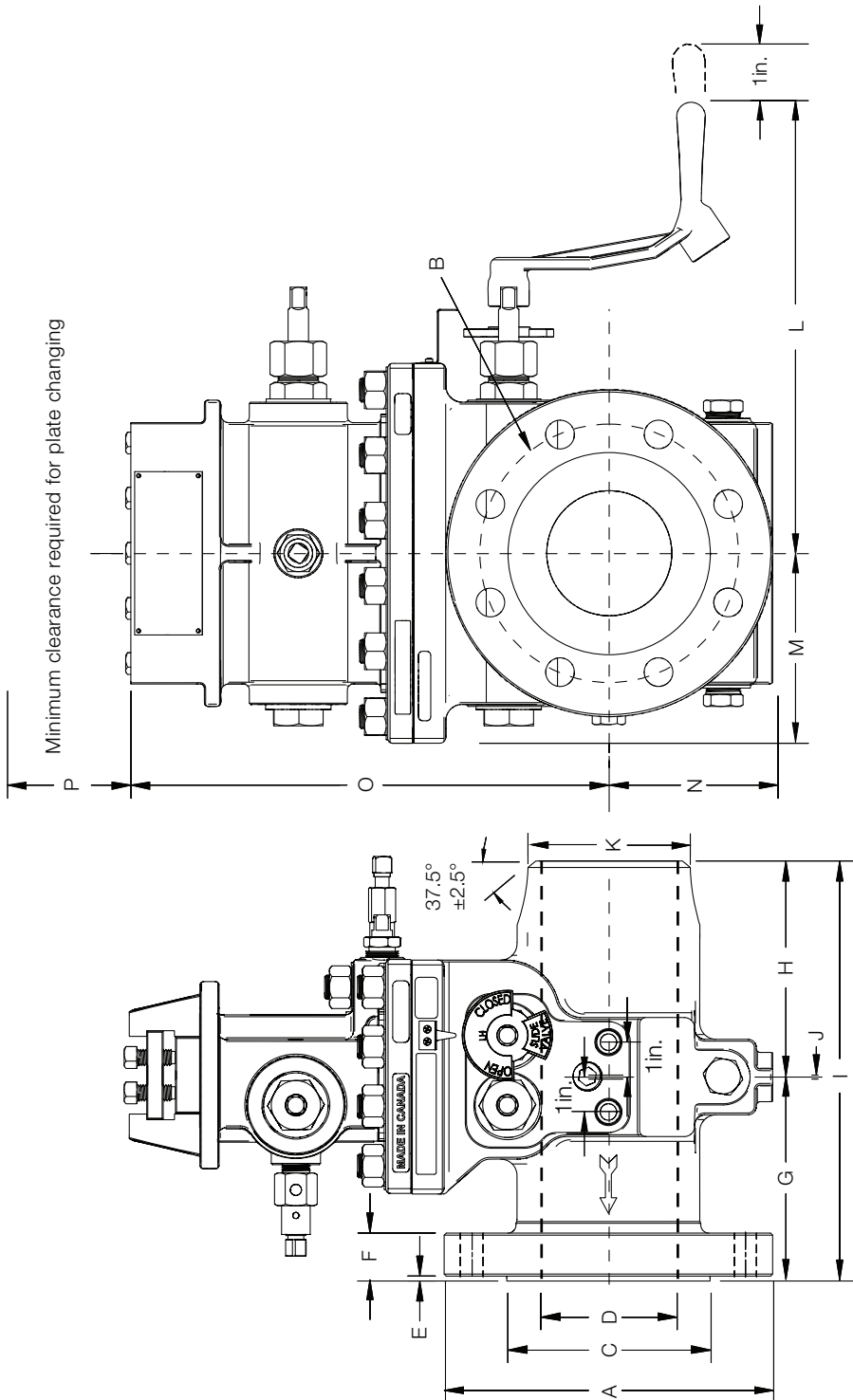


Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 600 – flangeneck – ring type joint																				
2	6.500	5.000	4.250	40, 80, 160	0.313	1.313	5.375	5.188	10.688	0.125	2.375	12.875	4.250	4.250	13.000	5.563	8 – 0.625	4.250	0.500	105
3	8.250	6.625	5.750	40, 80	0.313	1.563	6.688	7.125	13.875	0.125	3.500	13.750	5.313	4.875	14.000	6.063	8 – 0.750	5.000	0.500	160
4	10.750	8.500	6.875	40, 80	0.313	1.813	6.625	6.563	13.313	0.125	4.500	14.125	5.813	5.313	15.500	7.000	8 – 0.825	5.750	0.750	265
6	14.000	11.500	9.500	40, 80	0.313	2.188	8.000	8.000	16.125	0.125	6.625	15.500	7.000	7.500	19.000	9.000	12 – 1.000	6.750	0.750	400
8	16.500	13.750	11.875	80	0.313	2.500	8.687	8.375	17.312	0.250	8.625	16.000	8.000	8.625	22.000	11.000	12 – 1.125	7.500	0.750	595
10	20.000	17.000	14.000	80	0.313	2.813	8.188	9.375	17.813	0.250	10.750	17.375	9.000	10.063	25.000	13.125	16 – 1.250	8.500	0.750	745
12	22.000	19.250	16.250	80	0.313	2.938	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	27.875	15.000	20 – 1.250	8.750	0.750	1215
14	23.750	20.750	18.000	80	0.313	3.063	10.563	10.563	21.375	0.250	14.000	20.125	11.875	12.625	32.000	17.563	20 – 1.375	9.250	0.750	1475
ANSI 900 – flangeneck – standard raised face																				
2	8.500	6.500	3.625	40, 80, 160	0.250	1.750	5.813	5.188	11.125	0.125	2.375	12.875	4.250	4.250	13.000	5.563	8 – 0.875	5.750	0.500	205
3	9.500	7.500	5.000	40, 80, 160	0.250	1.750	6.875	7.125	14.125	0.125	3.500	13.750	5.313	4.875	14.000	6.063	8 – 0.875	5.750	0.500	215
4	11.500	9.250	6.188	80, 160	0.250	2.000	6.813	6.563	13.500	0.125	4.500	14.125	5.813	5.313	15.500	7.000	8 – 1.125	6.750	0.750	300
6	15.000	12.500	8.500	80, 160	0.250	2.125	8.250	8.000	16.375	0.125	6.625	15.500	7.000	7.500	19.000	9.000	12 – 1.125	7.750	0.750	490
8	18.500	15.500	10.625	160	0.250	2.750	9.000	8.375	17.625	0.250	8.625	16.000	8.000	8.625	22.000	11.000	12 – 1.375	8.750	0.750	1095
10	21.500	18.500	12.750	160	0.250	3.000	8.375	9.375	18.000	0.250	10.750	17.375	9.000	10.063	25.000	13.125	20 – 1.375	9.250	0.750	1555
12	24.000	21.000	15.000	160	0.250	3.375	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	27.875	15.000	17 – 1.375	10.000	0.750	1935
14	25.250	22.000	16.250	160	0.250	3.625	10.563	10.563	21.375	0.250	14.000	20.125	11.875	12.625	32.000	17.563	20 – 1.500	10.750	0.750	2135
ANSI 900 – flangeneck – ring type joint																				
2	8.500	6.500	4.875	40, 80, 160	0.313	1.750	5.875	5.188	11.188	0.125	2.375	12.875	4.250	4.250	13.000	5.563	8 – 0.875	5.750	0.500	205
3	9.500	7.500	6.125	40, 80, 160	0.313	1.750	6.938	7.125	14.188	0.125	3.500	13.750	5.313	4.875	14.000	6.063	8 – 0.875	5.750	0.500	215
4	11.500	9.250	7.125	80, 160	0.313	2.000	6.875	6.563	13.563	0.125	4.500	14.125	5.813	5.313	15.500	7.000	8 – 1.125	6.750	0.750	300
6	15.000	12.500	9.500	80, 160	0.313	2.438	8.313	8.000	16.438	0.125	6.625	15.500	7.000	7.500	19.000	9.000	12 – 1.125	7.750	0.750	490
8	18.500	15.500	12.125	160	0.313	2.750	9.000	8.375	17.625	0.250	8.625	16.000	8.000	8.625	22.000	11.000	12 – 1.375	8.750	0.750	1095
10	21.500	18.500	14.250	160	0.313	3.000	8.438	9.375	18.063	0.250	10.750	17.375	9.000	10.063	25.000	13.125	16 – 1.375	9.250	0.750	1555
12	24.000	21.000	16.500	160	0.313	3.375	9.406	9.781	19.438	0.250	12.750	18.875	10.750	11.750	27.875	15.000	20 – 1.375	10.000	0.750	1935
14	25.250	22.000	18.375	160	0.438	3.813	10.563	10.563	21.375	0.250	14.000	20.125	11.875	12.625	32.000	17.563	20 – 1.500	11.000	0.750	2135

FPD212

Dual-chamber orifice fitting

Line sizes 2 to 12in. flangeneck design (weldneck upstream, flange downstream)

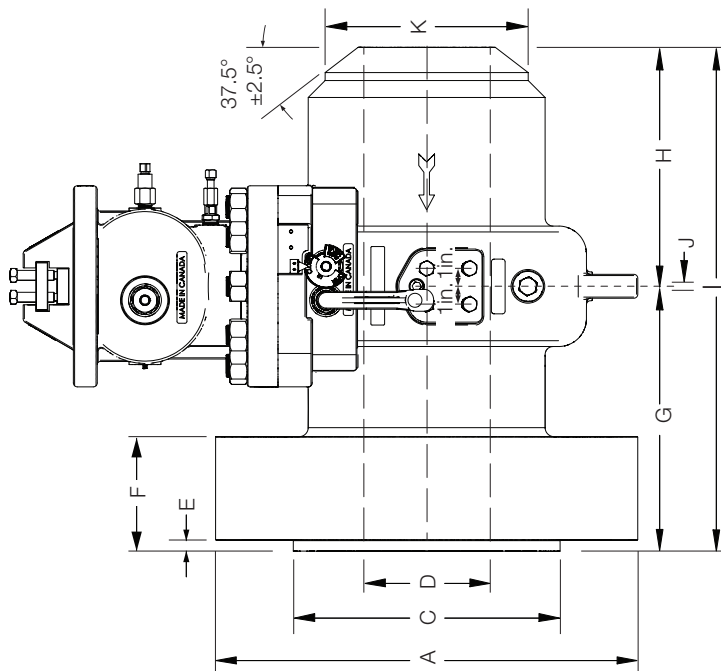
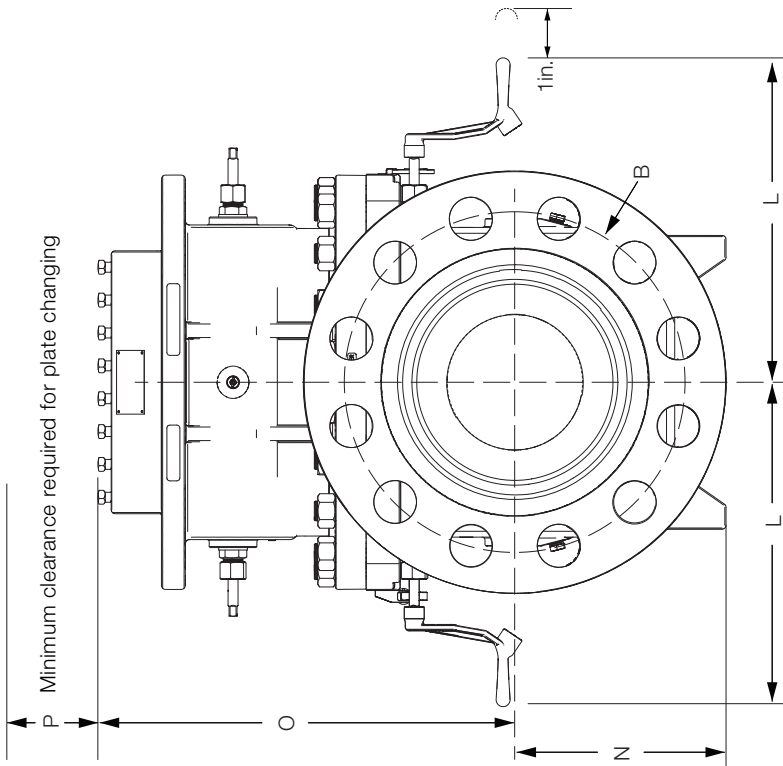


Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 1500 RF – flange neck configuration – standard raised face flange																				
2	8.500	6.500	3.625	80, 160, XX	0.250	1.750	7.000	7.000	14.125	0.125	2.375	12.875	5.750	4.500	13.750	5.563	8 – 0.875	5.750	0.500	205
3	10.500	8.000	5.000	80, 160, XX	0.250	2.125	7.688	7.938	15.750	0.125	3.500	13.750	5.625	5.625	15.000	6.063	8 – 1.125	7.000	0.500	275
4	12.250	9.500	6.188	160, XX	0.250	2.375	8.375	7.875	16.375	0.125	4.500	14.125	6.500	6.125	16.250	7.000	8 – 1.250	7.750	0.750	445
6	15.500	12.500	8.500	80, 120, 160, XX	0.250	3.500	10.188	10.750	21.063	0.125	6.625	15.500	7.750	8.000	19.375	9.000	12 – 1.375	10.250	0.750	710
8	19.000	15.500	10.625	80, 120, 160, XX	0.250	3.875	11.156	11.719	23.125	0.250	8.625	16.000	9.750	9.500	22.500	11.000	12 – 1.625	11.500	0.750	1240
10	23.000	19.000	12.750	140, 160	0.250	4.500	12.500	12.500	25.250	0.250	10.750	17.375	11.000	11.500	25.000	13.125	12 – 1.875	13.250	0.750	1745
12	26.500	22.500	15.000	160	0.250	5.125	13.063	13.625	26.938	0.250	12.750	18.875	12.375	13.250	28.250	15.000	16 – 2.000	14.750	0.750	2805
ANSI 1500 RTJ – flange neck configuration – ring type joint flange																				
2	8.500	6.500	4.875	80, 160, XX	0.313	1.813	7.000	7.000	14.125	0.125	2.375	12.875	5.750	4.500	13.750	5.563	8 – 0.875	5.750	0.500	205
3	10.500	8.000	6.625	80, 160, XX	0.313	2.188	7.688	7.938	15.750	0.125	3.500	13.750	5.625	5.625	15.000	6.063	8 – 1.125	7.000	0.500	275
4	12.250	9.500	7.625	160, XX	0.313	2.438	8.375	7.875	16.375	0.125	4.500	14.125	6.500	6.125	16.250	7.000	8 – 1.250	7.750	0.750	445
6	15.500	12.500	9.750	80, 120, 160, XX	0.375	3.625	10.188	10.750	21.063	0.125	6.625	15.500	7.750	8.000	19.375	9.000	12 – 1.375	10.500	0.750	710
8	19.000	15.500	12.500	80, 120, 160, XX	0.438	4.063	11.156	11.719	23.125	0.250	8.625	16.000	9.750	9.500	22.500	11.000	12 – 1.625	11.750	0.750	1240
10	23.000	19.000	14.625	140, 160	0.438	4.688	12.500	12.500	25.250	0.250	10.750	17.375	11.000	11.500	25.500	13.125	12 – 1.875	13.500	0.750	1745
12	26.500	22.500	17.250	160	0.563	5.438	13.063	13.625	26.938	0.250	12.750	18.875	12.375	13.250	28.250	15.000	16 – 2.000	15.250	0.750	2805

FPD212

Dual-chamber orifice fitting

Line sizes 2 to 12 in. flangeneck design (weldneck upstream, flange downstream)

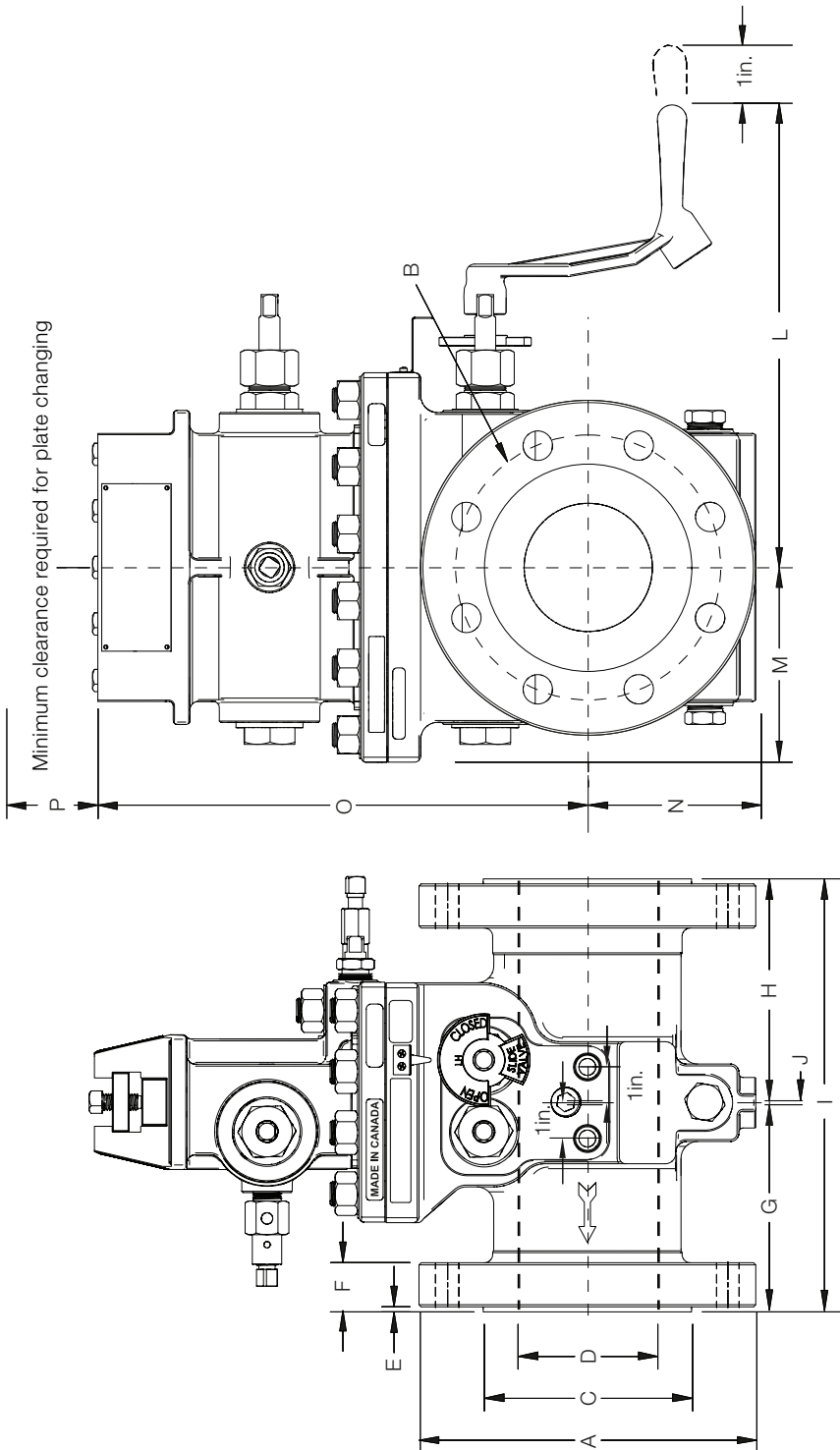


Size	Outside diameter of flange		Diameter of bolt pattern		Diameter of raised face		Standard pipe schedule		Width of raised face		Flange thickness including face		Downstream face of orifice		Upstream face of orifice		Overall face to face		Orifice plate thickness		Diameter of weldneck hub		Operating clearance from center		Centerline to bottom		Centerline to top		Clearance for plate changing		Number and diameter of studs per flange		Length of studs with nuts		Pipe size of drain plugs		Approximate weight (lbs)		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
ANSI 2500 RF – flange neck configuration – standard raised face flange																																							
2	9.250	6.750	3.620	160, XXS	0.250	2.370	8.625	8.625	17.375	0.125	2.375	12.250	5.375	13.375	5.563	8 – 1.000	7.000	0.500	220																				
3	12.000	9.000	5.000	160, XXS	0.250	2.875	9.563	9.563	19.250	0.125	3.500	14.250	6.000	14.875	6.063	8 – 1.250	8.750	0.500	390																				
4	14.000	10.750	6.190	160, XXS	0.250	3.370	10.500	10.500	21.125	0.125	4.500	14.125	7.000	16.125	7.000	8 – 1.500	10.000	0.750	440																				
6	19.000	14.500	8.500	160, XXS	0.250	4.620	12.500	12.500	25.125	0.125	6.625	16.500	9.500	19.125	9.000	8 – 2.000	13.500	0.750	1120																				
8	21.750	17.250	10.620	160, XXS	0.250	5.250	19.563	19.563	39.375	0.250	8.625	18.000	10.875	22.551	11.000	12 – 2.000	15.000	0.750	1950																				
10	26.500	21.250	12.750	160, XXS	0.250	6.750	22.625	22.625	45.500	0.250	12.750	19.813	13.250	26.250	13.250	12 – 2.500	19.250	0.750	3160																				
12	30.000	24.375	15.000	160, XXS	0.250	7.500	23.375	20.875	44.500	0.250	12.750	22.750	15.000	27.548	15.000	12 – 2.750	21.250	0.750	4830																				
ANSI 2500 RTJ – flange neck configuration – ring type joint flange																																							
2	9.250	6.750	5.250	160, XXS	0.313	2.433	8.688	8.688	17.500	0.125	2.375	12.250	5.375	13.375	5.563	8 – 1.000	7.000	0.500	220																				
3	12.000	9.000	6.625	160, XXS	0.375	3.000	9.688	9.688	19.500	0.125	3.500	14.250	6.000	14.875	6.063	8 – 1.250	9.000	0.500	390																				
4	14.000	10.750	8.000	160, XXS	0.438	3.558	10.688	10.688	21.500	0.125	4.500	14.125	7.000	16.125	7.000	8 – 1.500	10.500	0.750	440																				
6	19.000	14.500	11.000	160, XXS	0.500	4.870	12.750	12.750	25.625	0.125	6.625	16.500	9.500	19.125	9.000	8 – 2.000	14.250	0.750	1120																				
8	21.750	17.250	13.375	160, XXS	0.563	5.563	19.875	19.875	40.000	0.250	8.625	18.000	10.875	22.551	11.000	12 – 2.000	15.500	0.750	1950																				
10	26.500	21.250	16.750	160, XXS	0.688	7.188	20.875	23.063	44.188	0.250	12.750	19.813	13.250	26.250	13.250	12 – 2.500	20.000	0.750	3160																				
12	30.000	24.375	19.500	160, XXS	0.688	7.938	20.875	23.813	44.938	0.250	12.750	22.750	15.000	27.548	15.000	12 – 2.750	22.000	0.750	4830																				

