

Orifice flange assembly

Model : F500

Spec. sheet no. **FD05-01**

Description

Orifice flange assembly is used in conjunction with orifice plate for flow measurement of smaller or medium size pipes at lower or medium pressure ranges. The flange connection is a RF type and the differential pressure tapping system is the flange taps.



Specification

Flange mounting type

Welding neck
Slip-on
Socket-weld
Ring-joint welding neck

Orifice bore type

Concentric square edged orifice
Quadrant edged orifice
Eccentric orifice
Segmental orifice

Nominal diameter

25 ~ 600 mm
1" ~ 24"

Flow claculation standards

ISO 5167-1 and 2 2003
AGA-3
ASME MFC-3M (R.W Miller)
JIS Z 8762

Flange ratings

JIS 10, 20, 30, 40 and 63 K
ANSI (or JPI) 150, 300, 600, 900, 1500 and 2500Lb RF

Plate thickness

3,6,9,12 mm and Over

Flange material

A105, A182-F304, A182-F316, A182-F11,
A182-F22, A350-LF2 and Other

Plate material

Standard : 304SS and 316L SS
Non-standard : Monel, Hastelloy B/C, Titanium etc.

Materials of bolts and nuts

Stud bolts : SNB7, A193-B7, A194-B8 and Other
Nuts : S45C, A194-2H, A194-8 and Other
Jack bolts : 304SS

Drain and vent hole

Per ASME/ISA recommendations
Not drilled for orifice bores smaller than 25.4 mm

Gasket

Thickness : 4.5 mm or other
Material : Spiral wound gaskets or other

Markings

Upstream side of tab handle stamped "Upstream"
and with bore type and size, line size, tag number
and flange rating

Differential pressure piping connection

Select referring to the model number construction table

Special markings

Special marking may be furnished to meet special
requirement

WISE®

Main order

Ordering information

1. Base model

F500 Orifice flange assembly

2. Line size

A01	½"	J01	15A
A02	¾"	J02	20A
A03	1"	J03	25A
A04	1½"	J04	40A
A05	2"	J05	50A
A06	3"	J06	80A
A07	4"	J07	100A
A08	6"	J08	150A
A09	8"	J09	200A
A10	10"	J10	250A
A11	12"	J11	300A
A12	14"	J12	350A
A13	16"	J13	400A
A14	18"	J14	450A
A15	20"	J15	500A
A16	24"	J16	600A
ZZZ	Other		

3. Connection

A01	150Lb RF	J01	10K RF
A02	300Lb RF	J02	16K RF
A03	600Lb RF	J03	20K RF
A04	900Lb RF	J04	30K RF
A05	1500Lb RF	J05	40K RF
A06	2500Lb RF	J06	63K RF
A11	150Lb FF	J11	10K FF
A12	300Lb FF	J12	16K FF
A13	600Lb FF	J13	20K FF
A14	900Lb FF	J14	30K FF
A15	1500Lb FF	J15	40K FF
A16	2500Lb FF	J16	63K FF
A21	150Lb RTJ	J21	10K RTJ
A22	300Lb RTJ	J22	16K RTJ
A23	600Lb RTJ	J23	20K RTJ
A24	900Lb RTJ	J24	30K RTJ
A25	1500Lb RTJ	J25	40K RTJ
A26	2500Lb RTJ	J26	63K RTJ
ZZZ	Other		

4. Element type

1	Concentric
2	Quadrant
3	Conditioning
4	Eccentric
5	Segmental
O	Other

5. Element material

6	316L SS
O	Other

6. Orifice flange and Bolt / Nuts material

C	A105 and A193 B7 / A194 2H
4	A182 F304 and A193 B8 / A194 8
6	A182 F316 and A193 B8M / A194 8M
O	Other

7. Gasket material

S	Spiral wound 4.5T, RF type
N	Non-asbestos 3.0T, RF type
I	Soft Iron, RTJ type
O	Other

