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Specialised Pipe and Fittings Australia

PIPE
FITTINGS
FLANGES

AUSTRALIAN OWNED #08542 CERTIFIED

Guide to Pipe and Fittings

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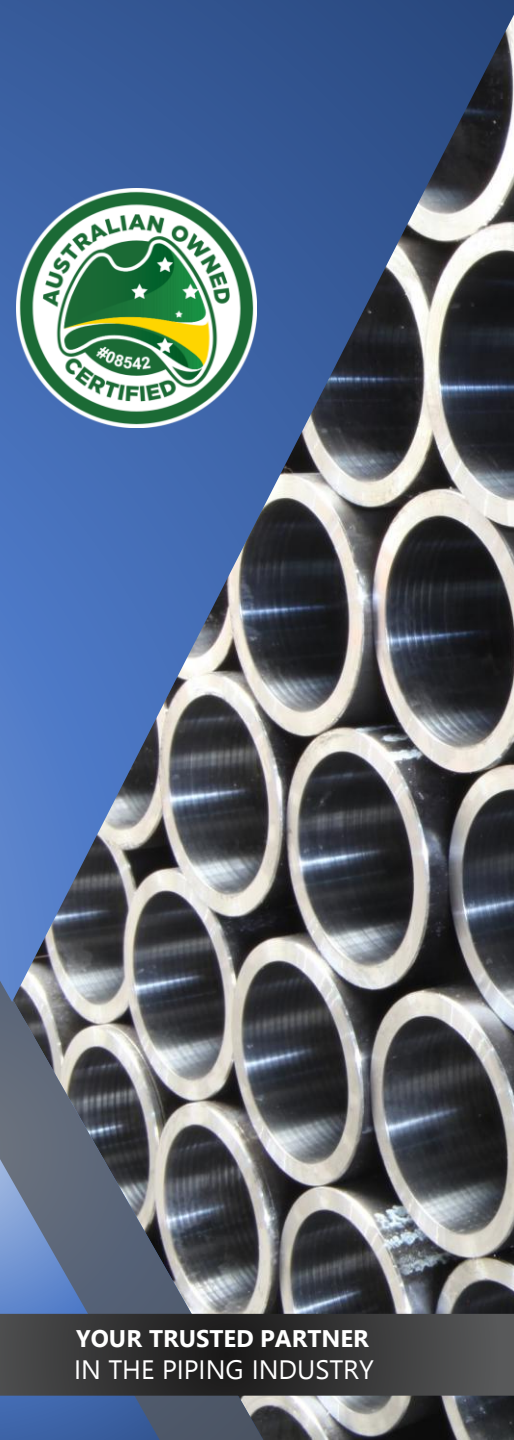
Scope of Supply



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Pipe Tolerances

ASTM A999/A999M-12

Standard Specification for Alloy and Stainless Pipe

16. Straightness

16.1 The finished pipe shall be reasonably straight.

16.2 For metal-arc welded pipe, the maximum deviation from a 10-ft [3.0-m] straight edge placed so that both ends are in contact with the pipe shall be 1⁄8 in. [3.2 mm]. For metal-arc welded pipe with lengths shorter than 10 ft. [3.0 m], this maximum deviation shall be prorated with respect to the ratio of the actual length to 10 ft. [3.0 m].

ASTM A999/A999M - 12				
Standard Specification for General Requirements for Alloy Stainless Steel Pipe				
Table 1-Permissible Variations in Outside Diameter				
NPS / DN Designator	Over (inches)	Over (mm)	Under (inches)	Under (mm)
1/8" to 1 1/2" incl (6mm to 40mm)	0.015	0.4	0.031	0.8
Over 1 1/2" to 4" incl (40mm to 100mm)	0.031	0.7	0.031	0.8
Over 4" to 8" incl (100mm to 200mm)	0.062	1.6	0.031	0.8
Over 8" to 18" incl (200mm to 450mm)	0.093	2.4	0.031	0.8
Over 18" to 26" incl (450mm to 650mm)	0.125	3.2	0.031	0.8
Over 26" to 34" incl (450mm to 850mm)	0.156	4.0	0.031	0.8
Over 34" to 48" incl (850mm to 1200mm)	0.187	4.8	0.031	0.8

Minimum Wall thickness on inspection for nominal (average) pipe wall thickness is covered under Appendix X1. of ASTM A999/A999m – 12

The following equation, may be applied to calculate minimum wall thickness from nominal (average) wall thickness:

tn x 0.875 = tm

where:
tn = nominal (average) wall thickness,

and
tm = minimum wall thickness

The nominal plain end mass, in kilograms per meter, is calculated using the following formula:

Wpe = 0.0246615(D - t)t

where:
D = outside diameter to the nearest 0.1 mm for outside diameters that are 16 in. (406.4 mm) and smaller and to the nearest 1.0 mm for outside diameters larger than 16 in. (406.4mm) (the symbol D is to be used for OD only in mathematical equations or formulas)

and;
Wpe = nominal plain end mass, rounded to the nearest 0.01 kg/m

and;
t = specified wall thickness, rounded to the nearest 0.01 mm

Please note that the relevant standard must be checked for specific information in each situation. All contents of this document are a guide only.

Pipe Weights

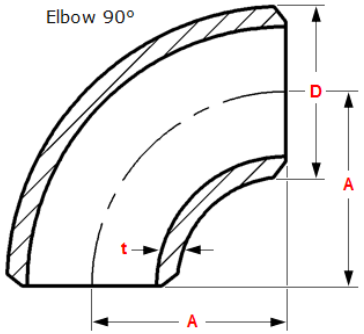
Nominal Size		OD	Welded & Seamless Wrought Steel Pipe to ASME B36.10M (Weights are in kg/Lm) Welded & Seamless Wrought Stainless Steel Pipe to ASME B36.19M (Weights are in kg/Lm)															
DN	NPS	mm	Schedule															
			5S	10S	10	20	30	40S	STD	40	60	80S	XS	80	100	120	140	160	XXS
6	1/8	10.3	-	0.28	0.28	-	0.32	0.37	0.37	0.37	-	0.47	0.47	0.47	-	-	-	-	-
8	1/4	13.7	-	0.49	0.49	-	0.54	0.63	0.63	0.63	-	0.80	0.80	0.80	-	-	-	-	-
10	3/8	17.1	-	0.63	0.63	-	0.70	0.84	0.84	0.84	-	1.10	1.10	1.10	-	-	-	-	-
15	1/2	21.3	0.80	1.00	1.00	-	1.12	1.27	1.27	1.27	-	1.62	1.62	1.62	-	-	-	1.95	2.55
20	3/4	26.7	1.02	1.28	1.28	-	1.44	1.69	1.69	1.69	-	2.20	2.20	2.20	-	-	-	2.90	3.64
25	1	33.4	1.29	2.09	2.09	-	2.18	2.50	2.50	2.50	-	3.24	3.24	3.24	-	-	-	4.24	5.45
32	11/4	42.2	1.65	2.69	2.69	-	2.87	3.39	3.39	3.39	-	4.47	4.47	4.47	-	-	-	5.61	7.77
40	11/2	48.3	1.90	3.11	3.11	-	3.54	4.05	4.05	4.05	-	5.41	5.41	5.41	-	-	-	7.25	9.55
50	2	60.3	2.39	3.93	3.93	-	4.48	5.44	5.44	5.44	-	7.48	7.48	7.48	-	-	-	11.11	13.44
65	21/2	73.0	3.69	5.26	5.26	-	8.04	8.63	8.63	8.63	-	11.41	11.41	11.41	-	-	-	14.92	20.39
80	3	88.9	4.52	6.46	6.46	-	9.92	11.29	11.29	11.29	-	15.27	15.27	15.27	-	-	-	21.35	27.68
90	31/2	101.6	5.18	7.41	7.41	-	11.41	13.57	13.57	13.57	-	18.64	18.64	18.64	-	-	-	-	-
100	4	114.3	5.84	8.37	8.37	-	12.91	16.08	16.08	16.08	-	22.32	22.32	22.32	-	28.32	-	33.54	41.03
125	5	141.3	9.46	11.56	11.56	-	-	21.77	21.77	21.77	-	30.97	30.97	30.97	-	40.28	-	49.12	57.43
150	6	168.3	11.31	13.83	13.83	-	-	28.26	28.26	28.26	-	42.56	42.56	42.56	-	54.21	-	67.57	79.22
200	8	219.1	14.78	19.97	19.97	33.32	36.81	42.55	42.55	42.55	53.09	64.64	64.64	64.64	75.92	90.44	100.93	111.27	107.93
250	10	273.1	22.61	27.79	27.79	41.77	51.03	60.31	60.31	60.31	81.56	81.56	81.56	96.02	114.76	133.06	155.16	172.34	155.16
300	12	323.9	31.25	35.99	35.99	49.73	65.20	73.88	73.88	79.73	108.96	97.47	97.47	132.09	159.92	186.98	208.15	238.78	186.98
350	14	355.6	34.34	41.36	54.69	67.91	81.33	81.33	81.33	94.55	126.72	107.4	107.4	158.11	194.98	224.66	253.58	281.72	-
400	16	406.4	41.56	47.34	62.65	77.83	93.27	93.27	93.27	123.31	160.13	123.31	123.31	203.54	245.57	286.66	333.21	365.38	-
450	18	457	46.79	53.31	70.57	87.71	122.38	105.17	105.17	155.81	205.75	139.16	139.16	254.57	309.64	363.58	408.28	459.39	-
500	20	508	59.32	68.65	78.56	117.15	155.12	117.15	117.15	183.43	247.84	155.13	155.13	311.19	381.55	441.52	508.15	564.85	-
550	22	559	65.33	75.62	86.55	129.14	171.09	-	129.14	-	294.27	-	171.10	373.85	451.45	527.05	600.67	672.30	-
600	24	610	82.58	94.53	94.53	141.12	209.64	141.12	141.12	255.43	355.28	187.07	187.07	442.11	547.74	640.07	720.19	808.27	-
650	26	660	-	-	127.36	202.74	-	-	152.88	-	-	-	202.74	-	-	-	-	-	-
700	28	711	-	-	137.32	218.71	271.21	-	164.86	-	-	-	218.71	-	-	-	-	-	-
750	30	762	118.34	147.29	147.29	234.68	292.18	-	176.85	-	-	-	234.68	-	-	-	-	-	-
800	32	813	-	-	157.25	250.65	312.15	-	188.83	342.94	-	-	250.65	-	-	-	-	-	-
850	34	864	-	-	167.21	266.63	332.12	-	200.82	364.92	-	-	266.63	-	-	-	-	-	-
900	36	914	-	-	176.97	282.29	351.70	-	212.57	420.45	-	-	282.29	-	-	-	-	-	-

