

Kerkau Manufacturing



B16.5 Flange Book



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Revision 1

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*NOTE: This book is based on ASME B16.5 2009. For accuracy, some sections have been taken directly from the standard.

The information in this catalog was compiled from industry standards and sources that Kerkau Manufacturing believes to be credible and reliable. Kerkau however, does not guarantee the accuracy of this data.



FLANGE TOLERANCES

GENERAL NOTE: Dimensions are in inches.

*Outside Diameter of Flange (dimension O)

OD ≤ 12	± 0.060
OD $> 12, \leq 24$	± 0.120
OD > 24	± 0.190

Thickness of Flange (dimension C)

Raised Face, Class 400 and above Flat Face, RTJ, Tongue, Groove, Male and Female Face Flanges

NPS 18 and smaller	$+0.120, -zero$
NPS 20 and larger	$+0.190, -zero$

Class 150 & 300 Flat Face Flanges

NPS 18 and smaller	$+0.120, -0.060$
NPS 20 and larger	$+0.190, -0.060$

Hub

*Diameter of hub at base (dimension X)

NPS 5 and smaller	± 0.030
NPS 6 and larger	± 0.060

Taper of hub

$\leq 7^\circ$

Outside diameter of welding end of welding neck flanges (dimension A)

NPS 5 and smaller	$+0.09, -0.03$
NPS 6 and larger	$+0.16, -0.03$

Wall thickness (welding neck flanges)

min. 87.5% of the nominal

*Depth of Socket (dimension D)

± 0.010

Length Through Hub (dimension Y)

Welding Neck

NPS 4 and smaller	± 0.060
NPS 5 to 10, inclusive	$+0.060, -0.120$
NPS 12 and larger	$+0.120, -0.180$

*Slip-On, Threaded, Socket Welding and Lapped

NPS 10 and smaller	± 0.060
NPS 12 and larger	± 0.120

Bore

Lapped and Slip-On, Counter-bore Threaded and Socket Welding (dimensions B and Q)

NPS 10 and smaller	$+0.030, -zero$
NPS 12 and larger	$+0.060, -zero$

Socket Welding (dimension B)

NPS 1/2" to 3"	± 0.010
----------------	-------------

Welding Neck and Socket Welding (dimension J)

NPS 10 and smaller	± 0.030
NPS 12 to 18, inclusive	± 0.060
NPS 20 and larger	$+0.120, -0.060$

Facings

*Facing Height

± 0.010

Diameter of raised face (dimensions R & K)

Class 150, 300 (0.06 in. raised face) ± 0.030

Class 400 + (0.25 in. raised face) ± 0.020

Ring Type Joint $+0.020, -zero$

Inside and outside diameter of large and small tongue, groove, male and female

R, S, T, U, W, X, Y & Z ± 0.020

K & L $+0.020, -zero$

Ring Joint Facing

Depth (dimension E)

$+0.016, -zero$

Width (dimension F)

± 0.008

Pitch diameter (dimension P)

± 0.005

Radius at bottom (dimension R)

$R \leq 0.060$ $+0.030, -zero$

$R > 0.060$ ± 0.030

23 degree angle

$\pm 1/2$ deg.

Drilling and Facing

Diameter of bolt circle

± 0.060

Center-to-center of adjacent bolt holes

± 0.030

Eccentricity between bolt circle and diameter and machined facing diameters

NPS 2 1/2 and smaller ± 0.030

NPS 3 and larger ± 0.060

*Diameter of bolt holes

± 0.020

Note: Tolerances marked with an * are Kerkau Tolerances

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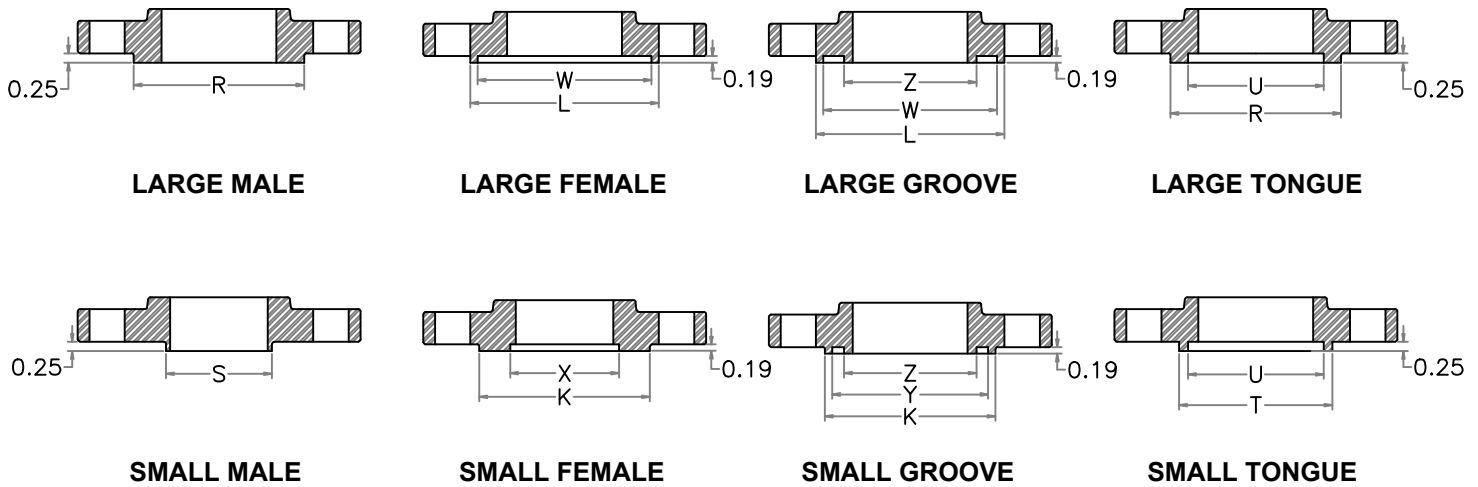
PERMISSIBLE IMPERFECTIONS

GENERAL NOTE: Dimensions are in inches.

Nominal Pipe Size	Maximum Radial Projection of Imperfections Which Are No Deeper Than the Bottom of the Serrations	Maximum Depth and Radial Projection of Imperfections Which Are Deeper Than the Bottom of the Serrations
1/2	0.12	0.06
3/4	0.12	0.06
1	0.12	0.06
1-1/4	0.12	0.06
1-1/2	0.12	0.06
2	0.12	0.06
2-1/2	0.12	0.06
3	0.18	0.06
3-1/2	0.25	0.12
4	0.25	0.12
5	0.25	0.12
6	0.25	0.12
8	0.31	0.18
10	0.31	0.18
12	0.31	0.18
14	0.31	0.18
16	0.38	0.18
18	0.50	0.25
20	0.50	0.25
24	0.50	0.25

NOTES:

Imperfections in the flange facing finish shall not exceed the dimensions shown in the table above. Adjacent imperfections shall be separated by a distance of at least four times the maximum radial projection. A radial projection shall be measured by the difference between an outer radius and an inner radius encompassing the imperfection where the radii are struck from the centerline of the bore. Imperfections less than half the depth of the serrations shall not be considered cause for rejection. Protrusions above the serrations are not permitted.



ASME B16.5 FLANGE FACING DIMENSIONS

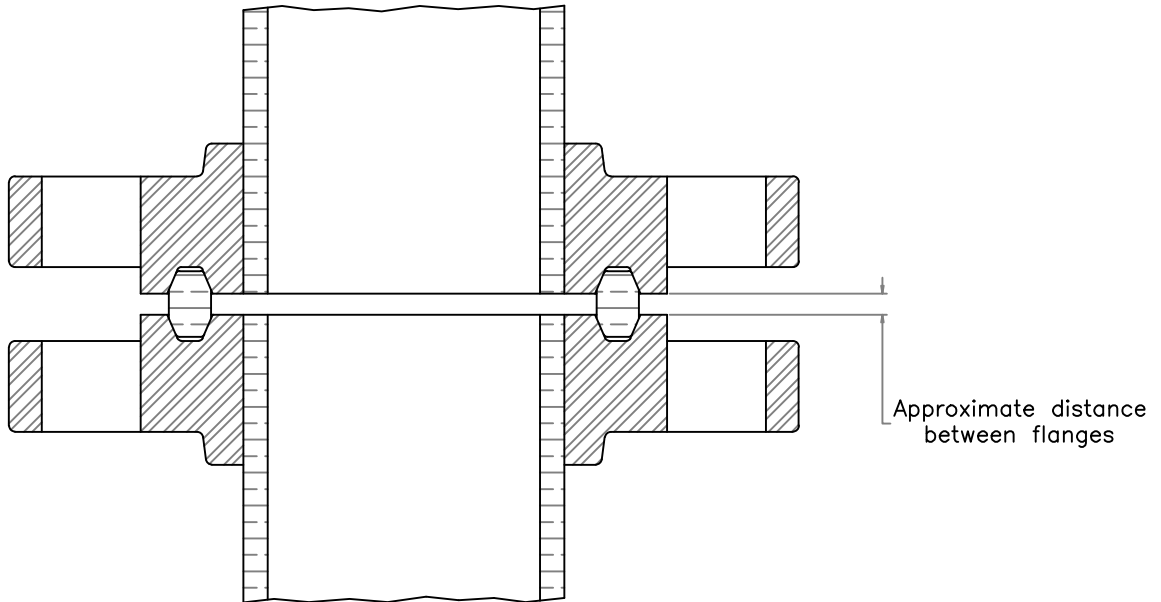
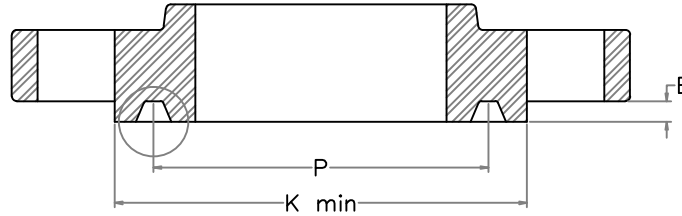
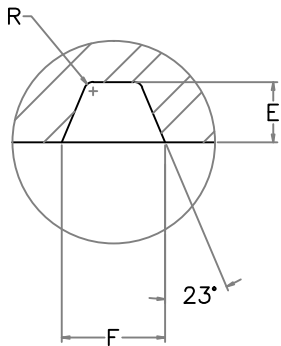
(ALL PRESSURE RATING CLASSES)

GENERAL NOTE: Dimensions are in inches.

1	2	3	4	5	6	7	8	9	10	11
Nominal Pipe Size	Raised Face Large Male and Large Tongue R	Small Male S	Small Tongue T	Inside Diameter of Large and Small Tongue U	Large Female and Large Groove W	Small Female X	Small Groove Y	Inside Diameter of Large and Small Groove Z	Small Female and Groove K min.	Large Female and Groove L min.
1/2	1.38	0.72	1.38	1.00	1.44	0.78	1.44	0.94	1.75	1.81
3/4	1.69	0.94	1.69	1.31	1.75	1.00	1.75	1.25	2.06	2.12
1	2.00	1.19	1.88	1.50	2.06	1.25	1.94	1.44	2.25	2.44
1-1/4	2.50	1.50	2.25	1.88	2.56	1.56	2.31	1.81	2.62	2.94
1-1/2	2.88	1.75	2.50	2.12	2.94	1.81	2.56	2.06	2.88	3.31
2	3.62	2.25	3.25	2.88	3.69	2.31	3.31	2.81	3.62	4.06
2-1/2	4.12	2.69	3.75	3.38	4.19	2.75	3.81	3.31	4.12	4.56
3	5.00	3.31	4.62	4.25	5.06	3.38	4.69	4.19	5.00	5.44
3-1/2	5.50	3.81	5.12	4.75	5.56	3.88	5.19	4.69	5.50	5.94
4	6.19	4.31	5.69	5.19	6.25	4.38	5.75	5.12	6.19	6.62
5	7.31	5.38	6.81	6.31	7.38	5.44	6.88	6.25	7.31	7.75
6	8.50	6.38	8.00	7.50	8.56	6.44	8.06	7.44	8.50	8.94
8	10.62	8.38	10.00	9.38	10.69	8.44	10.06	9.31	10.62	11.06
10	12.75	10.50	12.00	11.25	12.81	10.56	12.06	11.19	12.75	13.19
12	15.00	12.50	14.25	13.50	15.06	12.56	14.31	13.44	15.00	15.44
14	16.25	13.75	15.50	14.75	16.31	13.81	15.56	14.69	16.25	16.69
16	18.50	15.75	17.62	16.75	18.56	15.81	17.69	16.69	18.50	18.94
18	21.00	17.75	20.12	19.25	21.06	17.81	20.19	19.19	21.00	21.44
20	23.00	19.75	22.00	21.00	23.06	19.81	22.06	20.94	23.00	23.44
24	27.25	23.75	26.25	25.25	27.31	23.81	26.31	25.19	27.25	27.69

- Notes: 1) Ring joint facings follow on the next pages.
 2) For raised face dimensions, see Dimensions of Flanges.
 3) Large male and female faces and large tongue and groove are not applicable to Class 150 because of potential dimensional conflicts.
 4) Large male and raised face flanges are identical in Class 400 and above.
 5) The gasket contact surface shall not exceed 125 μ in. roughness for tongue and groove and small male and female.
 6) The gasket contact surface for large male and female shall be 125 μ to 250 μ in. roughness.

DIMENSIONS OF RING JOINT FLANGES



GENERAL NOTE: Dimensions are in inches.

