

Ferrous Material					
Material Classification			Comparison as nations		
Large	Middle	Small	ASTM (U.S.A)		
			Designation	Identification	
Ferrous (Base Mat'I.Fe)	Carbon Steel	Ambient and Higher Temperature Service	A234	WPB WPC	
		Low Temperature Service	A420	WPL3 WPL6 WPL9	
				Low Alloy (1% Q 9%)	A234	WP1 WP12 WP11 WP22 WP23 WP9 WP91 WP92
		Martensitic Stainless Steel	A815			WP410 WP430
	Ferritic Stainless Steel					A403	WP304/L WP316/L WP317/L WP321/H WP347/H
		Austenitic Stainless Steel	A403				S31254 904L
	Super Austenitic Stainless Steel					A403	S31803 S32750 S32760
		High Alloy (Cr>1%) Stainless Steel	A815		

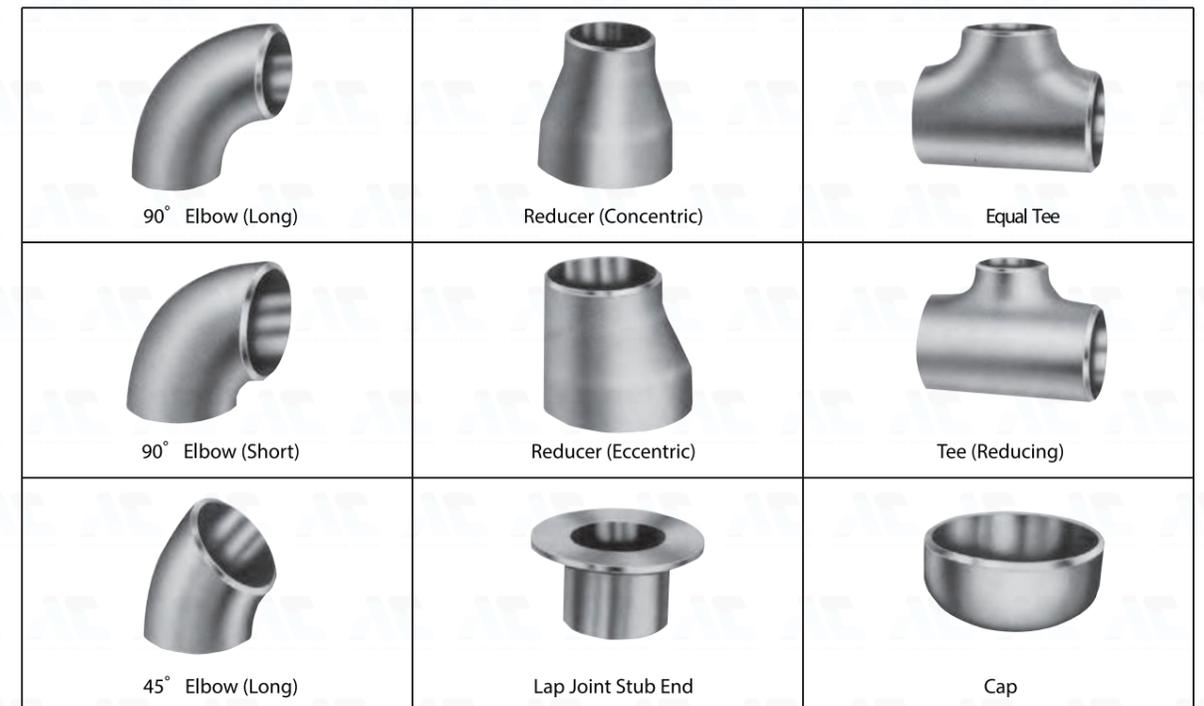
Non-Ferrous Material Comparison		
Material Classification	Trade Mark	UNS NO.
Non-Ferrous (Base Mat' I: Ni)	Inconel 600	N06600
	Inconel 690	N06690
	Inconel 800H / 800HT	N08810/N08811
	Inconel 625	N06625
	Incoloy 825	N08825
	Hastelloy 82	N10665
	Hastelloy C276	N10276
	Hastelloy C22	N06022
	Incoloy 020	N08020
	Monel 400	N04400
Non-Ferrous (Base Mat'I: Cu)	Cu-Ni 70/30	C71500
	Cu-Ni 90/10	C70600

WROUGHT STEEL BUTT WELD PIPE FITTINGS

(Carbon & Alloy Steel)



Stainless Steel Butt-Welding Fittings



FORGED STEEL SOCKET-WELDING & THREADED FITTINGS

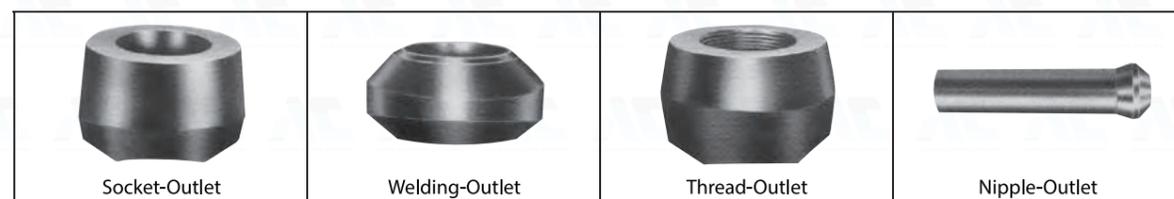
Socket Welding Fittings



Threaded Fittings



Outlets



FLANGE(CARBON STEEL, STAINLESS STEEL, ALLOY STEEL)