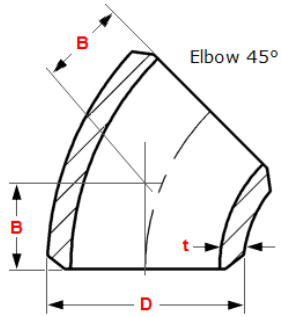
Pipe Wall Thickness

Nominal Size		OD	Nominal Wall Thickness For Welded & Seamless Wrought Steel Pipe To ASME B36.10 (In Millimeters) / Nominal Wall Thickness For Welded & Seamless Wrought Stainless Steel Pipe To ASME B36.19 (In Millimeters)															
DN	NPS	mm	Schedule															
			5S	10S	10	20	30	40S	STD	40	60	80S	XS	80	100	120	140	160	XXS
6	1/8	10.3	-	1.24	1.24	-	1.45	1.73	1.73	1.73	-	2.41	2.41	2.41	-	-	-	-	-
8	1/4	13.7	-	1.65	1.65	-	1.85	2.24	2.24	2.24	-	3.02	3.02	3.02	-	-	-	-	-
10	3/8	17.1	-	1.65	1.65	-	1.85	2.31	2.31	2.31	-	3.20	3.20	3.20	-	-	-	-	-
15	1/2	21.3	1.65	2.11	2.11	-	2.41	2.77	2.77	2.77	-	3.73	3.73	3.73	-	-	-	4.78	7.47
20	3/4	26.7	1.65	2.11	2.11	-	2.41	2.87	2.87	2.87	-	3.91	3.91	3.91	-	-	-	5.56	7.82
25	1	33.4	1.65	2.77	2.77	-	2.90	3.38	3.38	3.38	-	4.55	4.55	4.55	-	-	-	6.35	9.09
32	11/4	42.2	1.65	2.77	2.77	-	2.97	3.56	3.56	3.56	-	4.85	4.85	4.85	-	-	-	6.35	9.70
40	11/2	48.3	1.65	2.77	2.77	-	3.18	3.68	3.68	3.68	-	5.08	5.08	5.08	-	-	-	7.14	10.15
50	2	60.3	1.65	2.77	2.77	-	3.18	3.91	3.91	3.91	-	5.54	5.54	5.54	-	-	-	8.74	11.07
65	21/2	73.0	2.11	3.05	3.05	-	4.78	5.16	5.16	5.16	-	7.01	7.01	7.01	-	-	-	9.53	14.02
80	3	88.9	2.11	3.05	3.05	-	4.78	5.49	5.49	5.49	-	7.62	7.62	7.62	-	-	-	11.13	15.24
90	31/2	101.6	2.11	3.05	3.05	-	4.78	5.74	5.74	5.74	-	8.08	8.08	8.08	-	-	-	-	-
100	4	114.3	2.11	3.05	3.05	-	4.78	6.02	6.02	6.02	-	8.56	8.56	8.56	-	11.13	-	13.49	17.12
125	5	141.3	2.77	3.40	3.40	-	-	6.55	6.55	6.55	-	9.53	9.53	9.53	-	12.70	-	15.88	19.05
150	6	168.3	2.77	3.40	3.40	-	-	7.11	7.11	7.11	-	10.97	10.97	10.97	-	14.27	-	18.26	21.95
200	8	219.1	2.77	3.76	3.76	6.35	7.04	8.18	8.18	8.18	10.31	12.70	12.70	12.70	15.09	18.26	20.62	23.01	22.23
250	10	273.1	3.40	4.19	4.19	6.35	7.80	9.27	9.27	9.27	12.70	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
300	12	323.9	3.96	4.57	4.57	6.35	8.38	9.53	9.53	10.31	14.27	12.70	12.70	17.48	21.44	25.40	28.58	33.32	25.40
350	14	355.6	3.96	4.78	6.35	7.92	9.53	9.53	9.53	11.13	15.09	12.70	12.70	19.05	23.83	27.79	31.75	35.71	-
400	16	406.4	4.19	4.78	6.35	7.92	9.53	9.53	9.53	12.70	16.66	12.70	12.70	21.44	26.19	30.96	36.53	40.49	-
450	18	457	4.19	4.78	6.35	7.92	11.13	9.53	9.53	14.27	19.05	12.70	12.70	23.83	29.36	34.93	39.67	45.24	-
500	20	508	4.78	5.54	6.35	9.53	12.70	9.53	9.53	15.09	20.62	12.70	12.70	26.19	32.54	38.10	44.45	50.01	-
550	22	559	4.78	5.54	6.35	9.53	12.70	-	9.53	-	22.23	-	12.70	28.58	34.93	41.28	47.63	53.98	-
600	24	610	5.54	6.35	6.35	9.53	14.27	9.53	9.53	17.48	24.61	12.70	12.70	30.96	38.89	46.02	52.37	59.54	-
650	26	660	-	-	7.92	12.70	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-
700	28	711	-	-	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-	-
750	30	762	6.35	7.92	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-	-
800	32	813	-	-	7.92	12.70	15.88	-	9.53	17.48	-	-	12.70	-	-	-	-	-	-
850	34	864	-	-	7.92	12.70	15.88	-	9.53	17.48	-	-	12.70	-	-	-	-	-	-
900	36	914	-	-	7.92	12.70	15.88	-	9.53	19.05	-	-	12.70	-	-	-	-	-	-

Butt Weld

ASME B16.9 & B16.28
(Measurements in mm)

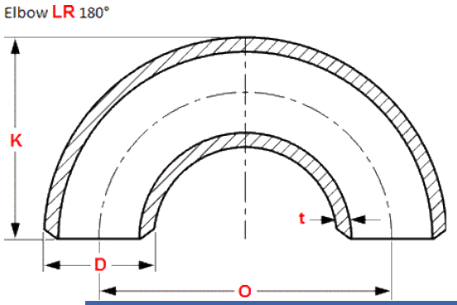


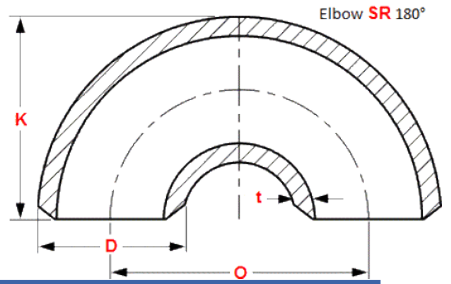


Long and Short Radius Elbows

Nominal Pipe Size mm	Outside Diameter at Bevel D	Centre to End		
		Long Radius Elbow		Short Radius Elbow
		90 Deg A	45 Deg B	90 Deg A
15	21.3	38.1	15.7	–
20	26.7	28.4	11.2	–
25	33.5	38.1	22.4	25.4
32	42.2	47.8	25.4	31.8
40	48.3	57.2	28.4	38.1
50	60.3	76.2	35.1	50.8
65	73.0	95.2	44.4	63.5
80	88.9	114.3	50.8	76.2
100	114.3	152.4	63.5	101.6
125	141.3	190.5	79.2	127.0
150	168.3	228.6	95.2	152.4
200	219.1	304.8	127.0	203.2
250	273.1	381.0	158.8	254.0
300	323.8	457.2	190.5	304.8
350	355.6	533.4	222.2	355.6
400	406.4	609.6	254.0	406.4
450	457.2	685.8	285.8	457.2
500	508.0	762.0	317.5	508.0
600	609.6	914.4	381.0	609.6

