

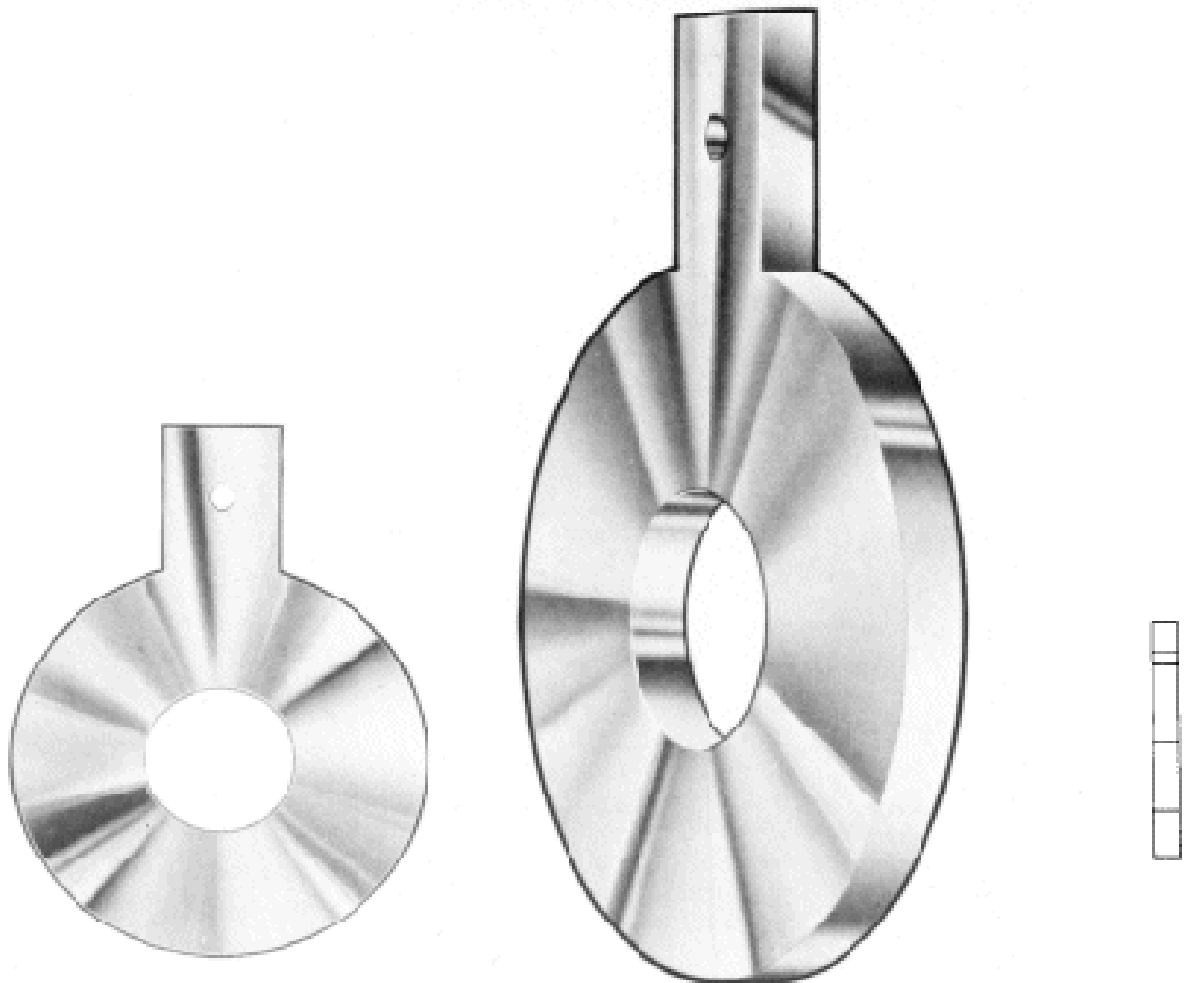
TRI-FLOTECH, Inc.



