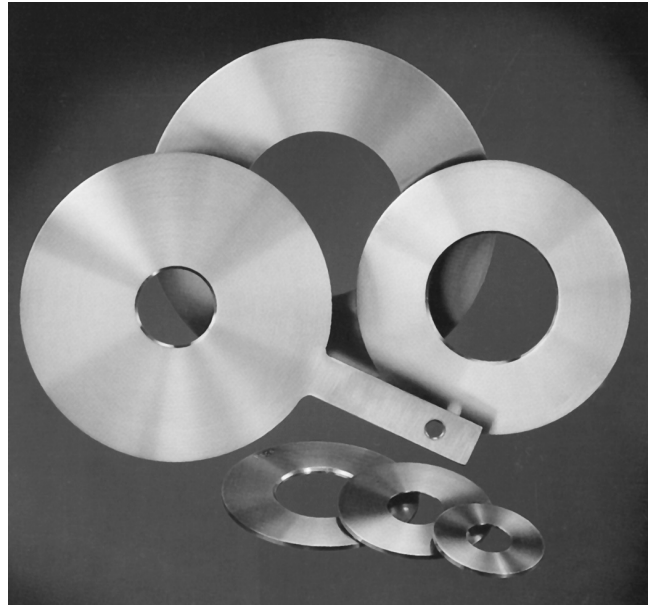


*FMC Technologies Measurement Solutions offers high quality **Orifice Plates** to meet the demanding requirements of both customer and industry standards. State of the art manufacturing facilities, an ISO 9001 certified quality control program and skilled craftsmen combine to produce orifice plates that meet or exceed all recognized measurement standards. FMC Technologies Measurement Solutions Orifice Plates are available in 304 or 316 stainless steel (other alloys are available on request to meet your service requirements) and are precision machined and hand polished to insure accuracy.*

FMC Technologies Measurement Solutions Orifice Plates are available for use with MeasureMaster® and Orifice-Master® orifice fittings and Orifice Flange Unions.



Specifications

Standard Size Orifice Plates

Universal Orifice Plates

Catalog No. 500

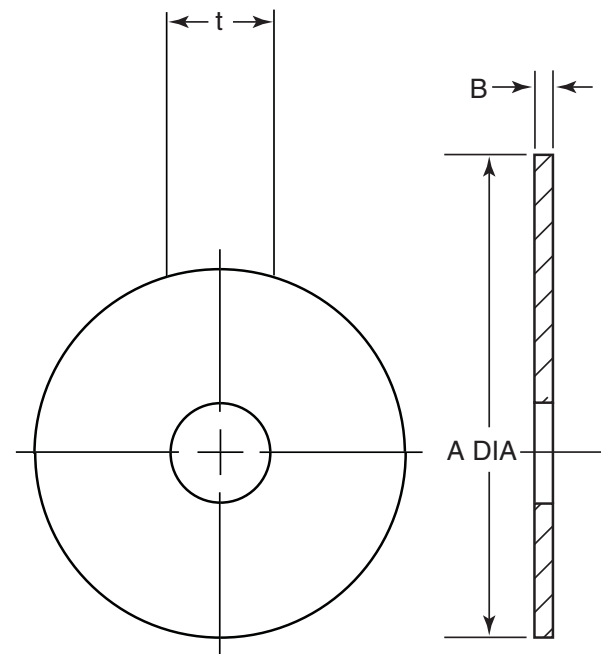
FMC Technologies Measurement Solutions Universal Orifice Plates are dimensioned to standard industry sizes to allow the standardization of orifice plate equipment.

The "500" Orifice Plates are designed to be interchangeable with other makes of fittings in line sizes up to and including 10"¹. Plate materials are stocked in 304 and 316 stainless steel, as well as Monel 400 and Hastelloy B and C, and in thicknesses up to 3/8".

Note: If required, FMC Technologies Measurement Solutions can determine the orifice bore of the plate. Basic flow data (listed on the back page) is required at the time of order.

Dimensions

Line Size (Inches)	Dimensions (Inches)		Weight (Pounds) (Blind Plate Not Bored)
	A	B	
1	1.3	.125	.05
1.5	2	.125	.11
2	2.4	.125	.17
2.5	2.8	.125	.26
3	3.4	.125	.34
4	4.4	.125	.55
5	5.5	.125	.95
6	6.4	.125	1.18
8	8.4	.25	2.03
10	10.7	.25	6.5
12	12.6	.25	9.0
14	13.8	.25	11.19
16	16	.375	21.5
18	17.9	.375	27.68
20	20	.375	34.17
24	24.3	.375	49.26
26	26	.375	57.75
30	30.5	.500	106.55
34	34.5	.500	136.33
36	36.5	.500	152.59



t Bore to be specified by the customer

¹ In line sizes above 10" (and when the plate thickness exceeds 1/4") it is advised that the original equipment manufacturer as well as the internal line diameter are provided to ensure the correct replacements.