Note: "t" = wall thickness and is designated by linepipe schedule





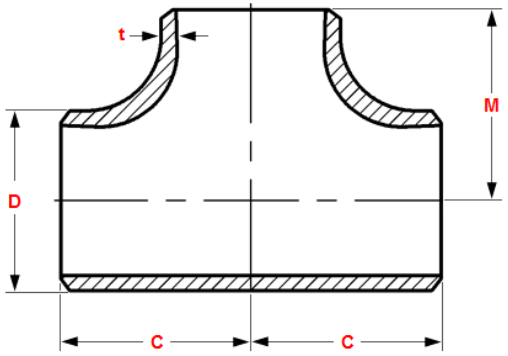
Return (180deg) Elbows

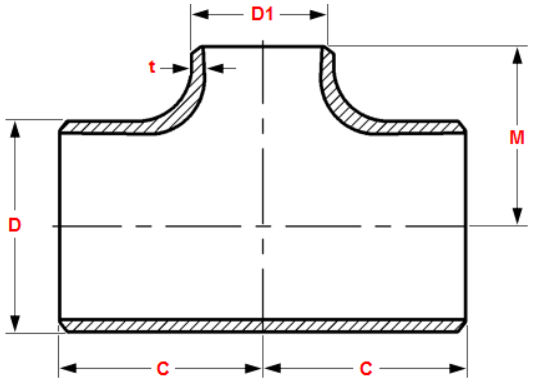
Nominal Pipe Size mm	Outside Diameter at Bevel D	Long Radius		Short Radius	
		Centre to Centre O	Back to Face K	Centre to Centre O	Back to Face K
15	21.3	76.2	47.8	–	–
20	26.7	57.2	42.9	–	–
25	33.5	76.2	55.6	50.8	41.1
32	42.2	95.2	69.8	63.5	52.3
40	48.3	114.3	82.6	76.2	62.0
50	60.3	152.4	106.4	101.6	81.0
65	73.0	190.5	131.8	127.0	100.1
80	88.9	228.6	158.8	152.4	120.7
100	114.3	304.8	209.6	203.2	158.8
125	141.3	381.0	261.9	254.0	196.9
150	168.3	457.2	312.7	304.8	236.5
200	219.1	609.6	414.3	406.4	312.7
250	273.1	762.0	517.7	508.0	390.7
300	323.8	914.4	619.3	609.6	466.9
350	355.6	1066.8	711.2	711.2	533.4
400	406.4	1219.2	812.8	812.8	609.6
450	457.2	1371.6	914.4	914.4	685.8
500	508.0	1524.0	1016.0	1016.0	762.0
600	609.6	1828.8	1219.2	1219.2	914.4

Note: "t" = wall thickness and is designated by linepipe schedule

Butt Weld

ASME B16.9 & B16.28
(Measurements in mm)





Tees: Equal and Reducing

Nominal Pipe Size mm	Outside Diameter at Bevel D		Centre-to-end		Nominal Pipe Size mm	Outside Diameter at Bevel D		Centre-to-end	
	Run	Outlet	Run C	Outlet M		Run	Outlet	Run C	Outlet M
15x15	21.3	21.3	25.4	25.4	80x80	88.9	88.9	85.9	85.9
20x20	26.7	26.7	28.4	28.4	80x65		73.0		82.6
20x15		21.3		28.4	80x50		60.3		76.2
25x25	33.5	33.5	38.1	38.1	80x40		48.3		73.0
25x20		26.7		38.1	80x32		42.2		69.8
25x15		21.3		38.1	100x100	114.3	114.3	104.6	104.6
32x32	42.2	42.2	47.8	47.8	100x80		88.9		98.6
32x25		33.5		47.8	100x65		73.0		95.2
32x20		26.7		47.8	100x50		60.3		88.9
32x15		21.3		47.8	100x40		48.3		85.9
40x40	48.3	48.3	57.2	57.2	125x125	141.3	141.3	124.0	124.0
40x32		42.2		57.2	125x100		114.3		117.3
40x25		33.5		57.2	125x80		88.9		111.3
40x20		26.7		57.2	125x65		73.0		108.0
40x15		21.3		57.2	125x50		60.3		104.6
50x50	60.3	60.3	63.5	63.5	150x150	168.3	168.3	142.7	142.7
50x40		48.3		60.3	150x125		141.3		136.7
50x32		42.2		57.2	150x100		114.3		130.0
50x25		33.5		50.8	150x80		88.9		124.0
50x20		26.7		44.4	150x65		73.0		120.6
65x65	73.0	73.0	76.2	76.2	200x200	219.1	219.1	177.8	177.8
65x50		60.3		69.8	200x150		168.3		168.3
65x40		48.3		66.5	200x125		141.3		162.1
65x32		42.2		63.5	200x100		114.2		155.4
65x25		33.5		57.2					

Note: "t" = wall thickness and is designated by linepipe schedule

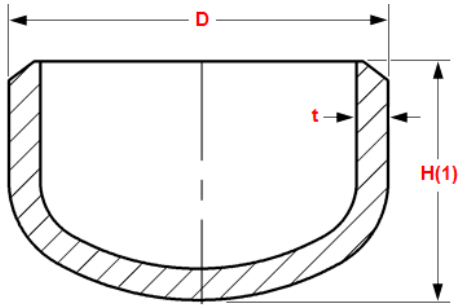
Tees: Equal and Reducing

Nominal Pipe Size mm	Outside Diameter at Bevel D		Centre-to-end		Nominal Pipe Size mm	Outside Diameter at Bevel D		Centre-to-end	
	Run	Outlet	Run C	Outlet M		Run	Outlet	Run C	Outlet M
250x250	273.1	273.1	215.9	215.9	450x450	457.2	457.2	342.9	342.9
250x200		219.1		203.2	450x400		406.4		330.2
250x150		168.3		193.5	450x350		355.6		330.2
250x125		141.3		190.5	450x300		323.8		320.5
250x100		114.3		184.2	450x250		273.1		307.8
300x300	323.8	323.8	254.0	254.0	450x200		219.1		298.4
300x250		273.1		241.3	500x500	508.0	508.0	381.0	381.0
300x200		219.1		228.6	500x450		457.2		368.3
300x150		168.3		219.1	500x400		406.4		355.6
300x125		141.3		215.9	500x350		355.6		355.6
350x350	355.6	355.6	279.4	279.4	500x300		323.8		345.9
350x300		323.8		269.7	500x250		273.1		333.2
350x250		273.1		257.0	500x200		219.1		323.8
350x200		219.1		247.6	600x600	609.6	609.6	431.8	431.8
350x150		168.3		238.3	600x500		508.0		431.8
400x400	406.4	406.4	304.8	304.8	600x450		457.2		419.1
400x350		355.6		304.8	600x400		406.4		406.4
400x300		323.8		295.1	600x350		355.6		406.4
400x250		273.1		282.4	600x300		323.8		396.7
400x200		219.1		373.0	600x250		273.1		384.0
400x150		168.3		263.7					

Note: "t" = wall thickness and is designated by linepipe schedule

Butt Weld

ASME B16.9 & B16.28
(Measurements in mm)

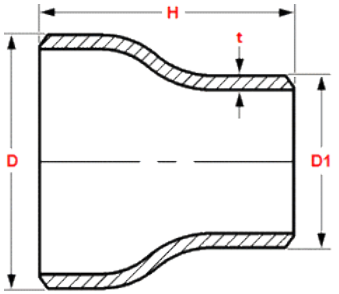


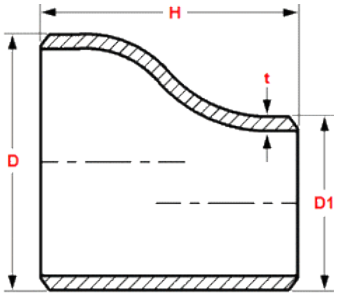
Caps

Nominal Pipe Size mm	Outside Diameter at Bevel D	Length* H (1)	Limiting Wall Thickness for Length H (1)
15	21.3	25.4	4.6
20	26.7	25.4	3.8
25	33.5	38.1	4.6
32	42.2	38.1	4.8
40	48.3	38.1	5.1
50	60.3	38.1	5.6
65	73.0	38.1	7.1
80	88.9	50.8	7.6
100	114.3	63.5	8.6
125	141.3	76.2	9.7
150	168.3	88.9	10.9
200	219.1	101.6	12.7
250	273.1	127.0	12.7
300	323.8	152.4	12.7
350	355.6	165.1	12.7
400	406.4	177.8	12.7
450	457.2	203.2	12.7
500	508.0	228.6	12.7
600	609.6	266.7	12.7

Note: "t" = wall thickness and is designated by linepipe schedule

* Length applies for thickness not exceeding that given in column





Reducers Concentric and Eccentric

NB Pipe Size	Outside Diameter at Bevel Large End D	Outside Diameter at Bevel Small End D1	End to End H	NB Pipe Size	Outside Diameter at Bevel Large End D	Outside Diameter at Bevel Small End D1	End to End H	NB Pipe Size	Outside Diameter at Bevel Large End D	Outside Diameter at Bevel Small End D1	End to End H
20x15	26.7	21.3	38.1	100x80 100x65 100x50 100x40	114.3	88.9 73.0 60.3 48.3	101.6	350x300 350x250 350x200 350x150	355.6	323.8 273.1 219.1 168.3	330.2
25x20 25x15	33.5	26.7 21.3	50.8								
32x25 32x20 32x15	42.2	33.5 26.7 21.3	50.8	125x100 125x80 125x65 125x50	141.3	114.3 88.9 73.0 60.3	127	400x350 400x300 400x250 400x200	406.4	355.6 323.8 273.1 219.1	355.6
40x32 40x25 40x20 40x15	48.3	42.2 33.5 26.7 21.3	63.5	150x125 150x100 150x80 150x65	168.3	141.3 114.3 88.9 73.0	139.7	450x400 450x350 450x300 450x250	457.2	406.4 355.6 323.8 273.1	381
50x40 50x32 50x25 50x20	60.3	48.3 42.2 33.5 26.7	76.2	200x150 200x125 200x100 200x80	219.1	168.3 141.3 114.3 88.9	152.4	500x450 500x400 500x350 500x300	508	457.2 406.4 355.6 323.8	508
65x50 65x40 65x32 65x25	73	60.3 48.3 42.2 33.5	88.9	250x200 250x150 250x125 250x100	273.1	219.1 168.3 141.3 114.3	177.8	600x500 600x450 600x400	609.6	508.0 457.2 406.4	508
80x65 80x50 80x40 80x32	88.9	73.0 60.3 48.3 42.2	88.9	300x250 300x200 300x150 300x125	323.8	273.1 219.1 168.3 141.3	203.2				

