



WINSTON / ROYAL GUARD CORPORATION

Line Blinds and Bleed Rings

Line blinds are used to isolate a section of line between a valve and a vessel or other equipment, typically for maintenance or replacement. The **Figure 8, or spectacle blind**, is a one piece or welded assembly with a blank side and a spacer side. With this type of blind its location is easily recognized in the piping run and whether the line is “open” or “blocked off”.



Figure 8
Spectacle Blind



Figure 6B
Paddle Spacer



Figure 6A
Paddle Blind



Figure 7
Bleed Ring

The **figure 6A paddle blind** and **figure 6B paddle spacer** are similar to the spectacle blind except it is made in two pieces and with a handle to protrude from the associated flange for identification. These can many times be easier to handle than the spectacle blind due to weight considerations. Larger sizes are furnished with lifting rings.

Figure 7 bleed rings, or drip rings, are for permanent installation in a line such that it can be drained prior to servicing associated equipment. It can also be used for sampling.

These items are available in mill finish, machined finish, or female ring type joint (RTJ). Male RTJ design is not recommended due to the potential for damage to the machined facing during handling and installation.

Pressure ratings for the blinds and bleed rings are from 150# to 2500#. Blind thicknesses conform to ASME B16.48.

The blinds and bleed rings are available in many materials including carbon steel, stainless steels, and various alloys.



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Line Blinds - Female Ring Joint Type (RTJ)

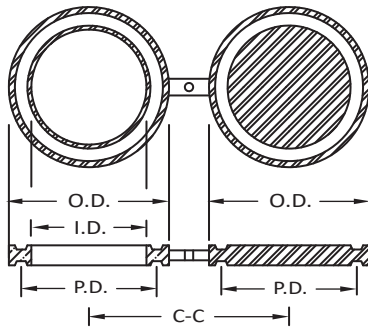


Figure 8 Spectacle Blind

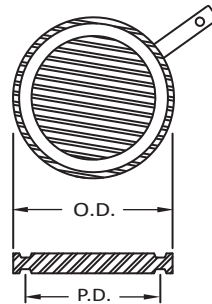


Figure 6A
Paddle Blind

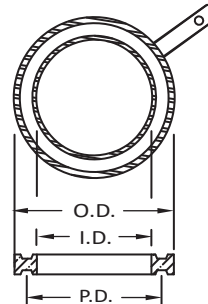
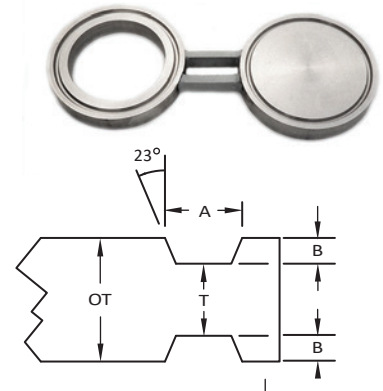


Figure 6B
Paddle Spacer



Nom. Pipe Size	150# Female RTJ								300# Female RTJ							
	I.D.	O.D.	C-C	P.D.	A	B	T	OT	I.D.	O.D.	C-C	P.D.	A	B	T	OT
1	1-1/4	2-1/2	4-1/2	1-7/8	11/32	1/4	1/4	3/4	1-1/4	2-3/4	5	2	11/32	1/4	1/4	3/4
1-1/2	1-7/8	3-1/4	5-1/2	2-9/16	11/32	1/4	1/4	3/4	1-7/8	3-9/16	6	2-11/16	11/32	1/4	3/8	7/8
2	2-3/8	4	6	3-1/4	11/32	1/4	1/4	3/4	2-3/8	4-1/4	7	3-1/4	15/32	5/16	3/8	1
2-1/2	2-7/8	4-3/4	7	4	11/32	1/4	3/8	7/8	2-7/8	5	8	4	15/32	5/16	1/2	1-1/8
3	3-1/2	5-1/4	8	4-1/2	11/32	1/4	3/8	7/8	3-1/2	5-3/4	8-1/2	4-7/8	15/32	5/16	1/2	1-1/8
4	4-1/2	6-3/4	9-1/2	5-7/8	11/32	1/4	3/8	7/8	4-1/2	6-7/8	10	5-7/8	15/32	5/16	5/8	1-1/4
6	6-5/8	8-5/8	11-1/2	7-5/8	11/32	1/4	1/2	1	6-5/8	9-1/2	12-1/2	8-5/16	15/32	5/16	3/4	1-3/8
8	8-5/8	10-3/4	14	9-3/4	11/32	1/4	5/8	1-1/8	8-5/8	11-7/8	15	10-5/8	15/32	5/16	1	1-5/8
10	10-3/4	13	16-1/2	12	11/32	1/4	3/4	1-1/4	10-3/4	14	18	12-3/4	15/32	5/16	1-1/8	1-3/4
12	12-3/4	16	19-1/2	15	11/32	1/4	7/8	1-3/8	12-3/4	16-1/4	20-1/2	15	15/32	5/16	1-3/8	2
14	14	16-3/4	21	15-5/8	11/32	1/4	7/8	1-3/8	14	18	22-1/2	16-1/2	15/32	5/16	1-1/2	2-1/8
16	16	19	23	17-7/8	11/32	1/4	1	1-1/2	16	20	25	18-1/2	15/32	5/16	1-5/8	2-1/4
18	18	21-1/2	25	20-3/8	11/32	1/4	1-1/8	1-5/8	18	22-5/8	27-1/2	21	15/32	5/16	1-3/4	2-3/8
20	20	23-1/2	28	22	11/32	1/4	1-1/8	1-5/8	20	25	30	23	17/32	3/8	2	2-3/4
24	24	28	32-1/2	26-1/2	11/32	1/4	1-3/8	1-7/8	24	29-1/4	35	27-1/4	21/32	7/16	2-1/4	3-1/8

