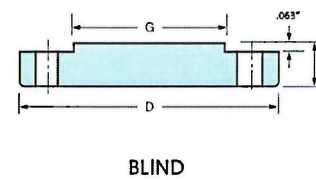
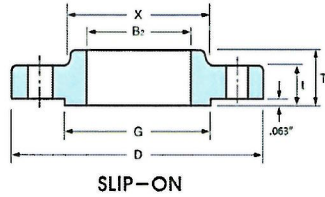
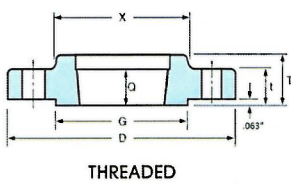
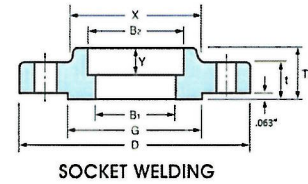
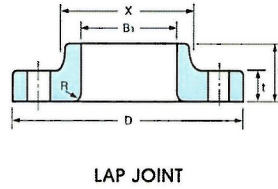
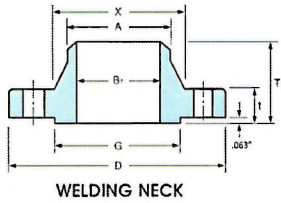




ANSI Flanges—Class 150



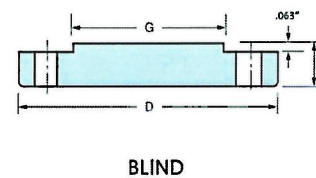
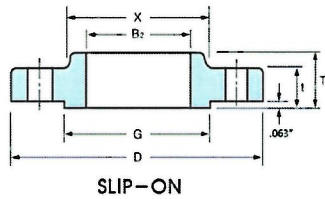
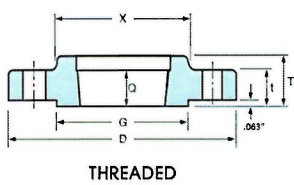
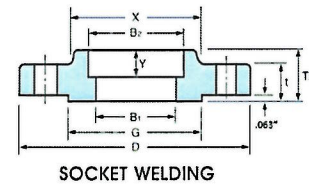
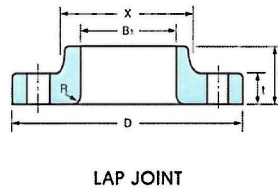
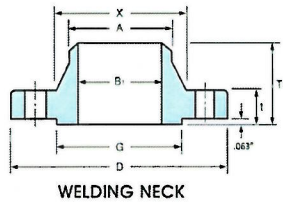
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