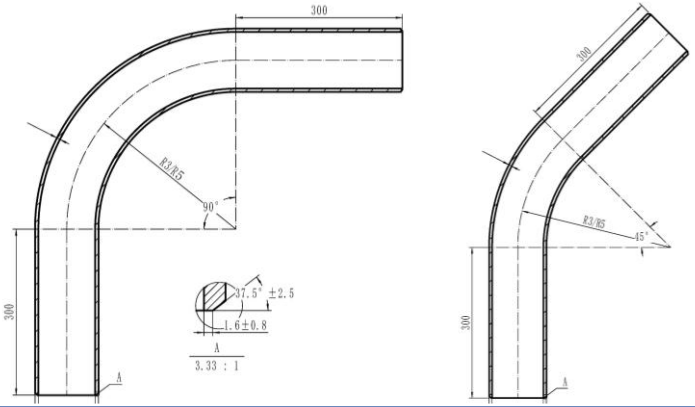
Note: "t" = wall thickness and is designated by linepipe schedule

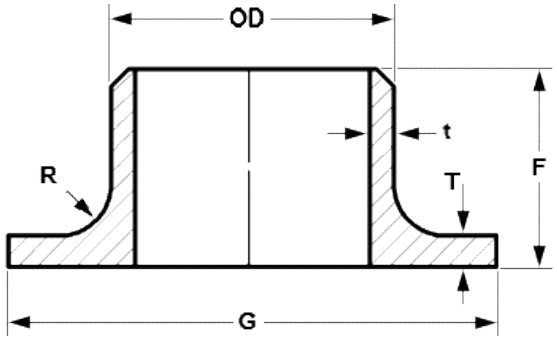
SPFA
Specialised Pipe and Fittings Australia

YOUR TRUSTED PARTNER
IN THE PIPING INDUSTRY

Butt Weld

ASME B16.9, B16.49 & MSS SP43
(Measurements in mm)





Induction 3D & 5D Bend

Nominal Pipe Size	Outside Diameter at Bevel	3D Centre Line Radius		5D Centre Line Radius		Tangent *
		90 Deg R3 *	45 Deg R3 *	90 Deg R5 *	45 Deg R5 *	
15	21.3	38.1	38.1	63.5	63.5	300
20	26.7	57.2	57.2	95.3	95.3	300
25	33.5	76.2	76.2	127.0	127.0	300
32	42.2	95.3	95.3	158.8	158.8	300
40	48.3	114.3	114.3	190.5	190.5	300
50	60.3	152.4	152.4	254.0	254.0	300
65	73.0	190.5	190.5	317.5	317.5	300
80	88.9	228.6	228.6	381.0	381.0	300
100	114.3	304.8	304.8	508.0	508.0	300
125	141.3	381.0	381.0	635.0	635.0	300
150	168.3	457.2	457.2	762.0	762.0	300
200	219.1	609.6	609.6	1,016	1,016	300
250	273.1	762.0	762.0	1,270	1,270	300
300	323.8	914.4	914.4	1,524	1,524	300
350	355.6	1,067	1,067	1,778	1,778	300
400	406.4	1,219	1,219	2,032	2,032	300
450	457.2	1,372	1,372	2,286	2,286	300
500	508.0	1,524	1,524	2,540	2,540	300
600	609.6	1,829	1,829	3,048	3,048	300

Note: wall thickness is designated by nominal pipe wall thickness.
* SPFA standard dimensions; according to ASME B16.49 the BEND RADIUS (R3 & R5) and TANGENT are specified by the purchaser.

Stub Ends

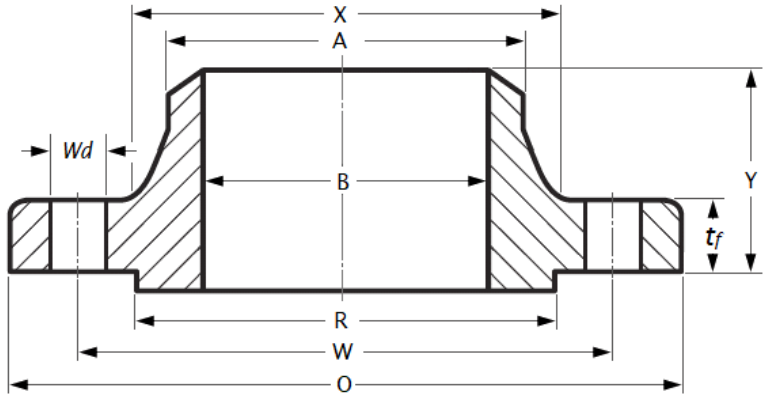
Type A Radius for Lap Joint
Type B Square for Slip On

NB	OD *max*	OD *min*	G	ASME & MSS Type A R	MSS Type B R *max*	ASME B16.9 Radius Type				MSS SP43 Type A & B	
						Long Pattern		Short Pattern			
						F	Approx kg	F	Approx kg	F	Approx kg
15	22.8	20.5	35	3	0.76	76	0.12	51	0.07	51	0.07
20	28.1	25.9	43	3	0.76	76	0.16	51	0.10	51	0.10
25	35.0	32.6	51	3	0.76	102	0.31	51	0.16	51	0.16
32	43.6	41.4	64	5	0.76	102	0.44	51	0.22	51	0.22
40	49.9	47.5	73	6	0.76	102	0.54	51	0.25	51	0.25
50	62.4	59.5	92	8	0.76	152	1.02	64	0.43	64	0.43
65	75.3	72.2	105	8	0.76	152	1.54	64	0.57	64	0.57
80	91.3	88.1	127	10	0.76	152	2.11	64	0.73	64	0.73
90	104.0	100.8	140	10	0.76	152	2.67	76	0.86	76	0.86
100	116.7	113.5	157	11	0.76	152	3.10	76	1.09	76	1.09
125	114.3	140.5	186	11	1.52	203	5.39	76	1.47	76	1.47
150	171.3	167.5	216	13	1.52	203	6.89	89	2.15	89	2.15
200	222.1	218.3	270	13	1.52	203	10.80	102	3.22	102	3.22
250	277.2	272.3	324	13	1.52	254	17.92	127	5.13	127	5.13
300	328.0	323.1	381	13	1.52	254	22.00	152	8.16	152	8.16
350	359.9	354.8	413	13	1.52	305	28.58	152	10.89	152	10.89
400	411.0	405.6	470	13	1.52	305	33.34	152	12.70	152	12.70
450	462.0	456.0	533	13	1.52	305	44.91	152	17.24	152	17.24
500	514.0	507.0	584	13	1.52	305	48.99	152	21.77	152	21.77
550	565.0	558.0	641	13	1.52	305	56.02	152	24.50	152	24.50
600	616.0	609.0	692	13	1.52	305	63.05	152	27.22	152	27.22

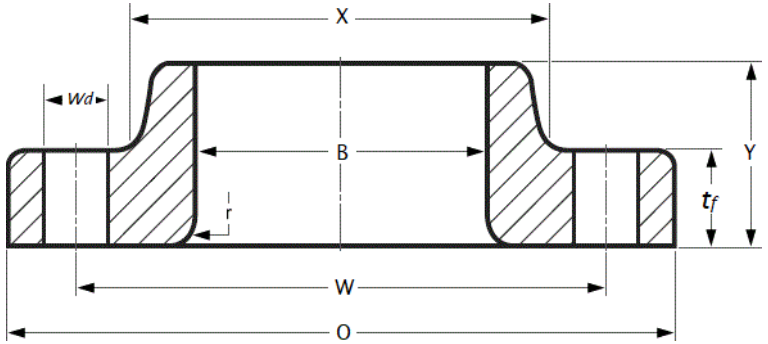
Note: the lap thickness "T" shall not be less than nominal pipe wall thickness "t"

Dimensional arrangements for ASME B16.5 Flanges

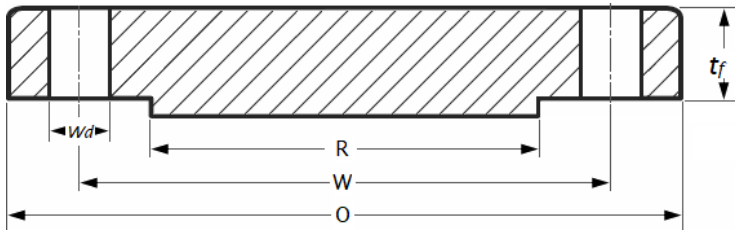
WELD NECK (WNRF)