NOTES:

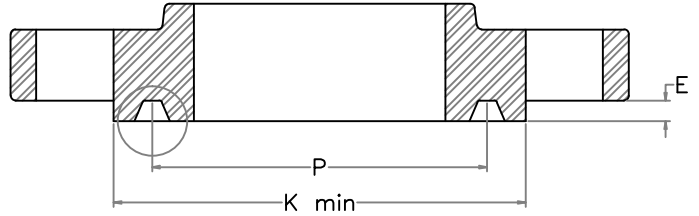
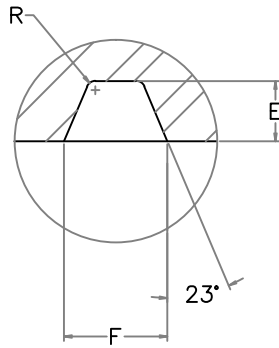
1. Height of raised portion is equal to the depth of groove dimension E, but is not subjected to the tolerances for E. Former full-face contour may be used.
2. Stamping shall include the letter R and the corresponding ring groove number. For details see the stamping page.
3. Ring Numbers for Class 400 from 1/2" to 3 1/2" are identical to Class 600
4. Ring Numbers for Class 900 from 1/2" to 2 1/2" are identical to Class 1500
5. For ring joints with lapped flanges in Classes 300 and 600, ring and groove number R30 are used instead of R31

TOLERANCES:

E	(depth)	+0.016, -0.0
F	(width)	±0.008
P	(pitch diameter)	±0.005
R	(radius at bottom)	
		R < 0.06 +0.03, -0.0
		R > 0.06 ±0.03

23 deg. (angle) ±1/2 deg.

The side wall surface of gasket groove shall not exceed 63 micro in. roughness.



TOLERANCES:

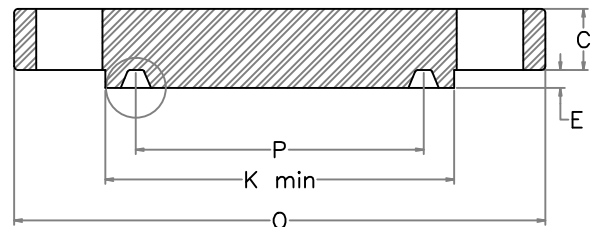
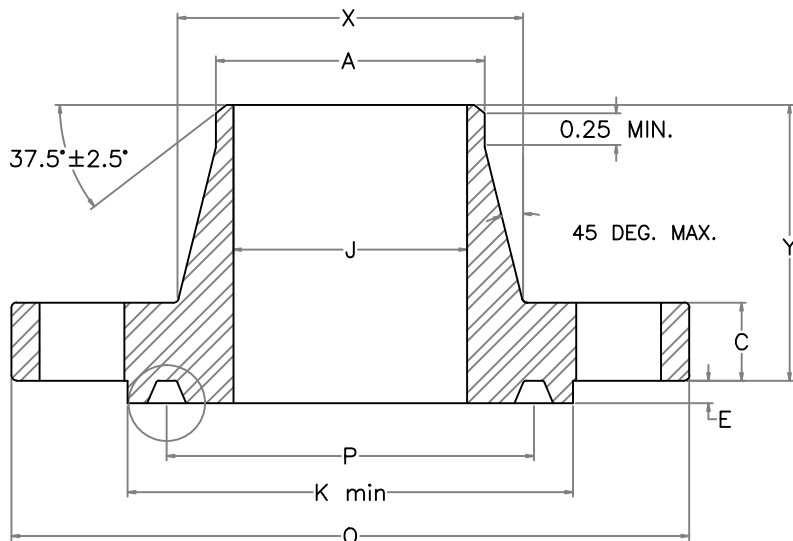
- E (depth) +0.016, -0.0
- F (width) ±0.008
- P (pitch diameter) ±0.005
- R (radius at bottom)
 - R < 0.06 +0.03, -0.0
 - R > 0.06 ±0.03

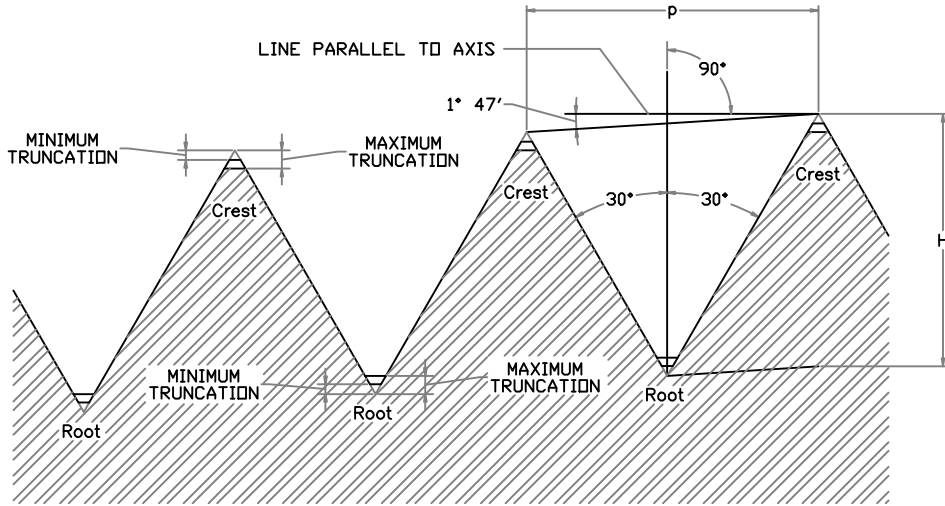
23 deg. (angle) ±1/2 deg.

The side wall surface of gasket groove shall not exceed 63 micro in. roughness.

DIMENSIONS OF RING JOINT FLANGES

Nominal Pipe Size					Groove Number	Groove Dimensions				Diameter of Raised Portion K					Approximate Distance Between Flanges						
150	300 400 600	900	1500	2500		Pitch Dia. P	Depth E	Width F	Groove Radius R	150	300 400 600	900	1500	2500	150	300	400	600	900	1500	2500
18	---	---	---	---	68	20.375	0.250	0.344	0.03	21.50	---	---	---	---	0.12	---	---	---	---	---	---
---	18	---	---	---	69	21.000	0.312	0.469	0.03	---	22.62	---	---	---	---	0.22	0.22	0.19	---	---	---
---	---	18	---	---	70	21.000	0.500	0.781	0.06	---	---	23.38	---	---	---	---	---	---	0.19	---	---
---	---	---	18	---	71	21.000	0.688	1.188	0.09	---	---	---	24.12	---	---	---	---	---	---	0.31	---
20	---	---	---	---	72	22.000	0.250	0.344	0.03	23.50	---	---	---	---	0.12	---	---	---	---	---	---
---	20	---	---	---	73	23.000	0.375	0.531	0.06	---	25.00	---	---	---	---	0.22	0.22	0.19	---	---	---
---	---	20	---	---	74	23.000	0.500	0.781	0.06	---	---	25.50	---	---	---	---	---	---	0.19	---	---
---	---	---	20	---	75	23.000	0.688	1.312	0.09	---	---	---	26.50	---	---	---	---	---	---	0.38	---
24	---	---	---	---	76	26.500	0.250	0.344	0.03	28.00	---	---	---	---	0.12	---	---	---	---	---	---
---	24	---	---	---	77	27.250	0.438	0.656	0.06	---	29.50	---	---	---	---	0.25	0.25	0.22	---	---	---
---	---	24	---	---	78	27.250	0.625	1.062	0.09	---	---	30.38	---	---	---	---	---	---	0.22	---	---
---	---	---	24	---	79	27.250	0.812	1.438	0.09	---	---	---	31.25	---	---	---	---	---	---	0.44	---





NOTES:

$H = 0.866025p$ = height of 60 deg. sharp V thread
 h = height of thread on product
 $p = 1/n$ = pitch (measured parallel to axis)
 n = number of threads per inch
 taper = 3/4 in. diameter per 12 in. along the axis

Truncation may be parallel to the axis or taper of thread

*All design dimensions must be met (plug gage alone does not indicate conforming thread)

Basic Thread Form of NPT

DIMENSIONS OF NPT THREADS

ASME B1.20.1

GENERAL NOTE: Dimensions are in inches.

Nominal Pipe Size	Threads per Inch n	Pitch of Thread p	Basic Thread						Height of Sharp V Thread H	Height of Thread Max.	Height of Thread Min.	Truncation		Equivalent Width of Flat		Basic Minor Diameter at Small End of Pipe (tap drill size)	Increase in Diameter per Thread (0.0625/n)	Program Chamfer at Beginning of Internal Thread
			Pitch Diameter at Beginning of Internal Thread E1	Minor Diameter at Beginning of Internal Thread		Major Diameter at Beginning of Internal Thread		Max.				Min.	Max.	Min.				
				Max.	Min.	Max.	Min.											
1/16	27	0.0370	0.2812	0.2562	0.2515	0.3108	0.3061	0.0321	0.0296	0.0250	0.0036	0.0012	0.0041	0.0014	0.2416	0.0023	---	
1/8	27	0.0370	0.3736	0.3486	0.3440	0.4032	0.3986	0.0321	0.0296	0.0250	0.0036	0.0012	0.0041	0.0014	0.3339	0.0023	---	
1/4	18	0.0556	0.4916	0.4533	0.4472	0.5361	0.5300	0.0481	0.0444	0.0383	0.0049	0.0018	0.0057	0.0021	0.4329	0.0035	---	
3/8	18	0.0556	0.6270	0.5887	0.5826	0.6715	0.6653	0.0481	0.0444	0.0383	0.0049	0.0018	0.0057	0.0021	0.5676	0.0035	---	
1/2	14	0.0714	0.7784	0.7277	0.7213	0.8356	0.8291	0.0619	0.0571	0.0507	0.0056	0.0024	0.0064	0.0027	0.7013	0.0045	---	
3/4	14	0.0714	0.9889	0.9382	0.9317	1.0460	1.0396	0.0619	0.0571	0.0507	0.0056	0.0024	0.0064	0.0027	0.9105	0.0045	---	
1	11.5	0.0870	1.2386	1.1760	1.1691	1.3082	1.3012	0.0753	0.0696	0.0626	0.0063	0.0029	0.0073	0.0033	1.1441	0.0054	0.1250	
1-1/4	11.5	0.0870	1.5834	1.5208	1.5138	1.6529	1.6460	0.0753	0.0696	0.0626	0.0063	0.0029	0.0073	0.0033	1.4876	0.0054	0.1250	
1-1/2	11.5	0.0870	1.8223	1.7597	1.7528	1.8919	1.8850	0.0753	0.0696	0.0626	0.0063	0.0029	0.0073	0.0033	1.7265	0.0054	0.1250	
2	11.5	0.0870	2.2963	2.2337	2.2267	2.3658	2.3589	0.0753	0.0696	0.0626	0.0063	0.0029	0.0073	0.0033	2.1995	0.0054	0.1250	
2-1/2	8	0.1250	2.7622	2.6694	2.6622	2.8622	2.8549	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	2.6195	0.0078	0.1500	
3	8	0.1250	3.3885	3.2957	3.2885	3.4885	3.4813	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	3.2406	0.0078	0.1500	
3-1/2	8	0.1250	3.8888	3.7961	3.7888	3.9888	3.9816	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	3.7375	0.0078	0.1500	
4	8	0.1250	4.3871	4.2944	4.2871	4.4871	4.4799	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	4.2344	0.0078	0.1500	
5	8	0.1250	5.4493	5.3565	5.3493	5.5493	5.5420	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	5.2907	0.0078	0.1500	
6	8	0.1250	6.5060	6.4132	6.4060	6.6060	6.5987	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	6.3461	0.0078	0.1500	
8	8	0.1250	8.5000	8.4073	8.4000	8.6000	8.5928	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	8.3336	0.0078	0.1500	
10	8	0.1250	10.6209	10.5282	10.5209	10.7209	10.7137	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	10.4453	0.0078	0.1500	
12	8	0.1250	12.6178	12.5251	12.5178	12.7178	12.7106	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	12.4328	0.0078	0.1500	
14	8	0.1250	13.8726	13.7799	13.7726	13.9726	13.9654	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	13.6750	0.0078	0.1500	
16	8	0.1250	15.8758	15.7830	15.7757	15.9758	15.9685	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	15.6625	0.0078	0.1500	
18	8	0.1250	17.8750	17.7822	17.7750	17.9750	17.9678	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	17.6500	0.0078	0.1500	
20	8	0.1250	19.8703	19.7776	19.7703	19.9703	19.9631	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	19.6375	0.0078	0.1500	
24	8	0.1250	23.8609	23.7682	23.7609	23.9609	23.9537	0.1083	0.1000	0.0928	0.0078	0.0041	0.0090	0.0048	23.6125	0.0078	0.1500	