FPD212

Dual-chamber orifice fitting

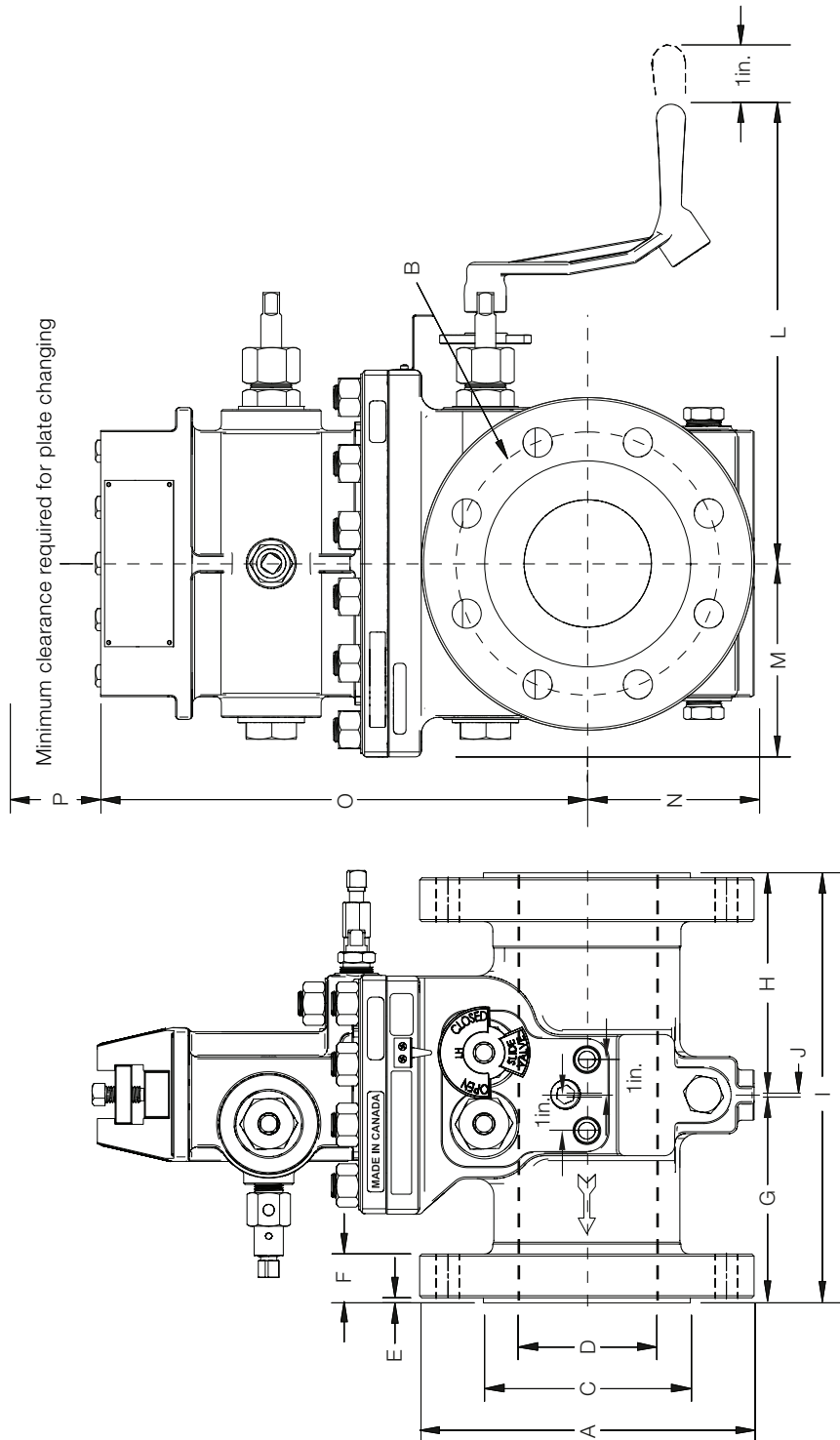
Line sizes 2 to 14 in. flange x flange (raised face / ring joint)



Size	A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 150 – flange x flange – standard raised face																			
2	6.000	4.750	3.625	40, 80	0.063	0.750	5.313	5.188	10.625	0.125	12.875	4.250	4.250	13.000	5.563	4 – 0.625	3.250	0.500	105
3	7.500	6.000	5.000	40	0.063	0.938	6.375	6.375	12.875	0.125	13.750	5.313	5.313	14.000	6.063	4 – 0.625	3.500	0.500	155
4	9.000	7.500	6.188	40	0.063	0.938	5.750	6.500	12.375	0.125	14.125	5.813	5.813	15.500	7.000	8 – 0.625	3.500	0.750	255
6	11.000	9.500	8.500	40	0.063	1.000	6.813	8.000	14.938	0.125	15.500	7.000	7.000	19.000	9.000	8 – 0.750	4.000	0.750	365
8	13.500	11.750	10.625	40	0.063	1.125	7.313	8.375	15.938	0.250	16.000	8.000	8.000	22.000	11.000	8 – 0.750	4.250	0.750	550
10	16.000	14.250	12.750	40	0.063	1.188	6.563	7.812	14.625	0.250	17.375	9.000	10.063	25.000	13.125	12 – 0.875	4.500	0.750	655
12	19.000	17.000	15.000	40	0.063	1.250	9.406	9.781	19.438	0.250	18.875	10.750	11.750	27.875	15.000	12 – 0.875	4.750	0.750	1130
14	21.000	18.750	16.250	40	0.063	1.375	10.563	10.563	21.375	0.250	20.125	11.875	12.625	32.000	17.563	12 – 1.000	5.250	0.750	1370
ANSI 300 – flange x flange – standard raised face																			
2	6.500	5.000	3.625	40, 80	0.063	0.938	5.313	5.188	10.625	0.125	12.875	4.250	4.250	13.000	5.563	8 – 0.625	3.500	0.500	110
3	8.250	6.625	5.000	40	0.063	1.125	6.500	6.500	13.125	0.125	13.750	5.313	5.313	14.000	6.063	8 – 0.750	4.250	0.500	170
4	10.000	7.875	6.188	40	0.063	1.250	6.063	6.500	12.688	0.125	14.125	5.813	5.813	15.500	7.000	8 – 0.750	4.500	0.750	275
6	12.500	10.625	8.500	40, 80	0.063	1.438	7.250	8.000	15.375	0.125	15.500	7.000	7.500	19.000	9.000	12 – 0.750	4.750	0.750	405
8	15.000	13.000	10.625	40, 80	0.063	1.625	7.813	8.375	16.438	0.250	16.000	8.000	8.625	22.000	11.000	12 – 0.875	5.500	0.750	605
10	17.500	15.250	12.750	40, 80	0.063	1.875	7.250	9.375	16.875	0.250	17.375	9.000	10.063	25.000	13.125	16 – 1.000	6.250	0.750	730
12	20.500	17.750	15.000	40, 80	0.063	2.000	9.406	9.781	19.438	0.250	18.875	10.750	11.750	27.875	15.000	16 – 1.125	6.750	0.750	1245
14	23.000	20.250	16.250	40, 80	0.063	2.125	10.563	10.563	21.375	0.250	20.125	11.875	12.625	32.000	17.563	20 – 1.125	7.000	0.750	1510
ANSI 600 – flange x flange – standard raised face																			
2	6.500	5.000	3.625	40, 80, 160	0.250	1.250	5.313	5.188	10.625	0.125	12.875	4.250	4.250	13.000	5.563	8 – 0.625	4.250	0.500	115
3	8.250	6.625	5.000	40, 80	0.250	1.500	6.625	6.625	13.375	0.125	13.750	5.313	5.313	14.000	6.063	8 – 0.750	5.000	0.500	175
4	10.750	8.500	6.188	40, 80	0.250	1.750	6.563	6.563	13.250	0.125	14.125	5.813	5.813	15.500	7.000	8 – 0.875	5.750	0.750	300
6	14.000	11.500	8.500	40, 80	0.250	2.125	7.938	8.000	16.063	0.125	15.500	7.000	7.500	19.000	9.000	12 – 1.000	6.750	0.750	480
8	16.500	13.750	10.625	40, 80	0.250	2.438	8.625	8.375	17.250	0.250	16.000	8.000	8.625	22.000	11.000	12 – 1.125	7.500	0.750	700
10	20.000	17.000	12.750	80	0.250	2.750	8.125	9.375	17.750	0.250	17.375	9.000	10.063	25.000	13.125	16 – 1.250	8.500	0.750	925
12	22.000	19.250	15.000	80	0.250	2.875	9.406	9.781	19.438	0.250	18.875	10.750	11.750	27.875	15.000	20 – 1.250	8.750	0.750	1430
14	23.750	20.750	16.250	80	0.250	3.000	10.563	10.563	21.375	0.250	20.125	11.875	12.625	32.000	17.563	20 – 1.375	9.250	0.750	1735