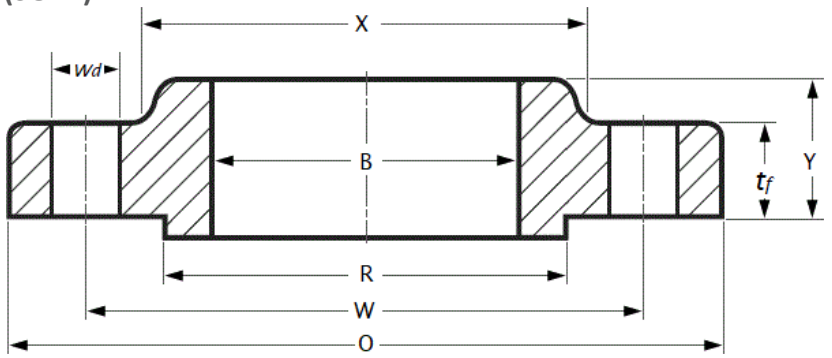
LAP JOINT (LJFF)



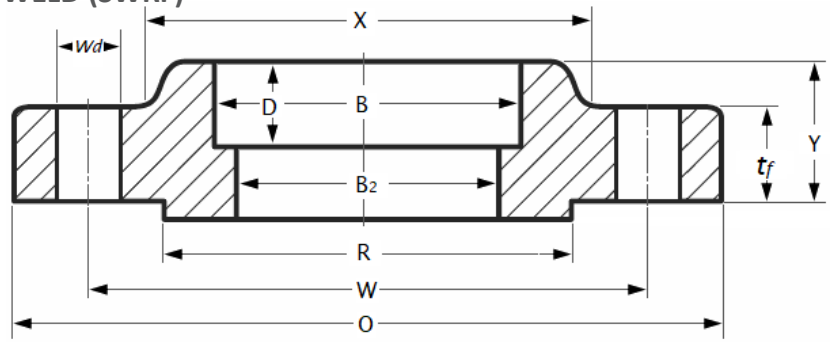
BLIND (BLRF)



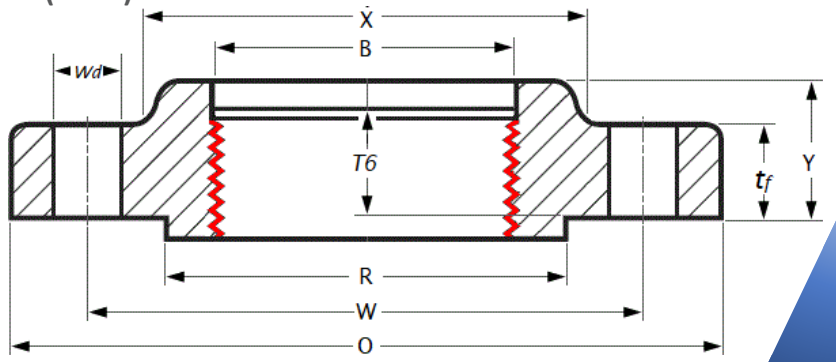
SLIP ON (SORF)



SOCKET WELD (SWRF)



THREADED (THRF)



Dimensional tables for ASME B16.5 Flanges

CLASS 150		15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	600
OD	O	90	100	110	120	130	150	180	190	215	230	255	280	345	405	485	535	595	635	700	815
MIN THICK *	t_f	11.2	12.7	14.3	15.9	17.5	19.1	22.3	23.9	23.9	23.9	23.9	25.4	28.6	30.2	31.8	35.0	36.6	39.7	42.9	47.7
HUB LENGTH **	Y	16	16	17	21	22	25	29	30	32	33	36	40	44	49	56	57	64	68	73	83
HUB LENGTH W/N	Y	48	52	56	57	62	64	70	70	71	76	89	89	102	102	114	127	127	140	145	152
PCD	W	60.3	69.9	79.4	88.9	98.4	120.7	139.7	152.4	177.8	190.5	215.9	241.3	298.5	362.0	431.8	476.3	539.8	577.9	635.0	749.3
BOLT HOLE DIA	*Wd*	16	16	16	16	16	19	19	19	19	19	22	22	22	25	25	29	29	32	32	35
No. BOLTS	*n*	4	4	4	4	4	4	4	4	4	8	8	8	8	12	12	12	16	16	20	20
WEIGHT ***	kg	0.5	0.7	0.9	1.1	1.4	2.2	3.2	3.6	5.0	5.9	6.8	8.0	12.8	18.0	27.7	37.7	48.2	59.0	67.0	96.0
WEIGHT W/N	kg	0.9	0.9	1.4	1.4	1.8	2.8	4.6	5.2	5.5	7.8	9.6	12.5	19.9	24.6	40.0	52.0	65.0	76.0	89.4	123.0
WEIGHT BLIND	kg	0.9	0.9	0.9	1.4	1.8	2.3	3.2	5.5	5.9	7.7	9.1	12.0	21.4	30.5	50.0	63.0	85.0	99.0	129.0	190.0

CLASS 300		15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	600
OD	O	95	115	125	135	155	165	190	210	230	255	280	320	380	445	520	585	650	710	775	915
MIN THICK *	t_f	12.7	14.3	15.9	19.1	20.7	22.3	25.4	28.6	30.2	31.8	35.0	36.6	41.3	47.7	50.8	54.0	57.2	60.4	63.5	69.9
HUB LENGTH **	Y	22	25	25	27	30	33	38	43	44	48	51	52	62	67	73	76	83	89	95	106
HUB LENGTH W/N	Y	52	57	60	65	68	70	76	79	81	86	98	98	111	117	130	143	146	159	162	168
PCD	W	66.7	82.6	88.9	98.4	114.3	127.0	149.2	168.3	184.2	200.0	235.0	269.9	330.2	387.4	450.8	514.4	571.5	628.6	685.8	812.8
BOLT HOLE DIA	*Wd*	16	19	19	19	22	19	22	22	22	22	22	22	25	29	32	32	35	35	35	41
No. BOLTS	*n*	4	4	4	4	4	8	8	8	4	8	8	12	12	16	16	20	20	24	24	24
WEIGHT ***	kg	0.7	1.1	1.4	2.1	3.0	3.2	4.6	5.9	7.3	10.5	13.2	16.3	25.0	35.0	51.0	72.0	95.0	115.0	140.0	223.0
WEIGHT W/N	kg	0.9	1.4	1.8	2.3	3.2	3.6	5.5	6.9	9.1	12.1	16.4	21.1	31.4	44.0	65.0	94.0	113.0	139.0	168.0	236.0
WEIGHT BLIND	kg	0.9	1.4	1.8	2.7	3.2	3.6	5.5	7.3	9.6	12.7	16.8	21.8	35.9	55.0	83.0	110.0	143.0	188.0	234.0	364.0

CLASS 600		15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	600
OD	O	95	115	125	135	155	165	190	210	230	275	330	355	420	510	560	605	685	745	815	940
MIN THICK *	t_f	14.3	15.9	17.5	20.7	22.3	25.4	28.6	31.8	35.0	38.1	44.5	47.7	55.6	63.5	66.7	69.9	76.2	82.6	88.9	101.6
HUB LENGTH **	Y	22	25	27	29	32	37	41	46	49	54	60	67	76	86	92	94	106	117	127	140
HUB LENGTH W/N	Y	52	57	62	67	70	73	79	83	86	102	114	117	133	152	156	165	178	184	190	203
PCD	W	66.7	82.6	88.9	98.4	114.3	127.0	149.2	168.3	184.2	215.9	266.7	292.1	349.2	431.8	489.0	527.0	603.2	654.0	723.9	838.2
BOLT HOLE DIA	*Wd*	16	19	19	19	22	20	22	22	25	25	29	29	32	35	35	38	41	45	45	51
No. BOLTS	*n*	4	4	4	4	4	8	8	8	8	8	8	12	12	16	20	20	20	20	24	24
WEIGHT ***	kg	0.9	1.4	1.6	2.1	3.2	3.6	5.5	6.8	9.6	15.0	28.6	36.4	44.1	80.0	98.0	118.0	166.0	216.0	278.0	398.0
WEIGHT W/N	kg	1.4	1.6	1.8	2.5	3.6	4.6	6.4	8.2	11.8	16.8	30.9	33.2	51.0	86.0	103.0	125.0	200.0	252.0	314.0	444.0
WEIGHT BLIND	kg	0.9	1.4	1.8	2.7	3.6	4.6	6.8	9.1	13.2	18.6	30.9	39.1	63.0	105.0	134.0	172.0	240.0	302.0	389.0	534.0

Note:
* Min thickness includes raised face but not hub or WN
** Hub length for slip on and threaded flanges
*** Approximate weight SW, SO, LJ & THD (excludes WN) - ALL weights are approximate only

Dimensional tables for ASME B16.5 Flanges

CLASS 900	15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	600
OD O	Use CLASS 1500 Dimensions							240	Size is not defined by ASME B16.5	290	350	380	470	545	610	640	705	785	855	1040
MIN THICK * t_f								38.5		44.5	51.0	56.0	63.5	70.0	79.5	86.0	89.0	102.0	108.0	140.0
HUB LENGTH ** Y								54		70	79	86	102	108	117	130	133	152	159	203
HUB LENGTH W/N Y								102		114	127	140	162	184	200	213	216	229	248	292
PCD W								190.5		235.0	279.4	317.5	393.7	469.9	533.4	558.8	616.0	685.8	749.3	901.7
BOLT HOLE DIA *Wd*								25		32	35	32	38	38	38	41	45	51	54	66
No. BOLTS *n*								8		8	8	12	12	16	20	20	20	20	20	20
WEIGHT *** kg								14.1		24.1	37.7	49.0	78.1	111.2	148.0	172.5	208.4	293.7	359.6	671.9
WEIGHT W/N kg								13.2		23.2	39.0	49.9	84.9	121.7	168.9	255.2	311.0	419.5	528.5	956.6
WEIGHT BLIND kg								14.0		24.6	39.6	51.0	90.0	132.0	188.0	225.0	281.0	400.0	503.0	954.0

