VENGEANCE

Oilfield Products Inc.

Line Blanks Catalogue

Steel Line Blanks

Note to Purchaser

1. If the purchaser needs a steel line blank that deviates from this standard, the deviating requirements shall be stated in the purchase order.

2. If no exceptions are to be taken this standard, the purchase order need only make reference to ASME B16.48 standard and specified the items marked with an asterisk (*) in the following list. Other items listed are options that may also be specified if required.

   *a. Size
   *b. Class
   *c. Facing
   *d. Style
   *e. Plate Material
   f. Inside diameter
   g. Lifting or handling device

General

The ASME B16.48 standard covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for operating line blanks in sizes NPS ½ through NPS 24 for installation between ASME B16.5 flanges in the 150, 300, 600, 900, 1500, and 2500 pound pressure classes. Line blanks used onlyfor pressure testing are not part of this standard.

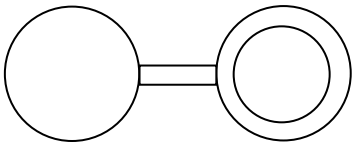
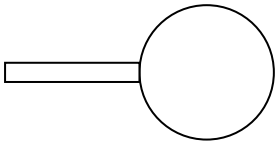
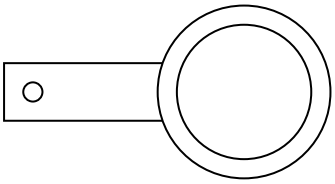


FIGURE 8 BLANK



PADDLE BLANK



PADDLE SPACER

CAUTION: Paddle Blanks shall not be supplied with indicator or bolt holes.

A *figure 8 blank* (also called a spectacle blank) is a pressure-retaining plate with one solid end and one open end connected with a web or tie bar (see Figure).

A *paddle blank* is similar to the solid end of a figure-8 blank. It has a plain radial handle. It is generally used in conjunction with paddle spacer in large sizes (see Figure).

A *paddle spacer* is similar to the open end figure-8 blank. It has a plain radial handle. It is generally used in conjunction With a paddle blank (see Figure).

Handles for paddle spacer shall have a single through indicator hole located near the end of the handle. The hole diameter shall not be less than ½" (12mm).

SECTION – RATINGS

Pressure – Temperature Ratings

Pressure-Temperature ratings are those listed in ASME B16.5 and B16.34 standard class for the material group corresponding to the plate materials.

ASME Class

Line blanks covered by this standard are for the following

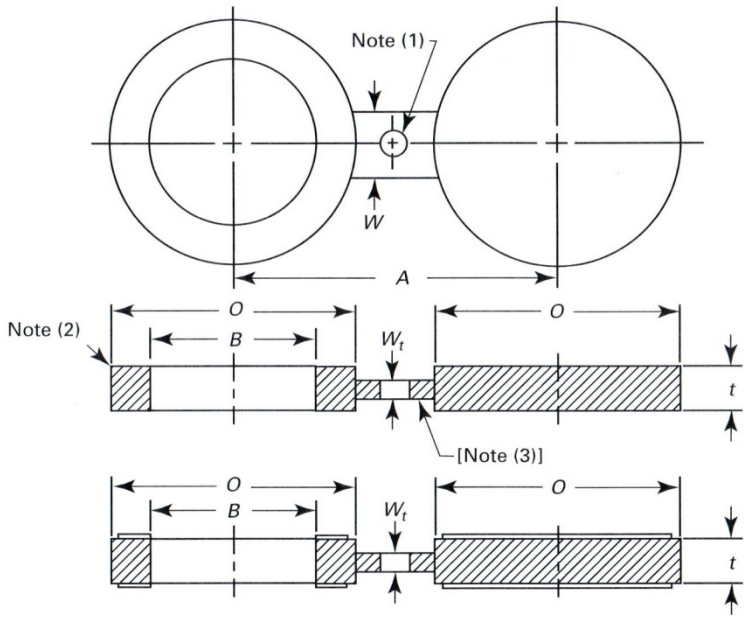
ASME classes: 150, 300, 600, 900, 1500, and 2500.

SECTION – MATERIALS

GROUP 1 MATERIALS		PRODUCT FORMS		
Material Group	NOMINAL DESIGNATION	FORGINGS	CASTINGS	PLATES
1.1	C-Si C-Mn Si C-Mn Si C-Mn Si-V 3-½ Ni	A105 A350-LF2 A350 LF6 CL1 A350-LF3	A216-WCB	A515-70 A516-70 A537-CL1
1.2	C-Mn-Si C-Mn-Si C-Mn-Si-V 2-½ Ni 3-½ Ni	 A350-LF6 CL2	A216-WCC A216-LCC A352-LC2 A352-LC3	 A203-B A203-E
1.4	C-Si C-Mn-Si	 A350-LF1 CL1		A515-60 A516-60
1.5	C-1/2 Mo C-1/2 Mo	A182-F1		A204-A A204-B
1.7	½ Cr-½ Mo Ni-½ Cr-½ Mo ¾ Ni-¾ Cr-1 Mo	A182-F2	 A217-WC4 A217-WC5	
1.9	1-¼ Cr-½ Mo 1-¼ Cr-½ Mo-Si	 A182-F11 CL2	A217-WC6	 A387-11 CL2
1.10	2-¼ Cr-1 Mo	A182-F22 CL3	A217-WC9	A387-22 CL2
1.13	5 Cr-½ Mo	A182-F5A	A217-C5	
1.14	9 Cr-1 Mo	A182-F9	A217-C12	
1.15	9 Cr-1 Mo-V	A182-F91	A217-C12A	A387-91 CL2
1.17	1 Cr-½ Mo 5 Cr-½ Mo			