VALVES(CARBON & ALLOY STEEL & STAINLESS STEEL & CAST IRON)



重量公式 APPROX WEIGHT EQUATION

1. ELBOW

$$W = 15.4864 \times \theta / 360 \times F \times T \times (D - T) \times 10^{-5}$$

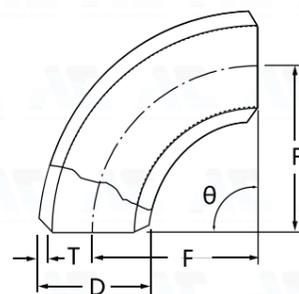
W = Weight (kg)

F = Center to End (mm)

D = Outside Diameter (mm)

T = Wall Thickness (mm)

θ = Angle



2. TEE

$$W = [0.02466 \{ 2Ct_1(OD_1 - t_1) + t_2(OD_2 - t_2) \times (M - OD_1/2) \}] \times 10^{-3} \times K$$

W = Weight (kg)

C = Center to End (mm)

OD₁ = Outside Diameter (mm)

t₁ = Wall Thickness (mm)

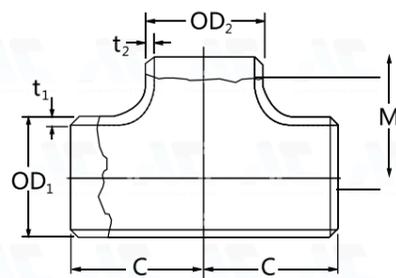
OD₂ = Outside Diameter (mm)

t₂ = Wall Thickness (mm)

M = Center to End (mm)

K = 1 (PLATE)

K = 1.363 (PIPE)



3. REDUCER

$$W = 1.232t_1 (OD_1 + OD_2 - 2t_1)\ell \times 10^{-5}$$

$$\ell = \frac{\sqrt{H^2 + (OD_1 - OD_2)^2}}{2}$$

W = Weight (kg)

H = End to End (mm)

OD₁ = Large Size Outside Diameter (mm)

OD₂ = Small Size

t₁ = Wall Thickness (mm)



4. CAP

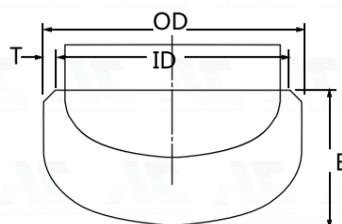
$$W = 7.85 \times \frac{\pi}{4} (OD + E)^2 \times T \times 10^{-6}$$

W = Weight (kg)

OD = Outside Diameter (mm)

T = Wall Thickness (mm)

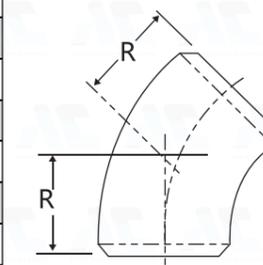
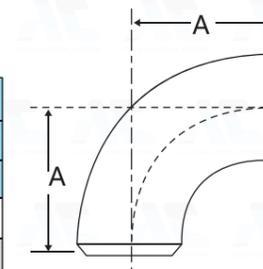
E = End to End (mm)



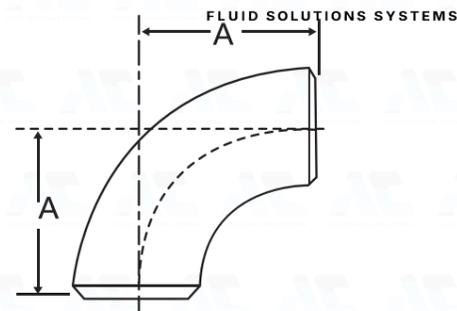
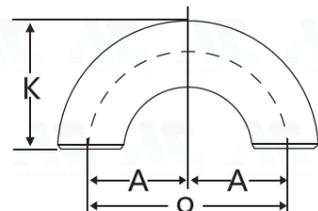
弯头 45,90,180° Elbow - ASME B16.9

DIMENSIONS OF LONG RADIUS ELBOWS

Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel	Center to End	
			90 Deg Elbows A	45 Deg Elbows B
1/2	15	21.3	38	16
1/4	20	26.7	38	19
1	25	33.4	38	22
1 1/4	32	42.2	48	25
1 1/2	40	48.3	57	29
2	50	60.3	76	35
2 1/2	65	73	95	44
3	80	88.9	114	51
3 1/2	90	101.6	133	57
4	100	114.3	152	64
5	125	141.3	190	79
6	150	168.3	229	95
8	200	219.1	305	127
10	250	273	381	159
12	300	323.8	457	190
14	350	355.6	533	222
16	400	406.4	610	254
18	450	457	686	286
20	500	508	762	318
22	550	559	838	343
24	600	610	914	381
26	650	660	991	405
28	700	711	1067	438
30	750	762	1143	470
32	800	813	1219	502
34	850	864	1295	533
36	900	914	1372	565
38	950	965	1448	600
40	1000	1016	1524	632
42	1050	1067	1600	660
44	1100	1118	1676	695
46	1150	1168	1753	727
48	1200	1219	1829	759



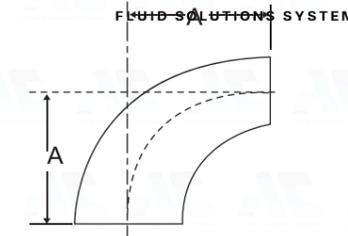
Notes:
The above size only according to the standard ASME B16.9, different standard the size is different.