Nominal Pipe Size	600# Female RTJ								900# Female RTJ							
	I.D.	O.D.	C-C	P.D.	A	B	T	OT	I.D.	O.D.	C-C	P.D.	A	B	T	OT
1	1-1/4	2-3/4	5	2	11/32	1/4	3/8	7/8	1-1/4	2-3/8	5-1/2	2	11/32	1/4	3/8	7/8
1-1/2	1-7/8	3-9/16	6	2-11/16	11/32	1/4	3/8	7/8	1-7/8	3-5/8	6-1/2	2-11/16	11/32	1/4	1/2	1
2	2-3/8	4-1/4	7	3-1/4	15/32	5/16	1/2	1-1/8	2-3/8	4-7/8	8	3-3/4	15/32	5/16	5/8	1-1/4
2-1/2	2-7/8	5	8	4	15/32	5/16	5/8	1-1/4	2-7/8	5-3/8	8-1/2	4-1/4	15/32	5/16	3/4	1-3/8
3	3-1/2	5-3/4	8-1/2	4-7/8	15/32	5/16	5/8	1-1/4	3-1/2	6-1/8	9	4-7/8	15/32	5/16	3/4	1-3/8
4	4-1/2	6-7/8	10-1/2	5-7/8	15/32	5/16	3/4	1-3/8	4-1/2	7-1/8	10-1/2	5-7/8	15/32	5/16	1	1-5/8
6	6-5/8	9-1/2	13-1/2	8-5/16	15/32	5/16	1-1/8	1-3/4	6-5/8	9-1/2	14	8-5/16	15/32	5/16	1-1/4	1-7/8
8	8-5/8	11-7/8	16	10-5/8	15/32	5/16	1-3/8	2	8-5/8	12-1/8	17	10-5/8	15/32	5/16	1-5/8	2-1/4
10	10-3/4	14	18-1/2	12-3/4	15/32	5/16	1-5/8	2-1/4	10-3/4	14-1/4	20	12-3/4	15/32	5/16	1-7/8	2-1/2
12	12-3/4	16-1/4	20-1/2	15	15/32	5/16	1-7/8	2-1/2	12-3/4	16-1/2	22	15	15/32	5/16	2-1/4	2-7/8
14	14	18	23	16-1/2	15/32	5/16	2	2-5/8	14	18-3/8	24	16-1/2	21/32	7/16	2-3/8	3-1/4
16	16	20	25-1/2	18-1/2	15/32	5/16	2-1/4	2-7/8	16	20-5/8	26	18-1/2	21/32	7/16	2-3/4	3-5/8
18	18	22-5/8	28	21	15/32	5/16	2-1/2	3-1/8	18	23-3/8	29	21	25/32	1/2	3	4
20	20	25	31	23	17/32	3/8	2-3/4	3-1/2	20	25-1/8	32	23	25/32	1/2	3-3/4	4-3/8
24	24	29-1/2	35	27-1/4	21/32	7/16	3-1/4	4-1/8	24	30-3/8	38	27-1/4	1-1/16	5/8	4	5-1/4

