Orifice plate with ring
Model : F200

Spec. sheet no. FD02-01

Description
Orifice ring assemblies are used for flow measurement of smaller or medium sized pipes at lower pressure. Each assembly consists of one orifice plate and two orifice rings at lower pressure. Each assembly two orifice rings. Differential pressure is taken out in a corner tap system. Orifice block, which are of a unit-construction type and provide higher pressure ratings than the orifice ring assemblies, also are available.

Specification

Orifice bore type
Concentric square edged orifice
Quadrant edged orifice
Minimum quadrant edged orifice diameter 4.5 mm
Minimum quadrant edged radius 0.5 mm

Flow calculation standards
ISO 5167-1 and 2 2003
AGA-3
ASME MFC-3M and 14M
JIS Z 8762
BS 1042

Flange ratings
JIS 5, 10, 16, and 20K
ANSI (or JPI) 150 and 300 Lb
(Note: ANSI and JPI ring dimensions are identical)

Pressure taps
Corner taps

Plate thickness
3, 6, 9 and 12 mm

Tab handle
Welded to orifice plate

Pressure tab nipples
Pipe size : 15 mm (½ inch), Sch 40 and 80
Length : 75 and 150 mm
Tap connections : ½ PT and ½ NPT male
socket welding and butt welding
flange connection

Drain and vent hole
Per ASME recommendations
Not drilled for orifice bores smaller than 25.4 mm

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

Special markings
Special marking may be furnished to meet special requirements

Materials
Ring and pressure tap nipple : 304SS and 316SS
Plate : 304SS, 316L SS, Monel and other
Tab handle : 304SS and 316L SS

Gaskets
Material : Non-Asbestos and Teflon
Thickness : 1.5, 2.0 and 3.0 mm

1. Base model

F200	Orifice plate with ring

2. Type

P2	Orifice plate with ring

3. Line size

JIS	mm	ANSI	inch	DIN	mm
J015	15A	**A001**	½B	**D015**	15A
J020	20A	**A002**	¾B	**D020**	20A
J025	25A	**A003**	1B	**D025**	25A
J040	40A	**A004**	1½B	**D040**	40A
J050	50A	**A005**	2B	**D050**	50A
J065	65A	**A006**	2½B	**D065**	65A
J080	80A	**A007**	3B	**D080**	80A
J100	100A	**A008**	4B	**D100**	100A
J125	125A	**A009**	5B	**D125**	125A
J150	150A	**A010**	6B	**D150**	150A
J200	200A	**A011**	8B	**D200**	200A
J250	250A	**A012**	10B	**D250**	250A
J300	300A	**A013**	12B	**D300**	300A
J350	350A	**A014**	14B	**D350**	350A
J400	400A	**A015**	16B	**D400**	400A
J450	450A	**A016**	18B	**D450**	450A
J500	500A	**A017**	20B	**D500**	500A
J600	600A	**A018**	24B	**D600**	600A
J700	700A	**A019**	28B	**D700**	700A
J800	800A	**A020**	32B	**D800**	800A
J000	1,000A	**A021**	40B	**D000**	1,000A
XXXX	Other				

4. Bore type

C	Concentric edge
E	Eccentric
Q	Quadrant edge
S	Segmental

5. Flange rating

JIS		ANSI		DIN	
J010	JIS 10K	**A010**	ANSI 150 Lb	**P010**	PN 10
J016	JIS 16K	**A020**	ANSI 300 Lb	**P016**	PN 16
J020	JIS 20K	**A030**	ANSI 600 Lb	**P025**	PN 25
J030	JIS 30K	**A040**	ANSI 900 Lb	**P040**	PN 40
J040	JIS 40K	**A050**	ANSI 1,500 Lb		
J063	JIS 63K	**A060**	ANSI 2,500 Lb		