FIGURE 8 BLANKS

Dimension of Class 150 Raised Face Figure 8 Blanks



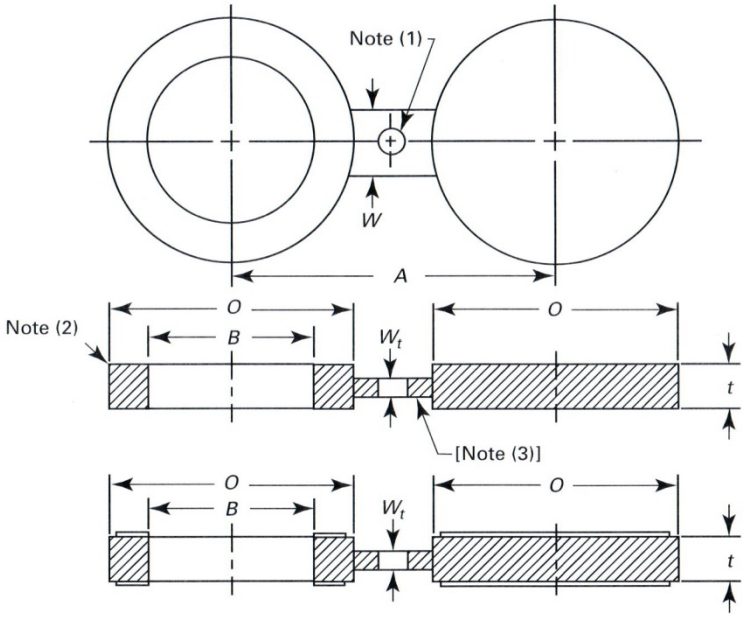
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.62	16	1.75	45	2.38	60	0.12	3	1.50	38
¾	.75	21	2.12	54	2.75	70	0.12	3	1.50	38
1	1.05	27	2.50	64	3.12	80	0.12	3	1.50	38
1 ¼	1.66	42	2.88	73	3.50	90	0.25	6.4	1.50	38
1 ½	1.90	48	3.25	83	3.88	100	0.25	6.4	1.50	38
2	2.38	61	4.00	102	4.75	120	0.25	6.4	2.00	51
2 ½	2.88	73	4.75	107	5.50	140	0.25	6.4	2.00	51
3	3.50	89	5.25	133	6.00	150	0.25	6.4	2.50	64
3 ½	4.00	102	6.25	159	7.00	175	0.38	9.7	2.50	64
4	4.50	114	6.75	172	7.50	190	0.38	9.7	2.50	64
5	5.56	141	7.62	194	8.50	215	0.38	9.7	3.00	76
6	6.62	168	8.62	219	9.50	240	0.50	12.7	3.00	76
8	8.62	219	10.88	276	11.75	300	0.50	12.7	3.00	76
10	10.75	273	13.25	337	14.25	360	0.62	15.7	4.00	102
12	12.75	324	16.00	406	17.00	430	0.75	19.1	4.00	102
14	14.00	356	17.62	448	18.75	475	0.75	19.1	4.25	108
16	16.00	406	20.12	511	21.25	540	0.88	22.4	4.25	108
18	18.00	457	21.50	546	22.75	580	1.00	25.4	4.50	114
20	20.00	508	23.75	603	25.00	635	1.12	28.4	4.75	121
24	24.00	610	28.12	714	29.50	750	1.25	31.8	5.50	140

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 300 Raised Face Figure 8 Blanks



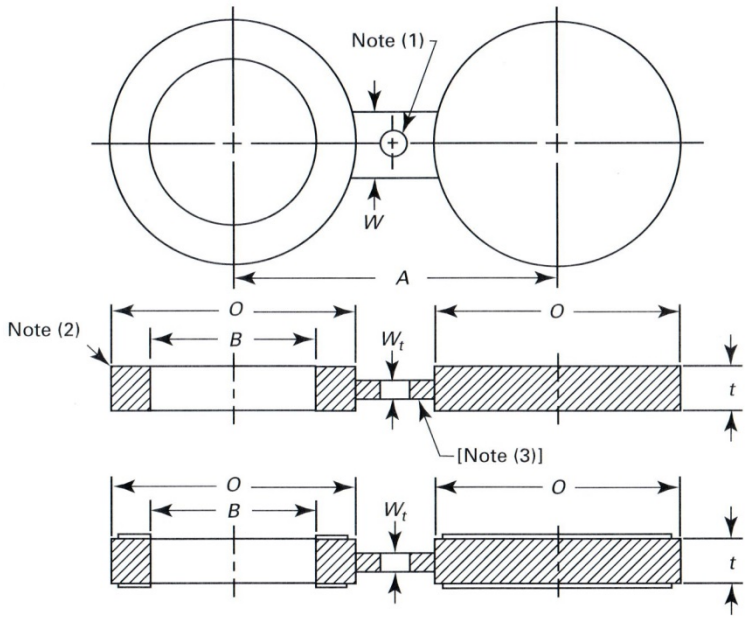
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.62	16	2.00	51	2.62	65	0.25	6.4	1.50	38
¾	.82	21	2.50	64	3.25	80	0.25	6.4	1.50	38
1	1.05	27	2.75	70	3.50	90	0.25	6.4	1.50	38
1 ¼	1.66	42	3.12	79	3.88	100	0.25	6.4	1.50	38
1 ½	1.90	48	3.62	92	4.50	115	0.25	6.4	1.50	38
2	2.38	61	4.25	108	5.00	125	0.38	9.7	2.00	51
2 ½	2.88	73	5.00	127	5.88	150	0.38	9.7	2.00	51
3	3.50	89	5.75	146	6.62	170	0.38	9.7	2.50	64
3 ½	4.00	102	6.38	162	7.25	185	0.50	12.7	2.50	64
4	4.50	114	7.00	178	7.88	200	0.50	12.7	2.50	64
5	5.56	141	8.38	213	9.25	235	0.62	15.7	3.00	76
6	6.62	168	9.75	248	10.62	270	0.62	15.7	3.00	76
8	8.62	219	12.00	305	13.00	330	0.88	22.4	3.00	76
10	10.75	273	14.12	359	15.25	385	1.00	25.4	4.00	102
12	12.75	324	16.50	419	17.75	450	1.12	28.4	4.00	102
14	14.00	356	19.00	483	20.25	515	1.25	31.8	4.25	108
16	16.00	406	21.12	536	22.50	570	1.50	38.1	4.25	108
18	18.00	457	23.38	594	24.75	630	1.62	41.1	4.50	114
20	20.00	508	15.62	651	27.00	685	1.75	44.5	4.75	121
24	24.00	610	30.38	772	32.00	810	2.00	50.8	5.50	140