Nominal Pipe Size	1500# Female RTJ								2500# Female RTJ							
	I.D.	O.D.	C-C	P.D.	A	B	T	OT	I.D.	O.D.	C-C	P.D.	A	B	T	OT
1	1-1/4	2-13/16	5-1/2	2	11/32	1/4	1/2	1	1-1/4	3-1/4	6	2-3/8	11/32	1/4	5/8	1-1/8
1-1/2	1-7/8	3-5/8	6-1/2	2-11/16	11/32	1/4	5/8	1-1/8	1-7/8	4-1/2	7-1/2	3-1/4	15/32	5/16	3/4	1-3/8
2	2-3/8	4-7/8	8	3-3/4	15/32	5/16	3/4	1-3/8	2-3/8	5-1/4	8-1/2	4	15/32	5/16	1	1-5/8
2-1/2	2-7/8	5-3/8	8-1/2	4-1/4	15/32	5/16	7/8	1-1/2	2-7/8	5-7/8	9-1/2	4-3/8	17/32	3/8	1-1/8	1-7/8
3	3-1/2	6-5/8	10	5-3/8	15/32	5/16	1-1/8	1-3/4	3-1/2	6-5/8	11	5	17/32	3/8	1-1/4	2
4	4-1/2	7-5/8	11	6-3/8	15/32	5/16	1-1/4	1-7/8	4-1/2	8	12-1/2	6-3/16	21/32	7/16	1-5/8	2-1/2
6	6-5/8	9-3/4	14	8-5/16	17/32	3/8	1-5/8	2-3/8	6-5/8	11	17	9	25/32	1/2	2-1/4	3-1/4
8	8-5/8	12-1/2	17-1/2	10-5/8	21/32	7/16	2	2-7/8	8-5/8	13-3/8	20	11	29/32	9/16	2-3/4	3-7/8
10	10-3/4	14-5/8	20-1/2	12-3/4	21/32	7/16	2-3/8	3-1/4	10-3/4	16-3/4	24	13-1/2	1-3/16	11/16	3-1/4	4-5/8
12	12-3/4	17-1/4	24	15	29/32	9/16	2-7/8	4	12-3/4	19-1/2	27	16	1-5/16	11/16	3-7/8	5-1/4
14	14	19-1/4	25-1/2	16-1/2	1-1/16	5/8	3-1/8	4-3/8								
16	16	21-1/2	29	18-1/2	1-3/16	11/16	3-1/2	4-7/8								
18	18	24-1/5	32-1/2	21	1-3/16	11/16	3-7/8	5-1/4								
20	20	26-1/2	35-1/2	23	1-5/16	11/16	4-1/4	5-5/8								
24	24	31-1/4	42	27-1/4	1-7/16	13/16	5	6-5/8								

Dimensions are in inches



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Line Blinds - Mill and Machined Finish

