

ORIFICE FLANGE ASSEMBLY

MODEL
S3.02



PRODUCT DESCRIPTION

The orifice plate with flange assemblies are employed for measuring the rate of flow or quantity of moving fluids like liquids, gases or vapors. They are comprised of Gaskets, Hardware and Orifice Flanges that contain pressure sensing ports. It is designed to transfer stresses to the pipe, thereby reducing high stress concentration at the base of the flange.



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KEY FEATURES

- Liquid, gas & steam flow measurements Accuracy $\leq \pm 0.5\%$ of actual flow rate
- Repeatability of measurement of 0.1 % Working Pressure & Temp rating as per flange

SPECIFICATIONS

Design	:	ISO 5167:2003 / AGA-3 / ASME MFC 3M / R W Miller / BS 1042
Orifice plate material	:	SS 316
Orifice plate thickness	:	3.15 mm
Pressure tapping	:	Flange tapping
Pressure tapping connection	:	1/2" NPT (F)
Flange type	:	Weld neck, Slip-on & Threaded
Flange size & rating	:	2" 300# as per ANSI B16.36
Flange facing	:	Raised face & RTJ
Flange bore / Pipe schedule	:	Sch. 40
Gasket type	:	Spiral wound

APPLICATION

- Power generation
- Oil production and refining
- Water treatment and distribution
- Gas processing and transmission
- Chemical and petrochemical industries

MATERIAL OF CONSTRUCTION

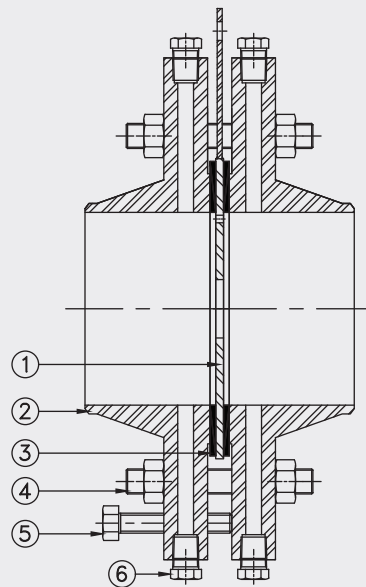
Flange material	:	A 105
Plate material	:	SS 316
Gasket material	:	SS 316 with graphite filler
Stud bolts, Nuts	:	A193 Gr.B7 / A194 Gr. 2H
Jack screw	:	A193 Gr. B7

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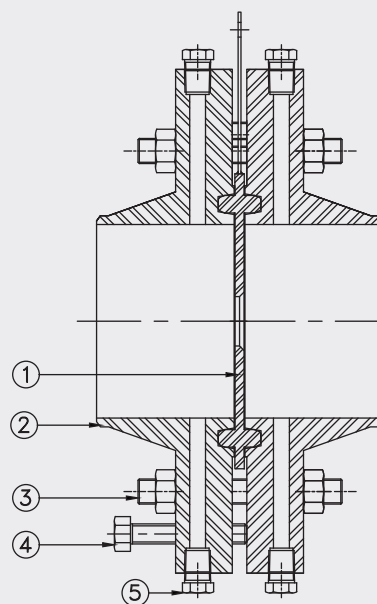
DIMENSIONAL DRAWINGS

Raised Fase



Bill of Material	
Sr.No.	Parameter
1	Orifice Plate
2	Orifice Flange
3	Gasket
4	Stud & Nuts
5	Jack Screw
6	Spare Plug

Ring Type Joint



Bill of Material	
Sr.No.	Parameter
1	Orifice Plate
2	Orifice Flange
3	Stud & Nuts
4	Jack Screw
5	Spare Plug

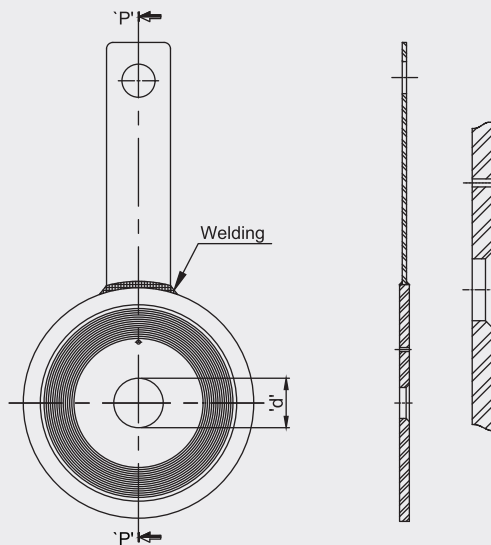
Important Notes: Above drawings are not to scale. All dimension are in mm