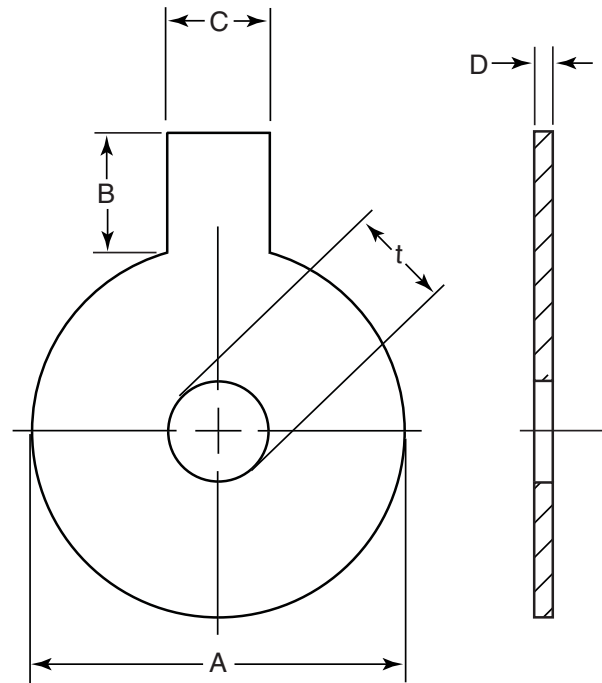
Paddle-Type Orifice Plates

Catalog No. 520

FMC Technologies Measurement Solutions Paddle Type Orifice Plates are manufactured according to the same strict tolerances as our Universal Orifice Plates. Standard industry plate diameters ensure complete interchangeability.

The plate handles are stamped with relevant information (line size, ANSI rating of the flange, material and bore diameter) as well as other customer information as required. As with the Universal Orifice Plates, we stock plate material in 304 and 316 stainless steel, as well as Monel 400 and Hastelloy B and C, in thicknesses up to 3/8".

When ordering, please specify: catalog number, nominal pipe size, ANSI rating of flange, material, and orifice bore.



t Bore to be specified by the customer

Dimensions

Line Size (Inches)	Dimensions (Inches)										Weight (Pounds) (Blind Plate Not Bored)			
	ANSI Class 150		ANSI Class 300		ANSI Class 600		ANSI Class 900		ANSI Class 150-900		ANSI Class 150	ANSI Class 300	ANSI Class 600	ANSI Class 900
	A	B	A	B	A	B	A	B	C	D				
1	2.6	4	2.9	4	2.9	4	3.1	4	1	.125	.31	.36	.36	.42
1.5	3.4	4	3.8	4	3.8	4	3.9	4	1	.125	.42	.52	.52	.56
2	4.1	4	4.4	4	4.4	4	5.6	4	1	.125	.59	.66	.66	1.03
2.5	4.9	4	5.1	4	5.1	4	6.5	4	1	.125	.76	1.00	1.00	1.26
3	5.4	4	5.9	4	5.9	4	6.6	4	1	.125	.93	1.10	1.10	1.37
4	6.9	4	7.1	4	7.6	4	8.1	4	1	.125	1.46	1.57	1.78	2.01
5	7.8	4	8.5	4	9.5	4	9.8	4	1	.125	1.74	2.24	2.76	2.90
6	8.8	4	9.9	4	10.5	4	11.4	4	1	.125	2.34	2.94	3.33	3.87
8	11	4	12.1	4	12.6	4	14.1	4	1	.25	3.61	4.36	4.73	5.89
10	13.4	4	14.3	4	15.8	4	17.1	4	1	.25	10.52	11.92	14.54	17.12
12	16.1	6	16.6	6	18	6	19.6	6	1.5	.25	15.18	16.16	18.88	22.38
14	17.8	6	19.1	6	19.4	6	20.5	6	1.5	.25	18.34	21.26	21.84	24.40
16	20.3	6	21.3	6	22.3	6	22.6	6	1.5	.375	34.50	39	42	43.50
18	21.5	6	23.4	6	24	6	25	6	1.5	.375	39	46.90	48	52.50
20	23.8	6	25.6	6	26.8	6	27.4	6	1.5	.375	48	55.50	60	63
24	28.1	6	30.4	6	31	6	32.9	6	1.5	.375	66	78	81	91.50