CLASS 1500	15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	600
OD O	120	130	150	160	180	215	245	265	Size is not defined by ASME B16.5	310	375	395	485	585	675	750	825	915	985	1170
MIN THICK * t_f	22.5	25.5	29.0	29.0	32.0	38.5	41.5	48.0		54.0	73.5	83.0	92.0	108.0	124.0	133.5	146.5	162.0	178.0	203.5
HUB LENGTH ** Y	32	35	41	41	44	57	64	-		-	-	-	-	-	-	-	-	-	-	-
HUB LENGTH W/N Y	60	70	73	73	83	102	105	117		124	156	171	213	254	283	298	311	327	356	406
PCD W	82.6	88.9	101.6	111.1	123.8	165.1	190.5	203.2		241.3	292.1	317.5	393.7	482.6	571.5	635.0	704.8	774.7	831.8	990.6
BOLT HOLE DIA *Wd*	22	22	25	25	29	25	29	35		35	41	38	45	51	55	58	67	73	80	92
No. BOLTS *n*	4	4	4	4	4	8	8	8		8	8	12	12	12	16	16	16	16	16	16
WEIGHT *** kg	2.7	2.7	3.8	4.6	6.4	10.0	16.4	-		-	-	-	-	-	-	-	-	-	-	-
WEIGHT W/N kg	2.3	3.2	3.9	4.6	6.4	10.9	16.4	21.8		31.4	60.0	75.0	124.0	206.0	314.0	380.0	775.0	644.0	775.0	1232
WEIGHT BLIND kg	1.8	2.7	4.1	4.6	6.4	11.4	15.9	21.8		33.2	65.0	72.0	137.0	230.0	352.0	420.0	558.0	760.0	965.0	1558

Note:
* Min thickness includes raised face but not hub or WN
** Hub length for slip on and threaded flanges
*** Approximate weight SW, SO, LJ & THD (excludes WN) - ALL weights are approximate only

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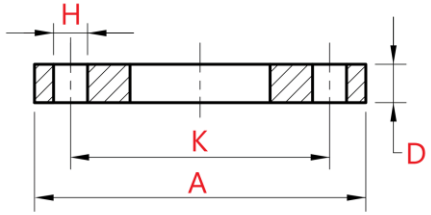
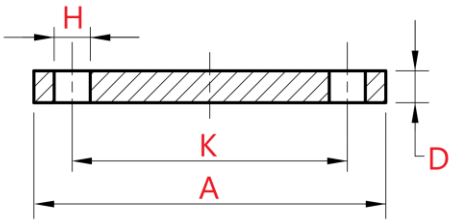
Table Flanges

AS 2129
(Measurements in mm)

SLIP ON (SO)



BLIND (BL)



AS2129 TABLE D		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS *	D	5	5	5	6	6	8	8	10	10	13	13	13	16	19	22	22	25	29	32
O D	A	95	100	115	120	135	150	165	185	215	255	280	335	405	455	525	580	640	705	825
PCD	K	67	73	83	87	98	114	127	146	178	210	235	292	356	406	470	521	584	641	756
No BOLTS	n	4	4	4	4	4	4	4	4	4	8	8	8	8	12	12	12	12	16	16
BOLT SIZE	H	M12	M12	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M24	M24	M24	M24	M27
I WEIGHT SO	kg	0.30	0.30	0.40	0.50	0.60	0.90	1.10	1.60	2.10	3.70	4.10	5.10	8.80	11.90	20.20	23.10	30.70	42.40	60.20
WEIGHT BL	kg	0.28	0.31	0.41	0.54	0.68	1.12	1.36	2.14	2.89	5.28	6.36	9.11	16.39	24.56	37.86	46.21	63.94	90.00	136.00

AS2129 TABLE E		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS *	D	6	6	7	8	9	10	10	11	13	14	17	19	22	25	29	32	35	38	48
O D	A	95	100	115	120	135	150	165	185	215	255	280	335	405	455	525	580	640	705	825
PCD	K	67	73	83	87	98	114	127	146	178	210	235	292	356	406	470	521	584	641	756
No BOLTS	n	4	4	4	4	4	4	4	4	8	8	8	8	12	12	12	12	16	16	16
BOLT SIZE	H	M12	M12	M12	M12	M12	M16	M16	M16	M16	M16	M20	M20	M20	M24	M24	M24	M24	M24	M30
WEIGHT SO	kg	0.30	0.40	0.50	0.60	0.90	1.20	1.30	1.80	2.70	3.90	5.30	7.50	12.10	15.60	26.60	33.6	42.90	55.50	90.30
WEIGHT BL	kg	0.34	0.37	0.58	0.72	1.02	1.40	1.70	2.35	3.75	5.68	8.32	13.31	22.53	32.32	49.91	67.22	89.50	117.93	204.00

AS2129 TABLE F		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS *	D	10	10	10	13	13	16	16	16	19	22	22	25	29	32	35	41	44	51	57
O D	A	95	100	120	135	140	165	185	205	230	280	305	370	430	490	550	610	675	735	850
PCD	K	67	73	87	98	105	127	146	165	191	235	260	324	381	438	495	552	610	673	871
No BOLTS	n	4	4	4	4	4	4	8	8	8	8	12	12	12	16	16	20	20	24	24
BOLT SIZE	H	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M24	M24	M27	M27	M30	M30	M33
WEIGHT SO	kg	0.50	0.54	0.77	1.26	1.32	2.27	2.68	3.21	4.49	7.61	8.21	13.17	18.72	25.15	35.76	48.87	62.33	82.15	114.19
WEIGHT BL	kg	0.53	0.59	0.84	1.41	1.53	2.66	3.25	4.05	6.14	10.53	12.32	21.05	32.93	47.12	64.76	93.24	122.59	168.38	253.10

AS2129 TABLE H		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS	D	13	13	14	17	17	19	19	22	25	29	29	32	35	41	48	54	60	67	76
O D	A	115	115	120	135	140	165	185	205	230	280	305	370	430	490	550	610	675	735	850
PCD	K	83	83	87	98	105	127	146	165	191	235	260	324	381	438	495	552	610	673	781
No BOLTS	n	4	4	4	4	4	4	8	8	8	8	12	12	12	16	16	20	20	24	24
BOLT SIZE	H	M16	M16	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M24	M24	M27	M27	M30	M30	M33
WEIGHT SO	kg	1.00	1.00	1.20	1.70	1.80	2.80	3.40	4.70	6.20	10.60	11.80	17.60	23.70	34.10	52.10	68.70	90.80	115.90	162.90
WEIGHT BL	kg	1.01	1.07	1.26	1.93	2.08	3.23	4.06	5.77	8.26	14.31	16.84	27.35	40.41	61.47	90.66	125.47	170.7	226.00	343.00

Note: * Plate flanges less than 12.0mm thickness may suffer unacceptable distortion after welding. these items are typically stocked in 10 or 12mm thickness

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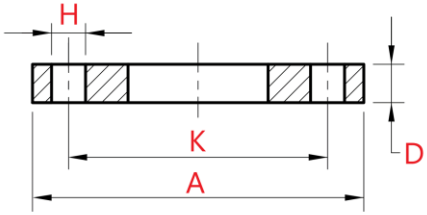
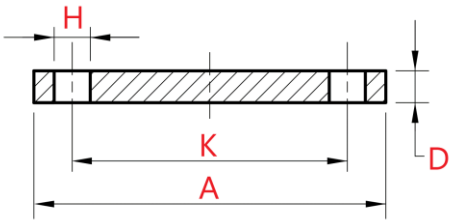
Table Flanges

AS 4087 & EN 1092
(Measurements in mm)

SLIP ON (SO)



BLIND (BL)



AS4087 PN16		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS	D						11	11	11	13		13	19	19	23	30	30	30	38	48
O D	A						150	165	185	215		280	335	405	455	525	580	640	705	825
PCD	K						114	127	146	178		235	292	356	406	470	521	584	641	756
No BOLTS	n	-	-	-	-	-	4	4	4	4	-	8	8	8	12	12	12	12	16	16
BOLT SIZE	H						M16	M16	M16	M16		M16	M16	M20	M20	M24	M24	M24	M24	M27
WEIGHT SO	kg						1.23	1.44	1.75	2.63		3.90	7.39	10.23	13.93	26.68	30.78	36.27	54.41	88.40
WEIGHT BL	kg						1.50	1.83	2.33	3.75		6.33	13.38	19.54	29.72	51.54	63.25	77.35	118.66	205.37

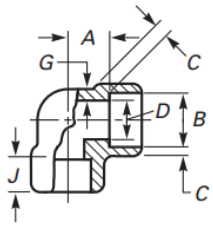
AS4087 PN21		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS	D						15	15	15	19		24	24	30	30	30	38	38	48	58
O D	A						165	185	205	230		305	370	430	490	550	610	675	735	850
PCD	K						127	146	165	191		260	324	381	438	495	552	610	673	781
No BOLTS	n	-	-	-	-	-	4	8	8	8	-	12	12	12	16	16	20	20	24	24
BOLT SIZE	H						M16	M16	M16	M16		M20	M20	M24	M24	M27	M27	M30	M30	M33
WEIGHT SO	kg						2.13	2.51	3.01	4.49		8.95	12.64	19.36	23.57	30.65	45.29	53.83	77.32	116.19
WEIGHT BL	kg						2.50	3.05	3.80	6.14		13.44	20.21	34.06	44.18	55.51	86.42	105.88	158.48	257.54

