

BS 3293 : 1960

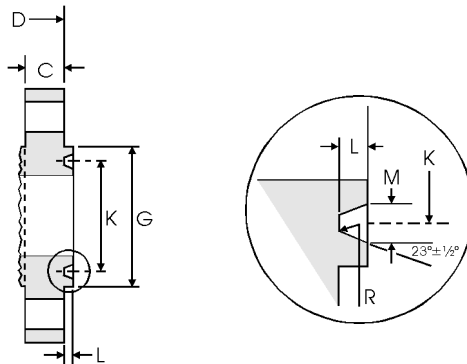
British Standard BS 3293 : 1960 - Carbon Steel Pipe Flanges (over 24 inches nominal size) for the Petroleum Industry, covers Class 150 lb to 600 lb weld neck and slip on flanges.

Dimensions and Tolerances

Tolerances on flange dimensions (BS 3293 : 1960)

Dimension	Tolerance		
	in	mm	
Weld Neck and Slip On Flanges (pages 8-56 to 8-59)	G (raised face diameter)	$\pm 1/64$	± 0.40
	C (flange thickness)	$+3/16, -0$	$+4.76, -0$
	D (overall length)	$\pm 1/8$	± 3.18
	E (outside diameter at welding end of weld neck hub)	$+5/32, -1/32$	$+3.97, -0.79$
	B (inside diameter of weld neck flange)	$+1/8, -1/16$	$+3.18, -1.59$
	B (inside diameter of slip on flange)	$+1/16, -0$	$+1.59, -0$
Ring Joint Facing on Weld Neck and Slip On Flanges (see below)	L (depth of groove)	$+1/64, -0$	$+0.40, -0$
	M (width of groove)	± 0.008	± 0.20
	K (pitch diameter of groove)	± 0.005	± 0.13

Ring Joint Facings - BS 3293



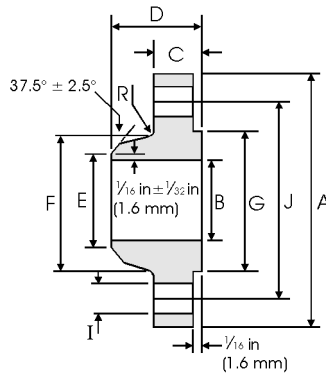
- Note
- Values for minimum flange thickness, C, and overall length, D, are detailed in the flange tables.
 - For ring joint tolerances see above.
 - R = 1/16 in (0.40 mm) max, corner radius at bottom of groove.

Ring joint facing dimensions - BS 3293

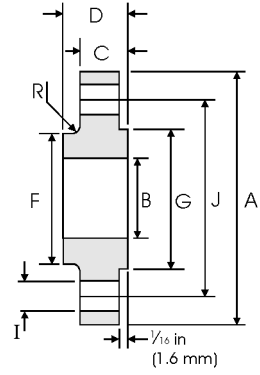
Class (lb)				Groove/Ring Number	Raised Face	Groove			Weight		
150	300	400	600		G	K	L	M	kg/piece		
Nominal Pipe Size (NPS)					Face Diameter min	Pitch Diameter	Depth	Width	Class 300 lb	Class 400 lb	Class 600 lb
				in mm	in mm	in mm	in mm	WNF Slip on	WNF Slip on	WNF Slip on	
	26	26	26	R93	31 ⁷ / ₈ 809.6	29 ¹ / ₂ 749.3	1 ¹ / ₂ 12.7	25 ⁵ / ₃₂ 19.8	298 270	349 304	446 417
	28	28	28	R94	33 ⁷ / ₈ 860.4	31 ¹ / ₂ 800.1	1 ¹ / ₂ 12.7	25 ⁵ / ₃₂ 19.8	360 333	409 364	518 482
	30	30	30	R95	36 ¹ / ₈ 917.6	33 ³ / ₄ 857.2	1 ¹ / ₂ 12.7	25 ⁵ / ₃₂ 19.8	412 376	465 419	570 537
	32	32	32	R96	38 ³ / ₄ 984.2	36 914.4	9 ⁹ / ₁₆ 14.3	29 ⁵ / ₃₂ 23.0	465 425	539 482	697 622
	34	34	34	R97	40 ³ / ₄ 1035.0	38 965.2	9 ⁹ / ₁₆ 14.3	29 ⁵ / ₃₂ 23.0	536 492	608 540	735 670
	36	36	36	R98	43 1092.2	40 ¹ / ₄ 1022.3	9 ⁹ / ₁₆ 14.3	29 ⁵ / ₃₂ 23.0	595 548	689 621	800 764