DIMENSIONS OF LONG RADIUS RETURNS

Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel	Center-to-Center, D	Back-to-Face, K
1/2	15	21.3	76	48
3/4	20	26.7	76	51
1	25	33.4	76	56
1 1/4	32	42.2	95	70
1 1/2	40	48.3	114	83
2	50	60.3	152	106
2 1/2	65	73.0	190	132
3	80	88.9	229	159
3 1/2	90	101.6	267	184
4	100	114.3	305	210
5	125	141.3	381	262
6	150	168.3	457	313
8	200	219.1	610	414
10	250	273	762	518
12	300	323.8	914	619
14	350	355.6	1067	711
16	400	406.4	1219	813
18	450	457	1372	914
20	500	508	1524	1016
22	550	559	1676	1118
24	600	610	1829	1219

Notes: All dimensions are in millimeters.
The above size only according to the standard ASME B16.9, different standard the size is different .



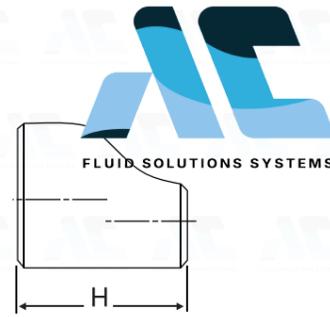
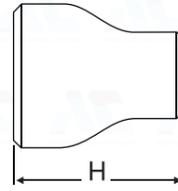
异径弯头 Reducing Elbow - ASME B16.9

DIMENSIONS OF LONG RADIUS-REDUCING ELBOWS

Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		Center-to-End, A	Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		Center-to-End, A
		Large End	Small End				Large End	Small End	
2 × 1 1/2	50 × 40	60.3	48.3	76	10 × 8	250 × 200	273	219.1	381
2 × 1 1/4	50 × 32	60.3	42.2	76	10 × 6	250 × 150	273	168.3	381
2 × 1	50 × 25	60.3	33.4	76	10 × 5	250 × 125	273	141.3	381
2 1/2 × 2	65 × 50	73	60.3	95	12 × 10	300 × 250	323.8	273	457
2 1/2 × 1 1/2	65 × 40	73	48.3	95	12 × 8	300 × 200	323.8	219.1	457
2 1/2 × 1 1/4	65 × 32	73	42.2	95	12 × 6	300 × 150	323.8	168.3	457
3 × 2 1/2	80 × 65	88.9	73	114	14 × 12	350 × 300	355.6	323.8	533
3 × 2	80 × 50	88.9	60.3	114	14 × 10	350 × 250	355.6	273	533
3 × 1 1/2	80 × 40	88.9	48.3	114	14 × 8	350 × 200	355.6	219.1	533
3 1/2 × 3	90 × 80	101.6	88.9	133	16 × 14	400 × 350	406.4	355.6	610
3 1/2 × 2 1/2	90 × 65	101.6	73	133	16 × 12	400 × 300	406.4	323.8	610
3 1/2 × 2	90 × 50	101.6	60.3	133	16 × 10	400 × 250	406.4	273	610
4 × 3 1/2	100 × 90	114.3	101.6	152	18 × 16	450 × 400	457	406.4	686
4 × 3	100 × 80	114.3	88.9	152	18 × 14	450 × 350	457	355.6	686
4 × 2 1/2	100 × 65	114.3	73	152	18 × 12	450 × 300	457	323.8	686
4 × 2	100 × 50	114.3	60.3	152	18 × 10	450 × 250	457	273	686
5 × 4	125 × 100	141.3	114.3	190	20 × 18	500 × 450	508	457	762
5 × 3 1/2	125 × 90	141.3	101.6	190	20 × 16	500 × 400	508	406.4	762
5 × 3	125 × 80	141.3	88.9	190	20 × 14	500 × 350	508	355.6	762
5 × 2 1/2	125 × 65	141.3	73	190	20 × 12	500 × 300	508	323.8	762
6 × 5	150 × 125	168.3	141.3	229	20 × 10	500 × 250	610	273	762
6 × 4	150 × 100	168.3	114.3	229	24 × 22	600 × 550	610	559	914
6 × 3 1/2	150 × 90	168.3	101.6	229	24 × 20	600 × 500	610	508	914
6 × 3	150 × 80	168.3	88.9	229	24 × 18	600 × 450	610	457	914
8 × 6	200 × 150	219.1	168.3	305	24 × 16	600 × 400	610	406.4	914
8 × 5	200 × 125	219.1	141.3	305	24 × 14	600 × 350	610	355.6	914
8 × 4	200 × 100	219.1	114.3	305	24 × 12	600 × 300	610	323.8	914

Notes: All dimensions are in millimeters.
The above size only according to the standard ASME B16.9, different standard the size is different .