6. Plate material

4	304SS
6	316L SS
H	Hastelloy-C
M	Monel
O	Other

7. Ring material

4	304SS
6	316L SS
0	Option

8. Drain / vent

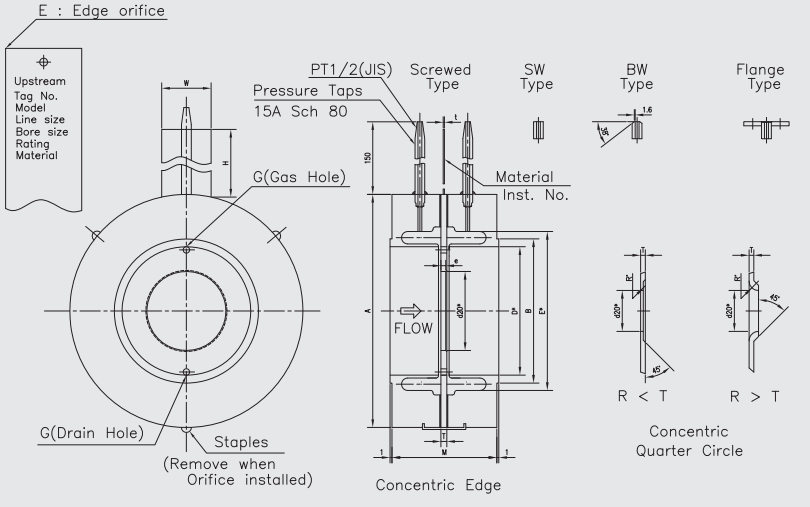
D	Drain (Not drilled for orifice bores smaller than 25.4 mm)
V	Vent (Not drilled for orifice bores smaller than 25.4 mm)
N	None

9. Options

1	Nipple (75L + 150L)
2	Nipple (150L + 150L)
3	Tap valve
N	None

1	2	3	4	5	6	7	8	9	
F200	**P2**	**A005**	**C**	**A020**	**6**	**4**	**V**	**2**	**Sample ordering code**

Dimension



✱d20 : Orifice Dia.AT 20°C : Refer to orifice calculated sheet

D : Inside dia. of ring

E : Inside dia. of gasket

Ring orifices for FOR JIS 5K Flange

UNIT : mm

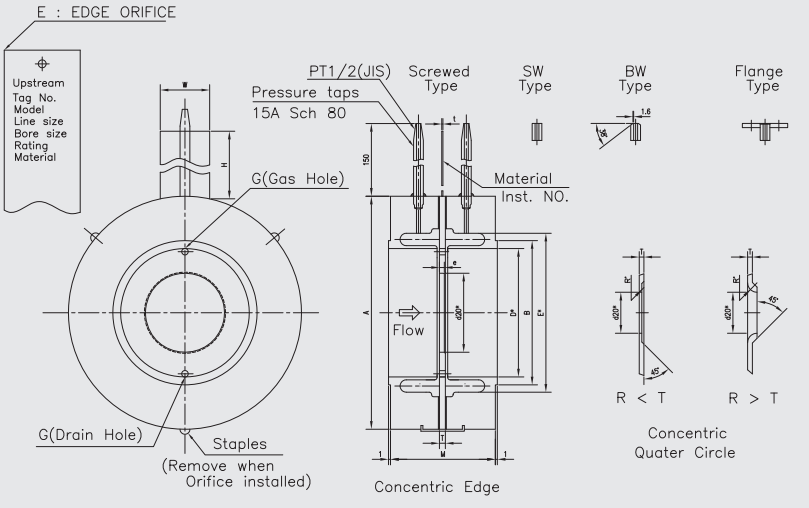
NOMINAL PIPE SIZE	OUTSIDE DIAM. OF RINGS AND PLATE A	DIAM OF GASKET STAY B	THICKNESS OF EDGS e	DIAM OF HOLE G	FACE TO FACE M	THICKNESS OF PLATE T	WIDTH OF TAB HANDLE W	HIGHT OF TAB HANDLE H	THICKNESS OF TAB HANDLE t
15	–	–	–	–	–	–	–	–	–
20	–	–	–	–	–	–	–	–	–
25	65	33	0.2~0.4	–	75	2	25	100	3
32	78	42	0.3~0.5	1.6	75	2	25	100	3
40	83	48	0.3~0.5	1.6	75	2	25	100	3
50	93	60	0.5~0.8	1.6	75	2	25	100	3
65	118	73	0.5~0.8	1.6	75	3	25	100	3
80	129	88	0.5~0.8	1.6	75	3	25	100	3
90	139	101	0.5~0.8	1.6	75	3	25	100	3
100	149	114	0.8~1.2	1.6	75	3	38	100	3
125	184	141	0.8~1.2	1.6	75	3	38	130	3
150	214	168	0.8~1.2	1.6	75	3	38	130	3
175	240	196	1.5~2.0	1.6	76	4	38	130	3
200	260	219	1.5~2.0	1.6	76	4	38	130	3
225	285	246	1.5~2.0	1.6	76	4	38	160	6
250	325	273	e = T	2.0	76	4	38	160	6
300	370	323	e = T	2.5	76	4	38	160	6