FPD212

Dual-chamber orifice fitting

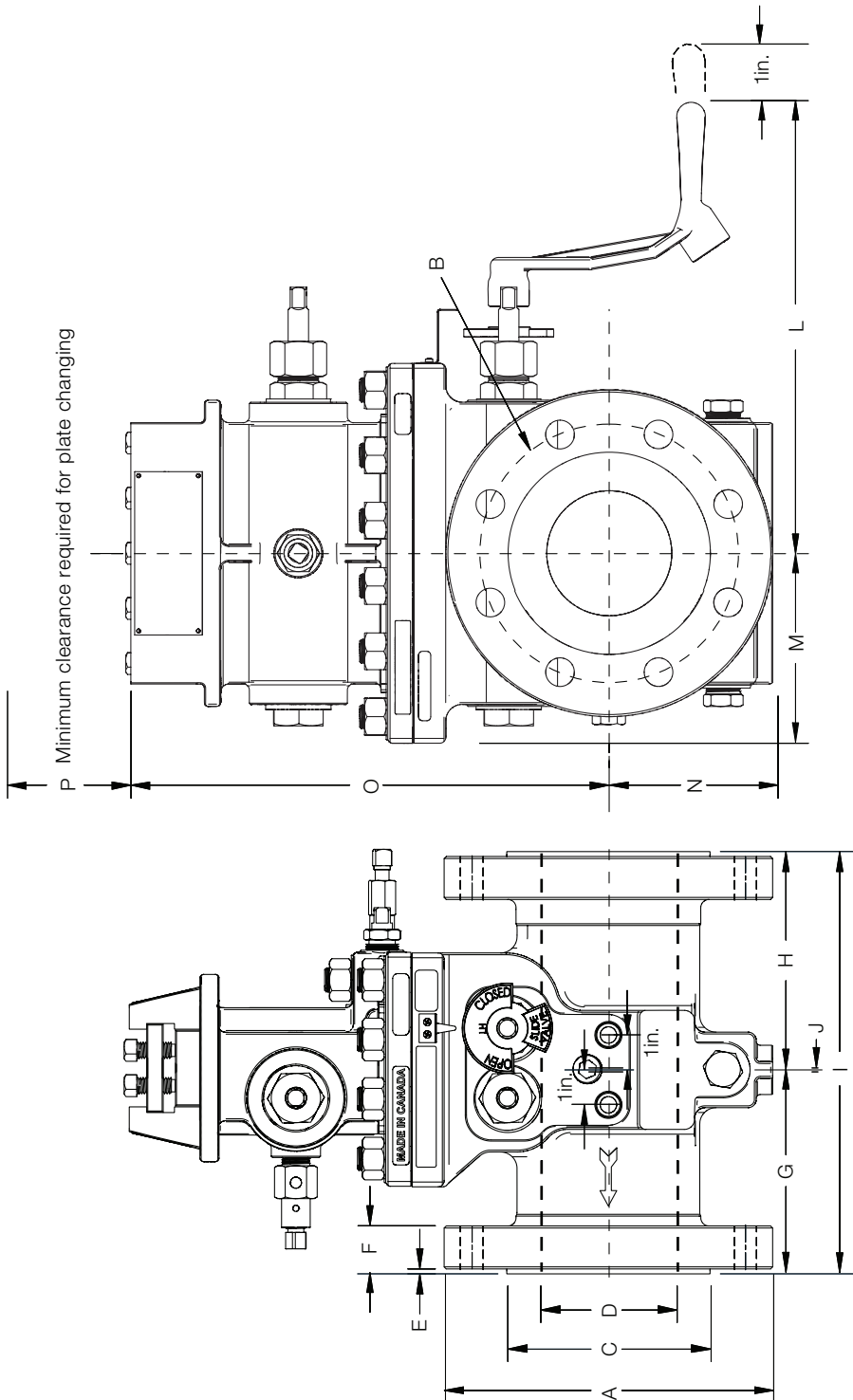


Size	Outside diameter of flange	Diameter of bolt pattern	Diameter of raised face	Standard pipe schedule	D	E	Width of raised face	F	Flange thickness including face	G	Downstream face of orifice plate to face of downstream flange	H	Upstream face of orifice plate to face of upstream flange	I	Overall face to face	J	Orifice plate thickness	L	Operating clearance from center	M	N	O	P	Clearance for plate changing of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 600 – flange x flange – ring type joint																											
2	6.500	5.000	4.250	40, 80, 160	0.313	1.313	5.375	5.375	5.375	5.375	5.375	5.375	5.375	10.875	0.125	12.875	4.250	12.875	4.250	4.250	4.250	13.000	5.563	8 – 0.625	4.250	0.500	115
3	8.250	6.625	5.750	40, 80	0.313	1.563	6.688	6.688	6.688	6.688	6.688	6.688	6.688	13.500	0.125	13.750	5.313	13.750	5.313	4.875	4.875	14.000	6.063	8 – 0.750	5.000	0.500	175
4	10.750	8.500	6.875	40, 80	0.313	1.813	6.625	6.625	6.625	6.625	6.625	6.625	6.625	13.375	0.125	14.125	5.813	14.125	5.813	5.313	5.313	15.500	7.000	8 – 0.875	5.750	0.750	300
6	14.000	11.500	9.500	40, 80	0.313	2.188	8.000	8.000	8.000	8.000	8.000	8.000	8.000	16.125	0.125	15.500	7.000	15.500	7.000	7.500	7.500	19.000	9.000	12 – 1.000	6.750	0.750	480
8	16.500	13.750	11.875	80	0.313	2.500	8.687	8.375	8.375	8.375	8.375	8.375	8.375	17.312	0.250	16.000	8.000	16.000	8.000	8.625	8.625	22.000	11.000	12 – 1.125	7.750	0.750	710
10	20.000	17.000	14.000	80	0.313	2.813	8.188	9.375	9.375	9.375	9.375	9.375	9.375	17.813	0.250	17.375	9.000	17.375	9.000	10.063	10.063	25.000	13.125	16 – 1.250	8.500	0.750	925
12	22.000	19.250	16.250	80	0.313	2.938	9.406	9.781	9.781	9.406	9.406	9.781	9.781	19.438	0.250	18.875	10.750	18.875	10.750	11.750	11.750	27.875	15.000	20 – 1.250	8.750	0.750	1430
14	23.750	20.750	18.000	80	0.313	3.063	10.563	10.563	10.563	10.563	10.563	10.563	10.563	21.375	0.250	20.125	11.875	20.125	11.875	12.625	12.625	32.000	17.563	20 – 1.375	9.250	0.750	1735
ANSI 900 – flange x flange – standard raised face																											
2	8.500	6.500	3.625	40, 80, 160	0.250	1.750	6.313	6.313	6.313	6.313	6.313	6.313	6.313	12.750	0.125	12.875	4.250	12.875	4.250	4.250	4.250	13.000	5.563	8 – 0.875	5.750	0.500	230
3	9.500	7.500	5.000	40, 80, 160	0.250	1.750	6.875	6.875	6.875	6.875	6.875	6.875	6.875	13.875	0.125	13.750	5.313	13.750	5.313	4.875	4.875	14.000	6.063	8 – 0.875	5.750	0.500	245
4	11.500	9.250	6.188	80, 160	0.250	2.000	6.813	6.813	6.813	6.813	6.813	6.813	6.813	13.500	0.125	14.125	5.813	14.125	5.813	5.313	5.313	15.500	7.000	8 – 1.125	6.750	0.750	355
6	15.000	12.500	8.500	80, 160	0.250	2.438	8.250	8.250	8.250	8.250	8.250	8.250	8.000	16.375	0.125	15.500	7.000	15.500	7.000	7.500	7.500	19.000	9.000	12 – 1.125	7.750	0.750	600
8	18.500	15.500	10.625	160	0.250	2.750	9.000	9.000	9.000	9.000	9.000	9.000	9.000	18.250	0.250	16.000	8.000	16.000	8.000	8.625	8.625	22.000	11.000	12 – 1.375	8.750	0.750	1265
10	21.500	18.500	12.750	160	0.250	3.000	8.375	9.375	9.375	8.375	9.375	9.375	9.375	18.000	0.250	17.375	9.000	17.375	9.000	10.063	10.063	25.000	13.125	16 – 1.375	9.250	0.750	1800
12	24.000	21.000	15.000	160	0.250	3.375	9.406	9.781	9.781	9.406	9.406	9.781	9.781	19.438	0.250	18.875	10.750	18.875	10.750	11.750	11.750	27.875	15.000	17 – 1.375	10.000	0.750	2260
14	25.250	22.000	16.250	160	0.250	3.625	10.563	10.563	10.563	10.563	10.563	10.563	10.563	21.375	0.250	20.125	11.875	20.125	11.875	12.625	12.625	32.000	17.563	20 – 1.500	10.750	0.750	2515
ANSI 900 – flange x flange – ring type joint																											
2	8.500	6.500	3.625	40, 80, 160	0.313	1.813	6.375	6.375	6.375	6.375	6.375	6.375	6.375	12.875	0.125	12.875	4.250	12.875	4.250	4.250	4.250	13.000	5.563	8 – 0.875	5.750	0.500	230
3	9.500	7.500	6.125	40, 80, 160	0.313	1.813	6.938	6.938	6.938	6.938	6.938	6.938	6.938	14.000	0.125	13.750	5.313	13.750	5.313	4.875	4.875	14.000	6.063	8 – 0.875	5.750	0.500	245
4	11.500	9.250	7.125	80, 160	0.313	2.063	7.469	6.875	6.875	7.469	6.875	6.875	6.875	14.469	0.125	14.125	5.813	14.125	5.813	5.313	5.313	15.500	7.000	8 – 1.125	6.750	0.750	355
6	15.000	12.500	9.500	80, 160	0.313	2.500	8.313	8.063	8.063	8.313	8.063	8.063	8.063	16.500	0.125	15.500	7.000	15.500	7.000	7.500	7.500	19.000	9.000	12 – 1.125	7.750	0.750	600
8	18.500	15.500	12.125	160	0.313	2.813	9.000	8.375	8.375	9.000	8.375	8.375	8.375	17.625	0.250	16.000	8.000	16.000	8.000	8.625	8.625	22.000	11.000	12 – 1.375	8.750	0.750	1265
10	21.500	18.500	14.250	160	0.313	3.063	8.438	9.375	9.375	8.438	9.375	9.375	9.375	18.063	0.250	17.375	9.000	17.375	9.000	10.063	10.063	25.000	13.125	16 – 1.375	9.250	0.750	1800
12	24.000	21.000	16.500	160	0.313	3.438	9.406	9.781	9.781	9.406	9.406	9.781	9.781	19.438	0.250	18.875	10.750	18.875	10.750	11.750	11.750	27.875	15.000	20 – 1.375	10.000	0.750	2260
14	25.250	22.000	18.375	160	0.438	4.063	10.563	10.563	10.563	10.563	10.563	10.563	10.563	21.375	0.250	20.125	11.875	20.125	11.875	12.625	12.625	32.000	17.563	20 – 1.500	11.000	0.750	2495