BORE SCHEDULES



ASME B36.10M - 1996

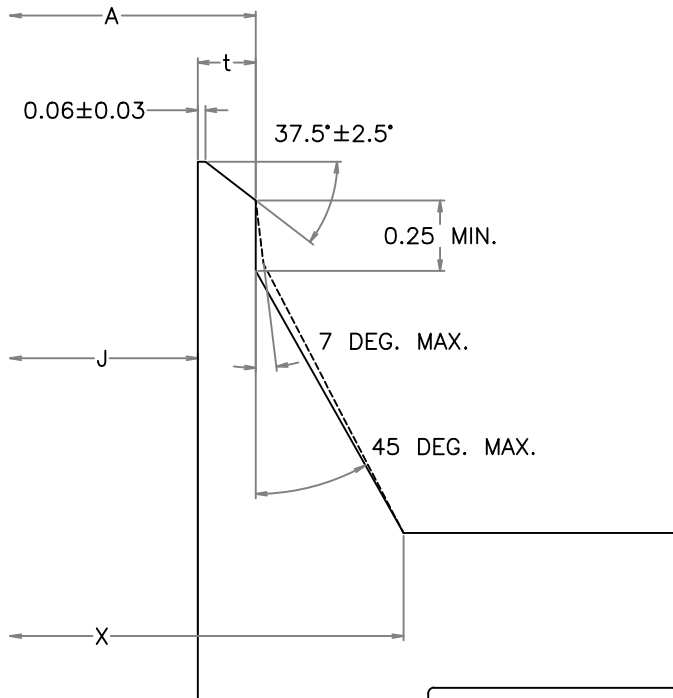
NOMINAL WALL THICKNESS AND INSIDE DIAMETER																
Nominal Pipe Size	Outside Diameter	WALL I.D.	5	10	20	30	STD.	40	60	XH	80	100	120	140	160	XXH
1/8	0.405	Wall	---	.049	---	.057	.068	.068	---	.095	.095	---	---	---	---	---
		I.D.	---	.307	---	.291	.269	.269	---	.215	.215	---	---	---	---	---
1/4	0.540	Wall	---	.065	---	.073	.088	.088	---	.119	.119	---	---	---	---	---
		I.D.	---	.410	---	.394	.364	.364	---	.302	.302	---	---	---	---	---
3/8	0.675	Wall	---	.065	---	.073	.091	.091	---	.126	.126	---	---	---	---	---
		I.D.	---	.545	---	.529	.493	.493	---	.423	.423	---	---	---	---	---
1/2	0.840	Wall	.065	.083	---	.095	.109	.109	---	.147	.147	---	---	---	.188	.294
		I.D.	.710	.674	---	.650	.622	.622	---	.546	.546	---	---	---	.464	.252
3/4	1.050	Wall	.065	.083	---	.095	.113	.113	---	.154	.154	---	---	---	.219	.308
		I.D.	.920	.884	---	.860	.824	.824	---	.742	.742	---	---	---	.612	.434
1	1.315	Wall	.065	.109	---	.114	.133	.133	---	.179	.179	---	---	---	.250	.358
		I.D.	1.185	1.097	---	1.087	1.049	1.049	---	.957	.957	---	---	---	.815	.599
1 1/4	1.660	Wall	.065	.109	---	.117	.140	.140	---	.191	.191	---	---	---	.250	.382
		I.D.	1.530	1.442	---	1.426	1.380	1.380	---	1.278	1.278	---	---	---	1.160	.896
1 1/2	1.900	Wall	.065	.109	---	.125	.145	.145	---	.200	.200	---	---	---	.281	.400
		I.D.	1.770	1.682	---	1.650	1.610	1.610	---	1.500	1.500	---	---	---	1.338	1.100
2	2.375	Wall	.065	.109	---	.125	.154	.154	---	.218	.218	---	---	---	.344	.436
		I.D.	2.245	2.157	---	2.125	2.067	2.067	---	1.939	1.939	---	---	---	1.687	1.503
2 1/2	2.875	Wall	.083	.120	---	.188	.203	.203	---	.276	.276	---	---	---	.375	.552
		I.D.	2.709	2.635	---	2.499	2.469	2.469	---	2.323	2.323	---	---	---	2.125	1.771
3	3.500	Wall	.083	.120	---	.188	.216	.216	---	.300	.300	---	---	---	.438	.600
		I.D.	3.334	3.260	---	3.124	3.068	3.068	---	2.900	2.900	---	---	---	2.624	2.300
3 1/2	4.000	Wall	.083	.120	---	.188	.226	.226	---	.318	.318	---	---	---	---	---
		I.D.	3.834	3.760	---	3.624	3.548	3.548	---	3.364	3.364	---	---	---	---	---
4	4.500	Wall	.083	.120	---	.188	.237	.237	---	.337	.337	---	.438	---	.531	.674
		I.D.	4.334	4.260	---	4.124	4.026	4.026	---	3.826	3.826	---	3.624	---	3.438	3.152
5	5.563	Wall	.109	.134	---	---	.258	.258	---	.375	.375	---	.500	---	.625	.750
		I.D.	5.345	5.295	---	---	5.047	5.047	---	4.813	4.813	---	4.563	---	4.313	4.063
6	6.625	Wall	.109	.134	---	---	.280	.280	---	.432	.432	---	.562	---	.719	.864
		I.D.	6.407	6.357	---	---	6.065	6.065	---	5.761	5.761	---	5.501	---	5.187	4.897
8	8.625	Wall	.109	.148	.250	.277	.322	.322	.406	.500	.500	.594	.719	.812	.906	.875
		I.D.	8.407	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	Wall	.134	.165	.250	.307	.365	.365	.500	.500	.594	.719	.844	1.000	1.125	1.000
		I.D.	10.482	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	Wall	.156	.180	.250	.330	.375	.406	.562	.500	.688	.844	1.000	1.125	1.312	1.000
		I.D.	12.438	12.390	12.250	12.090	12.000	11.938	11.626	11.750	11.374	11.062	10.750	10.500	10.126	10.750
14	14.000	Wall	.156	.250	.312	.375	.375	.438	.594	.500	.750	.938	1.094	1.250	1.406	---
		I.D.	13.688	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	Wall	.165	.250	.312	.375	.375	.500	.656	.500	.844	1.031	1.219	1.438	1.594	---
		I.D.	15.670	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	Wall	.165	.250	.312	.438	.375	.562	.750	.500	.938	1.156	1.375	1.562	1.781	---
		I.D.	17.670	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	Wall	.188	.250	.375	.500	.375	.594	.812	.500	1.031	1.281	1.500	1.750	1.969	---
		I.D.	19.624	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	Wall	.188	.250	.375	.500	.375	---	.875	.500	1.125	1.375	1.625	1.875	2.125	---
		I.D.	21.624	21.500	21.250	21.000	21.250	---	20.250	21.000	19.750	19.250	18.750	18.250	17.750	---
24	24.000	Wall	.218	.250	.375	.562	.375	.688	.969	.500	1.219	1.531	1.812	2.062	2.344	---
		I.D.	23.564	23.500	23.250	22.876	23.250	22.624	22.062	23.000	21.562	20.938	20.376	19.876	19.312	---

Note: Dimensions are in inches.

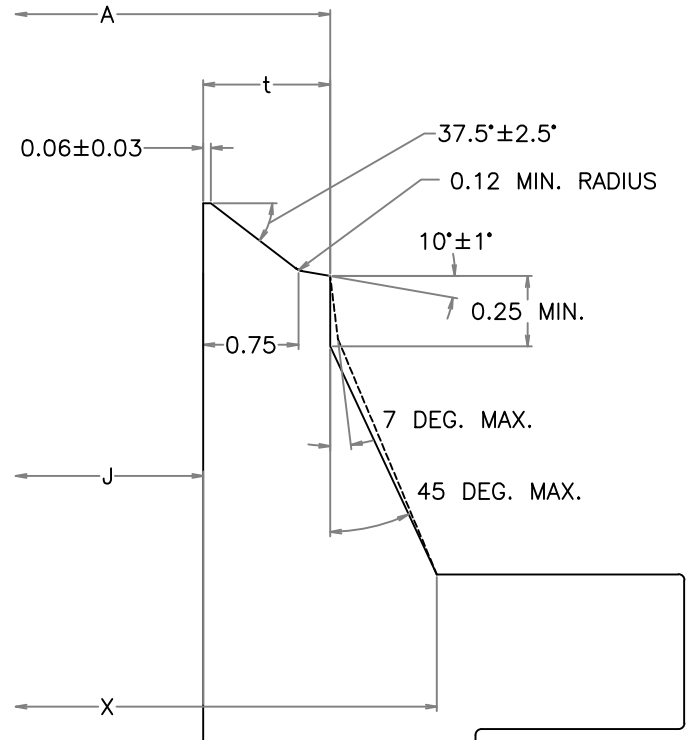
Note: Bore schedules with wall thickness greater than .88 are in bold print, indicating different welding end contour.



WELDING END CONTOURS



BEVEL FOR WALL THICKNESSES t
FROM 0.19 in. TO 0.88 in.,
INCLUSIVE



BEVEL FOR WALL THICKNESSES t
GREATER THAN 0.88 in.

- A = diameter of hub at beginning of chamfer, in.
J = diameter of bore, in.
X = diameter of hub at base, in.
t = nominal wall thickness of pipe, in.

GENERAL NOTE: Dimensions are in inches.

NOTES:

1. Typically the flat near the point of weld is machined with enough length to clean up the neck.
2. Wall thickness shall never be less than 87.5% of the nominal.



REDUCING FLANGES
(ALL PRESSURE RATING CLASSES)
GENERAL NOTE: Dimensions are in inches.

1	2
Nominal Pipe Size	Smallest Size of Reducing Outlet Requiring Hub Flanges
1	1/2
1-1/4	1/2
1-1/2	1/2
2	1
2-1/2	1-1/4
3	1-1/4
3-1/2	1-1/2
4	1-1/2
5	1-1/2
6	2-1/2
8	3
10	3-1/2
12	3-1/2
14	3-1/2
16	4
18	4
20	4
24	4

Slip-On and Threaded Reducing Flanges

NOTES:

- 1) The hub dimensions shall be at least as large as those of the standard flanges of the size to which the reduction is being made, except Slip-On and Threaded flanges reducing to a size smaller than those of column 2 may be made from blind flanges. See Example 2.
- 2) Class 150 threaded flanges do not have a counter-bore. Class 300 and higher pressure flanges will have depth of counter-bore of 0.25 in. for NPS 2 and smaller tapping and 0.38 in. for NPS 2 1/2 and larger. The diameter of the counter-bore is the same as that given in the tables of threaded flanges for the corresponding tapping.
- 3) Minimum length of effective threads shall be at least equal to dimension T of the corresponding pressure class threaded flange as shown in tables but does not necessarily extend from the face of the flange.
- 4) For welding neck flanges, the hub dimensions shall be the same as those of the standard flange of the size to which the reduction is being made.
- 5) Reducing socket welding flanges, up to and including NPS 3, are also covered by B16.5.

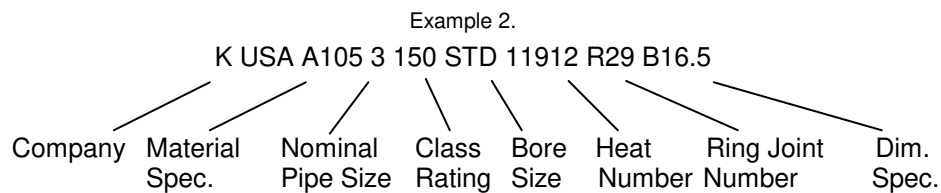
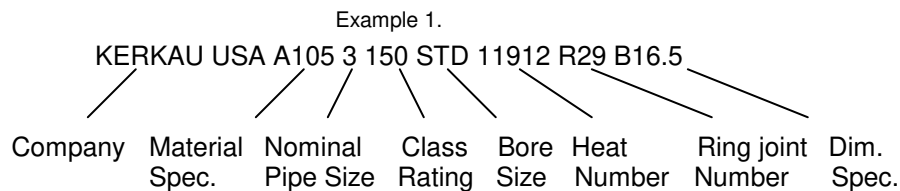
EXAMPLES:

- 1) The size designation is NPS 6 x 2 1/2 - Class 300 reducing threaded flange. This flange has the following dimensions:
 NPS 2 1/2 = taper pipe thread tapping (ASME B1.20.1)
 12.5 in. = outside diameter of regular NPS 6 Class 300 threaded flange
 1.44 in. = thickness of regular NPS 6 Class 300 threaded flange
 7.0 in. = diameter of hub for regular NPS 5 Class 300 threaded flange
 0.62 in. = height of hub for regular NPS 5 Class 300 threaded flange
 Other dimensions are the same as for regular NPS 6 Class 300 threaded flange
- 2) The size designation is NPS 6 x 2 - Class 300 reducing threaded flange. Use regular NPS 6 Class 300 blind flange tapped with NPS 2 taper pipe thread (ASME B1.20.1)



STAMPING

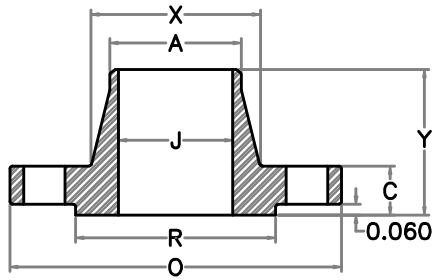
Stamping is located on the outside diameter of the flange.



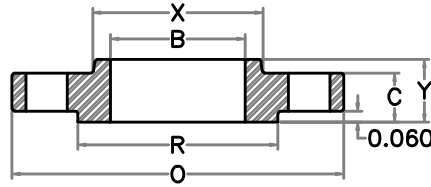
NOTES:

- 1) Flanges not covered by ASME B16.5 should not have the B16.5 stamping. Ex: socket welding flanges over 3 in.
- 2) Bore Size should be stamped only on welding neck and socket welding flanges.
- 3) Bore Size should be stamped as follows:
 - STD = standard bore
 - XH = extra heavy bore
 - XXH = double extra heavy bore
 - S80 = schedule 80 (all numbered schedules are stamped with the schedule number preceded by an S)

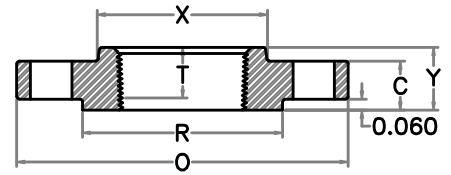
Visit www.Kerkau.com or call toll free 1-800-248-5060



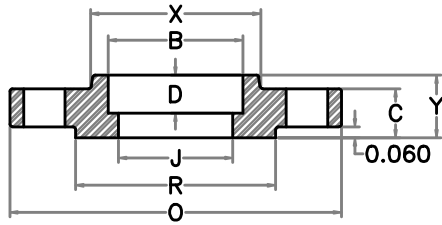
WELDING NECK



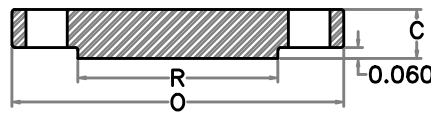
SLIP-ON WELDING



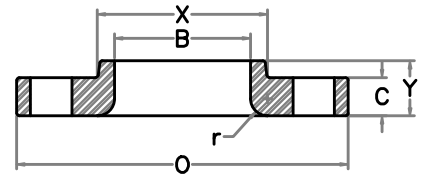
THREADED



SOCKET WELDING



BLIND



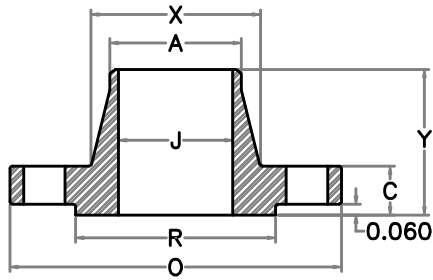
LAP JOINT

ASME B16.5 CLASS 150 FLANGE DIMENSIONS

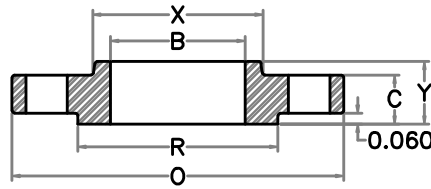
GENERAL NOTE: Dimensions are in inches.