Nominal Pipe Size	Outside Diameter	Hub Diameter	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter	Bore			Thread Length
					Weldneck	SO, SW	Lap Joint	Bolt Circle Φ	No. of holes	Bolt Hole Φ		Weldneck	SO, SW	Lap Joint	
-	D	X	G	t	T ₁	T ₂	T ₃	-	-	-	A	B ₁	B ₂	B ₃	Q
1/2	3.50	1.19	1.38	0.44	1.88	0.62	0.62	2.38	4	0.62	0.84	To be specified by purchaser	0.88	0.90	0.62
3/4	3.88	1.50	1.69	0.50	2.06	0.62	0.62	2.75	4	0.62	1.05		1.09	1.11	0.62
1	4.25	1.94	2.00	0.56	2.19	0.69	0.69	3.12	4	0.62	1.32		1.36	1.38	0.69
1 1/4	4.62	2.31	2.50	0.62	2.25	0.81	0.81	3.50	4	0.62	1.66		1.70	1.72	0.81
1 1/2	5.00	2.56	2.88	0.69	2.44	0.88	0.88	3.88	4	0.62	1.90		1.95	1.97	0.88
2	6.00	3.06	3.62	0.75	2.50	1.00	1.00	4.75	4	0.75	2.38		2.44	2.46	1.00
2 1/2	7.00	3.56	4.12	0.88	2.75	1.12	1.12	5.50	4	0.75	2.88		2.94	2.97	1.12
3	7.50	4.25	5.00	0.94	2.75	1.19	1.19	6.00	4	0.75	3.50		3.57	3.60	1.19
3 1/2	8.50	4.81	5.50	0.94	2.81	1.25	1.25	7.00	8	0.75	4.00		4.07	4.10	1.25
4	9.00	5.31	6.19	0.94	3.00	1.31	1.31	7.50	8	0.75	4.50		4.60	4.60	1.31
5	10.00	6.44	7.31	0.94	3.50	1.44	1.44	8.50	8	0.88	5.56		5.66	5.69	1.44
6	11.00	7.56	8.50	1.00	3.50	1.56	1.56	9.50	8	0.88	6.63		6.75	6.75	1.56
8	13.50	9.69	10.62	1.12	4.00	1.75	1.75	11.75	8	0.88	8.63		8.72	8.75	1.75
10	16.00	12.00	12.75	1.19	4.00	1.94	1.94	14.25	12	1.00	10.75		10.88	10.92	1.94
12	19.00	14.38	15.00	1.25	4.50	2.19	2.19	17.00	12	1.00	12.75		12.88	12.92	2.19
14	21.00	15.75	16.25	1.38	5.00	2.25	3.12	18.75	12	1.12	14.00		14.14	14.18	2.25
16	23.50	18.00	18.50	1.44	5.00	2.50	3.44	21.25	16	1.12	16.00	16.16	16.19	2.50	
18	25.00	19.88	21.00	1.56	5.50	2.69	3.81	22.75	16	1.25	18.00	18.18	18.20	2.69	
20	27.50	22.00	23.00	1.69	5.69	2.88	4.06	25.00	20	1.25	20.00	20.20	20.25	2.88	
24	32.00	26.12	27.25	1.88	6.00	3.25	4.38	29.50	20	1.38	24.00	24.25	24.25	3.25	



ANSI Flanges—Class 300



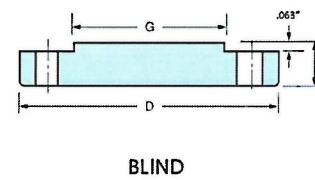
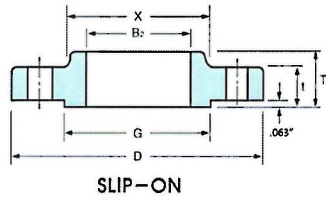
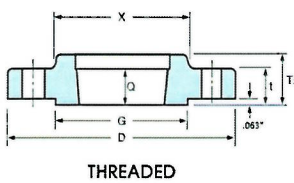
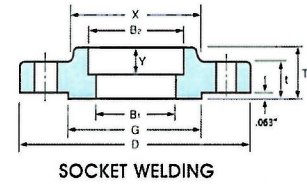
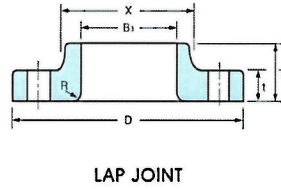
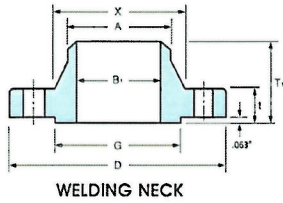
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

