

WELDBEND FITTINGS

**90° ELBOWS
LONG RADIUS
STANDARD WEIGHT
& EXTRA STRONG**



Pipe Size	A Center to End
1/2	1-1/2
3/4	1-1/8
1	1-1/2
1-1/4	1-7/8
1-1/2	2-1/4
2	3
2-1/2	3-3/4
3	4-1/2
3-1/2	5-1/4
4	6
5	7-1/2
6	9
8	12
10	15
12	18
14	21
16	24
18	27
20	30
24	36

**90° ELBOWS
SHORT RADIUS
STANDARD WEIGHT
& EXTRA STRONG**

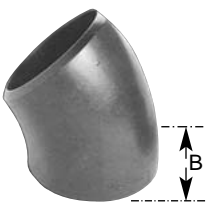


Pipe Size	A Center to End
1	1
1-1/4	1-1/4
1-1/2	1-1/2
2	2
2-1/2	2-1/2
3	3
3-1/2	3-1/2
4	4
5	5
6	6
8	8
10	10
12	12
14	14
16	16
18	18
20	20
24	24

**90° REDUCING
ELBOWS
STANDARD WEIGHT
& EXTRA STRONG**

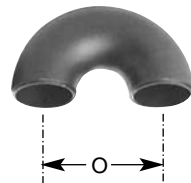
Pipe Size	A Center to End	Pipe Size	A Center to End
2 x 1	3	5 x 3	7-1/2
2 x 1-1/4	3	5 x 3-1/2	7-1/2
2 x 1-1/2	3	5 x 4	7-1/2
2-1/2 x 1-1/4	3-3/4	6 x 3	9
2-1/2 x 1-1/2	3-3/4	6 x 3-1/2	9
2-1/2 x 2	3-3/4	6 x 4	9
3 x 1-1/2	4-1/2	6 x 5	9
3 x 2	4-1/2	8 x 4	12
3 x 2-1/2	4-1/2	8 x 5	12
3-1/2 x 2	5-1/4	8 x 6	12
3-1/2 x 2-1/2	5-1/4	10 x 5	15
3-1/2 x 3	5-1/4	10 x 6	15
4 x 2	6	10 x 8	15
4 x 2-1/2	6	12 x 6	18
4 x 3	6	12 x 8	18
4 x 3-1/2	6	12 x 10	18
5 x 2-1/2	7-1/2		

**45° ELBOWS
STANDARD WEIGHT
& EXTRA STRONG**



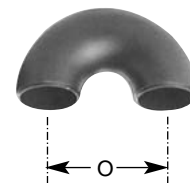
Pipe Size	B Center to End
1/2	5/8
3/4	7/16
1	7/8
1-1/4	1
1-1/2	1-1/8
2	1-3/8
2-1/2	1-3/4
3	2
3-1/2	2-1/4
4	2-1/2
5	3-1/8
6	3-3/4
8	5
10	6-1/4
12	7-1/2
14	8-3/4
16	10
18	11-1/4
20	12-1/2
24	15

**180° RETURN BENDS
SHORT RADIUS
STANDARD WEIGHT
& EXTRA STRONG**



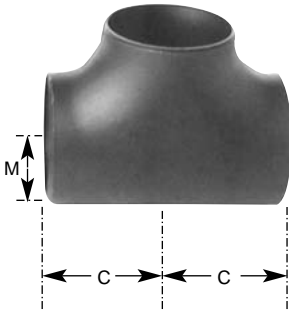
Pipe Size	O Center to Center
1	2
1-1/4	2-1/2
1-1/2	3
2	4
2-1/2	5
3	6
3-1/2	7
4	8
5	10
6	12
8	16
10	20
12	24
14	28
16	32
18	36
20	40
24	48

**180° RETURN BENDS
LONG RADIUS
STANDARD WEIGHT
& EXTRA STRONG**



Pipe Size	O Center to Center
1/2	3
3/4	2-1/4
1	3
1-1/4	3-3/4
1-1/2	4-1/2
2	6
2-1/2	7-1/2
3	9
3-1/2	10-1/2
4	12
5	15
6	18
8	24
10	30
12	36
14	42
16	48
18	54
20	60
24	72