EN1092 PN16		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS	D	14	16	16	18	18	20	20	20	22	22	24	26	29	32	35	38	42	46	55
O D	A	95	105	115	140	150	165	185	200	220	250	285	340	405	460	520	580	640	715	840
PCD	K	65	75	85	100	110	125	145	160	180	210	240	295	355	410	470	525	585	650	770
No BOLTS	n	4	4	4	4	4	4	8	8	8	8	8	12	12	12	16	16	20	20	20
BOLT SIZE	H	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M24	M24	M24	M27	M27	M30	M33
WEIGHT SO	kg	0.69	0.97	1.16	1.90	2.17	2.84	3.35	3.75	4.57	4.57	7.43	10.14	14.83	19.84	29.35	37.46	48.10	66.82	106.05
WEIGHT BL	kg	0.74	1.05	1.28	2.12	2.45	3.33	4.06	4.80	6.47	6.47	11.92	18.33	29.04	41.82	58.35	78.58	105.63	144.59	240.08

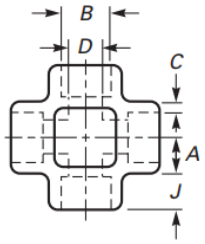
EN1092 PN25		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
THICKNESS	D	14	16	16	18	18	20	22	24	26	28	30	32	35	38	42	48	54	58	68
O D	A	95	105	115	140	150	165	185	200	235	270	300	360	425	485	555	620	670	730	845
PCD	K	65	75	85	100	110	125	145	160	190	220	250	310	370	430	490	550	600	660	770
No BOLTS	n	4	4	4	4	4	4	8	8	8	8	8	12	12	16	16	16	20	20	20
BOLT SIZE	H	M12	M12	M12	M16	M16	M16	M16	M16	M20	M24	M24	M24	M27	M27	M30	M33	M33	M33	M36
WEIGHT SO	kg	0.69	0.97	1.16	1.90	2.17	2.84	3.68	4.50	6.32	8.42	10.68	14.88	21.03	27.80	43.58	60.16	72.73	90.78	132.82
WEIGHT BL	kg	0.74	1.05	1.28	2.12	2.45	3.33	4.47	5.77	8.57	12.14	16.30	24.97	38.17	53.89	78.38	112.11	146.69	188.84	298.54

Socket Weld

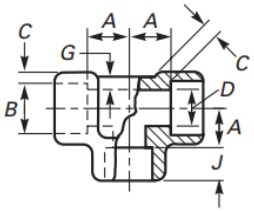
ASME B16.11
(Measurements in mm)



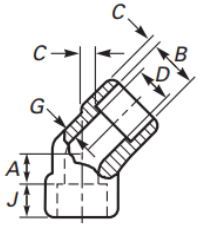
90-deg Elbow



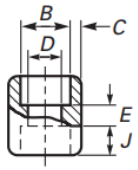
Cross



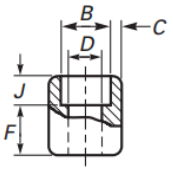
Tee



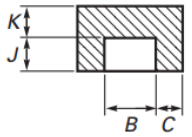
45-deg Elbow



Coupling



Half-Coupling



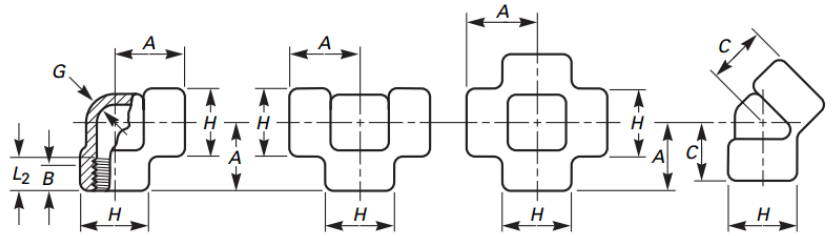
Cap

Class 3000		Centre-to-bottom of Socket	Centre-to-bottom of Socket	Socket Bore		Socket Wall		Bore Diameter		Laying Length	Laying Length	Body Wall	End Wall	Tolerances +/- mm		
Note:		1	2			3										
DN	NPS	A	A	B Max	B Min	C Avg	C Min	D Max	D Min	E	F	G	K	A	E	F
6	1/8	11.0	8.0	11.2	10.8	3.18	3.18	7.6	6.1	6.5	16.0	2.41	4.8	1.0	1.5	1.0
8	1/4	11.0	8.0	14.6	14.2	3.78	3.30	10.0	8.5	6.5	16.0	3.02	4.8	1.0	1.5	1.0
10	3/8	13.5	8.0	18.0	17.6	4.01	3.50	13.3	11.8	6.5	17.5	3.20	4.8	1.5	3.0	1.5
15	1/2	15.5	11.0	22.2	21.8	4.67	4.09	16.6	15.0	9.5	22.5	3.73	6.4	1.5	3.0	1.5
20	3/4	19.0	13.0	27.6	27.2	4.90	4.27	21.7	20.2	9.5	24.0	3.91	6.4	1.5	3.0	1.5
25	1	22.5	14.0	34.3	33.9	5.69	4.98	27.4	25.9	12.5	28.5	4.55	9.6	2.0	4.0	2.0
32	1-1/4	27.0	17.5	43.1	42.7	6.07	5.28	35.8	34.3	12.5	30.0	4.85	9.6	2.0	4.0	2.0
40	1-1/2	32.0	20.5	49.2	48.8	6.35	5.54	41.6	40.1	12.5	32.0	5.08	11.2	2.0	4.0	2.0
50	2	38.0	25.5	61.7	61.2	6.96	6.04	53.3	51.7	19.0	41.0	5.54	12.7	2.0	4.0	2.0
65	2-1/2	41.0	28.5	74.4	73.9	8.76	7.67	64.2	61.2	19.0	43.0	7.01	15.7	2.5	5.0	2.5
80	3	57.0	32.0	90.3	89.8	9.52	8.30	79.4	76.4	19.0	44.5	7.62	19.0	2.5	5.0	2.5
100	4	66.5	41.0	115.7	115.2	10.69	9.35	103.8	100.7	19.0	48.0	8.56	22.4	2.5	5.0	2.5

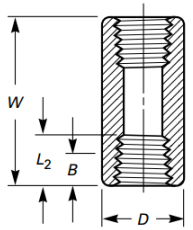
Note: 1 For 90deg Elbows, Tees and Crosses
2 For 45deg Elbows
3 Average socket wall thickness around periphery shall not be less than the listed value. The minimum value are permitted in localized areas.

Threaded Fittings

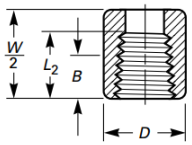
ASME B16.11 (Measurements in mm)



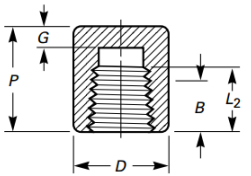
90-deg Elbow | Tee | Cross | 45-deg Elbow



Coupling



Half-Coupling



Cap

Class 3000		Centre-to-end	Centre-to-end	Minimum Length of Thread		OD of Band	Min Wall	Min End Wall	End-to-end Couplings	End-to-end Caps	OD
Note:		1	2	3			4	5			
DN	NPS	A	C	B	L2	H	G (1)	G (2)	W	P	D
6	1/8	21	17	6.4	6.7	22	3.18	4.8	32	19	16
8	1/4	25	19	8.1	10.2	25	3.30	4.8	35	25	19
10	3/8	28	22	9.1	10.4	33	3.51	4.8	38	25	22
15	1/2	33	25	10.9	13.6	38	4.09	6.4	48	32	28
20	3/4	38	28	12.7	13.9	46	4.32	6.4	51	37	35
25	1	44	33	14.7	17.3	56	4.98	9.7	60	41	44
32	1-1/4	51	35	17.0	18.0	62	5.28	9.7	67	44	57
40	1-1/2	60	43	17.8	18.4	75	5.56	11.2	79	44	64
50	2	64	44	19.0	19.2	84	7.14	12.7	86	48	76
65	2-1/2	83	52	23.6	28.9	102	7.65	15.7	92	60	92
80	3	95	64	25.9	30.5	121	8.84	19.0	108	65	108
100	4	114	79	27.7	33.0	152	11.18	22.4	121	68	140

Note: 1 For 90deg Elbows, Tees and Crosses

2 For 45deg Elbows

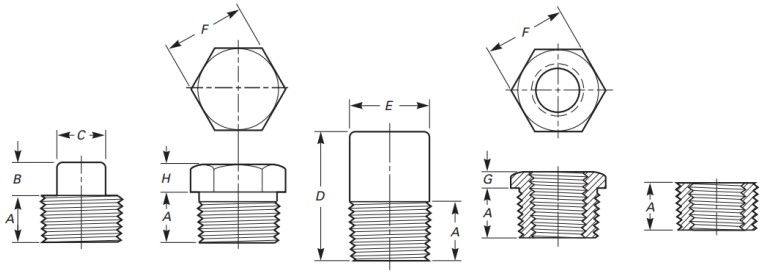
3 Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for Pipe Threads (ASME B1.20.1; see para. 6.3).