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ORIFICE PLATES AND RTJ PLATE HOLDERS

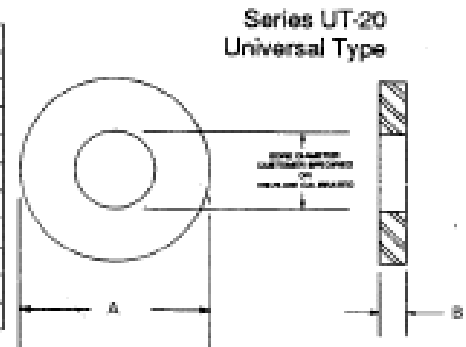


CUSTOM CRAFTED
FLOW ELEMENTS

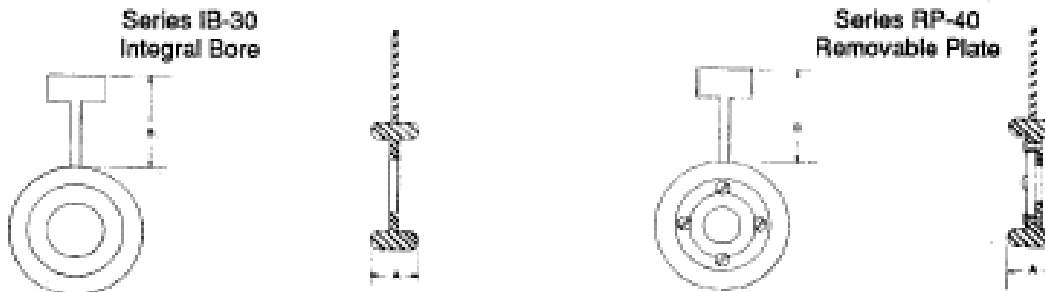


UNIVERSAL SIZE ORIFICE PLATES FOR USE IN RING JOINT PLATE HOLDERS SERIES UT-20

LINE SIZE	DIMENSIONS		WEIGHT BLANK	LINE SIZE	DIMENSIONS		WEIGHT BLANK
	A	B			A	B	
3/4"	1.125"	1/8"	0.03	10"	10.687"	1/8"	3.25
1"	1.312"	1/8"	0.05	12"	12.593"	1/4"	7.50
1-1/2"	2.000"	1/8"	0.15	14"	14.000"	1/4"	11.50
2"	2.437"	1/8"	0.20	16"	16.000"	1/4"	15.00
2-1/2"	2.812"	1/8"	0.30	18"	18.000"	1/4"	19.00
3"	3.437"	1/8"	0.35	20"	20.000"	1/4"	23.00
4"	4.406"	1/8"	0.60	24"	24.000"	1/4"	33.00
6"	6.437"	1/8"	1.20	26"	26.000"	1/4"	44.00
8"	8.437"	1/8"	2.00	30"	30.000"	3/8"	77.00



HANDLE TYPE RING JOINT ORIFICE PLATE HOLDERS



NOTE: In sizes below 3" only Series IB-30 (Integral Bore) available.
Oval form standard; octagonal form available.

DIMENSIONS AND A.P.I. RING NUMBERS												
Size	A.P.I. Ring Nos.	A	B	A.P.I. Ring Nos.	A	B	A.P.I. Ring Nos.	A	B	A.P.I. Ring Nos.	A	B
1"	R-16	3/8"	7-1/4"	R-16	3/8"	7-1/4"	R-16	3/8"	7-1/4"	R-16	1"	7-1/4"
1-1/2"	R-20	1"	7-1/4"	R-20	1"	7-1/4"	R-20	1"	7-1/4"	R-20	1-1/8"	7-1/4"
2"	R-23	1-1/16"	7-1/4"	R-24	1-1/16"	7-1/4"	R-24	1-1/8"	7-1/4"	R-26	1-1/8"	7-1/4"
2-1/2"	R-26	1-1/16"	7-1/4"	R-27	1-1/16"	7-1/4"	R-27	1-1/8"	7-1/4"	R-28	1-3/16"	7-1/4"
3"	R-31	1-1/16"	7-1/4"	R-31	1-1/16"	7-1/4"	R-35	1-1/8"	7-1/4"	R-32	1-3/16"	7-1/4"
4"	R-37	1-1/16"	7-1/4"	R-37	1-1/16"	7-1/4"	R-39	1-1/8"	7-1/4"	R-38	1-1/4"	7-1/4"
5"	R-41	1-1/16"	7-1/4"	R-41	1-1/16"	7-1/4"	R-44	1-1/8"	7-1/4"	R-42	1-3/8"	7-1/4"
6"	R-45	1-1/16"	7-1/4"	R-45	1-1/16"	7-1/4"	R-46	1-1/8"	7-1/4"	R-46	1-3/8"	7-1/4"
8"	R-49	1-1/16"	7-1/4"	R-49	1-1/16"	7-1/4"	R-50	1-1/4"	7-1/4"	R-47	1-1/2"	7-1/4"
10"	R-53	1-1/16"	7-1/4"	R-53	1-1/16"	7-1/4"	R-54	1-1/4"	7-1/4"	R-51	1-3/4"	7-1/4"
12"	R-57	1-3/16"	7-1/4"	R-57	1-3/16"	7-1/4"	R-58	1-5/8"	7-1/4"	R-60	1-15/16"	9-1/4"
14"	R-61	1-3/16"	7-1/4"	R-62	1-5/16"	7-1/4"	R-63	1-3/4"	7-1/4"	....	....	....
16"	R-65	1-3/16"	7-1/4"	R-65	1-7/16"	7-1/4"	R-67	2"	9-1/4"	....	....	....
18"	R-69	1-3/16"	7-1/4"	R-70	1-9/16"	7-1/4"	R-71	2"	9-1/4"	....	....	....
20"	R-73	1-1/4"	7-1/4"	R-74	1-9/16"	7-1/4"	R-75	2-1/8"	11-1/4"	....	....	....
24"	R-77	1-7/16"	7-1/4"	R-78	1-7/8"	9-1/4"	R-79	2-5/16"	11-1/4"	....	....	....

