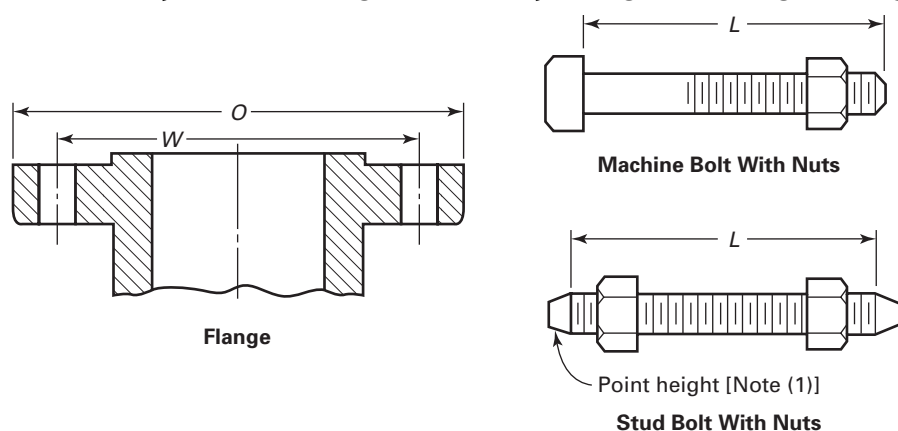


Table 7 Templates for Drilling Class 150 Pipe Flanges and Flanged Fittings

Nominal Pipe Size, NPS	Outside Diameter of Flange, <i>O</i>	Drilling [Notes (2), (3)]				Length of Bolts, <i>L</i> [Notes (1), (4)]		
		Diameter of Bolt Circle, <i>W</i>	Diameter of Bolt Holes, in.	Number of Bolts	Stud Bolts [Note (1)]		Machine Bolts	
					2-mm Raised Face	Ring Joint		
1/2	90	60.3	5/8	4	1/2	55	...	50
3/4	100	69.9	5/8	4	1/2	65	...	50
1	110	79.4	5/8	4	1/2	65	75	55
1 1/4	115	88.9	5/8	4	1/2	70	85	55
1 1/2	125	98.4	5/8	4	1/2	70	85	65
2	150	120.7	3/4	4	5/8	85	95	70
2 1/2	180	139.7	3/4	4	5/8	90	100	75
3	190	152.4	3/4	4	5/8	90	100	75
3 1/2	215	177.8	3/4	8	5/8	90	100	75
4	230	190.5	3/4	8	5/8	90	100	75
5	255	215.9	7/8	8	3/4	95	110	85
6	280	241.3	7/8	8	3/4	100	115	85
8	345	298.5	7/8	8	3/4	110	120	90
10	405	362.0	1	12	7/8	115	125	100
12	485	431.8	1	12	7/8	120	135	100
14	535	476.3	1 1/8	12	1	135	145	115
16	595	539.8	1 1/8	16	1	135	145	115
18	635	577.9	1 1/4	16	1 1/8	145	160	125
20	700	635.0	1 1/4	20	1 1/8	160	170	140
24	815	749.3	1 3/8	20	1 1/4	170	185	150

GENERAL NOTES:

- (a) Dimensions of Table 7 are in millimeters, except for diameters of bolts and bolt holes, which are in inch units. For dimensions in inch units, refer to Mandatory Appendix II, Table II-7.
 (b) For other dimensions, see Tables 8 and 9.

NOTES:

- (1) The length of the stud bolt does not include the height of the points (see para. 6.10.2).
 (2) For flange bolt holes, see para. 6.5.
 (3) For spot facing, see para. 6.6.
 (4) Bolt lengths not shown in the table may be determined in accordance with Nonmandatory Appendix C (see para. 6.10.2).