8. Meter run type (Up / Down stream : 20D / 10D)

F	Yes, Flange type
B	Yes, Butt weld
O	Other
N	None

9. Tap and Valve type (As per flange material)

A	½" NPT, 1 pair, Only plug
B	½" NPT, 1 pair, Globe valve with plug
C	½" NPT, 1 pair Gate valve with plug
O	Other

10. Drain / Vent hole

D	Drain hole
V	Vent hole
N	None (Bore size < 25.4 mm or Required)

11. Option

C	Calibration test
O	Other
N	None

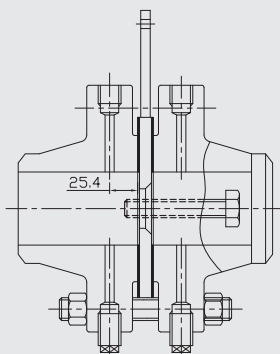
Sample ordering code

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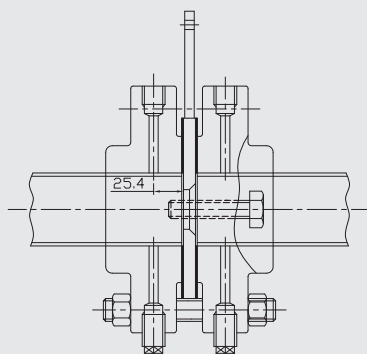


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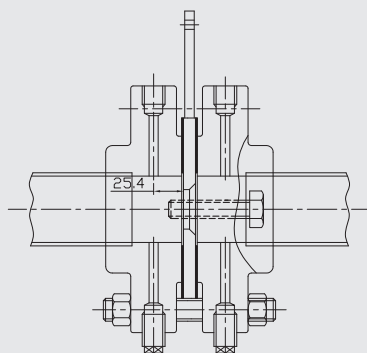
Dimension



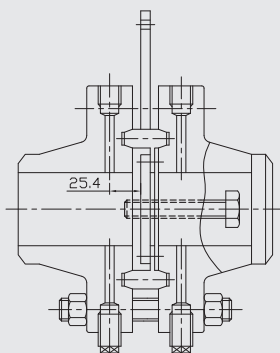
Model : F500-W



Model : F500-S

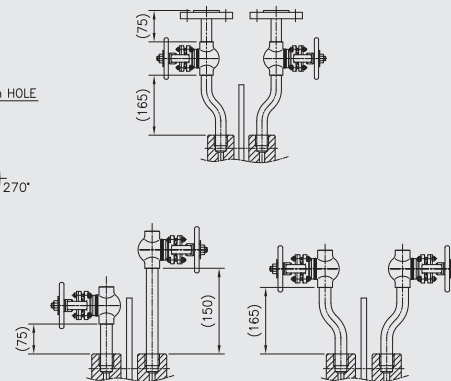
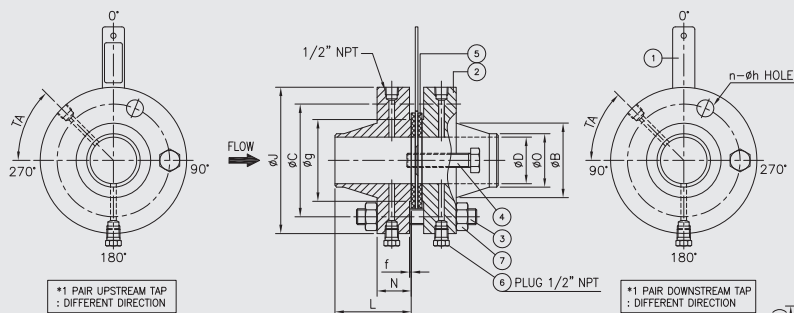