1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thick- ness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Beginning of Chamfer Welding Neck A	7 Length Through Hub			10 Thread Length Threaded Min. T	11 Bore			14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Depth of Socket D	16 Drilling	
						8 Threaded Slip-On Socket Welding Y	9 Lapped Y	9 Welding Neck Y		11 Slip-On Socket Welding Min. B	12 Lapped Min. B	13 Welding Neck Socket Welding J			16 Diameter of Bolt Circle	17 Number and Diameter of Bolt Holes
1/2	3.50	0.44	1.38	1.19	0.84	0.62	0.62	1.88	0.62	0.88	0.90		0.12	0.38	2.38	4-0.62
3/4	3.88	0.50	1.69	1.50	1.05	0.62	0.62	2.06	0.62	1.09	1.11	S	0.12	0.44	2.75	4-0.62
1	4.25	0.56	2.00	1.94	1.32	0.69	0.69	2.19	0.69	1.36	1.38	E	0.12	0.50	3.12	4-0.62
1-1/4	4.62	0.62	2.50	2.31	1.66	0.81	0.81	2.25	0.81	1.70	1.72	E	0.19	0.56	3.50	4-0.62
1-1/2	5.00	0.69	2.88	2.56	1.90	0.88	0.88	2.44	0.88	1.95	1.97		0.25	0.62	3.88	4-0.62
2	6.00	0.75	3.62	3.06	2.38	1.00	1.00	2.50	1.00	2.44	2.46	B	0.31	0.69	4.75	4-0.75
2-1/2	7.00	0.88	4.12	3.56	2.88	1.12	1.12	2.75	1.12	2.94	2.97	O	0.31	0.75	5.50	4-0.75
3	7.50	0.94	5.00	4.25	3.50	1.19	1.19	2.75	1.19	3.57	3.60	R	0.38	0.81	6.00	4-0.75
3-1/2	8.50	0.94	5.50	4.81	4.00	1.25	1.25	2.81	1.25	4.07	4.10	E	0.38	*0.88	7.00	8-0.75
4	9.00	0.94	6.19	5.31	4.50	1.31	1.31	3.00	1.31	4.57	4.60		0.44	*0.94	7.50	8-0.75
5	10.00	0.94	7.31	6.44	5.56	1.44	1.44	3.50	1.44	5.66	5.69	S	0.44	*0.94	8.50	8-0.88
6	11.00	1.00	8.50	7.56	6.63	1.56	1.56	3.50	1.56	6.72	6.75	C	0.50	*1.06	9.50	8-0.88
8	13.50	1.12	10.62	9.69	8.63	1.75	1.75	4.00	1.75	8.72	8.75	H	0.50	*1.25	11.75	8-0.88
10	16.00	1.19	12.75	12.00	10.75	1.94	1.94	4.00	1.94	10.88	10.92	E	0.50	*1.31	14.25	12-1.00
12	19.00	1.25	15.00	14.38	12.75	2.19	2.19	4.50	2.19	12.88	12.92	D	0.50	*1.56	17.00	12-1.00
14	21.00	1.38	16.25	15.75	14.00	2.25	3.12	5.00	2.25	14.14	14.18	U	0.50	*1.62	18.75	12-1.12
16	23.50	1.44	18.50	18.00	16.00	2.50	3.44	5.00	2.50	16.16	16.19	L	0.50	*1.75	21.25	16-1.12
18	25.00	1.56	21.00	19.88	18.00	2.69	3.81	5.50	2.69	18.18	18.20	E	0.50	*1.94	22.75	16-1.25
20	27.50	1.69	23.00	22.00	20.00	2.88	4.06	5.69	2.88	20.20	20.25	S	0.50	*2.12	25.00	20-1.25
24	32.00	1.88	27.25	26.12	24.00	3.25	4.38	6.00	3.25	24.25	24.25		0.50	*2.50	29.50	20-1.38

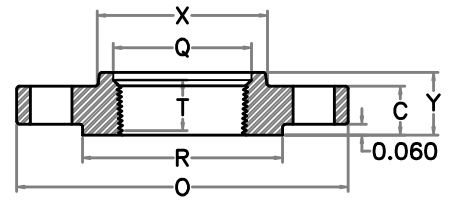
- Notes:
- This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 - Lap Joints (14" +) made with Slip-On Welding length through hub are nonstandard.
 - Blind flanges may be made with or without hubs. Hubs are nonstandard.
 - The flange dimensions illustrated are for .06 in. raised face (except lapped); for requirements of other facings, see the table on facings.
 - For welding end and bevel, see the figure on welding end contours.
 - When these flanges are required with flat face, either the full thickness or thickness with raised face removed may be furnished. Removing the raised face may make the length through the hub nonstandard.
 - For thread of flange, see tables on threads.
 - Socket welding flanges larger than NPS 3 in. are marked with a (*), and are not B16 standard flanges.
 - The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.



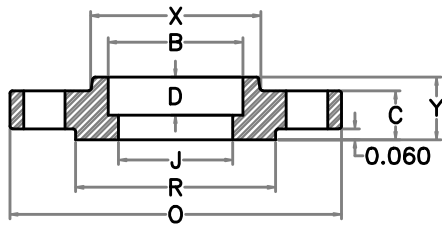
WELDING NECK



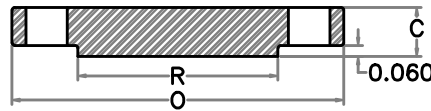
SLIP-ON WELDING



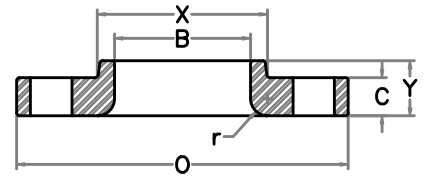
THREADED



SOCKET WELDING



BLIND



LAP JOINT

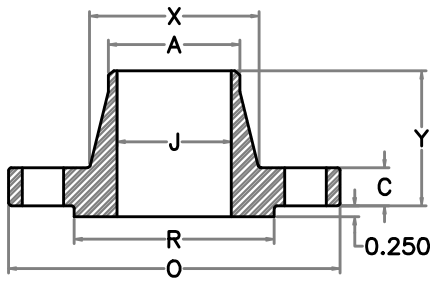
ASME B16.5 CLASS 300 FLANGE DIMENSIONS

GENERAL NOTE: Dimensions are in inches.

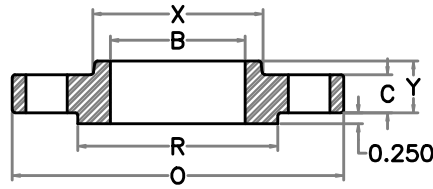
1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thick- ness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Begin- ning of Chamfer Welding Neck A	7 Length Through Hub			10 Thread Length Threaded Min. T	11 Bore			14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Counter- bore Threaded Flange Min. Q	16 Depth of Socket D	17 Drilling	
						8 Threaded Slip-On Socket Welding Y	9 Lapped Y	12 Welding Neck Y		13 Welding Neck Socket Welding J	18 Diameter of Bolt Circle	19 Number and Diameter of Bolt Holes					
																10 Threaded Slip-On Socket Welding Min. B	11 Lapped Min. B
1/2	3.75	0.56	1.38	1.50	0.84	0.88	0.88	2.06	0.62	0.88	0.90		0.12	0.93	0.38	2.62	4-0.62
3/4	4.62	0.62	1.69	1.88	1.05	1.00	1.00	2.25	0.62	1.09	1.11	S	0.12	1.14	0.44	3.25	4-0.75
1	4.88	0.69	2.00	2.12	1.32	1.06	1.06	2.44	0.69	1.36	1.38	E	0.12	1.41	0.50	3.50	4-0.75
1-1/4	5.25	0.75	2.50	2.50	1.66	1.06	1.06	2.56	0.81	1.70	1.72	E	0.19	1.75	0.56	3.88	4-0.75
1-1/2	6.12	0.81	2.88	2.75	1.90	1.19	1.19	2.69	0.88	1.95	1.97		0.25	1.98	0.62	4.50	4-0.88
2	6.50	0.88	3.62	3.31	2.38	1.31	1.31	2.75	1.12	2.44	2.46	B	0.31	2.50	0.69	5.00	8-0.75
2-1/2	7.50	1.00	4.12	3.94	2.88	1.50	1.50	3.00	1.25	2.94	2.97	O	0.31	3.00	0.75	5.88	8-0.88
3	8.25	1.12	5.00	4.62	3.50	1.69	1.69	3.12	1.25	3.57	3.60	R	0.38	3.63	0.81	6.62	8-0.88
3-1/2	9.00	1.19	5.50	5.25	4.00	1.75	1.75	3.19	1.44	4.07	4.10	E	0.38	4.13	*0.88	7.25	8-0.88
4	10.00	1.25	6.19	5.75	4.50	1.88	1.88	3.38	1.44	4.57	4.60		0.44	4.63	*0.94	7.88	8-0.88
5	11.00	1.38	7.31	7.00	5.56	2.00	2.00	3.88	1.69	5.66	5.69	S	0.44	5.69	*0.94	9.25	8-0.88
6	12.50	1.44	8.50	8.12	6.63	2.06	2.06	3.88	1.81	6.72	6.75	C	0.50	6.75	*1.06	10.62	12-0.88
8	15.00	1.62	10.62	10.25	8.63	2.44	2.44	4.38	2.00	8.72	8.75	H	0.50	8.75	*1.25	13.00	12-1.00
10	17.50	1.88	12.75	12.62	10.75	2.62	3.75	4.62	2.19	10.88	10.92	E	0.50	10.88	*1.31	15.25	16-1.12
12	20.50	2.00	15.00	14.75	12.75	2.88	4.00	5.12	2.38	12.88	12.92	D	0.50	12.94	*1.56	17.75	16-1.25
14	23.00	2.12	16.25	16.75	14.00	3.00	4.38	5.62	2.50	14.14	14.18	U	0.50	14.19	*1.62	20.25	20-1.25
16	25.50	2.25	18.50	19.00	16.00	3.25	4.75	5.75	2.69	16.16	16.19	L	0.50	16.19	*1.75	22.50	20-1.38
18	28.00	2.38	21.00	21.00	18.00	3.50	5.12	6.25	2.75	18.18	18.20	E	0.50	18.19	*1.94	24.75	24-1.38
20	30.50	2.50	23.00	23.12	20.00	3.75	5.50	6.38	2.88	20.20	20.25	S	0.50	20.19	*2.12	27.00	24-1.38
24	36.00	2.75	27.25	27.62	24.00	4.19	6.00	6.62	3.25	24.25	24.25		0.50	24.19	*2.50	32.00	24-1.62

- Notes:
1. This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 2. Lap Joints (10" +) made with Slip-On Welding length through hub are nonstandard.
 3. Blind flanges may be made with or without hubs. Hubs are nonstandard.
 4. The flange dimensions illustrated are for .06 in. raised face (except lapped); for requirements of other facings, see the table on facings.

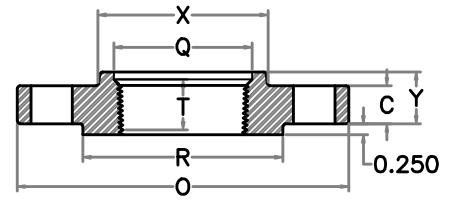
5. For welding end and bevel, see the figure on welding end contours.
6. When these flanges are required with flat face, either the full thickness or thickness with raised face removed may be furnished. Removing the raised face may make the length through the hub nonstandard.
7. For thread of flange, see tables on threads.
8. Socket welding flanges larger than NPS 3 in. are marked with a (*), and are not B16 standard flanges.
9. The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.



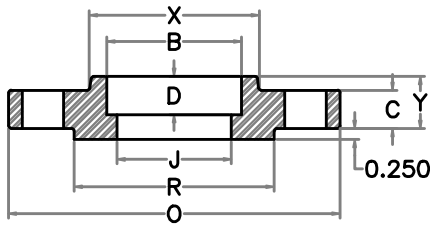
WELDING NECK



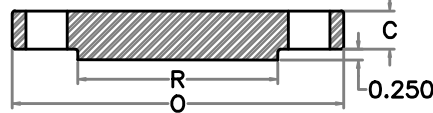
SLIP-ON WELDING



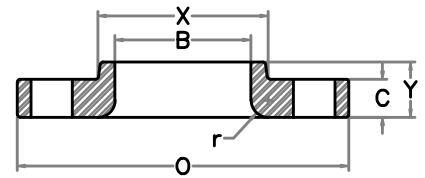
THREADED



SOCKET WELDING



BLIND



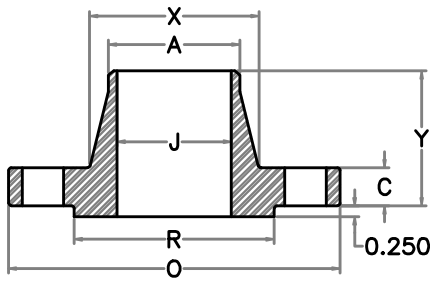
LAP JOINT

ASME B16.5 CLASS 400 FLANGE DIMENSIONS

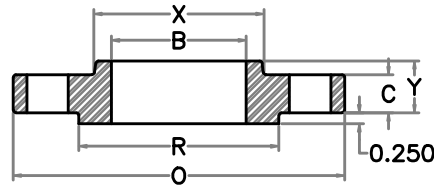
GENERAL NOTE: Dimensions are in inches.