TRI-FLO INC. ALSO MANUFACTURES

FLOW NOZZLES	VENTURI TUBES	METER TUBES
FLOW TUBES	STRAIGHTENING VANES	CONDENSATE CHAMBERS
RESTRICTION ORIFICE UNIONS	SPOOL PIECES	SPECIAL FLOW DEVICES

SEE SPECIFIC BROCHURE FOR INFORMATION

CUSTOM CRAFTED
FLOW ELEMENTS

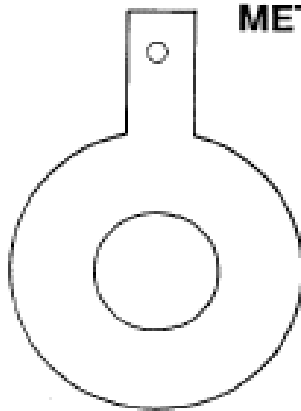


TRI-FLO ORIFICE PLATES ARE:

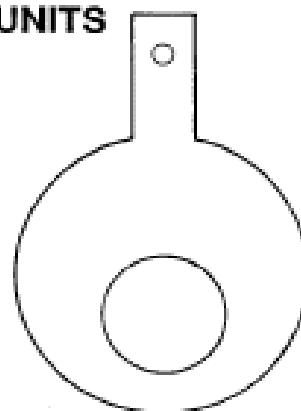
Manufactured to the recommendations of AGA, ISA, ASME and ISO
Normally supplied in 304 or 316 stainless steel. Monel, Hastelloy C or B, Alloy 20, Teflon and other materials available.
Supplied in all standard designs — Concentric, Eccentric, Quadrant Edge, Bore with Counter Bore, Segmental
Sized to the correct bore by our engineering department on our computer system for fast calculations with accuracy.
Grounding rings and spacers available to customer specifications.