Nominal Pipe Size	Outside Diameter	Hub Diameter	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter	Bore			Thread Length
					Weldneck	SO, SW	Lap Joint	Bolt Circle Φ	No. of holes	Bolt Hole Φ		Weldneck	SO, SW	Lap Joint	
-	D	X	G	t	T ₁	T ₂	T ₃	-	-	-	A	B ₁	B ₂	B ₃	Q
1/2	3.75		1.38	0.56	2.06	0.88	0.88	2.62	4	0.62	0.84	To be specified by purchaser	0.88	0.90	0.62
3/4	4.62		1.69	0.62	2.25	1.00	1.00	3.25	4	0.75	1.05		1.09	1.11	0.62
1	4.88		2.00	0.69	2.44	1.06	1.06	3.50	4	0.75	1.32		1.36	1.38	0.69
1 1/4	5.25		2.50	0.75	2.56	1.06	1.06	3.88	4	0.75	1.66		1.70	1.72	0.81
1 1/2	6.12		2.88	0.81	2.69	1.19	1.19	4.50	4	0.88	1.90		1.95	1.97	0.88
2	6.50		3.62	0.88	2.75	1.31	1.31	5.00	8	0.75	2.38		2.44	2.46	1.12
2 1/2	7.50		4.12	1.00	3.00	1.50	1.50	5.88	8	0.88	2.88		2.94	2.97	1.25
3	8.25		5.00	1.12	3.12	1.69	1.69	6.62	8	0.88	3.50		3.57	3.60	1.25
3 1/2	9.00		5.50	1.19	3.19	1.75	1.75	7.25	8	0.88	4.00		4.07	4.10	1.44
4	10.00		6.19	1.25	3.38	1.88	1.88	7.88	8	0.88	4.50		5.57	4.60	1.44
5	11.00		7.31	1.38	3.88	2.00	2.00	9.25	8	0.88	5.56		5.66	5.69	1.69
6	12.50		8.50	1.44	3.88	2.06	2.06	10.62	12	0.88	6.63		6.72	6.75	1.81
8	15.00		10.62	1.62	4.38	2.44	2.44	13.00	12	1.00	8.63		8.72	8.75	2.00
10	17.50		12.75	1.88	4.62	2.62	3.75	15.25	16	1.12	10.75		10.88	10.92	2.19
12	20.50		15.00	2.00	5.12	2.88	4.00	17.75	16	1.25	12.75		12.88	12.92	2.38
14	23.00		16.25	2.12	5.62	3.00	4.38	20.25	20	1.25	14.00		14.14	14.18	2.50
16	25.50		18.50	2.25	5.75	3.25	4.75	22.50	20	1.38	16.00	16.16	16.19	2.69	
18	28.00		21.00	2.38	6.25	3.50	5.12	24.75	24	1.38	18.00	18.18	18.20	2.75	
20	30.50		23.00	2.50	6.38	3.75	5.50	27.00	24	1.38	20.00	20.20	20.25	2.88	
24	36.00		27.25	2.75	6.62	4.19	6.00	32.00	24	1.62	24.00	24.25	24.25	3.25	



ANSI Flanges—Class 400



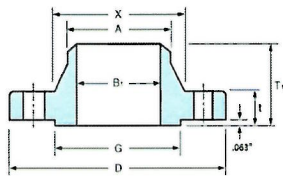
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

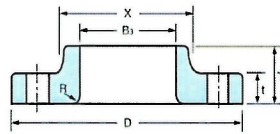
Nominal Pipe Size	Outside Diameter	Hub Diameter X	Raised Face Diameter R	Flange Thickness	Overall Length			Drilling			Weld End Diameter A	Bore			Thread Length
					Weldneck T ₁	SO, SW T ₂	Lap Joint T ₃	Bolt Circle Φ	No. of holes	Bolt Hole Φ		Weldneck	SO, SW B ₂	Lap Joint B ₃	
4	10.00	5.75	6.19	1.38	3.50	2.00	2.00	7.88	8	1.00	4.50	B ₁	4.57	4.60	1.44
5	11.00	7.00	7.31	1.50	4.00	2.12	2.12	9.25	8	1.00	5.56	To be specified by purchaser	5.66	5.69	1.69
6	12.50	8.12	8.50	1.62	4.06	2.25	2.25	10.62	12	1.00	6.63		6.72	6.75	1.81
8	15.00	10.25	10.62	1.88	4.62	2.69	2.69	13.00	12	1.12	8.63		8.72	8.75	2.00
10	17.50	12.62	12.75	2.12	4.88	2.88	4.00	15.25	16	1.25	10.75		10.88	10.92	2.19
12	20.50	14.75	15.00	2.25	5.38	3.12	4.25	17.75	16	1.38	12.75		12.88	12.92	2.38
14	23.00	16.75	16.25	2.38	5.88	3.31	4.62	20.25	20	1.38	14.00		14.14	14.18	2.50
16	25.50	19.00	18.50	2.50	6.00	3.69	5.00	22.50	20	1.50	16.00		16.16	16.19	2.69
18	28.00	21.00	21.00	2.62	6.50	3.88	5.38	24.75	24	1.50	18.00		18.18	18.20	2.75
20	30.50	23.12	23.00	2.75	6.62	4.00	5.75	27.00	24	1.62	20.00		20.20	20.25	2.88
24	36.00	27.62	27.25	3.00	6.88	4.50	6.62	32.00	24	1.88	24.00		24.25	24.25	3.25