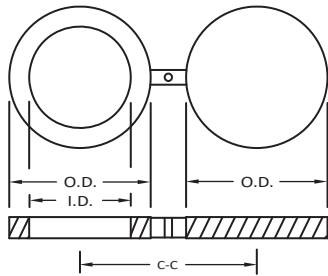


Figure 8 Spectacle Blind

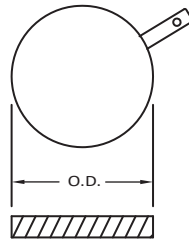


Figure 6A
Paddle Blind

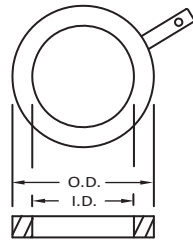


Figure 6B
Paddle Spacer



SIZE	150#				300#				600#			
	I.D.	O.D.	C-C	T	I.D.	O.D.	C-C	T	I.D.	O.D.	C-C	T
1/2	5/8	1-3/4	4	1/8	5/8	2	4-1/2	1/4	5/8	2	4-1/2	1/4
3/4	7/8	2-1/8	4	1/8	7/8	2-1/2	4-1/2	1/4	7/8	2-1/2	4-1/2	1/4
1	1-1/8	2-1/2	4-1/2	1/8	1-1/8	2-3/4	5	1/4	1	2-3/4	5	1/4
1-1/4	1-5/8	2-7/8	5	1/4	1-5/8	3-1/8	5-1/2	1/4	1-3/8	3-1/8	5-1/2	3/8
1-1/2	1-7/8	3-1/4	5-1/2	1/4	1-7/8	3-5/8	6	1/4	1-5/8	3-5/8	6	3/8
2	2-3/8	4	6	1/4	2-3/8	4-1/4	6-1/2	3/8	2-1/8	4-1/4	6-1/2	3/8
2-1/2	2-7/8	4-3/4	7	1/4	2-7/8	5	7-1/2	3/8	2-5/8	5	7-1/2	1/2
3	3-1/2	5-1/4	8	1/4	3-1/2	5-3/4	8	3/8	3-1/4	5-3/4	8	1/2
3-1/2	4	6-1/4	9	3/8	4	6-3/8	9-1/2	1/2	3-3/4	6-1/4	10	5/8
4	4-1/2	6-3/4	9-1/2	3/8	4-1/2	7	10	1/2	4-1/4	7-1/2	11	5/8
5	5-1/2	7-5/8	10-1/2	3/8	5-1/2	8-3/8	12-1/2	5/8	5-3/8	9-3/8	13	3/4
6	6-5/8	8-5/8	11-1/2	1/2	6-5/8	9-3/4	13	5/8	6-3/8	10-3/8	14	7/8
8	8-5/8	10-7/8	14	1/2	8-5/8	12	15	7/8	8-3/8	12-1/2	16	1-1/8
10	10-3/4	13-1/4	17	5/8	10-3/4	14-1/8	17-1/2	1	10-3/8	15-5/8	20	1-3/8
12	12-3/4	16	19	3/4	12-3/4	16-1/2	21	1-1/8	12-3/8	17-5/8	22	1-5/8
14	14	17-5/8	21	3/4	14	19	23	1-1/4	13-5/8	19-1/4	24	1-3/4
16	16	20-1/8	24	7/8	16	21-1/8	26	1-1/2	15-5/8	22-1/8	27	2
18	18	21-1/2	26	1	18	23-3/8	28	1-5/8	17-5/8	24	29	2-1/8
20	20	23-3/4	28	1-1/8	20	25-5/8	31	1-3/4	19-1/2	26-3/4	32	2-1/2
24	24	28-1/8	33	1-1/4	24	30-3/8	36	2	23-1/2	31	36	2-7/8

SIZE	900#				1500#				2500#			
	I.D.	O.D.	C-C	T	I.D.	O.D.	C-C	T	I.D.	O.D.	C-C	T
1/2	5/8	2-3/8	5	1/4	5/8	2-3/8	5	1/4	5/8	2-5/8	5-1/2	3/8
3/4	7/8	2-5/8	5	1/4	7/8	2-5/8	5	3/8	7/8	2-7/8	5-1/2	3/8
1	1	3	5-1/2	1/4	1	3	5-1/2	3/8	1	3-1/4	5-3/4	3/8
1-1/4	1-3/8	3-3/8	6	3/8	1-3/8	3-3/8	6	3/8	1-3/8	4	7	1/2
1-1/2	1-5/8	3-3/4	6-1/2	3/8	1-5/8	3-3/4	6-1/2	1/2	1-5/8	4-1/2	7-1/4	5/8
2	2-1/8	5-1/2	8	1/2	2	5-1/2	8	1/2	2	5-5/8	9	5/8
2-1/2	2-5/8	6-3/8	9	1/2	2-1/2	6-3/8	9	5/8	2-3/8	6-1/2	10	3/4
3	3-1/4	6-1/2	9	5/8	3	6-3/4	10	3/4	3	7-5/8	11-1/2	7/8
3-1/2												
4	4-1/4	8	11	3/4	4	8-1/8	11-1/2	7/8	4	9-1/8	12-1/2	1-1/8
5	5-1/4	9-5/8	15	7/8	5	9-7/8	15	1-1/8	5	10-7/8	17	1-3/8
6	6-3/8	11	15	1	6	11	15	1-3/8	6	12-3/8	18	1-5/8
8	8-3/8	14	18	1-3/8	8	13-3/4	18-1/2	1-5/8	7-7/8	15-1/8	20-1/2	2-1/8
10	10-3/8	17	21	1-5/8	10	17	22	2	9-3/4	18-5/8	25	2-5/8
12	12-3/8	19-1/2	24	1-7/8	12	20-3/8	25-1/2	2-3/8	11-3/8	21-1/2	28	3-1/8
14	13-5/8	20-3/8	25	2-1/8	13-1/8	22-5/8	28-1/2	2-5/8				
16	15-5/8	22-1/2	27-1/2	2-3/8	15	25-1/8	31	3				
18	17-5/8	25	30	2-5/8	16-7/8	27-5/8	34	3-3/8				
20	19-1/2	27-3/8	33	2-7/8	18-7/8	29-5/8	36-3/4	3-3/4				
24	23-1/2	23-1/2	39-1/2	3-1/2	22-5/8	35-3/8	43-1/4	4-3/8				