Model : F500-O



Model : F500-J

Dimension



ORIFICE FLANGES DIMENSIONS: ANSI B16.36 FORGED FLANGES. (300lb) UNIT : mm

RIFLE FLANGE DIMENSIONS: B16.36 FORGED FLANGES. (300lb)													UNIT : mm
SIZE IN (INCH)	OUT-SIDE DIA	THICKNESS	FACE OF BASE	HUB THRU	HUB DIA	POINT OF WELD.	TAP HOLE SIZE	BOLT CIRCLE	HOLE OF DIA	HOLE NO.	BOLT SIZE & LENGTH	JACK BOLT LENGTH	TAP ANGLE (°)
2	165	38.6	92.1	86	84	60.3	6.4	127	17.5	8	5/8"x140	5/8"x75	45
2 1/2	190	38.6	104.8	89	100	73	6.4	149.2	20.6	8	3/4"x145	5/8"x75	45
3	210	38.6	127	89	117	88.9	9.5	168.3	20.6	8	3/4"x145	3/4"x75	45
4	255	38.6	157.2	92	146	114.3	12.7	200	20.6	8	3/4"x145	3/4"x75	45
5	280	38.6	185.7	102	178	141.3	12.7	235	22.2	8	3/4"x145	3/4"x75	45
6	320	38.6	215.9	100	206	168.3	12.7	269.9	22.2	12	3/4"x145	3/4"x75	30
8	380	41.1	269.9	112	260	219.1	12.7	330.2	25.4	12	7/8"x160	3/4"x75	30
10	445	48.1	323.8	118	321	273	12.7	387.4	28.6	16	1"x185	1"x115	45
12	520	51.3	381	131	375	323.8	12.7	450.8	31.8	16	1 1/8"x200	1"x115	45
14	585	54.4	412.8	143	425	355.6	12.7	514.4	31.8	20	1 1/8"x210	1"x115	36
16	650	57.6	469.9	146	483	406.4	12.7	571.5	34.9	20	1 1/4"x220	1"x115	36
18	710	60.8	533.4	159	533	457	12.7	628.6	34.9	24	1 1/4"x230	1"x115	45
20	775	64	584.2	162	587	508	12.7	685.8	34.9	24	1 1/4"x240	1"x115	45
24	915	70.3	692.2	169	702	610	12.7	812.8	41.3	24	1 1/2"x270	1"x140	45

ORIFICE FLANGES DIMENSIONS: ANSI B16.36 FORGED FLANGES. (600lb) UNIT : mm

FRIDGE FLANGES DIMENSIONS: B16.36 FORGED FLANGES. (600lb)													UNIT : mm
SIZE IN (INCH)	OUT-SIDE DIAM	THICKNESS	FACE OF BASE	HUB DIA -T H	HUB DIA -B	POINT OF WELD.	TAP HOLE DIA	BOLT CLE DIA	HOLE DIA	HOLE OF NO.	BOLT SIZE & LENGTH	JACK BOLLER LENGTH	TAP ANGLE (°)
J	N	g	L	B	O	X	C	h	n				TA
2	165	38.6	92.1	86	84	60.3	6.4	12.7	17.5	8	5/8"x140	5/8"x75	45
2 1/2	190	38.6	104.8	89	100	73	6.4	149.2	20.6	8	3/4"x145	3/4"x75	45
3	210	38.6	127	89	117	88.9	9.5	168.3	20.6	8	3/4"x175	3/4"x75	45
4	275	45.1	157.2	109	152	114.3	12.7	215.9	25.4	8	7/8"x165	3/4"x100	45
5	330	45.1	185.7	115	189	141.3	12.7	266.7	28.6	8	1" x 185	1"x110	45
6	355	54.7	215.9	124	222	168.3	12.7	292.1	28.6	12	" x 195	1"x110	30
8	420	62.6	269.9	140	273	219.1	12.7	349.2	31.8	12	1 1/8"x220	1"x120	30
10	510	70.5	323.8	159	343	273	12.7	431.8	34.9	16	1 1/4"x250	1"x140	45
12	560	73.7	381	163	400	323.8	12.7	489	34.9	20	1 1/4"x255	1"x140	36
14	605	76.9	412.8	172	432	355.6	12.7	527	38.1	20	1 3/8"x270	1"x150	36
16	685	83.2	469.9	185	495	406.4	12.7	603.2	41.3	20	1 1/2"x295	1"x155	36
18	745	89.5	533.4	191	546	457	12.7	654	44.5	20	1 5/8"x320	1"x165	36
20	815	95.9	584.2	197	610	508	12.7	723.9	44.5	24	1 5/8"x330	1"x180	45
24	940	108.6	692.2	210	718	610	12.7	838.2	50.8	24	1 7/8"x375	1"x195	45