ORIFICE FLANGE UNIONS — STANDARD CARBON STEEL, STAINLESS STEEL AND OTHER FORGEABLE MATERIALS AVAILABLE

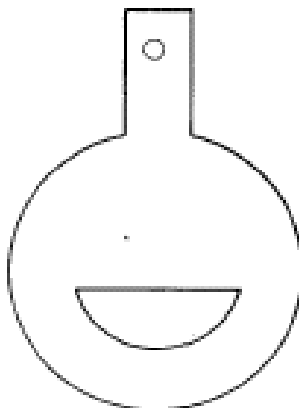
CALCULATIONS CAN BE DONE IN EITHER METRIC OR ENGLISH UNITS



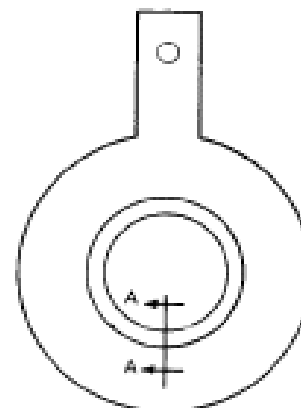
Concentric



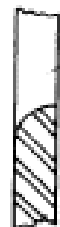
Eccentric



Segmental



Quadrant Edge



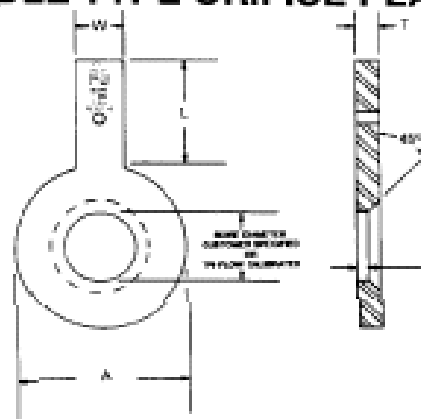
Section A-A

MATERIAL CERTIFICATIONS FOR ALL MATERIALS AVAILABLE WHEN SPECIFIED

CUSTOM CRAFTED
FLOW ELEMENTS



SERIES PT-10 PADDLE TYPE ORIFICE PLATES



Line Size	WEIGHT IN POUNDS - BLANK PLATE					All Ratings		WEIGHT IN POUNDS - BLANK PLATE						
	150#	300#	600#	900#	1500#	T	t	W	L	150#	300#	600#	900#	1500#
1/2"	1.875	2.125	2.125	2.500	2.500	0.125	0.020	1.00	3.00	.2	.2	.2	.3	.3
3/4"	2.125	2.625	2.625	2.750	2.750	0.125	0.020	1.00	3.00	.3	.3	.3	.3	.3
1"	2.625	2.875	2.875	3.125	3.125	0.125	0.020	1.00	3.00	.3	.4	.4	.5	.5
1-1/2"	3.375	3.750	3.750	3.875	3.875	0.125	0.030	1.00	3.00	.5	.5	.5	.6	.6
2"	4.125	4.375	4.375	5.625	5.625	0.125	0.030	1.00	3.00	.6	.7	.7	1.0	1.0
2-1/2"	4.875	5.125	5.125	6.500	6.500	0.125	0.030	1.00	3.00	.8	.9	.9	1.3	1.3
3"	5.375	5.875	5.875	6.625	6.875	0.125	0.030	1.00	3.00	1.0	1.1	1.1	1.4	1.5
4"	6.875	7.125	7.625	8.125	8.250	0.125	0.060	1.00	3.00	1.5	1.6	1.8	2.0	2.1
5"	7.750	8.500	9.500	9.750	10.000	0.125	0.060	1.00	3.00	1.9	2.2	2.7	2.9	3.0
6"	8.750	9.875	10.500	11.375	11.125	0.125	0.060	1.00	3.00	2.4	3.0	3.4	3.9	3.7
8"	11.000	12.125	12.625	14.125	13.875	0.125	0.125	1.00	3.00	3.6	4.4	4.8	5.8	5.7
10"	13.375	14.250	15.750	17.125	17.125	0.125	0.125	1.00	3.00	5.3	6.0	7.3	8.6	8.8
12"	16.125	16.625	18.000	19.625	20.500	0.125	0.125	1.00	3.50	8.1	8.6	10.0	11.7	12.8
14"	17.750	19.125	19.375	20.500	-	0.250	0.250	1.00	3.50	11.0	11.7	13.0	14.2	-
16"	20.250	21.250	22.250	22.625	-	0.250	0.250	1.50	3.50	11.9	13.1	14.4	14.8	-
18"	21.625	23.500	24.125	25.125	-	0.250	0.250	1.50	3.50	27.5	32.3	34.0	36.8	-
20"	23.875	25.750	26.875	27.565	-	0.250	0.250	1.50	4.50	33.3	38.8	42.0	43.9	-
24"	28.250	30.500	31.125	33.000	-	0.250	0.250	1.50	4.50	47.2	53.9	56.0	62.9	-
26"	30.500	32.875	34.125	34.750	-	0.250	0.250	1.50	4.50	82.1	94.9	102.1	105.8	-
30"	34.750	37.500	38.250	39.750	-	0.250	0.250	1.50	4.50	106.1	123.1	127.9	137.9	-
36"	41.125	43.875	44.375	-	-	0.250	0.250	1.50	4.50	125.0	160.0	165.0	180.0	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tri-Flo standard for beveling orifice plates are:
(Based on recommendations of AGA Report No. 3 and ISA
RP3.2, unless otherwise requested.)