FPD212

Dual-chamber orifice fitting

Line sizes 2 to 12 in. flange x flange (raised face / ring joint)

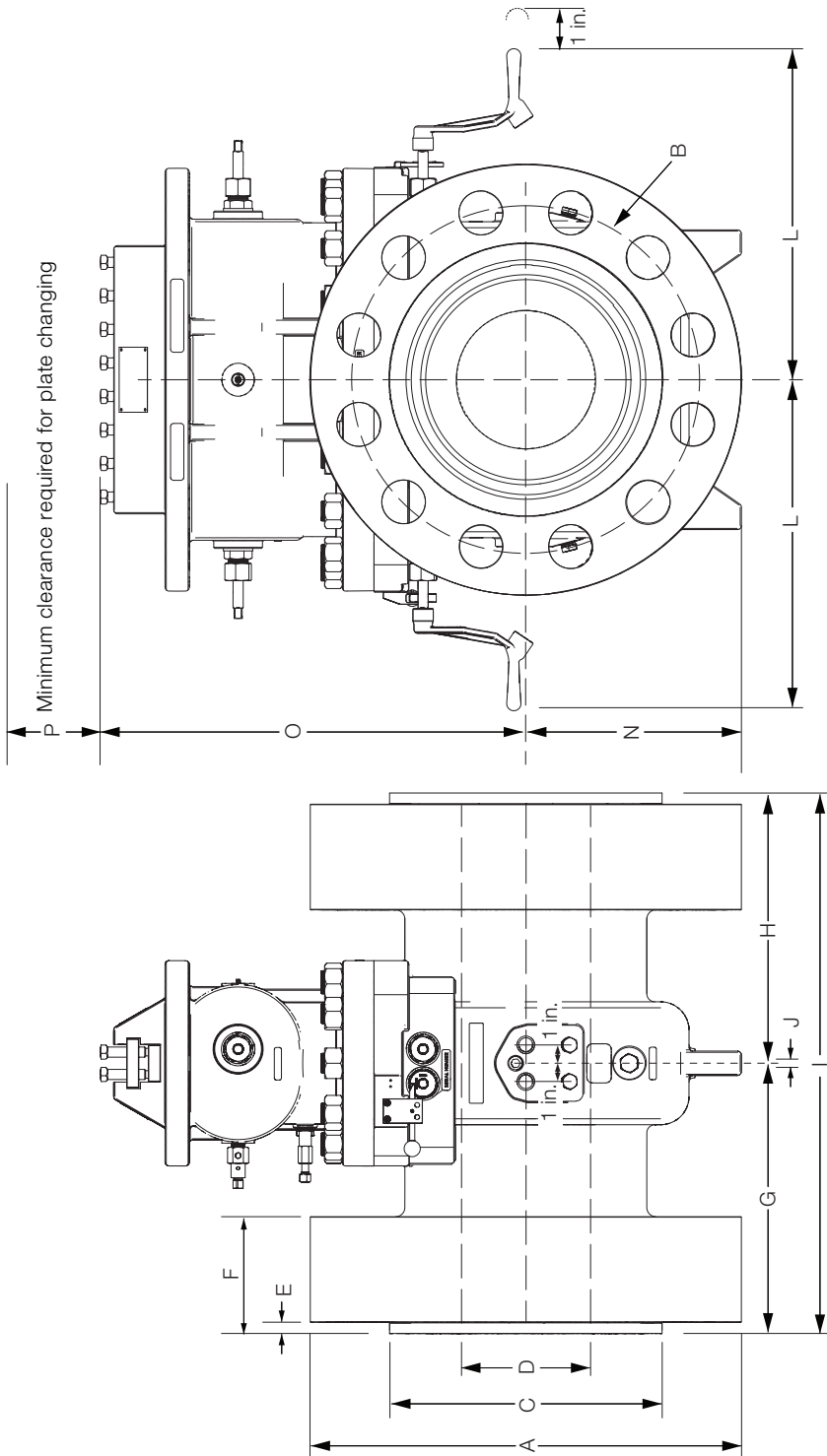


Size	A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 1500 – flange x flange – standard raised face																			
2	8.500	6.500	3.625	80, 160, XX	0.250	1.750	7.000	7.000	14.000	0.125	12.875	5.750	4.500	13.750	9.563	8 – 0.875	5.750	0.500	230
3	10.500	8.000	5.000	80, 160, XX	0.250	2.125	7.688	8.188	16.000	0.125	13.750	5.625	5.625	15.000	6.063	8 – 1.125	7.000	0.500	325
4	12.250	9.500	6.188	160, XX	0.250	2.375	7.875	8.375	16.375	0.125	14.125	6.500	6.125	16.250	7.000	8 – 1.250	7.750	0.750	520
6	15.500	12.500	8.500	80, 120, 160, XX	0.250	3.500	10.188	10.750	21.063	0.125	16.000	7.750	7.750	19.125	9.000	12 – 1.375	10.250	0.750	875
8	19.000	15.500	10.625	80, 120, XX, 160	0.250	3.875	11.156	11.719	23.125	0.250	17.250	9.750	9.500	22.125	11.000	12 – 1.625	11.500	0.750	1500
10	23.000	19.000	12.750	140, 160	0.250	4.500	12.313	12.313	24.875	0.250	18.375	11.000	11.500	26.000	13.125	12 – 1.875	13.250	0.750	2180
12	26.500	22.500	15.000	160	0.250	5.125	13.313	13.313	26.875	0.250	20.250	12.375	13.250	28.250	15.000	16 – 2.000	4.750	0.750	3470
ANSI 1500 – flange x flange – ring type joint																			
2	8.500	6.500	4.875	80, 160, XX	0.313	1.813	7.000	7.000	14.125	0.125	12.875	5.750	4.500	13.750	9.563	8 – 0.875	5.750	0.500	230
3	10.500	8.000	6.625	80, 160, XX	0.313	2.188	7.688	8.188	16.125	0.125	13.750	5.625	5.625	15.000	6.063	8 – 1.125	7.000	0.500	325
4	12.250	9.500	7.625	160, XX	0.313	2.438	7.875	8.375	16.500	0.125	14.125	6.500	6.125	16.250	7.000	8 – 1.250	7.750	0.750	520
6	15.500	12.500	9.750	80, 120, 160, XX	0.375	3.625	10.313	10.875	21.313	0.125	15.500	7.750	8.000	19.375	9.000	12 – 1.375	10.500	0.750	875
8	19.000	15.500	12.500	80, 120, XX, 160	0.438	4.063	11.344	11.906	23.500	0.250	17.250	9.750	9.500	22.125	11.000	12 – 1.625	11.750	0.750	1500
10	23.000	19.000	14.625	140, 160	0.438	4.688	12.500	12.500	25.250	0.250	18.375	11.000	11.500	26.000	13.125	12 – 1.875	13.500	0.750	2180
12	26.500	22.500	17.250	160	0.563	5.438	13.625	13.625	27.500	0.250	20.250	12.375	13.250	27.813	15.000	16 – 2.000	15.250	0.750	3470

FPD212

Dual-chamber orifice fitting

Line sizes 2 to 12 in. flange x flange (raised face / ring joint)

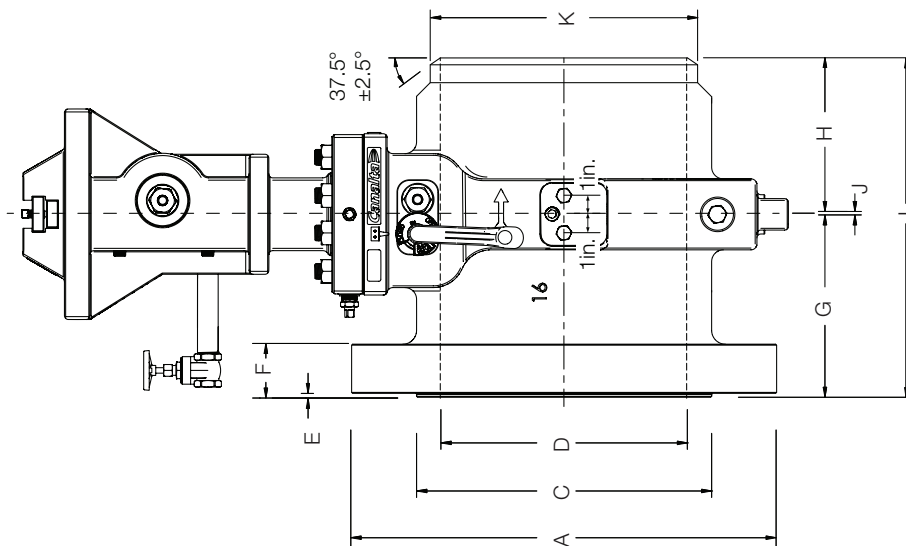
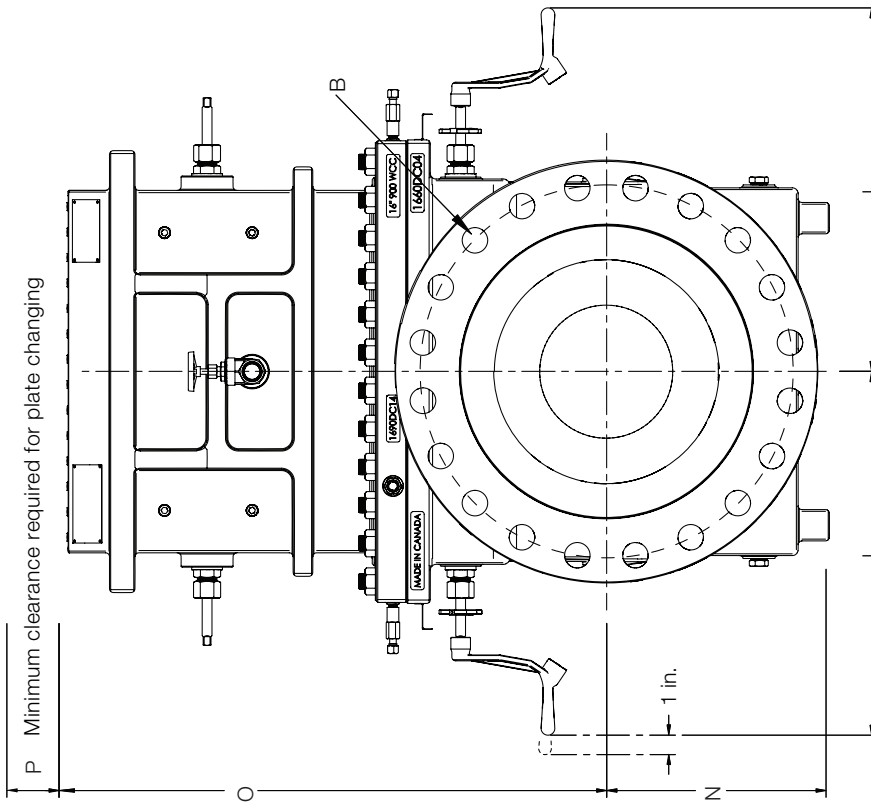