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 600 Raised Face Figure 8 Blanks



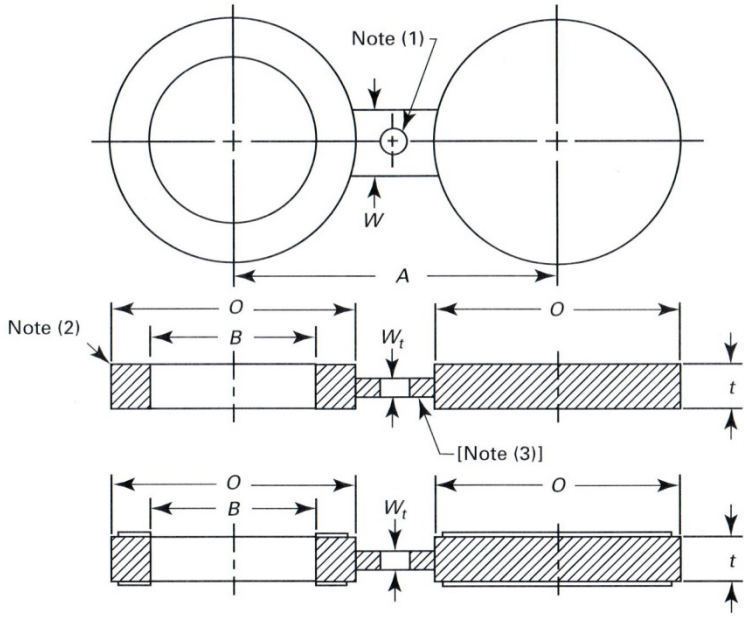
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.62	16	2.00	51	2.62	65	0.25	6.4	1.50	38
¾	.82	21	2.50	64	3.25	80	0.25	6.4	1.50	38
1	1.05	27	2.75	70	3.50	90	0.25	6.4	2.25	57
1 ¼	1.44	37	3.12	79	3.88	100	0.38	9.7	2.25	57
1 ½	1.68	43	3.62	92	4.50	115	0.38	9.7	2.62	67
2	2.16	55	4.25	108	5.00	125	0.38	9.7	2.25	57
2 ½	2.64	67	5.00	127	5.88	150	0.50	12.7	2.62	67
3	3.26	83	5.75	146	6.62	170	0.50	12.7	2.62	67
3 ½	3.76	96	6.25	159	7.25	185	0.62	15.7	3.00	76
4	4.26	108	7.50	191	8.50	215	0.62	15.7	3.00	76
5	5.30	135	9.38	238	10.50	265	0.75	19.1	3.38	86
6	6.36	162	10.38	264	11.50	290	0.88	22.4	3.38	86
8	8.33	212	12.50	318	13.75	350	1.12	28.4	3.75	95
10	10.42	265	15.62	397	17.00	430	1.38	35.1	4.12	105
12	12.39	315	17.88	454	19.25	490	1.62	41.1	4.12	105
14	13.62	346	19.25	489	20.75	525	1.75	44.5	4.50	114
16	15.62	397	22.12	562	23.75	605	2.00	50.8	4.88	124
18	17.62	448	24.00	610	25.75	655	2.12	53.8	5.25	133
20	19.56	497	26.75	679	28.50	725	2.50	63.5	5.25	133
24	23.50	597	31.00	787	33.00	840	2.88	73.2	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 900 Raised Face Figure 8 Blanks