- Note
- Weights are based on manufacturer's data and are approximate.

Weld Neck and Slip On Flanges - BS 3293



Weld Neck



Slip On

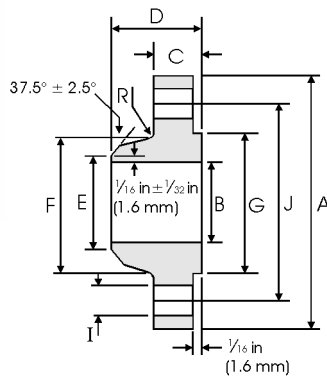
Class 150 lb

Pipe Nominal Pipe Size	Flange Data				Hub Data		Raised Face	Drilling Data			Radius	Weight	
	A	B	C	D		E	F	G	H	I	J	R	
	Overall Diameter	Slip on Inside Diameter	Flange Thickness	WNF Overall Length	Slip on Overall Length	WNF Diameter at Weld Bevel	WNF / Slip on Hub Diameter	Face Diameter	Number of Holes	Bolt Hole Diam.	Diameter of Circle of Holes	Fillet	kg/ piece
in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		in mm	in mm	in mm	WNF Slip On
26	34 ¹ / ₄ 869.9	26 ¹ / ₄ 666.7	2 50.8	5 127.0	3 ³ / ₈ 85.7	26 660.4	28 ¹ / ₂ 723.9	29 ¹ / ₄ 742.9	24	1 ³ / ₈ 34.9	31 ³ / ₄ 806.4	1 ⁴ / ₄ 6.35	118 107
28	36 ¹ / ₂ 927.1	28 ¹ / ₄ 717.6	2 ¹ / ₁₆ 52.4	5 ¹ / ₁₆ 128.6	3 ⁷ / ₁₆ 87.3	28 711.2	30 ³ / ₄ 781.0	31 ¹ / ₄ 793.7	28	1 ³ / ₈ 34.9	34 863.6	1 ⁴ / ₄ 6.35	134 122
30	38 ³ / ₄ 984.2	30 ¹ / ₄ 768.3	2 ¹ / ₈ 54.0	5 ¹ / ₈ 130.2	3 ¹ / ₂ 88.9	30 762.0	32 ³ / ₄ 831.8	33 ³ / ₄ 857.2	28	1 ³ / ₈ 34.9	36 914.4	1 ⁴ / ₄ 6.35	153 138
32	41 ³ / ₄ 1060.4	32 ¹ / ₄ 819.1	2 ¹ / ₄ 57.1	5 ¹ / ₄ 133.3	3 ⁵ / ₈ 92.1	32 812.8	35 889.0	35 ³ / ₄ 908.0	28	1 ⁵ / ₈ 41.3	38 ¹ / ₂ 977.9	5 ¹ / ₁₆ 7.94	190 170