Size	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 2500 – flange x flange – standard raised face																		
2	9.250	6.750	3.620	160, XXS	0.250	2.370	8.625	8.625	17.375	0.125	12.250	5.375	13.375	5.563	8 – 1.000	7.000	0.500	260
3	12.000	9.000	5.000	160, XXS	0.250	2.875	9.563	9.563	19.250	0.125	14.250	6.000	14.875	6.063	8 – 1.250	8.750	0.500	450
4	14.000	10.750	6.190	160, XXS	0.250	3.370	10.500	10.500	21.125	0.125	14.125	7.000	16.125	7.000	8 – 1.500	10.000	0.750	640
6	19.000	14.500	8.500	160, XXS	0.250	4.620	12.500	12.500	25.125	0.125	16.500	9.500	19.125	9.000	8 – 2.000	13.500	0.750	1380
8	21.750	17.250	10.620	160, XXS	0.250	5.250	19.563	19.563	39.375	0.250	18.000	10.875	22.551	11.000	12 – 2.000	15.000	0.750	2280
10	26.500	21.250	12.750	160, XXS	0.250	6.750	22.625	22.625	45.500	0.250	19.813	13.250	26.250	13.250	12 – 2.500	19.250	0.750	3880
12	30.000	24.375	15.000	160, XXS	0.250	7.500	23.375	23.375	47.000	0.250	22.750	15.000	27.548	15.000	12 – 2.750	21.250	0.750	5860
ANSI 2500 – flange x flange – ring type joint																		
2	9.250	6.750	5.250	160, XXS	0.313	2.433	8.688	8.688	17.500	0.125	12.250	5.375	13.375	5.563	8 – 1.000	7.250	0.500	260
3	12.000	9.000	6.625	160, XXS	0.375	3.000	9.688	9.688	19.500	0.125	14.250	6.000	14.875	6.063	8 – 1.250	9.000	0.500	450
4	14.000	10.750	8.000	160, XXS	0.438	3.558	10.688	10.688	21.500	0.125	14.125	7.000	16.125	7.000	8 – 1.500	10.500	0.750	640
6	19.000	14.500	11.000	160, XXS	0.500	4.870	12.750	12.750	25.625	0.125	16.500	9.500	19.125	9.000	8 – 2.000	14.250	0.750	1380
8	21.750	17.250	13.375	160, XXS	0.563	5.563	19.875	19.875	40.000	0.250	18.000	10.875	22.551	11.000	12 – 2.000	15.500	0.750	2280
10	26.500	21.250	16.750	160, XXS	0.688	7.188	23.063	23.063	46.375	0.250	19.813	13.250	26.250	13.250	12 – 2.500	20.000	0.750	3880
12	30.000	24.375	19.500	160, XXS	0.688	7.938	23.813	23.813	47.875	0.250	22.750	15.000	27.548	15.000	12 – 2.750	22.000	0.750	5860

FPD212

Dual-chamber orifice fitting

Line size 16 in. flangeneck design (weldneck upstream, flange downstream)

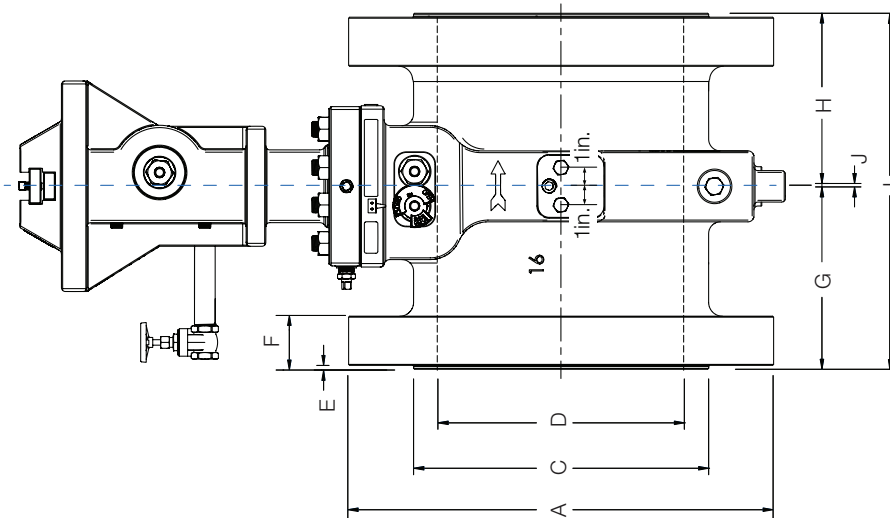
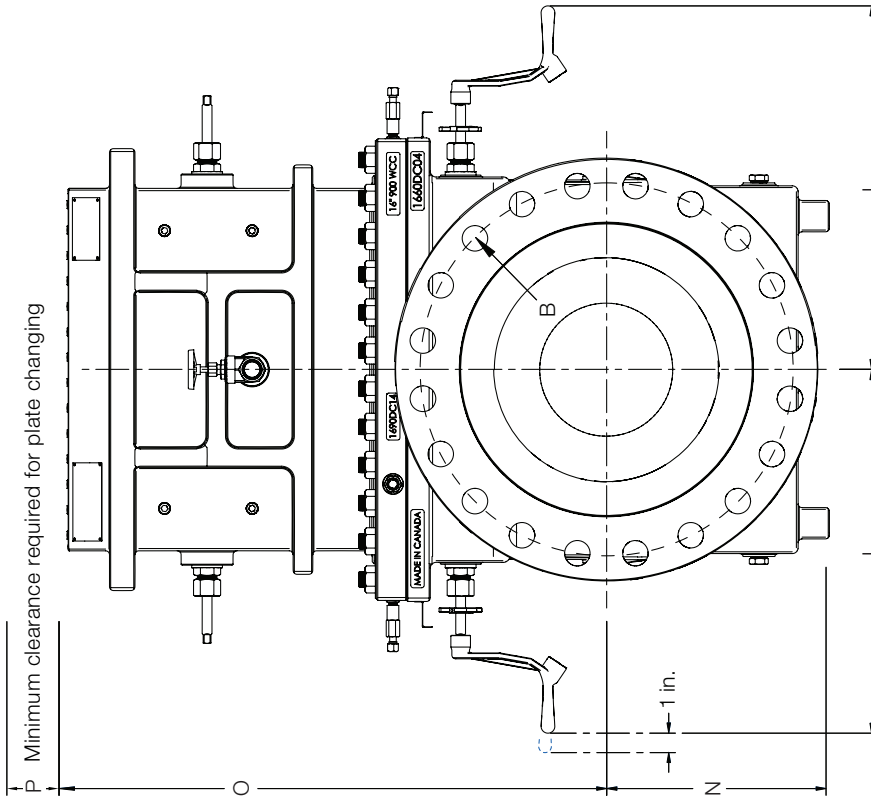


Size	A	B	C	D	E	F	G	H	I	J	K	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
	Outside diameter of flange	Diameter of bolt pattern	Diameter of raised face	Standard pipe schedule	Width of raised face	Flange thickness including face	Downstream face of orifice plate to face of flange	Upstream face of orifice plate to face of butt weld	Overall face to face	Orifice plate thickness	Diameter of weldneck hub	Operating clearance from center	Centerline to bottom	Centerline to top	Clearance for plate changing				
ANSI 150 – flangeneck – standard raised face																			
16	23.500	21.250	18.500	40	0.063	1.438	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	16 – 1.000	5.250	0.750	1965
ANSI 300 – flangeneck – standard raised face																			
16	25.500	22.500	18.500	40, 80	0.063	2.250	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	20 – 1.250	7.500	0.750	2080
ANSI 600 – flangeneck – standard raised face																			
16	27.000	23.750	18.500	80	0.250	3.250	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	20 – 1.500	10.000	0.750	2315
ANSI 600 – flangeneck – ring type joint																			
16	27.000	23.750	20.000	80	0.313	3.313	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	20 – 1.500	10.000	0.750	2315
ANSI 900 – flangeneck – standard raised face																			
16	27.750	24.250	18.500	160	0.250	3.750	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	20 – 1.625	11.250	0.750	2407
ANSI 900 – flangeneck – ring type joint																			
16	27.750	24.250	20.625	160	0.438	3.938	10.813	11.313	22.500	0.375	16.000	23.250	13.500	35.375	19.500	20 – 1.625	11.500	0.750	2407

FPD212

Dual-chamber orifice fitting

Line size 16 in. flange x flange (raised face / ring joint)

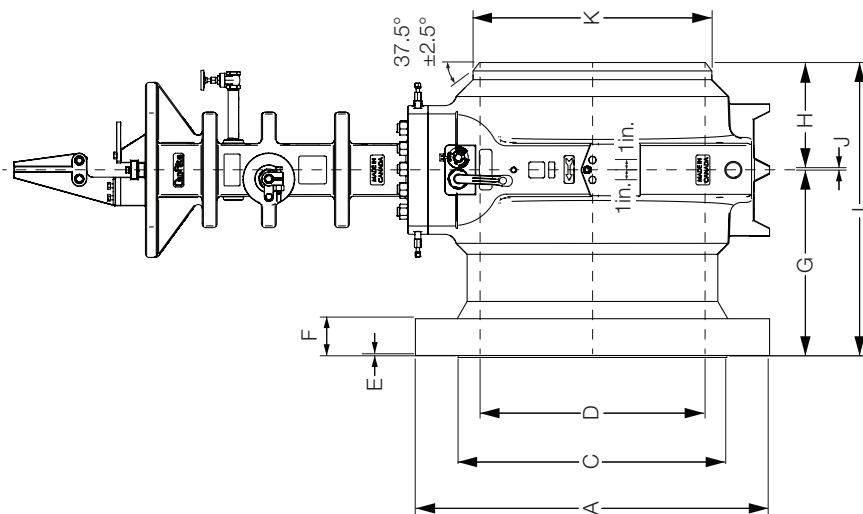
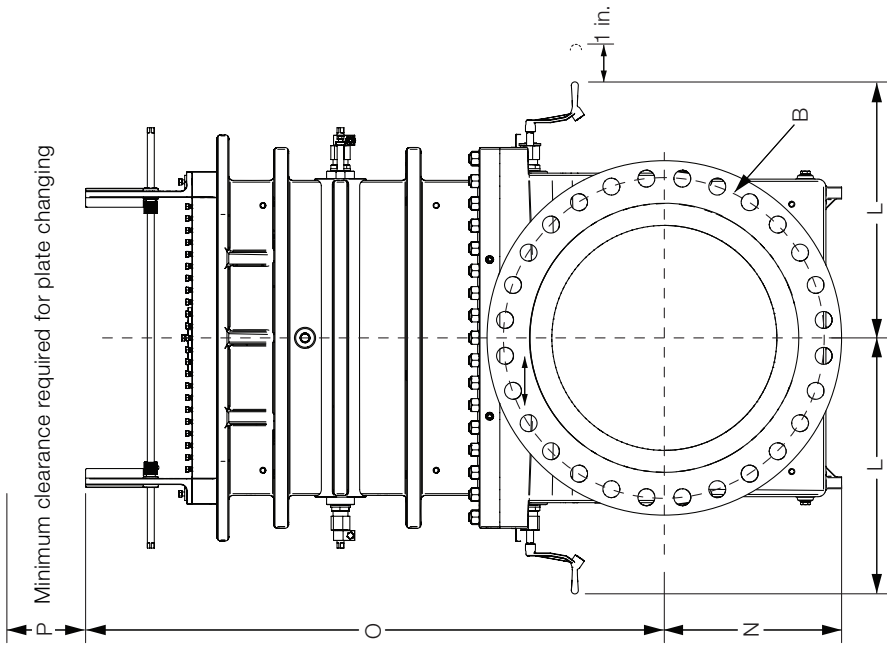