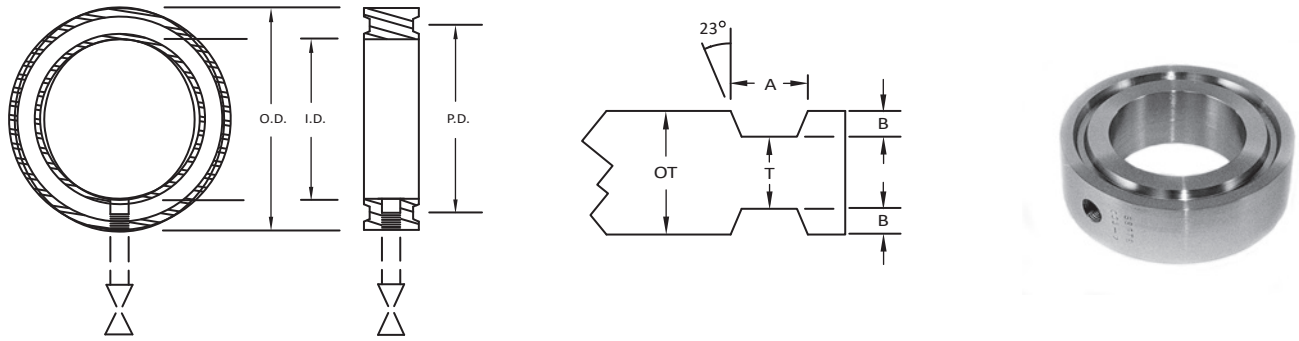
Dimensions are in inches



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Figure 7 Bleed Rings

Female Ring Joint Type (RTJ)



NOM. PIPE SIZE	150# Female RTJ							300# Female RTJ						
	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" & 3/4" TAP	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" & 3/4" TAP
1	1-1/8	2-1/2	1-7/8	11/32	1/4	1-5/8	2-1/8	1-1/4	2-3/4	2	11/32	1/4	1-5/8	2-1/8
1-1/2	1-3/4	3-1/4	2-9/16	11/32	1/4	1-5/8	2-1/8	1-7/8	3-9/16	2-11/16	11/32	1/4	1-5/8	2-1/8
2	2-1/4	4	3-1/4	11/32	1/4	1-5/8	2-1/8	2-3/8	4-1/4	3-1/4	15/32	5/16	1-5/8	2-1/4
2-1/2	2-5/8	4-3/4	4	11/32	1/4	1-5/8	2-1/8	2-7/8	5	4	15/32	5/16	1-5/8	2-1/4
3	3-1/4	5-1/4	4-1/2	11/32	1/4	1-5/8	2-1/8	3-1/2	5-3/4	4-7/8	15/32	5/16	1-5/8	2-1/4
4	4-1/4	6-3/4	5-7/8	11/32	1/4	1-5/8	2-1/8	4-1/2	6-7/8	5-7/8	15/32	5/16	1-5/8	2-1/4
6	6-1/4	8-5/8	7-5/8	11/32	1/4	1-5/8	2-1/8	6-5/8	9-1/2	8-5/16	15/32	5/16	1-5/8	2-1/4
8	8-1/4	10-7/8	9-3/4	11/32	1/4	1-5/8	2-1/8	8-5/8	11-7/8	10-5/8	15/32	5/16	1-5/8	2-1/4
10	10-1/4	13-1/4	12	11/32	1/4	1-5/8	2-1/8	10-3/4	14	12-3/4	15/32	5/16	1-5/8	2-1/4
12	12-1/4	16	15	11/32	1/4	1-5/8	2-1/8	12-3/4	16-1/4	15	15/32	5/16	1-5/8	2-1/4
14	13-1/2	17-5/8	15-5/8	11/32	1/4	1-5/8	2-1/8	14	18	16-1/2	15/32	5/16	1-5/8	2-1/4
16	15-1/2	20-1/8	17-7/8	11/32	1/4	1-5/8	2-1/8	16	20	18-1/2	15/32	5/16	1-5/8	2-1/4
18	18-1/2	21-1/2	20-3/8	11/32	1/4	1-5/8	2-1/8	18	22-5/8	21	15/32	5/16	1-5/8	2-1/4
20	20-1/2	23-3/4	22	11/32	1/4	1-5/8	2-1/8	20	25	23	17/32	3/8	1-5/8	2-3/8
24	24-1/2	28-1/8	26-1/2	11/32	1/4	1-5/8	2-1/8	24	29-1/4	27-1/4	21/32	7/16	1-5/8	2-1/2

