



ORIFICE PLATES

Simple, Predictable and Reliable Differential Flow Measurement

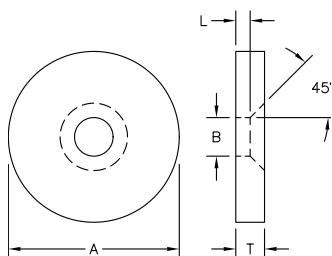
SERIES 500 / 520 UNIVERSAL & PADDLE ORIFICE PLATES SERIES 560 / 590 RING TYPE JOINT PLATES & HOLDERS RESTRICTION ORIFICE UNIONS



USA Industries manufactures a full range of flow measurement components—including universal orifice plates, paddle plates, ring type joint (RTJ) plates, and restriction orifice unions—engineered to meet or exceed AGA, ISA, ANSI, ASME, and API standards. We stock plates in 304 and 316 stainless steel, offered in 1/8" and 1/4" thicknesses. Additional materials and custom thicknesses are available upon request. Each plate is precision-bored to align with customer-supplied sizing calculations. For added convenience, USA Industries also provides sizing calculation services for a nominal fee.

Series 500 Orifice Plates & Seals

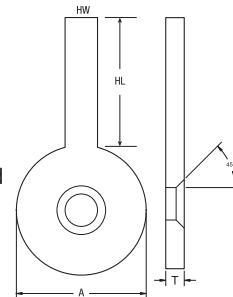
USA Industries' Universal Orifice Plates are engineered for compatibility with all standard orifice fitting assemblies and RTJ plate holders. They can be used with both dual- and single-chambered orifice fittings, offering maximum versatility across various applications.



Nominal Pipe Size (in)	A (in)	L (in)	T (in)
1	1.312	1.02	1/8
1-1/2	2	0.03	1/8
2	2.437	0.03	1/8
2-1/2	2.812	0.03	1/8
3	3.437	0.03	1/8
4	4.406	0.06	1/8
5	6	0.06	1/8
6	6.437	0.06	1/8
8	8.437	0.125	1/4
10	10.687	0.125	1/4
12	12.593	.25	1/4
14	14	.25	1/4
16	16	.25	3/8
18	18	.25	3/8
20	20	0.375	3/8
24	24	0.375	3/8

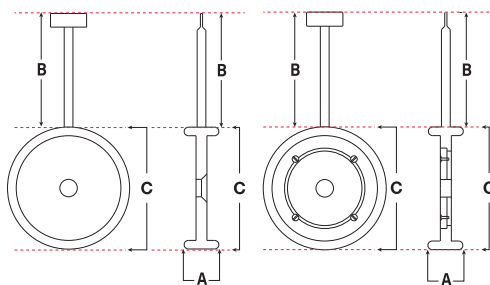
Series 520 Paddle Orifice Plates

USA Industries' Paddle-Type Orifice Plates are specifically designed for use with Raised Face Orifice Flanges and Holding Blocks. Each plate is manufactured to meet or exceed the rigorous standards set by AGA, ISA, ANSI, ASME, and API, ensuring reliable performance and precision.



Series 560 Plates & 590 Plate Holders

The RTJ-Type Orifice Plate includes an integrated gasket for direct installation between RTJ flanges. With no moving parts, it's well-suited for high-pressure, high-temperature service. Plate thickness depends on line size and differential pressure, and plates can be made as a solid piece or a two-piece assembly with a carrier ring or gasket.

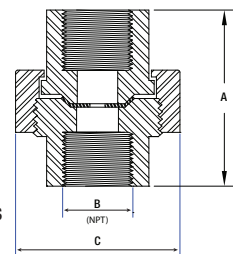


Line Size (in)	Flange Rating A							HL (in)	HW (in)	T (in)
	150#	300#	400#	600#	900#	1500#	2500#			
0.5	1.875	2.125	2.125	2.125	2.5	2.5	2.75	4	1	1/8
0.75	2.25	2.625	2.625	2.625	2.75	2.75	3			
1	2.625	2.875	2.875	2.875	3.125	3.125	3.375			
1.25	3	3.25	3.25	3.25	3.5	3.5	4.125			
1.5	3.375	3.75	3.75	3.75	3.875	3.875	4.625			
2	4.125	4.375	4.375	4.375	5.625	5.625	5.75			
2.5	4.875	5.125	5.125	5.125	6.5	6.5	6.625			
3	5.375	5.875	5.875	5.875	6.625	6.875	7.75			
4	6.875	7.125	7	7.625	8.125	8.25	9.25			
5	7.75	8.5	8.375	9.5	9.75	10	11			
6	8.75	9.875	9.75	10.5	11.375	11.125	12.125	6	1-1/2	1/4
8	11	12.125	12	12.625	14.125	13.875	15.25			
10	13.375	14.25	14.125	15.75	17.125	17.125	18.75			
12	16.125	16.625	16.5	18	19.625	20.5	21.625			
14	17.75	19.125	19	19.375	20.5	22.75	-			3/8
16	20.25	21.25	21.125	22.25	22.625	25.25	-			
18	21.5	23.375	23.25	24	25	27.625	-			
20	23.75	25.625	25.375	26.75	27.375	29.625	-			
22	26	27.75	27.5	28.875	-	-	-			1/2
24	28.125	30.735	30.125	31	32.875	35.5	-			
30	34.625	37.375	37.25	38.125	-	-	-			
36	41.125	43.875	43.875	44.375	-	-	-			