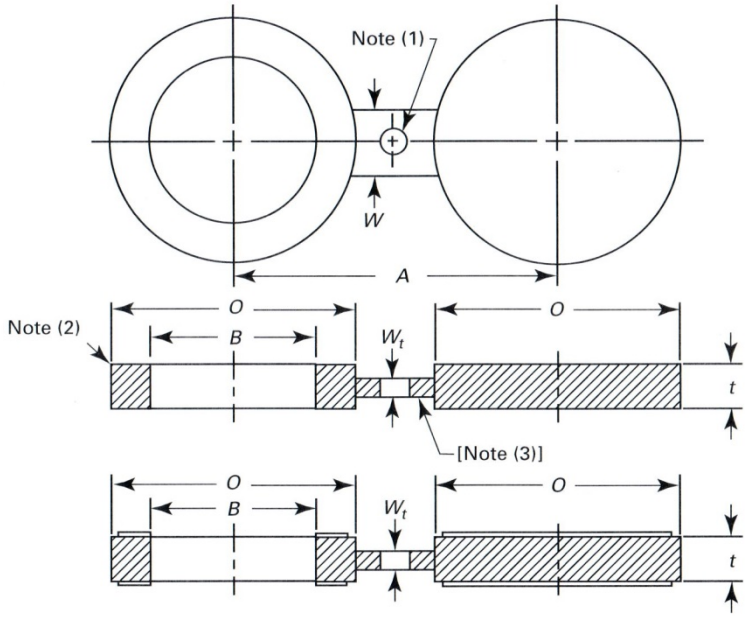
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.62	16	2.38	60	3.25	80	0.25	6.4	1.50	38
¾	.82	21	2.62	67	3.50	90	0.25	6.4	1.62	41
1	1.05	27	3.00	76	4.00	100	0.25	6.4	2.25	57
1 ¼	1.44	37	3.38	86	4.38	110	0.38	9.7	2.25	57
1 ½	1.68	43	3.75	95	4.88	125	0.38	9.7	2.62	67
2	2.16	55	5.50	140	6.50	165	0.50	12.7	2.25	57
2 ½	2.64	67	6.38	162	7.50	190	0.50	12.7	2.62	67
3	3.26	83	6.50	165	7.50	190	0.62	15.7	2.62	67
4	4.26	108	8.00	203	9.25	235	0.75	19.1	3.00	76
5	5.30	135	9.62	244	11.00	280	0.88	22.4	3.38	86
6	6.36	162	11.25	286	12.50	320	1.00	25.4	3.38	86
8	8.33	212	14.00	356	15.50	395	1.38	35.1	3.75	95
10	10.42	265	17.00	432	18.50	470	1.62	41.1	4.12	105
12	12.39	315	19.50	495	21.00	535	1.88	47.8	4.12	105
14	13.62	346	20.38	518	22.00	560	2.12	53.8	4.50	114
16	15.62	397	22.50	572	24.25	615	2.38	60.5	4.88	124
18	17.62	448	25.00	635	27.00	685	2.62	66.5	5.25	133
20	19.56	497	27.38	696	29.50	750	2.88	73.2	5.25	133
24	23.50	597	32.88	835	35.50	900	3.50	88.9	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 1500 Raised Face Figure 8 Blanks



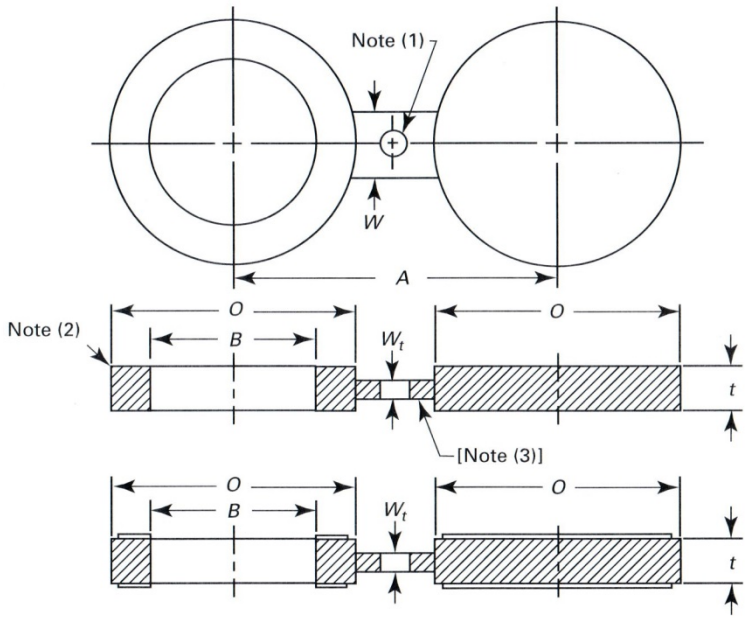
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	0.62	16	2.38	61	3.25	80	0.25	6.4	1.50	38
¾	0.82	21	2.62	67	3.50	90	0.38	9.7	1.62	41
1	1.05	27	3.00	76	4.00	100	0.38	9.7	2.20	64
1 ¼	1.38	35	3.38	86	4.38	110	0.38	9.7	2.50	64
1 ½	1.61	41	3.75	95	4.88	125	0.50	12.7	2.75	70
2	2.07	53	5.50	140	6.50	165	0.50	12.7	2.75	70
2 ½	2.47	63	6.38	162	7.50	190	0.62	15.7	3.00	76
3	3.07	78	6.75	172	8.00	205	0.75	19.1	3.00	76
4	4.03	102	8.12	206	9.50	240	0.88	22.4	3.50	89
5	5.05	128	9.88	251	11.50	290	1.12	28.4	3.50	89
6	6.06	154	11.00	279	12.50	320	1.38	35.1	3.50	89
8	7.98	203	13.75	349	15.50	395	1.62	41.1	4.00	102
10	10.02	255	17.00	432	19.00	480	2.00	50.8	4.50	114
12	11.94	303	20.38	518	22.50	570	2.38	60.5	4.50	114
14	13.12	333	22.62	575	25.00	635	2.62	66.5	5.00	127
16	15.00	381	25.12	638	27.75	705	3.00	76.2	5.25	133
18	16.88	429	27.62	702	30.50	775	3.38	85.9	5.75	146
20	18.81	478	29.62	752	32.75	830	3.75	95.3	6.00	152
24	22.62	575	35.38	899	39.00	990	4.38	111.3	7.00	178