NOM. PIPE SIZE	600# Female RTJ							900# Female RTJ						
	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" & 3/4" TAP	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" - 3/4" TAP
1	1-1/4	2-3/4	2	11/32	1/4	1-5/8	2-1/8	1-1/4	2-3/8	2	11/32	1/4	1-5/8	2-1/8
1-1/2	1-7/8	3-9/16	2-11/16	11/32	1/4	1-5/8	2-1/8	1-7/8	3-5/8	2-11/16	11/32	1/4	1-5/8	2-1/8
2	2-3/8	4-1/4	3-1/4	15/32	5/16	1-5/8	2-1/4	2-3/8	4-7/8	3-3/4	15/32	5/16	1-5/8	2-1/4
2-1/2	2-1/2	5	4	15/32	5/16	1-5/8	2-1/4	2-7/8	5-3/8	4-1/4	15/32	5/16	1-5/8	2-1/4
3	3-1/2	5-3/4	4-7/8	15/32	5/16	1-5/8	2-1/4	3-1/2	6-1/8	4-7/8	15/32	5/16	1-5/8	2-1/4
4	4-1/2	6-7/8	5-7/8	15/32	5/16	1-5/8	2-1/4	4-1/2	7-1/8	5-7/8	15/32	5/16	1-5/8	2-1/4
6	6-5/8	9-1/2	8-5/16	15/32	5/16	1-5/8	2-1/4	6-5/8	9-1/2	8-5/16	15/32	5/16	1-5/8	2-1/4
8	8-5/8	11-7/8	10-5/8	15/32	5/16	1-5/8	2-1/4	8-5/8	12-1/8	10-5/8	15/32	5/16	1-5/8	2-1/4
10	10-3/4	14	12-3/4	15/32	5/16	1-5/8	2-1/4	10-3/4	14-1/4	12-3/4	15/32	5/16	1-5/8	2-1/4
12	12-3/4	16-1/4	15	15/32	5/16	1-5/8	2-1/4	12-3/4	16-1/2	15	15/32	5/16	1-5/8	2-1/4
14	14	18	16-1/2	15/32	5/16	1-5/8	2-1/4	14	18-3/8	16-1/2	21/32	7/16	1-5/8	2-1/2
16	16	20	18-1/2	15/32	5/16	1-5/8	2-1/4	16	20-5/8	18-1/2	21/32	7/16	1-5/8	2-1/4
18	18	22-5/8	21	15/32	5/16	1-5/8	2-1/4	18	23-3/8	21	25/32	1/2	1-5/8	2-5/8
20	20	25	23	17/32	3/8	1-5/8	2-3/8	20	25-1/8	23	25/32	1/2	1-5/8	2-5/8
24	24	29-1/2	27-1/4	21/32	7/16	1-5/8	2-1/2	24	30-3/8	27-1/4	1-1/16	5/8	1-5/8	2-7/8