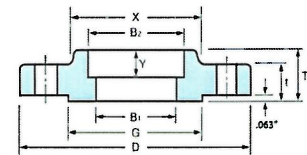
ANSI Flanges—Class 600



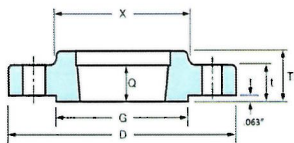
WELDING NECK



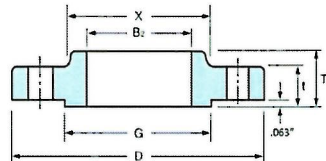
LAP JOINT



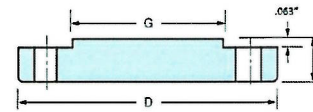
SOCKET WELDING



THREADED



SLIP-ON



BLIND

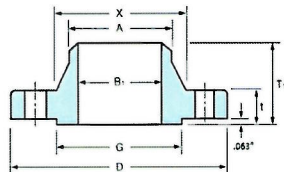
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

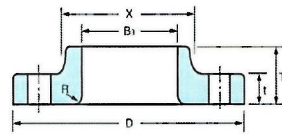
Nominal Pipe Size	Outside Diameter	Hub Diameter X	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter A	Bore			Thread Length
					Weldneck T ₁	SO, SW T ₂	Lap Joint T ₃	Bolt Circle Ø	No. of holes	Bolt Hole Ø		Weldneck B ₁	SO, SW B ₂	LapJoint B ₃	
½	3.75	1.50	1.38	0.56	2.06	0.88	0.88	2.62	4	0.62	0.84	B ₁	0.88	0.90	0.62
¾	4.62	1.88	1.69	0.62	2.25	1.00	1.00	3.25	4	0.75	1.05	To be specified by purchaser	1.09	1.11	0.62
1	4.88	2.12	2.00	0.69	2.44	1.06	1.06	3.50	4	0.75	1.32		1.36	1.38	0.69
1 ¼	5.25	2.50	2.50	0.81	2.62	1.12	1.12	3.88	4	0.75	1.66		1.70	1.72	0.81
1 ½	6.12	2.75	2.88	0.88	2.75	1.25	1.25	4.50	4	0.88	1.90		1.95	1.97	0.88
2	6.50	3.31	3.62	1.00	2.88	1.44	1.44	5.00	8	0.75	2.38		2.44	2.46	1.12
2 ½	7.50	3.94	4.12	1.12	3.12	1.62	1.62	5.88	8	0.88	2.88		2.94	2.97	1.25
3	8.25	4.62	5.00	1.25	3.25	1.81	1.81	6.62	8	0.88	3.50		3.57	3.60	1.38
3 ½	9.00	5.25	5.50	1.38	3.38	1.94	1.94	7.25	8	1.00	4.00		4.07	4.10	1.56
4	10.75	6.00	6.19	1.50	4.00	2.12	2.12	8.50	8	1.00	4.50		4.57	4.60	1.62
5	13.00	7.44	7.31	1.75	4.50	2.38	2.38	10.50	8	1.12	5.56		5.66	5.69	1.88
6	14.00	8.75	8.50	1.88	4.62	2.62	2.62	11.50	12	1.12	6.62		6.72	6.75	2.00
8	16.50	10.75	10.62	2.19	5.25	3.00	3.00	13.75	12	1.25	8.62		8.72	8.75	2.25
10	20.00	13.50	12.75	2.50	6.00	3.38	4.38	17.00	16	1.38	10.75		10.88	10.92	2.56
12	22.00	15.75	15.00	2.62	6.12	3.62	4.62	19.25	20	1.38	12.75		12.88	12.92	2.75
14	23.75	17.00	16.25	2.75	6.50	3.69	5.00	20.75	20	1.50	14.00		14.14	14.18	2.88
16	27.00	19.50	18.50	3.00	7.00	4.19	5.50	23.75	20	1.62	16.00		16.16	16.19	3.06
18	29.25	21.50	21.00	3.25	7.25	4.62	6.00	25.75	20	1.75	18.00	18.18	18.20	3.12	
20	32.00	24.00	23.00	3.50	7.50	5.00	6.50	28.50	24	1.75	20.00	20.20	20.25	3.25	
24	37.00	28.25	27.25	4.00	8.00	5.50	7.25	33.00	24	2.00	24.00	24.25	24.25	3.62	