ORIFICE FLANGES CLASS 900 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (900lb) UNIT : mm

ORICE FLANGES CLASS 900 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (900lb)														UNIT : mm
SIZE IN (INCH)	OUT-SIDE DIAM	THICKNESS	FACE OF RAISE	HUB THRU	HUB DIA	POINT OF WELD.	TAP HOLE SIZE	BOLT CIRCLE	HOLE DIA	HOLE NO.	BOLT SIZE & LENGTH	JACK BOLT & LENGTH	TAP ANGLE (°)	TA
2	215	45.1	92.1	109	105	60.3	6.4	165.1	25.4	8	7/8"x165	5/8"x100	45	
2 1/2	245	48.3	104.8	112	124	73	6.4	190.5	28.6	8	1"x180	5/8"x105	45	
3	240	45.1	127	129	127	88.9	9.5	205.5	25.4	8	7/8"x165	3/4"x100	45	
4	290	51.5	157.2	121	159	114.3	12.7	235	31.8	8	1 1/8"x200	3/4"x110	45	
6	380	62.6	215.9	147	235	168.3	12.7	317.5	31.8	12	1 1/8"x220	1"x120	30	
8	470	70.5	269.9	169	298	219.1	12.7	393.7	38.1	12	1 3/8"x250	1"x140	30	
10	545	76.9	323.8	191	368	273	12.7	469.3	38.1	16	1 3/8"x270	1"x150	45	
12	610	86.4	381	207	419	323.8	12.7	533.4	38.1	20	1 3/8"x290	1"x155	36	
14	640	92.8	412.8	220	451	355.6	12.7	558.8	41.3	20	1 1/2"x315	1"x165	36	
16	705	95.9	469.9	233	508	406.4	12.7	616	44.5	24	1 5/8"x330	1"x180	36	
18	785	108.6	533.4	236	565	457	12.7	685.8	50.8	20	1 7/8"x375	1"x195	36	
20	855	115	584.2	255	622	508	12.7	749.3	54	20	2"x390	1"x205	36	
24	1040	146.7	692.2	299	749	610	12.7	901.7	66.7	20	2 1/2"x450	1"x250	36	

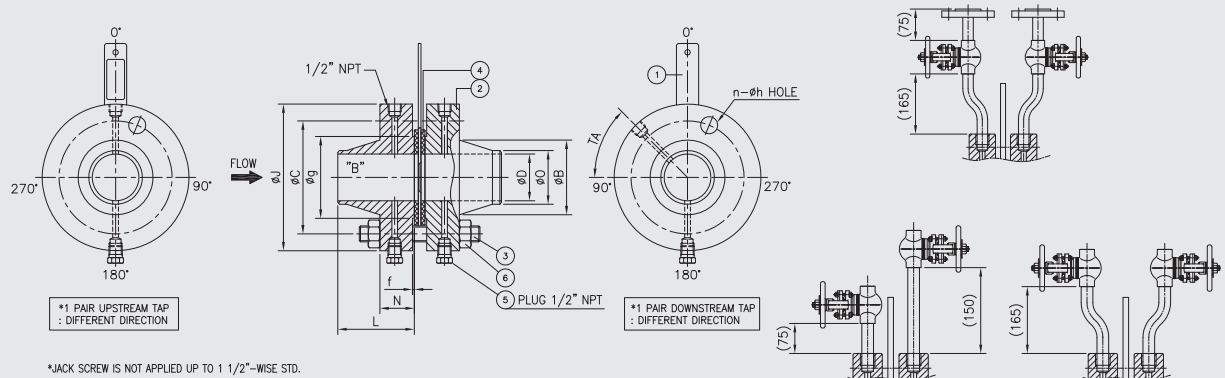
ORIFICE FLANGES CLASS 1500 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (1500lb) UNIT : mm