34	43 ³ / ₄ 1111.2	34 ¹ / ₄ 869.9	2 ⁵ / ₁₆ 58.7	5 ⁵ / ₁₆ 134.9	3 ¹¹ / ₁₆ 93.7	34 863.6	37 939.8	37 ³ / ₄ 958.8	32	1 ⁵ / ₈ 41.3	40 ¹ / ₂ 1028.7	5 ¹ / ₁₆ 7.94	212 184
36	46 1168.4	36 ¹ / ₄ 920.7	2 ³ / ₈ 60.3	5 ³ / ₈ 136.5	3 ³ / ₄ 95.2	36 914.4	39 ¹ / ₄ 996.9	40 ¹ / ₄ 1022.3	32	1 ⁵ / ₈ 41.3	42 ³ / ₄ 1085.8	5 ¹ / ₁₆ 7.94	242 211
38	48 ³ / ₄ 1238.2	38 ¹ / ₄ 971.5	2 ³ / ₈ 60.3	5 ³ / ₈ 136.5	3 ³ / ₄ 95.2	38 965.2	41 ³ / ₄ 1060.4	42 ¹ / ₄ 1073.1	32	1 ⁵ / ₈ 41.3	45 ¹ / ₄ 1149.3	3 ⁸ / ₈ 9.53	284 249
40	50 ³ / ₄ 1289.0	40 ¹ / ₄ 1022.3	2 ¹ / ₂ 63.5	5 ¹ / ₂ 139.7	3 ⁷ / ₈ 98.4	40 1016.0	43 ³ / ₄ 1111.2	44 ¹ / ₄ 1123.9	36	1 ⁵ / ₈ 41.3	47 ¹ / ₄ 1200.1	3 ⁸ / ₈ 9.53	311 272
42	53 1346.2	42 ¹ / ₄ 1073.2	2 ⁵ / ₈ 66.7	5 ⁵ / ₈ 142.9	4 101.6	42 1066.8	46 1168.4	47 1193.8	36	1 ⁵ / ₈ 41.3	49 ¹ / ₂ 1257.3	3 ⁸ / ₈ 9.53	358 313
44	55 ¹ / ₄ 1403.3	44 ¹ / ₄ 1123.9	2 ⁵ / ₈ 66.7	5 ⁵ / ₈ 142.9	4 101.6	44 1117.6	48 1219.2	49 1244.6	40	1 ⁵ / ₈ 41.3	51 ³ / ₄ 1314.4	7 ¹ / ₁₆ 11.11	376 331
46	57 ¹ / ₄ 1454.2	46 ¹ / ₄ 1174.7	2 ¹¹ / ₁₆ 68.3	5 ¹¹ / ₁₆ 144.5	4 ¹ / ₁₆ 103.2	46 1168.4	50 1270.0	51 1295.4	40	1 ⁵ / ₈ 41.3	53 ³ / ₄ 1365.2	7 ¹ / ₁₆ 11.11	399 349
48	59 ¹ / ₂ 1511.1	48 ¹ / ₄ 1225.5	2 ³ / ₄ 69.9	5 ³ / ₄ 146.1	4 ¹ / ₈ 104.8	48 1219.2	52 ¹ / ₄ 1327.2	53 ¹ / ₂ 1358.9	44	1 ⁵ / ₈ 41.3	56 1422.4	7 ¹ / ₁₆ 11.11	440 381