Thickness of orifice plate at orifice edge will be the smallest of

- A. 2% Line I.D. (D)
- B. $d/8$ (d-BORE)
- C. $(D-d) / 8$

This information is required when ordering

1. Series Number
2. Nominal Line Size
3. Flange ASA Rating
4. Plate Material
5. Plate Thickness
6. Quantity
7. Bore Size or

Tri-Flo will size the orifice with a bore calculation.

FLOW DATA REQUIRED FOR BORE CALCULATION

1. Meter Differential Range
2. Nominal Line Size
3. Pipe Schedule or Actual ID
4. Flowing Fluid
5. Flow Units
6. Maximum Flow
7. Normal Flow
8. Pressure At Max. Flow
9. Temperature at Max. Flow
10. S.G. (or Density) at Base Conditions
11. S.G. (or Density) at Flowing Conditions
12. Supercompressibility Factor at Flowing Conditions
13. Molecular Weight
14. Viscosity

CUSTOM CRAFTED
FLOW ELEMENTS



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BORE CALCULATION DATA

CUSTOMER: _____ PROJECT: _____

P. O. # _____ JOB NUMBER _____

Plate Type: PT-10 _____ UT-20 _____ Other _____ Line Type: Horizontal _____ Vertical _____
 Concentric _____ Other _____ Standard: ISA _____ AGA _____ Other _____
 Material: 316SS _____ 304SS _____ Other _____ Plate Thickness: 1/8 _____ 1/4 _____ Other _____
 Tap Location: Flange _____ Vena Contracta _____ Other _____ Flange Rating: _____

	STEAM	WATER	AIR	LIQUID	GAS or VAPOR
GENERAL	Tag Number				
	Line Number				
	Fluid			x	x
	Flow Tem. (°F)			x	x
	Flow Pressure (PSIG)	x		x	x
	Actual Orifice I.D.				
	Line I.D. or Sched.	x	x	x	x
	Meter Type (Hg or Dry)				
	S.G. of seal @ Ambient T.				
	Diff. Range Ins H ₂ O	x	x	x	x
Drain /or Vent Hole					
LIQUID	Flow Units			x	
	Max. Flow		x	x	
	Normal Flow				
	S.G. @ 60 °F			x	
	S.G. @ Flowing Cond.			x	
Viscosity cp @ Flow C.				x	
VAPOR / GAS	Flow Units		x		x
	Max. Flow		x		x
	Normal Flow				
	Specific Gravity				x or
	Molecular Weight				x
	Flowing Den. lbs./ft ³				
	Barometric Press. or Elev. at Plant Site			x	x
	Pressure Base (PSIA)				
	Temp. Base (°F)				
	Supercom. Factor @ Flowing T. & P.				
Viscosity cp @ Flow T. & P.					
STEAM	Max. Flow	x			
	Normal Flow				
	Quality % or Superheat °F	x			
NOTES					

TRI-FLO TECH, INC.



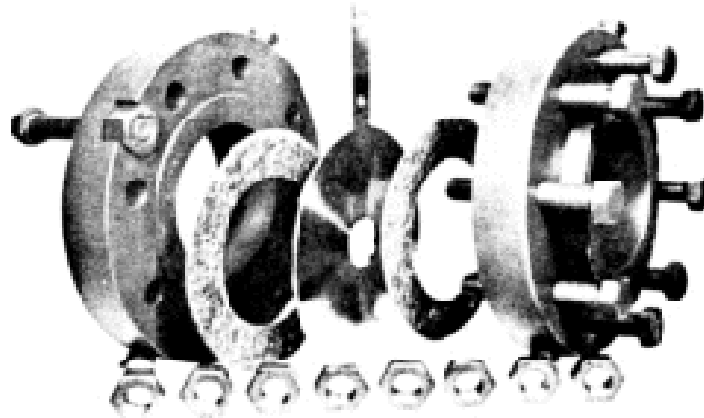
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OPERATING INSTRUCTIONS



To Remove Orifice Plate

- 1 Loosen all studs and remove the top half of the studs.
- 2 Spread flanges by turning the jackscrews clockwise.
- 3 Remove orifice plate for inspection or replacement.

To Install Orifice Plate

- 1 Replace orifice plate and gaskets between flanges.
- 2 Release the flanges by turning two jackscrews counterclockwise.
- 3 Replace all studs.
- 4 Retighten studs starting with two studs opposite each other.

Maintenance Instructions

- 1 We recommend that gaskets be replaced at each orifice plate inspection or change.

CUSTOM CRAFTED
FLOW ELEMENTS