NOM. PIPE SIZE	1500# Female RTJ							2500# Female RTJ						
	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" & 3/4" TAP	I.D.	O.D.	P.D.	A	B	T	OT - 1/2" & 3/4" TAP
1	1-1/4	2-13/16	2	11/32	1/4	1-5/8	2-1/8	1-1/4	3-1/4	2-3/8	11/32	1/4	1-5/8	2-1/8
1-1/2	1-7/8	3-5/8	2-11/16	11/32	1/4	1-5/8	2-1/8	1-7/8	4-1/2	3-1/4	15/32	5/16	1-5/8	2-1/4
2	2-3/8	4-7/8	3-3/4	15/32	5/16	1-5/8	2-1/4	2-3/8	5-1/4	4	15/32	5/16	1-5/8	2-1/4
2-1/2	2-7/8	5-3/8	4-1/4	15/32	5/16	1-5/8	2-1/4	2-7/8	5-7/8	4-3/8	17/32	3/8	1-5/8	2-3/8
3	3-1/2	6-5/8	5-3/8	15/32	5/16	1-5/8	2-1/4	3-1/2	6-5/8	5	17/32	3/8	1-5/8	2-3/8
4	4-1/2	7-5/8	6-3/8	15/32	5/16	1-5/8	2-1/4	4-1/2	8	6-3/16	21/32	7/16	1-5/8	2-1/2
6	6-5/8	9-3/4	8-5/16	15/32	3/8	1-5/8	2-3/8	6-5/8	11	9	25/32	1/2	1-5/8	2-5/8
8	8-5/8	12-1/2	10-5/8	21/32	7/16	1-5/8	2-1/2	8-5/8	13-3/8	11	29/32	9/16	1-5/8	2-3/4
10	10-3/4	14-5/8	12-3/4	21/32	7/16	1-5/8	2-1/2	10-3/4	16-3/4	13-1/2	1-3/16	11/16	1-5/8	3
12	12-3/4	17-1/4	15	29/32	9/16	1-5/8	2-3/4	12-3/4	19-1/2	16	1-5/16	11/16	1-5/8	3
14	14	19-1/4	16-1/2	1-1/16	5/8	1-5/8	2-7/8							
16	16	21-1/2	18-1/2	1-3/16	11/16	1-5/8	3							
18	18	24-1/8	21	1-3/16	11/16	1-5/8	3							
20	20	26-1/2	23	1-5/16	11/16	1-5/8	3							
24	24	31-1/4	27-1/4	1-7/16	13/16	1-5/8	3-1/4							

Dimensions are in inches



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Figure 7 Bleed Rings - Machined Finish

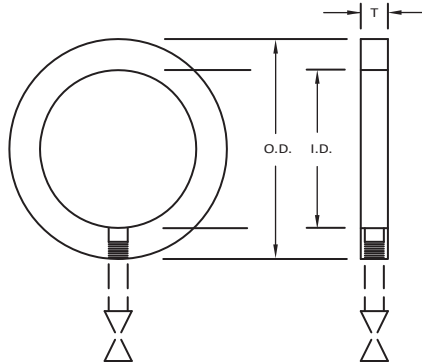


Fig 7 Bleed Rings with Machined finish



Nominal Pipe Size	150#				300#				600#			
	I.D.	O.D.	T - 1/2" & 3/4" Tap	T - 1" Tap	I.D.	O.D.	T - 1/2" - 3/4" TAP	T - 1" TAP	I.D.	O.D.	T - 1/2" & 3/4" Tap	T - 1" Tap
1/2	5/8	1-3/4	1-1/2	2-1/2	5/8	2	1-1/2	2-1/2	5/8	2	1-1/2	2-1/2
3/4	7/8	2-1/8	1-1/2	2-1/2	7/8	2-1/2	1-1/2	2-1/2	7/8	2-1/2	1-1/2	2-1/2
1	1-1/8	2-1/2	1-1/2	2-1/2	1-1/8	2-3/4	1-1/2	2-1/2	1-1/8	2-3/4	1-1/2	2-1/2
1-1/4	1-3/8	2-7/8	1-1/2	2-1/2	1-5/8	3-1/8	1-1/2	2-1/2	1-5/8	3-1/8	1-1/2	2-1/2
1-1/2	1-3/4	3-1/4	1-1/2	2-1/2	1-3/4	3-5/8	1-1/2	2-1/2	1-3/4	3-5/8	1-1/2	2-1/2
2	2-1/4	4	1-1/2	2-1/2	2-1/4	4-1/4	1-1/2	2-1/2	2-1/4	4-1/4	1-1/2	2-1/2
2-1/2	2-5/8	4-3/4	1-1/2	2-1/2	2-5/8	5	1-1/2	2-1/2	2-5/8	5	1-1/2	2-1/2
3	3-1/4	5-1/4	1-1/2	2-1/2	3-1/4	5-3/4	1-1/2	2-1/2	3-1/4	5-3/4	1-1/2	2-1/2
4	4-1/4	6-3/4	1-1/2	2-1/2	4-1/4	7	1-1/2	2-1/2	4-1/4	7-1/2	1-1/2	2-1/2
5	5-1/4	7-5/8	1-1/2	2-1/2	5-1/4	8-3/8	1-1/2	2-1/2	5-1/4	9-3/8	1-1/2	2-1/2
6	6-1/4	8-5/8	1-1/2	2-1/2	6-1/4	9-3/4	1-1/2	2-1/2	6-1/4	10-3/8	1-1/2	2-1/2
8	8-1/4	10-7/8	1-1/2	2-1/2	8-1/4	12	1-1/2	2-1/2	8-1/4	12-1/2	1-1/2	2-1/2
10	10-1/4	13-1/4	1-1/2	2-1/2	10-1/4	14-1/8	1-1/2	2-1/2	10-1/4	15-5/8	1-1/2	2-1/2
12	12-1/4	16	1-1/2	2-1/2	12-1/4	16-1/2	1-1/2	2-1/2	12-1/4	17-5/8	1-1/2	2-1/2
14	13-1/2	17-5/8	1-1/2	2-1/2	13-1/2	19	1-1/2	2-1/2	13-1/2	19-1/4	1-1/2	2-1/2
16	15-1/2	20-1/8	1-1/2	2-1/2	15-1/2	21-1/8	1-1/2	2-1/2	15-1/2	22-1/8	1-1/2	2-1/2
18	18-1/2	21-1/2	1-1/2	2-1/2	18-1/2	23-3/8	1-1/2	2-1/2	18-1/2	24	1-1/2	2-1/2
20	20-1/2	23-3/4	1-1/2	2-1/2	20-1/2	25-5/8	1-1/2	2-1/2	20-1/2	26-3/4	1-1/2	2-1/2
24	24-1/2	28-1/8	1-1/2	2-1/2	24-1/2	30-3/8	1-1/2	2-1/2	24-1/2	31	1-1/2	2-1/2