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 2500 Raised Face Figure 8 Blanks



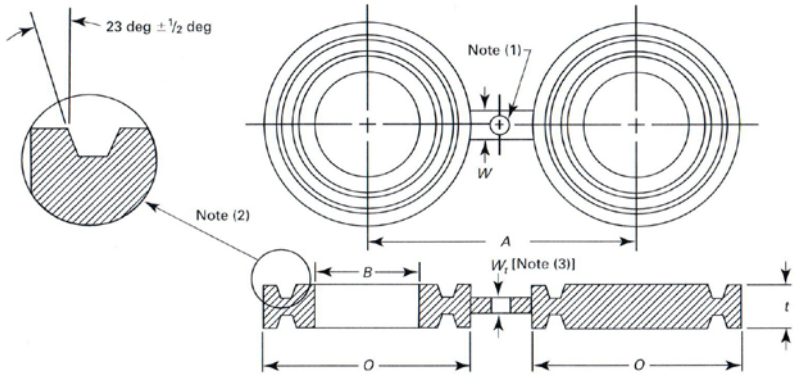
Optional Raised Face
[Note (2)]

NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	0.62	16	2.62	67	3.50	90	0.38	9.7	1.50	38
¾	0.82	21	2.88	73	3.75	95	0.38	9.7	1.62	41
1	1.05	27	3.25	83	4.25	110	0.38	9.7	2.50	64
1 ¼	1.38	35	4.00	102	5.12	130	0.50	12.7	2.50	64
1 ½	1.61	41	4.50	114	5.75	145	0.62	15.7	2.75	70
2	2.07	53	5.62	143	6.75	170	0.62	15.7	2.75	70
2 ½	2.47	63	6.50	165	7.75	195	0.75	19.1	3.00	76
3	3.07	78	7.62	194	9.00	230	0.88	22.4	3.00	76
4	4.03	102	9.12	232	10.75	275	1.12	28.4	3.50	89
5	5.05	128	10.88	276	12.75	325	1.38	35.1	3.50	89
6	6.06	154	12.38	314	14.50	370	1.62	41.1	3.05	89
8	7.81	198	15.12	384	17.25	440	2.12	53.8	4.00	102
10	9.75	248	18.62	473	21.25	540	2.62	66.5	4.50	114
12	11.37	289	21.50	546	24.38	620	3.12	79.2	4.50	114

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Optional raised face. Refer to ASME B16.48 para. 4.3.1.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 150 Female Ring-Joint Facing Figure 8 Blanks

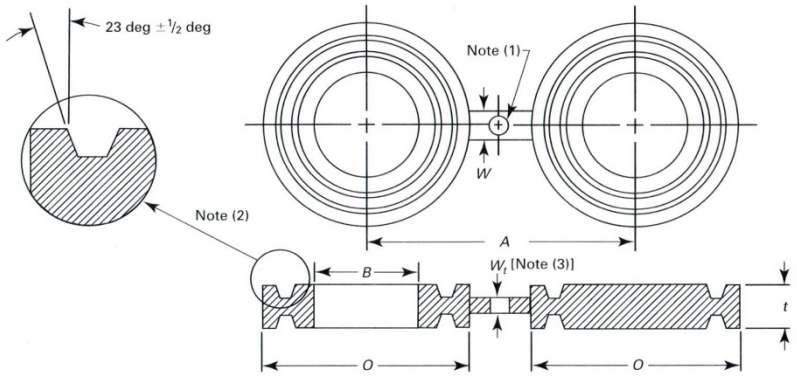


NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
1	1.32	34	2.50	64	3.12	80	0.75	19.1	2.00	51
1 ¼	1.66	42	2.88	73	3.50	90	0.75	19.1	2.00	51
1 ½	1.90	48	3.25	83	3.88	100	0.75	19.1	2.25	57
2	2.38	61	4.00	102	4.75	120	0.75	19.1	2.25	57
2 ½	2.88	73	4.75	121	5.50	140	0.88	22.4	2.25	57
3	3.50	89	5.25	133	6.00	150	0.88	22.4	2.25	57
3 ½	4.00	102	6.06	154	7.00	175	0.88	22.4	2.50	64
4	4.50	114	6.75	171	7.50	190	0.88	22.4	2.50	64
5	5.56	141	7.62	194	8.50	215	1.00	25.4	2.75	70
6	6.62	168	8.62	219	9.50	240	1.00	25.4	3.25	83
8	7.62	219	10.75	273	11.75	300	1.12	28.4	3.75	95
10	10.75	273	13.00	330	14.25	360	1.25	31.8	4.00	102
12	12.75	324	16.00	406	17.00	430	1.38	35.1	4.75	121
14	14.00	356	16.75	426	18.75	475	1.38	35.1	5.00	127
16	16.00	406	19.00	483	21.25	540	1.50	38.1	5.00	127
18	18.00	457	21.50	546	22.75	580	1.62	41.1	5.00	127
20	20.00	508	23.50	597	25.00	635	1.62	41.1	5.00	127
24	24.00	610	28.00	711	29.50	750	1.88	47.8	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 300 Female Ring-Joint Facing Figure 8 Blanks