1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thickness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Beginning of Chamfer Welding Neck A	7 Length Through Hub			10 Thread Length Threaded Min. T	Bore			14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Counter-bore Threaded Flange Min. Q	16 Depth of Socket D	17 Drilling	
						7 Threaded Slip-On Socket Welding Y	8 Lapped Y	9 Welding Neck Y		11 Slip-On Socket Welding Min. B	12 Lapped Min. B	13 Welding Neck Socket Welding J				17 Diameter of Bolt Circle	18 Number and Diameter of Bolt Holes
*1/2	3.75	0.56	1.38	1.50	0.84	0.88	0.88	2.06	0.62	0.88	0.90		0.12	0.93	0.38	2.62	4-0.62
*3/4	4.62	0.62	1.69	1.88	1.05	1.00	1.00	2.25	0.62	1.09	1.11	S	0.12	1.14	0.44	3.25	4-0.75
*1	4.88	0.69	2.00	2.12	1.32	1.06	1.06	2.44	0.69	1.36	1.38	E	0.12	1.41	0.50	3.50	4-0.75
*1-1/4	5.25	0.81	2.50	2.50	1.66	1.12	1.12	2.62	0.81	1.70	1.72	E	0.19	1.75	0.56	3.88	4-0.75
*1-1/2	6.12	0.88	2.88	2.75	1.90	1.25	1.25	2.75	0.88	1.95	1.97		0.25	1.99	0.62	4.50	4-0.88
*2	6.50	1.00	3.62	3.31	2.38	1.44	1.44	2.88	1.12	2.44	2.46	B	0.31	2.50	0.69	5.00	8-0.75
*2-1/2	7.50	1.12	4.12	3.94	2.88	1.62	1.62	3.12	1.25	2.94	2.97	O	0.31	3.00	0.75	5.88	8-0.88
*3	8.25	1.25	5.00	4.62	3.50	1.81	1.81	3.25	1.38	3.57	3.60	R	0.38	3.63	0.81	6.62	8-0.88
*3-1/2	9.00	1.38	5.50	5.25	4.00	1.94	1.94	3.38	1.56	4.07	4.10	E	0.38	4.13	*0.88	7.25	8-1.00
4	10.00	1.38	6.19	5.75	4.50	2.00	2.00	3.50	1.44	4.57	4.60		0.44	4.63	*0.94	7.88	8-1.00
5	11.00	1.50	7.31	7.00	5.56	2.12	2.12	4.00	1.69	5.66	5.69	S	0.44	5.69	*0.94	9.25	8-1.00
6	12.50	1.62	8.50	8.12	6.63	2.25	2.25	4.06	1.81	6.72	6.75	C	0.50	6.75	*1.06	10.62	12-1.00
8	15.00	1.88	10.62	10.25	8.63	2.69	2.69	4.62	2.00	8.72	8.75	H	0.50	8.75	*1.25	13.00	12-1.12
10	17.50	2.12	12.75	12.62	10.75	2.88	4.00	4.88	2.19	10.88	10.92	E	0.50	10.88	*1.31	15.25	16-1.25
12	20.50	2.25	15.00	14.75	12.75	3.12	4.25	5.38	2.38	12.88	12.92	D	0.50	12.94	*1.56	17.75	16-1.38
14	23.00	2.38	16.25	16.75	14.00	3.31	4.62	5.88	2.50	14.14	14.18	U	0.50	14.19	*1.62	20.25	20-1.38
16	25.50	2.50	18.50	19.00	16.00	3.69	5.00	6.00	2.69	16.16	16.19	L	0.50	16.19	*1.75	22.50	20-1.50
18	28.00	2.62	21.00	21.00	18.00	3.88	5.38	6.50	2.75	18.18	18.20	E	0.50	18.19	*1.94	24.75	24-1.50
20	30.50	2.75	23.00	23.12	20.00	4.00	5.75	6.62	2.88	20.20	20.25	S	0.50	20.19	*2.12	27.00	24-1.62
24	36.00	3.00	27.25	27.62	24.00	4.50	6.25	6.88	3.25	24.25	24.25		0.50	24.19	*2.50	32.00	24-1.88

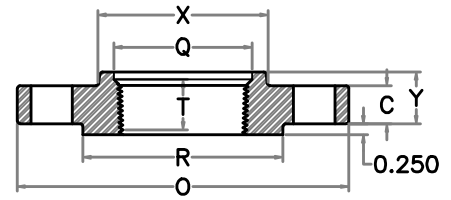
- Notes:
- This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 - Lap Joints (10" +) made with Slip-On Welding length through hub are nonstandard.
 - Blind flanges may be made with or without hubs. Hubs are nonstandard.
 - The flange dimensions illustrated are for .25 in. raised face (except lapped); for requirements of other facings, see the table on facings.
 - For welding end and bevel, see the figure on welding end contours.
 - For thread of flange, see tables on threads.
 - Socket welding flanges larger than NPS 3 in. are marked with a (*), and are not B16 standard flanges.
 - Dimensions of 1/2" to 3 1/2" are the same as for 600 lb. flanges.
 - The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.



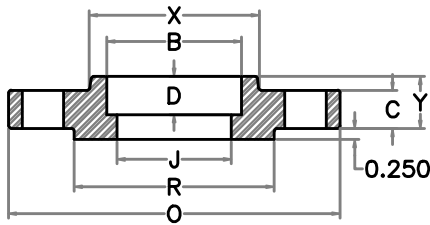
WELDING NECK



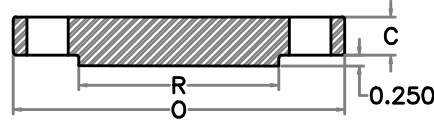
SLIP-ON WELDING



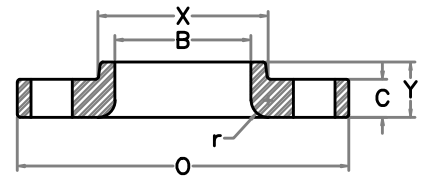
THREADED



SOCKET WELDING



BLIND



LAP JOINT

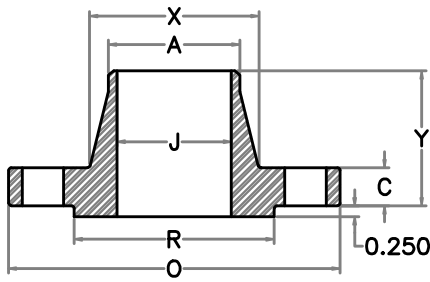
ASME B16.5 CLASS 600 FLANGE DIMENSIONS

GENERAL NOTE: Dimensions are in inches.

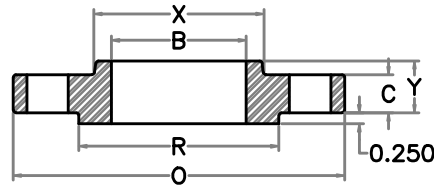
1	2	3	4	5	6	7			10	11			13	14	15	16	17		18
						Threaded Slip-On Socket Welding	Lapped	Welding Neck		Thread Length	Slip-On Socket Welding	Lapped					Welding Neck Socket Welding	Corner Radius of Bore of Lapped Flange and Pipe	
Nominal Pipe Size	Outside Diameter of Flange O	Thickness of Flange Min. C	Diameter of Raised Face R	Diameter of Hub at Base (Note 1) X	Hub Diameter Beginning of Chamfer Welding Neck A	Threaded Slip-On Socket Welding Y	Lapped Y	Welding Neck Y	Thread Length Min. T	Slip-On Socket Welding Min. B	Lapped Min. B	Welding Neck Socket Welding J	Corner Radius of Bore of Lapped Flange and Pipe r	Counter-bore Threaded Flange Min. Q	Depth of Socket D	Diameter of Bolt Circle	Number and Diameter of Bolt Holes		
1/2	3.75	0.56	1.38	1.50	0.84	0.88	0.88	2.06	0.62	0.88	0.90		0.12	0.93	0.38	2.62	4-0.62		
3/4	4.62	0.62	1.69	1.88	1.05	1.00	1.00	2.25	0.62	1.09	1.11	S	0.12	1.14	0.44	3.25	4-0.75		
1	4.88	0.69	2.00	2.12	1.32	1.06	1.06	2.44	0.69	1.36	1.38	E	0.12	1.41	0.50	3.50	4-0.75		
1-1/4	5.25	0.81	2.50	2.50	1.66	1.12	1.12	2.62	0.81	1.70	1.72	E	0.19	1.75	0.56	3.88	4-0.75		
1-1/2	6.12	0.88	2.88	2.75	1.90	1.25	1.25	2.75	0.88	1.95	1.97	O	0.25	1.99	0.62	4.50	4-0.88		
2	6.50	1.00	3.62	3.31	2.38	1.44	1.44	2.88	1.12	2.44	2.46	B	0.31	2.50	0.69	5.00	8-0.75		
2-1/2	7.50	1.12	4.12	3.94	2.88	1.62	1.62	3.12	1.25	2.94	2.97	O	0.31	3.00	0.75	5.88	8-0.88		
3	8.25	1.25	5.00	4.62	3.50	1.81	1.81	3.25	1.38	3.57	3.60	R	0.38	3.63	0.81	6.62	8-0.88		
3-1/2	9.00	1.38	5.50	5.25	4.00	1.94	1.94	3.38	1.56	4.07	4.10	E	0.38	4.13	*0.88	7.25	8-1.00		
4	10.75	1.50	6.19	6.00	4.50	2.12	2.12	4.00	1.62	4.57	4.60		0.44	4.63	*0.94	8.50	8-1.00		
5	13.00	1.75	7.31	7.44	5.56	2.38	2.38	4.50	1.88	5.66	5.69	S	0.44	5.69	*0.94	10.50	8-1.12		
6	14.00	1.88	8.50	8.75	6.63	2.62	2.62	4.62	2.00	6.72	6.75	C	0.50	6.75	*1.06	11.50	12-1.12		
8	16.50	2.19	10.62	10.75	8.63	3.00	3.00	5.25	2.25	8.72	8.75	H	0.50	8.75	*1.25	13.75	12-1.25		
10	20.00	2.50	12.75	13.50	10.75	3.38	4.38	6.00	2.56	10.88	10.92	E	0.50	10.88	*1.31	17.00	16-1.38		
12	22.00	2.62	15.00	15.75	12.75	3.62	4.62	6.12	2.75	12.88	12.92	D	0.50	12.94	*1.56	19.25	20-1.38		
14	23.75	2.75	16.25	17.00	14.00	3.69	5.00	6.50	2.88	14.14	14.18	U	0.50	14.19	*1.62	20.75	20-1.50		
16	27.00	3.00	18.50	19.50	16.00	4.19	5.50	7.00	3.06	16.16	16.19	L	0.50	16.19	*1.75	23.75	20-1.62		
18	29.25	3.25	21.00	21.50	18.00	4.62	6.00	7.25	3.12	18.18	18.20	E	0.50	18.19	*1.94	25.75	20-1.75		
20	32.00	3.50	23.00	24.00	20.00	5.00	6.50	7.50	3.25	20.20	20.25	S	0.50	20.19	*2.12	28.50	24-1.75		
24	37.00	4.00	27.25	28.25	24.00	5.50	7.25	8.00	3.62	24.25	24.25		0.50	24.19	*2.50	33.00	24-2.00		

Notes: 1. This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 2. Lap Joints (10" +) made with Slip-On Welding length through hub are nonstandard.
 3. Blind flanges may be made with or without hubs. Hubs are nonstandard.
 4. The flange dimensions illustrated are for .25 in. raised face (except lapped); for requirements of other facings, see the table on facings.

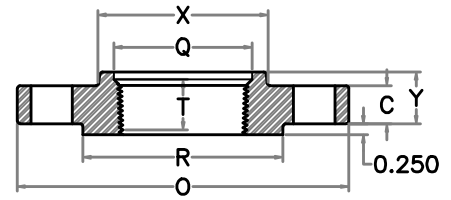
5. For welding end and bevel, see the figure on welding end contours.
 6. For thread of flange, see tables on threads.
 7. Socket welding flanges larger than NPS 3 in. are marked with a (*), and are not B16 standard flanges.
 8. The raised face shall have a finish from 125 μ in. to 250 μ in. roughness



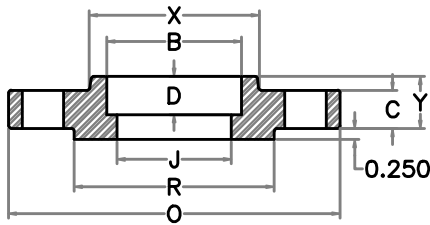
WELDING NECK



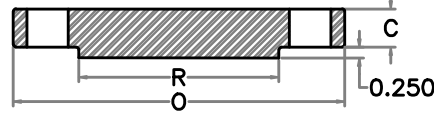
SLIP-ON WELDING



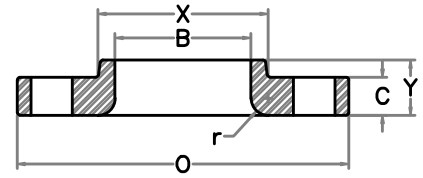
THREADED



SOCKET WELDING



BLIND



LAP JOINT

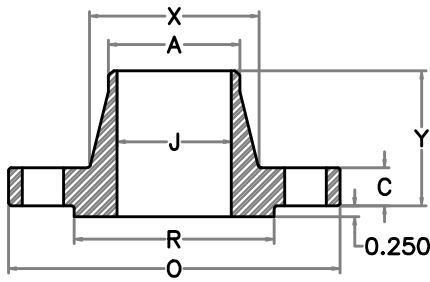
ASME B16.5 CLASS 900 FLANGE DIMENSIONS

GENERAL NOTE: Dimensions are in inches.