Ring orifices for JIS 10K Flange

UNIT : mm

NOMINAL PIPE SIZE	OUTSIDE DIAM. OF RINGS AND PLATE A	DIAM OF GASKET STAY B	THICKNESS OF EDGS e	DIAM OF HOLE G	FACE TO FACE M	THICKNESS OF PLATE T	WIDTH OF TAB HANDLE W	HIGHT OF TAB HANDLE H	THICKNESS OF TAB HANDLE t
15	58	21	0.2~0.3	–	75	2	25	100	3
20	63	27	0.2~0.4	–	75	2	25	100	3
25	74	33	0.2~0.4	–	75	2	25	100	3
32	84	42	0.3~0.5	1.6	75	2	25	100	3
40	89	48	0.3~0.5	1.6	75	2	25	100	3
50	104	60	0.5~0.8	1.6	75	2	25	100	3
65	124	73	0.5~0.8	1.6	75	3	25	100	3
80	134	88	0.5~0.8	1.6	75	3	25	100	3
90	144	101	0.5~0.8	1.6	75	3	25	100	3
100	159	114	0.8~1.2	1.6	75	3	38	100	3
125	190	141	0.8~1.2	1.6	75	3	38	130	3
150	220	168	0.8~1.2	1.6	75	3	38	130	3
175	245	196	1.5~2.0	1.6	76	4	38	130	3
200	270	219	1.5~2.0	1.6	76	4	38	130	3
225	290	246	1.5~2.0	1.6	76	4	38	160	6
250	333	273	e = T	2.0	76	4	38	160	6
300	378	323	e = T	2.5	76	4	38	160	6

Dimension



※d20 : Orifice Dia.AT 20°C : Refer to orifice calculated sheet

D : Inside dia. of ring

E : Inside dia. of gasket

Ring orifices for JIS 16K 20K Flange

UNIT : mm

Nominal Pipe Size	Outside Dia. of Rings and Plate A	Dia. of Gasket Stay B	Thickness of Edges e	Dia. of Hole G	Face to Face M	Thickness of Plate T	Width of Tab Handle W	Hight of Tab Handle H	Thickness of Tab Handle t
15	58	21	0.2~0.3	–	75	2	25	100	3
20	63	27	0.2~0.4	–	75	2	25	100	3
25	74	33	0.2~0.4	–	75	2	25	100	3
32	84	42	0.3~0.5	1.6	75	2	25	100	3
40	89	48	0.3~0.5	1.6	75	2	25	100	3
50	104	60	0.5~0.8	1.6	75	2	25	100	3
65	124	73	0.5~0.8	1.6	75	3	25	100	3
80	140	88	0.5~0.8	1.6	75	3	25	100	3
90	150	101	0.5~0.8	1.6	75	3	25	100	3
100	165	114	0.8~1.2	1.6	75	3	38	100	3
125	203	141	0.8~1.2	1.6	75	3	38	130	3
150	238	168	0.8~1.2	1.6	75	3	38	130	3
200	283	219	1.5~2.0	1.6	76	4	38	130	3
250	356	273	e = T	2.0	76	4	38	130	3
300	406	323	e = T	2.5	76	4	38	160	6

Ring orifices JIS ANSI JPI 150 Lb Flange

UNIT : mm

Nominal Pipe Size	Outside Dia. of Rings and Plate A	Dia. of Gasket Stay B	Thickness of Edge e	Dia. of Hole G	Face to Face M	Thickness of Plate T	Width of Tab Handle W	Hight of Tab Handle H	Thickness of Tab Handle t
1/2	–	–	–	–	–	–	–	–	–
3/4	–	–	–	–	–	–	–	–	–
1	66.7	33	0.2~0.4	–	75	2	25	100	3
1 1/4	76.2	42	0.3~0.5	1.6	75	2	25	100	3
1 1/2	85.7	48	0.3~0.5	1.6	75	2	25	100	3
2	104.8	60	0.5~0.8	1.6	75	2	25	100	3
2 1/2	123.8	73	0.5~0.8	1.6	75	3	25	100	3
3	136.5	88	0.5~0.8	1.6	75	3	25	100	3
3 1/2	161.9	101	0.5~0.8	1.6	75	3	25	100	3
4	174.6	114	0.8~1.2	1.6	75	3	38	100	3
5	196.9	141	0.8~1.2	1.6	75	3	38	130	3
6	222.3	168	0.8~1.2	1.6	75	3	38	130	3
8	279.4	219	1.5~2.0	1.6	76	4	38	130	3
10	339.7	273	e = T	2.0	76	4	38	130	3
12	409.6	323	e = T	2.5	76	4	38	160	6