

Benkan Fittings

Brochure



BENKAN®

Nominal Pipe Size		Outside Diameter	Nominal Wall Thickness							
A	B		Sch5S	Sch10S	Sch40S	Sch80S	Sch5	Sch10	Sch20	Sch30
8	1/4	13.7	—	1.65	2.2	3.0	—	1.65	—	1.9
10	3/8	17.1	—	1.65	2.3	3.2	—	1.65	—	1.9
15	1/2	21.3	1.65	2.1	2.8	3.7	1.65	2.1	—	2.4
20	3/4	26.7	1.65	2.1	2.9	3.9	1.65	2.1	—	2.4
25	1	33.4	1.65	2.8	3.4	4.5	1.65	2.8	—	2.9
32	1-1/4	42.2	1.65	2.8	3.6	4.9	1.65	2.8	—	3.0
40	1-1/2	48.3	1.65	2.8	3.7	5.1	1.65	2.8	—	3.2
50	2	60.3	1.65	2.8	3.9	5.5	1.65	2.8	—	3.2
65	2-1/2	73.0	2.1	3.0	5.2	7.0	2.1	3.0	—	4.8
80	3	88.9	2.1	3.0	5.5	7.6	2.1	3.0	—	4.8
90	3-1/2	101.6	2.1	3.0	5.7	8.1	2.1	3.0	—	4.8
100	4	114.3	2.1	3.0	6.0	8.6	2.1	3.0	—	4.8
125	5	141.3	2.8	3.4	6.6	9.5	2.8	3.4	—	—
150	6	168.3	2.8	3.4	7.1	11.0	2.8	3.4	—	—
200	8	219.1	2.8	3.8	8.2	12.7	2.8	3.8	6.4	7.0
250	10	273.0	3.4	4.2	9.3	12.7	3.4	4.2	6.4	7.8
300	12	323.8	4.0	4.6	9.5	12.7	4.0	4.6	6.4	8.4
350	14	355.6	4.0	4.8	9.5	12.7	4.0	6.4	7.9	9.5
400	16	406.4	4.2	4.8	9.5	12.7	4.2	6.4	7.9	9.5
450	18	457.2	4.2	4.8	9.5	12.7	4.2	6.4	7.9	11.1
500	20	508.0	4.8	5.5	9.5	12.7	4.8	6.4	9.5	12.7
550	22	558.8	4.8	5.5	—	—	4.8	6.4	9.5	12.7
600	24	609.6	5.5	6.4	9.5	12.7	5.5	6.4	9.5	14.3
650	26	660.4	—	—	—	—	—	7.9	12.7	—
700	28	711.2	—	—	—	—	—	7.9	12.7	15.9
750	30	762.0	6.4	7.9	—	—	6.4	7.9	12.7	15.9
800	32	812.8	—	—	—	—	—	7.9	12.7	15.9
850	34	863.6	—	—	—	—	—	7.9	12.7	15.9
900	36	914.4	—	—	—	—	—	7.9	12.7	15.9
950	38	965.2	—	—	—	—	—	—	—	—
1000	40	1016.0	—	—	—	—	—	—	—	—
1050	42	1066.8	—	—	—	—	—	—	—	—
1100	44	1117.6	—	—	—	—	—	—	—	—
1150	46	1168.4	—	—	—	—	—	—	—	—
1200	48	1219.2	—	—	—	—	—	—	—	—

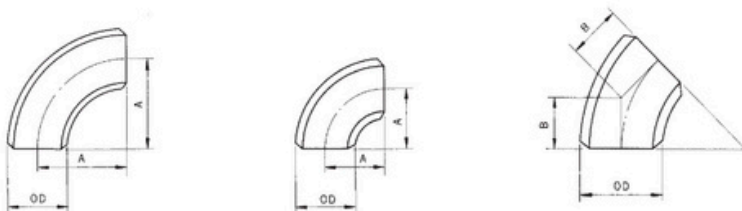
*1 Figures are converted from inch to mm (inch=25.4mm)

ASME B36.10 ASME B36.19

(mm)