WELDBEND FITTINGS

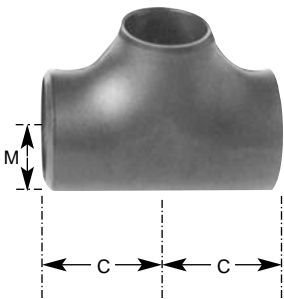


STRAIGHT TEES STANDARD WEIGHT & EXTRA STRONG

Pipe Size	C Center to End	M Center to End
1/2	1	1
3/4	1-1/8	1-1/8
1	1-1/2	1-1/2
1-1/4	1-7/8	1-7/8
1-1/2	2-1/4	2-1/4
2	2-1/2	2-1/2
2-1/2	3	3
3	3-3/8	3-3/8
3-1/2	3-3/4	3-3/4
4	4-1/8	4-1/8

Pipe Size	C Center to End	M Center to End
5	4-7/8	4-7/8
6	5-5/8	5-5/8
8	7	7
10	8-1/2	8-1/2
12	10	10
14	11	11
16	12	12
18	13-1/2	13-1/2
20	15	15
24	17	17

REDUCING TEES STANDARD WEIGHT & EXTRA STRONG



Pipe Size	C Center to End	M Center to End
3/4 x 3/4 x 1/2	1-1/8	1-1/8
1 x 1 x 1/2	1-1/2	1-1/2
1 x 1 x 3/4	1-1/2	1-1/2
1-1/4 x 1-1/4 x 1/2	1-7/8	1-7/8
1-1/4 x 1-1/4 x 1-3/4	1-7/8	1-7/8
1-1/4 x 1-1/4 x 1	1-7/8	1-7/8
1-1/2 x 1-1/2 x 1/2	2-1/4	2-1/4
1-1/2 x 1-1/2 x 3/4	2-1/4	2-1/4
1-1/2 x 1-1/2 x 1	2-1/4	2-1/4
1-1/2 x 1-1/2 x 1-1/4	2-1/4	2-1/4
2 x 2 x 3/4	2-1/2	1-3/4
2 x 2 x 1	2-1/2	2
2 x 2 x 1-1/4	2-1/2	2-1/4
2 x 2 x 1-1/2	2-1/2	2-3/8
2-1/2 x 2-1/2 x 1	3	2-1/4
2-1/2 x 2-1/2 x 1-1/4	3	2-1/2
2-1/2 x 2-1/2 x 1-1/2	3	2-5/8
2-1/2 x 2-1/2 x 2	3	2-3/4
3 x 3 x 1	3-3/8	2-5/8
3 x 3 x 1-1/4	3-3/8	2-3/4
3 x 3 x 1-1/2	3-3/8	2-7/8
3 x 3 x 2	3-3/8	3
3 x 3 x 2-1/2	3-3/8	3-1/4
3-1/2 x 3-1/2 x 1-1/2	3-3/4	3-1/8
3-1/2 x 3-1/2 x 2	3-3/4	3-1/4
3-1/2 x 3-1/2 x 2-1/2	3-3/4	3-1/2
3-1/2 x 3-1/2 x 3	3-3/4	3-5/8
4 x 4 x 1-1/2	4-1/8	3-3/8
4 x 4 x 2	4-1/8	3-1/2
4 x 4 x 2-1/2	4-1/8	3-3/4
4 x 4 x 3	4-1/8	3-7/8
4 x 4 x 3-1/2	4-1/8	4
5 x 5 x 2	4-7/8	4-1/8
5 x 5 x 2-1/2	4-7/8	4-1/4
5 x 5 x 3	4-7/8	4-3/8
5 x 5 x 3-1/2	4-7/8	4-1/2
5 x 5 x 4	4-7/8	4-5/8
6 x 6 x 2	5-5/8	4-3/4
6 x 6 x 2-1/2	5-5/8	4-3/4
6 x 6 x 3	5-5/8	4-7/8
6 x 6 x 3-1/2	5-5/8	5
6 x 6 x 4	5-5/8	5-1/8