Table 8 Dimensions of Class 150 Flanges

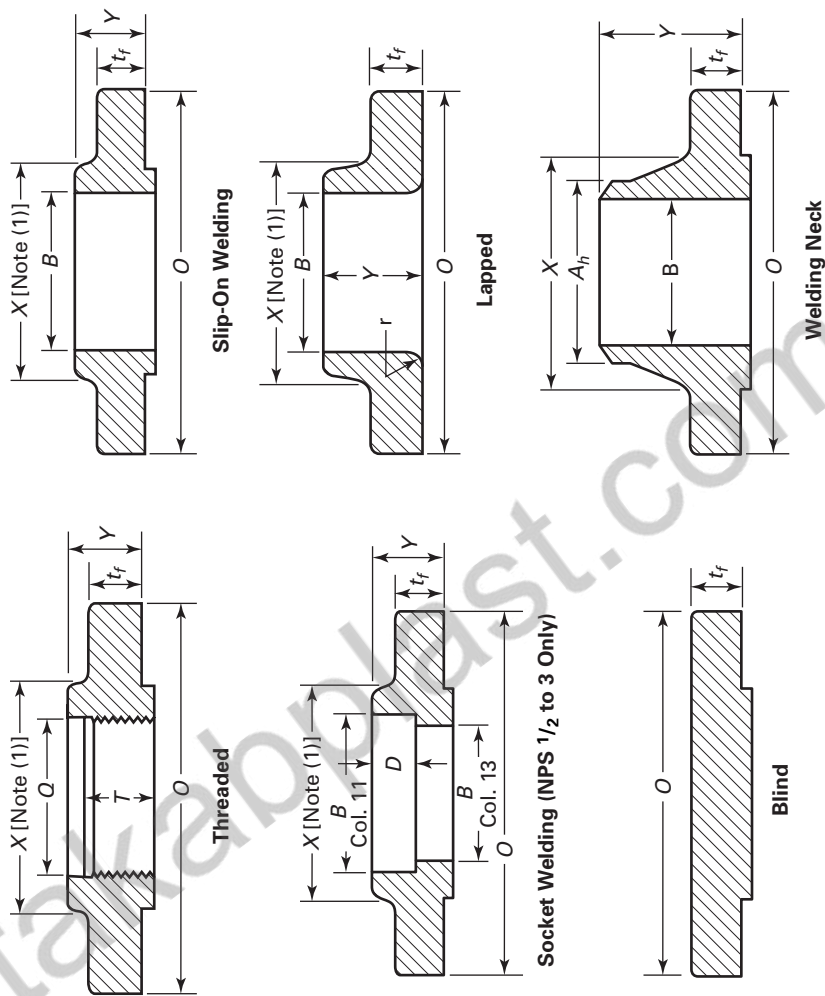


Table 8 Dimensions of Class 150 Flanges (Cont'd)

Nominal Pipe Size, NPS	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Outside Diameter of Flange, O	Minimum Thickness of Flange, t_f [Notes (2)-(4)]	Minimum Thickness of Lap Joint, t_l	Diameter of Hub, X	Length Through Hub		Minimum Thread Length Threaded, T [Note (6)]	Minimum Slip-on/Socket Welding, B	Welding Neck, Y	Welding Neck, Y	Minimum Slip-on/Socket Welding, B	Minimum Lapped, B	Welding Neck/Socket Welding, B [Note (7)]	Depth of Socket, D	
				Threaded/Slip-on/Socket Welding, Y	Lapped, Y									
1/2	90	11.2	30	21.3	14	16	46	46	16	22.2	22.9	15.8	3	10
3/4	100	12.7	38	26.7	14	16	51	51	16	27.7	28.2	20.9	3	11
1	110	14.3	49	33.4	16	17	54	54	17	34.5	34.9	26.6	3	13
1 1/4	115	15.9	59	42.2	19	21	56	56	21	43.2	43.7	35.1	5	14
1 1/2	125	17.5	65	48.3	21	22	60	60	22	49.5	50.0	40.9	6	16
2	150	19.1	78	60.3	24	25	62	62	25	61.9	62.5	52.5	8	17
2 1/2	180	20.7	90	73.0	27	29	68	68	29	74.6	75.4	62.7	8	19
3	190	22.3	108	88.9	29	30	68	68	30	90.7	91.4	77.9	10	21
3 1/2	215	23.9	122	101.6	30	32	70	70	32	103.4	104.1	90.1	10	...
4	230	25.5	135	114.3	32	33	75	75	33	116.1	116.8	102.3	11	...
5	255	27.1	164	141.3	35	36	87	87	36	143.8	144.4	128.2	11	...
6	280	28.7	192	168.3	38	40	87	87	40	170.7	171.4	154.1	13	...
8	345	31.5	246	219.1	43	44	100	100	44	221.5	222.2	202.7	13	...
10	405	34.5	305	273.0	48	49	100	100	49	276.2	277.4	254.6	13	...
12	485	38.1	365	323.8	54	56	113	113	56	327.0	328.2	304.8	13	...
14	535	41.3	400	355.6	56	57	125	125	57	359.2	360.2	Note (8)	13	...
16	595	44.5	457	406.4	62	62	125	125	64	410.5	411.2	Note (8)	13	...
18	635	47.7	505	457.0	67	67	138	138	68	461.8	462.3	Note (8)	13	...
20	700	50.8	559	508.0	71	71	143	143	73	513.1	514.4	Note (8)	13	...
24	815	61.0	663	610.0	81	81	151	151	83	616.0	616.0	Note (8)	13	...

Table 8 Dimensions of Class 150 Flanges (Cont'd)

GENERAL NOTES:

- (a) Dimensions of Table 8 are in millimeters. For dimensions in inches, refer to Table II-8 of Mandatory Appendix II.
- (b) For tolerance, see section 7.
- (c) For facings, see para. 6.4.
- (d) For flange bolt holes, see para. 6.5 and Table 7.
- (e) For spot facing, see para. 6.6.
- (f) For reducing threaded and slip-on flanges, see Table 6.
- (g) Blind flanges may be made with or without hubs at the manufacturer's option.
- (h) For reducing welding neck flanges, see para. 6.8.

NOTES:

- (1) This dimension is for large end of hub, which may be straight or tapered. Taper shall not exceed 7 deg on threaded, slip-on, socket-welding, and lapped flanges. This dimension is defined as the diameter at the intersection between the hub taper and back face of the flange.
- (2) The minimum thickness of these loose flanges, in sizes NPS 3½ and smaller, is slightly greater than the thickness of flanges on fittings, Table 9, which are reinforced by being cast integral with the body of the fitting.
- (3) These flanges may be supplied with a flat face. The flat face may be either the full t_f dimension of thickness plus 2 mm or the t_f dimension thickness without the raised face height. See para 6.3.2 for additional restrictions.
- (4) The flange dimensions illustrated are for regularly furnished 2-mm raised face (except lapped); for requirements of other facings, see Fig. 7.
- (5) For welding end bevel (see para. 6.7).
- (6) For thread of threaded flanges, see para. 6.9.
- (7) Dimensions in Column 13 correspond to the inside diameters of pipe as given in ASME B36.10M for standard wall pipe. Thickness of standard wall is the same as Schedule 40 in sizes NPS 10 and smaller. Tolerances in para. 7.5.2 apply. These bore sizes are furnished unless otherwise specified by the Purchaser.
- (8) To be specified by the Purchaser.