

# ORIFICE FLANGES AND ORIFICE PLATE

All the NEW-FLOW orifice unions are manufactured according to the software by Flow Soft inc. The following is a list of commonly used standards and references used in flow measurement calculations:

- Flow Measurement Engineering Handbook. 2nd edition. R.W. Miller.
- Principles and practice of Flow Meter Engineering. 9th edition. L.K. Spink.
- Fluid Meters, Their Theory and Application. 6th edition, Howard S. Bean.
- Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, ASME MFC-3M-1985.
- Measurement of fluid flow by means of pressure differential devices-Orifice plates, inserted in circular cross section conduits running full, ISO 5167-2-2003.
- Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids, AGA Report 3, API 2000,2003.



Approvals:



## Technical Data

**Orifice Plate Series:** Restriction plate. Concentric orifice plate.

- Quadrant edge orifice plate.
- Conical entrance orifice plate. Large and small orifice plate.
- Eccentric orifice plate. Segmental orifice plate. Ring-joint orifice plate.
- Screw type ring-joint orifice plate. Corner type plate.

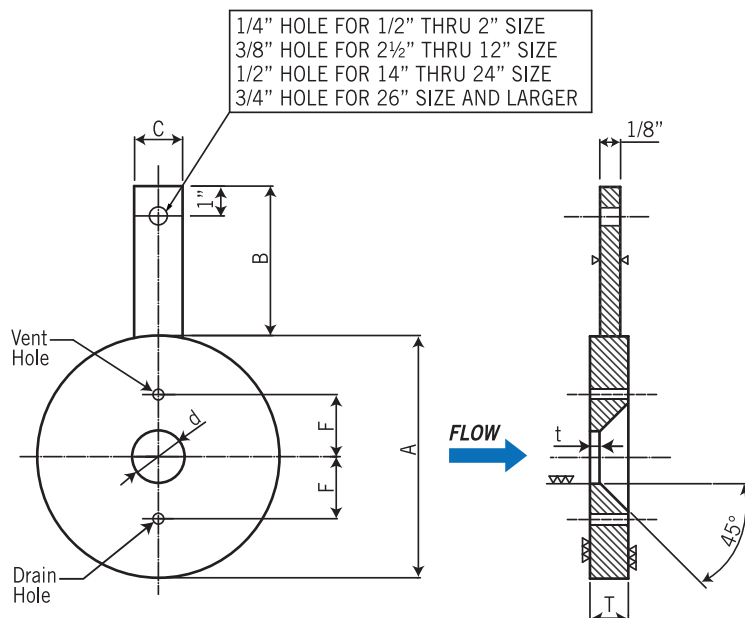
**Orifice Tap Series:** (a) flange taps. radius or D-D/2 taps, vena contract taps. and pipe taps.

(b) corner tap-individual pressure tap and annular slot design.

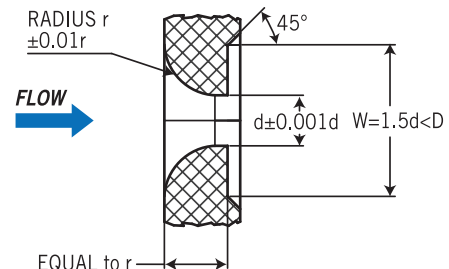
**Orifice Flange Series:** 1. Raised Face (RF type) 2. Ring-Joint (RJ type) 3. Slip-on (SO type) 4. Thread type