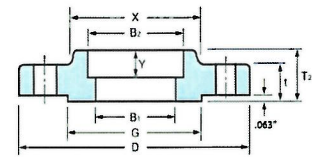
ANSI Flanges—Class 900



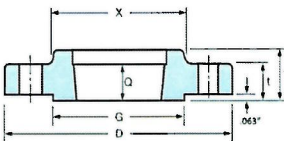
WELDING NECK



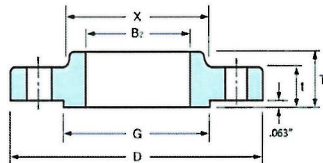
LAP JOINT



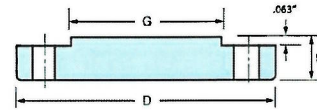
SOCKET WELDING



THREADED



SLIP-ON



BLIND

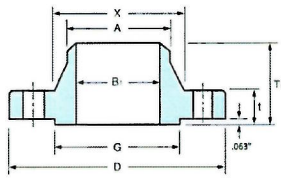
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

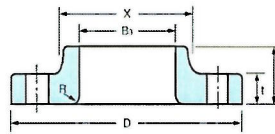
Nominal Pipe Size	Outside Diameter	Hub Diameter X	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter	Bore			Thread Length	
					Weldneck T ₁	SO, SW T ₂	Lap Joint T ₃	Bolt Circle Ø	No. of holes	Bolt Hole Ø		Weldneck B ₁	SO, SW B ₂	Lap Joint B ₃		
3	9.50	5.00	5.00	1.50	4.00	2.12	2.12	7.50	8	1.00	3.50	B ₁	3.57	3.60	1.62	
4	11.50	6.25	6.19	1.75	4.50	2.75	2.75	9.25	8	1.25	4.50	To be specified by purchaser	4.57	4.60	1.88	
5	13.75	7.50	7.31	2.00	5.00	3.13	3.13	11.00	8	1.38	5.56		5.66	5.69	2.12	
6	15.00	9.25	8.50	2.19	5.50	3.38	3.38	12.50	12	1.25	6.63		6.72	6.75	2.25	
8	18.50	11.75	10.62	2.50	6.38	4.00	4.50	15.50	12	1.50	8.63		8.72	8.75	2.50	
10	21.50	14.50	12.75	2.75	7.25	4.25	5.00	18.50	16	1.50	10.75		10.88	10.92	2.81	
12	24.00	16.50	15.00	3.12	7.88	4.62	5.62	21.00	20	1.50	12.75		12.88	12.92	3.00	
14	25.25	17.75	16.25	3.38	8.38	5.12	6.12	22.00	20	1.62	14.00		14.14	14.18	3.25	
16	27.75	20.00	18.50	3.50	8.50	5.25	6.50	24.25	20	1.75	16.00		16.16	16.19	3.38	
18	31.00	22.25	21.00	4.00	9.00	6.00	7.50	27.00	20	2.00	18.00		18.18	18.20	3.50	
20	33.75	24.50	23.00	4.25	9.75	6.25	8.25	29.50	20	2.12	20.00		20.20	20.25	3.62	
24	41.00	29.50	27.25	5.50	11.50	8.00	10.50	35.50	20	2.62	24.00		24.25	24.25	4.00	