大小头 Reducer - ASME B16.9



Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		End-to-End, H	Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		End-to-End, H
		Large End	Small End				Large End	Small End	
3/4 x 1/2	20 x 15	26.7	21.3	38	5 x 4	125 x 100	141.3	114.3	127
3/4 x 3/8	20 x 10	26.7	17.3	38	5 x 3 1/2	125 x 90	141.3	101.6	127
1 x 3/4	25 x 20	33.4	26.7	51	5 x 3	125 x 80	141.3	88.9	127
1 x 1/2	25 x 15	33.4	21.3	51	5 x 2 1/2	125 x 65	141.3	73.0	127
					5 x 2	125 x 50	141.3	60.3	127
1 1/4 x 1	32 x 25	42.2	33.4	51					
1 1/4 x 3/4	32 x 20	42.2	26.7	51	6 x 5	150 x 125	168.3	141.3	140
1 1/4 x 1/2	32 x 15	42.2	21.3	51	6 x 4	150 x 100	168.3	114.3	140
					6 x 3 1/2	150 x 90	168.3	101.6	140
1 1/2 x 1 1/4	40 x 32	48.3	42.2	64	6 x 3	150 x 80	168.3	88.9	140
1 1/2 x 1	40 x 25	48.3	33.4	64	6 x 2 1/2	150 x 65	168.3	73.0	140
1 1/2 x 3/4	40 x 20	48.3	26.7	64					
1 1/2 x 1/2	40 x 15	48.3	21.3	64	8 x 6	200 x 150	219.1	168.3	152
					8 x 5	200 x 125	219.1	141.3	152
2 x 1 1/2	50 x 40	60.3	48.3	76	8 x 4	200 x 100	219.1	114.3	152
2 x 1 1/4	50 x 32	60.3	42.2	76	8 x 3 1/2	200 x 90	219.1	101.6	152
2 x 1	50 x 25	60.3	33.4	76					
2 x 3/4	50 x 20	60.3	26.7	76	10 x 8	250 x 200	273.0	219.1	178
					10 x 6	250 x 150	273.0	168.3	178
2 1/2 x 2	65 x 50	73.0	60.3	89	10 x 5	250 x 125	273.0	141.3	178
2 1/2 x 1 1/2	65 x 40	73.0	48.3	89	10 x 4	250 x 100	273.0	114.3	178
2 1/2 x 1 1/4	65 x 32	73.0	42.2	89					
2 1/2 x 1	65 x 25	73.0	33.4	89	12 x 10	300 x 250	323.8	273.0	203
					12 x 8	300 x 200	323.8	219.1	203
3 x 2 1/2	80 x 65	88.9	73.0	89	12 x 6	300 x 150	323.8	168.3	203
3 x 2	80 x 50	88.9	60.3	89	12 x 5	300 x 125	323.8	141.3	203
3 x 1 1/2	80 x 40	88.9	48.3	89					
3 x 1 1/4	80 x 32	88.9	42.2	89	14 x 12	350 x 300	355.6	323.8	330
					14 x 10	350 x 250	355.6	273.0	330
3 1/2 x 3	90 x 80	101.6	88.9	102	14 x 8	350 x 200	355.6	219.1	330
3 1/2 x 2 1/2	90 x 65	101.6	73.0	102	14 x 6	350 x 150	355.6	168.3	330
3 1/2 x 2	90 x 50	101.6	60.3	102					
3 1/2 x 1 1/2	90 x 40	101.6	48.3	102	16 x 14	400 x 350	406.4	355.6	356
3 1/2 x 1 1/4	90 x 32	101.6	42.2	102	16 x 12	400 x 300	406.4	323.8	356
					16 x 10	400 x 250	406.4	273.0	356
4 x 3 1/2	100 x 90	114.3	101.6	102	16 x 8	400 x 200	406.4	219.1	356
4 x 3	100 x 80	114.3	88.9	102					
4 x 2 1/2	100 x 65	114.3	73.0	102	18 x 16	450 x 400	457	406.4	381
4 x 2	100 x 50	114.3	60.3	102	18 x 14	450 x 350	457	355.6	381
4 x 1 1/2	100 x 40	114.3	48.3	102	18 x 12	450 x 300	457	323.8	381
					18 x 10	450 x 250	457	273.0	381

Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		End-to-End, H	Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel		End-to-End, H
		Large End	Small End				Large End	Small End	
20x18	500x450	508	457	508	36x34	900x850	914	864	610
20x16	500x400	508	406.4	508	36x32	900x800	914	813	610
20x14	500x350	508	355.6	508	36x30	900x750	914	762	610
20x12	500x300	508	323.8	508	36x28	900x700	914	660	610
					36x26	900x650	914	610	610
22x20	550x500	559	508	508					
22x18	550x450	559	457	508	38x36	950x900	965	914	610
22x16	550x400	559	406.4	508	38x34	950x850	965	864	610
22x14	550x350	559	355.4	508	38x32	950x800	965	813	610
					38x30	950x750	965	762	610
24x22	600x550	610	559	508	38x28	950x700	965	711	610
24x20	600x500	610	508	508	38x26	950x650	965	660	610
24x18	600x450	610	457	508					
24x16	600x400	610	406.4	508	40x38	1000x950	1016	965	610
					40x36	1000x900	1016	914	610
26x24	650x600	660	610	610	40x34	1000x850	1016	864	610
26x22	650x550	660	559	610	40x32	1000x800	1016	813	610
26x20	650x500	660	508	610	40x30	1000x750	1016	762	610
26x18	650x450	660	457	610					
					42x40	1050x1000	1067	1016	610
28x26	700x650	711	660	610	42x38	1050x950	1067	965	610
28x24	700x600	711	610	610	42x36	1050x900	1067	914	610
28x22	700x550	711	508	610	42x34	1050x850	1067	864	610
28x20	700x500	711	457	610	42x32	1050x800	1067	813	610
					42x30	1050x750	1067	762	610
30x28	750x700	762	711	610					
30x26	750x650	762	660	610	44x42	1100x1050	1118	1067	610
30x24	750x600	762	610	610	44x40	1100x1000	1118	1016	610
30x22	750x550	762	508	610	44x38	1100x950	1118	965	610
					44x36	1100x900	1118	914	610
32x30	800x750	813	762	610					
32x28	800x700	813	711	610	46x44	1150x1100	1168	1118	711
32x26	800x650	813	660	610	46x42	1150x1050	1168	1067	711
32x24	800x600	813	610	610	46x40	1150x1000	1168	1016	711
					46x38	1150x950	1168	965	711
34x32	850x800	864	813	610					
34x30	850x750	864	762	610	48x46	1200x1150	1219	1168	711
34x28	850x700	864	660	610	48x44	1200x1100	1219	1118	711
34x26	850x650	864	610	610	48x42	1200x1050	1219	1067	711
					48x40	1200x1000	1219	1016	711

Notes:

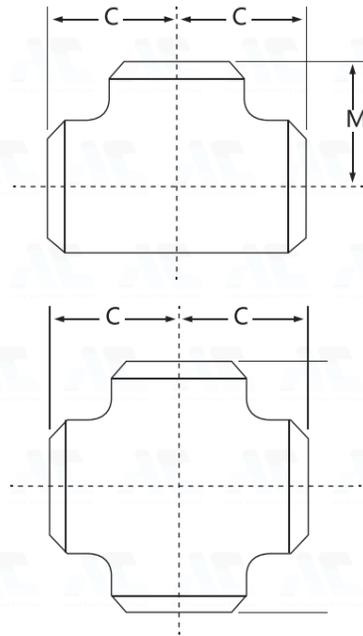
三通&四通 Tee - ASME B16.9

DIMENSIONS OF STRAIGHT TEES

Nominal Pipe Size(NPS)	DN	Outside Diameter at Bevel	Center- to-End	
			Run,C	Outlet,M
1/2	15	21.3	25	25
3/4	20	26.7	29	29
1	25	33.4	38	38
1 1/4	32	42.2	48	48
1 1/2	40	48.3	57	57
2	50	60.3	64	64
2 1/2	65	73.0	76	76
3	80	88.9	86	86
3 1/2	90	101.6	95	95
4	100	114.3	105	105
5	125	141.3	124	124
6	150	168.3	143	143
8	200	219.1	178	178
10	250	273.0	216	216
12	300	323.8	254	254
14	350	355.6	279	279
16	400	406.4	305	305
18	450	457	343	343
20	500	508	381	381
22	550	559	419	419
24	600	610	432	432
26	650	660	495	495
28	700	711	521	521
30	750	762	559	559
32	800	813	597	597
34	850	864	635	635
36	900	914	673	673
38	950	965	711	711
40	1000	1016	749	749
42	1050	1067	762	711
44	1100	1118	813	762
46	1150	1168	851	800
48	1200	1219	889	838

Notes: All dimensions are in millimeters.

- (1) Outlet dimension M for NPS 26 (DN 650) and larger is recommended but not required.
- (2) Dimensions applicable to crosses NPS 24 (DN 600) and smaller.
- (3) The above size only according to the standard ASME B16.9, different standard the size is

