

ASME B16.5 Flanges

Weld Neck, Slip-On, Socket Weld, Threaded, Lap Joint, Blind.

1/2" - 24" Class 150, 300, 400, 600, 900, 1500 and 2500

NOTE: Reducing flanges are available in all types and pressures.

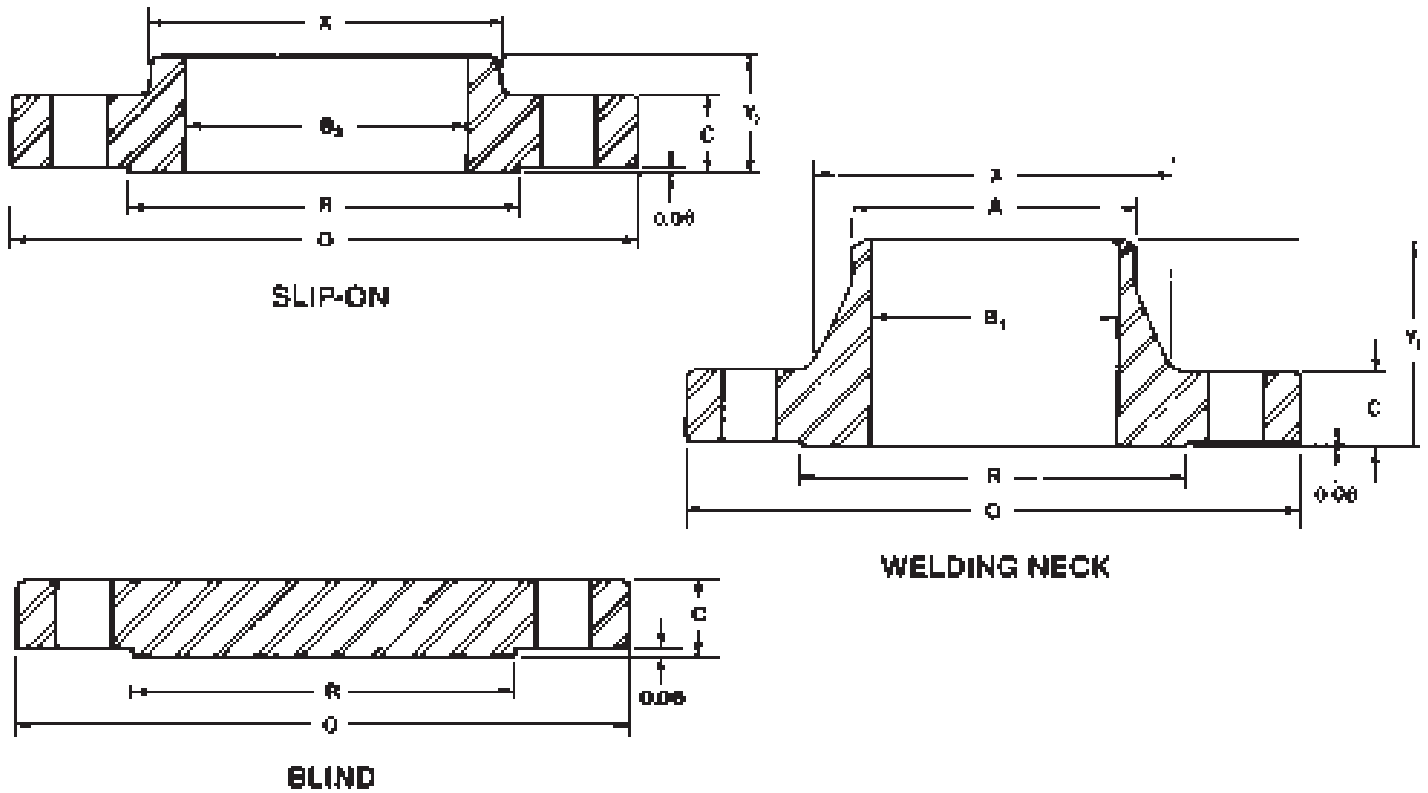
To order a reducing flange, state the smaller size first, then the outside diameter of the larger size. Example: 1" X 7½" O.D.

150 SO RF reducing would be a 3" X 1" Slip-on, Raised Faced Reducing. Or, to simplify, just state the actual pipe sizes in order of larger to smaller. Example: 3" X 1" Slip-on, Raised Faced, Reducing.



Class 150

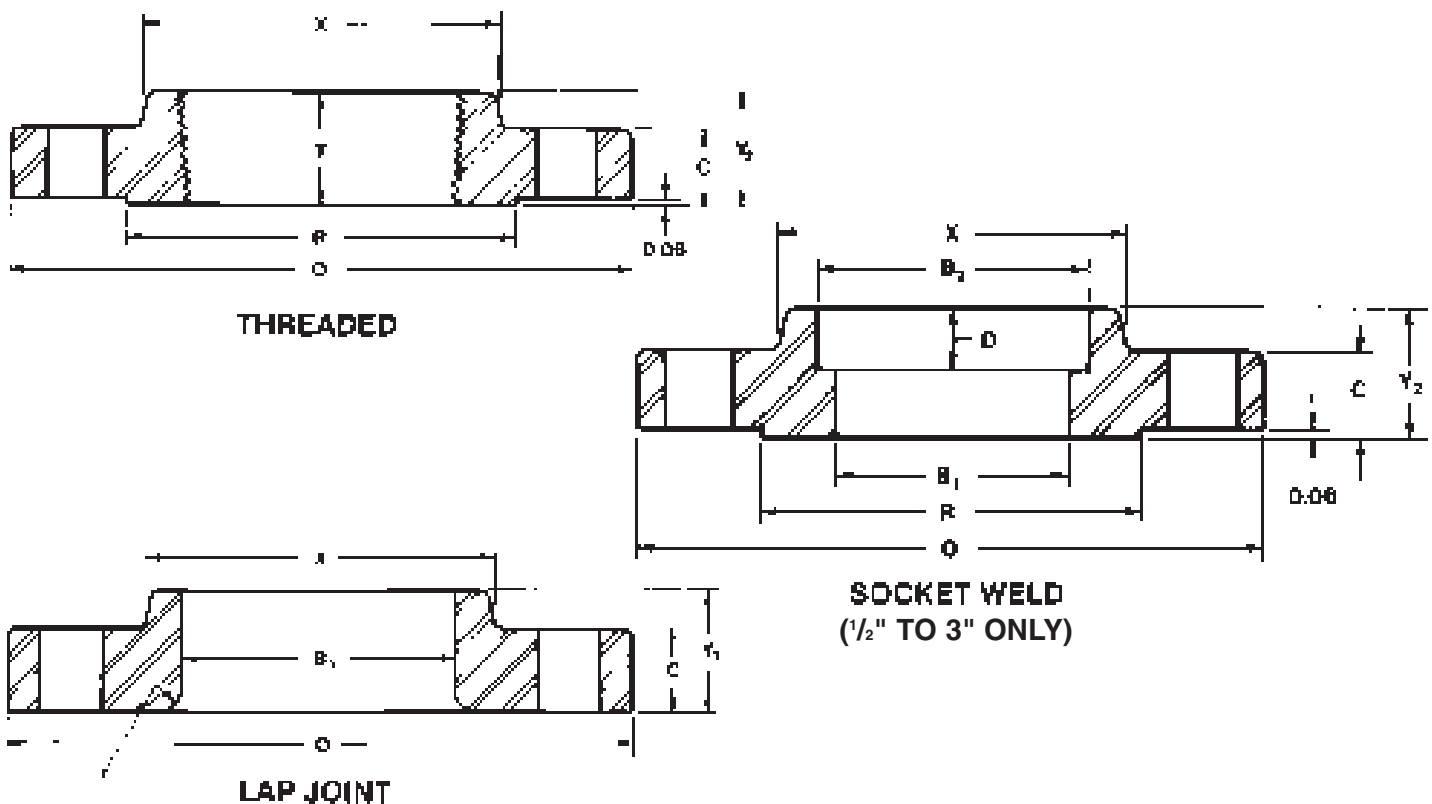
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Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
1/2	3.50	0.44	1.38	0.12	To be specified by purchaser.	0.88	0.90	1.88	0.62	0.62
3/4	3.88	0.50	1.69	0.12		1.09	1.11	2.06	0.62	0.62
1	4.25	0.56	2.00	0.12		1.36	1.38	2.19	0.69	0.69
1 1/4	4.62	0.62	2.50	0.19		1.70	1.72	2.25	0.81	0.81
1 1/2	5.00	0.69	2.88	0.25		1.95	1.97	2.44	0.88	0.88
2	6.00	0.75	3.62	0.31		2.44	2.46	2.50	1.00	1.00
2 1/2	7.00	0.88	4.12	0.31		2.94	2.97	2.75	1.12	1.12
3	7.50	0.94	5.00	0.38		3.57	3.60	2.75	1.19	1.19
3 1/2	8.50	0.94	5.50	0.38		4.07	4.10	2.81	1.25	1.25
4	9.00	0.94	6.19	0.44		4.60	4.60	3.00	1.31	1.31
5	10.00	0.94	7.31	0.44		5.66	5.69	3.50	1.44	1.44
6	11.00	1.00	8.50	0.50		6.72	6.75	3.50	1.56	1.56
8	13.50	1.12	10.62	0.50	8.72	8.75	4.00	1.75	1.75	
10	16.00	1.19	12.75	0.50	10.88	10.92	4.00	1.94	1.94	
12	19.00	1.25	15.00	0.50	12.88	12.92	4.50	2.19	2.19	
14	21.00	1.38	16.25	0.50	14.14	14.18	5.00	2.25	3.12	
16	23.50	1.44	18.50	0.50	16.16	16.19	5.00	2.50	3.44	
18	25.00	1.56	21.00	0.50	18.18	18.20	5.50	2.69	3.81	
20	27.50	1.69	23.00	0.50	20.20	20.25	5.69	2.88	4.06	
24	32.00	1.88	27.25	0.50	24.25	24.25	6.00	3.25	4.38	

Class 150

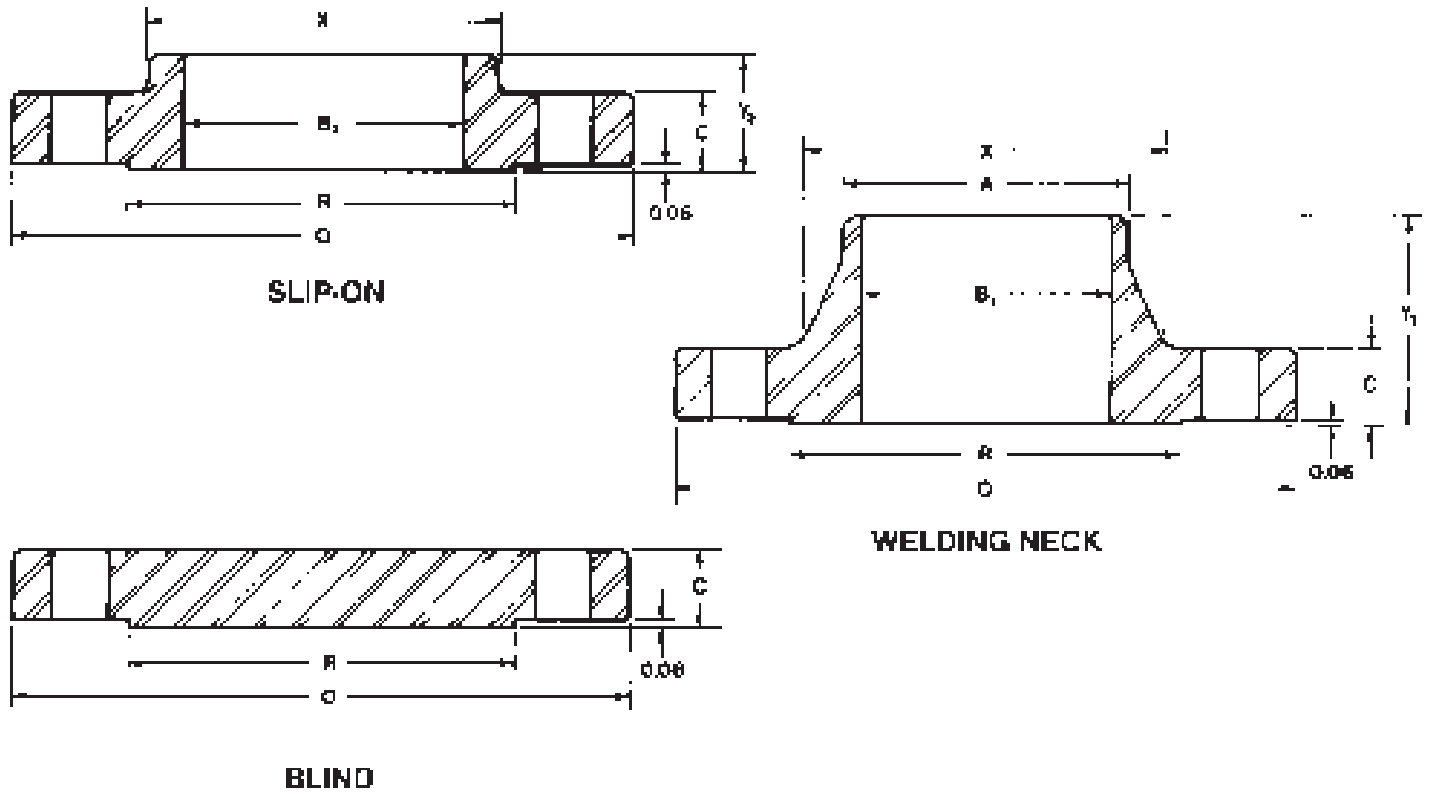
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Min. Thread Length T	Depth of Socket D	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
				Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
0.62	0.38	0.84	1.19	2.38	0.62	4	2	1	1	1	1/2
0.62	0.44	1.05	1.50	2.75	0.62	4	2	2	2	2	3/4
0.69	0.50	1.32	1.94	3.12	0.62	4	3	2	2	2	1
0.81	0.56	1.66	2.31	3.50	0.62	4	3	3	3	3	1 1/4
0.88	0.62	1.90	2.56	3.88	0.62	4	4	3	3	4	1 1/2
1.00	0.69	2.38	3.06	4.75	0.75	4	6	5	5	5	2
1.12	0.75	2.88	3.56	5.50	0.75	4	8	7	7	7	2 1/2
1.19	0.81	3.50	4.25	6.00	0.75	4	10	8	8	9	3
1.25	0.88	4.00	4.81	7.00	0.75	8	12	11	11	13	3 1/2
1.31	0.94	4.50	5.31	7.50	0.75	8	15	13	13	17	4
1.44	0.94	5.56	6.44	8.50	0.88	8	19	15	15	20	5
1.56	1.06	6.63	7.56	9.50	0.88	8	24	19	19	26	6
1.75	1.25	8.63	9.69	11.75	0.88	8	39	30	30	45	8
1.94	1.31	10.75	12.00	14.25	1.00	12	52	43	43	70	10
2.19	1.56	12.75	14.38	17.00	1.00	12	80	64	64	110	12
2.25	1.63	14.00	15.75	18.75	1.12	12	110	90	105	140	14
2.50	1.75	16.00	18.00	21.25	1.12	16	140	98	140	180	16
2.69	1.94	18.00	19.88	22.75	1.25	16	150	130	160	220	18
2.88	2.13	20.00	22.00	25.00	1.25	20	180	165	195	285	20
3.25	2.50	24.00	26.12	29.50	1.38	20	260	220	275	430	24

Class 300

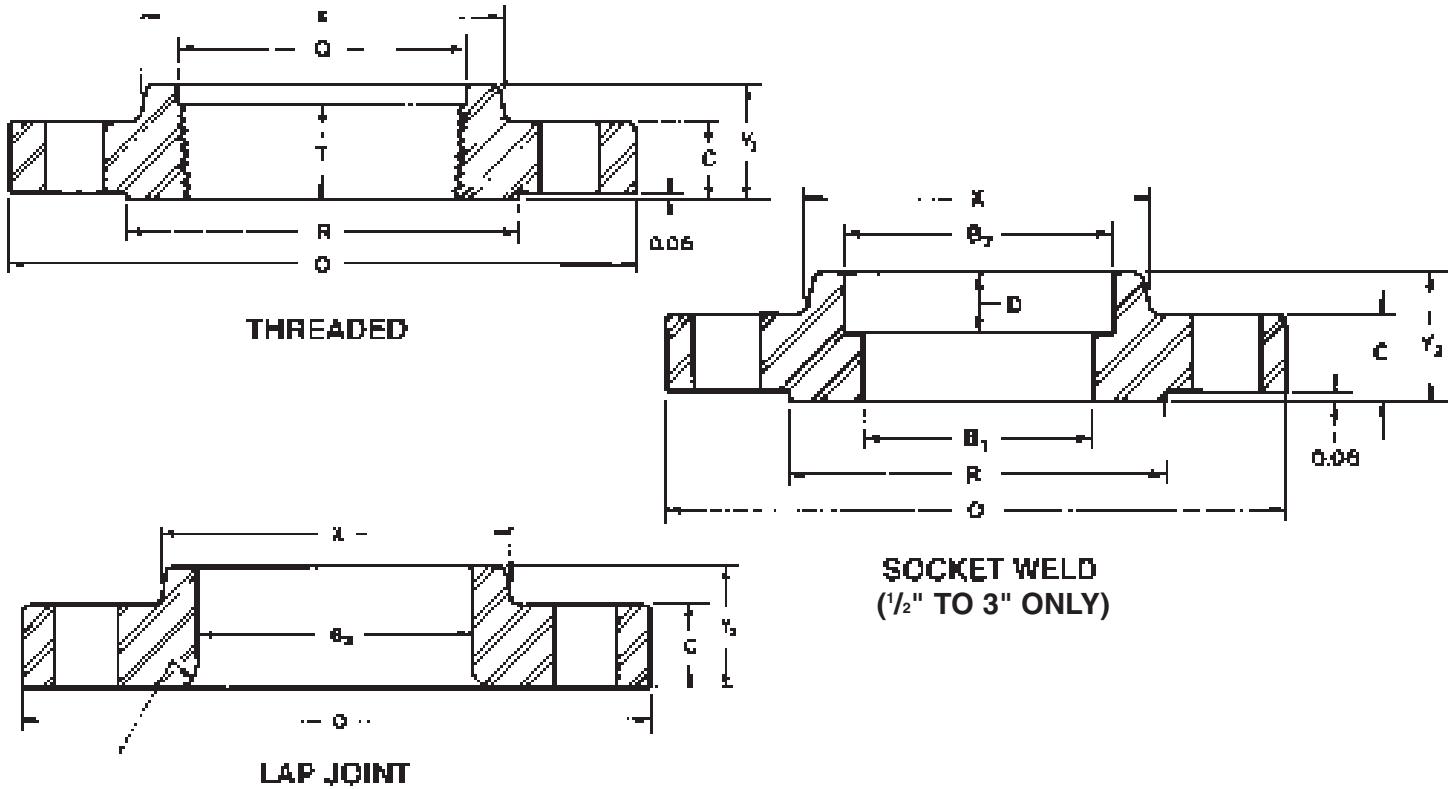
ASME B16.5



Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B_1	Slip-on B_2	Lap Joint B_3	Welding Neck Y_1	Slip-on Socket Y_2	Lap Joint Y_3
1/2	3.75	0.56	1.38	0.12	To be specified by purchaser.	0.88	0.90	2.06	0.88	0.88
3/4	4.62	0.62	1.69	0.12		1.09	1.11	2.25	1.00	1.00
1	4.88	0.69	2.00	0.12		1.36	1.38	2.44	1.06	1.06
1 1/4	5.25	0.75	2.50	0.19		1.70	1.72	2.56	1.06	1.06
1 1/2	6.12	0.81	2.88	0.25		1.95	1.97	2.69	1.19	1.19
2	6.50	0.88	3.62	0.31		2.44	2.46	2.75	1.31	1.31
2 1/2	7.50	1.00	4.12	0.31		2.94	2.97	3.00	1.50	1.50
3	8.25	1.12	5.00	0.38		3.57	3.60	3.12	1.69	1.69
3 1/2	9.00	1.19	5.50	0.38		4.07	4.10	3.19	1.75	1.75
4	10.00	1.25	6.19	0.44		4.57	4.60	3.38	1.88	1.88
5	11.00	1.38	7.31	0.44		5.66	5.69	3.88	2.00	2.00
6	12.50	1.44	8.50	0.50		6.72	6.75	3.88	2.06	2.06
8	15.00	1.62	10.62	0.50	8.72	8.75	4.38	2.44	2.44	
10	17.50	1.88	12.75	0.50	10.88	10.92	4.62	2.62	3.75	
12	20.50	2.00	15.00	0.50	12.88	12.92	5.12	2.88	4.00	
14	23.00	2.12	16.25	0.50	14.14	14.18	5.62	3.00	4.38	
16	25.50	2.25	18.50	0.50	16.16	16.19	5.75	3.25	4.75	
18	28.00	2.38	21.00	0.50	18.18	18.20	6.25	3.50	5.12	
20	30.50	2.50	23.00	0.50	20.20	20.25	6.38	3.75	5.50	
24	36.00	2.75	27.25	0.50	24.25	24.25	6.62	4.19	6.00	