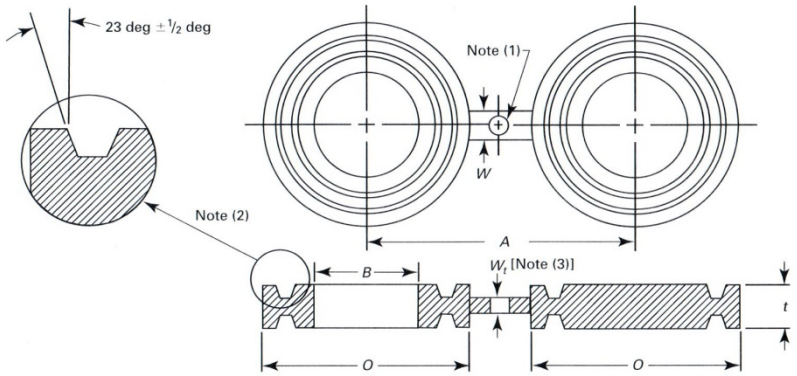


NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.84	21	2.00	51	2.62	65	0.62	15.7	1.50	38
¾	1.05	27	2.50	64	3.25	80	0.75	19.1	1.75	45
1	1.32	34	2.75	70	3.50	90	0.75	19.1	2.00	51
1 ¼	1.66	42	3.12	79	3.88	100	0.88	22.4	2.00	51
1 ½	1.90	48	3.56	90	4.50	115	0.88	22.4	2.25	57
2	2.38	61	4.25	108	5.00	125	1.00	25.4	2.25	57
2 ½	2.88	73	5.00	127	5.88	150	1.12	28.4	2.25	57
3	3.50	89	5.75	146	6.62	170	1.12	28.4	2.25	57
3 ½	4.00	102	6.25	159	7.25	185	1.12	28.4	2.50	64
4	4.50	114	6.88	175	7.88	200	1.25	31.8	2.50	64
5	5.56	141	7.25	210	9.25	235	1.38	35.1	2.75	70
6	6.62	168	9.50	241	1.062	270	1.38	35.1	3.50	83
8	8.62	219	11.88	302	13.00	330	1.62	41.1	3.75	95
10	10.75	273	14.00	356	15.25	385	1.75	44.5	4.00	102
12	12.75	324	16.25	413	17.75	450	2.00	50.8	4.75	121
14	14.00	356	18.00	457	20.25	515	2.12	53.8	5.00	127
16	16.00	406	20.00	508	22.50	570	2.25	57.2	5.00	127
18	18.00	457	22.62	575	24.75	630	2.38	60.5	5.00	127
20	20.00	508	25.00	635	27.00	685	2.75	69.9	5.00	127
24	24.00	610	29.50	749	32.00	810	3.12	79.2	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 600 Female Ring-Joint Facing Figure 8 Blanks

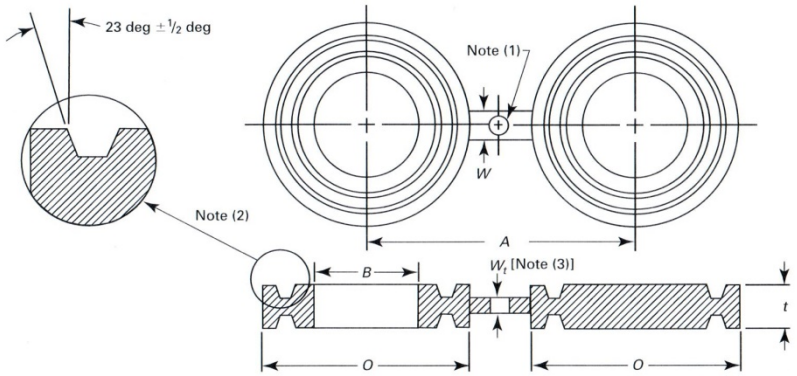


NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.84	21	2.00	51	2.62	65	0.75	19.1	1.50	38
¾	1.05	27	2.50	64	3.25	80	0.88	22.4	1.75	45
1	1.32	34	2.75	70	3.50	90	0.88	22.4	2.00	51
1 ¼	1.66	42	3.12	79	3.88	100	0.88	22.4	2.00	51
1 ½	1.90	48	3.56	90	4.50	115	0.88	22.4	2.25	57
2	2.38	61	4.25	108	5.00	125	1.12	28.4	2.25	57
2 ½	2.88	73	5.00	127	5.88	150	1.25	31.8	2.25	57
3	3.50	89	5.75	146	6.62	170	1.25	31.8	2.25	57
3 ½	4.00	102	6.25	159	7.25	185	1.38	35.1	2.50	64
4	4.50	114	6.88	175	8.50	215	1.38	35.1	2.50	64
5	5.56	141	7.25	210	10.50	265	1.50	38.1	2.75	70
6	6.62	168	9.50	241	11.50	290	1.75	44.5	3.25	83
8	8.62	219	11.88	302	13.75	350	2.00	50.8	3.75	95
10	10.75	273	14.00	356	17.00	430	2.25	57.2	4.00	102
12	12.75	324	16.25	413	19.25	490	2.50	63.5	4.75	121
14	14.00	356	18.00	457	20.75	525	2.62	66.5	5.00	127
16	16.00	406	20.00	508	23.75	605	2.88	73.2	5.00	127
18	18.00	457	22.62	575	25.75	655	3.12	79.2	5.00	127
20	20.00	508	25.00	635	28.50	725	3.50	88.9	5.00	127
24	24.00	610	29.50	749	33.00	840	4.12	104.6	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 900 Female Ring-Joint Facing Figure 8 Blanks