Nominal Well Thickness										Nominal Pipe Size	
STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS	A	B
2.2	2.2	—	3.0	3.0	—	—	—	—	—	8	1/4
2.3	2.3	—	3.2	3.2	—	—	—	—	—	10	3/8
2.8	2.8	—	3.7	3.7	—	—	—	4.8	7.5	15	1/2
2.9	2.9	—	3.9	3.9	—	—	—	5.6	7.8	20	3/4
3.4	3.4	—	4.5	4.5	—	—	—	6.4	9.1	25	1
3.6	3.6	—	4.9	4.9	—	—	—	6.4	9.7	32	1-1/4
3.7	3.7	—	5.1	5.1	—	—	—	7.1	10.2	40	1-1/2
3.9	3.9	—	5.5	5.5	—	—	—	8.7	11.1	50	2
5.2	5.2	—	7.0	7.0	—	—	—	9.5	14.0	65	2-1/2
5.5	5.5	—	7.6	7.6	—	—	—	11.1	15.2	80	3
5.7	5.7	—	8.1	8.1	—	—	—	—	—	90	3-1/2
6.0	6.0	—	8.6	8.6	—	11.1	—	13.5	17.1	100	4
6.6	6.6	—	9.5	9.5	—	12.7	—	15.9	19.1	125	5
7.1	7.1	—	11.0	11.0	—	14.3	—	18.3	21.9	150	6
8.2	8.2	10.3	12.7	12.7	15.1	18.3	20.6	23.0	22.2	200	8
9.3	9.3	12.7	12.7	15.1	18.3	21.4	25.4	28.6	25.4	250	10
9.5	10.3	14.3	12.7	17.5	21.4	25.4	28.6	33.3	25.4	300	12
9.5	11.1	15.1	12.7	19.1	23.8	27.8	31.8	35.7	—	350	14
9.5	12.7	16.7	12.7	21.4	26.2	31.0	36.5	40.5	—	400	16
9.5	14.3	19.1	12.7	23.8	29.4	34.9	39.7	45.2	—	450	18
9.5	15.1	20.6	12.7	26.2	32.5	38.1	44.5	50.0	—	500	20
9.5	—	22.2	12.7	28.6	34.9	41.3	47.6	54.0	—	550	22
9.5	17.5	24.6	12.7	31.0	38.9	46.0	52.4	59.5	—	600	24
9.5	—	—	12.7	—	—	—	—	—	—	650	26
9.5	—	—	12.7	—	—	—	—	—	—	700	28
9.5	—	—	12.7	—	—	—	—	—	—	750	30
9.5	17.5	—	12.7	—	—	—	—	—	—	800	32
9.5	17.5	—	12.7	—	—	—	—	—	—	850	34
9.5	19.1	—	12.7	—	—	—	—	—	—	900	36
9.5	—	—	12.7	—	—	—	—	—	—	950	38
9.5	—	—	12.7	—	—	—	—	—	—	1000	40
9.5	—	—	12.7	—	—	—	—	—	—	1050	42
9.5	—	—	12.7	—	—	—	—	—	—	1100	44
9.5	—	—	12.7	—	—	—	—	—	—	1150	46
9.5	—	—	12.7	—	—	—	—	—	—	1200	48