Class 300

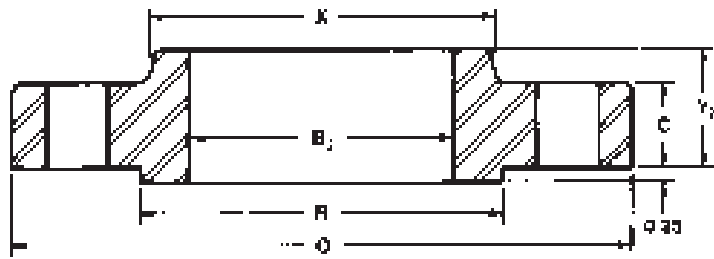
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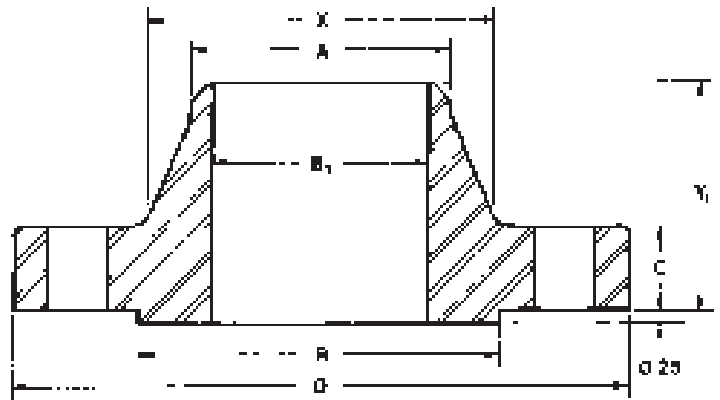
Min. Thread Length T	Dia. Counter Bore Thd. Q	Depth of Socket D	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
					Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
0.62	0.93	0.38	0.84	1.50	2.62	0.62	4	2	2	2	2	$1/2$
0.62	1.14	0.44	1.05	1.88	3.25	0.75	4	3	3	3	3	$3/4$
0.69	1.41	0.50	1.32	2.12	3.50	0.75	4	4	3	3	3	1
0.81	1.75	0.56	1.66	2.50	3.88	0.75	4	5	4	4	4	$1 1/4$
0.88	1.98	0.62	1.90	2.75	4.50	0.88	4	7	6	6	6	$1 1/2$
1.12	2.50	0.69	2.38	3.31	5.00	0.75	8	9	7	7	8	2
1.25	3.00	0.75	2.88	3.94	5.88	0.88	8	12	10	10	12	$2 1/2$
1.25	3.63	0.81	3.50	4.62	6.62	0.88	8	15	13	13	16	3
1.44	4.13	0.88	4.00	5.25	7.25	0.88	8	18	17	17	21	$3 1/2$
1.44	4.63	0.94	4.50	5.75	7.88	0.88	8	25	22	22	27	4
1.69	5.69	0.94	5.56	7.00	9.25	0.88	8	32	28	28	35	5
1.81	6.75	1.06	6.62	8.12	10.62	0.88	12	42	39	39	50	6
2.00	8.75	1.25	8.62	10.25	13.00	1.00	12	67	58	58	81	8
2.19	10.88	1.31	10.75	12.62	15.25	1.12	16	91	81	91	124	10
2.38	12.94	1.56	12.75	14.75	17.75	1.25	16	140	115	140	185	12
2.50	14.19	1.62	14.00	16.75	20.25	1.25	20	180	165	190	250	14
2.69	16.19	1.75	16.00	19.00	22.50	1.38	20	250	190	250	295	16
2.75	18.19	1.94	18.00	21.00	24.75	1.38	24	320	250	295	395	18
2.88	20.19	2.12	20.00	23.12	27.00	1.38	24	400	315	370	505	20
3.25	24.19	2.50	24.00	27.62	32.00	1.62	24	580	475	550	790	24

Class 400

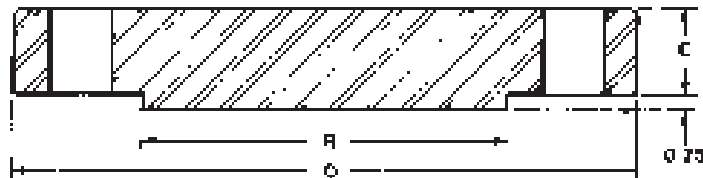
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SLIP-ON



WELDING NECK



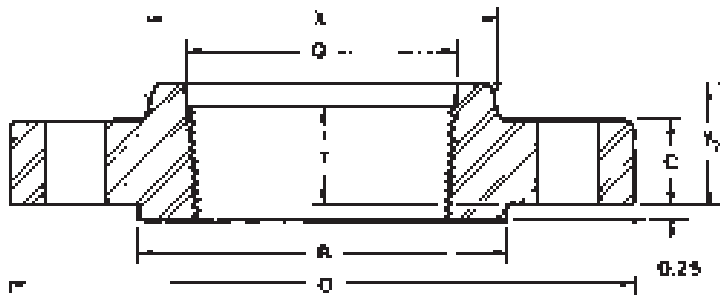
BLIND

Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
4	10.00	1.38	6.19	0.44	To be specified by purchaser.	4.57	4.60	3.50	2.00	2.00
5	11.00	1.50	7.31	0.44		5.66	5.69	4.00	2.12	2.12
6	12.50	1.62	8.50	0.50		6.72	6.75	4.06	2.25	2.25
8	15.00	1.88	10.62	0.50		8.72	8.75	4.62	2.69	2.69
10	17.50	2.12	12.75	0.50		10.88	10.92	4.88	2.88	4.00
12	20.50	2.25	15.00	0.50		12.88	12.92	5.38	3.12	4.25
14	23.00	2.38	16.25	0.50		14.14	14.18	5.88	3.31	4.62
16	25.50	2.50	18.50	0.50		16.16	16.19	6.00	3.69	5.00
18	28.00	2.62	21.00	0.50		18.18	18.20	6.50	3.88	5.38
20	30.50	2.75	23.00	0.50		20.20	20.25	6.62	4.00	5.75
24	36.00	3.00	27.25	0.50		24.25	24.25	6.88	4.50	6.62

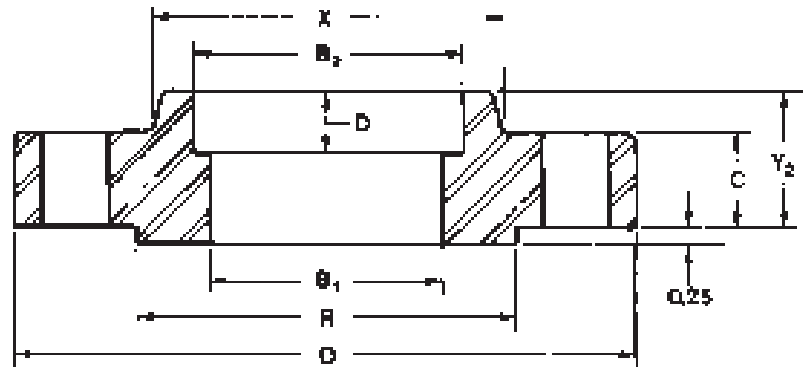
Thickness and length through hub do not include 1/4" raised face.

Class 400

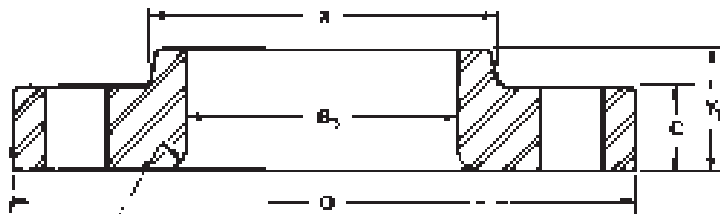
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THREADED



SOCKET WELD
(1/2" TO 3" ONLY)



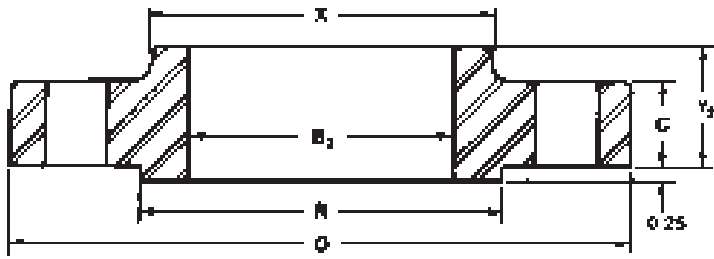
LAP JOINT

Min. Thread Length T	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
			Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
ARE IDENTICAL WITH CLASS 600										
1.44	4.50	5.75	7.88	1.00	8	35	26	25	33	4
1.69	5.56	7.00	9.25	1.00	8	43	31	29	44	5
1.81	6.63	8.12	10.62	1.00	12	57	44	42	61	6
2.00	8.63	10.25	13.00	1.12	12	89	67	64	100	8
2.19	10.75	12.62	15.25	1.25	16	125	91	110	155	10
2.38	12.75	14.75	17.75	1.38	16	175	130	150	225	12
2.50	14.00	16.75	20.25	1.38	20	230	180	205	290	14
2.69	16.00	19.00	22.50	1.50	20	295	235	260	370	16
2.75	18.00	21.00	24.75	1.50	24	350	285	315	455	18
2.88	20.00	23.12	27.00	1.62	24	425	345	385	587	20
3.25	24.00	27.62	32.00	1.88	24	620	510	570	890	24

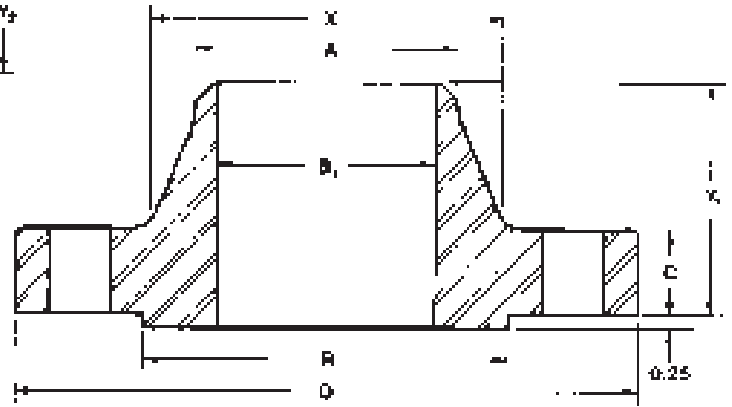
See 300 Class dimensions for dimensions "Q" and "D".

Class 600

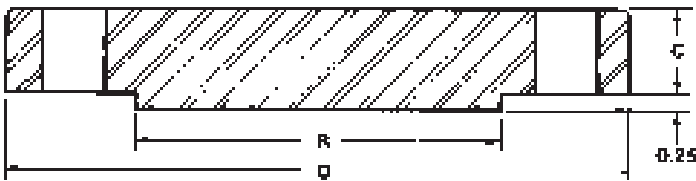
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SLIP-ON



WELDING NECK



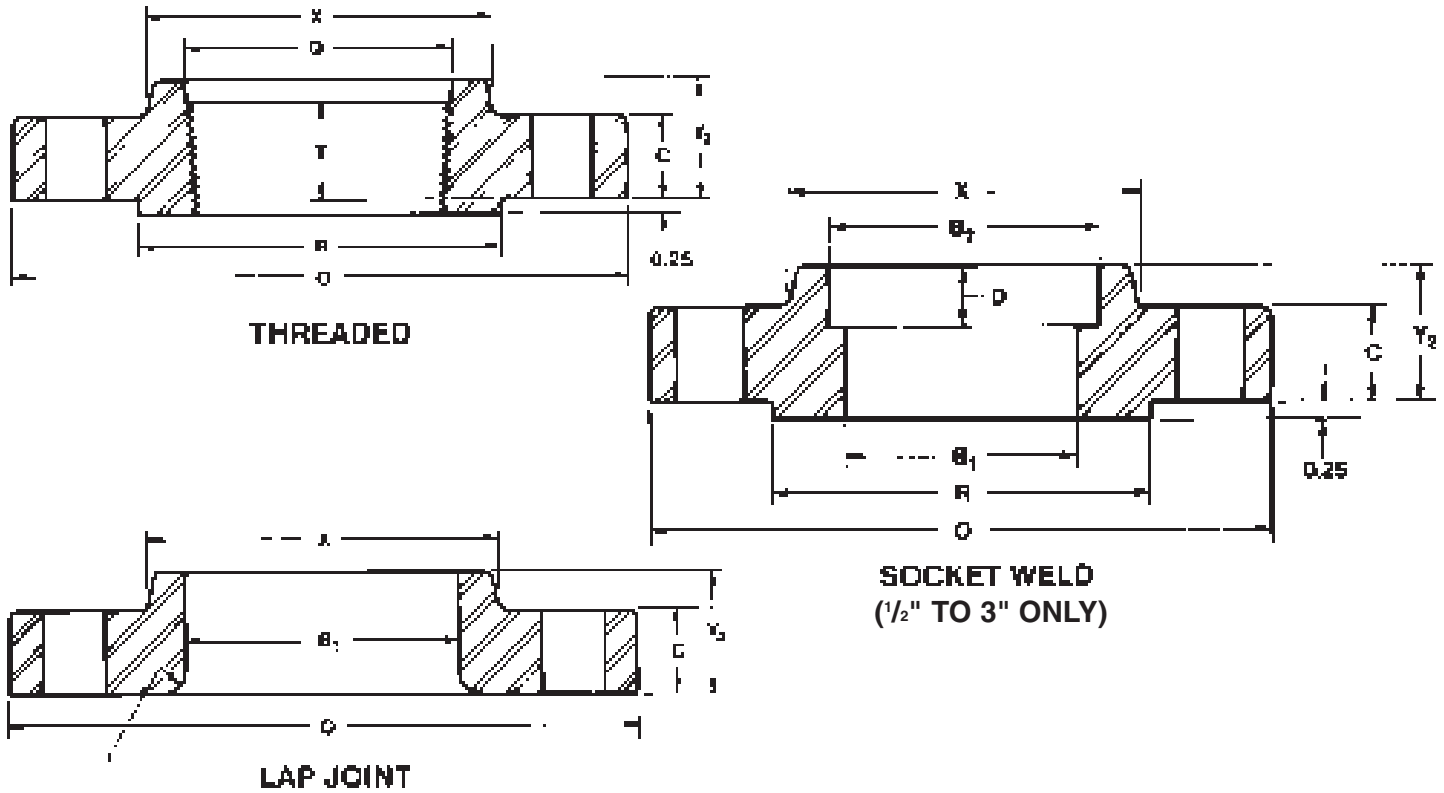
BLIND

Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
1/2	3.75	0.56	1.38	0.12	To be specified by purchaser.	0.88	0.90	2.06	0.88	0.88
3/4	4.62	0.62	1.69	0.12		1.09	1.11	2.25	1.00	1.00
1	4.88	0.69	2.00	0.12		1.36	1.38	2.44	1.06	1.06
1 1/4	5.25	0.81	2.50	0.19		1.70	1.72	2.62	1.12	1.12
1 1/2	6.12	0.88	2.88	0.25		1.95	1.97	2.75	1.25	1.25
2	6.50	1.00	3.62	0.31		2.44	2.46	2.88	1.44	1.44
2 1/2	7.50	1.12	4.12	0.31		2.94	2.97	3.12	1.62	1.62
3	8.25	1.25	5.00	0.38		3.57	3.60	3.25	1.81	1.81
3 1/2	9.00	1.38	5.50	0.38		4.07	4.10	3.38	1.94	1.94
4	10.75	1.50	6.19	0.44		4.57	4.60	4.00	2.12	2.12
5	13.00	1.75	7.31	0.44		5.66	5.69	4.50	2.38	2.38
6	14.00	1.88	8.50	0.50		6.72	6.75	4.62	2.62	2.62
8	16.50	2.19	10.62	0.50		8.72	8.75	5.25	3.00	3.00
10	20.00	2.50	12.75	0.50		10.88	10.92	6.00	3.38	4.38
12	22.00	2.62	15.00	0.50	12.88	12.92	6.12	3.62	4.62	
14	23.75	2.75	16.25	0.50	14.14	14.18	6.50	3.69	5.00	
16	27.00	3.00	18.50	0.50	16.16	16.19	7.00	4.19	5.50	
18	29.25	3.25	21.00	0.50	18.18	18.20	7.25	4.62	6.00	
20	32.00	3.50	23.00	0.50	20.20	20.25	7.50	5.00	6.50	
24	37.00	4.00	27.25	0.50	24.25	24.25	8.00	5.50	7.25	

Thickness and length through hub do not include 1/4" raised face.