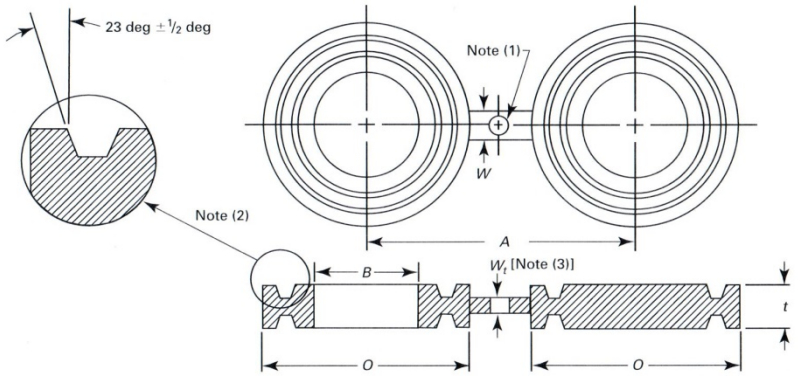


NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.84	21	2.38	61	3.25	80	0.88	22.4	1.5	38
¾	1.05	27	2.62	67	3.50	90	0.88	22.4	1.75	45
1	1.32	34	2.81	71	4.00	100	0.88	22.4	2.00	51
1 ¼	1.66	42	3.19	81	4.38	110	1.00	25.4	2.00	51
1 ½	1.90	48	3.62	92	4.88	125	1.00	25.4	2.50	64
2	2.38	61	4.88	124	6.50	165	1.25	31.8	2.00	51
2 ½	2.88	73	5.38	137	7.50	190	1.38	35.1	2.62	67
3	3.50	89	6.12	155	7.50	190	1.38	35.1	2.62	67
4	4.50	114	7.12	181	9.25	235	1.62	41.1	2.88	73
5	5.56	141	8.50	216	11.00	280	1.75	44.5	2.88	73
6	6.62	168	9.50	241	12.50	315	1.88	47.8	2.88	73
8	8.62	219	12.12	308	15.50	395	2.25	57.2	3.12	80
10	10.75	273	14.25	362	18.50	470	2.50	63.5	4.75	121
12	12.75	324	16.50	419	21.00	535	2.88	73.2	4.75	121
14	14.00	356	18.38	467	22.00	560	3.25	82.6	4.75	121
16	16.00	406	20.62	524	24.25	615	3.62	91.9	5.00	127
18	18.00	457	23.38	594	27.00	685	4.00	101.6	5.25	133
20	20.00	508	25.50	648	29.50	750	4.38	111.3	5.00	127
24	24.00	610	30.38	772	35.50	900	5.25	133.4	5.50	140

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

Dimension of Class 1500 Female Ring-Joint Facing Figure 8 Blanks

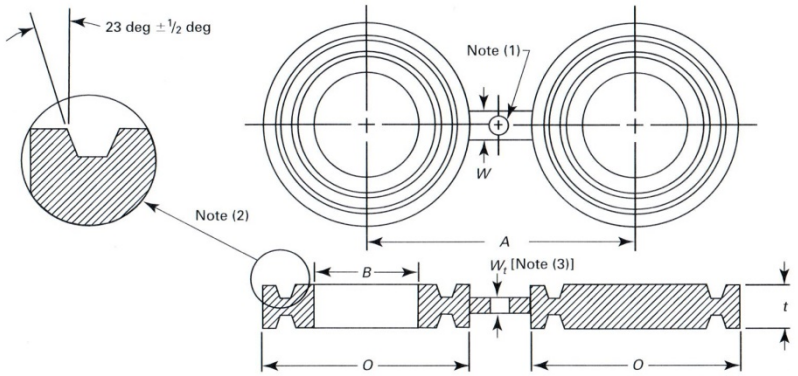


NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.84	21	2.38	61	3.25	80	0.88	22.4	1.50	38
¾	1.05	27	2.62	67	3.50	90	1.00	25.4	1.75	45
1	1.32	34	2.81	71	4.00	100	1.00	25.4	2.12	54
1 ¼	1.66	42	3.19	81	4.38	110	1.00	25.4	2.12	54
1 ½	1.90	48	3.62	92	4.88	125	1.12	28.4	2.25	57
2	2.38	61	4.88	124	6.50	165	1.38	35.1	2.12	54
2 ½	2.88	73	5.38	137	7.50	190	1.50	38.1	2.25	57
3	3.50	89	6.62	168	8.00	205	1.75	44.5	2.88	73
4	4.50	114	7.62	194	9.50	240	1.88	47.8	3.00	76
5	5.56	141	9.00	229	11.50	290	2.12	53.8	3.00	76
6	6.62	168	9.75	248	12.50	315	2.38	60.5	3.12	79
8	8.62	219	12.50	318	15.50	395	2.88	73.2	3.38	86
10	10.75	273	14.62	371	19.00	480	3.25	82.5	5.25	133
12	12.75	324	17.25	438	22.50	570	4.00	101.6	5.25	133
14	14.00	356	19.25	489	25.00	635	4.38	111.3	5.50	140
16	16.00	406	21.50	546	27.75	705	4.88	124.0	5.75	146
18	18.00	457	24.12	613	30.50	775	5.25	133.0	6.00	152
20	20.00	508	26.50	673	32.75	830	5.62	142.7	6.50	165
24	24.00	610	31.25	794	39.00	990	6.62	168.1	7.00	178