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DIMENSIONAL DRAWINGS

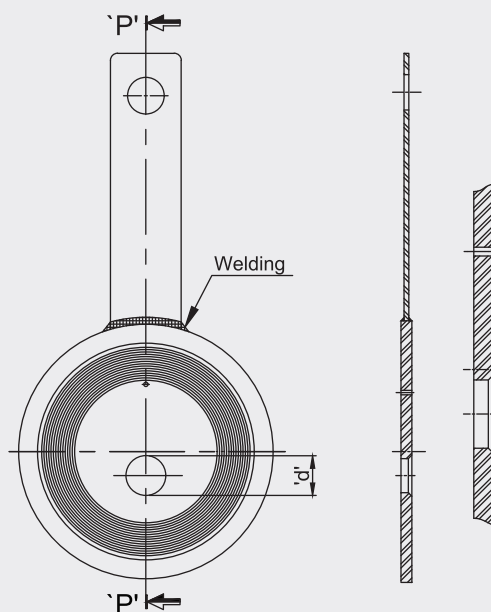
Square Edge Concentric



Square Edge Concentric

These are most commonly used for flow measurement. This has special features such as simple structures, high accuracy, and ease of installation & replacement. The orifice plates are correctly finished to the dimensions, surface roughness, and flatness to the applicable standard. These plates are recommended for clean liquids, gases & steam flow, when the Reynolds number ranges from 10000 to 100000000

Eccentric



Eccentric

For liquids containing solid particles that are likely to sediment or for vapours likely to deposit water condensate, this orifice plate is used with its eccentric bore bottom flush with the bottom of the piping inside surface so that the sedimentation of such inclusions are avoided. Likewise, for gases or vapours, it may be installed with its eccentric bore top flush with the ID of the piping to avoid stay of gas or vapour in its vicinity.

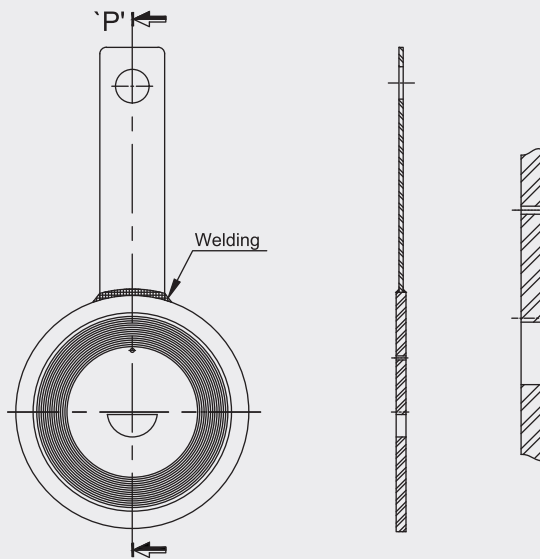
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DIMENSIONAL DRAWINGS

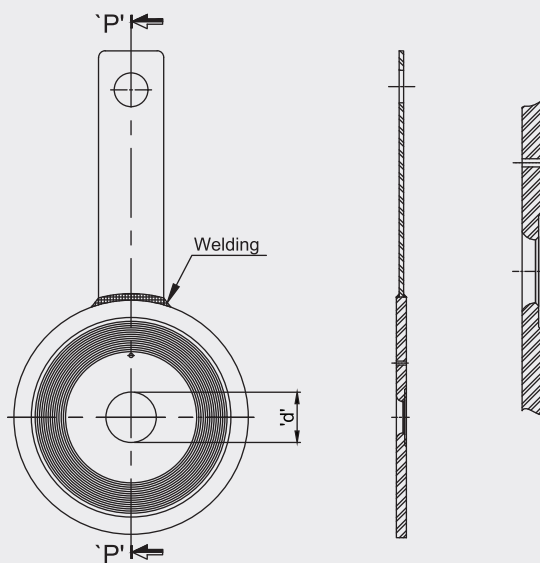
Segmental



Segmental

Segmental orifice plates are most useful where there are substantial entrained water or air and also if there are suspension in the fluids. This avoids build up in front of the orifice plate. The orifice hole is placed at the bottom for gas service and top for liquids.