## PADDLE TYPE ORIFICE PLATE

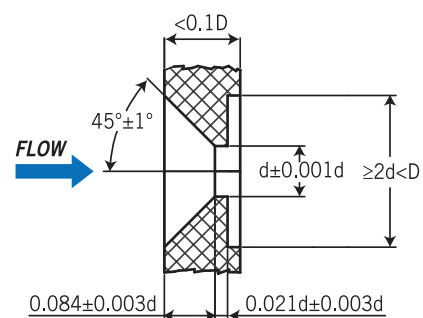
Model: COP



Concentric Orifice Plate



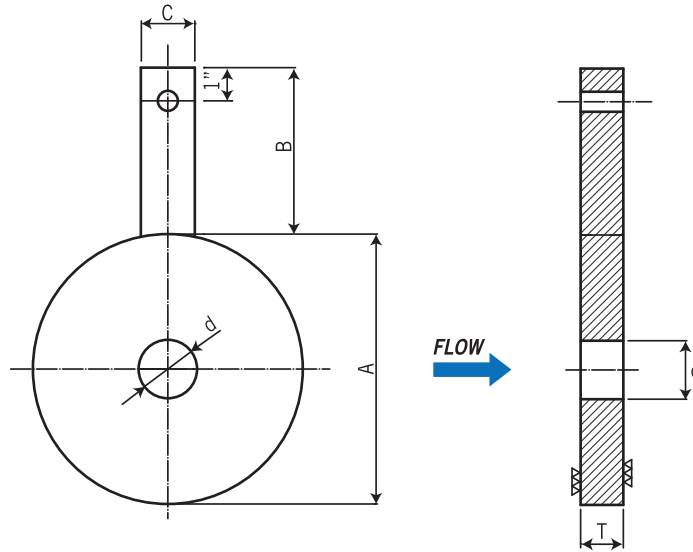
Quadrant Edge Orifice Plate



Conical Entrance Orifice Plate

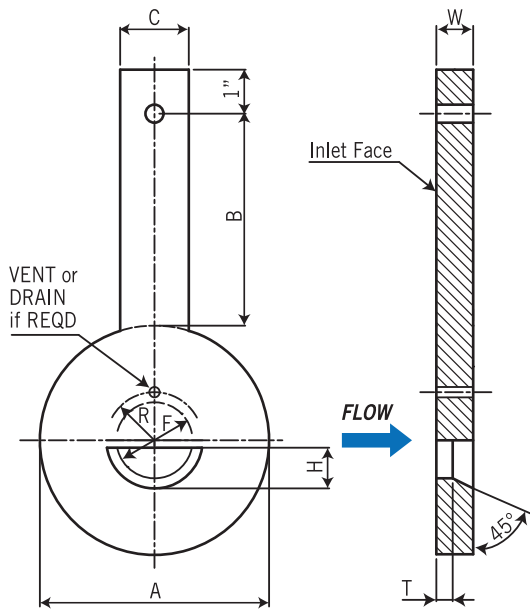
## PADDLE TYPE RESTRICTION PLATE

Model: PRP



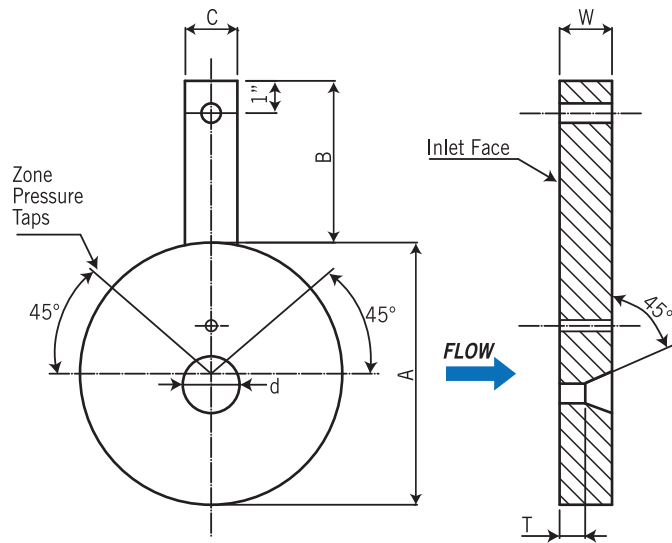
## SEGMENTAL ORIFICE PLATE

Model: SOP



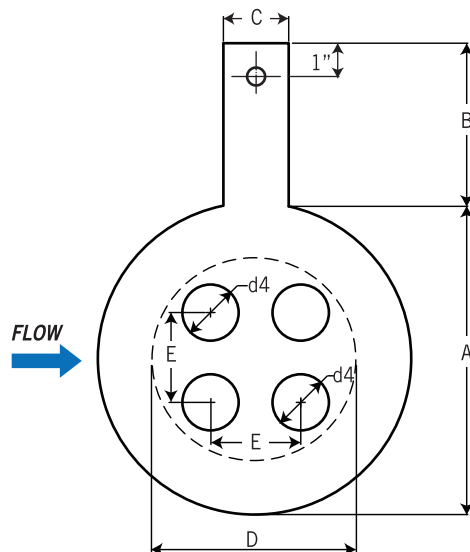
## ECCENTRIC PLATE

Model: EP



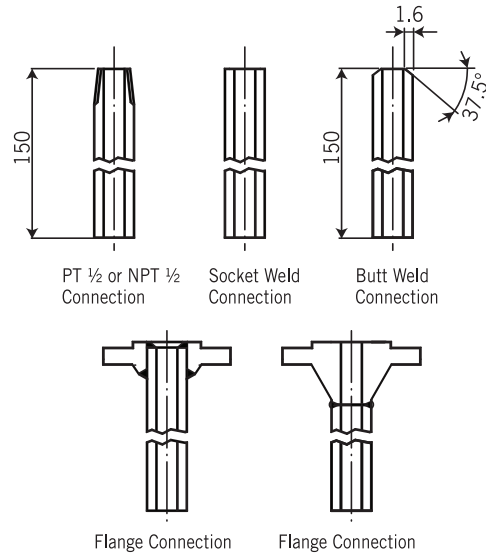
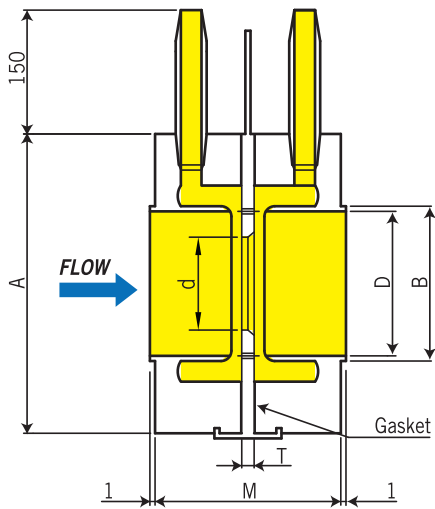
## MULTI-HOLES ORIFICE PLATE

Model: MOP



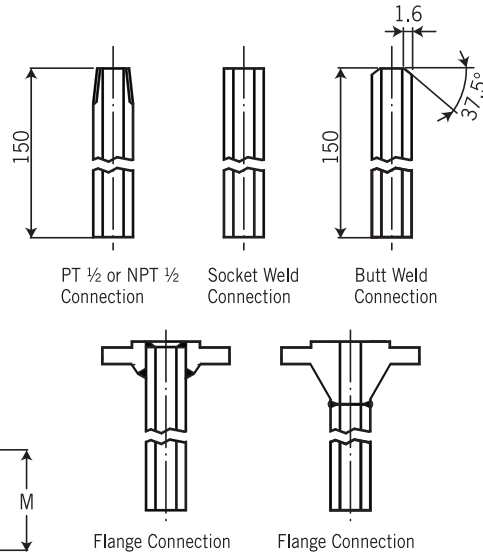
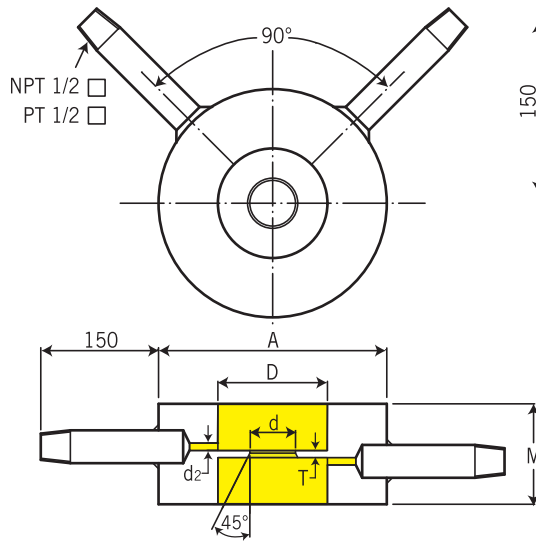
**CORNER TYPE PLATE**