Size	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)	
ANSI 150 – flange x flange – standard raised face																			
16	23.500	21.250	18.500	40	0.063	1.438	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	16 – 1.000	5.250	0.750	2060	
ANSI 300 – flange x flange – standard raised face																			
16	25.500	22.500	18.500	40, 80	0.063	2.250	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	20 – 1.250	7.500	0.750	2300	
ANSI 600 – flange x flange – standard raised face																			
16	27.000	23.750	18.500	80	0.250	3.250	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	20 – 1.500	10.000	0.750	2680	
ANSI 600 – flange x flange – ring type joint																			
16	27.000	23.750	20.000	80	0.313	3.313	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	20 – 1.500	10.000	0.750	2680	
ANSI 900 – flange x flange – standard raised face																			
16	27.750	24.250	18.500	160	0.250	3.750	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	20 – 1.625	11.250	0.750	2867	
ANSI 900 – flange x flange – ring type joint																			
16	27.750	24.250	20.625	160	0.438	3.938	10.719	11.531	22.625	0.375	23.250	13.500	35.375	19.500	20- 1.625	11.500	0.750	2867	

FPD212

Dual-chamber orifice fitting

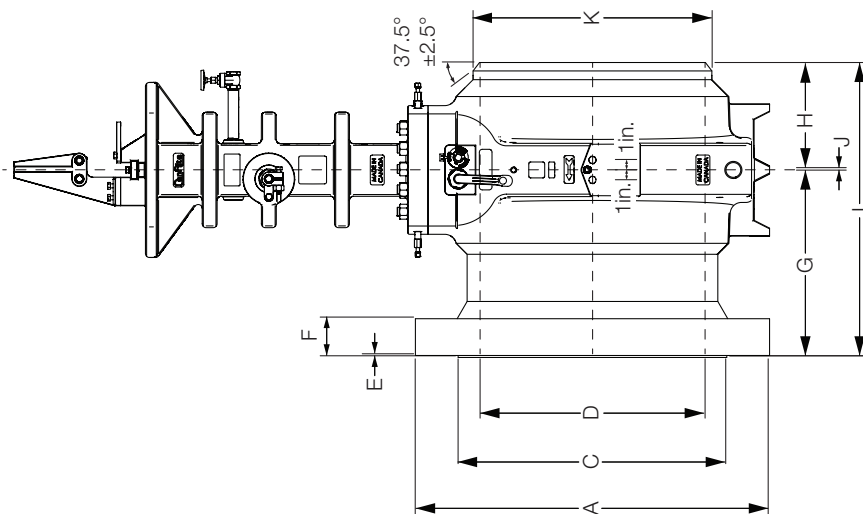
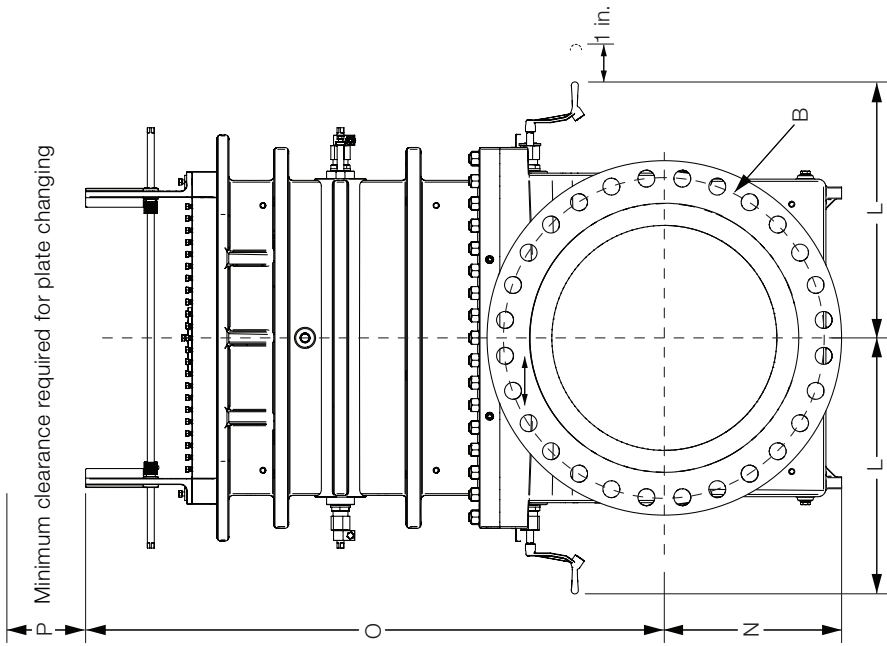
Line sizes 18 to 30 in. flangeneck design (weldneck upstream, flange downstream)



Size	A	B	C	D	E	F	G	H	I	J	K	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 150 – flangeneck – standard raised face																			
18	25.000	22.750	21.000	20, 30, 40, 60, 80	0.063	1.560	12.688	13.438	26.500	0.375	18.000	25.250	16.250	54.125	23.500	16 – 1.125	6.000	1.000	2679
20	27.500	25.000	23.000	20, 30, 40, 60, 80	0.063	1.688	12.688	13.438	26.500	0.375	20.000	25.250	16.250	54.125	23.500	20 – 1.125	6.500	1.000	2711
24	32.000	29.500	27.250	20, XS, 30, 40	0.063	1.875	13.250	13.250	26.875	0.375	24.000	28.063	18.500	60.875	27.500	20 – 1.250	7.000	1.000	4073
26	34.250	31.750	29.500	Min. W.T. – .219	0.063	2.688	15.313	15.313	31.000	0.375	26.000	36.500	20.000	65.625	31.000	24 – 1.250	7.000	1.000	6846
30	38.750	36.000	33.750	Customer specification	0.063	2.938	17.250	17.250	35.000	0.500	30.000	40.000	27.000	71.500	35.000	28 – 1.250	7.250	1.000	14750
ANSI 300 – flangeneck – standard raised face																			
18	28.000	24.750	21.000	30, 40, 60, 80	0.063	2.375	12.688	13.438	26.500	0.375	18.000	25.250	16.250	54.125	23.500	24 – 1.250	7.750	1.000	2988
20	30.500	27.000	23.000	30, 40, 60, 80	0.063	2.500	12.688	13.438	26.500	0.375	20.000	25.250	16.250	54.125	23.500	24 – 1.250	8.250	1.000	3051
24	36.000	32.000	27.250	40, 60, 80	0.063	2.750	13.250	13.250	26.875	0.375	24.000	28.063	18.500	60.875	27.500	24 – 1.500	9.250	1.000	4633
26	38.250	34.500	29.500	Min. W.T. – .750	0.063	3.125	15.313	15.313	31.000	0.375	26.000	36.500	20.000	65.625	31.000	28 – 1.625	10.000	1.000	7454
30	43.000	39.250	33.750	Customer specification	0.063	3.625	17.250	17.250	35.000	0.500	30.000	40.000	27.000	71.500	35.000	28 – 1.750	11.250	1.000	15500

FPD212

Dual-chamber orifice fitting

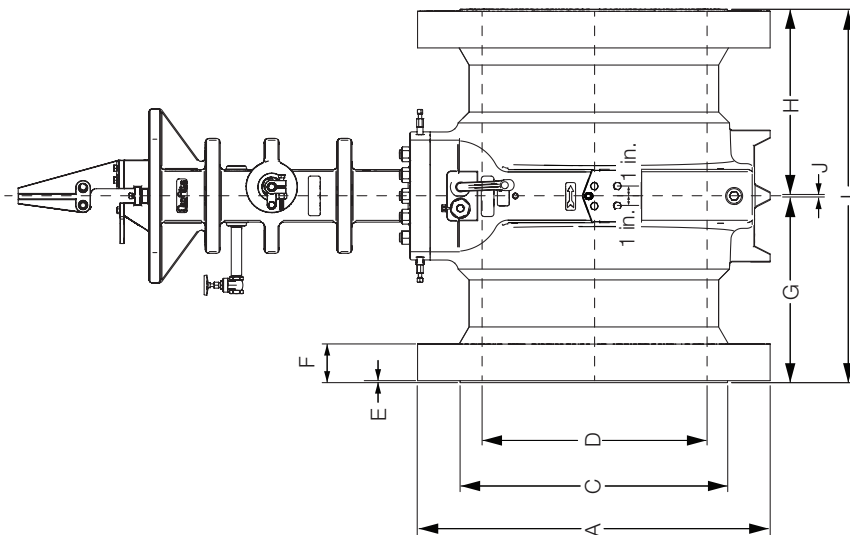
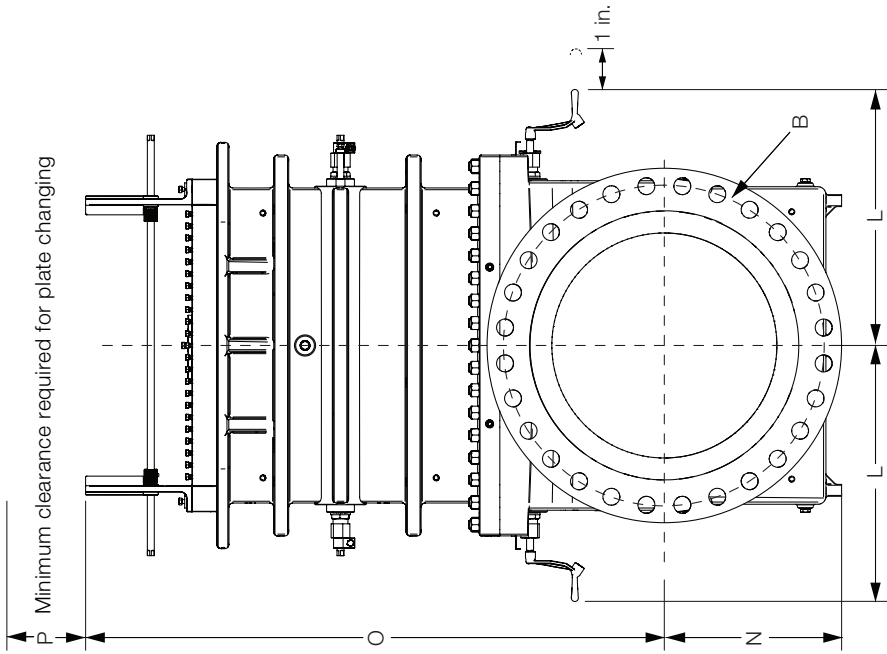