Conical Entrance



Conical Entrance

These conical entrance orifice plates are used for low Reynolds number in the range of 80 to 2000 and give more constant or predictable discharge coefficient. At lower Reynolds numbers, the discharge coefficient of square edge orifice plate may change by as much as 30%. These are mor usable for viscous service.

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MODEL CODING & ORDERING INFORMATION

DESCRIPTION	CODE	X3.02	XXX	D1	WN	F	A15	318	SQ	S4
Model										
Orifice flange Assembly	X3.02	X3.02								
Flange Size & Rating										
As per table-1	XXX		XXX							
Other than flange table	XXX									
Pipe schedule										
Sch.5	D1			D1						
Sch.10	D2									
Sch.20	D3									
Sch.40	D4									
Sch.60	D5									
Sch.80	D6									
Sch.120	D7									
Sch.160	D8									
Sch. XS	D9									
Sch. XXS	D10									
Flange Type										
Weld-Neck	WN				WN					
Slip-On	SO									
Socket-Weld	SW									
Screwed	SC									
WN Ring Type Joint	WN									
WN Lon Tongue + Groove	WL									
Lap Joint	LP									
Taping Type										
Flange	F					F				
Radius	R									
Corner	C									
Pipe	P									
Flange Material										
ASTM A105	A15						A15			
SS 304	S4									
SS 316	S6									
SS 316L	SL									
SS 316 / SS 316L	DC									
As per customer specify	XX									
Plate Thickness										
3.18 mm	318							318		
6.35 mm	635									
9.52 mm	952									
12.70 mm	127									
As per customer specify	XXX									
Orifice Plate Type										
Square edge	SQ								SQ	
Quadrant edge	QU									
Eccentric	EC									
Segmental	SE									
Conical entrance	CO									
Ring Type joint	RT									
Plate Material										
SS 304	S4									S4
SS 310	S1									
SS 316	S6									
SS 316L	SL									
Duplex SS 2205	DU									
Duplex SS 2207	D7									
Inconel 625	I5									
Inconel 825	I2									
Hast C-276	HC									
Monel 400	M4									
As per customer specify	XX									



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MODEL CODING & ORDERING INFORMATION

DESCRIPTION	CODE	AH	PT	AA	X17
Stud Nut A193 Gr.B7/ A194 Gr.2H A193 Gr.B7M/ A194 Gr.2HM A3193 Gr.B8/ A194 Gr.8A A193 Gr.B8M/ A194 Gr.8M	AH AHM AA AM	AH			
Gasket PTFE SS 304 + GRFL SS 316 + GRFL Octagonal Ring Oval Ring	PT 4G 7G OG OV		PT		
Jack Screw A193 Gr.B7 A193 Gr.B7M A3193 Gr.B8 A193 Gr.B8M	AH AHM AA AM			AA	
Other Option Material Test Certificate Tested to NACE Standard Dimensional Report PMI Test	X17 X20 X67 X89				X17

Table -1 AS PER ANSI B 16.36

NOMINAL SIZE	RATING/ CLASS	CODE	NOMINAL SIZE	RATING/ CLASS	CODE	NOMINAL SIZE	RATING/ CLASS	CODE
1"	300	B22	1 1/2"	300	B34	2 1/2"	300	B46
	600	B23		600	B35		600	B47
	900	B24		900	B36		900	B48
	1500	B25		1500	B37		1500	B49
	2500	B26		2500	B38		2500	B50
1 1/4"	300	B28	2"	300	B40	3"	300	B52
	600	B29		600	B41		600	B53
	900	B30		900	B42		900	B54
	1500	B31		1500	B43		1500	B55
	2500	B32		2500	B44		2500	B56

SAMPLE ORDERING CODE:

X3.02-XXX.D1.WN.F.A15.318.SQ.S4.AH.PT.AA.X17

Note: Specifications and dimensions given in this product catalogue represents the state of engineering at the time of printing. Modifications may take place and material specified may be replaced by others without prior notice.