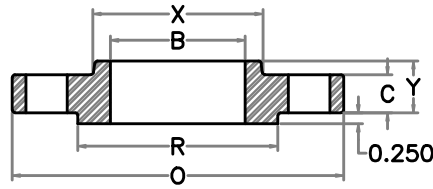
1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thickness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Beginning of Chamfer Welding Neck A	7-9 Length Through Hub			10 Thread Length Threaded Min. T	11-13 Bore			14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Counter-bore Threaded Flange Min. Q	16 Depth of Socket D	17-18 Drilling	
						7 Threaded Slip-On Socket Welding Y	8 Lapped Y	9 Welding Neck Y		11 Slip-On Socket Welding Min. B	12 Lapped Min. B	13 Welding Neck Socket Welding J				17 Diameter of Bolt Circle	18 Number and Diameter of Bolt Holes
*1/2	4.75	0.88	1.38	1.50	0.84	1.25	1.25	2.38	0.88	0.88	0.90	S	0.12	0.93	0.38	3.25	4-0.88
*3/4	5.12	1.00	1.69	1.75	1.05	1.38	1.38	2.75	1.00	1.09	1.11	S	0.12	1.14	0.44	3.50	4-0.88
*1	5.88	1.12	2.00	2.06	1.32	1.62	1.62	2.88	1.12	1.36	1.38	E	0.12	1.41	0.50	4.00	4-1.00
*1-1/4	6.25	1.12	2.50	2.50	1.66	1.62	1.62	2.88	1.19	1.70	1.72	E	0.19	1.75	0.56	4.38	4-1.00
*1-1/2	7.00	1.25	2.88	2.75	1.90	1.75	1.75	3.25	1.25	1.95	1.97	B	0.25	1.99	0.62	4.88	4-1.12
*2	8.50	1.50	3.62	4.12	2.38	2.25	2.25	4.00	1.50	2.44	2.46	B	0.31	2.50	0.69	6.50	8-1.00
*2-1/2	9.62	1.62	4.12	4.88	2.88	2.50	2.50	4.12	1.88	2.94	2.97	O	0.31	3.00	0.75	7.50	8-1.12
3	9.50	1.50	5.00	5.00	3.50	2.12	2.12	4.00	1.62	3.57	3.60	R	0.38	3.63	*0.81	7.50	8-1.00
3-1/2	---	---	---	---	---	---	---	---	---	---	---	E	---	---	---	---	---
4	11.50	1.75	6.19	6.25	4.50	2.75	2.75	4.50	1.88	4.57	4.60	S	0.44	4.63	*0.94	9.25	8-1.25
5	13.75	2.00	7.31	7.50	5.56	3.12	3.12	5.00	2.12	5.66	5.69	S	0.44	5.69	*0.94	11.00	8-1.38
6	15.00	2.19	8.50	9.25	6.63	3.38	3.38	5.50	2.25	6.72	6.75	C	0.50	6.75	*1.06	12.50	12-1.25
8	18.50	2.50	10.62	11.75	8.63	4.00	4.50	6.38	2.50	8.72	8.75	H	0.50	8.75	*1.25	15.50	12-1.50
10	21.50	2.75	12.75	14.50	10.75	4.25	5.00	7.25	2.81	10.88	10.92	E	0.50	10.88	*1.31	18.50	16-1.50
12	24.00	3.12	15.00	16.50	12.75	4.62	5.62	7.88	3.00	12.88	12.92	D	0.50	12.94	*1.56	21.00	20-1.50
14	25.25	3.38	16.25	17.75	14.00	5.12	6.12	8.38	3.25	14.14	14.18	U	0.50	14.19	*1.62	22.00	20-1.62
16	27.75	3.50	18.50	20.00	16.00	5.25	6.50	8.50	3.38	16.16	16.19	L	0.50	16.19	*1.75	24.25	20-1.75
18	31.00	4.00	21.00	22.25	18.00	6.00	7.50	9.00	3.50	18.18	18.20	E	0.50	18.19	*1.94	27.00	20-2.00
20	33.75	4.25	23.00	24.50	20.00	6.25	8.25	9.75	3.62	20.20	20.25	S	0.50	20.19	*2.12	29.50	20-2.12
24	41.00	5.50	27.25	29.50	24.00	8.00	10.50	11.50	4.00	24.25	24.25	S	0.50	24.19	*2.50	35.50	20-2.62

- Notes:
1. This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 2. Lap Joints (8" +) made with Slip-On Welding length through hub are nonstandard.
 3. Blind flanges may be made with or without hubs. Hubs are nonstandard.
 4. The flange dimensions illustrated are for .25 in. raised face (except lapped); for requirements of other facings, see the table on facings.

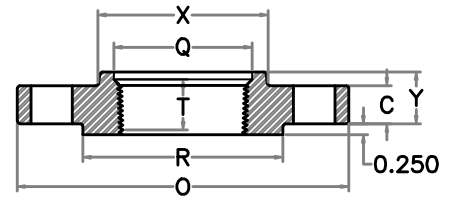
5. For welding end and bevel, see the figure on welding end contours.
6. For thread of flange, see tables on threads.
7. Socket welding flanges larger than NPS 2 1/2 in. are marked with a (*), and are not B16 standard flanges.
8. Dimensions of 1/2" to 2 1/2" are the same as for 1500 lb. flanges.
9. The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.



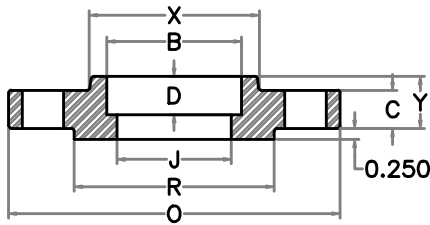
WELDING NECK



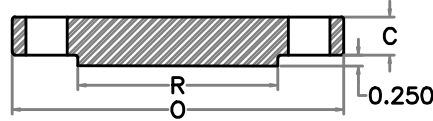
SLIP-ON WELDING



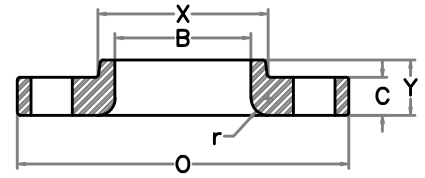
THREADED



SOCKET WELDING



BLIND



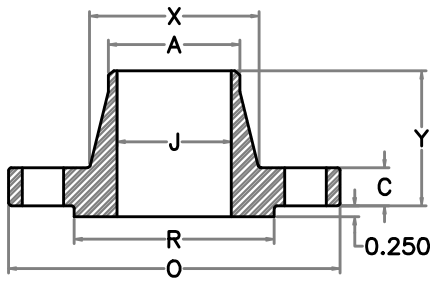
LAP JOINT

ASME B16.5 CLASS 1500 FLANGE DIMENSIONS

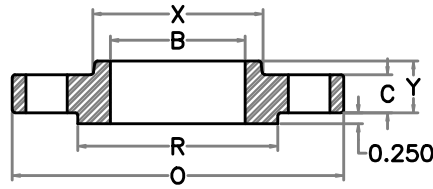
GENERAL NOTE: Dimensions are in inches.

1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thickness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Beginning of Chamfer Welding Neck A	7-9 Length Through Hub			10 Thread Length Threaded Min. T	11-13 Bore			14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Counter-bore Threaded Flange Min. Q	16 Depth of Socket D	17-18 Drilling	
						7 Threaded Slip-On Socket Welding Y	8 Lapped Y	9 Welding Neck Y		11 Slip-On Socket Welding Min. B	12 Lapped Min. B	13 Welding Neck Socket Welding J				17 Diameter of Bolt Circle	18 Number and Diameter of Bolt Holes
1/2	4.75	0.88	1.38	1.50	0.84	1.25	1.25	2.38	0.88	0.88	0.90		0.12	0.93	0.38	3.25	4-0.88
3/4	5.12	1.00	1.69	1.75	1.05	1.38	1.38	2.75	1.00	1.09	1.11	S	0.12	1.14	0.44	3.50	4-0.88
1	5.88	1.12	2.00	2.06	1.32	1.62	1.62	2.88	1.12	1.36	1.38	E	0.12	1.41	0.50	4.00	4-1.00
1-1/4	6.25	1.12	2.50	2.50	1.66	1.62	1.62	2.88	1.19	1.70	1.72	E	0.19	1.75	0.56	4.38	4-1.00
1-1/2	7.00	1.25	2.88	2.75	1.90	1.75	1.75	3.25	1.25	1.95	1.97		0.25	1.99	0.62	4.88	4-1.12
2	8.50	1.50	3.62	4.12	2.38	2.25	2.25	4.00	1.50	2.44	2.46	B	0.31	2.50	0.69	6.50	8-1.00
2-1/2	9.62	1.62	4.12	4.88	2.88	2.50	2.50	4.12	1.88	2.94	2.97	O	0.31	3.00	0.75	7.50	8-1.12
3	10.50	1.88	5.00	5.25	3.50	*2.88	2.88	4.62	*2.00	3.57	3.60	R	0.38	*3.63	*0.81	8.00	8-1.25
3-1/2	---	---	---	---	---	---	---	---	---	---	---	E	---	---	---	---	---
4	12.25	2.12	6.19	6.38	4.50	*3.56	3.56	4.88	*2.25	4.57	4.60		0.44	*4.63	*0.94	9.50	8-1.38
5	14.75	2.88	7.31	7.75	5.56	*4.12	4.12	6.12	*2.50	5.66	5.69	S	0.44	*5.69	*0.94	11.50	8-1.62
6	15.50	3.25	8.50	9.00	6.63	*4.69	4.69	6.75	*2.75	6.72	6.75	C	0.50	*6.75	*1.06	12.50	12-1.50
8	19.00	3.62	10.62	11.50	8.63	*5.62	5.62	8.38	*3.00	8.72	8.75	H	0.50	*8.75	*1.25	15.50	12-1.75
10	23.00	4.25	12.75	14.50	10.75	*6.25	7.00	10.00	*3.31	10.88	10.92	E	0.50	*10.88	*1.31	19.00	12-2.00
12	26.50	4.88	15.00	17.75	12.75	*7.12	8.62	11.12	*3.62	12.88	12.92	D	0.50	*12.94	*1.56	22.50	16-2.12
14	29.50	5.25	16.25	19.50	14.00	---	9.50	11.75	---	14.14	14.18	U	0.50	*14.19	*1.62	25.00	16-2.38
16	32.50	5.75	18.50	21.75	16.00	---	10.25	12.25	---	16.16	16.19	L	0.50	*16.19	*1.75	27.75	16-2.62
18	36.00	6.38	21.00	23.50	18.00	---	10.88	12.88	---	18.18	18.20	E	0.50	*18.19	*1.94	30.50	16-2.88
20	38.75	7.00	23.00	25.25	20.00	---	11.50	14.00	---	20.20	20.25	S	0.50	*20.19	*2.12	32.75	16-3.12
24	46.00	8.00	27.25	30.00	24.00	---	13.00	16.00	---	24.25	24.25		0.50	*24.19	*2.50	39.00	16-3.62

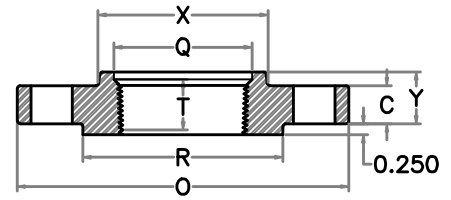
- Notes:
- This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 - Lap Joints (10" +) made with Slip-On Welding length through hub are nonstandard.
 - Blind flanges may be made with or without hubs. Hubs are nonstandard.
 - The flange dimensions illustrated are for .25 in. raised face (except lapped); for requirements of other facings, see the table on facings.
 - For welding end and bevel, see the figure on welding end contours.
 - For thread of flange, see tables on threads.
 - Slip-On Welding, Threaded and Socket welding flanges larger than NPS 2 1/2 in. are marked with a (*), and are not B16 standard flanges.
 - The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.



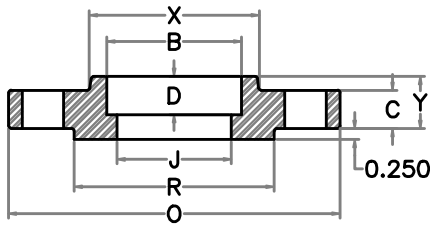
WELDING NECK



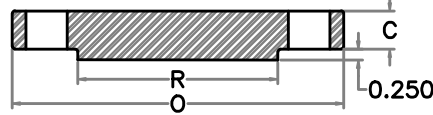
SLIP-ON WELDING



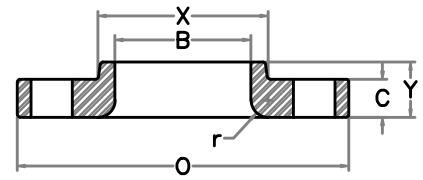
THREADED



SOCKET WELDING



BLIND



LAP JOINT

ASME B16.5 CLASS 2500 FLANGE DIMENSIONS

GENERAL NOTE: Dimensions are in inches.