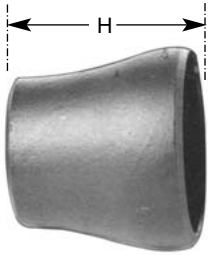
Pipe Size	C Center to End	M Center to End
6 x 6 x 5	5-5/8	5-3/8
8 x 8 x 3	7	6
8 x 8 x 3-1/2	7	6
8 x 8 x 4	7	6-1/8
8 x 8 x 5	7	6-3/8
8 x 8 x 6	7	6-5/8
10 x 10 x 3	8-1/2	7-1/4
10 x 10 x 4	8-1/2	7-1/4
10 x 10 x 5	8-1/2	7-1/2
10 x 10 x 6	8-1/2	7-5/8
10 x 10 x 8	8-1/2	8
12 x 12 x 4	10	8-1/2
12 x 12 x 5	10	8-1/2
12 x 12 x 6	10	8-5/8
12 x 12 x 8	10	9
12 x 12 x 10	10	9-1/2
14 x 14 x 6	11	9-3/8
14 x 14 x 8	11	9-3/4
14 x 14 x 10	11	10-1/8
14 x 14 x 12	11	10-5/8
16 x 16 x 6	12	10-3/8
16 x 16 x 8	12	10-3/4
16 x 16 x 10	12	11-1/8
16 x 16 x 12	12	11-5/8
16 x 16 x 14	12	12
18 x 18 x 8	13-1/2	11-3/4
18 x 18 x 10	13-1/2	12-1/8
18 x 18 x 12	13-1/2	12-5/8
18 x 18 x 14	13-1/2	13
18 x 18 x 16	13-1/2	13
20 x 20 x 8	15	12-3/4
20 x 20 x 10	15	13-1/8
20 x 20 x 12	15	13-5/8
20 x 20 x 14	15	14
20 x 20 x 16	15	14
20 x 20 x 18	15	14-1/2
24 x 24 x 10	17	15-1/8
24 x 24 x 12	17	15-5/8
24 x 24 x 14	17	16
24 x 24 x 16	17	16
24 x 24 x 18	17	16-1/2
24 x 24 x 20	17	17

WELDBEND FITTINGS

**REDUCERS
CONCENTRIC AND ECCENTRIC
STANDARD WEIGHT
& EXTRA STRONG**

Pipe Size	H Length
3/4 x 1-1/2	1-1/2
1 x 1/2	2
1 x 3/4	2
1-1/4 x 1/2	2
1-1/4 x 3/4	2
1-1/4 x 1	2
1-1/2 x 1/2	2-1/2
1-1/2 x 3/4	2-1/2
1-1/2 x 1	2-1/2
1-1/2 x 1-1/4	2-1/2
2 x 3/4	3
2 x 1	3
2 x 1-1/4	3
2 x 1-1/2	3
2-1/2 x 1	3-1/2
2-1/2 x 1-1/4	3-1/2
2-1/2 x 1-1/2	3-1/2
2-1/2 x 2	3-1/2
3 x 1	3-1/2
3 x 1-1/4	3-1/2
3 x 1-1/2	3-1/2
3 x 2	3-1/2
3 x 2-1/2	3-1/2
3-1/2 x 1-1/4	4
3-1/2 x 1-1/2	4
3-1/2 x 2	4
3-1/2 x 2-1/2	4
3-1/2 x 3	4
4 x 1	4
4 x 1-1/4	4
4 x 1-1/2	4
4 x 2	4
4 x 2-1/2	4
4 x 3	4
4 x 3-1/2	4
5 x 2	5
5 x 2-1/2	5
5 x 3	5
5 x 3-1/2	5
5 x 4	5
6 x 2	5-1/2

Pipe Size	H Length
6 x 2-1/2	5-1/2
6 x 3	5-1/2
6 x 3-1/2	5-1/2
6 x 4	5-1/2
6 x 5	5-1/2
8 x 3	6
8 x 3-1/2	6
8 x 4	6
8 x 5	6
8 x 6	6
10 x 4	7
10 x 5	7
10 x 6	7
10 x 7	8
12 x 4	8
12 x 5	8
12 x 6	8
12 x 8	8
12 x 10	8
14 x 6	13
14 x 8	13
14 x 10	13
14 x 12	13
16 x 6	14
16 x 8	14
16 x 10	14
16 x 12	14
16 x 14	14
18 x 10	15
18 x 12	15
18 x 14	15
18 x 16	15
20 x 10	20
20 x 12	20
20 x 14	20
20 x 16	20
20 x 18	20
24 x 16	20
24 x 18	20
24 x 20	20