ORICE FLANGES CLASS 1500 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (1500lb)														UNIT : mm
SIZE IN (INCH)	OUT-SIDE DIAM	THICK NESS	RAISE OF FACE	HUB LENG TH	HUB DIA	POINT OF WELD.	TAP HOLE SIZE	BOLT CIRCLE	HOLE DIA	HOLE NO.	BOLT SIZE & LENGTH	JACK BOLT LENGTH	TAP ANGLE (°)	TA
2	215	45.1	92.1	109	105	60.3	6.4	165.1	25.4	8	7/8"x170	5/8"x100		45
2 1/2	245	48.3	104.8	112	124	73	6.4	190.5	28.4	8	1"x185	5/8"x105		45
3	265	54.7	127	124	133	88.9	9.5	203.2	31.8	8	1 1/8"x205	5/8"x115		45
4	310	61	157.2	131	162	114.3	12.7	241.3	35.1	8	1 1/4"x230	3/4"x125		45
6	395	89.6	215.9	178	229	168.3	12.7	317.5	38.1	12	1 3/8"x295	1"x160		30
8	485	111	269.9	220	291.2	219.7	12.7	393.7	44.5	12	1 5/8"x335	1"x180		30
10	585	115	323.8	261	368	273	12.7	482.6	50.8	12	1 7/8"x385	1"x200		30
12	675	130.9	381	290	451	323.8	12.7	571.6	53.8	16	2"x430	1"x220		45
14	750	140.4	412.8	305	495	355.6	12.7	635	60.5	16	2 1/4"x465	1"x230		45
16	825	153.1	469.9	318	552	406.4	12.7	704.8	66.5	16	2 1/2"x515	1"x255		45
18	915	169	538.4	330	597	457	12.7	747.4	73.2	16	2 3/4"x565	1"x275		45
20	985	184.8	584.2	363	641	508	12.7	830.8	79.2	16	3"x615	1 1/2"x300		45
24	1170	210.2	692.2	413	762	610	12.7	906.9	91.9	16	3 1/2"x705	1 1/2"x335		45

ORIFICE FLANGES CLASS 2500 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (2500lb) UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK NESS	FACE OF FLANGE	HUB LENG - TH	HUB DIA	POINT OF WELD.	BOLT CIRC DIA	HOLE OF FLANGE	HOLE OF FLANGE	BOLT SIZE & LENGTH	JACK BOLT LENGTH	JACK BOLT TAP	ANGLE (°)
	J	N	g	L	B	O	X	C	h	n		TA	
2	235	64.2	92.4	134	95	60.3	6.4	171.4	28.6	8	1"x205	5/8"x115	45
2 1/2	265	67.8	101.8	150	114	73	6.4	196.8	31.8	8	1 1/8"x230	5/8"x125	45
3	305	73.7	127	175	133	88.9	9.5	228.6	34.9	8	1 1/4"x255	3/4"x130	45
4	355	83.2	157.2	197	165	114.3	12.7	273	41.3	8	1 1/2"x295	1"x160	45
6	485	115	215.9	280	235	168.3	12.7	368.3	54	8	2"x395	1"x200	45
8	550	134	269.9	325	305	219.1	12.7	438.2	54	12	2"x435	1"x220	30
10	675	172.1	323.8	426	375	273	12.7	539.8	66.7	12	2 1/2"x450	1"x275	30
12	760	191.2	381	451	441	323.8	12.7	619.1	73	12	2 3/4"x510	1"x300	30

Dimension



*JACK SCREW IS NOT APPLIED UP TO 1 1/2"-WISE STD.