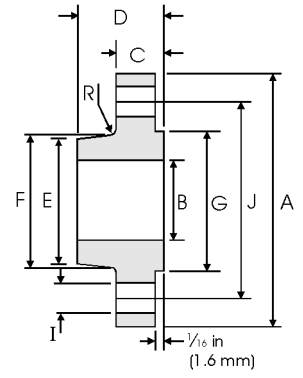
Notes

- For weld neck flanges, dimension B is to be specified by the purchaser. It corresponds to the pipe inside diameter.
- For slip on flanges, the hub may be cylindrical or have a draft of $\leq 7^\circ$ on the outside surface.
- WNF = Weld Neck Flange.
- Weights are based on manufacturer's data and are approximate.
- For ring joint facings see page 8-55.
- For tolerances see page 8-55.

Weld Neck and Slip On Flanges - BS 3293



Weld Neck



Slip On

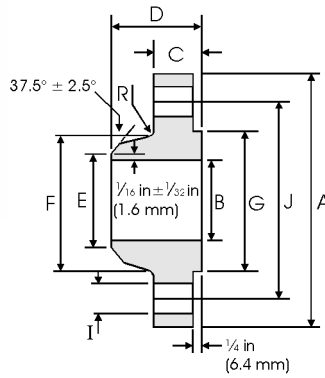
Class 300 lb

Nominal Pipe Size	Flange Data				Hub Data			Raised Face	Drilling Data			Radius	Weight
	A	B	C	D	E		F	G	H	I	J	R	
	Overall Diameter	Slip on Inside Diameter	Flange Thickness	WNF / Slip on Overall Length	WNF Diam. at Weld Bevel	Slip on Hub Diam. at Small End	Hub Diameter	Face Diameter	Number of Holes	Bolt Hole Diam.	Diameter of Circle of Holes	Fillet	kg/ piece
in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		in mm	in mm	in mm	WNF Slip On
26	38 ¹ / ₄ 971.5	26 ¹ / ₄ 666.7	3 ¹ / ₈ 79.4	7 ¹ / ₄ 184.1	26 ¹ / ₄ 666.7	27 ¹ / ₁₆ 687.4	28 ³ / ₈ 720.7	29 ¹ / ₂ 749.3	28	1 ³ / ₄ 44.4	34 ¹ / ₂ 876.3	³ / ₈ 9.53	279 251
28	40 ³ / ₄ 1035.0	28 ¹ / ₄ 717.6	3 ³ / ₈ 85.7	7 ³ / ₄ 196.8	28 ¹ / ₄ 717.5	29 ¹ / ₈ 739.7	30 ¹ / ₂ 774.7	31 ¹ / ₂ 800.1	28	1 ³ / ₄ 44.4	37 939.8	⁷ / ₁₆ 11.11	340 313
30	43 1092.2	30 ¹ / ₄ 768.3	3 ⁵ / ₈ 92.1	8 ¹ / ₄ 209.5	30 ¹ / ₄ 768.3	31 ³ / ₁₆ 792.2	32 ⁹ / ₁₆ 827.2	33 ³ / ₄ 857.2	28	1 ⁷ / ₈ 47.6	39 ¹ / ₄ 996.9	⁷ / ₁₆ 11.11	390 354
32	45 ¹ / ₄ 1149.3	32 ¹ / ₄ 819.1	3 ⁷ / ₈ 98.4	8 ³ / ₄ 222.2	32 ¹ / ₄ 819.1	33 ¹ / ₄ 844.6	34 ¹¹ / ₁₆ 881.1	36 914.4	28	2 50.8	41 ¹ / ₂ 1054.1	⁷ / ₁₆ 11.11	435 395
34	47 ¹ / ₂ 1206.5	34 ¹ / ₄ 869.9	4 101.6	9 ¹ / ₈ 231.8	34 ⁵ / ₁₆ 871.5	35 ⁵ / ₁₆ 896.9	36 ⁷ / ₈ 936.6	38 965.2	28	2 50.8	43 ¹ / ₂ 1104.9	¹ / ₂ 12.7	504 460
36	50 1270.0	36 ¹ / ₄ 920.7	4 ¹ / ₈ 104.8	9 ¹ / ₂ 241.3	36 ⁵ / ₁₆ 922.3	37 ³ / ₈ 949.3	39 990.6	40 ¹ / ₄ 1022.3	32	2 ¹ / ₈ 54.0	46 1168.4	¹ / ₂ 12.7	560 513

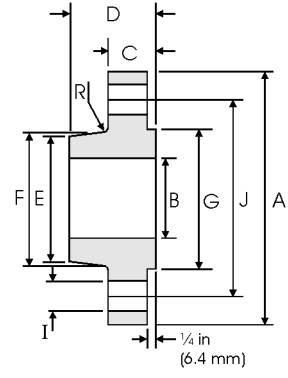
Notes

- For weld neck flanges, dimension B is to be specified by the purchaser. It corresponds to the pipe inside diameter.
- For slip on flanges, the hub may be cylindrical or have a draft of $\leq 7^\circ$ on the outside surface.
- WNF = Weld Neck Flange.
- Weights are based on manufacturer's data and are approximate.
- For ring joint facings see page 8-55.
- For tolerances see page 8-55.