Model: CORNER TAP-1

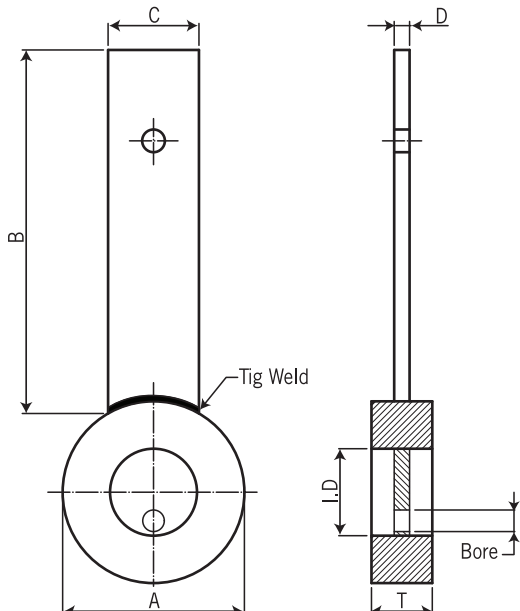


**CORNER TYPE PLATE**

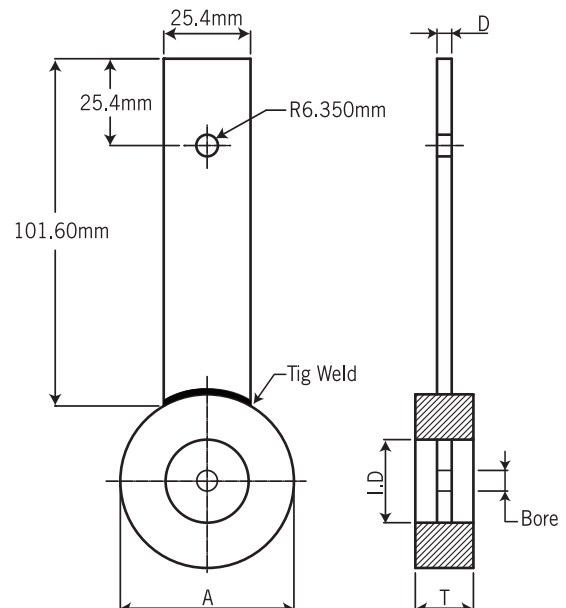
Model: CORNER TAP-2



**PADDLE TYPE LARGE AND SMALL ECCENTRIC PLATE**

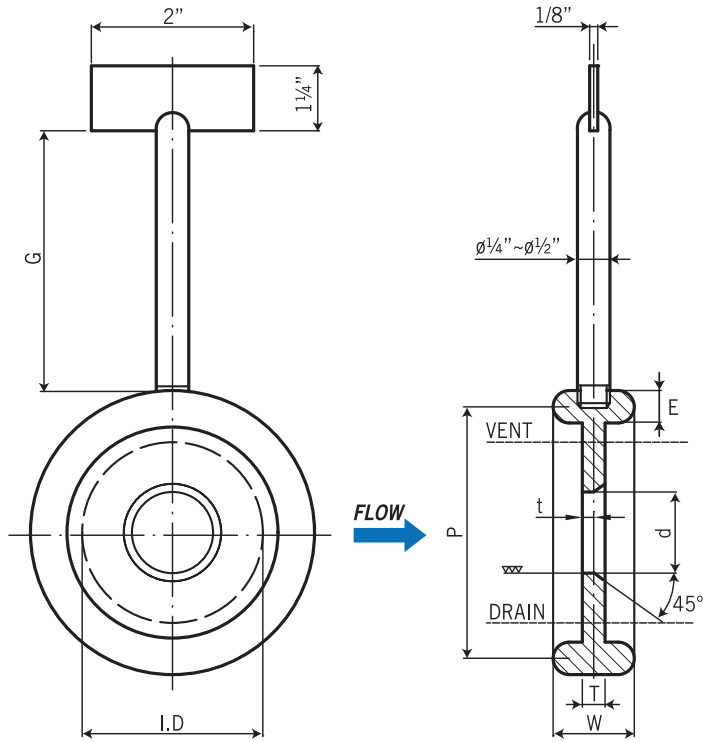


**PADDLE TYPE LARGE AND SMALL CONCENTRIC PLATE**

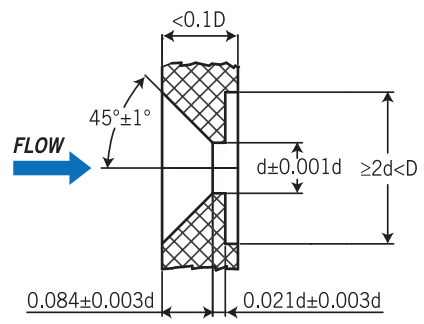
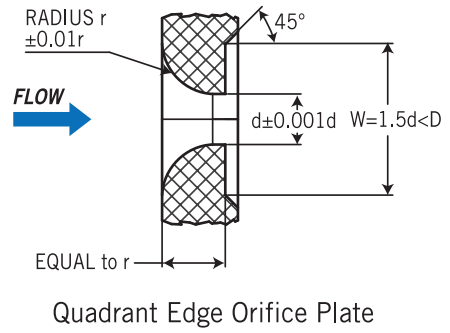


## RING-JOINT ORIFICE PALTE

Model: RJO  Octagonal (standard)  
 Oval (option)

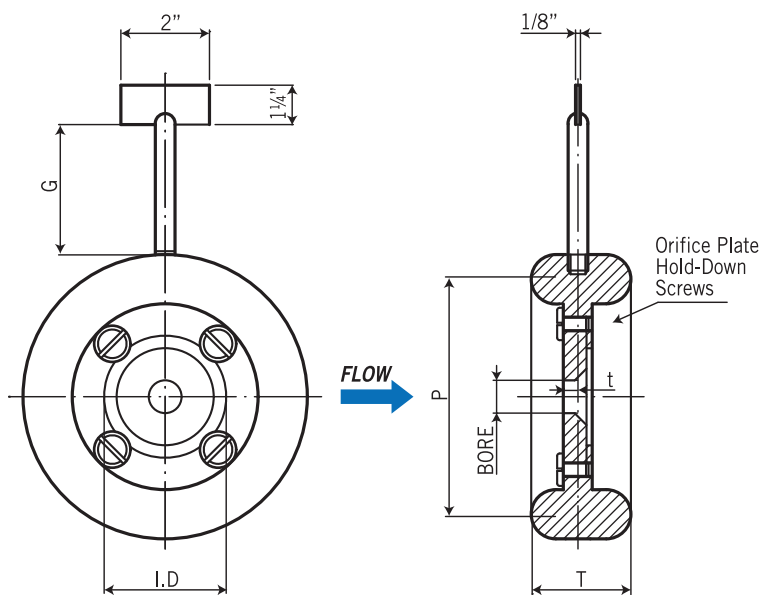


Square Edged

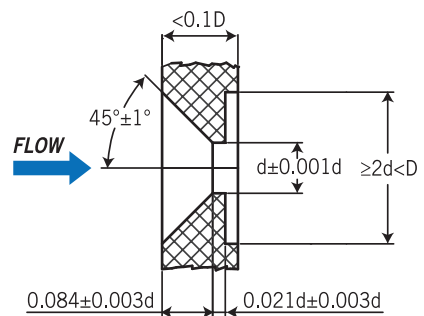
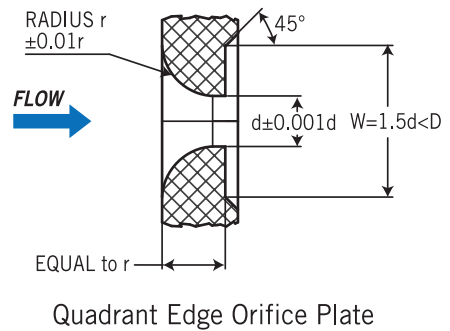


## SCREW TYPE RING-JOINT ORIFICE PLATE

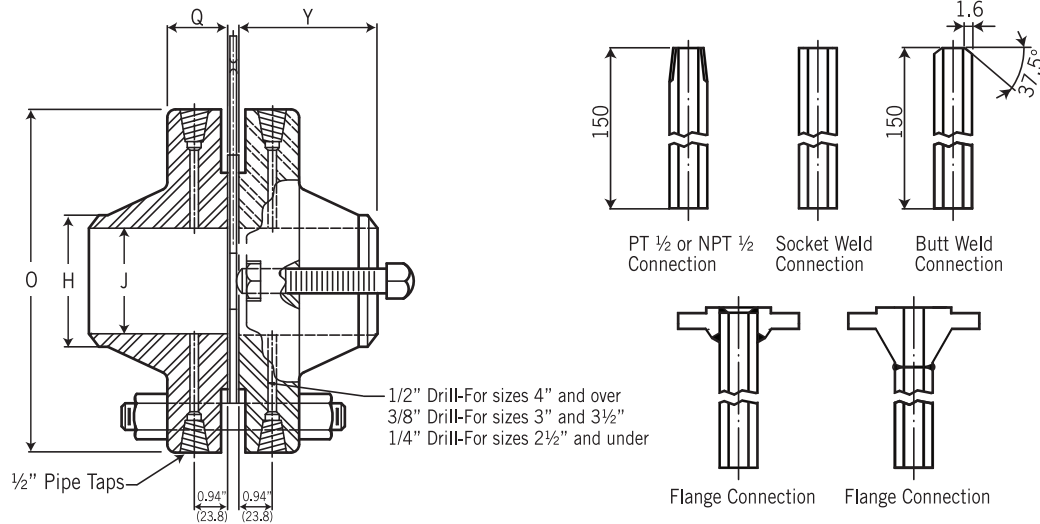
Model: SRJO  Octagonal (standard)  
 Oval (option)