CONCENTRIC



ECCENTRIC

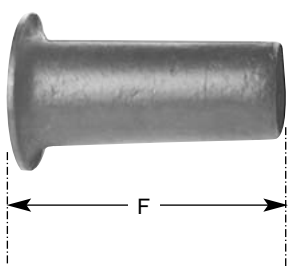
**CAPS
STANDARD WEIGHT &
EXTRA STRONG**

Pipe Size	E Length
1/2	1
3/4	1-1/4
1	1-1/2
1-1/4	1-1/2
1-1/2	1-1/2
2	1-1/2
2-1/2	1-1/2
3	2
3-1/2	2-1/2
4	2-1/2
5	3
6	3-1/2
8	4
10	5
12	6
14	6-1/2
16	7
18	8
20	9
24	10-1/2



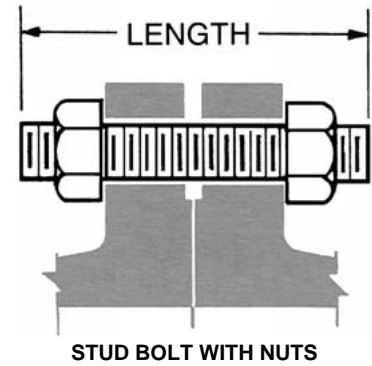
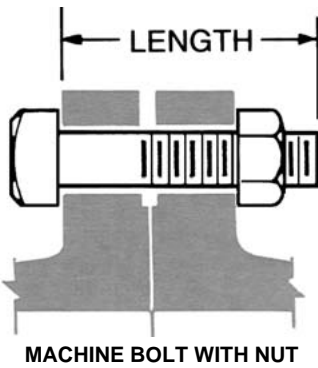
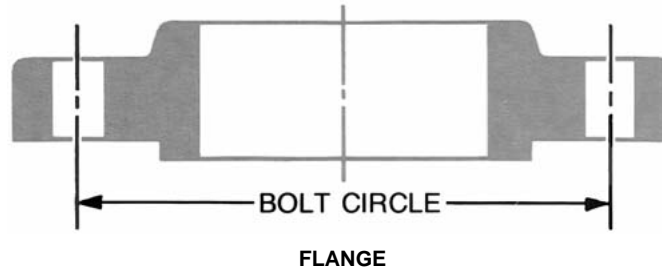
**LAP JOINT STUB ENDS
STANDARD WEIGHT &
EXTRA STRONG**

Pipe Size in.	Overall Length F in.
1/2	3
3/4	3
1	4
1-1/4	4
1-1/2	4
2	6
2-1/2	6
3	6
3-1/2	6
4	6
5	8
6	8
8	8
10	10
12	10
14	12
16	12



WELDBEND FLANGES

CLASS 150 STEEL PIPE FLANGE DATA

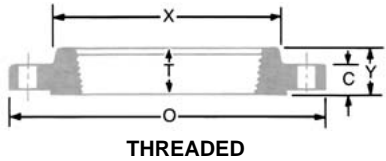


Pipe Size	BOLTING PATTERN AND BOLT LENGTHS						Pipe Size
	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Machine Bolts	Stud Bolts	
					0.06 in. Raised Face	0.06 in. Raised Face	
1/2	2.38	0.62	4	1/2	2.00	2.50	1/2
3/4	2.75	0.62	4	1/2	2.25	2.50	3/4
1	3.12	0.62	4	1/2	2.25	2.75	1
1-1/4	3.50	0.62	4	1/2	2.50	2.75	1-1/4
1-1/2	3.88	0.62	4	1/2	2.50	3.00	1-1/2
2	4.75	0.75	4	5/8	2.75	3.25	2
2-1/2	5.50	0.75	4	5/8	3.00	3.50	2-1/2
3	6.00	0.75	4	5/8	3.25	3.75	3
3-1/2	7.00	0.75	8	5/8	3.25	3.75	3-1/2
4	7.50	0.75	8	5/8	3.25	3.75	4
5	8.50	0.88	8	3/4	3.25	4.00	5
6	9.50	0.88	8	3/4	3.50	4.00	6
8	11.75	0.88	8	3/4	3.75	4.25	8
10	14.25	1.00	12	7/8	4.25	4.75	10
12	17.00	1.00	12	7/8	4.25	4.75	12
14	18.75	1.12	12	1	4.50	5.25	14
16	21.25	1.12	16	1	4.75	5.50	16
18	22.75	1.25	16	1-1/8	5.00	6.00	18
20	25.00	1.25	20	1-1/8	5.50	6.25	20
24	29.50	1.38	20	1-1/4	6.00	7.00	24