Long and Short Radius Elbows



ASME B16.9

*BENKAN's Standards (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD	Center-to-End			
		Long Radius Elbow		Short Radius Elbow	
		90 Deg. A	45 Deg. B	90 Deg. A	45 Deg.* B
1/2	21.3	38.1	15.7	—	—
3/4	26.7	38.1	19.1	—	—
1	33.4	38.1	22.4	25.4	—
1-1/4	42.2	47.8	25.4	31.8	—
1-1/2	48.3	57.2	28.4	38.1	—
2	60.3	76.2	35.1	50.8	—
2-1/2	73.0	95.3	44.5	63.5	—
3	88.9	114.3	50.8	76.2	31.6
3-1/2	101.6	133.4	57.2	88.9	36.8
4	114.3	152.4	63.5	101.6	42.1
5	141.3	190.5	79.2	127.0	52.6
6	168.3	228.6	95.3	152.4	63.4
8	219.1	304.8	127.0	203.2	84.2
10	273.0	381.0	158.8	254.0	105.2
12	323.8	457.2	190.5	304.8	126.3
14	355.6	533.4	222.3	355.6	147.3
16	406.4	609.6	254.0	406.4	168.3
18	457.2	685.8	285.8	457.2	189.4
20	508.0	762.0	317.5	508.0	210.4
22	558.8	838.2	342.9	558.8	231.5
24	609.6	914.4	381.0	609.6	252.5
26	660.4	990.6	406.4	660.4*	273.5
28	711.2	1066.8	438.2	711.2*	294.6
30	762.0	1143.0	469.9	762.0*	315.6
32	812.8	1219.2	501.7	812.8*	336.7
34	863.6	1295.4	533.4	863.6*	357.7
36	914.4	1371.6	565.2	914.4*	378.8
38	965.2	1447.8	599.9	965.2*	399.8
40	1016.0	1524.0	632.0	1016.0*	420.8
42	1066.8	1600.2	660.4	1066.8*	441.9
44	1117.6	1676.4	695.5	1117.6*	462.9
46	1168.4	1752.6	726.9	—	—
48	1219.2	1828.8	759.0	1219.2*	505.0
52*	1320.8	—	—	1320.8	547.1
54*	1371.6	2057.4	852.2	1371.6	568.1
56*	1422.4	2133.6	883.8	—	—
60*	1524.0	2286.0	946.9	1524.0	631.3
66*	1676.4	2514.6	1041.6	—	—
72*	1828.8	2743.2	1262.5	—	—
80*	2032.0	—	—	2032.0	841.7



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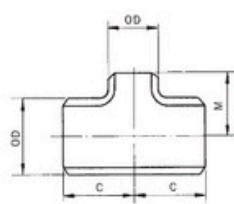
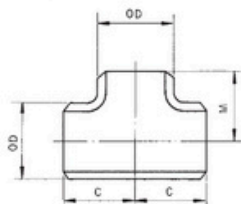
Nominal Pipe Size	WEIGHT (Kg)									
	90° LONG		90° SHORT		TEE		CAP		REDUCER	
	STD	XS	STD	XS	STD	XS	STD	XS	STD	XS
1/2	0.08	0.10	—	—	0.08	0.11	0.04	0.05	—	—
3/4	0.10	0.13	—	—	0.12	0.16	0.05	0.07	0.06	0.07
1	0.15	0.19	0.10	0.13	0.25	0.31	0.11	0.14	0.11	0.14
1-1/4	0.26	0.34	0.17	0.22	0.42	0.55	0.14	0.19	0.15	0.20
1-1/2	0.37	0.49	0.24	0.32	0.60	0.80	0.17	0.23	0.24	0.32
2	0.65	0.89	0.43	0.59	0.87	1.19	0.23	0.33	0.37	0.50
2-1/2	1.30	1.70	0.87	1.14	1.67	2.19	0.40	0.53	0.70	0.91
3	2.03	2.73	1.35	1.82	2.41	3.25	0.66	0.91	0.91	1.22
3-1/2	2.82	3.91	1.88	2.61	3.17	4.39	0.96	1.36	1.28	1.77
4	3.83	5.36	2.55	3.57	4.11	5.75	1.17	1.68	1.53	2.14
5	6.55	9.23	4.37	6.15	6.60	9.30	1.92	2.77	2.50	3.52
6	10.1	15.3	6.75	10.2	9.71	14.7	2.89	4.48	3.61	5.45
8	20.4	30.9	13.6	20.6	18.1	27.4	5.20	8.05	5.71	8.63
10	36.2	48.7	24.1	32.5	30.9	41.7	9.17	12.5	9.65	13.0
12	52.8	69.9	35.2	46.6	44.2	58.4	13.3	17.7	13.7	18.2
14	67.9	89.9	45.2	59.9	53.5	70.9	15.9	21.2	25.5	33.8
16	89.0	118.0	59.3	78.6	66.1	87.7	20.0	26.7	30.9	41.0
18	112.9	149.8	75.3	99.9	83.9	111.3	25.5	34.1	37.7	50.0
20	139.7	185.5	93.1	123.7	103.8	137.8	31.8	42.5	56.3	74.7
22	169.3	225.0	112.8	150.0	125.8	167.2	38.7	51.7	62.3	82.8
24	201.7	268.3	134.5	178.8	139.2	185.1	45.0	60.1	68.4	90.9
26	237.0	315.3	158.0	210.2	176.1	234.3	50.3	67.3	89.3	118.7
28	275.2	366.2	183.5	244.2	198.2	263.8	56.0	74.8	96.5	128.4
30	316.2	420.9	210.8	280.6	228.3	303.9	61.9	82.8	103.8	138.1
32	360.1	479.4	240.0	319.6	260.4	346.7	68.2	91.2	111.0	147.8
34	406.8	541.7	271.2	361.2	294.6	392.4	74.8	100.0	118.3	157.5
36	456.3	607.8	304.2	405.2	331.0	440.9	81.7	109.2	125.5	167.2
38	508.7	677.8	—	—	369.5	492.3	94.4	126.2	132.8	176.9
40	563.9	751.5	376.0	501.0	410.1	546.5	102.1	136.5	140.0	186.6
42	622.0	829.0	414.7	552.7	421.3	561.6	110.1	147.2	147.3	196.3
44	682.9	910.3	455.3	606.9	474.5	632.5	124.9	166.9	154.5	206.0
46	746.7	995.5	—	—	520.4	693.8	133.7	178.7	188.8	251.6
48	813.3	1,084.4	542.2	722.9	568.4	757.9	142.8	191.0	197.2	262.9