Square Edged



## 300LB. -400LB. ANSI B16.36 FORGED STEEL WELDING NECK ORIFICE FLANGES



### RAISED FACE (RF TYPE)

unit:mm

300 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	DIAM. OF BORE	DIAM. OF RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
		O	Q	H	Y	J								
1	123.8	38.1	33.5	82.6	26.7	71.4	9.5	Two extra carbon steel bolts are furnished to be used as jack screws.	4	19.1	15.9	101.6	88.9	8.2
1 1/2	155.6	38.1	48.3	85.7	40.9	93.7	12.7		4	22.2	19.1	107.9	114.3	11.4
2	165.1	38.1	60.5	85.7	52.6	109.5	9.5		8	19.1	15.9	101.6	127.0	12.2
2 1/2	190.5	38.1	73.2	88.9	62.7	128.6	12.7		8	22.2	19.1	107.9	149.2	15.8
3	209.6	38.1	88.9	88.9	78.0	147.6	12.7		8	22.2	19.1	107.9	168.3	19.5
4	254.0	38.1	114.3	92.7	102.4	179.4	12.7		8	22.2	19.1	107.9	200.0	29.9
6	317.5	38.1	168.4	100.0	154.2	247.7	12.7		12	22.2	19.1	107.9	269.8	48.1
8	381.0	41.1	219.2	111.1	203.0	304.8	15.9		12	25.4	22.2	107.9	330.2	69.0
10	444.5	47.8	273.1	117.5	254.5	358.8	19.1		16	28.6	25.4	139.7	387.4	98.0
12	520.7	50.8	323.9	130.2	304.8	419.1	22.2		16	31.8	28.6	139.7	450.9	148.5
14	584.2	53.8	355.6	142.9	366.6	482.6	22.2		20	31.8	28.6	152.4	514.4	203.3
16	647.7	57.2	406.1	146.1	387.4	536.6	25.4		20	34.9	31.8	165.1	571.5	270.5
18	711.2	60.5	457.2	158.8	438.2	593.7	25.4		24	34.9	31.8	165.1	628.6	336.4
20	774.7	63.5	508.0	161.9	489.0	650.9	25.4		24	34.9	31.8	177.8	685.8	402.6
24	914.4	69.9	609.6	168.3	593.1	771.5	31.8		24	42.3	38.1	190.5	812.8	595.2

400 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	DIAM. OF BORE	DIAM. OF RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
		O	Q	H	Y	J								
1	123.8	44.5	33.5	82.6	To be specified by purchaser.	71.4	9.5	47.6	4	19.1	15.9	120.7	88.9	8.2
1 1/2	155.6	44.5	48.3	85.7		93.7	12.7	57.2	4	22.2	19.1	127.0	114.3	11.4
2	165.1	44.5	60.5	85.7		109.5	9.5	47.6	8	22.2	15.9	120.7	127.0	12.3
2 1/2	191.5	44.5	73.2	88.9		128.6	12.7	57.2	8	22.2	19.1	127.0	149.2	15.9
3	209.6	44.5	88.9	88.9		147.6	12.7	57.2	8	22.2	19.1	127.0	168.3	19.5
4	254.0	44.5	114.3	88.9		157.2	6.4	57.2	8	25.4	22.2	139.7	200.0	37.2
6	317.5	47.5	168.4	103.2		215.9	12.7	88.9	12	25.4	22.2	158.8	269.9	61.7
8	381.0	54.1	219.2	117.5		269.5	12.7	88.9	12	28.6	25.4	171.5	330.2	96.7
10	444.5	60.2	273.1	123.8		323.9	12.7	101.6	16	31.8	28.6	193.7	387.4	140.3
12	520.7	63.5	323.9	136.5		381.0	12.7	101.6	16	34.9	31.8	203.2	450.9	194.8
14	584.2	67.1	355.6	149.2		412.8	12.7	108.3	20	34.9	31.8	209.6	514.4	251.5
16	647.7	69.9	406.0	152.4		469.9	12.7	108.3	20	38.1	34.9	222.3	571.5	320.0
18	711.2	72.9	457.2	165.1		533.4	12.7	44.3	24	38.1	34.9	234.9	628.7	391.8
20	774.7	76.2	508.0	168.3		584.2	12.7	120.7	24	41.3	38.1	247.7	685.8	483.9
24	914.4	82.6	609.6	174.6		692.2	12.7	127.0	24	47.6	44.5	279.4	812.8	706.0

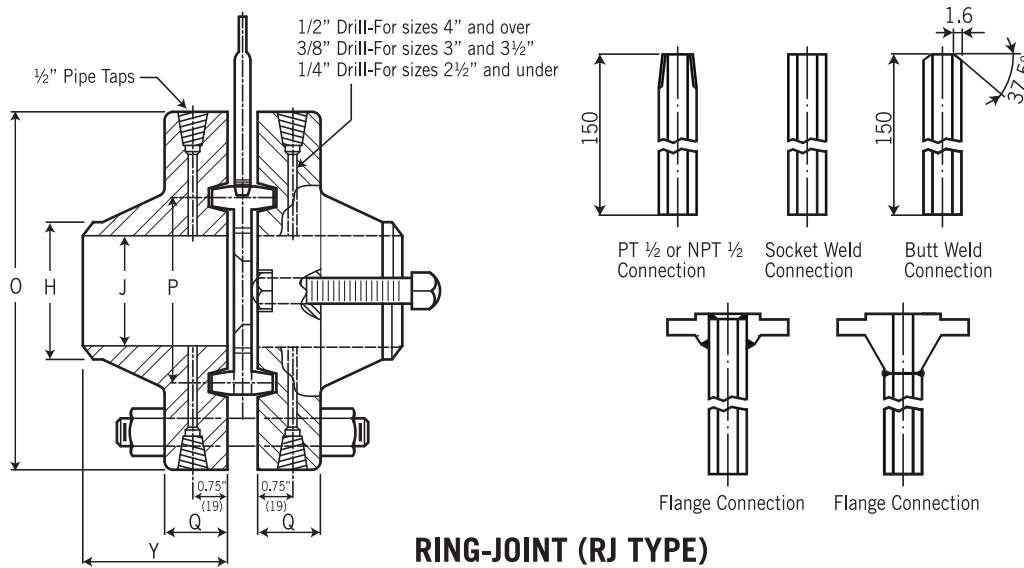
## 600LB. -1500LB. ANSI B16.36 FORGED STEEL WELDING NECK ORIFICE FLANGES RAISED FACE (RF TYPE)

600 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES RAISED FACE	DIAM. OF HUB	LENGTH THROUGH HUB RAISED FACE	DIAM. OF BORE	DIAM. OF RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BOLTS	LENGTH OF STUD BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
							RAISED FACE					RAISED FACE		
							0					Q		H
1	123.8	44.5	33.5	82.6	To be specified by purchaser.	71.4	9.5	47.6	4	17.5	15.9	125	88.9	8.2
1½	155.6	44.5	48.3	85.7		93.7	12.7	57.2	4	20.6	19.1	135	114.3	11.4
2	165.1	44.5	60.5	85.7		109.5	9.5	47.6	8	17.5	15.9	125	127.0	12.3
2½	190.5	44.5	73.2	88.9		128.6	12.7	57.2	8	20.6	19.1	135	149.2	15.9
3	209.6	44.5	88.9	88.9		147.6	12.7	57.2	8	20.6	19.1	135	168.3	19.5
4	273.1	44.5	114.3	101.6		157.2	6.4	57.2	8	25.4	22.2	150	215.9	46.8
6	355.6	54.1	168.4	117.5		215.9	12.7	88.9	12	28.6	25.4	180	292.1	88.5
8	419.1	62.0	219.2	133.3		269.9	12.7	101.6	12	31.8	28.6	195	349.3	126.2
10	508.0	69.9	273.1	152.4		323.9	12.7	101.6	16	34.9	31.8	220	431.8	206.1
12	558.8	72.9	233.9	155.6		381.0	12.7	114.3	20	34.9	31.8	230	489.0	251.1
14	603.3	76.2	355.6	165.1		412.8	12.7	127.0	20	38.1	34.9	240	527.1	370.0
16	685.8	82.6	406.4	177.8		469.9	12.7	127.0	20	41.3	38.1	260	603.3	505.3
18	743.0	88.9	457.2	184.2		533.4	12.7	127.0	20	44.5	41.3	280	654.1	592.9
20	813.8	95.3	508.0	190.5		584.2	12.7	152.4	24	44.5	41.3	300	723.9	612.9
24	939.8	108.0	609.6	203.2		692.2	12.7	152.4	24	50.8	47.6	335	838.2	1044.2