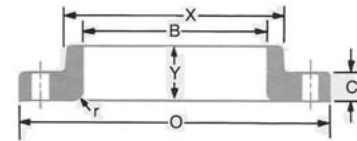
CONFORMS TO ASTM A105; ANSI B16.5

WELDBEND FLANGES

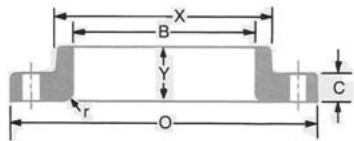
CLASS 150 STEEL PIPE FLANGES



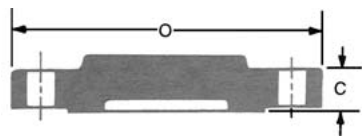
THREADED



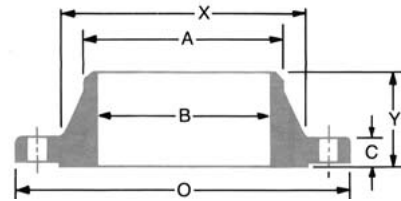
LAPPED



SLIP-ON



BLIND



WELD NECK

Pipe Size	O Outside Diameter of Flange	C Thickness of Flange; Minimum	X ** Diameter of Hub	A Diameter of Weld Neck	Y Threaded Slip-on	Y Lapped	Y Weld Neck	T Thread Length Threaded Flange, Minimum	B Slip-on; Minimum	B Lapped Minimum	B Weld Neck	r Lapped Flange Radius	Pipe Size
1/2	3.50	0.44	1.19	0.84	0.62	0.62	1.88	0.62	0.88	0.90	0.62	0.12	1/2
3/4	3.88	0.50	1.50	1.05	0.62	0.62	2.06	0.62	1.09	1.11	0.82	0.12	3/4
1	4.25	0.56	1.94	1.32	0.69	0.69	2.19	0.69	1.36	1.38	1.05	0.12	1
1-1/4	4.62	0.62	2.31	1.66	0.81	0.81	2.25	0.81	1.70	1.72	1.38	0.19	1-1/4
1-1/2	5.00	0.69	2.56	1.90	0.88	0.88	2.44	0.88	1.95	1.97	1.61	0.25	1-1/2
2	6.00	0.75	3.06	2.38	1.00	1.00	2.50	1.00	2.44	2.46	2.07	0.31	2
2-1/2	7.00	0.88	3.56	2.88	1.12	1.12	2.75	1.12	2.94	2.97	2.47	0.31	2-1/2
3	7.50	0.94	4.25	3.50	1.19	1.19	2.75	1.19	3.57	3.60	3.07	0.38	3
3-1/2	8.50	0.94	4.81	4.00	1.25	1.25	2.81	1.25	4.07	4.10	3.55	0.38	3-1/2
4	9.00	0.94	5.31	4.50	1.31	1.31	3.00	1.31	4.57	4.60	4.03	0.44	4
5	10.00	0.94	6.44	5.56	1.44	1.44	3.50	1.44	5.66	5.69	5.05	0.44	5
6	11.00	1.00	7.56	6.63	1.56	1.56	3.50	1.56	6.72	6.75	6.07	0.50	6
8	13.50	1.12	9.69	8.63	1.75	1.75	4.00	1.75	8.72	8.75	7.98	0.50	8
10	16.00	1.19	12.00	10.75	1.94	1.94	4.00	1.94	10.88	10.92	10.02	0.50	10
12	19.00	1.25	14.38	12.75	2.19	2.19	4.50	2.19	12.88	12.92	12.00	0.50	12
14	21.00	1.38	15.75	14.00	2.25	3.12	5.00	2.25	14.14	14.18	WELDBEND Specifications	0.50	14
16	23.50	1.44	18.00	16.00	2.50	3.44	5.00	2.50	16.16	16.19		0.50	16
18	25.00	1.56	19.88	18.00	2.69	3.81	5.50	2.69	18.18	18.20		0.50	18
20	27.50	1.69	22.00	24.00	2.88	4.06	5.69	2.88	20.20	20.25		0.50	20
24	32.00	1.88	26.12	24.00	3.25	4.38	6.00	3.25	24.25	24.25		0.50	24

*Should flanges be required with flat face, shipments may be either the full thickness, or a thickness with raised face removed. (Removal of the raised face produces a non-standard length through the hub.)