LINE SIZE (in.)	.5	.75	1	1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	24
API Ring No.	R-11	R-13	R-16	R-20	R-23	R-26	R-31	R-37	R-45	R-49	R-53	R-57	R-61	R-65	R-69	R-73	R-77
ANSI 300 Gap 1 (in.)		.625				.655					.78				.905		1.03
ANSI 600 Gap 1 (in.)			.625								.75				.875		1
A (in.)	.945	1.025			1.125				1.25					1.375		1.66	
B (in.)	4.25				5.25			6.25					7.25				
C Ring OD (in.)	1.593	2	2.313	3	3.688	4.438	5.313	6.313	8.75	11.063	13.188	15.438	16.938	18.938	21.438	23.5	27.875
560 Plate Blank Wt. (lb.)	.3	.5	.6	.9	1.9	2.5	3.3	4.3	7.2	10.6	14.3	18.7	21.9	35.6	45.9	56.2	80.8
590 Plate Blank Wt. (lb.)					1.7	2.1	2.6	3.2	4.6	5.9	7.2	8.4	9.3	12.3	14	17.7	26.1
API Ring No.	R-12	R-14	R-16	R-20	R-24	R-27	R-31	R-37	R-45	R-49	R-53	R-57	R-62	R-66	R-70	R-74	R-78
ANSI 900 Gap 1 (in.)			.625						.75					.875		1	
A (in.)		1.025			1.195	1.155			1.28	1.47	1.595	1.685	2.09				
B (in.)		4.25			5.25		6.25				7.25		9.25				
C Ring OD (in.)	1.875	2.063	2.313	3	4.188	4.688	5.313	6.313	8.75	11.063	13.188	15.438	17.125	19.125	21.75	23.75	28.25
560 Plate Blank Wt. (lb.)	.4	.5	.6	.9	2	2.7	3.3	4.3	7.2	10.6	14.3	18.7	21.9	35.6	45.9	56.2	80.8
590 Plate Blank Wt. (lb.)					1.8	2.3	2.6	3.2	4.6	5.9	7.2	8.4	9.3	12.3	14	17.7	26.1
API Ring No.	R-12	R-14	R-16	R-20	R-24	R-27	R-31	R-37	R-45	R-49	R-53	R-57	R-62	R-66	R-70	R-74	R-78
ANSI 1500 Gap 1 (in.)			.625					.565		.75				.875		1	
A (in.)		1.025			1.195				1.47	1.69	1.84		2.005		2.31		
B (in.)		4.25			5.25		6.25		7.25		8.25		9.25		10.25		
C Ring OD (in.)	1.875	2.063	2.313	3	4.188	4.688	5.313	6.313	8.813	11.25	13.375	15.875	17.5	19.625	22.125	24.25	28.625
560 Plate Blank Wt. (lb.)	.4	.5	.6	.9	2	2.7	3.3	4.9	8.2	14	18.3	30.8	40.8	64.4	77.5	93.7	132.8
590 Plate Blank Wt. (lb.)					1.8	2.3	2.9	3.5	5.6	9.5	11.4	21.2	29.1	42.1	47.8	57.8	81.2
API Ring No.	R-13	R-16	R-18	R-23	R-26	R-28	R-32	R-38	R-47	R-51	R-55	R-60					
ANSI 2500 Gap 1 (in.)			.625						.75								
A (in.)		1.025			1.195	1.255	1.345	1.465	1.69	1.94	2						
B (in.)		4.25			5.25		6.25		7.25		8.25		9.25				
C Ring OD (in.)	2	2.313	2.688	3.688	4.438	4.875	5.5	6.813	9.75	11.875	14.625	17.25					
560 Plate Blank Wt. (lb.)	.5	.6	.7	1.5	2.5	3.3	4.5	6.6	13.1	20.1	37.6	49.8					
590 Plate Blank Wt. (lb.)					2.1	2.9	3.7	5.5	10.2	15.5	26.6	39.3					

Restriction Orifice Unions

Restriction Orifice Unions (RSUs) are stocked in carbon steel and stainless steel bodies, rated to 3,000 PSIG, and available in line sizes from 1/4" to 2" with female NPT or socket-weld connections. Non-standard sizes and materials can be produced quickly upon request.



Plates can be configured to suit your needs as:

- Recessed
- Pressed
- Pressed with a tab for easy size identification —no need to break the union

Line Size (in)	A OAL (in)	B NPT or SW (in)	C Hex Size (in)
1/4	1-3/4	1/4	1-3/8
3/8	1-7/8	3/8	1-5/8
1/2	2	1/2	1-3/4
3/4	2-1/4	3/4	2-3/16
1	2-9/16	1	2-9/16
1-1/4	2-7/8	1-1/4	3-1/6
1-1/2	3-1/8	1-1/2	3-7/16
2	3-1/2	2	4