900 LB. (for sizes 2-1/2 inch and smaller, use 1500LB.)														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES RAISED FACE	DIAM. OF HUB	LENGTH THROUGH HUB RAISED FACE	DIAM. OF BORE	DIAM. OF RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BOLTS	LENGTH OF STUD BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
							RAISED FACE					RAISED FACE		
							0					Q		H
3	241.3	44.5	88.9	101.6	To be specified by purchaser.	127.0	9.5	88.9	8	25.4	22.2	150	190.5	35.9
4	292.1	50.8	114.3	114.3		157.2	9.5	88.9	8	31.8	26.5	180	235.0	58.6
6	381.0	62.0	168.4	139.7		215.9	15.9	114.3	12	31.8	28.6	195	317.5	119.4
8	469.9	69.9	219.2	161.9		269.9	15.9	114.3	12	38.1	34.9	230	393.7	202.0
10	546.1	76.2	273.1	184.2		323.9	15.9	114.3	16	38.1	34.9	240	469.9	287.8
12	609.1	85.6	323.9	200.0		381.0	15.9	114.3	20	38.1	34.9	260	533.4	395.9

1500 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES RAISED FACE	DIAM. OF HUB	LENGTH THROUGH HUB RAISED FACE	DIAM. OF BORE	DIAM. OF RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BOLTS	LENGTH OF STUD BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
							RAISED FACE					RAISED FACE		
							0					Q		H
1	149.2	44.5	33.5	73.1	To be specified by purchaser.	50.8	6.4	76.2	4	25.4	22.2	150	101.6	11.8
1½	177.8	44.5	48.3	82.6		73.1	6.4	76.2	4	28.6	25.4	160	123.8	20.4
2	215.9	44.5	60.5	101.6		92.1	6.4	76.2	8	25.4	22.2	150	165.1	29.5
2½	244.5	47.5	73.2	104.8		104.8	6.4	76.2	8	28.6	25.4	165	190.5	44.5
3	266.7	54.1	88.9	117.5		127.0	9.6	114.3	8	31.8	28.6	185	203.2	55.8
4	311.2	60.2	114.3	123.8		157.2	9.6	114.3	8	34.9	31.8	205	241.3	82.6
6	393.7	88.9	168.4	171.5		215.9	15.9	165.1	12	38.1	34.9	265	317.5	184.8
8	482.6	98.3	219.2	212.7		269.9	15.9	165.1	12	44.5	41.3	300	393.7	306.5
10	584.2	114.3	273.1	254.0		323.9	15.9	165.1	12	50.8	47.6	345	482.6	498.9
12	673.1	130.3	323.9	282.6		381.0	15.9	165.1	16	54.0	50.8	380	571.5	774.5
14	749.3	139.7	355.6	298.5		412.8	15.9	170.0	16	60.5	57.2	415	635.0	973.0
16	825.5	152.5	406.4	311.2		469.9	15.9	185.0	16	66.7	63.5	450	704.9	1260
18	914.4	168.4	457.2	327.2		533.4	15.9	198.5	16	73.0	71.1	500	774.7	1695
20	984.3	184.2	508.0	355.6		584.2	15.9	215.0	16	79.4	76.2	545	831.9	2064
24	1168.4	209.4	609.6	406.4		692.2	15.9	240.0	16	92.1	88.9	620	990.6	3305

## 300LB. -400LB. ANSI B16.36 FORGED STEEL WELDING NECK ORIFICE FLANGES



unit:mm

300 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES RING JOINT	DIAM. OF HUB	LENGTH THROUGH HUB RING JOINT	DIAM. OF BORE	DIAM. OF PITCH	DEPTH OF JACK SCREW SLOT RING JOINT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS RING JOINT	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
														RING JOINT
	O	Q	H	Y	J	P								RING JOINT
1	123.8	38.1	33.5	76.2	26.7	50.8	6.4	Two extra carbon steel bolts are furnished to be used as jack screws.	4	27.0	15.9	139.2	88.9	6.8
1 1/2	155.6	38.1	48.3	79.4	40.9	68.3	6.4		4	30.2	19.1	149.2	114.3	11.4
2	165.1	38.1	60.5	79.4	52.6	82.6	6.4		8	27.0	15.9	138.2	127.0	13.6
2 1/2	190.5	38.1	73.2	82.6	62.7	101.6	6.4		8	30.2	19.1	148.2	149.2	20.8
3	209.6	38.1	88.9	82.6	78.0	123.8	6.4		8	30.2	19.1	148.2	168.3	25.4
4	254.0	38.1	114.3	85.7	102.4	149.2	6.4		8	30.2	19.1	148.2	200.0	29.5
6	317.5	38.1	168.4	98.4	154.2	134.9	6.4		12	22.2	19.1	148.2	269.8	48.6
8	381.0	41.1	219.2	111.1	203.0	269.9	9.5		12	25.4	22.2	158.2	330.2	76.7
10	444.5	47.8	273.1	117.5	254.5	323.9	12.7		16	28.6	25.4	178.2	387.4	113.5
12	520.7	50.8	323.9	130.2	304.8	381.0	15.9		16	31.8	28.6	193.2	450.9	165.7
14	584.2	53.8	355.6	142.9	366.6	419.1	15.9		20	31.8	28.6	198.2	514.4	222.4
16	647.7	57.2	406.1	146.1	387.4	469.9	19.1		20	34.9	31.8	208.2	571.5	290.6
18	711.2	60.5	457.2	158.8	438.2	533.0	19.1		24	34.9	31.8	218.2	628.6	356.4
20	774.7	63.5	508.0	161.9	489.0	584.2	19.1		24	34.9	31.8	227.0	685.8	435.8
24	914.4	69.9	609.6	168.3	593.1	692.2	25.4		24	42.3	38.1	256.8	812.8	640.1