Class 600

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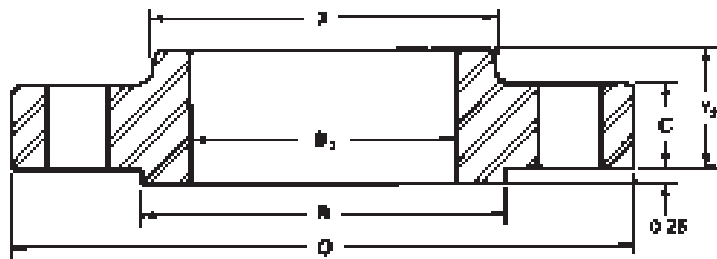


Min. Thread Length T	Depth of Socket D	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
				Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
0.62	0.38	0.84	1.50	2.62	0.62	4	2	2	2	2	1/2
0.62	0.44	1.05	1.88	3.25	0.75	4	4	3	3	3	3/4
0.69	0.50	1.32	2.12	3.50	0.75	4	4	4	4	4	1
0.81	0.56	1.66	2.50	3.88	0.75	4	6	5	5	5	1 1/4
0.88	0.62	1.90	2.75	4.50	0.88	4	8	7	7	8	1 1/2
1.12	0.69	2.38	3.31	5.00	0.75	8	12	9	9	10	2
1.25	0.75	2.88	3.94	5.88	0.88	8	18	13	12	15	2 1/2
1.38	0.81	3.50	4.62	6.62	0.88	8	23	16	15	20	3
1.56	0.88	4.00	5.25	7.25	1.00	8	26	21	20	29	3 1/2
1.62	0.94	4.50	6.00	8.50	1.00	8	42	37	36	41	4
1.88	0.94	5.56	7.44	10.50	1.12	8	68	63	61	68	5
2.00	1.06	6.62	8.75	11.50	1.12	12	81	80	78	86	6
2.25	1.25	8.62	10.75	13.75	1.25	12	120	115	110	140	8
2.56	1.31	10.75	13.50	17.00	1.38	16	190	170	170	230	10
2.75	1.56	12.75	15.75	19.25	1.38	20	225	200	200	295	12
2.88	1.62	14.00	17.00	20.75	1.50	20	280	230	250	355	14
3.06	1.75	16.00	19.50	23.75	1.62	20	390	330	365	495	16
3.12	1.94	18.00	21.50	25.75	1.75	20	475	400	435	630	18
3.25	2.12	20.00	24.00	28.50	1.75	24	590	510	570	810	20
3.62	2.50	24.00	28.25	33.00	2.00	24	830	730	810	1250	24

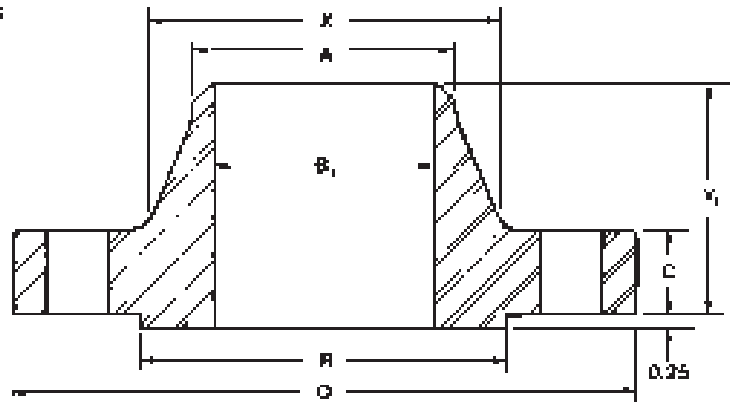
See 300 Class dimensions for dimensions "Q" and "D".

Class 900

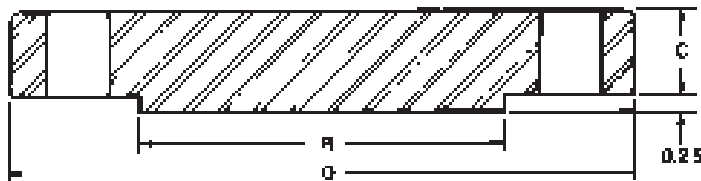
ASME B16.5



SLIP-ON



WELDING NECK



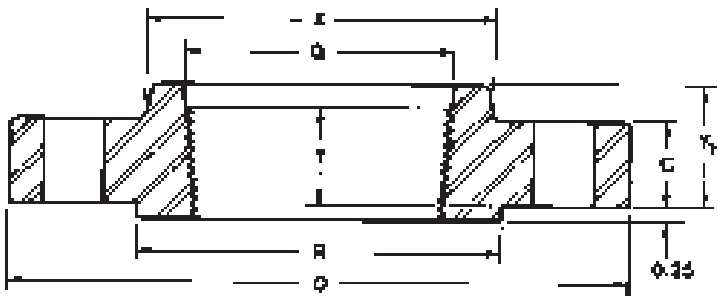
BLIND

Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
3	9.50	1.50	5.00	0.38	To be specified by purchaser.	3.57	3.60	SIZES 1/2" THRU 2 1/2"		
4	11.50	1.75	6.19	0.44		4.57	4.60	4.00	2.12	2.12
5	13.75	2.00	7.31	0.44		5.66	5.69	4.50	2.75	2.75
6	15.00	2.19	8.50	0.50		6.72	6.75	5.00	3.13	3.13
8	18.50	2.50	10.62	0.50		8.72	8.75	5.50	3.38	3.38
10	21.50	2.75	12.75	0.50		10.88	10.92	6.38	4.00	4.50
12	24.00	3.12	15.00	0.50		12.88	12.92	7.25	4.25	5.00
14	25.25	3.38	16.25	0.50		14.14	14.18	7.88	4.62	5.62
16	27.75	3.50	18.50	0.50		16.16	16.19	8.38	5.12	6.12
18	31.00	4.00	21.00	0.50		18.18	18.20	8.50	5.25	6.50
20	33.75	4.25	23.00	0.50		20.20	20.25	9.00	6.00	7.50
24	41.00	5.50	27.25	0.50		24.25	24.25	9.75	6.25	8.25
								11.50	8.00	10.50

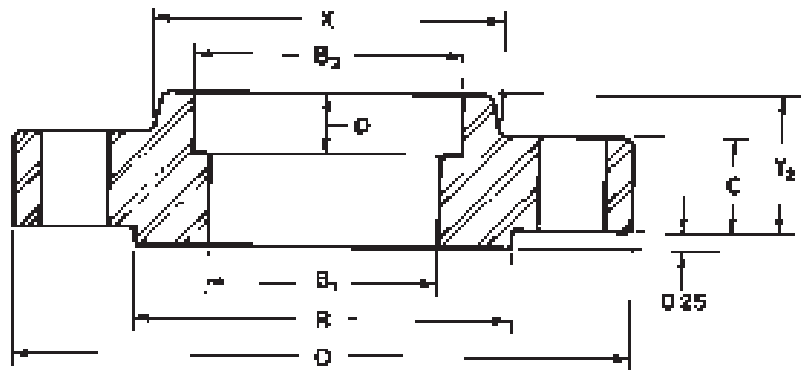
Thickness and length through hub do not include 1/4" raised face.

Class 900

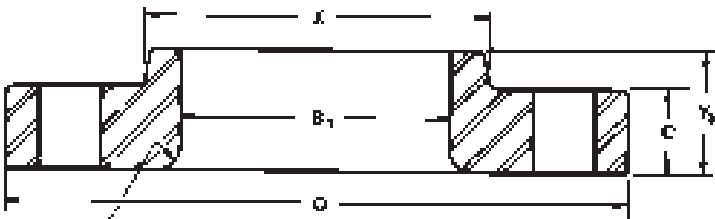
ASME B16.5



THREADED



**SOCKET WELD
(1/2" TO 3" ONLY)**



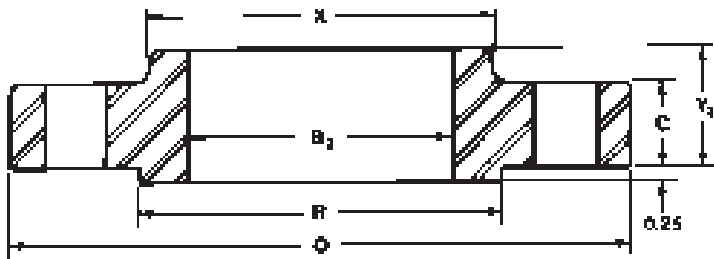
LAP JOINT

Min. Thread Length T	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
			Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
ARE IDENTICAL WITH CLASS 600										
1.62	3.50	5.00	7.50	1.00	8	31	26	25	29	3
1.88	4.50	6.25	9.25	1.25	8	53	53	51	54	4
2.12	5.56	7.50	11.00	1.38	8	86	83	81	87	5
2.25	6.63	9.25	12.50	1.25	12	110	110	105	115	6
2.50	8.63	11.75	15.50	1.50	12	175	170	190	200	8
2.81	10.75	14.50	18.50	1.50	16	260	245	275	290	10
3.00	12.75	16.50	21.00	1.50	20	325	325	370	415	12
3.25	14.00	17.75	22.00	1.62	20	400	400	415	520	14
3.38	16.00	20.00	24.25	1.75	20	495	425	465	600	16
3.50	18.00	22.25	27.00	2.00	20	680	600	650	850	18
3.62	20.00	24.50	29.50	2.12	20	830	730	810	1075	20
4.00	24.00	29.50	35.50	2.62	20	1500	1400	1550	2025	24

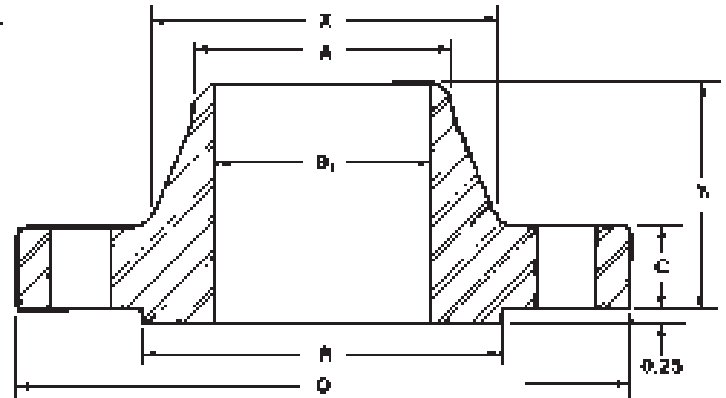
See 300 Class dimensions for dimensions "Q" and "D".

Class 1500

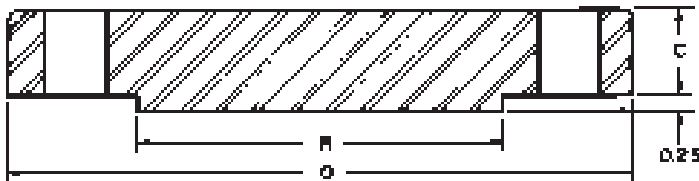
ASME B16.5



SLIP-ON



WELDING NECK



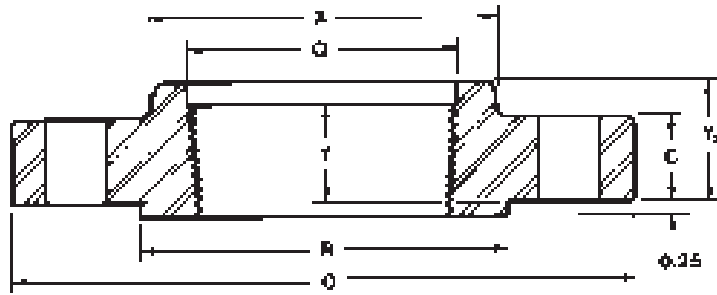
BLIND

Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
1/2	4.75	0.88	1.38	0.12	To be specified by purchaser.	0.88	0.90	2.38	1.25	1.25
3/4	5.12	1.00	1.69	0.12		1.09	1.11	2.75	1.38	1.38
1	5.88	1.12	2.00	0.12		1.36	1.38	2.88	1.62	1.62
1 1/4	6.25	1.12	2.50	0.19		1.70	1.72	2.88	1.62	1.62
1 1/2	7.00	1.25	2.88	0.25		1.95	1.97	3.25	1.75	1.75
2	8.50	1.50	3.62	0.31		2.44	2.46	4.00	2.25	2.25
2 1/2	9.62	1.63	4.12	0.31		2.94	2.97	4.12	2.50	2.50
3	10.50	1.88	5.00	0.38		3.57	3.60	4.62	2.88	2.88
4	12.25	2.12	6.19	0.44		4.57	4.60	4.88	3.56	3.56
5	14.75	2.88	7.31	0.44		5.66	5.69	6.12	4.12	4.12
6	15.50	3.25	8.50	0.50		6.72	6.75	6.75	4.69	4.69
8	19.00	3.62	10.62	0.50		8.72	8.75	8.38	5.62	5.62
10	23.00	4.25	12.75	0.50		10.88	10.92	10.00	6.25	7.00
12	26.50	4.88	15.00	0.50		12.88	12.92	11.12	7.12	8.62
14	29.50	5.25	16.25	0.50	14.14	14.18	11.75	—	9.50	
16	32.50	5.75	18.50	0.50	16.16	16.19	12.25	—	10.25	
18	36.00	6.38	21.00	0.50	18.18	18.20	12.88	—	10.88	
20	38.75	7.00	23.00	0.50	20.20	20.25	14.00	—	11.50	
24	46.00	8.00	27.25	0.50	24.25	24.25	16.00	—	13.00	

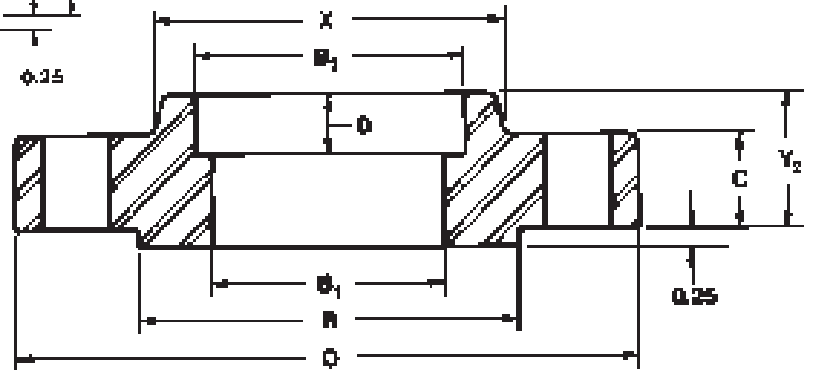
Thickness and length through hub do not include 1/4" raised face.

Class 1500

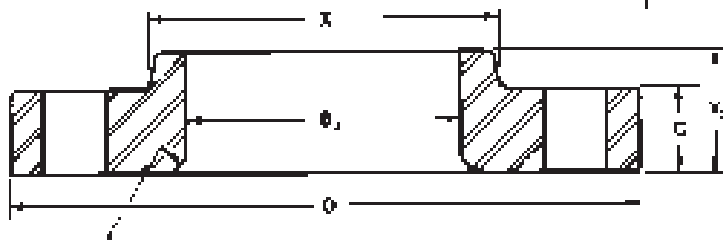
ASME B16.5



THREADED
(1/2" TO 2 1/2" ONLY)



SOCKET WELD
(1/2" TO 2 1/2" ONLY)



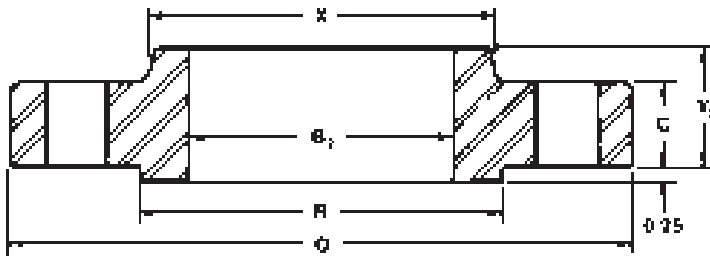
LAP JOINT

Min. Thread Length T	Depth of Socket D	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
				Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
0.88	0.38	0.84	1.50	3.25	0.88	4	5	4	4	4	1/2
1.00	0.44	1.05	1.75	3.50	0.88	4	6	5	5	6	3/4
1.12	0.50	1.32	2.06	4.00	1.00	4	9	8	8	8	1
1.19	0.56	1.66	2.50	4.38	1.00	4	10	9	9	9	1 1/4
1.25	0.62	1.90	2.75	4.88	1.12	4	13	12	12	13	1 1/2
1.50	0.69	2.38	4.12	6.50	1.00	8	25	25	25	25	2
1.88	0.75	2.88	4.88	7.50	1.12	8	36	36	35	35	2 1/2
2.00	0.81	3.50	5.25	8.00	1.25	8	48	48	47	48	3
2.25	0.94	4.50	6.38	9.50	1.38	8	73	73	75	73	4
2.50	0.94	5.56	7.75	11.50	1.62	8	130	130	140	140	5
2.75	1.06	6.63	9.00	12.50	1.50	12	165	165	170	160	6
3.00	1.25	8.63	11.50	15.50	1.75	12	275	260	285	300	8
3.31	1.31	10.75	14.50	19.00	2.00	12	455	435	485	510	10
3.63	1.56	12.75	17.75	22.50	2.12	16	690	580	630	690	12
—	1.63	14.00	19.50	25.00	2.38	16	940	—	890	975	14
—	1.75	16.00	21.75	27.75	2.62	16	1250	—	1150	1300	16
—	1.94	18.00	23.50	30.50	2.88	16	1625	—	1475	1750	18
—	2.13	20.00	25.25	32.75	3.12	16	2050	—	1775	2225	20
—	2.50	24.00	30.00	39.00	3.62	16	3325	—	2825	3625	24

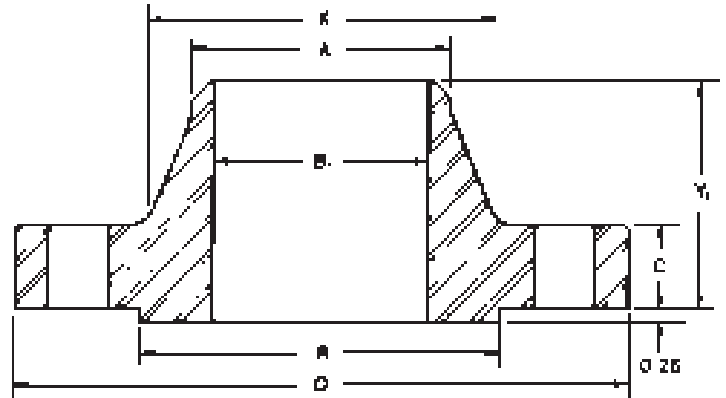
See 300 Class dimensions for dimensions "Q" and "D".

Class 2500

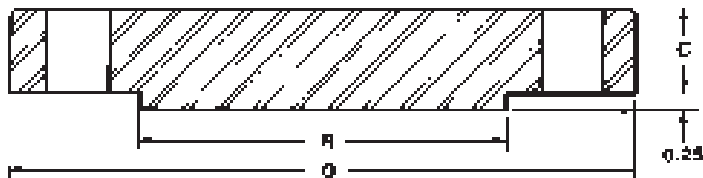
ASME B16.5



SLIP-ON



WELDING NECK



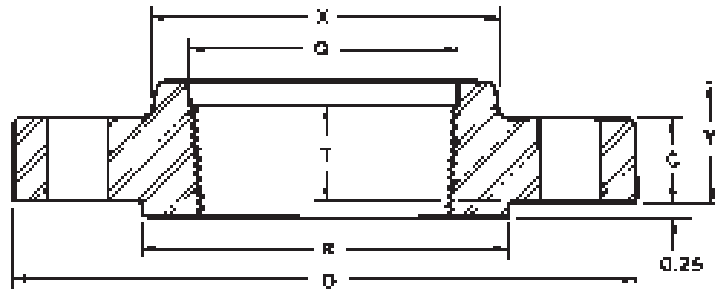
BLIND

Nominal Size	Common Dimensions				Bore			Length Thru Hub		
	Outside Dia. O	Thk. C	Raised Face Dia. R	Fillet Radius r	Welding Neck Socket B ₁	Slip-on B ₂	Lap Joint B ₃	Welding Neck Y ₁	Slip-on Socket Y ₂	Lap Joint Y ₃
1/2	5.25	1.19	1.38	0.12	To be specified by purchaser.	0.88	0.90	2.88	1.56	1.56
3/4	5.50	1.25	1.69	0.12		1.09	1.11	3.12	1.69	1.69
1	6.25	1.38	2.00	0.12		1.36	1.38	3.50	1.88	1.88
1 1/4	7.25	1.50	2.50	0.19		1.70	1.72	3.75	2.06	2.06
1 1/2	8.00	1.75	2.88	0.25		1.95	1.97	4.38	2.38	2.38
2	9.25	2.00	3.62	0.31		2.44	2.46	5.00	2.75	2.75
2 1/2	10.50	2.25	4.12	0.31		2.94	2.97	5.62	3.12	3.12
3	12.00	2.62	5.00	0.38		3.57	3.60	6.62	3.62	3.62
4	14.00	3.00	6.19	0.44		4.57	4.60	7.50	4.25	4.25
5	16.50	3.62	7.31	0.44		5.66	5.69	9.00	5.12	5.12
6	19.00	4.25	8.50	0.50		6.72	6.75	10.75	6.00	6.00
8	21.75	5.00	10.62	0.50		8.72	8.75	12.50	7.00	7.00
10	26.50	6.50	12.75	0.50	10.88	10.92	16.50	9.00	9.00	
12	30.00	7.25	15.00	0.50	12.88	12.92	18.25	10.00	10.00	

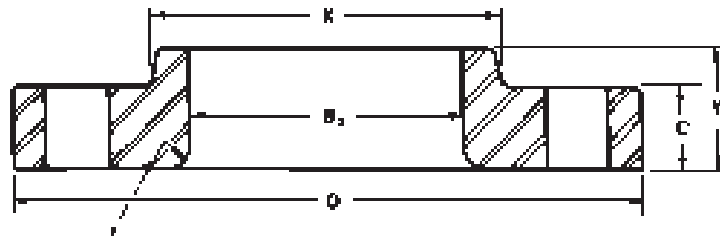
Class 2500 Slip-Ons are not included in ASME B16.5 specifications. Thickness and length through hub do not include 1/4" raised face.