Weld Neck and Slip On Flanges - BS 3293



Weld Neck



Slip On

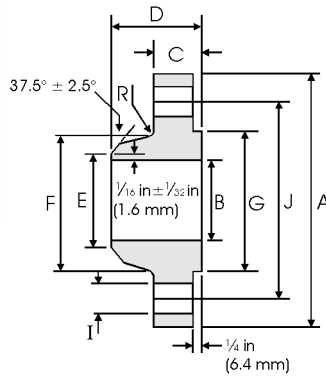
Class 400 lb

Pipe Nominal Pipe Size	Flange Data				Hub Data			Raised Face	Drilling Data			Radius	Weight
	A	B	C	D	E	F	G	H	I	J	R		
	Overall Diameter	Slip on Inside Diameter	Flange Thickness	WNF / Slip on Overall Length	WNF Diam. at Weld Bevel	Slip on Hub Diam. at Small End	Hub Diameter	Face Diameter	Number of Holes	Bolt Hole Diam.	Diameter of Circle of Holes	Fillet	kg/ piece
in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		in mm	in mm	in mm	WNF Slip On
26	38 ¹ / ₄ 971.5	26 ¹ / ₄ 666.7	3 ¹ / ₂ 88.9	7 ⁵ / ₈ 193.7	26 ⁵ / ₁₆ 668.3	27 ⁵ / ₁₆ 693.7	28 ⁵ / ₈ 727.1	29 ¹ / ₂ 749.3	28	1 ⁷ / ₈ 47.6	34 ¹ / ₂ 876.3	⁷ / ₁₆ 11.11	340 295
28	40 ³ / ₄ 1035.0	28 ¹ / ₄ 717.6	3 ³ / ₄ 95.2	8 ¹ / ₈ 206.4	28 ⁵ / ₁₆ 719.1	29 ³ / ₈ 746.1	30 ¹³ / ₁₆ 782.6	31 ¹ / ₂ 800.1	28	2 50.8	37 939.8	¹ / ₂ 12.7	399 354
30	43 1092.2	30 ¹ / ₄ 768.3	4 101.6	8 ⁵ / ₈ 219.1	30 ⁵ / ₁₆ 769.6	31 ¹ / ₂ 800.1	32 ¹⁵ / ₁₆ 836.6	33 ³ / ₄ 857.2	28	2 ¹ / ₈ 54.0	39 ¹ / ₄ 996.9	¹ / ₂ 12.7	454 408
32	45 ¹ / ₄ 1149.3	32 ¹ / ₄ 819.1	4 ¹ / ₄ 107.9	9 ¹ / ₈ 231.8	32 ³ / ₈ 822.3	33 ⁹ / ₁₆ 852.5	35 889.0	36 914.4	28	2 ¹ / ₈ 54.0	41 ¹ / ₂ 1054.1	¹ / ₂ 12.7	522 465
34	47 ¹ / ₂ 1206.5	34 ¹ / ₄ 869.9	4 ³ / ₈ 111.1	9 ¹ / ₂ 241.3	34 ³ / ₈ 873.1	35 ⁵ / ₈ 904.9	37 ³ / ₁₆ 944.6	38 965.2	28	2 ¹ / ₈ 54.0	43 ¹ / ₂ 1104.9	⁹ / ₁₆ 14.29	590 522
36	50 1270.0	36 ¹ / ₄ 920.8	4 ¹ / ₂ 114.3	9 ⁷ / ₈ 250.8	36 ⁷ / ₁₆ 925.5	37 ³ / ₄ 958.8	39 ⁷ / ₈ 1012.9	40 ¹ / ₄ 1022.3	32	2 ¹ / ₈ 54.0	46 1168.4	⁹ / ₁₆ 14.29	669 601