Ring Joint Plate Holders and Integral Orifice Plates

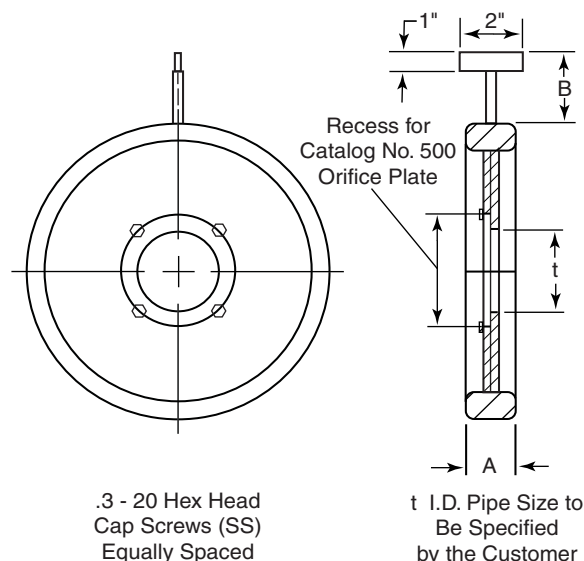
Catalog No. 560 and 590

FMC Measurement Solutions Plate Holders can be furnished in any API ring size² in standard oval as well as optional octagonal style.

Standard materials of construction include cadmium plated Carbon Steel (0.25% maximum carbon, 146 to 187 BHN) and 304 or 316 Stainless Steel. Other materials are available on request.

Plate handle tabs are stamped with relevant information –line size, API ring number, material and other customer information as required.

When ordering, please specify: catalog number, nominal pipe size, ANSI rating of flange, API ring number, material, and orifice bore if applicable



Dimensions

Line Size (Inches)	Dimensions (Inches) and Ring Numbers (Orifice Plates and Plate Holders can be furnished to meet customer's special requirements or specifications)										Approximate Weight (Pounds) (Without Orifice Plates)			
	ANSI Class 600 ANSI Class 300		ANSI Class 900		ANSI Class 1500		ANSI Class 2500		ANSI Class 600	ANSI Class 900	ANSI Class 1500	ANSI Class 2500		
	Ring No.	A B	Ring No.	A B	Ring No.	A B	Ring No.	A B						
1 ³	R-16	1 4.8	R-16	1 4.8	R-16	1 4.8	R-18	1 4.8	.71	.71	.71	.81		
1.5 ³	R-20	1 4.8	R-20	1 4.8	R-20	1 4.8	R-23	1.1 4.8	.93	.93	.93	1.79		
2 ³	R-23	1.1 4.8	R-24	1.1 4.8	R-24	1.1 4.8	R-26	1.1 4.8	1.58	2.12	2.12	2.41		
2.5	R-26	1.1 4.8	R-26	1.1 4.8	R-27	1.1 4.8	R-28	1.2 4.8	2.37	2.92	2.92	3.18		
3	R-31	1.1 4.8	R-31	1.1 4.8	R-35	1.1 4.8	R-32	1.2 6.8	2.89	2.89	3.40	4.66		
4	R-37	1.1 4.8	R-37	1.1 4.8	R-39	1.1 4.8	R-38	1.3 6.8	3.43	3.43	4.40	5.80		
5	R-41	1.1 4.8	R-41	1.1 4.8	R-44	1.2 4.8	R-42	1.4 6.8	4.77	4.77	5.83	9.54		
6	R-45	1.1 4.8	R-45	1.1 4.8	R-46	1.2 6.8	R-47	1.4 6.8	5.76	5.76	6.66	11.44		
8	R-49	1.1 4.8	R-49	1.1 4.8	R-50	1.3 6.8	R-51	1.6 4.8	7.93	7.93	10.87	16.67		
10	R-53	1.1 4.8	R-53	1.1 4.8	R-54	1.3 6.8	R-55	1.9 6.8	9.28	9.28	12.78	28.81		
12	R-57	1.1 4.8	R-57	1.1 4.8	R-58	1.6 6.8	R-60	2 6.8	11.99	11.99	22.52	40.03		
12 ⁴	R-57	1.2 4.8	R-57	1.2 4.8	R-58	1.7 6.8	R-60	2.1 6.8	12.72	12.72	23.98	42.25		

Orifice Calculation Data

Experienced FMC Technologies Measurement Solutions personnel are available to calculate the orifice bore diameters and flow coefficients from flow data furnished by the customer. Temperature and pressure correction can also be provided. When ordering orifice bore calculations, please provide the following information: Type of service, inside pipe diameter, normal and maximum flow rates, temperature (flow conditions), pressure (flow conditions), specific gravity or molecular weight for liquids, specify gravity @ 60° F and @ flow temperature, F, differential of meter in inches, type of meter (with or without mercury), type of chart, type of pressure taps, operating viscosity, temperature base, and pressure base.

² "590" Plate Holders are available in sizes 2" and larger. Smaller than 2" are available only in the Integral "560" design.

³ 2 inch size and under are furnished with snap rings. Snap rings are available on larger sizes.

⁴ For 1/4 inch thick Orifice Plate.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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