Class 2500

ASME B16.5



THREADED



LAP JOINT

Min. Thread Length T	Dia. Hub at Bevel A	Hub Dia. X	Drilling			Approx. Weight				Nominal Size
			Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Slip-on Thrd. Sock. W.	Lap Joint	Blind	
1.12	0.84	1.69	3.50	0.88	4	7	7	7	7	1/2
1.25	1.05	2.00	3.75	0.88	4	8	8	8	8	3/4
1.38	1.32	2.25	4.25	1.00	4	12	11	11	11	1
1.50	1.66	2.88	5.12	1.12	4	17	16	16	17	1 1/4
1.75	1.90	3.12	5.75	1.25	4	25	22	22	23	1 1/2
2.00	2.38	3.75	6.75	1.12	8	42	38	37	39	2
2.25	2.88	4.50	7.75	1.25	8	52	55	53	56	2 1/2
2.50	3.50	5.25	9.00	1.38	8	94	83	80	86	3
2.75	4.50	6.50	10.75	1.62	8	145	125	120	135	4
3.00	5.56	8.00	12.75	1.88	8	245	210	205	225	5
3.25	6.63	9.25	14.50	2.12	8	380	325	315	345	6
3.75	8.63	12.00	17.25	2.12	12	580	485	470	530	8
4.25	10.75	14.75	21.25	2.62	12	1075	930	900	1025	10
4.75	12.75	17.38	24.38	2.88	12	1525	1100	1100	1300	12

See 300 Class dimensions for dimensions "Q" and "D".

ASME B16.47 Ser. A, Ser. B INDUSTRY STANDARD and AWWA Flanges

Weld Neck, Slip-On, Blind.

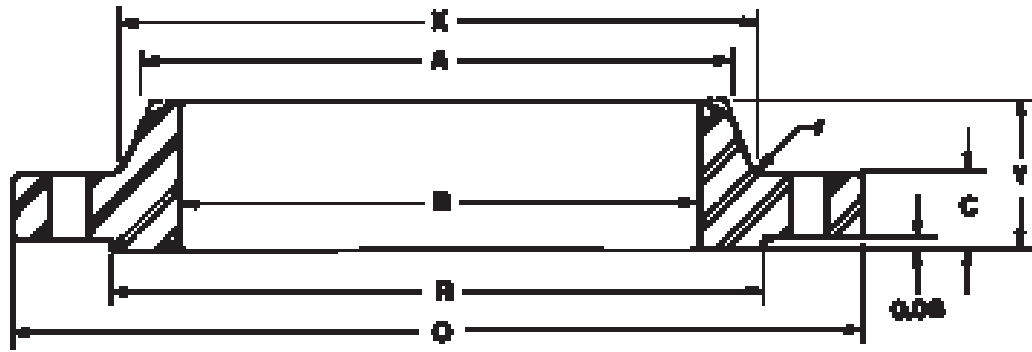
Class 150 to Class 900

The following section is in order by pressure class due to the overlapping dimensions of some standards.

Simply turn to the pressure class required and find the dimensional standard of your choice.

Class 75

B16.47, Ser. B (formerly API-605)

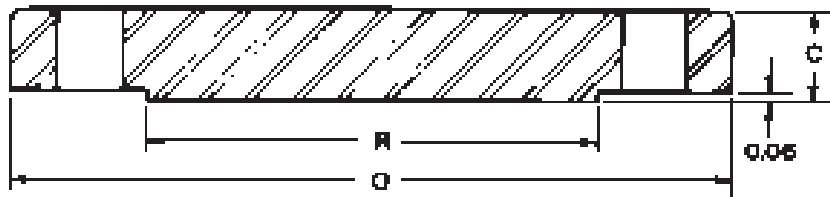


WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Fillet Radius r	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Hub Dia. X
		Welding Neck	Blind						
26	30.00	1.31	1.31	27.75	0.31	To be specified by purchaser.	2.31	26.06	26.62
28	32.00	1.31	1.31	29.75	0.31		2.44	28.06	28.62
30	34.00	1.31	1.31	31.75	0.31		2.56	30.06	30.62
32	36.00	1.38	1.44	33.75	0.31		2.75	32.06	32.62
34	38.00	1.38	1.50	35.75	0.31		2.88	34.06	34.62
36	40.69	1.44	1.67	38.00	0.38		3.38	36.06	36.81
38	42.69	1.50	1.75	40.00	0.38		3.50	38.06	38.81
40	44.69	1.50	1.75	42.00	0.38		3.62	40.06	40.81
42	46.69	1.56	1.88	44.00	0.38		3.75	42.06	42.81
44	49.25	1.69	1.94	46.25	0.38		4.12	44.06	44.88
46	51.25	1.75	2.00	48.25	0.38		4.25	46.06	46.88
48	53.25	1.81	2.12	50.25	0.38		4.38	48.06	48.88
50	55.25	1.88	2.18	52.25	0.38		4.56	50.06	50.94
52	57.38	1.88	2.25	54.25	0.38		4.75	52.06	52.94
54	59.38	1.94	2.38	56.25	0.38		4.94	54.06	55.00
56	62.00	2.00	2.44	58.50	0.44		5.31	56.06	57.12
58	64.00	2.06	2.50	60.50	0.44	5.44	58.06	59.12	
60	66.00	2.19	2.62	62.50	0.44	5.69	60.06	61.12	

Class 75

B16.47, Ser. B

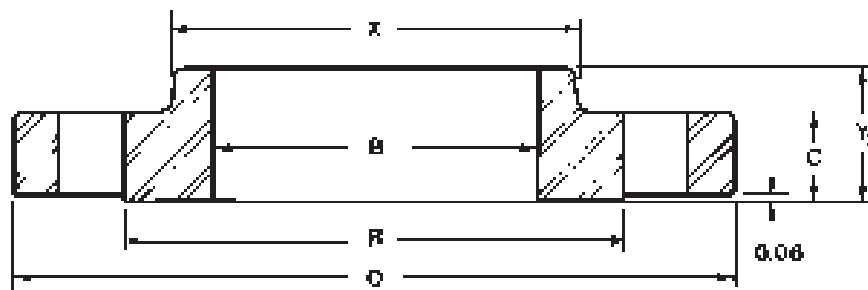


BLIND

Drilling			Approx. Weight		Nominal Size
Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Blind	
28.50	0.75	36	80	225	26
30.50	0.75	40	80	290	28
32.50	0.75	44	90	330	30
34.50	0.75	48	105	390	32
36.50	0.75	52	110	430	34
39.06	0.88	40	145	518	36
41.06	0.88	40	160	595	38
43.06	0.88	44	170	760	40
45.06	0.88	48	185	895	42
47.38	1.00	36	230	1065	44
49.38	1.00	40	245	1185	46
51.38	1.00	44	270	1315	48
53.38	1.00	44	290	1505	50
55.50	1.00	48	310	1665	52
57.50	1.00	48	340	1840	54
59.88	1.12	40	400	2110	56
61.88	1.12	44	430	2300	58
63.88	1.12	44	475	2500	60

Class 75

INDUSTRY STANDARD



SLIP-ON

Nominal Size	Outside Dia. O	Thickness C		O.D. Raised Face R	Dia. at Base of Hub X	Bore B	Length Thru Hub Y
		Slip-On	Blind				
26	33.00	1.25	1.25	30.00	28.50	26.25	2.25
28	35.00	1.25	1.38	32.00	30.50	28.25	2.25
30	37.00	1.25	1.38	34.00	32.50	30.25	2.25
32	39.50	1.25	1.50	36.25	34.63	32.25	2.50
34	41.50	1.25	1.63	38.25	36.63	34.25	2.50
36	43.50	1.25	1.63	40.25	38.63	36.25	2.50
42	50.00	1.25	1.88	46.50	44.75	42.25	2.75
48	56.00	1.25	2.13	52.50	50.75	48.25	2.88
54	62.50	1.38	2.38	59.00	57.25	54.25	3.13
60	68.50	1.63	2.63	65.00	63.25	60.25	3.63
66	75.50	1.75	2.88	71.63	69.50	66.25	4.00
72	81.50	2.00	3.13	77.63	75.50	72.25	4.50

Class 75

INDUSTRY STANDARD

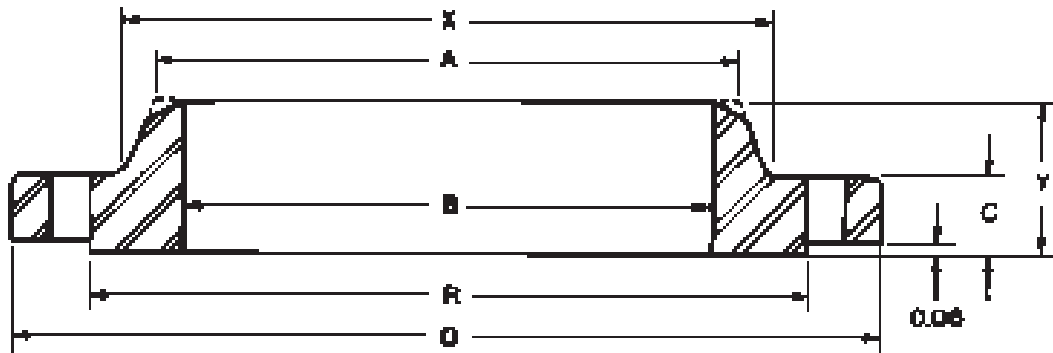


BLIND

Drilling			Approx. Weight		Nominal Size
Bolt Circle Dia.	Dia. Holes	No. Holes	Slip-On	Blind	
31.00	1.00	32	120	290	26
33.00	1.00	36	140	360	28
35.00	1.00	36	150	405	30
37.38	1.13	40	170	500	32
39.38	1.13	40	180	600	34
41.38	1.13	44	190	660	36
47.75	1.25	48	235	1000	42
53.75	1.25	56	270	1450	48
60.25	1.25	68	335	2000	54
66.25	1.25	72	450	2675	60
73.00	1.38	72	590	3550	66
79.00	1.38	80	730	4500	72

Class 75

INDUSTRY STANDARD



WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		O.D. Raised Face R	Dia. at Base of Hub X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A
		Welding Neck	Blind					
26	31.50	1.15	1.25	28.63	27.13	To be specified by purchaser.	3.00	To be specified by purchaser.
28	33.50	1.25	1.25	30.63	29.13		3.00	
30	35.50	1.25	1.38	32.63	31.13		3.00	
32	38.25	1.25	1.50	35.00	33.38		3.25	
34	40.25	1.25	1.50	37.00	35.38		3.25	
36	42.25	1.25	1.63	39.00	37.38		3.25	
42	49.00	1.25	1.88	45.50	43.75		3.50	
48	55.00	1.25	2.13	51.50	49.75		3.75	
54	61.25	1.38	2.38	57.75	56.00		4.00	
60	67.25	1.63	2.63	63.75	62.00		4.38	
66	74.00	1.88	2.88	70.13	68.00		4.88	
72	80.00	2.25	3.13	76.13	74.00		5.25	

Class 75

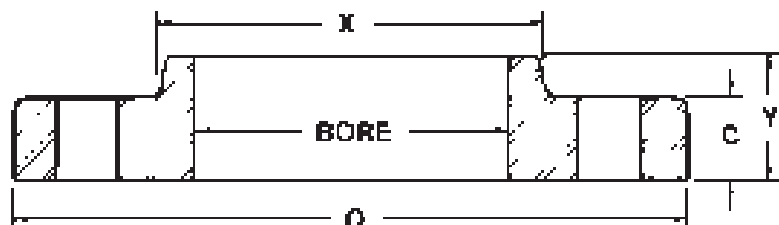
INDUSTRY STANDARD



BLIND

Drilling			Approx. Weight		Nominal Size
Bolt Circle	Dia. Holes	No. Holes	Welding Neck	Blind	
29.63	1.00	32	98	265	26
31.63	1.00	36	105	300	28
33.63	1.00	36	110	370	30
36.13	1.13	36	140	470	32
38.13	1.13	40	150	520	34
40.13	1.13	40	160	620	36
46.75	1.25	48	210	970	42
52.75	1.25	52	240	1375	48
59.00	1.25	64	310	1925	54
65.00	1.25	72	400	2575	60
71.50	1.38	72	560	3400	66
77.50	1.38	80	700	4350	72

Class 125 LW, AWWA C207 CLASSES B, D



SLIP-ON

Nominal Size	Outside Dia. O	Thickness C			Hub Dia. X	Bore	Length Thru Hub Y ₂
		Slip-On 125 LW, B, D	Ring				
			B	D	X		Y ₂
6	11.00	0.56	0.69	0.69	7.56	6.72	1.25
8	13.50	0.56	0.69	0.69	9.68	8.72	1.25
10	16.00	0.68	0.69	0.69	12.00	10.88	1.25
12	19.00	0.68	0.69	0.81	14.38	12.88	1.25
14	21.00	0.75	0.69	0.94	15.75	14.14	1.25
16	23.50	0.75	0.69	1.00	18.00	16.16	1.25
18	25.00	0.75	0.69	1.06	19.88	18.18	1.25
20	27.50	0.75	0.69	1.13	22.00	20.20	1.25
22	29.50	1.00	0.75	1.19	24.25	22.22	1.75
24	32.00	1.00	0.75	1.25	26.13	24.25	1.75
26	34.25	1.00	0.81	1.31	28.50	26.25	1.75
28	36.50	1.00	0.88	1.31	30.50	28.25	1.75
30	38.75	1.00	0.88	1.38	32.50	30.25	1.75
32	41.75	1.13	0.94	1.50	34.75	32.25	1.75
34	43.75	1.13	0.94	1.50	36.75	34.25	1.75
36	46.00	1.13	1.00	1.63	38.75	36.25	1.75
38	48.75	1.13	1.00	1.63	40.75	38.25	1.75
40	50.75	1.13	1.00	1.63	43.00	40.25	1.75
42	53.00	1.25	1.13	1.75	45.00	42.25	1.75
44	55.25	1.25	1.13	1.75	47.00	44.25	2.25
46	57.25	1.25	1.13	1.75	49.00	46.25	2.25
48	59.50	1.38	1.25	1.75	51.00	48.25	2.50
50	61.75	1.38	1.25	2.00	53.00	50.25	2.50
52	64.00	1.38	1.25	2.00	55.00	52.25	2.50
54	66.25	1.38	1.33	2.13	57.00	54.25	2.50
60	73.00	1.50	1.50	2.25	63.00	60.25	2.75
66	80.00	1.50	1.63	2.50	69.00	66.25	2.75
72	86.50	1.50	1.75	2.63	75.00	72.25	2.75
84	99.75	1.75	2.00	2.75	87.50	84.25	3.00
96	113.25	2.00	2.25	3.00	100.00	96.25	3.25

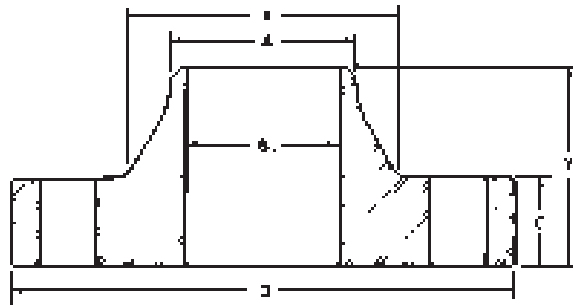
Class 125 LW, AWWA C207 CLASSES B, D



RING

Drilling				Approx. Weight			Nominal Size
Bolt Circle	Bolt Hole Dia.		No. Holes	Slip-On 125 LW, B & D	Ring		
	B	125 LW D			Size B	D	
9.50	3/4	0.88	8	13	11	12	6
11.75	3/4	0.88	8	18	14	15	8
14.25	3/4	1.00	12	26	20	20	10
17.00	3/4	1.00	12	42	30	33	12
18.75	7/8	1.13	12	44	36	50	14
21.25	7/8	1.13	16	58	43	60	16
22.75	7/8	1.25	16	59	45	65	18
25.00	7/8	1.25	20	69	50	80	20
27.25	7/8	1.38	20	76	60	90	22
29.50	7/8	1.38	20	115	70	110	24
31.75	7/8	1.38	24	125	85	130	26
34.00	7/8	1.38	28	140	100	145	28
36.00	1	1.38	28	150	110	165	30
38.50	1	1.63	28	205	145	210	32
40.50	1	1.63	32	215	150	220	34
42.75	1	1.63	32	235	175	265	36
45.25	1	1.63	32	265	200	300	38
47.25	1	1.63	36	280	205	315	40
49.50	1 1/8	1.63	36	330	250	365	42
51.75	1 1/8	1.63	40	350	265	385	44
53.75	1 1/8	1.63	40	365	275	400	46
56.00	1 1/8	1.63	44	425	325	430	48
58.25	1 1/4	1.88	44	450	340	500	50
60.50	1 1/4	1.88	44	475	360	540	52
62.75	1 3/8	1.88	44	500	420	615	54
69.25	1 3/8	1.88	52	640	535	760	60
76.00	1 3/8	1.88	52	750	700	1025	66
82.50	1 3/8	1.88	60	850	840	1200	72
95.50	1 5/8	2.13	64	1225	1200	1575	84
108.50	1 7/8	2.38	68	1725	1665	2125	96

Class 125 & AWWA C207 CLASS E

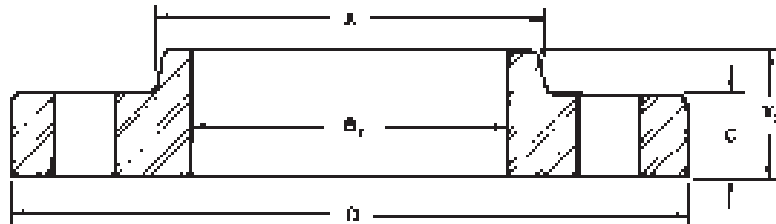


WELDING NECK

Nominal Size	Outside Dia. O	Thickness C	Hub Dia. X	Bore		Length Thru Hub	
		C	X	Welding Neck B ₁	Slip-On B ₂	Slip-On Y ₂	Welding Neck Y ₁
6	11.00	1.00	7.56		6.72	1.56	3.50
8	13.50	1.13	9.68		8.72	1.75	4.00
10	16.00	1.19	12.00		10.88	1.94	4.00
12	19.00	1.25	14.38		12.88	2.19	4.50
14	21.00	1.38	15.75		14.14	2.25	5.00
16	23.50	1.44	18.00		16.16	2.50	5.00
18	25.00	1.56	19.88		18.18	2.68	5.50
20	27.50	1.68	22.00		20.20	2.88	5.69
22	29.50	1.81	24.25		22.22	3.13	5.88
24	32.00	1.88	26.13		24.25	3.25	6.00
26	34.25	2.00	28.50		26.25	3.38	5.00
28	36.50	2.06	30.75		28.25	3.44	5.06
30	38.75	2.13	32.75		30.25	3.50	5.13
32	41.75	2.25	35.00		32.25	3.63	5.25
34	43.75	2.31	37.00		34.25	3.68	5.31
36	46.00	2.38	39.25		36.25	3.75	5.38
38	48.75	2.38	41.75		38.25	3.75	5.38
40	50.75	2.50	43.75		40.25	3.88	5.50
42	53.00	2.63	46.00		42.25	4.00	5.63
44	55.25	2.63	48.00		44.25	4.00	5.63
46	57.25	2.68	50.00		46.25	4.06	5.68
48	59.50	2.75	52.25		48.25	4.13	5.75
50	61.75	2.75	54.25		50.25	4.13	5.75
52	64.00	2.88	56.50		52.25	4.25	5.88
54	66.25	3.00	58.75		54.25	4.38	6.00
60	73.00	3.13	65.25		60.25	4.50	6.13
66	80.00	3.38	71.50		66.25	4.88	6.38
72	86.50	3.50	78.50		72.25	5.00	6.50
84	99.75	3.88	90.50		84.25	5.38	6.88
96	113.25	4.25	102.75		96.25	5.75	7.25

To be specified by purchaser.