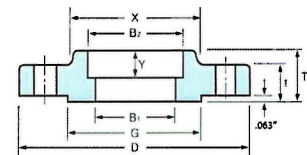
ANSI Flanges—Class 1500



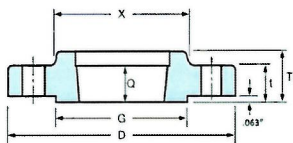
WELDING NECK



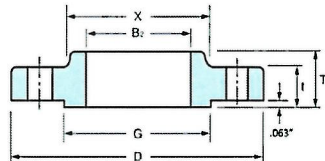
LAP JOINT



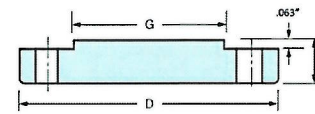
SOCKET WELDING



THREADED



SLIP-ON



BLIND

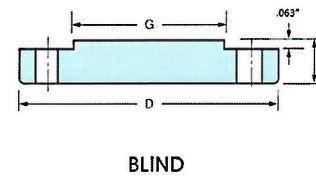
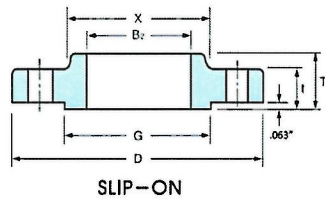
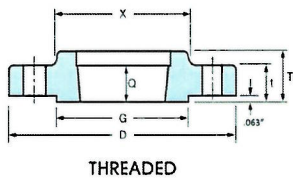
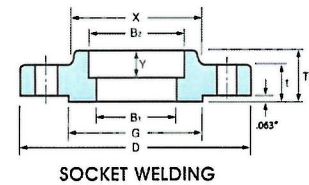
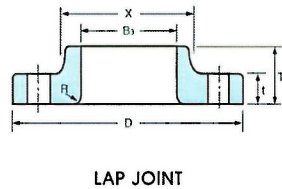
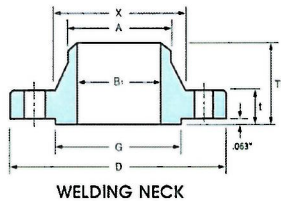
NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

Nominal Pipe Size	Outside Diameter	Hub Diameter	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter A	Bore			Thread Length
					Weldneck T ₁	SO, SW T ₂	Lap Joint T ₃	Bolt Circle Φ	No. of holes	Bolt Hole Φ		Weldneck B ₁	SO, SW B ₂	Lap Joint B ₃	
1/2	4.75	1.50	1.38	0.12	2.38	1.25	1.25	3.25	4	0.88	0.84	To be specified by purchaser	0.88	0.90	0.88
3/4	5.12	1.75	1.69	0.12	2.75	1.38	1.38	3.50	4	0.88	1.05		1.09	1.11	1.00
1	5.88	2.06	2.00	0.12	2.88	1.62	1.62	4.00	4	1.00	1.32		1.36	1.38	1.12
1 ¼	6.25	2.50	2.50	0.19	2.88	1.62	1.62	4.38	4	1.00	1.66		1.70	1.72	1.19
1 ½	7.00	2.75	2.88	0.25	3.25	1.75	1.75	4.88	4	1.12	1.90		1.95	1.97	1.25
2	8.50	4.12	3.62	0.31	4.00	2.25	2.25	6.50	8	1.00	2.38		2.44	2.46	1.50
2 ½	9.62	4.88	4.12	0.31	4.12	2.50	2.50	7.50	8	1.12	2.88		2.94	2.97	1.88
3	10.50	5.25	5.00	0.38	4.62	2.88	2.88	8.00	8	1.25	3.50		3.57	3.60	2.00
4	12.25	6.38	6.19	0.44	4.88	3.56	3.56	9.50	8	1.38	4.50		4.57	4.60	2.25
5	14.75	7.75	7.31	0.44	6.12	4.12	4.12	11.50	8	1.62	5.56		5.66	5.69	2.50
6	15.50	9.00	8.50	0.50	6.75	4.69	4.69	12.50	12	1.50	6.63		6.72	6.75	2.75
8	19.00	11.50	10.62	0.50	8.38	5.62	5.62	15.50	12	1.75	8.63		8.72	8.75	3.00
10	23.00	14.50	12.75	0.50	10.00	6.25	7.00	19.00	12	2.00	10.75		10.88	10.92	3.31
12	26.50	17.75	15.00	0.50	11.12	7.12	8.62	22.50	16	2.12	12.75		12.88	12.92	3.63
14	29.50	19.50	16.25	0.50	11.75	-	9.50	25.00	16	2.38	14.00		14.14	14.18	-
16	32.50	21.75	18.50	0.50	12.25	-	10.25	27.75	16	2.62	16.00		16.16	16.19	-
18	36.00	23.50	21.00	0.50	12.88	-	10.88	30.50	16	2.88	18.00	18.18	18.20	-	
20	38.75	25.25	23.00	0.50	14.00	-	11.50	32.75	16	3.12	20.00	20.20	20.25	-	
24	46.00	30.00	27.25	0.50	16.00	-	13.00	39.00	16	3.62	24.00	24.25	24.25	-	