ORIFICE FLANGES DIMENSIONS: ANSI B16.36 FORGED FLANGES. (300Lb)

UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK - NESS	RAISE. OF FACE	HUB LENG -TH	HUB DIA. BASE	POINT OF WELD.	TAP HOLE SIZE	BOLT CIR- CLE	HOLE OF DIA.	HOLE OF NO.	BOLT SIZE & LENGTH
J	N	g	L	B	O	X	C	h	n		
1/2	95	38.6	35.1	77	38	21.3	6.4	66.7	15.9	4	1/2"x130
3/4	115	38.6	42.9	81	48	26.7	6.4	82.6	17.5	4	5/8"x140
1	125	38.6	50.8	83	54	33.5	6.4	88.9	17.5	4	5/8"x140
1 1/2	155	38.6	73	86	70	48.3	6.4	114.3	20.6	4	3/4"x145

ORIFICE FLANGES CLASS 900 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (900Lb)

UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK - NESS	RAISE. OF FACE	HUB LENG -TH	HUB DIA. BASE	POINT OF WELD.	TAP HOLE SIZE	BOLT CIR- CLE	HOLE OF DIA.	HOLE OF NO.	BOLT SIZE & LENGTH
J	N	g	L	B	O	X	C	h	n		
1/2	120	45.1	35.1	83	38	21.3	6.4	82.6	22.3	4	3/4"x160
3/4	130	45.1	42.9	90	44	26.7	6.4	88.9	22.3	4	3/4"x160
1	150	45.1	50.8	90	52	33.5	6.4	101.6	25.4	4	7/8"x165
1 1/2	180	45.1	73	96	70	48.3	6.4	123.8	28.6	4	1"x175

ORIFICE FLANGES CLASS 2500 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (2500Lb)

UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK - NESS	RAISE. OF FACE	HUB LENG -TH	HUB DIA. BASE	POINT OF WELD.	TAP HOLE SIZE	BOLT CIR- CLE	HOLE OF DIA.	HOLE OF NO.	BOLT SIZE & LENGTH
J	N	g	L	B	O	X	C	h	n		
1/2	135	45.1	34.9	87.9	43	21.3	6.4	88.9	22.2	4	3/4"x160
3/4	140	45.1	42.9	92.3	51	26.7	6.4	95.2	22.2	4	3/4"x160
1	160	45.1	50.8	99	57	33.5	6.4	108	25.4	4	7/8"x170
1 1/2	205	51.5	73	118	79	48.3	6.4	146	31.8	4	1 1/8"x200

ORIFICE FLANGES DIMENSIONS: ANSI B16.36 FORGED FLANGES. (600Lb)

UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK - NESS	RAISE. OF FACE	HUB LENG -TH	HUB DIA. BASE	POINT OF WELD.	TAP HOLE SIZE	BOLT CIR- CLE	HOLE OF DIA.	HOLE OF NO.	BOLT SIZE & LENGTH
J	N	g	L	B	O	X	C	h	n		
1/2	95	38.6	35.1	77	38	21.3	6.4	66.7	15.9	4	1/2"x130
3/4	115	38.6	42.9	81	48	26.7	6.4	82.6	17.5	4	5/8"x140
1	125	38.6	50.8	83	54	33.5	6.4	88.9	17.5	4	5/8"x140
1 1/2	155	38.6	73	86	70	48.3	6.4	114.3	20.6	4	3/4"x145

ORIFICE FLANGES CLASS 1500 DIMENSIONS: ANSI B16.36 FORGED FLANGES. (1500Lb)

UNIT : mm

SIZE IN (INCH)	OUT-SIDE DIAM	THICK - NESS	RAISE. OF FACE	HUB LENG -TH	HUB DIA. BASE	POINT OF WELD.	TAP HOLE SIZE	BOLT CIR- CLE	HOLE OF DIA.	HOLE OF NO.	BOLT SIZE & LENGTH
J	N	g	L	B	O	X	C	h	n		
1/2	120	45.1	35.1	83	38	21.3	6.4	82.6	22.3	4	3/4"x160
3/4	130	45.1	42.9	90	44	26.7	6.4	88.9	22.3	4	3/4"x160
1	150	45.1	50.8	90	52	33.5	6.4	101.6	25.4	4	7/8"x170
1 1/2	180	45.1	73	96	70	48.3	6.4	123.8	28.4	4	1"x175

Memo