Class 125 & AWWA C207 CLASS E

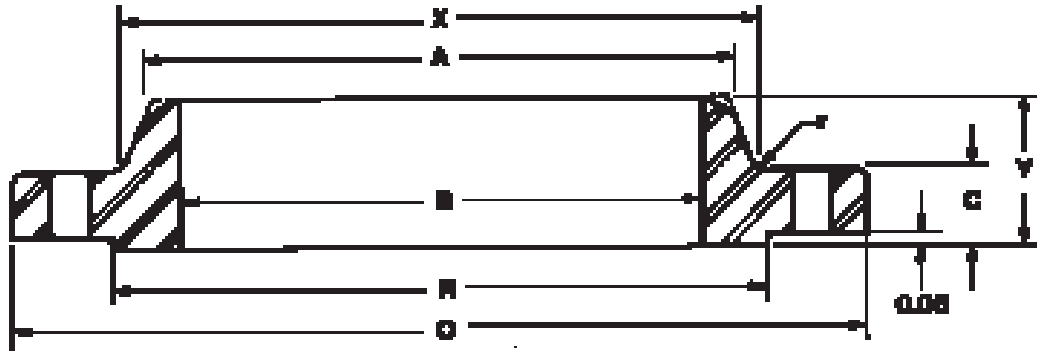


SLIP-ON

Dia. Hub at Bevel A	Drilling			Approx. Weight		Nominal Size
	Bolt Circle	Dia. Holes	No. Holes	Slip-On	Welding Neck	
6.63	9.50	0.88	8	19	24	6
8.63	11.75	0.88	8	30	39	8
10.75	14.25	1.00	12	43	52	10
12.75	17.00	1.00	12	64	80	12
14.00	18.75	1.13	12	85	110	14
16.00	21.25	1.13	16	93	140	16
18.00	22.75	1.25	16	120	150	18
20.00	25.00	1.25	20	155	180	20
22.00	27.25	1.38	20	175	225	22
24.00	29.50	1.38	20	210	255	24
26.00	31.75	1.38	24	235	265	26
28.00	34.00	1.38	28	270	295	28
30.00	36.00	1.38	28	305	340	30
32.00	38.50	1.63	28	375	410	32
34.00	40.50	1.63	32	400	440	34
36.00	42.75	1.63	32	450	495	36
38.00	45.25	1.63	32	530	570	38
40.00	47.25	1.63	36	570	620	40
42.00	49.50	1.63	36	650	710	42
44.00	51.75	1.63	40	690	750	44
46.00	53.75	1.63	40	730	800	46
48.00	56.00	1.63	44	800	870	48
50.00	58.25	1.88	44	830	900	50
52.00	60.50	1.88	44	920	1000	52
54.00	62.75	1.88	44	1025	1100	54
60.00	69.25	1.88	52	1250	1350	60
66.00	76.00	1.88	52	1625	1775	66
72.00	82.50	1.88	60	1925	2100	72
84.00	95.50	2.13	64	2600	2825	84
96.00	108.50	2.38	68	3275	3800	96

Class 150

B16.47, Ser. A



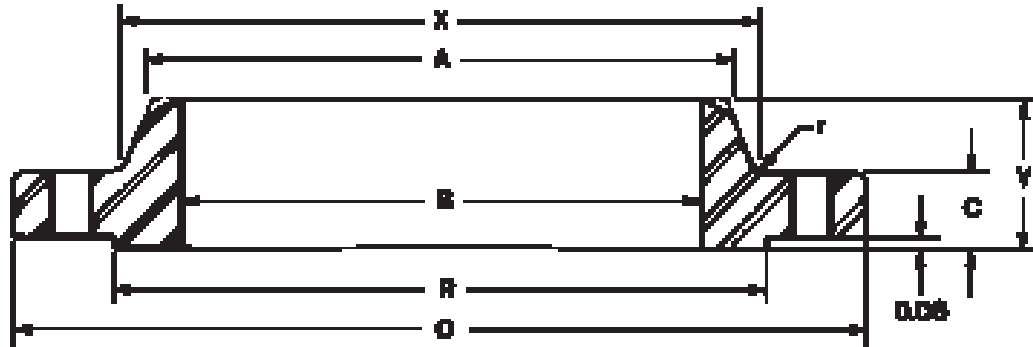
WELDING NECK

Nominal Size	Outside Dia. O	Thickness (Min.) C	Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
									Bolt Circle	Dia. Holes	No. Holes	
26	34.25	2.69	29.50	26.62	To be specified by purchaser.	4.75	26.00	0.38	31.75	1.38	24	300
28	36.50	2.81	31.50	28.62		4.94	28.00	0.44	34.00	1.38	28	345
30	38.75	2.94	33.75	30.75		5.38	30.00	0.44	36.00	1.38	28	400
32	41.75	3.19	36.00	32.75		5.69	32.00	0.44	38.50	1.62	28	505
34	43.75	3.25	38.00	34.75		5.88	34.00	0.50	40.50	1.62	32	540
36	46.00	3.56	40.25	36.75		6.19	36.00	0.50	42.75	1.62	32	640
38	48.75	3.44	42.25	39.00		6.19	38.00	0.50	45.25	1.62	32	720
40	50.75	3.56	44.25	41.00		6.44	40.00	0.50	47.25	1.62	36	775
42	53.00	3.81	47.00	43.00		6.75	42.00	0.50	49.50	1.62	36	890
44	55.25	4.00	49.00	45.00		7.00	44.00	0.50	51.75	1.62	40	990
46	57.25	4.06	51.00	47.12		7.31	46.00	0.50	53.75	1.62	40	1060
48	59.50	4.25	53.50	49.12		7.56	48.00	0.50	56.00	1.62	44	1185
50	61.75	4.38	55.50	51.25		8.00	50.00	0.50	58.25	1.88	44	1270
52	64.00	4.56	57.50	53.25		8.25	52.00	0.50	60.50	1.88	44	1410
54	66.25	4.75	59.50	55.25		8.50	54.00	0.50	62.75	1.88	44	1585
56	68.75	4.88	62.00	57.38		9.00	56.00	0.50	65.00	1.88	48	1760
58	71.00	5.06	64.00	59.38	9.25	58.00	0.50	67.25	1.88	48	1915	
60	73.00	5.19	66.00	61.38	9.44	60.00	0.50	69.25	1.88	52	2045	

*SP-44 Class 150 blinds and Welding Neck Flanges have the same thickness. Blinds available upon request.

Class 150

B16.47, Ser. B



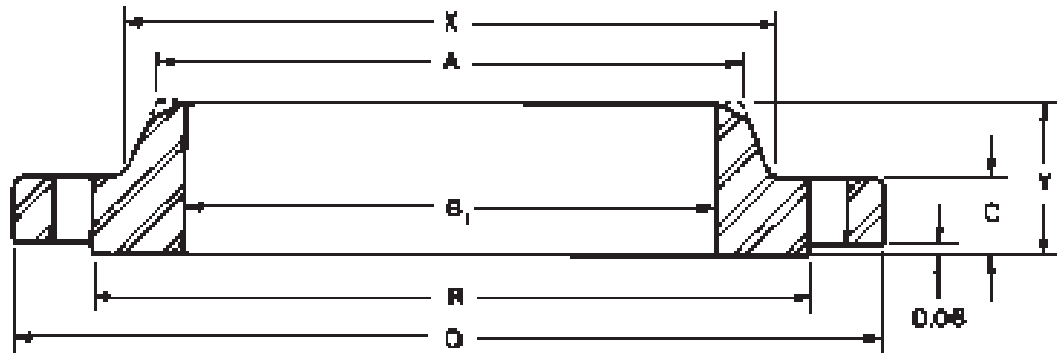
WELDING NECK

Nominal Size	Outside Dia. O	Thickness (Min.) C	Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
									Bolt Circle	Dia. Holes	No. Holes	
26	30.94	1.62	28.00	26.94	To be specified by purchaser.	3.50	26.06	0.38	29.31	0.88	36	120
28	32.94	1.75	30.00	28.94		3.75	28.06	0.38	31.31	0.88	40	140
30	34.94	1.75	32.00	31.00		3.94	30.06	0.38	33.31	0.88	44	150
32	37.06	1.81	34.00	33.06		4.25	32.06	0.38	35.44	0.88	48	170
34	39.56	1.94	36.25	35.12		4.34	34.06	0.38	37.69	1.00	40	210
36	41.62	2.06	38.25	37.19		4.632	36.06	0.38	39.75	1.00	44	240
38	44.25	2.12	40.25	39.25		4.88	38.12	0.38	42.12	1.12	40	290
40	46.25	2.19	42.50	41.31		5.06	40.12	0.38	44.12	1.12	44	310
42	48.25	2.31	44.50	43.38		5.25	42.12	0.44	46.12	1.12	48	345
44	50.25	2.38	46.50	45.38		5.38	44.12	0.44	48.12	1.12	52	370
46	52.81	2.44	48.62	47.44		5.69	46.12	0.44	50.56	1.25	40	435
48	54.81	2.56	50.75	49.50		5.88	48.12	0.44	52.56	1.25	44	480
50	56.81	2.69	52.75	51.50		6.06	50.12	0.44	54.56	1.25	48	520
52	58.81	2.75	54.75	53.56		6.19	52.12	0.44	56.56	1.25	52	550
54	61.00	2.81	56.75	55.62		6.38	54.12	0.44	58.75	1.25	56	620
56	63.00	2.88	58.75	57.69		6.56	56.12	0.56	60.75	1.25	60	650
58	65.94	2.94	60.75	59.69	6.88	58.12	0.56	63.44	1.38	48	780	
60	67.94	3.00	63.00	61.81	7.06	60.12	0.56	65.44	1.38	52	850	

Blinds available upon request.

Class 175

INDUSTRY STANDARD



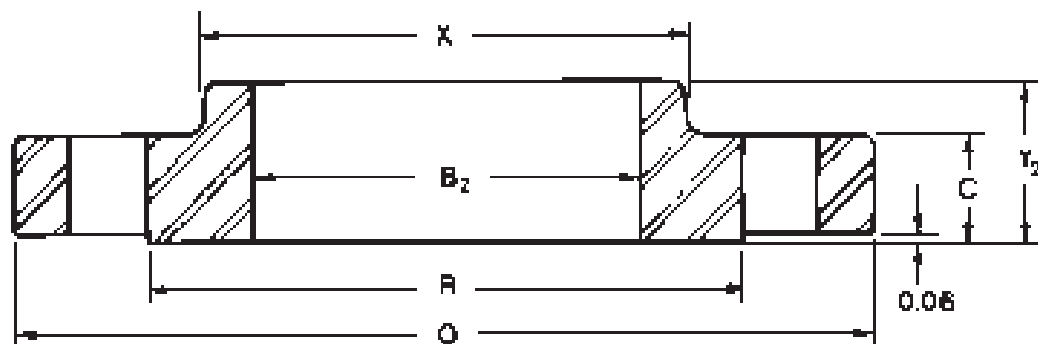
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C			Raised Face Dia. R	Hub Dia. X	Bore		Length Thru Hub Y		Dia. Hub at Bevel A
		Welding Neck	Slip-On	Blind			B ₁	B ₂	Welding Neck	Slip-On	
26	31.50	1.38	1.38	1.78	29.00	27.63	26.25	3.38	2.75		
28	33.50	1.38	1.38	2.00	31.00	29.63	28.25	3.38	2.75		
30	35.75	1.38	1.38	2.13	33.25	31.88	30.25	3.63	2.75		
32	37.75	1.38	1.38	2.25	35.25	33.88	32.25	3.63	2.75		
34	40.25	1.50	1.75	2.38	37.38	35.88	34.25	3.75	3.38		
36	42.25	1.50	1.75	2.50	39.38	37.88	36.25	3.75	3.38		
38	44.25	1.75	2.00	2.63	41.38	39.88	38.25	4.13	3.75		
40	46.25	1.75	2.00	2.75	43.38	41.88	40.25	4.13	4.00		
42	49.00	2.00	2.38	2.88	45.75	44.13	42.25	4.50	4.38		
44	51.00	2.00	2.38	3.00	47.75	46.13	44.25	4.50	4.38		
46	53.00	2.00	2.38	3.13	49.75	48.13	46.25	4.50	4.63		
48	55.00	2.25	2.63	3.38	51.75	50.13	48.25	4.88	4.88		
50	57.00	2.25	2.63	3.38	53.75	52.13	50.25	4.88	4.88		
52	59.50	2.63	3.00	3.63	56.00	54.25	52.25	5.38	5.38		
54	61.50	2.63	3.00	3.63	58.00	56.25	54.25	5.38	5.38		
60	67.50	2.75	3.13	4.00	64.00	62.25	60.25	5.75	5.88		
66	73.50	3.13	4.00	4.38	70.00	68.50	66.25	6.13	6.88		
72	80.00	3.63	5.00	4.75	76.50	74.50	72.25	6.63	8.00		

Notes: Sizes are nominal **inside** diameters of pipe or shell used with Welding Neck flanges, and nominal **outside** diameters of pipe or shell used with Slip-On Flanges.

Class 175

INDUSTRY STANDARD

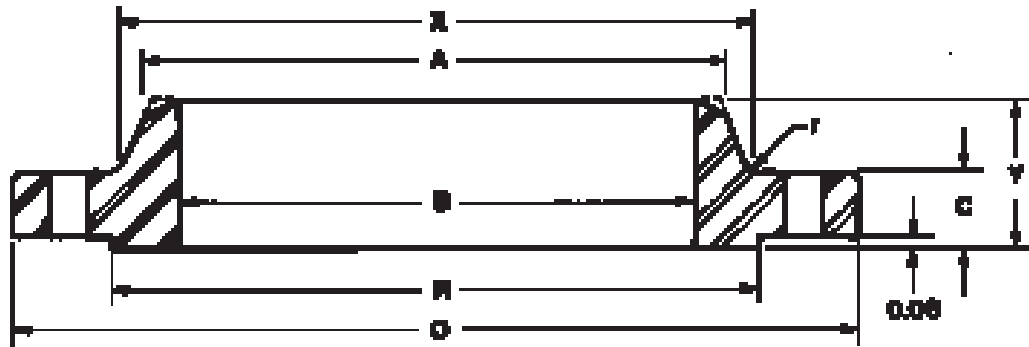


SLIP-ON

Drilling			Approx. Weight			Nominal Size
Bolt Circle Dia.	Dia. Holes	No. Holes	Welding Neck	Slip-On	Blind	
29.88	0.88	28	120	105	405	26
31.88	0.88	28	130	115	490	28
34.13	0.88	36	150	130	590	30
36.13	0.88	36	160	140	700	32
38.38	1.00	36	195	200	840	34
40.38	1.00	36	205	210	970	36
42.38	1.00	36	245	250	1125	38
44.38	1.00	40	255	270	1300	40
46.88	1.13	40	340	365	1500	42
48.88	1.13	40	360	380	1700	44
50.88	1.13	40	375	410	1925	46
52.88	1.13	44	430	460	2225	48
54.88	1.13	44	450	480	2400	50
57.25	1.25	44	560	600	2800	52
59.25	1.25	44	580	620	3000	54
65.25	1.25	48	680	730	4000	60
74.25	1.25	56	830	1000	5175	66
77.75	1.25	64	1075	1400	6650	72

Class 300

B16.47, Ser. A

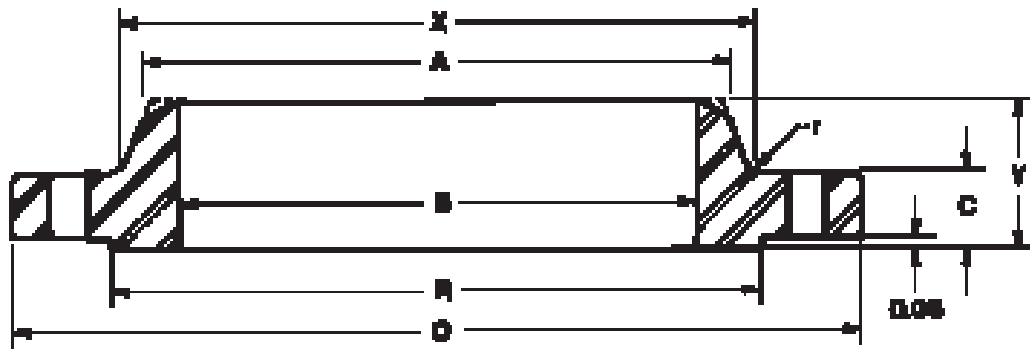


WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
Sizes 12" thru 24" identical to ASME B16.5 except when a single taper hub is required.													
26	38.25	3.12	3.31	29.50	28.38		7.25	26.00	0.38	34.50	1.75	28	605
28	40.75	3.38	3.56	31.50	30.50		7.75	28.00	0.44	37.00	1.75	28	745
30	43.00	3.62	3.75	33.75	32.56		8.25	30.00	0.44	39.25	1.88	28	870
32	45.25	3.88	3.94	36.00	34.69	To be specified by purchaser.	8.75	32.00	0.44	41.50	2.00	28	1005
34	47.50	4.00	4.12	38.00	36.88		9.12	34.00	0.50	43.50	2.00	28	1145
36	50.00	4.12	4.38	40.25	39.00		9.50	36.00	0.50	46.00	2.12	32	1275
38	46.00	4.25	4.25	40.50	39.12		7.12	38.00	0.50	43.00	1.62	32	695
40	48.75	4.50	4.50	42.75	41.25		7.63	40.00	0.50	45.50	1.75	32	840
42	50.75	4.69	4.69	44.75	43.25		7.88	42.00	0.50	47.50	1.75	32	950
44	53.25	4.88	4.88	47.00	45.25		8.12	44.00	0.50	49.75	1.88	32	1055
46	55.75	5.06	5.06	49.00	47.38		8.50	46.00	0.50	52.00	2.00	28	1235
48	57.75	5.25	5.25	51.25	49.38		8.81	48.00	0.50	54.00	2.00	32	1380
50	60.25	5.50	5.50	53.50	51.38		9.12	50.00	0.50	56.25	2.12	32	1530
52	62.25	5.69	5.69	55.50	53.38		9.38	52.00	0.50	58.25	2.12	32	1660
54	65.25	6.00	6.00	57.75	55.50		9.94	54.00	0.50	61.00	2.38	28	2050
56	67.25	6.06	6.06	59.75	57.62	10.25	56.00	0.50	63.00	2.38	28	2155	
58	69.25	6.25	6.25	62.00	59.62	10.50	58.00	0.50	65.00	2.38	32	2270	
60	71.25	6.44	6.44	64.00	61.62	10.75	60.00	0.50	67.00	2.38	32	2470	