1 Nominal Pipe Size	2 Outside Diameter of Flange O	3 Thickness of Flange Min. C	4 Diameter of Raised Face R	5 Diameter of Hub at Base (Note 1.) X	6 Hub Diameter Beginning of Chamfering of Welding Neck A	7 Length Through Hub			10 Thread Length Threaded Min. T	11 Bore			13 Welding Neck Socket Welding J	14 Corner Radius of Bore of Lapped Flange and Pipe r	15 Counter-bored Flange Min. Q	16 Depth of Socket D	17 Drilling	
						8 Threaded Slip-On Socket Welding Y	9 Lapped Y	10 Welding Neck Y		11 Slip-On Socket Welding Min. B	12 Lapped Min. B	13 Welding Neck Socket Welding J					17 Diameter of Bolt Circle	18 Number and Diameter of Bolt Holes
1/2	5.25	1.19	1.38	1.69	0.84	1.56	1.56	2.88	1.12	*0.88	0.90		0.12	0.93	*0.38	3.50	4-0.88	
3/4	5.50	1.25	1.69	2.00	1.05	1.69	1.69	3.12	1.25	*1.09	1.11	S	0.12	1.14	*0.44	3.75	4-0.88	
1	6.25	1.38	2.00	2.25	1.32	1.88	1.88	3.50	1.38	*1.36	1.38	E	0.12	1.41	*0.50	4.25	4-1.00	
1-1/4	7.25	1.50	2.50	2.88	1.66	2.06	2.06	3.75	1.50	*1.70	1.72	E	0.19	1.75	*0.56	5.12	4-1.12	
1-1/2	8.00	1.75	2.88	3.12	1.90	2.38	2.38	4.38	1.75	*1.95	1.97		0.25	1.99	*0.62	5.75	4-1.25	
2	9.25	2.00	3.62	3.75	2.38	2.75	2.75	5.00	2.00	*2.44	2.46	B	0.31	2.50	*0.69	6.75	8-1.12	
2-1/2	10.50	2.25	4.12	4.50	2.88	3.12	3.12	5.62	2.25	*2.94	2.97	O	0.31	3.00	*0.75	7.75	8-1.25	
3	12.00	2.62	5.00	5.25	3.50	*3.62	3.62	6.62	*2.50	*3.57	3.60	R	0.38	*3.63	*0.81	9.00	8-1.38	
3-1/2	---	---	---	---	---	---	---	---	---	---	---	E	---	---	---	---	---	
4	14.00	3.00	6.19	6.50	4.50	*4.25	4.25	7.50	*2.75	*4.57	4.60		0.44	*4.63	*0.94	10.75	8-1.62	
5	16.50	3.62	7.31	8.00	5.56	*5.12	5.12	9.00	*3.00	*5.66	5.69	S	0.44	*5.69	*0.94	12.75	8-1.88	
6	19.00	4.25	8.50	9.25	6.63	*6.00	6.00	10.75	*3.25	*6.72	6.75	C	0.50	*6.75	*1.06	14.50	8-2.12	
8	21.75	5.00	10.62	12.00	8.63	*7.00	7.00	12.50	*3.75	*8.72	8.75	H	0.50	*8.75	*1.25	17.25	12-2.12	
10	26.50	6.50	12.75	14.75	10.75	*9.00	9.00	16.50	*4.25	*10.88	10.92	E	0.50	*10.88	*1.31	21.25	12-2.62	
12	30.00	7.25	15.00	17.38	12.75	*10.00	10.00	18.25	*4.75	*12.88	12.92	D	0.50	*12.94	*1.56	24.38	12-2.88	
14	---	---	---	---	---	---	---	---	---	---	---	U	---	---	---	---	---	
16	---	---	---	---	---	---	---	---	---	---	---	L	---	---	---	---	---	
18	---	---	---	---	---	---	---	---	---	---	---	E	---	---	---	---	---	
20	---	---	---	---	---	---	---	---	---	---	---	S	---	---	---	---	---	
24	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	

- Notes:
1. This dimension is for the base end of the hub, which may be straight or tapered. Taper shall not exceed 7° on threaded, slip-on, socket-welding, and lapped flanges.
 2. Blind flanges may be made with or without hubs. Hubs are nonstandard.
 3. The flange dimensions illustrated are for .25 in. raised face (except lapped); for requirements of other facings, see the table on facings.
 4. For welding end and bevel, see the figure on welding end contours.

5. For thread of flange, see tables on threads.
6. Threaded flanges larger than NPS 2 1/2 in. are marked with a (*), and are not B16 standard flanges.
7. 2500 lb. Slip-On Welding and Socket Welding flanges are not B16 standard flanges.
8. The raised face shall have a finish from 125 μ in. to 250 μ in. roughness.

(ALL PRESSURE RATING CLASSES)

GENERAL NOTE: Dimensions are in inches.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nominal Pipe Size	Class 150 Flanges					Class 300 Flanges					Class 400 Flanges				
	Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs		Length of Bolts	Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs		Length of Bolts	Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs		
			0.06 in. Raised Face	Ring Joint	0.06 in. Raised Face			0.06 in. Raised Face	Ring Joint	0.06 in. Raised Face			0.25 in. Raised Face	Female, Tongue and Groove	Ring Joint
1/2	4	1/2	2.25	---	2.00	4	1/2	2.50	3.00	2.25	4	1/2	3.00	2.75	3.00
3/4	4	1/2	2.50	---	2.00	4	5/8	3.00	3.50	2.50	4	5/8	3.50	3.25	3.50
1	4	1/2	2.50	3.00	2.25	4	5/8	3.00	3.50	2.50	4	5/8	3.50	3.25	3.50
1-1/4	4	1/2	2.75	3.25	2.25	4	5/8	3.25	3.75	2.75	4	5/8	3.75	3.50	3.75
1-1/2	4	1/2	2.75	3.25	2.50	4	3/4	3.50	4.00	3.00	4	3/4	4.25	4.00	4.25
2	4	5/8	3.25	3.75	2.75	8	5/8	3.50	4.00	3.00	8	5/8	4.25	4.00	4.25
2-1/2	4	5/8	3.50	4.00	3.00	8	3/4	4.00	4.50	3.25	8	3/4	4.75	4.50	4.75
3	4	5/8	3.50	4.00	3.00	8	3/4	4.25	4.75	3.50	8	3/4	5.00	4.75	5.00
3-1/2	8	5/8	3.50	4.00	3.00	8	3/4	4.25	5.00	3.75	8	7/8	5.50	5.25	5.50
4	8	5/8	3.50	4.00	3.00	8	3/4	4.50	5.00	3.75	8	7/8	5.50	5.25	5.50
5	8	3/4	3.75	4.25	3.25	8	3/4	4.75	5.25	4.25	8	7/8	5.75	5.25	5.75
6	8	3/4	4.00	4.50	3.25	12	3/4	4.75	5.50	4.25	12	7/8	6.00	5.75	6.00
8	8	3/4	4.25	4.75	3.50	12	7/8	5.50	6.00	4.75	12	1	6.75	6.50	6.75
10	12	7/8	4.50	5.00	4.00	16	1	6.25	6.75	5.50	16	1-1/8	7.50	7.25	7.50
12	12	7/8	4.75	5.25	4.00	16	1-1/8	6.75	7.25	5.75	16	1-1/4	8.00	7.75	8.00
14	12	1	5.25	5.75	4.50	20	1-1/8	7.00	7.50	6.25	20	1-1/4	8.25	8.00	8.25
16	16	1	5.25	5.75	4.50	20	1-1/4	7.50	8.00	6.50	20	1-3/8	8.75	8.50	8.75
18	16	1-1/8	5.75	6.25	5.00	24	1-1/4	7.75	8.25	6.75	24	1-3/8	9.00	8.75	9.00
20	20	1-1/8	6.25	6.75	5.50	24	1-1/4	8.00	8.75	7.25	24	1-1/2	9.50	9.25	9.75
24	20	1-1/4	6.75	7.25	6.00	24	1-1/2	9.00	10.00	8.00	24	1-3/4	10.50	10.25	11.00

Note: Bolt and stud dimensions of Class 400 1/2" to 3 1/2" are the same as Class 600.

(ALL PRESSURE RATING CLASSES)

GENERAL NOTE: Dimensions are in inches.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Nominal Pipe Size	Class 600 Flanges					Class 900 Flanges					Class 1500 Flanges					Class 2500 Flanges				
	Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs			Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs			Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs			Number of Bolts or Studs	Diameter of Bolts or Studs	Length of Studs		
			0.25 in. Raised Face	Male Female Tongue and Groove	Ring Joint			0.25 in. Raised Face	Male Female Tongue and Groove	Ring Joint			0.25 in. Raised Face	Male Female Tongue and Groove	Ring Joint			0.25 in. Raised Face	Male Female Tongue and Groove	Ring Joint
1/2	4	1/2	3.00	2.75	3.00	4	3/4	4.25	4.00	4.25	4	3/4	4.25	4.00	4.25	4	3/4	4.75	4.50	4.75
3/4	4	5/8	3.50	3.25	3.50	4	3/4	4.50	4.25	4.50	4	3/4	4.50	4.25	4.50	4	3/4	5.00	4.75	5.00
1	4	5/8	3.50	3.25	3.50	4	7/8	5.00	4.75	5.00	4	7/8	5.00	4.75	5.00	4	7/8	5.50	5.25	5.50
1-1/4	4	5/8	3.75	3.50	3.75	4	7/8	5.00	4.75	5.00	4	7/8	5.00	4.75	5.00	4	1	6.00	5.75	6.00
1-1/2	4	3/4	4.25	4.00	4.25	4	1	5.50	5.25	5.50	4	1	5.50	5.25	5.50	4	1-1/8	6.75	6.50	6.75
2	8	5/8	4.25	4.00	4.25	8	7/8	5.75	5.50	5.75	8	7/8	5.75	5.50	5.75	8	1	7.00	6.75	7.00
2-1/2	8	3/4	4.75	4.50	4.75	8	1	6.25	6.00	6.25	8	1	6.25	6.00	6.25	8	1-1/8	7.75	7.50	8.00
3	8	3/4	5.00	4.75	5.00	8	7/8	5.75	5.50	5.75	8	1-1/8	7.00	6.75	7.00	8	1-1/4	8.75	8.50	9.00
3-1/2	8	7/8	5.50	5.25	5.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4	8	7/8	5.75	5.50	5.75	8	1-1/8	6.75	6.50	6.75	8	1-1/4	7.75	7.50	7.75	8	1-1/2	10.00	9.75	10.25
5	8	1	6.50	6.25	6.50	8	1-1/4	7.50	7.25	7.50	8	1-1/2	9.75	9.50	9.75	8	1-3/4	11.75	11.50	12.25
6	12	1	6.75	6.50	6.75	12	1-1/8	7.50	7.25	7.75	12	1-3/8	10.25	10.00	10.50	8	2	13.50	13.25	14.00
8	12	1-1/8	7.50	7.25	7.75	12	1-3/8	8.75	8.50	8.75	12	1-5/8	11.50	11.25	12.75	12	2	15.00	14.75	15.50
10	16	1-1/4	8.50	8.25	8.50	16	1-3/8	9.25	9.00	9.25	12	1-7/8	13.25	13.00	13.50	12	2-1/2	19.25	19.00	20.00
12	20	1-1/4	8.75	8.50	8.75	20	1-3/8	10.00	9.75	10.00	16	2	14.75	14.50	15.25	12	2-3/4	21.25	21.00	22.00
14	20	1-3/8	9.25	9.00	9.25	20	1-1/2	10.75	10.50	11.00	16	2-1/4	16.00	15.75	16.75	---	---	---	---	---
16	20	1-1/2	10.00	9.75	10.00	20	1-5/8	11.25	11.00	11.50	16	2-1/2	17.50	17.25	18.50	---	---	---	---	---
18	20	1-5/8	10.75	10.50	10.75	20	1-7/8	12.75	12.50	13.25	16	2-3/4	19.50	19.25	20.75	---	---	---	---	---
20	24	1-5/8	11.25	11.00	11.50	20	2	13.75	13.50	14.25	16	3	21.25	21.00	22.25	---	---	---	---	---
24	24	1-7/8	13.00	12.75	13.25	20	2-1/2	17.25	17.00	18.00	16	3-1/2	24.25	24.00	25.50	---	---	---	---	---

Note: Bolt and stud dimensions of Class 900 1/2" to 2 1/2" are the same as Class 1500.



150# FLANGE WEIGHTS

1	3	4	5	6	7	8	9	11	12	13	14
Nominal Pipe Size	Welding Neck			Slip-On Welding	Threaded	Lapped	Blind	Socket Welding			Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
1/2	1.2	1.2	1.3	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1
3/4	1.7	1.8	1.8	1.4	1.4	1.6	1.5	1.4	1.4	1.4	1.6
1	2.4	2.5	2.6	1.9	2.0	2.1	2.1	1.9	1.9	2.0	2.2
1-1/4	3.1	3.3	3.4	2.5	2.5	2.6	2.8	2.5	2.5	2.6	3.0
1-1/2	4.1	4.2	4.4	3.2	3.3	3.4	3.7	3.3	3.3	3.3	4.0
2	6.0	6.3	6.7	4.9	5.1	5.1	5.8	5.0	5.1	5.1	6.3
2-1/2	9.6	10.0	10.5	7.7	8.1	8.1	9.3	8.0	8.1	8.1	10.0
3	11.4	12.0	12.8	9.0	9.5	9.3	11.6	9.4	9.5	9.6	12.6
3-1/2	14.1	14.8	---	11.3	11.8	11.6	14.5	11.6	11.8	12.9	16.1
4	16.0	16.9	18.5	12.4	13.0	12.7	16.4	12.8	13.0	13.3	18.8
5	19.9	21.5	24.5	14.2	15.1	14.5	20.2	15.0	15.3	15.8	24.8
6	24.4	26.9	30.9	17.3	18.5	17.4	26.4	18.3	18.7	19.5	33.5
8	40.1	44.5	53.0	27.8	29.7	28.1	45.2	29.3	30.0	31.5	58.4
10	54.6	61.5	74.7	37.9	41.0	38.3	66.5	40.7	42.1	45.0	90.6
12	83.5	96.0	116.2	60.0	64.3	60.7	99.8	63.4	65.6	69.8	143.0
14	110.8	129.1	155.3	79.3	84.2	89.5	134.0	83.0	86.0	90.7	181.9
16	136.9	162.7	195.4	102.4	109.0	116.8	174.6	107.5	112.5	119.8	251.0
18	154.9	194.0	240.2	110.8	119.4	127.9	213.6	116.8	123.5	132.8	312.9
20	191.4	243.6	301.4	140.3	151.4	160.5	279.0	147.2	156.1	167.7	407.0
24	260.7	345.2	429.7	196.5	213.9	222.7	421.4	205.0	218.7	235.2	629.1



300# FLANGE WEIGHTS

Nominal Pipe Size	Welding Neck			Slip-On Welding	Threaded	Lapped	Blind	Socket Welding			Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
1/2	1.8	1.8	1.9	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.7
3/4	3.0	3.0	3.1	2.7	2.7	2.9	2.6	2.7	2.7	2.8	2.9
1	3.8	3.9	4.0	3.2	3.3	3.5	3.3	3.3	3.4	3.4	3.7
1-1/4	4.8	4.9	5.0	4.0	4.1	4.2	4.3	4.1	4.1	4.2	4.7
1-1/2	6.8	7.0	7.2	5.8	6.0	6.2	6.3	6.0	6.1	6.1	6.9
2	8.0	8.2	8.7	6.7	6.9	7.0	7.5	7.0	7.1	7.2	8.5
2-1/2	11.9	12.4	12.8	10.0	10.3	10.4	11.3	10.5	10.6	10.7	13.0
3	15.9	16.5	17.4	13.4	13.8	13.8	15.7	14.1	14.3	14.6	18.4
3-1/2	19.9	20.7	---	16.9	17.4	17.3	20.1	17.7	18.0	20.3	23.5
4	25.8	26.9	28.6	22.1	22.7	22.6	26.5	23.2	23.5	24.1	31.1
5	34.5	36.2	39.4	27.9	29.0	28.5	35.8	29.6	30.1	31.3	42.6
6	43.9	46.5	50.9	35.7	37.2	36.3	47.9	37.7	38.5	40.0	57.0
8	67.9	72.5	81.7	54.9	57.1	55.7	78.0	58.4	59.9	63.2	97.2
10	97.2	105.0	120.1	77.2	80.7	88.1	121.5	82.6	85.4	91.2	147.7
12	139.8	154.0	177.3	112.5	117.0	126.4	178.4	119.2	123.7	132.0	220.9
14	194.3	214.3	243.1	156.5	161.9	183.0	237.6	164.3	170.5	180.5	292.5
16	241.2	270.2	307.4	198.3	205.4	233.9	310.2	208.2	217.8	231.9	390.4
18	297.8	341.1	392.7	244.1	252.8	286.7	395.8	255.9	269.5	288.0	505.6
20	359.4	416.4	480.1	300.9	312.0	352.0	498.0	315.0	333.3	357.3	646.5
24	520.8	610.1	699.8	451.4	469.4	527.9	762.7	469.9	499.3	535.1	1006.9

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights based upon flanges furnished with a raised face.