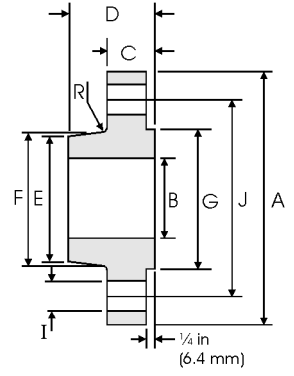
Notes

- For weld neck flanges, dimension B is to be specified by the purchaser. It corresponds to the pipe inside diameter.
- For slip on flanges, the hub may be cylindrical or have a draft of $\leq 7^\circ$ on the outside surface.
- WNF = Weld Neck Flange.
- Weights are based on manufacturer's data and are approximate.
- For ring joint facings see page 8-55.
- For tolerances see page 8-55.

Weld Neck and Slip On Flanges - BS 3293



Weld Neck



Slip On

Class 600 lb

Pipe	Flange Data				Hub Data			Raised Face	Drilling Data			Radius	Weight
Nominal Pipe Size	A	B	C	D	E		F	G	H	I	J	R	
	Overall Diameter	Slip on Inside Diameter	Flange Thickness	WNF / Slip on Overall Length	WNF Diam. at Weld Bevel	Slip on Hub Diam. at Small Lend	Hub Diameter	Face Diameter	Number of Holes	Bolt Hole Diam.	Diameter of Circle of Holes	Fillet	kg/ piece
	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm		in mm	in mm	in mm	in mm
26	40 1016.0	26 ¹ / ₄ 666.7	4 ¹ / ₄ 107.9	8 ³ / ₄ 222.2	26 ⁷ / ₁₆ 671.52	27 ¹³ / ₁₆ 706.4	29 ⁷ / ₁₆ 747.7	29 ¹ / ₂ 749.3	28	2 50.8	36 914.4	9 ⁹ / ₁₆ 14.29	437 408
28	42 ¹ / ₄ 1073.1	28 ¹ / ₄ 717.6	4 ³ / ₈ 111.1	9 ¹ / ₄ 234.9	28 ¹ / ₂ 723.9	29 ¹⁵ / ₁₆ 760.4	31 ⁵ / ₈ 803.3	31 ¹ / ₂ 800.1	28	2 ¹ / ₈ 54.0	38 965.2	5 ⁵ / ₈ 15.88	508 472
30	44 ¹ / ₂ 1130.3	30 ¹ / ₄ 768.3	4 ¹ / ₂ 114.3	9 ³ / ₄ 247.6	30 ¹ / ₂ 774.7	32 ¹ / ₁₆ 814.4	33 ¹⁵ / ₁₆ 862.0	33 ³ / ₄ 857.2	28	2 ¹ / ₈ 54.0	40 ¹ / ₄ 1022.3	1 ¹¹ / ₁₆ 17.46	559 526
32	47 1193.8	32 ¹ / ₄ 819.1	4 ⁵ / ₈ 117.5	10 ¹ / ₄ 260.3	32 ¹ / ₂ 825.5	34 ³ / ₁₆ 868.4	36 ¹ / ₈ 917.6	36 914.4	28	2 ³ / ₈ 60.3	42 ¹ / ₂ 1079.5	1 ¹¹ / ₁₆ 17.46	680 605
34	49 1244.6	34 ¹ / ₄ 869.9	4 ³ / ₄ 120.6	10 ⁵ / ₈ 269.9	34 ⁹ / ₁₆ 877.9	36 ⁵ / ₁₆ 922.3	38 ⁵ / ₁₆ 973.1	38 965.2	28	2 ³ / ₈ 60.3	44 ¹ / ₂ 1130.3	3 ³ / ₄ 19.05	717 652
36	51 ³ / ₄ 1314.4	36 ¹ / ₄ 920.7	4 ⁷ / ₈ 123.8	11 ¹ / ₈ 282.6	36 ⁹ / ₁₆ 928.7	38 ⁷ / ₁₆ 976.3	40 ⁵ / ₈ 1031.9	40 ¹ / ₄ 1022.3	28	2 ⁵ / ₈ 66.7	47 1193.8	3 ³ / ₄ 19.05	780 744

Notes

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