Class 300

B16.47, Ser. B

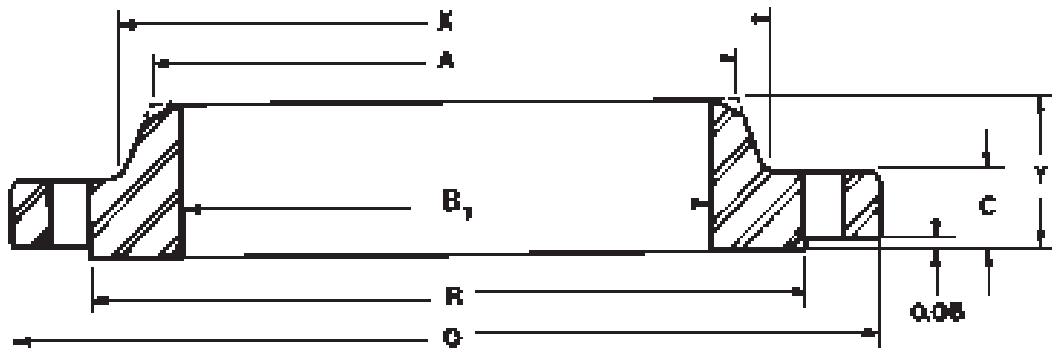


WELDING NECK

Nominal Size	Outside Dia. O	Thickness (Min.) C	Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
									Bolt Circle	Dia. Holes	No. Holes	
26	34.12	3.50	29.00	27.62	To be specified by purchaser.	5.69	26.19	0.56	31.62	1.38	32	400
28	36.25	3.50	31.00	29.75		5.88	28.19	0.56	33.75	1.38	36	450
30	39.00	3.69	33.25	32.00		6.22	30.25	0.56	36.25	1.50	36	550
32	41.50	4.06	35.50	34.00		6.62	32.25	0.63	38.50	1.62	32	685
34	43.62	4.06	37.50	36.12		6.81	34.25	0.63	40.62	1.62	36	750
36	46.12	4.06	39.75	38.00		7.12	36.25	0.63	42.88	1.75	32	840
38	48.12	4.38	41.75	40.00		7.56	38.25	0.63	44.88	1.75	36	915
40	50.12	4.56	43.88	42.00		7.81	40.25	0.63	46.88	1.75	40	990
42	52.50	4.69	46.00	44.00		8.06	42.31	0.63	49.00	1.88	36	1135
44	54.50	5.00	48.00	46.19		8.44	44.31	0.63	51.00	1.88	40	1235
46	57.50	5.06	50.00	48.38		8.75	46.31	0.63	53.75	2.00	36	1470
48	59.50	5.06	52.25	50.31		8.81	48.31	0.63	55.75	2.00	40	1575
50	61.50	5.44	54.25	52.38		9.25	50.31	0.63	57.75	2.00	44	1710
52	63.50	5.62	56.25	54.44		9.56	52.31	0.63	59.75	2.00	48	1840
54	65.88	5.38	58.25	56.50	9.44	54.31	0.63	62.12	2.00	48	1980	
56	69.50	6.06	60.50	58.81	10.56	56.31	0.69	65.00	2.38	36	2595	
58	71.94	6.06	62.75	60.94	10.81	58.31	0.69	67.44	2.38	40	2770	
60	73.94	5.94	65.00	62.94	10.69	60.31	0.69	69.44	2.38	40	2870	

Class 350

INDUSTRY STANDARD



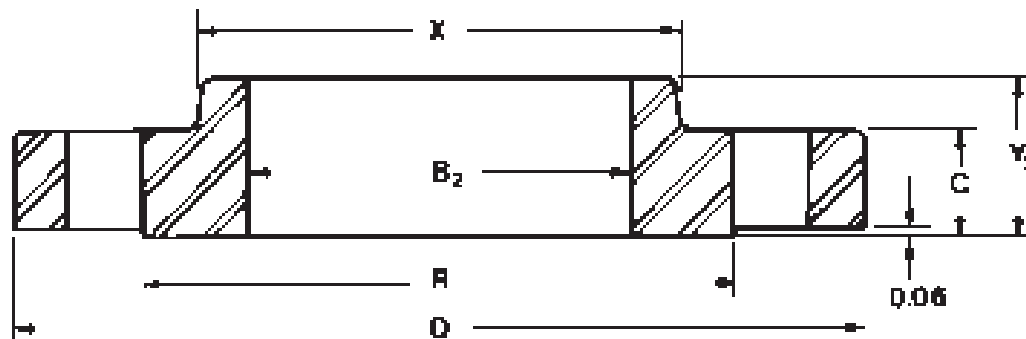
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C			Raised Face Dia. R	Hub Dia. X	Bore		Length Thru Hub Y	
		Welding Neck	Slip-On	Blind			B ₁	B ₂	Welding Neck	Slip-On
26	32.75	2.50	2.50	2.75	29.50	27.88	To be specified by purchaser.	26.25	5.00	4.50
28	34.75	2.50	2.50	2.88	31.50	29.88		28.25	5.00	4.50
30	37.00	2.63	2.63	3.00	33.75	32.13		30.25	5.25	4.75
32	39.00	2.75	2.75	3.25	35.75	34.13		32.25	5.50	5.00
34	41.00	2.88	2.88	3.38	37.75	36.13		34.25	5.75	5.13
36	43.75	3.13	3.13	3.63	40.25	38.50		36.25	6.13	5.63
38	45.75	3.13	3.13	3.75	42.25	40.50		38.25	6.13	5.63
40	47.75	3.25	3.25	4.00	44.25	42.50		40.25	6.25	5.88
42	50.00	3.50	3.50	4.13	46.50	44.75		42.25	6.50	6.13
44	52.75	3.75	3.75	4.38	48.88	46.75		44.25	6.75	6.75
46	54.75	4.25	4.25	4.75	50.88	48.75		46.25	7.25	7.25
48	56.75	4.25	4.25	4.75	52.88	50.75		48.25	7.25	7.25
52	61.50	4.25	—	—	57.25	55.00		52.25	7.50	—
54	63.50	4.50	4.75	—	59.25	57.00		54.25	7.75	8.25
60	69.50	4.50	5.00	—	65.25	63.00	60.25	8.00	8.50	
66	77.00	4.00	—	—	72.38	70.00	66.25	8.50	—	
72	83.00	4.00	—	—	78.38	76.00	72.25	9.00	—	

Notes: Sizes are nominal **inside** diameters of pipe or shell used with Welding Neck Flanges, and nominal **outside** diameters of pipe or shell used with Slip-On Flanges. Diameter of hub at Bevel to be specified by purchaser.

Class 350

INDUSTRY STANDARD



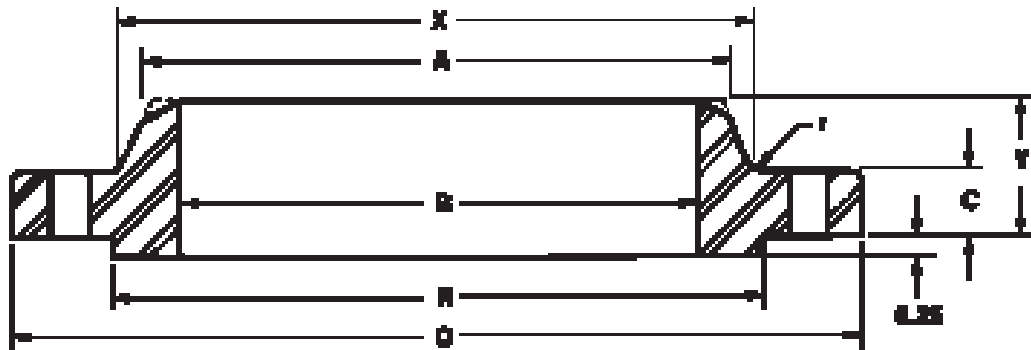
SLIP-ON

Drilling			Approx. Weight			Nominal Size
Bolt Circle Dia.	Dia. Holes	No. Holes	Welding Neck	Slip-On	Blind	
30.63	1.13	28	245	225	580	26
32.63	1.13	28	260	250	750	28
34.88	1.13	32	305	295	890	30
36.88	1.13	36	340	325	1050	32
38.88	1.13	40	375	355	1225	34
41.50	1.25	40	480	465	1500	36
43.50	1.25	40	510	490	1700	38
45.50	1.25	44	540	530	1975	40
47.75	1.25	48	640	620	2225	42
50.25	1.38	44	760	760	2625	44
52.25	1.38	48	880	880	2950	46
54.25	1.38	48	920	920	3300	48
58.75	1.50	52	1025	—	—	52
60.75	1.50	52	1200	1150	—	54
66.75	1.50	60	1325	1450	—	60
74.00	1.63	60	1675	—	—	66
80.00	1.63	72	1850	—	—	72

Class 400

B16.47 Series A

B16.47 Series B



WELDING NECK

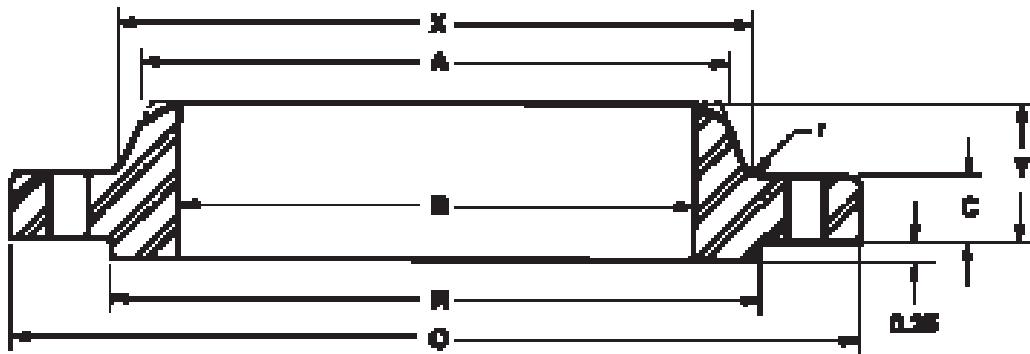
Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A Sizes 12" thru 24" identical to ASME B16.5 except when a single taper hub is required.													
26	38.25	3.50	3.88	29.50	28.62	To be specified by purchaser.	7.62	26.00	0.44	34.50	1.88	28	650
28	40.75	3.75	4.12	31.50	30.81		8.12	28.00	0.50	37.00	2.00	28	785
30	43.00	4.00	4.38	33.75	32.94		8.62	30.00	0.50	39.25	2.12	28	905
32	45.25	4.25	4.56	36.00	35.00		9.12	32.00	0.50	41.50	2.12	28	1065
34	47.50	4.38	4.81	38.00	37.18		9.50	34.00	0.56	43.50	2.12	28	1200
36	50.00	4.50	5.06	40.25	39.38		9.88	36.00	0.56	46.00	2.12	32	1340
B16.47 Ser B													
26	33.50	3.50	—	28.00	27.12	To be specified by purchaser.	5.88	26.00	0.44	30.75	1.50	28	360
28	36.00	3.75	—	30.00	29.12		6.25	28.00	0.50	33.00	1.62	24	450
30	38.25	4.00	—	32.25	31.25		6.69	30.00	0.50	35.25	1.62	28	530
32	40.75	4.25	—	34.38	33.25		7.06	32.00	0.50	37.50	1.75	28	635
34	42.75	4.38	—	36.50	35.38		7.38	34.00	0.56	39.50	1.75	32	690
36	45.50	4.69	—	38.62	37.50		7.88	36.00	0.56	42.00	1.75	28	855

Length thru Hub does not include 1/4" Raised Face.

Class 400

B16.47 Series A

B16.47 Series B



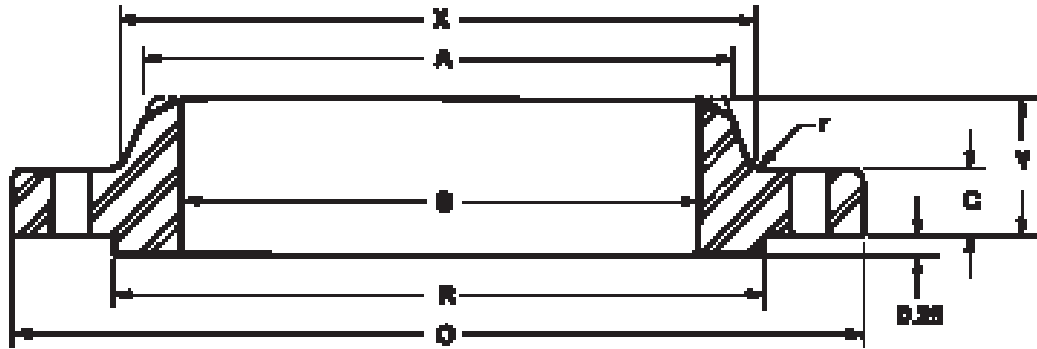
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A and Ser B are identical in sizes 38" thru 60".													
38	47.50	4.88	4.88	40.75	39.50	To be specified by purchaser.	8.12	38.00	0.56	44.00	1.88	32	935
40	50.00	5.12	5.12	43.00	41.50		8.50	40.00	0.56	46.25	2.00	32	1090
42	52.00	5.25	5.25	45.00	43.62		8.81	42.00	0.56	48.25	2.00	32	1190
44	54.50	5.50	5.50	47.25	45.62		9.18	44.00	0.56	50.50	2.12	32	1375
46	56.75	5.75	5.75	49.50	47.75		9.62	46.00	0.56	52.75	2.12	36	1525
48	59.50	6.00	6.00	51.50	49.88		10.12	48.00	0.56	55.25	2.38	28	1790
50	61.75	6.19	6.25	53.62	52.00		10.56	50.00	0.56	57.50	2.38	32	1950
52	63.75	6.38	6.44	55.62	54.00		10.88	52.00	0.56	59.50	2.38	32	2125
54	67.00	6.69	6.75	57.88	56.12		11.38	54.00	0.56	62.25	2.62	28	2565
56	69.00	6.88	6.94	60.12	58.25		11.75	56.00	0.56	64.25	2.62	32	2710
58	71.00	7.00	7.12	62.12	60.25		12.06	58.00	0.56	66.25	2.62	32	3230
60	74.25	7.31	7.44	64.38	62.38	12.56	60.00	0.56	69.00	2.88	32	3820	

Length thru Hub does not include 1/4" Raised Face.

Class 600

B16.47 Series A B16.47 Series B



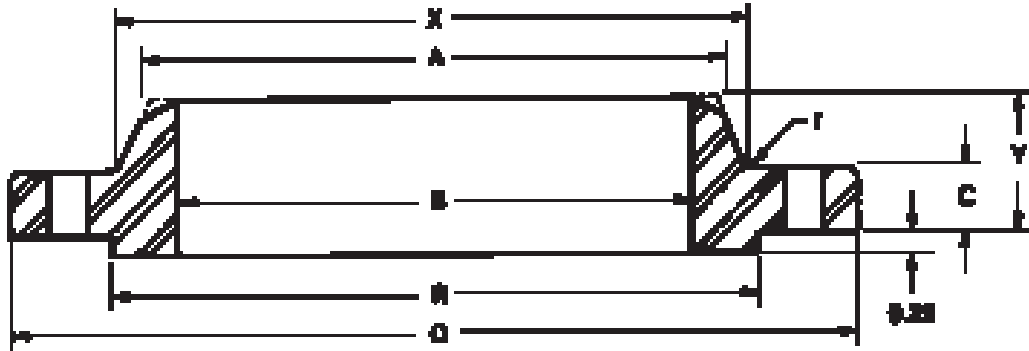
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A Sizes 12" thru 24" identical to ASME B16.5 except when a single taper hub is required.													
26	40.00	4.25	4.94	29.50	29.44	To be specified by purchaser.	8.75	26.00	0.50	36.00	2.00	28	940
28	42.25	4.38	5.18	31.50	31.62		9.25	28.00	0.50	38.00	2.12	28	1060
30	44.50	4.50	5.50	33.75	33.94		9.75	30.00	0.50	40.25	2.12	28	1210
32	47.00	4.62	5.81	36.00	36.12		10.25	32.00	0.50	42.50	2.12	28	1375
34	49.00	4.75	6.06	38.00	38.31		10.62	34.00	0.56	44.50	2.38	28	1540
36	51.75	4.88	6.38	40.25	40.62		11.12	36.00	0.56	47.00	2.62	28	1705
B16.47 Ser B													
26	35.00	4.38	4.38	28.62	27.50	To be specified by purchaser.	7.12	26.00	0.50	31.75	1.75	28	550
28	37.50	4.56	4.56	30.88	29.62		7.50	28.00	0.50	34.00	1.88	28	650
30	40.25	4.94	5.00	33.12	31.75		8.06	30.00	0.50	36.50	2.00	28	810
32	42.75	5.12	5.31	35.25	33.88		8.50	33.00	0.50	38.75	2.12	28	950
34	45.75	5.56	5.68	37.50	36.00		9.19	34.00	0.56	41.50	2.38	24	1205
36	47.75	5.75	5.94	39.75	38.12		9.56	36.00	0.56	43.50	2.38	28	1340

Length thru Hub does not include 1/4" Raised Face.

Class 600

B16.47 Series A B16.47 Series B



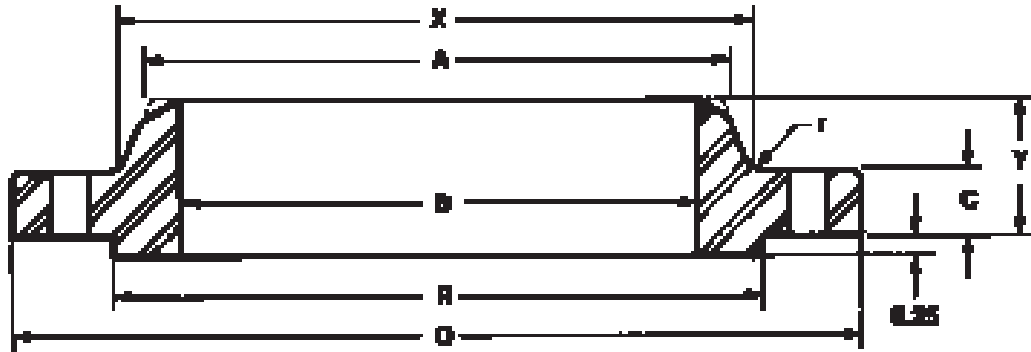
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A and Ser B are identical in sizes 38" thru 60".													
38	50.00	6.00	6.12	41.50	40.25	To be specified by purchaser.	10.00	38.00	0.56	45.75	2.38	28	1470
40	52.00	6.25	6.38	43.75	42.25		10.38	40.00	0.56	47.75	2.38	32	1630
42	55.25	6.62	6.75	46.00	44.38		11.00	42.00	0.56	50.50	2.62	28	2030
44	57.25	6.81	7.00	48.25	46.50		11.38	44.00	0.56	52.50	2.62	32	2160
46	59.50	7.06	7.31	50.25	48.62		11.81	46.00	0.56	54.75	2.62	32	2410
48	62.75	7.44	7.69	52.50	50.75		12.44	48.00	0.56	57.50	2.88	32	2855
50	65.75	7.75	8.00	54.50	52.88		12.94	50.00	0.56	60.00	3.12	28	3330
52	67.75	8.00	8.25	56.50	54.88		13.25	52.00	0.56	62.00	3.12	32	3560
54	70.00	8.25	8.56	58.75	57.00		13.75	54.00	0.56	64.25	3.12	32	3920
56	73.00	8.56	8.88	60.75	59.12		14.25	56.00	0.62	66.75	3.38	32	4280
58	75.00	8.75	9.12	63.00	61.12		14.56	58.00	0.62	68.75	3.38	32	4640
60	78.50	9.19	9.56	65.25	63.38	15.31	60.00	0.69	71.75	3.62	28	5000	

Length thru Hub does not include 1/4" Raised Face.