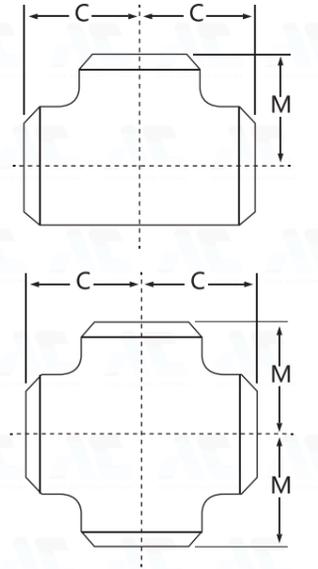


异径三通&四通 Reducing Tee - ASME B16.9

Nominal Pipe Size(NPS)	DN	Outside Diameter at Center-to-End Size Bevel		Center-to-End	
		Run	Outlet	Run,C	Outlet M
1/2x1/2x3/8	15 x15 x10	21.3	17.3	25	25
1/2x1/2x1/4	15 x15 x8	21.3	13.7	25	25
3/4x3/4x1/2	20 x20 x15	26.7	21.3	29	29
3/4x3/4x3/8	20 x20 x10	26.7	17.3	29	29
1x1x3/4	25 x25 x20	33.4	26.7	38	38
1x1x1/2	25 x25 x15	33.4	21.3	38	38
1 1/4x1 1/4x1	32 x32 x25	42.2	33.4	48	48
1 1/4x1 1/4x3/4	32 x32 x20	42.2	26.7	48	48
1 1/4x1 1/4x1/2	32 x32 x15	42.2	21.3	48	48
1 1/2x1 1/2x1 1/4	40 x40 x32	48.3	42.2	57	57
1 1/2x1 1/2x1	40 x40 x25	48.3	33.4	57	57
1 1/2x1 1/2x3/4	40 x40 x20	48.3	26.7	57	57
1 1/2x1 1/2x1/2	40 x40 x15	48.3	21.3	57	57
2x2x1 1/2	50 x50 x40	60.3	48.3	64	60
2x2x1 1/4	50 x50 x32	60.3	42.2	64	57
2x2x1	50 x50 x25	60.3	33.4	64	51
2x2x3/4	50 x50 x20	60.3	26.7	64	44
2 1/2x2 1/2x2	65 x65 x50	73	60.3	76	70
2 1/2x2 1/2x1 1/2	65 x65 x40	73	48.3	76	67
2 1/2x2 1/2x1 1/4	65 x65 x32	73	42.2	76	64
2 1/2x2 1/2x1	65 x65 x25	73	33.4	76	57
3x3x2 1/2	80 x80 x65	88.9	73	86	83
3x3x2	80 x80 x50	88.9	60.3	86	76
3x3x1 1/2	80 x80 x40	88.9	48.3	86	73
3x3x1 1/4	80 x80 x32	88.9	42.2	86	70
3 1/2x3 1/2x3	90 x90 x80	101.6	88.9	95	92
3 1/2x3 1/2x2 1/2	90 x90 x65	101.6	73	95	89
3 1/2x3 1/2x2	90 x90 x50	101.6	60.3	95	83
3 1/2x3 1/2x1 1/2	90 x90 x40	101.6	48.3	95	79
4x4x3 1/2	100 x100 x90	114.3	101.6	105	102
4x4x3	100 x100 x80	114.3	88.9	105	98
4x4x2 1/2	100 x100 x65	113.3	73	105	95
4x4x2	100 x100 x50	114.3	60.3	105	89
4x4x1 1/2	100 x100 x40	114.3	48.3	105	86
5x5x4	125 x125 x100	141.3	114.3	125	117
5x5x3 1/2	125 x125 x90	141.3	101.6	124	114
5x5x3	125 x125 x80	141.3	88.9	124	111
5x5x2 1/2	125 x125 x65	141.3	73	124	108
5x5x2	125 x125 x50	141.3	60.3	124	105

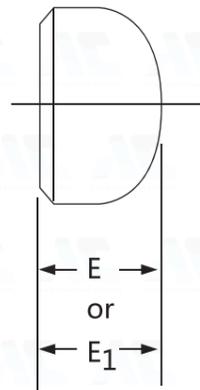
Notes:

different.



管帽 Caps - ASME B16.9

Nominal Pipe Size (NPS)	DN	Outside Diameter at Bevel	Length, E	Limiting Wall Thickness for	Length, E
			[Note (1)]	Length, E	[Note (2)]
1/2	15	21.3	25	4.57	25
3/4	20	26.7	25	3.81	25
1	25	33.4	38	4.57	38
1 1/4	32	42.2	38	4.83	38
1 1/2	40	48.3	38	5.08	38
2	50	60.3	38	5.59	44
2 1/2	65	73	38	7.11	51
3	80	88.9	51	7.62	64
3 1/2	90	101.6	64	8.13	76
4	100	114.3	64	8.64	76
5	125	141.3	76	9.65	89
6	150	168.3	89	10.92	102
8	200	219.1	102	12.7	127
10	250	273	127	12.7	152
12	300	323.8	152	12.7	178
14	350	355.6	165	12.7	191
16	400	406.4	178	12.7	203
18	450	457	203	12.7	229
20	500	508	229	12.7	254
22	550	559	254	12.7	254
24	600	610	267	12.7	305
26	650	660	267	...	...
28	700	711	267	...	...
30	750	762	267	...	...
32	800	813	267	...	...
34	850	864	267	...	...
36	900	914	267	...	...
38	950	965	305	...	...
40	1000	1016	305	...	...
42	1050	1067	305	...	...
44	1100	1118	343	...	...
46	1150	1168	343	...	...
48	1200	1219	343	...	...



Notes:

(a) All dimensions are in millimeters.

(b) The shape of these caps shall be ellipsoidal and shall conform to the shape requirements as given in the ASME Boiler and Pressure Vessel Code.