Nominal Pipe Size	900#				1500#			
	I.D.	O.D.	T - 1/2" & 3/4" Tap	T - 1" Tap	I.D.	O.D.	T - 1/2" & 3/4" Tap	T - 1" Tap
1/2	5/8	2-3/8	1-1/2	2-1/2	5/8	2-3/8	1-1/2	2-1/2
3/4	7/8	2-5/8	1-1/2	2-1/2	7/8	2-5/8	1-1/2	2-1/2
1	1-1/8	3	1-1/2	2-1/2	1-1/8	3	1-1/2	2-1/2
1-1/4	1-5/8	3-3/8	1-1/2	2-1/2	1-5/8	3-3/8	1-1/2	2-1/2
1-1/2	1-3/4	3-3/4	1-1/2	2-1/2	1-3/4	3-3/4	1-1/2	2-1/2
2	2-1/4	5-1/2	1-1/2	2-1/2	2-1/4	5-1/2	1-1/2	2-1/2
2-1/2	2-5/8	6-3/8	1-1/2	2-1/2	2-5/8	6-3/8	1-1/2	2-1/2
3	3-1/4	6-1/2	1-1/2	2-1/2	3-1/4	6-3/4	1-1/2	2-1/2
4	4-1/4	8	1-1/2	2-1/2	4-1/4	8-1/8	1-1/2	2-1/2
5	5-1/4	9-5/8	1-1/2	2-1/2	5-1/4	9-7/8	1-1/2	2-1/2
6	6-1/4	11	1-1/2	2-1/2	6-1/4	11	1-1/2	2-1/2
8	8-1/4	14	1-1/2	2-1/2	8-1/4	13-3/4	1-1/2	2-1/2
10	10-1/4	17	1-1/2	2-1/2	10-1/4	17	1-1/2	2-1/2
12	12-1/4	19-1/2	1-1/2	2-1/2	12-1/4	20-3/8	1-1/2	2-1/2
14	13-1/2	20-3/8	1-1/2	2-1/2	13-1/2	22-5/8	1-1/2	2-1/2
16	15-1/2	22-1/2	1-1/2	2-1/2	15-1/2	25-1/8	1-1/2	2-1/2
18	18-1/2	25	1-1/2	2-1/2	18-1/2	27-5/8	1-1/2	2-1/2
20	20-1/2	27-3/8	1-1/2	2-1/2	20-1/2	29-5/8	1-1/2	2-1/2
24	24-1/2	32-7/8	1-1/2	2-1/2	24-1/2	35-3/8	1-1/2	2-1/2

Dimensions are in inches

Specifications are subject to change without notice. 2-28-2018

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