Class 900

B16.47 Series A B16.47 Series B



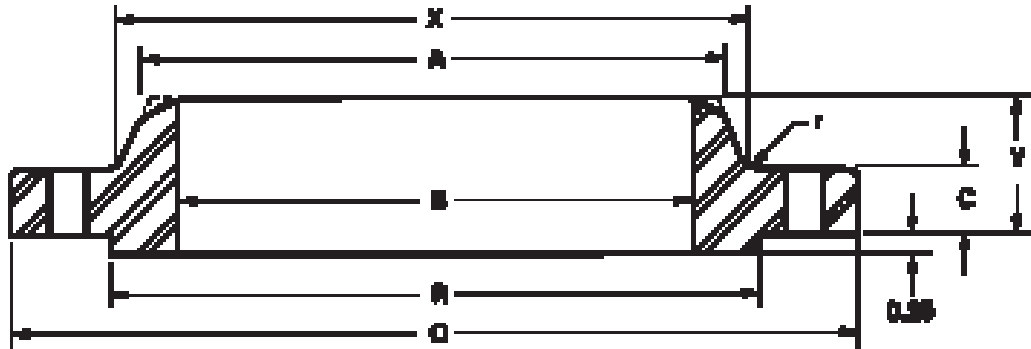
WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A Sizes 12" thru 24" identical to ASME B16.5 except when a single taper hub is required.													
26	42.75	5.50	6.31	29.50	30.50	To be specified by purchaser.	11.25	26.00	0.44	37.50	2.88	20	1525
28	46.00	5.62	6.75	31.50	32.75		11.75	28.00	0.50	40.25	3.12	20	1810
30	48.50	5.88	7.18	33.75	35.00		12.25	30.00	0.50	42.75	3.12	20	2120
32	51.75	6.25	7.62	36.00	37.25		13.00	32.00	0.50	45.50	3.38	20	2545
34	55.00	6.50	8.06	38.00	39.62		13.75	34.00	0.56	48.25	3.62	20	2970
36	57.50	6.75	8.44	40.25	41.88		14.25	36.00	0.56	50.75	3.62	20	3395
B16.47 Ser B													
26	40.25	5.31	6.06	30.00	29.25	10.19	26.00	0.44	35.50	2.62	20	1050	
28	43.50	5.81	6.56	32.25	31.38	10.88	28.00	0.50	38.25	2.88	20	1520	
30	46.50	6.12	6.93	34.50	33.50	11.38	30.00	0.50	40.75	3.12	20	1820	
32	48.75	6.31	7.31	36.50	35.75	11.94	32.00	0.50	43.00	3.12	20	2065	
34	51.75	6.75	7.68	39.00	37.88	12.56	34.00	0.56	45.50	3.38	20	2450	
36	53.00	6.81	7.94	40.50	40.00	12.81	36.00	0.56	47.25	3.12	24	2520	

Length thru Hub does not include 1/4" Raised Face.

Class 900

B16.47 Series A B16.47 Series B



WELDING NECK

Nominal Size	Outside Dia. O	Thickness C		Raised Face Dia. R	Hub Dia. X	Bore B	Length Thru Hub Y	Dia. Hub at Bevel A	Fillet Radius r	Drilling			Approx. Wt. WNF
		WNF	BF							Bolt Circle	Dia. Holes	No. Holes	
B16.47 Ser A and Ser B are identical in sizes 38" thru 48".													
38	57.50	7.50	8.50	43.25	42.25	To be specified by purchaser.	13.88	38.00	0.75	50.75	3.62	20	3385
40	59.50	7.75	8.81	45.75	44.38		14.31	40.00	0.81	52.75	3.62	24	3620
42	61.50	8.12	9.12	47.75	46.31		14.63	42.00	0.81	54.75	3.62	24	3960
44	64.88	8.44	9.56	50.00	48.62		15.38	44.00	0.88	57.62	3.88	24	4300
46	68.25	8.88	10.06	52.50	50.88		16.18	46.00	0.88	60.50	4.12	24	4640
48	70.25	9.19	10.38	54.50	52.88		16.50	48.00	0.94	62.50	4.12	24	4980

Length thru Hub does not include 1/4" Raised Face.

Miscellaneous Information

Special Facings
Bolt and Stud Dimensions
Dimensional Tolerances
Bore Chart

Typical Facings

For Steel Pipe Flanges

Nominal Pipe Size	Outside Dia.						Inside Dia.		Ring Joint	
	Raised Face Large Male Large Tongue; also Pipe Lap	Small Male	Small Tongue	Large Female, Large Groove	Small Female	Small Groove	Large Tongue Small Tongue	Large Groove Small Groove	Pitch Dia.	Depth of Groove
	A	B	C	D	E	F	G	H	P	L
1/2 ★	1.38	0.72	1.38	1.44	0.78	1.44	1.00	0.94		
3/4 ★	1.69	0.94	1.69	1.75	1.00	1.75	1.31	1.25		
1 ★	2.00	1.19	1.88	2.06	1.25	1.94	1.50	1.44		
1 1/4 ★	2.50	1.50	2.25	2.56	1.56	2.31	1.88	1.81		
1 1/2 ★	2.88	1.75	2.50	2.94	1.81	2.56	2.12	2.06		
2 ★	3.62	2.25	3.25	3.69	2.31	3.31	2.88	2.81		
2 1/2	4.12	2.69	3.75	4.19	2.75	3.81	3.38	3.31		
3 ★	5.00	3.31	4.62	5.06	3.38	4.69	4.25	4.19		
3 1/2 ★	5.50	3.81	5.12	5.56	3.88	5.19	4.75	4.69		
4 ★	6.19	4.31	5.69	6.25	4.38	5.75	5.19	5.12		
5 ★	7.31	5.38	6.81	7.38	5.44	6.88	6.31	6.25		
6 ★	8.50	6.38	8.00	8.56	6.44	8.06	7.50	7.44		
8 ★	10.62	8.38	10.00	10.69	8.44	10.06	9.38	9.31		
10	12.75	10.50	12.00	12.81	10.56	12.06	11.25	11.19		
12	15.00	12.50	14.25	15.06	12.56	14.31	13.50	13.44		
14	16.25	13.75	15.50	16.31	13.81	15.56	14.75	14.69		
16	18.50	15.75	17.62	18.56	15.81	17.69	16.75	16.69		
18	21.00	17.75	20.12	21.06	17.81	20.19	19.25	19.19		
20	23.00	19.75	22.00	23.06	19.81	22.06	21.00	20.94		
24	27.25	23.75	26.25	27.31	23.81	26.31	25.25	25.19		

These Dimensions Vary With The Flange Pressure Rating. See Pages 82, 83, and 84.

DIMENSIONS are shown in inches.

1/8" RAISED FACE (Fig. 1) is standard for 150 and 300 lb. Welding Neck, Slip-On, Screwed and Blind Flanges, and is included in the flange thickness.

1/16" RAISED FACE (Fig. 1) is standard for 400 lb. and heavier Welding Neck, Slip-On, Screwed and Blind Flanges, and is *not* included in the flange thickness.

LAP JOINT flanges are commonly furnished without a raised face, the rolled lap on the pipe itself forming a raised contact surface (see Fig. 2).

★ Large Female and Large Groove Class 150 in these sizes will be full faced to O.D. of flange.

Typical Facings

For Steel Pipe Flanges

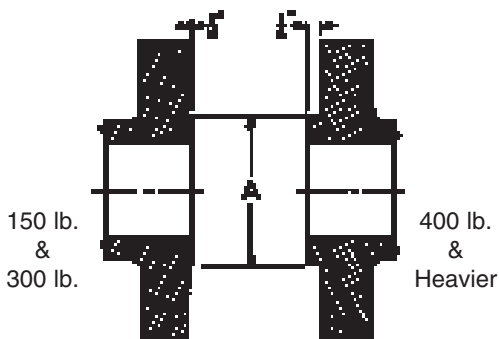


Fig. 1. RAISED FACE

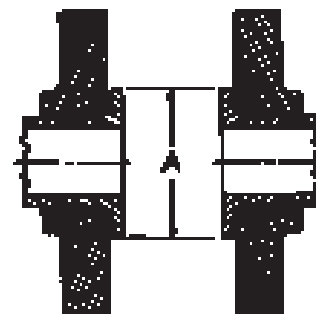


Fig. 2. LAP JOINT

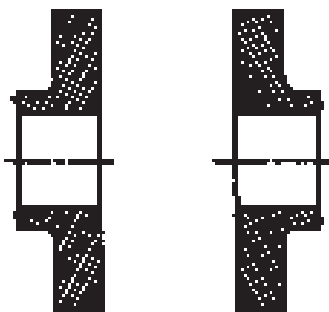


Fig. 3. FLAT FACE

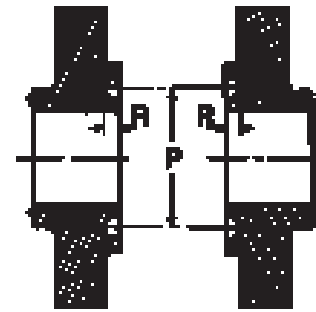


Fig. 4. RING JOINT

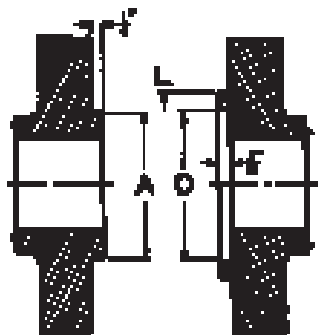


Fig. 5. LARGE MALE AND FEMALE

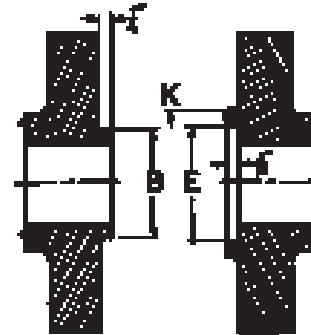


Fig. 6. SMALL MALE AND FEMALE

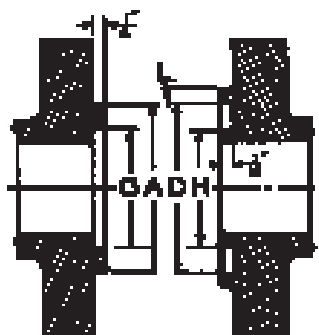


Fig. 7. LARGE TONGUE AND GROOVE

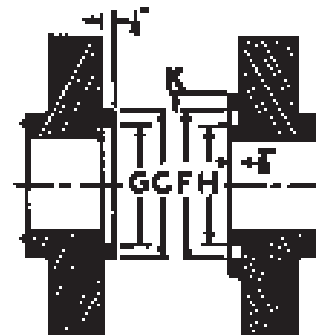
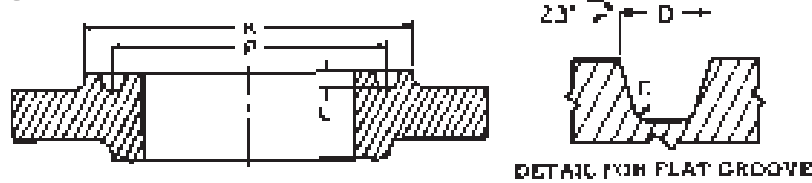


Fig. 8. SMALL TONGUE AND GROOVE

See Dimensions and Notes

Facing Dimensions for Ring Joints

ASME B16.5

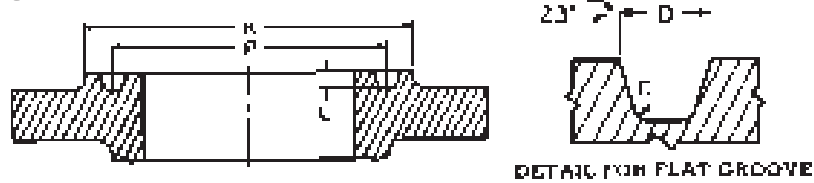


For 150 LB. Flanges						
Nominal Pipe Size	Pitch Dia. of Ring and Groove P	Dia. of Raised Face K	Groove		Ring	Approx. Distance Between Flanges When Joint is Compressed
			Width D	Depth L	Ring No.	
1	1.875	2.50	0.344	0.250	R15	0.16
1 1/4	2.250	2.88	0.344	0.250	R17	0.16
1 1/2	2.562	3.25	0.344	0.250	R19	0.16
2	3.250	4.00	0.344	0.250	R22	0.16
2 1/2	4.000	4.75	0.344	0.250	R25	0.16
3	4.500	5.25	0.344	0.250	R29	0.16
3 1/2	5.188	6.06	0.344	0.250	R33	0.16
4	5.875	6.75	0.344	0.250	R36	0.16
5	6.750	7.62	0.344	0.250	R40	0.16
6	7.625	8.62	0.344	0.250	R43	0.16
8	9.750	10.75	0.344	0.250	R48	0.16
10	12.000	13.00	0.344	0.250	R52	0.16
12	15.000	16.00	0.344	0.250	R56	0.16
14	15.625	16.75	0.344	0.250	R59	0.12
16	17.875	19.00	0.344	0.250	R64	0.12
18	20.375	21.50	0.344	0.250	R68	0.12
20	22.000	23.50	0.344	0.250	R72	0.12
24	26.500	28.00	0.344	0.250	R76	0.12

For 300, 400 and 600 LB. Flanges								
Nominal Pipe Size	Pitch Dia. of Ring and Groove P	Dia. of Raised Face K	Groove		Ring	Approx. Distance Between Flanges When Joint is Compressed		
			Width D	Depth L	Ring No.	300 lb.	400 lb.	600 lb.
1/2	1.344	2.00	0.281	0.219	R11	0.12	0.12	0.12
3/4	1.688	2.50	0.344	0.250	R13	0.16	0.16	0.16
1	2.000	2.75	0.344	0.250	R16	0.16	0.16	0.16
1 1/4	2.375	3.12	0.344	0.250	R18	0.16	0.16	0.16
1 1/2	2.688	3.56	0.344	0.250	R20	0.16	0.16	0.16
2	3.250	4.25	0.469	0.312	R23	0.22	0.19	0.19
2 1/2	4.000	5.00	0.469	0.312	R26	0.22	0.19	0.19
3	4.875	5.75	0.469	0.312	R31	0.22	0.19	0.19
3 1/2	5.188	6.25	0.469	0.312	R34	0.22	0.19	0.19
4	5.875	6.88	0.469	0.312	R37	0.22	0.22	0.19
5	7.125	8.25	0.469	0.312	R41	0.22	0.22	0.19
6	8.312	9.50	0.469	0.312	R45	0.22	0.22	0.19
8	10.625	11.88	0.469	0.312	R49	0.22	0.22	0.19
10	12.750	14.00	0.469	0.312	R53	0.22	0.22	0.19
12	15.000	16.25	0.469	0.312	R57	0.22	0.22	0.19
14	16.500	18.00	0.469	0.312	R61	0.22	0.22	0.19
16	18.500	20.00	0.469	0.312	R65	0.22	0.22	0.19
18	21.000	22.62	0.469	0.312	R69	0.22	0.22	0.19
20	23.000	25.00	0.531	0.375	R73	0.22	0.22	0.19
24	27.250	29.50	0.656	0.438	R77	0.25	0.25	0.22

Facing Dimensions for Ring Joints

ASME B16.5



For 900 LB. Flanges						
Nominal Pipe Size	Pitch Dia. of Ring and Groove P	Dia. of Raised Face K	Groove		Ring	Approx. Distance Between Flanges When Joint is Compressed
			Width D	Depth L	Ring No.	
1/2	1.562	2.38	0.344	0.250	R12	0.16
3/4	1.750	2.62	0.344	0.250	R14	0.16
1	2.000	2.81	0.344	0.250	R16	0.16
1 1/4	2.375	3.19	0.344	0.250	R18	0.16
1 1/2	2.688	3.62	0.344	0.250	R20	0.16
2	3.750	4.88	0.469	0.312	R24	0.12
2 1/2	4.250	5.38	0.469	0.312	R27	0.12
3	4.875	6.12	0.469	0.312	R31	0.16
4	5.875	7.12	0.469	0.312	R37	0.16
5	7.125	8.50	0.469	0.312	R41	0.16
6	8.312	9.50	0.469	0.312	R45	0.16
8	10.625	12.12	0.469	0.312	R49	0.16
10	12.750	14.25	0.469	0.312	R53	0.16
12	15.000	16.50	0.469	0.312	R57	0.16
14	16.500	18.38	0.656	0.438	R62	0.16
16	18.500	20.62	0.656	0.438	R66	0.16
18	21.000	23.38	0.781	0.500	R70	0.19
20	23.000	25.50	0.781	0.500	R74	0.19
24	27.250	30.38	1.062	0.625	R78	0.22

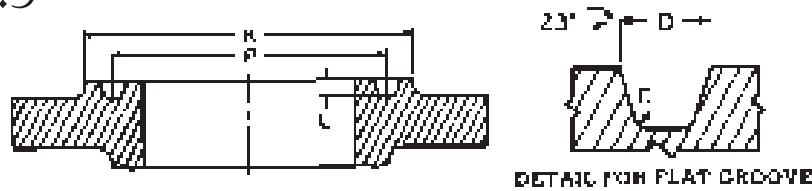
For 1500 LB. Flanges						
Nominal Pipe Size	Pitch Dia. of Ring and Groove P	Dia. of Raised Face K	Groove		Ring	Approx. Distance Between Flanges When Joint is Compressed
			Width D	Depth L	Ring No.	
1/2	1.562	2.38	0.344	0.250	R12	0.16
3/4	1.750	2.62	0.344	0.250	R14	0.16
1	2.000	2.81	0.344	0.250	R16	0.16
1 1/4	2.375	3.19	0.344	0.250	R18	0.16
1 1/2	2.688	3.62	0.344	0.250	R20	0.16
2	3.750	4.88	0.469	0.312	R24	0.12
2 1/2	4.250	5.38	0.469	0.312	R27	0.12
3	5.375	6.62	0.469	0.312	R35	0.12
4	6.375	7.62	0.469	0.312	R39	0.12
5	7.625	9.00	0.469	0.312	R44	0.12
6	8.312	9.75	0.531	0.375	R46	0.12
8	10.625	12.50	0.656	0.438	R50	0.16
10	12.750	14.62	0.656	0.438	R54	0.16
12	15.000	17.25	0.906	0.562	R58	0.19
14	16.500	19.25	1.062	0.625	R63	0.22
16	18.500	21.50	1.188	0.688	R67	0.31
18	21.000	24.12	1.188	0.688	R71	0.31
20	23.000	26.50	1.312	0.688	R75	0.38
24	27.250	31.25	1.438	0.812	R79	0.44

CORNER RADIUS "r" is 0.03" for 0.469" groove width and smaller; 0.06" for groove widths 0.531" to 0.906" inclusive and 0.09" for groove widths 1.062" and larger.