4 For 90deg, 45deg Elbows, Tees and Crosses

5 For Couplings, Half Couplings and Caps. The wall thickness away from the threaded ends shall meet the minimum wall thickness requirements of G(1).

Threaded Fittings

ASME B16.11
(Measurements in mm)



Square Head Plug | Hex Head Plug | Round Head Plug | Hex Head Bushing | Flush Bushing

Class 3000		Min Length	Min Square Height	Min Width Flats	Min Length	Nominal Head Dia	Nominal Width Flats	Min Hex Height Bush	Min Hex Height Plug
Note:				2			2		
DN	NPS	A	B	C	D	E	F	G	H
6	1/8	10	6	7.15	35	10	11.11	-	6
8	1/4	11	6	9.55	41	14	15.88	3	6
10	3/8	13	8	11.11	41	18	17.46	4	8
15	1/2	14	10	14.29	44	21	22.23	5	8
20	3/4	16	11	15.88	44	27	26.99	6	10
25	1	19	13	20.64	51	33	34.93	6	10
32	1-1/4	21	14	23.81	51	43	44.45	7	14
40	1-1/2	21	16	28.58	51	48	50.80	8	16
50	2	22	18	53.34	64	60	63.50	9	18
65	2-1/2	27	19	38.10	70	73	76.20	10	19
80	3	28	21	42.86	70	89	88.90	10	21
100	4	32	25	63.50	76	114	117.48	13	25

Note: 1 ***ASME B16.11 Cautionary Note Regarding Hex Bushings***: Hex head bushings of one-size reduction should not be used in services where they might be subject to harmful loads and forces other than internal pressures.

2 Manufacturer's applied tolerance shall ensure dimension will fit U.S. Customary tooling.

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Scope of Supply

Materials

Stainless Steel
Austenitic: 304/L/H, 316/L/H, 316Ti, 310/H/S, 317/L, 321/H, 347/H, 904L (N08904), 6Mo (S31254)
Ferritic: 430, 446-2
Martensitic: 410

Duplex/Super Duplex
S31803, S32205, S32750, S32760

Nickel Alloy
Alloy 31, 59, 20, 200, 201, C-276, 400, 600, 601, 690, 693, 625, 718, 825, 800H/HT

Copper Nickel
90/10, EEMUA 7060X, 70/30

Carbon/High Yield
A, B, C, X42, X46, X52, X56, X60, X65, X70, X80, X90, X100, X120
Galvanised

Low Temp
1, 3, 6, CC60, CC65, CC70

Chrome Moly
P1, P2, P5/b/c, P9, P11, P12, P15, P21, P22, P23, P24, P36, P91, P92, P122, P911

Titanium
Commercially Pure (Grade 1, 2, 3, 4), Ti6Al-4V (Grade 5), Ti 6Al-4V ELI (Grade 23), Ti-Pd (Grade 7), Ti Code 12 (Grade 12)

Products

Pipe and Tube
Welded, Seamless, Heat Exchanger, Boiler, Super Heater, Finned

Buttweld Fittings
Elbows LR & SR
Induction Bend, Lobster Back
180, 90, 45 & Custom Angles
Tees, Reducers, Stub Ends
Caps, Crosses
45D Wye Pieces & 45D Tees

Flanges
Weld Neck, Slip On, Blind, Lap Joint, Socket Weld, Long Weld Neck, Spectacle, Orifice, Spade & Spacer
150# to 2500#, Table D to Table R, PN6 to PN40

Groove Pipe and Fittings
Roll Groove & Cut Groove Pipes
Shurjoint Couplings fittings, valves &flanges

Pressure Fittings
Elbows, Tees, Couplings, Unions
Nipples, Bushes, Inserts
Weldolets, Sockolets
Threadolets, Nipolets, Latrolets
Elbolets, Sweepolets
Nipoflanges, BSPT, NPT, Socket Weld 3000#, 6000#, 9000#

Long Products
Plate, Sheet & Coil
Bars Round / Flat / Hex / Angle
Hollow Section, Channel

Custom Fittings
Transition Pieces,
Expansion Joints
Barred Tees, Nozzles

Ancillary
Stud Bolts, Gaskets, Flange Covers, Hangers, Clamps

Services

24 Hour, 7 days per week availability

Contract Management
Document Control

Tagging & Colour Coding
Packing & Marking
Freight, Storage & Warehousing

Technical Support
Third Party Inspection
Mechanical & NDE Testing

Specialised Pipe and Fittings Australia Pty Ltd is the premier supplier of quality pipe, pipe fittings, flanges and ancillary products.

We have the stock range and sourcing expertise to service the oil & gas, mining, mineral processing, petrochemical, power, defence, water and marine industries throughout Australia and Internationally.

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Stock Range

Stainless Steel & Duplex

Pipe - Seamless
TP304/L & TP316/L 15-300NB
S31803/S32205 25-300NB
Schedule 10S/40S/80S/160/XXS

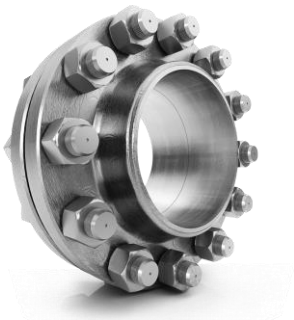
Buttweld Fittings - Seamless
WP304/L & WP316/L 15-300NB
S31803/S32205 25-300NB
Schedule 10S/40S/80S/160/XXS
Elbows L/R 45D & 90D
Elbows S/R 90D
Tees Equal & reducing
Reducers Concentric & Eccentric
Caps & Stub Ends

ANSI Flanges
F304/L & F316/L 15-300NB
F51/F60 25-300NB
ASME B16.5 Class 150#, 300#, 600#, 900# & 1500#
Weld Neck & Slip On
Socket Weld & Blind
Threaded BSPT & NPT
Orifice, Lap Joint, Spectacle Blinds, Spades & Spacers

Table Flanges
F304/L & F316/L 15-400NB
AS2129 Table D, E & PN 16
Slip On Pipe Bore & Blind
Threaded BSPT & NPT

Forged Pressure Fittings
F304/L & F316/L 15-300NB
3000# & 6000# Ratings
Socket Weld
Threaded BSPT & NPT
Elbows 45D & 90D
Tees Equal & reducing
Couplings Full, Half & Reducing
Reducing Bushes,
Reducing Inserts
Hex Nipples Equal & Reducing
Unions, Hex Plugs & Caps
Pipe Nipples PBE, TOE & TBE
Swage Nipples Concentric & Eccentric

Branch Outlets
F304/L & F316/L 15-50NB
3000# & 6000# Ratings
Sockolets, Weldolet
Threadolet BSPT & NPT
Elbolet, Latrolet
Nipolet, Nipoflange



Carbon Steel & Galvanised

Pipe - Seamless
A106-B / A53-B / API 5L-B / X42 PSL 1
15-600NB
Schedule STD / XS / 40 / 80 / 100 / 120 / 140 / 160 / XXS

Pipe - Welded
A53-B / API 5L-B / X42 PSL 1
AS/NZS 1163 C350 LO
50-1200NB
Schedule STD / XS / 40 / 80

Buttweld Fittings
WPB Seamless 15-600NB
WPB WX 750-900NB
Schedule STD / XS / 40 / 80 / 100 / 120 / 140 / 160 / XXS
Elbows L/R 45D & 90D
Elbows S/R 90D
Tees Equal & reducing
Reducers Concentric & Eccentric
Caps

3D Bends
A234-WPB Seamless 50-300NB
Schedule STD & XS
45D & 90D with 300mm Tangents

Groove Pipe and Fittings
Roll Groove & Cut Groove Pipes
Shurjoint Couplings fittings, valves & flanges

ANSI Flanges
A105N 15-600NB
ASME B16.5 Class 150#, 300#, 600#, 900# & 1500#
Weld Neck & Slip On
Socket Weld & Blind
Threaded BSPT & NPT
Orifice, Lap Joint, Spectacle Blinds, Spades & Spacers
ASME B16.47 Class 150# Series A
BS3293 Class 150# 750-900NB

Table Flanges
A105N 15-1200NB
AS2129 Table D, E & PN 16
Slip On Pipe Bore & Blind
Threaded BSPT & NPT

Forged Pressure Fittings
A105N 15-100NB
3000# & 6000# Ratings
Socket Weld
Threaded BSPT & NPT
Elbows 45D & 90D
Tees Equal & reducing
Couplings Full, Half & Reducing
Reducing Bushes
Reducing Inserts
Hex Nipples Equal & Reducing
Unions, Hex Plugs & Caps
Pipe Nipples PBE, TOE & TBE
Swage Nipples Conc & Ecc

Branch Outlets
A105N 15-150NB
3000# & 6000# Ratings
Sockolets, Weldolet
Threadolet BSPT & NPT
Elbolet, Latrolet
Nipolet, Nipoflange

Galvanised Pipe
A106-B Pipe Seamless
Ends: Plain, BSPT & NPT
15-20NB Schedule XS
25-50NB Schedule STD & XS

Galvanised Pressure Fittings
A105N 15-50NB
3000# Rating
Threaded BSPT & NPT
Elbows 45D & 90D
Tees Equal
Couplings Full & Reducing
Reducing Bushes

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PIPE

FITTINGS

FLANGES

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