400# FLANGE WEIGHTS

1 Nominal Pipe Size	3 Welding Neck			6 Slip-On Welding	7 Threaded	8 Lapped	9 Blind	11 Socket Welding			14 Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
*1/2	2.1	2.1	2.1	1.8	1.8	1.7	1.8	1.9	1.9	1.9	2.0
*3/4	3.4	3.4	3.5	3.0	3.0	2.9	3.0	3.1	3.1	3.2	3.3
*1	4.3	4.3	4.5	3.6	3.7	3.5	3.8	3.8	3.8	3.9	4.2
*1-1/4	5.7	5.9	6.0	4.8	4.9	4.5	5.2	4.9	5.0	5.1	5.7
*1-1/2	8.1	8.3	8.5	6.9	7.1	6.6	7.6	7.2	7.3	7.4	8.3
*2	10.0	10.3	10.8	8.4	8.6	7.9	9.6	8.8	8.9	9.1	10.7
*2-1/2	14.6	15.0	15.5	12.1	12.5	11.5	14.1	12.8	12.9	13.2	15.8
*3	19.3	20.0	20.9	16.1	16.6	15.2	19.4	17.0	17.3	17.8	22.1
*3-1/2	24.3	25.2	---	20.2	20.9	19.2	25.0	21.4	21.8	25.2	28.5
4	30.4	31.5	33.3	25.4	26.2	24.1	31.6	26.8	27.3	28.2	36.1
5	40.1	41.9	45.3	31.6	32.9	30.0	42.2	33.8	34.5	36.0	48.9
6	52.4	55.2	59.8	41.4	43.1	39.4	57.9	44.2	45.4	47.5	67.1
8	82.8	87.8	97.5	65.0	67.5	62.2	96.8	69.8	72.0	76.5	115.7
10	115.8	124.1	140.4	88.3	92.3	94.7	145.3	95.8	99.5	107.6	172.2
12	166.2	181.2	206.1	128.2	133.2	136.3	212.6	137.3	143.4	154.6	254.7
14	227.4	248.6	279.1	178.0	184.0	196.1	280.9	188.9	197.5	211.3	338.9
16	281.5	312.0	351.5	226.7	234.5	249.4	363.4	241.0	254.9	275.2	458.9
18	345.6	391.0	445.5	275.0	284.8	304.0	459.3	291.5	310.3	336.1	582.9
20	411.7	471.3	538.4	328.7	341.0	367.6	571.1	346.9	370.7	401.7	719.6
24	593.3	687.0	782.0	490.7	510.5	548.9	865.0	515.1	553.9	601.1	1119.4

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights of 1/2" to 3 1/2" are the same as for 600 lb. flanges.

Note: Weights based upon flanges furnished with a raised face.



600# FLANGE WEIGHTS

Nominal Pipe Size	Welding Neck			Slip-On Welding	Threaded	Lapped	Blind	Socket Welding			Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
1/2	2.1	2.1	2.1	1.8	1.8	1.7	1.8	1.9	1.9	1.9	2.0
3/4	3.4	3.4	3.5	3.0	3.0	2.9	3.0	3.1	3.1	3.2	3.3
1	4.3	4.3	4.5	3.6	3.7	3.5	3.8	3.8	3.8	3.9	4.2
1-1/4	5.7	5.9	6.0	4.8	4.9	4.5	5.2	4.9	5.0	5.1	5.7
1-1/2	8.1	8.3	8.5	6.9	7.1	6.6	7.6	7.2	7.3	7.4	8.3
2	10.0	10.3	10.8	8.4	8.6	7.9	9.6	8.8	8.9	9.1	10.7
2-1/2	14.6	15.0	15.5	12.1	12.5	11.5	14.1	12.8	12.9	13.2	15.8
3	19.3	20.0	20.9	16.1	16.6	15.2	19.4	17.0	17.3	17.8	22.1
3-1/2	24.3	25.2	---	20.2	20.9	19.2	25.0	21.4	21.8	25.2	28.5
4	39.3	40.5	42.6	33.1	34.0	31.8	39.4	34.7	35.2	36.1	44.4
5	65.7	67.7	71.4	55.5	57.0	53.9	66.9	58.1	59.0	60.7	74.7
6	78.0	81.2	86.3	65.2	67.1	63.2	82.0	68.7	70.2	72.8	94.6
8	119.2	124.8	135.9	97.9	100.7	95.1	133.0	103.6	106.1	111.5	153.8
10	194.2	204.4	224.5	157.9	162.6	168.2	219.3	167.4	172.1	182.3	254.9
12	232.8	249.5	277.2	188.3	194.2	201.6	278.1	199.9	207.6	221.7	333.3
14	277.1	300.7	335.1	221.5	228.5	241.9	338.9	234.4	244.6	261.0	399.2
16	386.5	422.4	469.8	318.5	327.6	346.7	479.1	336.0	352.9	377.8	579.7
18	463.3	514.0	575.6	387.5	398.6	419.9	608.9	409.4	434.3	468.6	749.6
20	578.0	644.8	721.3	492.0	506.0	537.3	781.5	518.5	553.1	598.3	973.5
24	814.2	924.3	1039.0	696.7	719.4	768.6	1190.0	731.6	787.3	854.9	1456.1

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights based upon flanges furnished with a raised face.



900# FLANGE WEIGHTS

Nominal Pipe Size	Welding Neck			Slip-On Welding	Threaded	Lapped	Blind	Socket Welding			Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
*1/2	4.4	4.4	4.4	4.1	4.1	4.0	4.2	4.2	4.2	4.2	4.4
*3/4	5.9	5.9	6.0	5.4	5.5	5.3	5.6	5.6	5.6	5.6	5.9
*1	8.5	8.7	8.8	7.9	8.0	7.8	8.2	8.2	8.2	8.3	8.7
*1-1/4	9.9	10.0	10.2	9.0	9.2	8.8	9.5	9.3	9.4	9.5	10.2
*1-1/2	13.6	13.8	14.1	12.4	12.6	12.1	13.3	12.8	12.9	13.0	14.1
*2	24.6	25.0	25.7	22.4	22.8	22.0	23.0	23.1	23.4	23.7	25.8
*2-1/2	33.9	34.4	35.0	31.0	31.6	30.4	31.8	32.2	32.5	32.9	36.4
3	30.9	31.6	32.8	26.5	27.1	25.6	29.9	27.7	28.0	28.6	33.4
3-1/2	---	---	---	---	---	---	---	---	---	---	---
4	50.6	52.0	54.4	44.8	45.8	43.5	50.3	47.0	47.7	49.1	59.0
5	81.1	83.3	87.6	72.1	73.8	70.5	82.6	75.8	77.0	79.6	96.6
6	106.0	109.7	115.9	92.8	94.9	90.6	107.2	97.6	99.8	103.4	129.8
8	180.6	187.3	200.6	158.8	162.0	162.7	185.6	167.2	171.0	179.0	231.7
10	266.3	278.4	302.7	225.4	230.7	236.7	275.3	238.4	244.8	258.7	345.4
12	353.6	375.4	412.4	296.8	303.1	315.2	387.8	313.2	324.2	344.3	478.6
14	405.7	436.6	482.6	342.6	350.3	362.4	462.0	363.2	379.6	405.9	583.9
16	488.9	533.4	593.2	412.7	422.8	444.6	579.9	436.9	460.4	494.9	735.5
18	660.2	724.0	803.4	576.1	588.8	622.7	819.5	608.1	644.6	694.6	1039.6
20	819.8	909.8	1016.4	706.4	722.4	780.4	1034.5	743.3	791.5	854.4	1301.3
24	1497.4	1661.5	1841.2	1346.4	1373.0	1493.4	1949.0	1407.7	1505.4	1624.2	2432.6

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights of 1/2" to 2 1/2" are the same as for 1500 lb. flanges.

Note: Weights based upon flanges furnished with a raised face.



1500# FLANGE WEIGHTS

Nominal Pipe Size	Welding Neck			Slip-On Welding	Threaded	Lapped	Blind	Socket Welding			Blank
	Standard	Schedule 80	Schedule 160					Standard	Schedule 80	Schedule 160	
1/2	4.4	4.4	4.4	4.1	4.1	4.0	4.2	4.2	4.2	4.2	4.4
3/4	5.9	5.9	6.0	5.4	5.5	5.3	5.6	5.6	5.6	5.6	5.9
1	8.5	8.7	8.8	7.9	8.0	7.8	8.2	8.2	8.2	8.3	8.7
1-1/4	9.9	10.0	10.2	9.0	9.2	8.8	9.5	9.3	9.4	9.5	10.2
1-1/2	13.6	13.8	14.1	12.4	12.6	12.1	13.3	12.8	12.9	13.0	14.1
2	24.6	25.0	25.7	22.4	22.8	22.0	23.0	23.1	23.4	23.7	25.8
2-1/2	33.9	34.4	35.0	31.0	31.6	30.4	31.8	32.2	32.5	32.9	36.4
3	44.7	45.6	47.0	40.6	41.4	39.7	43.5	42.4	42.9	43.7	49.7
3-1/2	---	---	---	---	---	---	---	---	---	---	---
4	66.9	68.3	70.9	62.5	63.7	61.2	67.5	65.6	66.6	68.4	80.5
5	126.9	129.7	135.0	116.4	118.4	114.7	131.4	121.5	123.3	126.9	148.0
6	150.9	155.6	163.7	136.6	139.2	134.4	160.9	144.0	147.1	152.6	186.8
8	256.2	265.4	284.1	230.1	233.8	226.9	271.5	242.9	248.7	260.9	330.3
10	444.1	461.7	497.7	390.7	397.1	401.7	469.8	411.7	422.1	444.5	563.3
12	661.9	693.2	747.5	587.5	594.8	631.4	704.6	616.1	635.2	670.2	861.5
14	870.5	913.9	979.9	---	---	851.4	934.8	---	---	---	---
16	1108.9	1173.8	1263.2	---	---	1093.9	1241.2	---	---	---	---
18	1443.9	1537.6	1657.6	---	---	1411.2	1689.6	---	---	---	---
20	1766.9	1901.1	2065.1	---	---	1695.0	2141.3	---	---	---	---
24	2806.2	3043.9	3312.9	---	---	2707.2	3456.4	---	---	---	---

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights based upon flanges furnished with a raised face.



2500# FLANGE WEIGHTS

1 Nominal Pipe Size	4 Welding Neck			6 Slip-On Welding	7 Threaded	8 Lapped	9 Blind	12 Socket Welding			14 Blank
	3 Standard	Schedule 80	Schedule 160					11 Standard	Schedule 80	Schedule 160	
1/2	7.2	7.2	7.3	6.8	6.9	6.7	6.9	6.9	7.0	7.0	7.1
3/4	8.5	8.5	8.6	7.9	8.0	7.8	8.1	8.1	8.1	8.2	8.5
1	12.0	12.1	12.3	11.1	11.3	11.0	11.4	11.4	11.5	11.6	12.0
1-1/4	17.6	17.8	18.0	16.3	16.5	16.1	16.8	16.7	16.8	17.0	17.9
1-1/2	24.6	24.9	25.3	22.8	23.1	22.5	23.7	23.3	23.5	23.7	25.1
2	36.5	37.0	37.9	33.6	34.1	33.1	35.3	34.5	34.8	35.2	37.7
2-1/2	53.2	54.0	54.9	48.5	49.2	47.8	51.1	50.0	50.4	50.9	55.0
3	80.5	81.9	83.9	73.1	74.1	72.1	78.1	75.4	76.1	77.1	84.2
3-1/2	---	---	---	---	---	---	---	---	---	---	---
4	123.3	125.7	129.9	111.7	113.2	110.3	121.2	115.5	116.8	119.0	132.9
5	204.9	209.1	217.3	185.2	187.6	183.4	202.5	191.8	194.1	198.6	223.9
6	316.4	324.4	337.9	285.3	288.5	283.0	315.4	295.1	299.3	306.6	348.7
8	474.4	488.5	517.5	418.1	423.1	414.8	477.7	434.7	442.2	458.0	541.7
10	900.7	931.2	994.5	788.8	797.5	784.1	912.9	820.8	836.7	870.8	1033.8
12	1276.8	1331.6	1429.0	1117.6	1127.7	1111.3	1313.1	1160.1	1188.6	1240.8	1497.7
14	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---

Note: Schedule 80 and extra heavy bores are identical from 1/2" to 8".

Note: Weights based upon flanges furnished with a raised face.