FLAT-BOTTOMED GROOVE, as shown in detail above, will be furnished unless otherwise specified.

Facing Dimensions For Ring Joints

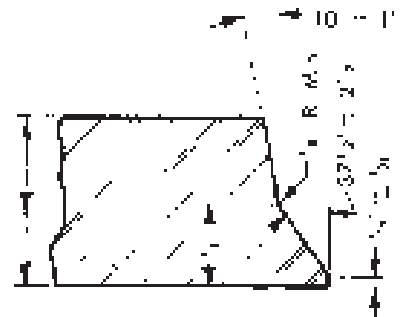
ASME B16.5



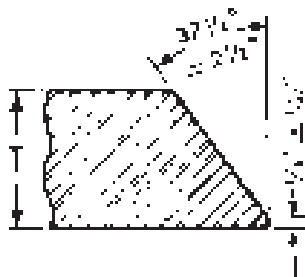
For 2500 LB. Flanges						
Nominal Pipe Size	Pitch Dia. of Ring and Groove P	Dia. of Raised Face K	Groove		Ring No.	Approx. Distance Between Flanges When Joint is Compressed
			Width D	Depth L		
1/2	1.688	2.56	0.344	0.250	R13	0.16
3/4	2.000	2.88	0.344	0.250	R16	0.16
1	2.375	3.25	0.344	0.250	R18	0.16
1 1/4	2.844	4.00	0.469	0.312	R21	0.12
1 1/2	3.250	4.50	0.469	0.312	R23	0.12
2	4.000	5.25	0.469	0.312	R26	0.12
2 1/2	4.380	5.88	0.531	0.375	R28	0.12
3	5.000	6.62	0.531	0.375	R32	0.12
4	6.188	8.00	0.656	0.438	R38	0.16
5	7.500	9.50	0.781	0.500	R42	0.16
6	9.000	11.00	0.781	0.500	R47	0.16
8	11.000	13.38	0.906	0.562	R51	0.19
10	13.500	16.75	1.188	0.688	R55	0.25
12	16.000	19.50	1.312	0.688	R60	0.31

Beveling Standards

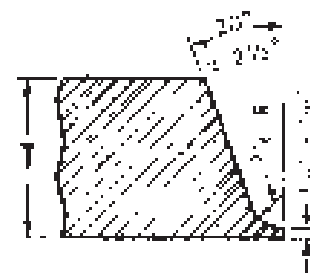
For wall thicknesses through 0.88", a straight 37.5° bevel with a 0.06" land is provided for fittings and flanges. For wall thicknesses greater than 0.88", a compound bevel is furnished. Also, for wall thicknesses above 0.75", a U bevel can be furnished if specified.



Compound bevel for thicknesses greater than 0.88"



37.5° bevel for wall thicknesses through 0.88"



20° U-bevel for all thicknesses above 0.75"

Note: All nominal Pipe Sizes in materials covered by ASME B16.9 are beveled as shown. Other bevels available upon request.

Ring Joint Dimensions

B16.47, Ser. A

Class 300, 400 and 600

Facing Dimensions Ring-Type Joint						Groove Fillet Radius
Flange Size	*Facing Dia.	Depth of Groove	Pitch Dia.	Width of Groove	Ring Number	
26	31.88	0.500	29.500	0.781	R93	0.06
28	33.88	0.500	31.500	0.781	R94	0.06
30	36.12	0.500	33.750	0.781	R95	0.06
32	38.75	0.562	36.000	0.906	R96	0.06
34	40.75	0.562	38.000	0.906	R97	0.06
36	43.00	0.562	40.250	0.906	R98	0.06

Class 900

Facing Dimensions Ring-Type Joint						Groove Fillet Radius
Flange Size	*Facing Dia.	Depth of Groove	Pitch Dia.	Width of Groove	Ring Number	
26	32.75	0.688	29.500	1.188	R100	0.09
28	35.00	0.688	31.500	1.312	R101	0.09
30	37.25	0.688	33.750	1.312	R102	0.09
32	39.50	0.688	36.000	1.312	R103	0.09
34	42.00	0.812	38.000	1.438	R104	0.09
36	44.25	0.812	40.250	1.438	R105	0.09

* Full face contour may be used.

Bolt and Stud Dimensions

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Nominal Pipe Size	150 LB. Flanges ⁽³⁾				300 LB. Flanges ⁽³⁾				400 LB. Flanges ⁽⁴⁾		
	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Bolts A	Length of Studs B	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Bolts A	Length of Studs B	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Studs B
1/2	4	0.50	2.00	2.25	4	0.50	2.25	2.50	*	*	*
3/4	4	0.50	2.00	2.50	4	0.62	2.50	3.00	*	*	*
1	4	0.50	2.25	2.50	4	0.62	2.50	3.00	*	*	*
1 1/4	4	0.50	2.25	2.75	4	0.62	2.75	3.25	*	*	*
1 1/2	4	0.50	2.50	2.75	4	0.75	3.00	3.50	*	*	*
2	4	0.62	2.75	3.25	8	0.62	3.00	3.50	*	*	*
2 1/2	4	0.62	3.00	3.50	8	0.75	3.25	4.00	*	*	*
3	4	0.62	3.00	3.50	8	0.75	3.50	4.25	*	*	*
3 1/2	8	0.62	3.00	3.50	8	0.75	3.75	4.25	*	*	*
4	8	0.62	3.00	3.50	8	0.75	3.75	4.50	8	0.88	5.50
5	8	0.75	3.25	3.75	8	0.75	4.25	4.75	8	0.88	5.75
6	8	0.75	3.25	4.00	12	0.75	4.25	4.75	12	0.88	6.00
8	8	0.75	3.50	4.25	12	0.88	4.75	5.50	12	1.00	6.75
10	12	0.88	4.00	4.50	16	1.00	5.50	6.25	16	1.12	7.50
12	12	0.88	4.00	4.75	16	1.12	5.75	6.75	16	1.25	8.00
14	12	1.00	4.50	5.25	20	1.12	6.25	7.00	20	1.25	8.25
16	16	1.00	4.50	5.25	20	1.25	6.50	7.50	20	1.38	8.75
18	16	1.12	5.00	5.75	24	1.25	6.75	7.75	24	1.38	9.00
20	20	1.12	5.50	6.25	24	1.25	7.25	8.00	24	1.50	9.50
24	20	1.25	6.00	6.75	24	1.50	8.00	9.00	24	1.75	10.50

Nominal Pipe Size	600 LB. Flanges ⁽⁴⁾			900 LB. Flanges ⁽⁴⁾			1500 LB. Flanges ⁽⁴⁾			2500 LB. Flanges ⁽⁴⁾		
	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Studs B	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Studs B	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Studs B	No. of Bolts or Studs	Dia. of Bolts or Studs	Length of Studs B
1/2	4	0.50	3.00	†	†	†	4	0.75	4.25	4	0.75	4.75
3/4	4	0.62	3.50	†	†	†	4	0.75	4.50	4	0.75	5.00
1	4	0.62	3.50	†	†	†	4	0.88	5.00	4	0.88	5.50
1 1/4	4	0.62	3.75	†	†	†	4	0.88	5.00	4	1.00	6.00
1 1/2	4	0.75	4.25	†	†	†	4	1.00	5.50	4	1.12	6.75
2	8	0.62	4.25	†	†	†	8	0.88	5.75	8	1.00	7.00
2 1/2	8	0.75	4.75	†	†	†	8	1.00	6.25	8	1.13	7.75
3	8	0.75	5.00	8	0.88	5.75	8	1.12	7.00	8	1.25	8.75
3 1/2	8	0.88	5.50	—	—	—	—	—	—	—	—	—
4	8	0.88	5.75	8	1.12	6.75	8	1.25	7.75	8	1.50	10.00
5	8	1.00	6.50	8	1.25	7.50	8	1.50	9.75	8	1.75	11.75
6	12	1.00	6.75	12	1.12	7.50	12	1.38	10.25	8	2.00	13.50
8	12	1.12	7.50	12	1.38	8.75	12	1.62	11.50	12	2.00	15.00
10	16	1.25	8.50	16	1.38	9.25	12	1.88	13.25	12	2.50	19.25
12	20	1.25	8.75	20	1.38	10.00	16	2.00	14.75	12	2.75	21.25
14	20	1.38	9.25	20	1.50	10.75	16	2.25	16.00	—	—	—
16	20	1.50	10.00	20	1.62	11.25	16	2.50	17.50	—	—	—
18	20	1.62	10.75	20	1.88	12.75	16	2.75	19.50	—	—	—
20	24	1.62	11.25	20	2.00	13.75	16	3.00	21.25	—	—	—
24	24	1.88	13.00	20	2.50	17.25	16	3.50	24.25	—	—	—

(1) All dimensions in inches.

(2) Lengths include allowance for pulling-up.

(3) Length based on .06" raised faced Welding Neck, Slip-On, Screwed or Blind Flanges. For lap joint, add the thickness of both laps.

(4) Length based on 0.25" raised faced Welding Neck, Slip-On, Screwed or Blind Flanges. For lap joint, add the thickness of both laps and subtract 0.50". For male and female or tongue and groove flange faces, subtract 0.25".

* Same as 600 lb. flanges. † Same as 1500 lb. flanges.

Bore Chart

Nominal Wall Thickness														
Nominal Size	Nominal Outside Dia.	Sched 10†	Sched. 20	Sched. 30	STD§ WALL	Sched. 40	Sched. 60	EX.# STG.	Sched. 80	Sched. 100	Sched. 120	Sched. 140	Sched. 160	XX STG.
1/2	0.840	0.083	—	—	0.109	0.109	—	0.147	0.147	—	—	—	0.188	0.294
3/4	1.050	0.083	—	—	0.113	0.113	—	0.154	0.154	—	—	—	0.219	0.308
1	1.315	0.109	—	—	0.133	0.133	—	0.179	0.179	—	—	—	0.250	0.358
1 1/4	1.660	0.109	—	—	0.140	0.140	—	0.191	0.191	—	—	—	0.250	0.382
1 1/2	1.990	0.109	—	—	0.145	0.145	—	0.200	0.200	—	—	—	0.281	0.400
2	2.375	0.120	—	—	0.154	0.154	—	0.218	0.218	—	—	—	0.344	0.436
2 1/2	2.875	0.120	—	—	0.203	0.203	—	0.276	0.276	—	—	—	0.375	0.552
3	3.500	0.120	—	—	0.216	0.216	—	0.300	0.300	—	—	—	0.438	0.600
3 1/2	4.000	0.120	—	—	0.226	0.226	—	0.318	0.318	—	—	—	—	0.636
4	4.500	0.134	—	—	0.237	0.237	—	0.337	0.337	—	0.438	—	0.531	0.674
5	5.563	0.134	—	—	0.258	0.258	—	0.375	0.375	—	0.500	—	0.625	0.750
6	6.625	0.134	—	—	0.280	0.280	—	0.432	0.432	—	0.562	—	0.719	0.864
8	8.625	0.148	0.250	0.277	0.322	0.322	0.406	0.500	0.500	0.594	0.719	0.812	0.906	0.875
10	10.750	0.165	0.250	0.307	0.365	0.365	0.500	0.500	0.594	0.719	0.844	1.000	1.125	1.000
12	12.750	0.180	0.250	0.330	0.375	0.406	0.562	0.500	0.688	0.844	1.000	1.125	1.312	1.000
14	14.000	0.250	0.312	0.375	0.375	0.438	0.656	0.500	0.750	0.938	1.094	1.250	1.406	—
16	16.000	0.250	0.312	0.375	0.375	0.500	0.750	0.500	0.844	1.031	1.219	1.438	1.594	—
18	18.000	0.250	0.312	0.438	0.375	0.562	0.812	0.500	0.938	1.156	1.375	1.562	1.781	—
20	20.000	0.250	0.375	0.500	0.375	0.594	—	0.500	1.031	1.218	1.500	1.750	1.969	—
22	22.000	0.250	—	—	0.375	—	0.969	0.500	—	—	—	—	—	—
24	24.000	0.250	0.375	0.562	0.375	0.688	—	0.500	1.219	1.531	1.812	2.062	2.344	—
26	26.000	—	—	—	0.375	—	—	0.500	—	—	—	—	—	—
30	30.000	0.312	0.500	0.625	0.375	—	—	0.500	—	—	—	—	—	—
36	36.000	0.312	0.500	0.625	0.375	0.750	—	0.500	—	—	—	—	—	—
40	40.000	—	—	—	0.375	—	—	0.500	—	—	—	—	—	—
42	42.000	—	—	—	0.375	—	—	0.500	—	—	—	—	—	—
48	48.000	—	—	—	0.375	—	—	0.500	—	—	—	—	—	—

Nominal Inside Diameter														
1/2	0.840	0.674	—	—	0.622	0.622	—	0.546	0.546	—	—	—	0.464	0.252
3/4	1.050	0.884	—	—	0.824	0.824	—	0.742	0.742	—	—	—	0.612	0.434
1	1.315	1.097	—	—	1.049	1.049	—	0.957	0.957	—	—	—	0.815	0.599
1 1/4	1.660	1.442	—	—	1.380	1.380	—	1.278	1.278	—	—	—	1.160	0.896
1 1/2	1.900	1.682	—	—	1.610	1.610	—	1.500	1.500	—	—	—	1.338	1.100
2	2.375	2.157	—	—	2.067	2.067	—	1.939	1.939	—	—	—	1.687	1.503
2 1/2	2.875	2.635	—	—	2.469	2.469	—	2.323	2.323	—	—	—	2.125	1.771
3	3.500	3.260	—	—	3.068	3.068	—	2.900	2.900	—	—	—	2.624	2.300
3 1/2	4.000	3.760	—	—	3.548	3.548	—	3.364	3.364	—	—	—	—	2.726
4	4.500	4.260	—	—	4.026	4.026	—	3.826	3.826	—	3.624	—	3.438	3.152
5	5.563	5.295	—	—	5.047	5.047	—	4.813	4.813	—	4.563	—	4.313	4.063
6	6.625	6.357	—	—	6.065	6.065	—	5.761	5.761	—	5.501	—	5.187	4.897
8	8.625	8.329	8.125	8.071	7.981	7.981	7.813	7.625	7.625	7.437	7.187	7.001	6.813	6.875
10	10.750	10.420	10.250	10.136	10.020	10.020	9.750	9.750	9.562	9.312	9.062	8.750	8.500	8.750
12	12.750	12.390	12.250	12.090	12.000	11.938	11.626	11.750	13.374	11.062	10.750	10.500	10.126	10.750
14	14.000	13.500	13.376	13.250	13.250	13.124	12.812	13.000	12.500	12.124	11.812	11.500	11.188	—
16	16.000	15.500	15.376	15.250	15.250	15.000	14.688	15.000	14.312	13.938	13.562	13.124	12.812	—
18	18.000	17.500	17.376	17.124	17.250	16.876	16.500	17.000	16.124	15.688	15.250	14.876	14.438	—
20	20.000	19.500	19.250	19.000	19.250	18.812	18.376	19.000	17.938	17.438	17.000	16.500	16.062	—
22	22.000	21.500	—	—	21.250	—	—	21.000	—	—	—	—	—	—
24	24.000	23.500	23.250	22.876	23.250	22.624	22.062	23.000	21.562	20.938	20.376	19.876	19.312	—
26	26.000	—	—	—	25.250	—	—	25.000	—	—	—	—	—	—
30	30.000	29.376	29.000	28.750	29.250	—	—	29.000	—	—	—	—	—	—
36	36.000	35.376	35.000	34.750	35.250	34.500	—	35.000	—	—	—	—	—	—
40	40.000	—	—	—	39.250	—	—	39.000	—	—	—	—	—	—
42	42.000	—	—	—	41.250	—	—	41.000	—	—	—	—	—	—
48	48.000	—	—	—	47.250	—	—	47.000	—	—	—	—	—	—

† Schedule 10 for sizes 14" and larger. Sizes 12" and smaller are Light Wall Thickness, or Stainless Steel Schedule 10S.

Extra Strong Wall Thicknesses are identical to Stainless Steel Schedule 80S in sizes thru 12".

§ Standard Wall Thicknesses are identical to Stainless Steel Schedule 40S in sizes thru 12".

Dimensional Tolerances for Tex Met Forged Pipe Flanges

Listed below are the Dimensional Tolerances to which Tex Met flanges are manufactured. These tolerances are a part of ASME B16.5 except where noted otherwise. The limits given are maximum, and Tex Met products

will normally run much closer to nominal dimensions than to these permitted extremes. Rigid inspection procedures assure the maintenance of high standards of accuracy in regular day to day production.

Threaded, Socket-Welded, Slip-On, Lap Joint and Blind			Welding Neck		
Inside Dia.	Threaded	To Standard Gauge Limits	Inside Dia.	10" and Smaller	± 0.03" (0.8mm)
	Socket-Welding Slip-On and Lap Joint	10" and Smaller + 0.03" (0.8mm), - 0" 12" and Larger + 0.06" (1.6mm), - 0"		12" thru 18"	± 0.06" (1.6mm)
Dia. of Contact Face	0.06" Raised Face	± 0.03" (0.8mm)	Dia. of Contact Face	20" thru 42"	+ 0.12" (3.2mm), - 0.06" (1.6mm)
	0.25" Raised Face Tongue and Groove Male, Female	± 0.02" (0.5mm)		0.06" Raised Face	± 0.03" (0.8mm)
Dia. of Counterbore	10" and Smaller	+ 0.03" (0.8mm), - 0"	Dia. of Hub at Point of Welding	0.25" Raised Face Tongue and Groove Male, Female	± 0.02" (0.5mm)
	12" thru 42"	+ 0.06" (1.6mm), - 0"		5" and Smaller	+ 0.09" (2.4mm), - 0.03" (0.8mm)
Drilling	Bolt Circle	± 0.06" (1.6mm)	Drilling	6" and Larger	+ 0.16" (4.0mm), - 0.03" (0.8mm)
	Bolt hole spacing	± 0.03" (0.8mm)		Bolt Circle	± 0.06" (1.6mm)
	Eccentricity of Bolt Circle with Respect to Facing	2 1/2" and Smaller 0.03" Max. (0.8mm)		Bolt hole spacing	± 0.03" (0.8mm)
		3" and Larger 0.06" Max. (1.6mm)		Eccentricity of Bolt Circle with Respect to Facing	2 1/2" and Smaller 0.03" Max. (0.8mm)
Thickness	18" and Smaller	+ 0.12" (3.2mm), - 0"	Thickness	3" and Larger	0.06" Max. (1.6mm)
	20" thru 42"	+ 0.19" (4.8mm), - 0"		18" and Smaller	+ 0.12" (3.2mm), - 0"
Ring Joint Facing			Length Thru Hub	Over 18"	+ 0.19" (4.8mm), - 0"
Depth	Dimension L	± 0.016" (0.4mm), - 0"		4" and Smaller	+ 0.06", - 0"
Width	Dimension D	± 0.008"	5" to 10" inclusive	+ 0.06", - 0.12"	
Pitch Dia.	Dimension P	± 0.005"	12" and Larger	+ 0.12", - 0.18"	
Rad. at Bottom	0.06" and Smaller Larger than 0.06"	+ 0.03" - 0" ± 0.03"	Inside and outside diameter of large and small tongue and groove and female ± 0.02".		
Angle	23° Angle	± 1/2°	For orifice flanges (not covered by ASME B16.5) the usual tolerance on the dimension 0.94" is ± 0.02" for sizes 3" and smaller, ± 0.03" for sizes 4" and larger. Regular flange tolerances apply to all other dimensions.		
B16.47 Series A Rad. @ Bottom		Max			