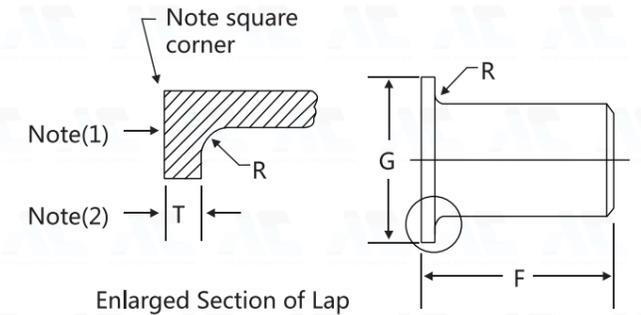
(c) The above size only according to the standard ASME B16.9, different standard the size is different.

NOTES:

(1) Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E."

(2) Length E₁ applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS 24 (DN 600) and smaller. For NPS 26 (DN 65) and larger, length E₁ shall be by agreement between manufacturer and purchaser.

翻边 Lap Joint Stub Ends - ASME B16.9



DIMENSIONS OF LAP JOINT STUB ENDS

Nominal Pipe Size (NPS)	DN	Outside Diameter of Barrel		Long Pattern Length, F	Short Pattern Length, F	Radius of Fillet, R	Diameter of Lap, G
		Max	Min				
1/2	15	22.8	20.5	76	51	3	35
3/4	20	28.1	25.9	76	51	3	43
1	25	35	32.6	102	51	3	51
1 1/4	32	43.6	41.4	102	51	5	64
1 1/2	40	49.9	47.5	102	51	6	73
2	50	62.4	59.5	152	64	8	92
2 1/2	65	75.3	72.2	152	64	8	106
3	80	91.3	88.1	152	64	10	127
3 1/2	90	104	100.8	152	76	10	140
4	100	116.7	113.5	152	76	11	157
5	125	144.3	140.5	203	76	11	185
6	150	171.3	167.5	203	89	13	218
8	200	222.1	218.3	203	102	13	270
10	250	277.2	272.3	254	127	13	324
12	300	328	323.1	254	152	13	381
14	350	359.9	354.8	305	152	13	413
16	400	411	405.6	305	152	13	470
18	450	462	456	305	152	13	533
20	500	514	507	305	152	13	584
22	550	565	558	305	152	13	641
24	600	616	609	305	152	13	692

Notes:

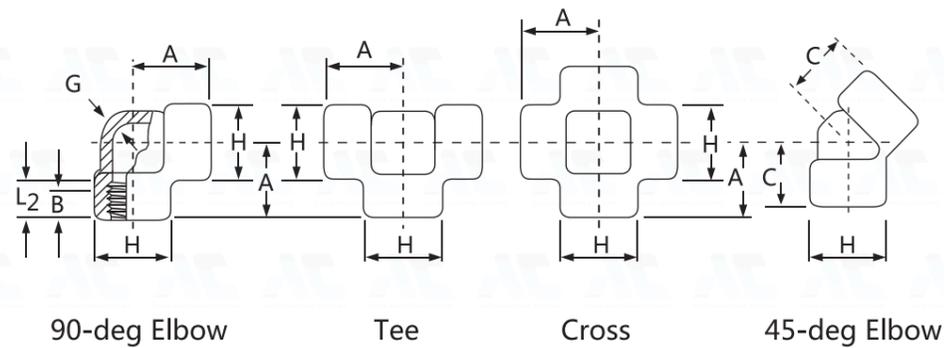
(a) All dimensions are in millimeters.

(b) The above size only according to the standard ASME B16.9, different standard the size is different.

(c) Service conditions and joint construction often dictate stub end length requirements. Therefore, the purchaser must specify long or short pattern fitting when ordering.

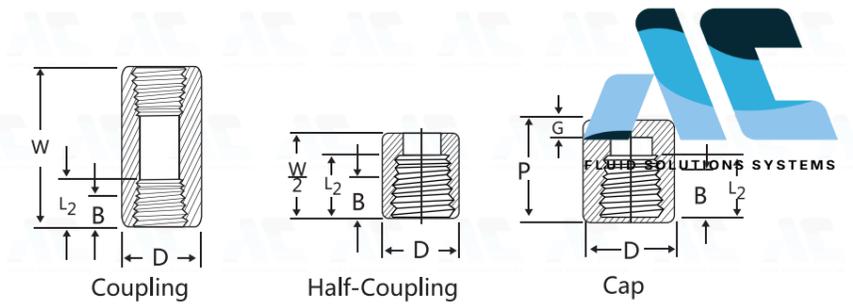
螺纹管件 Forged Threaded Fittings - ASME B16.11