400 LB.														
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES RING JOINT	DIAM. OF HUB	LENGTH THROUGH HUB RING JOINT	DIAM. OF BORE	DIAM. OF PITCH	DEPTH OF JACK SCREW SLOT RING JOINT	JACK SCREW SIZE	NUMBER OF BOLT	DIAM. OF HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS RING JOINT	BOLT CIRCLE	APPROX. WEIGHT UNION lb.
														RING JOINT
	O	Q	H	Y	J	P								RING JOINT
1	123.8	44.5	33.5	82.6	To be specified by purchaser.	50.8	6.4	63.5	4	27.0	15.9	---	88.9	6.8
1 1/2	155.6	44.5	48.3	85.7		68.3	6.4	76.2	4	30.2	19.1	---	114.3	11.4
2	165.1	46.0	60.5	85.7		82.6	6.4	63.5	8	30.2	15.9	---	127.0	13.6
2 1/2	191.5	46.0	73.2	88.9		101.6	6.4	76.2	8	30.2	19.1	---	149.2	20.9
3	209.6	46.0	88.9	88.9		123.8	6.4	76.2	8	30.2	19.1	---	168.3	25.4
4	254.0	46.0	114.3	88.9		149.2	15.9	76.2	8	30.2	22.2	152.4	200.0	40.9
6	317.5	49.1	168.4	103.2		134.9	22.2	101.6	12	25.4	22.2	165.1	269.9	65.8
8	381.0	55.7	219.2	117.5		269.9	22.2	114.3	12	28.6	25.4	184.2	330.2	99.9
10	444.5	61.8	273.1	123.8		323.9	22.2	114.3	16	31.8	28.6	203.2	387.4	147.6
12	520.7	65.1	323.9	136.5		381.0	22.2	127.0	16	34.9	31.8	216.0	450.9	204.3
14	584.2	68.6	355.6	149.2		419.1	22.2	127.0	20	34.9	31.8	228.6	514.4	267.9
16	647.7	71.4	406.0	152.4		469.9	22.2	127.0	20	38.1	34.9	235.0	571.5	338.2
18	711.2	74.5	457.2	165.1		533.0	22.2	127.0	24	38.1	34.9	241.3	628.7	413.1
20	774.7	79.4	508.0	168.3		584.2	22.2	139.7	24	41.3	38.1	260.4	685.8	526.6
24	914.4	87.3	609.6	174.6		690.2	22.2	152.0	24	47.6	44.5	292.1	812.8	755.9

## 600LB. -1500LB. ANSI B16.36 FORGED STEEL WELDING NECK ORIFICE FLANGES RING-JOINT (RJ TYPE)

unit:mm

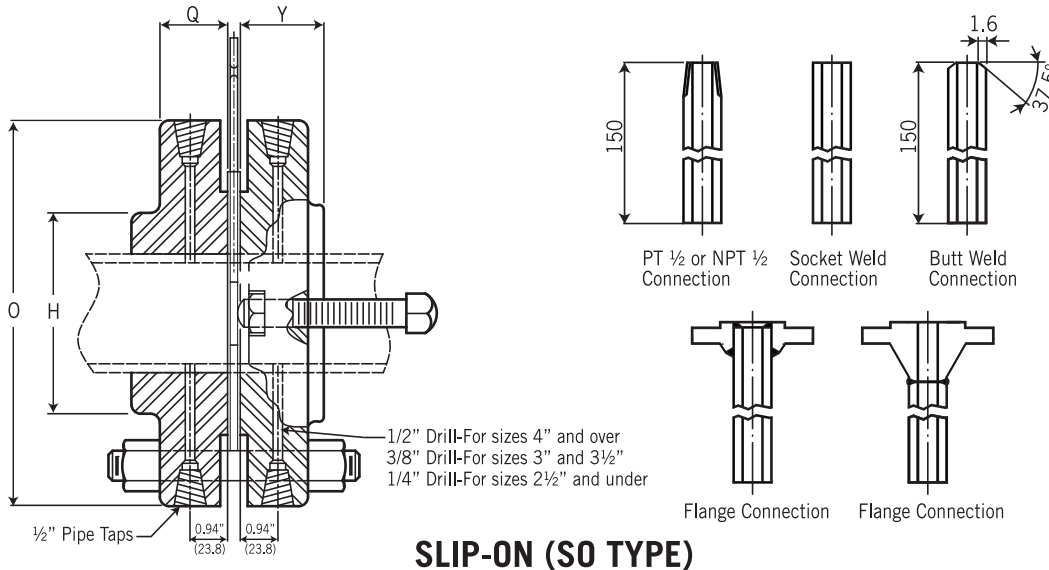
600 LB.																			
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES		DIAM. OF HUB	LENGTH THROUGH HUB		DIAM. OF BORE	DIAM. OF PITCH	DEPTH OF JACK SCREW SLOT		JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BLOTS	LENGTH OF STUD BOLTS		BOLT CIRCLE	APPROX. WEIGHT UNION lb.	
		RING JOINT	H		Y	RING JOINT			RING JOINT	RING JOINT					RING JOINT	RING JOINT		RING JOINT	RING JOINT
				O															
1	123.8	44.5	33.5	76.2	To be specified by purchaser.	50.8	12.7	55.6	4	19.1	15.9	140	88.9	6.8					
1½	155.6	44.5	48.3	79.4		68.3	12.7	55.6	4	22.2	19.1	140	114.3	11.4					
2	165.1	46.0	60.5	79.4		82.6	12.7	63.5	8	19.1	15.9	140	127.0	13.6					
2½	190.5	46.0	73.2	82.6		101.6	12.7	63.5	8	22.2	19.1	145	149.2	20.9					
3	209.6	46.0	88.9	82.6		123.8	15.9	76.2	8	22.2	19.1	145	168.3	25.4					
4	273.1	46.0	114.3	101.6		149.2	15.9	76.2	8	25.4	22.2	165	215.9	44.9					
6	355.6	55.7	168.4	117.5		211.1	22.2	114.3	12	28.6	25.4	190	292.1	89.4					
8	419.1	63.6	219.2	133.3		269.9	22.2	120.7	12	108.0	28.6	210	349.3	128.9					
10	508.0	71.4	273.1	152.4		323.9	22.2	127.0	16	34.9	31.8	235	431.8	214.3					
12	558.8	74.5	233.9	155.6		381.0	22.2	127.0	20	34.9	31.8	240	489.0	259.2					
14	603.3	77.8	355.6	165.1		419.1	22.2	139.7	20	38.1	34.9	255	527.1	377.0					
16	685.8	84.1	406.4	177.8		469.9	22.2	139.7	20	41.3	38.1	275	603.3	515.3					
18	743.0	90.5	457.2	184.2		533.4	22.2	146.1	20	44.5	41.3	290	654.1	603.8					
20	813.8	98.4	508.0	190.5		584.2	22.2	158.8	24	44.5	41.3	320	723.9	631.1					
24	939.8	112.7	609.6	203.2		692.2	22.2	177.8	24	50.8	47.6	350	838.2	1078.3					

900 LB. (for sizes 2-1/2 inch and smaller, use 1500LB.)																			
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES		DIAM. OF HUB	LENGTH THROUGH HUB		DIAM. OF BORE	DIAM. OF PITCH	DEPTH OF JACK SCREW SLOT		JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BLOTS	LENGTH OF STUD BOLTS		BOLT CIRCLE	APPROX. WEIGHT UNION lb.	
		RING JOINT	H		Y	RING JOINT			RING JOINT	RING JOINT					RING JOINT	RING JOINT			
				O														Q	H
3	241.3	46.0	88.9	101.6	To be specified by purchaser.	123.8	15.9	120.7	8	25.4	22.2	165	190.5	38.6					
4	292.1	52.4	114.3	114.3		149.2	15.9	85.7	8	31.8	26.5	190	235.0	63.6					
6	381.0	63.6	168.4	139.7		211.1	22.2	120.7	12	31.8	28.6	210	317.5	127.1					
8	469.9	71.4	219.2	161.9		269.9	22.2	127.0	12	38.1	34.9	240	393.7	215.7					
10	546.1	77.8	273.1	184.2		323.9	22.2	133.3	16	38.1	34.9	255	469.9	306.5					
12	609.1	87.2	323.9	200.0		381.0	22.2	139.7	20	38.1	34.9	275	533.4	422.2					