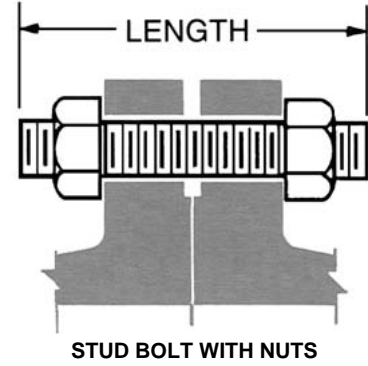
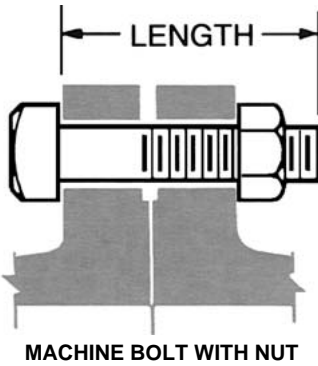
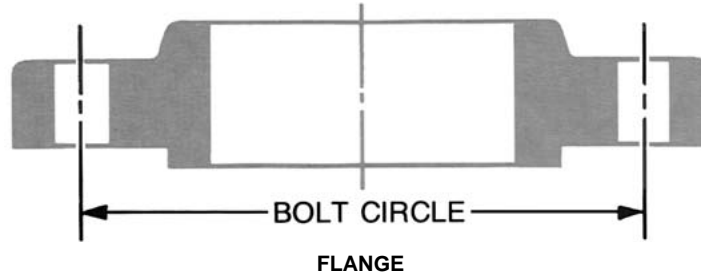
**A taper shall not exceed 7 degrees on threaded, slip-on, and lapped flanges

NOTES

1. All dimensions are in inches.
2. Blind flanges may be produced with or without hubs.

WELDBEND FLANGES

CLASS 300 STEEL PIPE FLANGE DATA

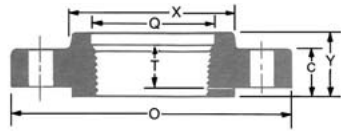


Pipe Size	BOLTING PATTERN AND BOLT LENGTHS						Pipe Size
	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Machine Bolts	Stud Bolts	
					0.06 in. Raised Face	0.06 in. Raised Face	
1/2	2.62	0.62	4	1/2	2.25	2.75	1/2
3/4	3.25	0.75	4	5/8	2.50	3.00	3/4
1	3.50	0.75	4	5/8	2.75	3.25	1
1-1/4	3.88	0.75	4	5/8	2.75	3.25	1-1/4
1-1/2	4.50	0.88	4	3/4	3.00	3.75	1-1/2
2	5.00	0.75	8	5/8	3.00	3.50	2
2-1/2	5.88	0.88	8	3/4	3.50	4.00	2-1/2
3	6.62	0.88	8	3/4	3.75	4.25	3
3-1/2	7.25	0.88	8	3/4	3.75	4.50	3-1/2
4	7.88	0.88	8	3/4	4.00	4.50	4
5	9.25	0.88	8	3/4	4.25	4.75	5
6	10.62	0.88	12	3/4	4.25	5.00	6
8	13.00	1.00	12	7/8	4.75	5.50	8
10	15.25	1.12	16	1	5.50	6.25	10
12	17.75	1.25	16	1-1/8	6.00	6.75	12
14	20.25	1.25	20	1-1/8	6.25	7.00	14
16	22.50	1.38	20	1-1/4	6.50	7.50	16
18	24.75	1.38	24	1-1/4	6.75	7.75	18
20	27.00	1.38	24	1-1/4	7.25	8.25	20
24	32.00	1.62	24	1-1/2	8.00	9.25	24