Threaded Fittings



Nominal Pipe Size	Center-to-End Elbows, Tees, Crosses			Center-to-End 45-deg Elbow			Outside Diameter of Band			Min. Wall Thickness			Min. Length of Thread	
	A			C			H			G			B	L ₂
	2000	3000	6000	2000	3000	6000	2000	3000	6000	2000	3000	6000		
1/8	0.81	0.81	0.97	0.69	0.69	0.75	0.88	0.88	1	0.125	0.125	0.25	0.25	0.2639
1/4	0.81	0.97	1.12	0.69	0.75	0.88	0.88	1	1.31	0.125	0.13	0.26	0.32	0.4018
3/8	0.97	1.12	1.31	0.75	0.88	1	1	1.31	1.5	0.125	0.138	0.275	0.36	0.4078
1/2	1.12	1.31	1.5	0.88	1	1.12	1.31	1.5	1.81	0.125	0.161	0.321	0.43	0.5337
3/4	1.31	1.5	1.75	1	1.12	1.31	1.5	1.81	2.19	0.125	0.17	0.336	0.5	0.5457
1	1.5	1.75	2	1.12	1.31	1.38	1.81	2.19	2.44	0.145	0.196	0.391	0.58	0.6828
1 1/4	1.75	2	2.38	1.31	1.38	1.69	2.19	2.44	2.97	0.153	0.208	0.417	0.67	0.7068
1 1/2	2	2.38	2.5	1.38	1.69	1.72	2.44	2.97	3.31	0.158	0.219	0.436	0.7	0.7235
2	2.38	2.5	3.25	1.69	1.72	2.06	2.97	3.31	4	0.168	0.281	0.476	0.75	0.7565
2 1/2	3	3.25	3.75	2.06	2.06	2.5	3.62	4	4.75	0.221	0.301	0.602	0.93	1.138
3	3.38	3.75	4.19	2.5	2.5	3.12	4.31	4.75	5.75	0.236	0.348	0.655	1.02	1.2
4	4.19	4.5	4.5	3.12	3.12	3.12	5.75	6	6	0.258	0.44	0.735	1.09	1.3

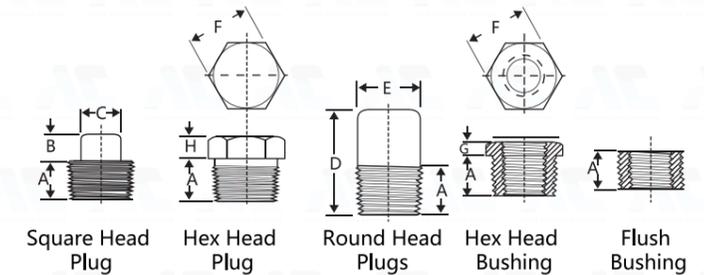
Notes: Dimensions are in inches.



Threaded Fittings

Nominal Pipe Size	End-to-End Couplings		End-to-End Caps		Outside Diameter		Min. Wall Thickness		Min. Length of Thread	
	W		P		D		G		B	L ₂
	3000 and 6000	3000	6000	3000	6000	3000	6000			
1/8	1.25	0.75	...	0.62	0.88	0.19	...	0.25	0.2639	
1/4	1.38	1	1.06	0.75	1	0.19	0.25	0.32	0.4018	
3/8	1.5	1	1.06	0.88	1.25	0.19	0.25	0.36	0.4078	
1/2	1.88	1.25	1.31	1.12	1.5	0.25	0.31	0.43	0.5337	
3/4	2	1.44	1.5	1.38	1.75	0.25	0.31	0.5	0.5457	
1	2.38	1.62	1.69	1.75	2.25	0.38	0.44	0.58	0.6828	
1 1/4	2.62	1.75	1.81	2.25	2.5	0.38	0.44	0.67	0.7068	
1 1/2	3.12	1.75	1.88	2.5	3	0.44	0.5	0.7	0.7235	
2	3.38	1.88	2	3	3.62	0.5	0.62	0.75	0.7565	
2 1/2	3.62	2.38	2.5	3.62	4.25	0.62	0.75	0.93	1.138	
3	4.25	2.56	2.69	4.25	5	0.75	0.88	1.02	1.2	
4	4.75	2.69	2.94	5.5	6.25	0.88	1.12	1.09	1.3	

Notes: Dimensions are in inches.



Plugs and Bushings

Nominal Pipe Size	Min. Length, A	Square Head Plugs		Round Head Plugs		Hex Plugs and Bushings		
		Min. Square Height, B	Min. Width Flats, C	Head Diameter, E	Min. Length, D	Nominal Width Flats, F	Hex Height	
							Min. Bushing, G	Plug, H
1/8	0.38	0.25	0.28	0.41	1.38	0.44	...	0.25
1/4	0.44	0.25	0.38	0.53	1.62	0.62	0.12	0.25
3/8	0.5	0.31	0.44	0.69	1.62	0.69	0.16	0.31
1/2	0.56	0.38	0.56	0.84	1.75	0.88	0.19	0.31
3/4	0.62	0.44	0.62	1.06	1.75	1.06	0.22	0.38
1	0.75	0.5	0.81	1.31	2	1.38	0.25	0.38
1 1/4	0.81	0.56	0.94	1.69	2	1.75	0.28	0.56
1 1/2	0.81	0.62	1.12	1.91	2	2	0.31	0.62
2	0.88	0.69	1.31	2.38	2.5	2.5	0.34	0.69
2 1/2	1.06	0.75	1.5	2.88	2.75	3	0.38	0.75
3	1.12	0.81	1.69	3.5	2.75	3.5	0.41	0.81

Notes: Dimensions are in inches.