1500 LB.																			
NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES		DIAM. OF HUB	LENGTH THROUGH HUB		DIAM. OF BORE	DIAM. OF PITCH	DEPTH OF JACK SCREW SLOT		JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF STUD BLOTS	LENGTH OF STUD BOLTS		BOLT CIRCLE	APPROX. WEIGHT UNION lb.	
		RING JOINT	H		Y	RING JOINT			RING JOINT	RING JOINT					RING JOINT				
				O												Q		H	Y
1	149.2	44.5	33.5	76.2	To be specified by purchaser.	50.8	12.7	55.6	4	25.4	22.2	160	101.6	12.3					
1½	177.8	44.5	48.3	82.6		68.3	12.7	55.6	4	28.6	25.4	165	123.8	18.6					
2	215.9	46.0	60.5	101.6		95.3	12.7	63.5	8	25.4	22.2	165	165.1	32.2					
2½	244.5	49.1	73.2	104.8		108.0	12.7	63.5	8	28.6	25.4	180	190.5	45.4					
3	266.7	55.7	88.9	117.5		127.0	15.9	85.7	8	31.8	28.6	185	203.2	59.5					
4	311.2	61.8	114.3	123.8		157.2	15.9	85.7	8	34.9	31.8	215	241.3	90.8					
6	393.7	92.1	168.4	171.5		215.9	22.2	152.4	12	38.1	34.9	280	317.5	197.5					
8	482.6	103.1	219.2	212.7		269.9	22.2	165.1	12	44.5	41.3	310	393.7	324.6					
10	584.2	119.1	273.1	254.0		323.9	22.2	177.8	12	50.8	47.6	355	482.6	528.9					
12	673.1	138.2	323.9	282.6		381.0	22.2	203.2	16	54.0	50.8	400	571.5	812.7					



## 300LB. -1500LB. ANSI B16.36 FORGED STEEL SLIP-ON ORIFICE FLANGES



### SLIP-ON (SO TYPE)

unit:mm

NOMINAL PIPE SIZE	300 LB.														
	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	DIAM. OF RAISED FACE	DIAM. OF BORE	HEIGHT TO COUNTER BORE	FACE COUNTER BORE HEIGHT	DEPTH OF JACK SCREW SLOT	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.
	O	Q	H	Y	SLIP-ON	F	G								
1	123.8	38.1	54.0	47.6	71.4	34.5	38.1	20.6	9.5	4	17.5	15.9	125	88.9	6.8
1 1/2	155.6	38.1	44.5	47.6	93.7	49.5	38.1	15.9	12.7	4	20.6	19.1	135	114.3	8.6
2	165.1	38.1	84.1	49.2	109.5	62.0	38.1	12.7	9.5	8	17.5	15.9	125	127.0	10.4
2 1/2	190.5	38.1	100.0	50.8	128.6	76.7	44.5	15.9	12.7	8	20.6	19.1	135	149.2	14.1
3	210.0	38.1	117.5	52.4	147.6	90.7	44.5	12.7	12.7	8	20.6	19.1	135	168.3	17.7
4	254.0	38.1	146.1	54.0	179.4	116.1	44.5	11.1	12.7	8	20.6	19.1	135	200.0	27.2
6	317.5	38.1	206.4	54.0	247.7	170.7	44.5	6.4	12.7	12	22.2	19.1	135	270.0	45.4
8	381.0	41.1	260.4	61.9	304.8	221.5	50.8	-	15.9	12	25.4	22.2	145	330.2	60.8
10	444.5	47.8	320.7	66.7	358.8	276.4	55.6	-	19.1	16	28.6	25.4	165	387.4	89.0
12	520.7	50.8	374.7	73.0	419.1	327.2	60.3	-	22.2	16	31.8	28.6	180	450.9	128.0
14	584.2	53.8	425.5	76.2	482.6	359.2	63.5	-	22.2	20	31.8	28.6	185	514.4	172.5
16	647.7	57.2	482.6	82.6	536.6	410.5	68.3	-	25.4	20	34.9	31.8	195	571.5	281.5
18	711.2	60.5	533.4	88.9	593.7	461.8	69.9	-	25.4	24	34.9	31.8	205	628.6	313.7
20	774.7	63.5	587.4	95.3	650.9	513.1	73.0	-	25.4	24	34.9	31.8	215	685.8	354.6
24	914.4	69.9	701.7	106.4	692.2	616.0	82.6	-	31.8	24	41.3	38.1	240	812.8	545.3

NOMINAL PIPE SIZE	400 LB. (sizes 3 inch and smaller furnished same as 300LB. except with stud bolts long enough for extra nut.)														
	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	HEIGHT TO COUNTER BORE	DIAM. OF TO RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS STUD	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.	
	O	Q	H	Y	F										
4	254.0	44.5	146.1	50.8	42.9	157.2	6.4	19.1x76.2	203.2	25.4	22.2	139.7	200.0	29.0	
6	317.5	47.5	206.4	57.2	52.4	215.9	9.5	25.4x88.9	304.8	25.4	22.2	158.8	269.9	50.0	
8	381.0	54.1	260.4	68.3	57.2	269.9	9.5	25.4x88.9	304.8	28.6	25.4	171.5	330.2	76.7	
10	444.5	60.2	320.7	73.0	61.9	323.9	12.7	25.4x101.6	406.4	31.8	28.6	190.5	387.4	108.5	
12	520.7	63.5	374.7	79.4	66.7	381.0	15.9	25.4x101.6	406.4	34.9	31.8	203.2	450.9	151.2	

NOMINAL PIPE SIZE	600 LB. (sizes 3 inch and smaller furnished same as 300LB. except with stud bolts long enough for extra nut.)														
	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	HEIGHT TO COUNTER BORE	DIAM. OF TO RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS STUD	LENGTH OF BOLTS STUD	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.	
	O	Q	H	Y	F										
4	273.1	44.5	152.4	54.0	47.6	157.2	6.4	19.1x76.2	8	25.4	22.2	150	215.9	40.4	
6	355.6	54.1	222.3	66.7	57.2	215.9	12.7	25.4x88.9	12	28.6	25.4	180	292.1	87.6	
8	419.1	62.0	273.1	76.2	63.5	269.9	12.7	25.4x101.6	12	31.8	28.6	195	349.3	124.4	
10	508.0	69.9	342.9	85.7	71.4	323.9	12.7	25.4x101.6	16	34.9	31.8	220	431.8	195.0	
12	558.8	72.9	400.1	92.1	76.2	381.0	12.7	25.4x114.3	20	34.9	31.8	230	489.0	241.1	