Size	A	B	C	D	E	F	G	H	I	J	K	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 600 – flangeneck – standard raised face																			
18	29.250	25.750	21.000	80, 100, 120	0.250	3.250	12.688	13.438	26.500	0.375	18.000	25.250	16.250	54.125	23.500	20 – 1.625	10.750	1.000	3380
20	32.000	28.500	23.000	80, 100, 120	0.250	3.750	12.688	13.438	26.500	0.375	20.000	25.250	16.250	54.125	23.500	24 – 1.625	11.750	1.000	3625
24	37.000	33.000	27.250	80, 100, 120	0.250	4.250	13.250	13.250	26.875	0.375	24.000	28.063	18.500	60.875	27.500	24 – 1.875	13.250	1.000	5405
26	40.000	36.000	29.500	Min. W.T. – 1.074	0.250	4.500	15.313	15.313	31.000	0.375	26.000	36.500	20.000	65.625	31.000	28 – 1.875	13.750	1.000	8146
30	44.500	40.250	33.750	Customer specification	0.250	4.750	17.250	17.250	35.000	0.500	30.000	40.000	27.000	71.500	35.000	28 – 2.000	14.500	1.000	16500
ANSI 600 – flangeneck – ring type joint																			
18	29.250	25.750	22.625	80, 100, 120	0.313	3.313	12.688	13.438	26.500	0.375	18.000	25.250	16.250	54.125	23.500	20 – 1.625	10.750	1.000	3380
20	32.000	28.500	25.000	80, 100, 120	0.375	3.875	12.688	13.438	26.500	0.375	20.000	25.250	16.250	54.125	23.500	24 – 1.625	11.750	1.000	3625
24	37.000	33.000	29.500	80, 100, 120	0.438	4.438	13.250	13.250	26.875	0.375	24.000	28.063	18.500	60.875	27.500	24 – 1.875	13.250	1.000	5405
26	40.000	36.000	31.875	Min. W.T. – 1.074	0.500	4.750	15.313	15.313	31.000	0.375	26.000	36.500	20.000	65.625	31.000	28 – 1.875	13.750	1.000	8146
30	44.500	40.250	36.125	Customer specification	0.500	5.000	17.250	17.250	35.000	0.500	30.000	40.000	27.000	71.500	35.000	28 – 2.000	14.500	1.000	16500

FPD212

Dual-chamber orifice fitting

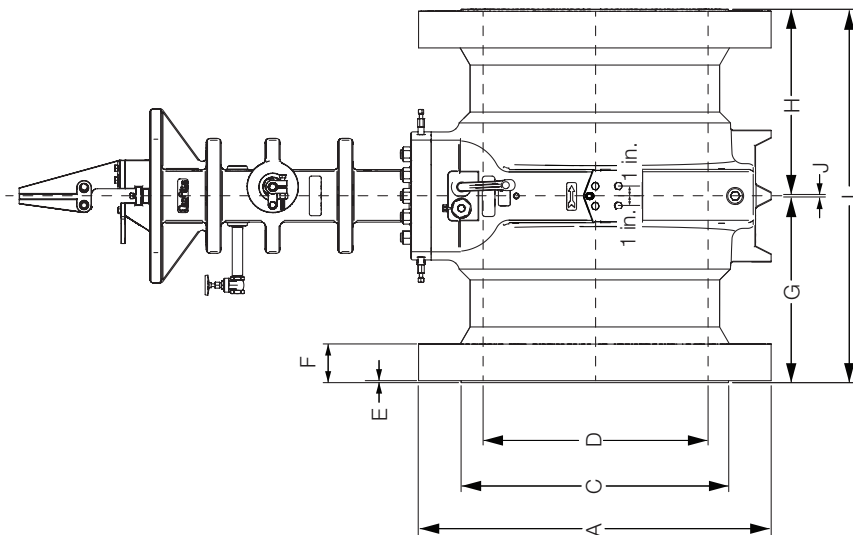
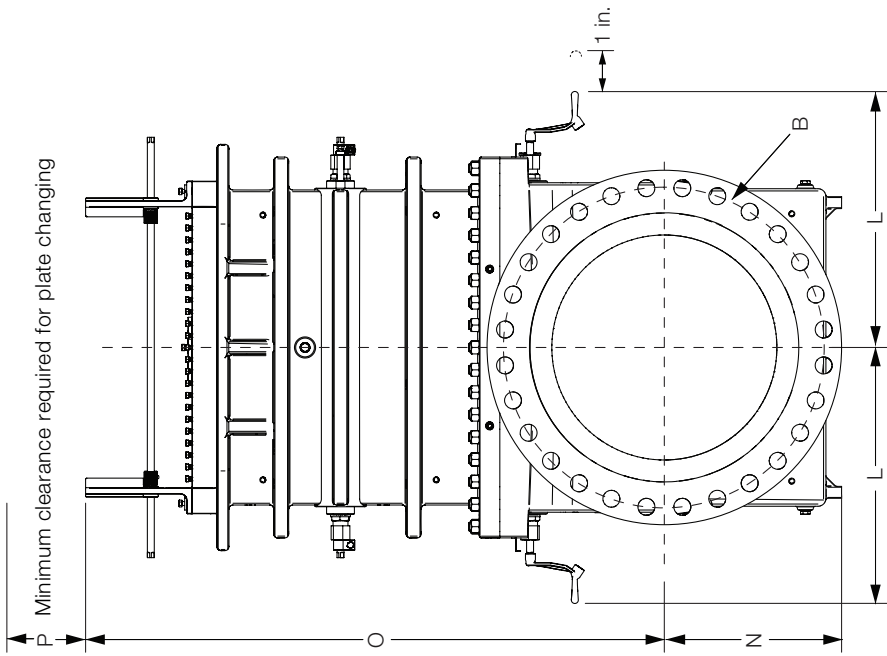
Line sizes 18 to 30 in. flange x flange (raised face / ring joint)



Size	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 150 – flange x flange – standard raised face																		
18	25.000	22.750	21.000	20, 30, 40, 60, 80	0.063	1.560	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	16 – 1.125	6.000	1.000	2679
20	27.500	25.000	23.000	20, 30, 40, 60, 80	0.063	1.688	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	20 – 1.125	6.500	1.000	2866
24	32.000	29.500	27.250	20, XS, 30, 40	0.063	1.875	13.250	13.250	26.875	0.375	28.063	18.500	60.875	27.500	20 – 1.250	7.000	1.000	4283
26	34.250	31.750	29.500	Customer specification	0.063	2.688	15.313	15.313	31.000	0.375	36.500	20.000	65.625	31.000	24 – 1.250	7.000	1.000	7094
30	38.750	36.000	33.750	Customer specification	0.063	2.938	17.250	17.250	35.000	0.500	40.000	27.000	71.500	35.000	56 – 1.250	7.250	1.000	15000
ANSI 300 – flange x flange – standard raised face																		
18	28.000	24.750	21.000	30, 40, 60, 80	0.063	2.375	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	24 – 1.250	7.750	1.000	2988
20	30.500	27.000	23.000	30, 40, 60, 80	0.063	2.500	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	24 – 1.250	8.250	1.000	3376
24	36.000	32.000	27.250	40, 60, 80	0.063	2.750	13.250	13.250	26.875	0.375	28.063	18.500	60.875	27.500	24 – 1.500	9.250	1.000	5123
26	38.250	34.500	29.500	Customer specification	0.063	3.125	15.313	15.313	31.000	0.375	36.500	20.000	65.625	31.000	28 – 1.625	10.000	1.000	8006
30	43.000	39.250	33.750	Customer specification	0.063	3.625	17.250	17.250	35.000	0.500	40.000	27.000	71.500	35.000	56 – 1.750	11.250	1.000	16500

FPD212

Dual-chamber orifice fitting



Size	A	B	C	D	E	F	G	H	I	J	L	N	O	P	Number and diameter of studs per flange	Length of studs with nuts	Pipe size of drain plugs	Approximate weight (lbs)
ANSI 600 – flange x flange – standard raised face																		
18	29.250	25.750	21.000	80, 100, 120	0.250	3.250	10.813	11.313	22.500	0.375	25.250	16.250	54.125	23.500	20 – 1.625	10.750	1.000	3992
20	32.000	28.500	23.000	80, 100, 120	0.250	3.750	10.813	11.313	26.500	0.375	25.250	16.250	54.125	23.500	24 – 1.625	11.750	1.000	4237
24	37.000	33.000	27.250	80, 100, 120	0.250	4.250	13.250	13.250	26.875	0.375	28.063	18.500	60.875	27.500	24 – 1.875	13.250	1.000	6281
26	40.000	36.000	29.500	Customer specification	0.250	4.500	15.313	15.313	31.000	0.375	36.500	20.000	65.625	31.000	28 – 1.875	13.750	1.000	9044
30	44.500	40.250	33.750	Customer specification	0.250	4.750	17.250	17.250	35.000	0.500	40.000	27.000	71.500	35.000	56 – 2.000	14.500	1.000	17500
ANSI 600 – flange x flange – ring type joint																		
18	29.250	25.750	22.625	80, 100, 120	0.313	3.313	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	20 – 1.625	10.750	1.000	3992
20	32.000	28.500	25.000	80, 100, 120	0.375	3.875	12.688	13.438	26.500	0.375	25.250	16.250	54.125	23.500	24 – 1.625	11.750	1.000	4417
24	37.000	33.000	29.500	80, 100, 120	0.438	4.438	13.250	13.250	26.875	0.375	28.063	18.500	60.875	27.500	48 – 1.875	13.500	1.000	6885
26	40.000	36.000	31.875	Customer specification	0.500	4.750	15.313	15.313	31.000	0.375	36.500	20.000	65.625	31.000	56 – 1.875	13.750	1.000	9596
30	44.500	40.250	36.125	Customer specification	0.500	5.000	17.250	17.250	35.000	0.500	40.000	27.000	71.500	35.000	56 – 2.000	14.500	1.000	18500

Acknowledgements

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