ANSI Flanges—Class 2500



NOTES:

1. See sections 6 and 7 of ASME B16.5 for additional dimensions and tolerances.
2. See Figures 8, 9 and 10 of ASME B16.5 for details on welding ends.
3. Flange facing shown is for raised face type. For ring type joint facing, see Table 5 of ASME B16.5.
4. SO is Slip-On, SW is Socket Welding

Nominal Pipe Size	Outside Diameter D	Hub Diameter x	Raised Face Diameter	Flange Thickness	Overall Length			Drilling			Weld End Diameter A	Bore			Thre ad Len gth
					Weld- neck T ₁	SO, SW T ₂	Lap Joint T ₃	Bolt Circle Φ	No. of holes	Bolt Hole Φ		Weld- neck B ₁	SO, SW B ₂	LapJo int B ₃	
½	5.25	1.69	1.38	0.12	2.88	1.56	1.56	3.50	4	0.88	0.84	To be spe cife d by pur cha ser	0.88	0.90	1.12
¾	5.50	2.00	1.69	0.12	3.12	1.69	1.69	3.75	4	0.88	1.05		1.09	1.11	1.25
1	6.25	2.25	2.00	0.12	3.50	1.88	1.88	4.25	4	1.00	1.32		1.36	1.38	1.38
1 ¼	7.25	2.88	2.50	0.19	3.75	2.06	2.06	5.12	4	1.12	1.66		1.70	1.72	1.50
1 ½	8.00	3.12	2.88	0.25	4.38	2.38	2.38	5.75	4	1.25	1.90		1.95	1.97	1.75
2	9.25	3.75	3.62	0.31	5.00	2.75	2.75	6.75	8	1.12	2.38		2.44	2.46	2.00
2 ½	10.50	4.50	4.12	0.31	5.62	3.12	3.12	7.75	8	1.25	2.88		2.94	2.97	2.25
3	12.00	5.25	5.00	0.38	6.62	3.62	3.62	9.00	8	1.38	3.50		3.57	3.60	2.50
4	14.00	6.50	6.19	0.44	7.50	4.25	4.25	10.75	8	1.62	4.50		4.57	4.60	2.75
5	16.50	8.00	7.31	0.44	9.00	5.12	5.12	12.75	8	1.88	5.56		5.66	5.69	3.00
6	19.00	9.25	8.50	0.50	10.75	6.00	6.00	14.50	8	2.12	6.63		6.72	6.75	3.25
8	21.75	12.00	10.62	0.50	12.50	7.00	7.00	17.25	12	2.12	8.63		8.72	8.75	3.75
10	26.50	14.75	12.75	0.50	16.50	9.00	9.00	21.25	12	2.62	10.75	10.88	10.92	4.25	
12	30.00	17.38	15.00	0.50	18.25	10.00	10.00	24.38	12	2.88	12.75	12.88	12.92	4.75	