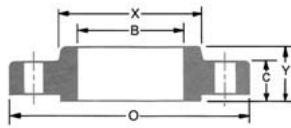
CONFORMS TO ASTM A105; ANSI B16.5

WELDBEND FLANGES

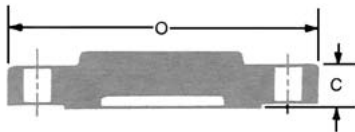
CLASS 300 STEEL PIPE FLANGES



THREADED

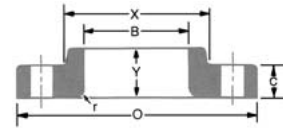


SLIP-ON

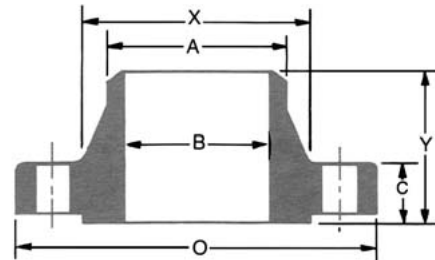


BLIND

**CLASS 600 ALSO
AVAILABLE—CALL US
FOR SPECS**



LAPPED



WELD NECK

Pipe Size	O Outside Diameter of Flange	C* Thickness of Flange; Minimum	X** Diameter of Hub	A Diameter of Weld Neck	Y Threaded Slip-on	Y Lapped	Y Weld Neck	T Thread Length Threaded Flange, Minimum	B Slip-on; Minimum	B Lapped Minimum	B Weld Neck	r Lapped Flange Radius	Q Counter-bore Threaded Flange, Minimum	Pipe Size
1/2	3.75	0.56	1.50	0.84	0.88	0.88	2.06	0.62	0.88	0.90	0.62	0.12	0.93	1/2
3/4	4.62	0.62	1.88	1.05	1.00	1.00	2.25	0.62	1.09	1.11	0.82	0.12	1.14	3/4
1	4.88	0.69	2.12	1.32	1.06	1.06	2.44	0.69	1.36	1.38	1.05	0.12	1.41	1
1-1/4	5.25	0.75	2.50	1.66	1.06	1.06	2.56	0.81	1.70	1.72	1.38	0.19	1.75	1-1/4
1-1/2	6.12	0.81	2.75	1.90	1.19	1.19	2.69	0.88	1.95	1.97	1.61	0.25	1.99	1-1/2
2	6.50	0.88	3.31	2.38	1.31	1.31	2.75	1.12	2.44	2.46	2.07	0.31	2.50	2
2-1/2	7.50	1.00	3.94	2.88	1.50	1.50	3.00	1.25	2.94	2.97	2.47	0.31	3.00	2-1/2
3	8.25	1.12	4.62	3.50	1.69	1.69	3.12	1.25	3.57	3.60	3.07	0.38	3.63	3
3-1/2	9.00	1.19	5.25	4.00	1.75	1.75	3.19	1.44	4.07	4.10	3.55	0.38	4.13	3-1/2
4	10.00	1.25	5.75	4.50	1.88	1.88	3.38	1.44	4.57	4.60	4.03	0.44	4.63	4
5	11.00	1.38	7.00	5.56	2.00	2.00	3.88	1.69	5.66	5.69	5.05	0.44	5.69	5
6	12.50	1.44	8.12	6.63	2.06	2.06	3.88	1.81	6.72	6.75	6.07	0.50	6.75	6
8	15.00	1.62	10.25	8.63	2.44	2.44	4.38	2.00	8.72	8.75	7.98	0.50	8.75	8
10	17.50	1.88	12.62	10.75	2.62	3.75	4.62	2.19	10.88	10.92	10.02	0.50	10.88	10
12	20.50	2.00	14.75	12.75	2.88	4.00	5.12	2.38	12.88	12.92	12.00	0.50	12.94	12
14	23.00	2.12	16.75	14.00	3.00	4.38	5.62	2.50	14.14	14.18		0.50	14.19	14
16	25.50	2.25	19.00	16.00	3.25	4.75	5.75	2.69	16.16	16.19	WELDBEND Specifications	0.50	16.19	16
18	28.00	2.38	21.00	18.00	3.50	5.12	6.25	2.75	18.18	18.20		0.50	18.19	18
20	30.50	2.50	23.12	24.00	3.75	5.50	6.38	2.88	20.20	20.25		0.50	20.19	20
24	36.00	2.75	27.62	24.00	4.19	6.00	6.62	3.25	24.25	24.25		0.50	24.19	24

*Should flanges be required with flat face, shipments may be either the full thickness, or a thickness with raised face removed. (Removal of the raised face produces a non-standard length through the hub.)

**A taper shall not exceed 7 degrees on threaded, slip-on, and lapped flanges

WELDBEND NOTES

- All dimensions are in inches.
- Calculated flange weights on page 47.
- Dimension tolerances on page 70.
- Standard flange facings on pages 72 and 73.
- Welding end bevel information on pages 75 and 75.
- Thread standards on page 76 and 77.
- Blind flanges may be produced with or without hubs.