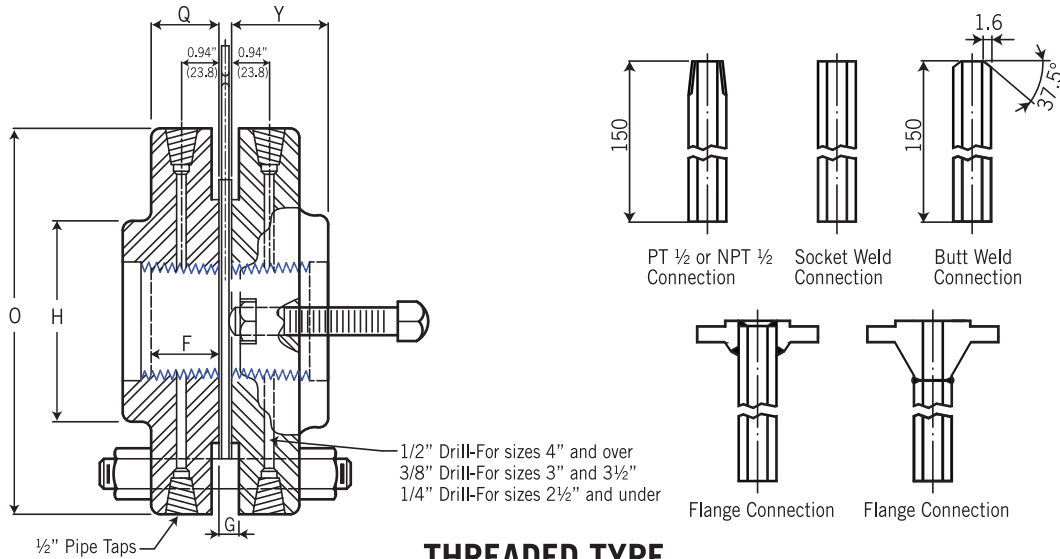
## 900 LB.

NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	HEIGHT TO COUNTER BORE	DIAM. OF TO RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS STUD	LENGTH OF BOLTS STUD	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.
	O	Q	H	Y	F									
3	241.3	44.5	127.0	54.0	47.6	127.0	6.4	19.1x88.9	8	25.4	22.2	150	190.0	35.0
4	292.1	50.8	158.8	69.9	54.0	157.2	6.4	19.1x88.9	8	31.8	28.6	180	235.0	60.4
6	381.0	62.0	235.0	85.7	63.5	215.9	12.7	25.4x114.3	12	31.8	28.6	195	317.5	117.6
8	469.9	69.9	298.5	101.6	69.9	269.9	12.7	25.4x114.3	12	38.1	34.9	230	393.7	188.4
10	546.1	76.2	368.3	108.0	77.8	323.9	12.7	25.4x114.3	16	38.1	34.9	240	470.0	267.0
12	609.6	85.6	419.1	117.5	82.6	381.0	12.7	25.4x114.3	20	38.1	34.9	260	533.4	354.0

## 1500 LB.

NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	HEIGHT TO COUNTER BORE	DIAM. OF TO RAISED FACE	DEPTH OF JACK SCREW SLOT	JACK SCREW SIZE	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS STUD	LENGTH OF BOLTS STUD	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.
	O	Q	H	Y	F									
1	149.2	44.5	52.4	47.6	38.1	50.8	6.4	15.9x76.2	4	25.4	22.2	150	101.6	11.8
1½	177.8	44.5	69.9	47.6	38.1	73.0	6.4	15.9x76.2	4	28.6	25.4	160	123.8	20.4
2	215.9	44.5	104.8	57.2	44.5	92.1	6.4	15.9x76.2	8	25.4	22.2	150	165.1	29.5
2½	244.5	47.5	123.8	63.5	54.0	104.8	6.4	15.9x76.2	8	28.6	25.4	165	190.5	44.5
3	266.7	54.1	133.4	73.0	57.2	127.0	6.4	19.1x114.3	8	31.8	28.6	185	203.2	55.8
4	311.2	60.2	161.9	90.5	63.5	157.2	6.4	19.1x114.3	8	34.9	31.8	205	241.3	82.6
6	393.7	88.9	228.6	119.1	76.2	215.9	12.7	25.4x165.1	12	38.1	34.9	265	317.5	184.8
8	482.6	98.3	292.1	142.9	82.6	269.9	12.7	25.4x165.1	12	44.5	34.9	300	393.7	292.8
10	584.2	114.3	368.3	158.8	90.5	323.9	12.7	25.4x165.1	12	50.8	47.6	345	482.6	482.6
12	673.1	130.3	450.9	181.0	98.4	381.0	12.7	25.4x165.1	16	54.0	50.8	380	571.5	753.6

## 300LB. ANSI B16.36 FORGED STEEL THREAD ORIFICE FLANGES



### THREADED TYPE

unit:mm

## 300 LB.

NOMINAL PIPE SIZE	OUTSIDE DIAM OF FLANGE	THICKNESS OF FLANGES	DIAM. OF HUB	LENGTH THROUGH HUB	DIAM. OF TO RAISED FACE	DIAM. OF BORE	HEIGHT TO COUNTER BORE	FACE COUNTER BORE HEIGHT	DEPTH OF JACK SCREW SLOT	NUMBER OF BOLT HOLES	DIAM. OF BOLT HOLES	DIAM. OF BLOTS	LENGTH OF BOLTS	BOLT CIRCLE	APPROX. WEIGHT UNIT lb.
					THREADED										
	O	Q	H	Y		F	G								
1	123.8	38.1	54.0	47.6	71.4	34.5	38.1	20.6	9.5	4	17.5	15.9	125	88.9	6.8
1½	155.6	38.1	44.5	47.6	93.7	49.5	38.1	15.9	12.7	4	20.6	19.1	135	114.3	8.6
2	165.1	38.1	84.1	49.2	109.5	62.0	38.1	12.7	9.5	8	17.5	15.9	125	127.0	10.4
2½	190.5	38.1	100.0	50.8	128.6	76.7	44.5	15.9	12.7	8	20.6	19.1	135	149.2	14.1
3	210.0	38.1	117.5	52.4	147.6	90.7	44.5	12.7	12.7	8	20.6	19.1	135	168.3	17.7
4	254.0	38.1	146.1	54.0	179.4	116.1	44.5	11.1	12.7	8	20.6	19.1	135	200.0	27.2

## Ordering Information

Individual Specification			Requirement		Requirement	
1	Tag No.	With S.S. Tag Nameplate				
2	Maker					
3	Model No.					
4	Quantity					
5	P&ID No.					
6	Line No. / Vessel No.					
7	Line Size	Sched No.				
8	Accuracy					
9	FCFC's Painting or Makers Painting STD					
<b>Orifice Plates</b>						
10	Plate Type					
11	Applied Code or Standard					
12	Plate Material					
13	Plate Thickness	(mm)				
14	Bore / Diameter Ratio	(d/D)				
15	Drain Hole	Vent Hole				
<b>Flange &amp; Ring</b>						
16	Pipe Material					
17	Type (Flange or Ring)					
18	Flange / Ring Type					
19	Flange Conn. & Rating					
20	Flange / Ring Material					
21	Gasket Material					
22	Tap Type					
23	Tap Conn.					
24	Tap Material					
<b>Accessories</b>						
25	Bolts & Nuts	Jack Screws				
26	Drain Plugs	Material				
27	Tap Valve (½" x 2pc)	Material				
28	Others Material (Bolts & Nuts, ...)					
<b>Operating Condition</b>						
29	Fluid & State					
30	Flow Rate: Norm.	Max. (T/Hr)				
31	Press. Norm.	Max. (kg/cm <sup>2</sup> G)				
32	Temp. Norm.	Max. (°C)				
33	Specific Gravity Density					
34	Molecular Weight					
35	Viscosity Range	(cp)				
36	Compression Factor					
37	Ratio of Spec. Heat	(Cp/Cv)				
38	Measuring Range					
39	Diff. Pressure Range					

\* Please fill in above block on request.