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

FIGURE 8 BLANKS

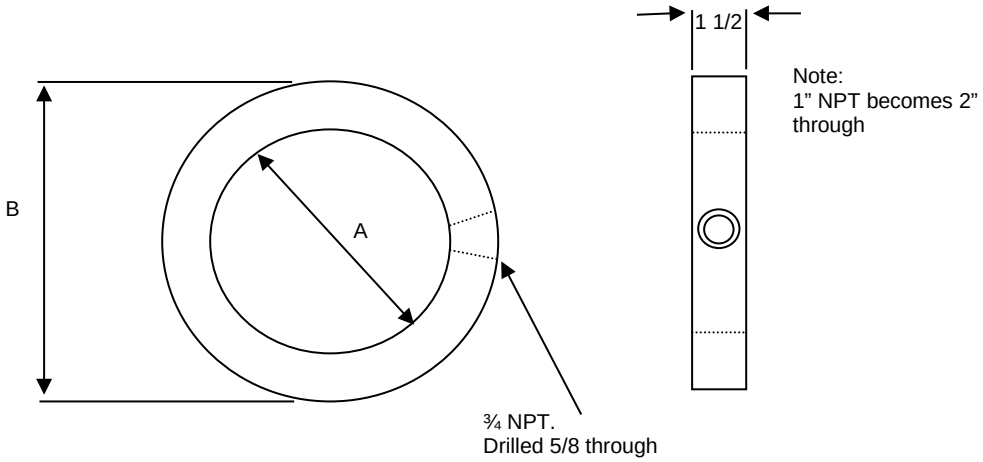
Dimension of Class 2500 Female Ring-Joint Facing Figure 8 Blanks



NPS	Inside Diameter B		Outside Diameter O		Centerline Dimensions A		Thickness t		Web Width W	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
½	.84	21	2.56	65	3.50	90	1.00	25.4	1.50	38
¾	1.05	27	2.88	73	3.75	95	1.12	28.4	1.75	45
1	1.32	34	3.25	83	4.25	110	1.12	28.4	2.12	54
1 ¼	1.66	42	4.00	102	5.12	130	1.38	35.1	2.12	54
1 ½	1.90	48	4.50	114	5.75	145	1.50	38.1	2.38	61
2	2.38	61	5.25	133	6.75	170	1.62	41.1	2.25	57
2 ½	2.88	73	5.88	149	7.75	195	1.88	47.8	2.38	61
3	3.50	89	6.62	168	9.00	230	2.00	50.8	3.00	76
4	4.50	114	8.00	203	10.75	270	2.50	63.5	3.25	83
5	5.56	141	9.50	241	12.75	325	2.88	73.2	3.50	89
6	6.62	168	11.00	279	14.50	370	3.25	82.6	3.75	95
8	8.62	219	13.38	340	17.25	440	3.88	98.6	3.75	95
10	10.75	273	16.75	425	21.25	540	4.62	117.3	3.58	91
12	12.75	324	19.50	495	24.38	620	5.25	133.4	6.00	152

NOTES:
(1) Hole size (where required due to bolt spacing) shall be the same as the flange bolt hole and located such that it will not interfere with bolting between two flanges.
(2) Female ring-joint groove dimensions shall be in accordance with ASME B16.5.
(3) The thickness of the web (or tie bar) dimension, Wt, shall be as determined by ASME B16.48 para. 4.1.

BLEED RINGS



	DIMENSION IN INCHES											
PIPE	150		300		600		900		1500		2500	
SIZE	A	B	A	B	A	B	A	B	A	B	A	B
1	1.05	2.50	1.05	2.75	1.05	2.75	1.05	3.00	1.05	3.00	1.05	3.25
1 ½	1.90	3.25	1.90	3.62	1.68	3.62	1.68	3.75	1.61	3.75	1.61	4.50
2	2.38	4.00	2.38	4.25	2.16	4.25	2.16	5.50	2.07	5.50	2.07	5.62
2 ½	2.88	4.75	2.88	5.00	2.64	5.00	2.64	6.38	2.47	6.38	2.47	6.50
3	3.50	5.25	3.50	5.75	3.26	5.75	3.26	6.50	3.07	6.75	3.07	7.62
4	4.50	6.75	4.50	7.00	4.26	7.50	4.26	8.00	4.03	8.12	4.03	9.12
5	5.56	7.62	5.56	8.38	5.30	9.38	5.30	9.62	5.05	9.88	5.05	10.88
6	6.62	8.62	6.62	9.75	6.36	10.38	6.36	11.25	6.06	11.00	6.06	12.38
8	8.62	10.88	8.62	12.00	8.33	12.50	8.33	14.00	7.98	13.75	7.81	15.12
10	10.75	13.25	10.75	14.12	10.42	15.62	10.42	17.00	10.02	17.00	9.75	18.62
12	12.75	16.00	12.75	16.50	12.39	17.88	12.39	19.50	11.94	20.38	11.37	21.50
14	14.00	17.62	14.00	19.00	13.62	19.25	13.62	20.38	13.12	22.62	…	…
16	16.00	20.12	16.00	21.12	15.62	22.12	15.62	22.50	15.00	25.12	…	…
18	18.00	21.50	18.00	23.38	17.62	24.00	17.62	25.00	16.88	27.62	…	…
20	20.00	23.75	20.00	25.62	19.56	26.75	19.56	17.38	18.81	29.62	…	…
24	24.00	28.12	24.00	30.38	23.50	31.00	23.50	32.88	22.62	35.38	…	…

NOTES:
(1) Female ring-joint available thickness will be as per ASME B16.48 RTJ Figure 8 Blinds plus the following (1/2" NPT + 7/8") – (3/4" NPT + 1") – (1" NPT + 1-3/8")
(2) Bleed rings with 1" NPT shall be 2" thick.

VOP Addendum 1 to ASME B16.48