* Weight and volume are according to theoretical calculation.

* Figures of tees are on equal tees and figures of reducers are on one size reduction reducers.

VOLUME (m ³)					Nominal Pipe Size
90° LONG	90° SHORT	TEE	CAP	REDUCER	
—	—	—	—	—	1/2
—	—	—	—	—	3/4
—	—	—	—	—	1
—	—	—	—	—	1-1/4
—	—	—	—	—	1-1/2
0.001	0.001	0.001	—	—	2
0.002	0.001	0.001	—	0.001	2-1/2
0.003	0.002	0.002	—	0.001	3
0.004	0.003	0.003	0.001	0.001	3-1/2
0.005	0.004	0.004	0.001	0.001	4
0.010	0.007	0.007	0.001	0.002	5
0.016	0.011	0.011	0.002	0.004	6
0.037	0.025	0.022	0.005	0.007	8
0.070	0.046	0.040	0.009	0.013	10
0.118	0.079	0.067	0.015	0.021	12
0.164	0.109	0.091	0.021	0.042	14
0.245	0.163	0.126	0.029	0.059	16
0.349	0.232	0.179	0.042	0.080	18
0.479	0.319	0.246	0.059	0.131	20
0.638	0.424	0.327	0.052	0.159	22
0.828	0.551	0.388	0.066	0.189	24
1.053	0.700	0.540	0.083	0.266	26
1.315	0.875	0.649	0.103	0.308	28
1.618	1.076	0.800	0.125	0.354	30
1.964	1.306	0.974	0.151	0.403	32
2.355	1.566	1.170	0.180	0.455	34
2.796	1.859	1.391	0.212	0.510	36
3.288	2.187	1.639	0.248	0.568	38
3.835	2.550	1.914	0.288	0.629	40
4.440	2.953	2.023	0.332	0.694	42
5.105	3.395	2.400	0.381	0.761	44
5.833	3.879	2.753	0.433	0.971	46
6.627	4.407	3.138	0.491	1.057	48

Straight and Reducing Tees



MSS SP-75
ASME B16.9

*BENKAN's Standards (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End	
	Run	Outlet	Run C	Outlet ⁽¹⁾⁽²⁾ M		Run	Outlet	Run C	Outlet ⁽¹⁾⁽²⁾ M
1/2 x 1/2	21.3	21.3	25.4	25.4	5 x 5	141.3	141.3	124.0	124.0
3/8		17.3		25.4	4		114.3		117.3
1/4		13.7		25.4	3-1/2		101.6		114.3
3/4 x 3/4	26.7	26.7	28.4	28.4	3		88.9		111.3
1/2		21.3		28.4	2-1/2		73.0		108.0
3/8		17.3		28.4	2		60.3		104.6
1 x 1	33.4	33.4	38.1	38.1	1-1/2*		48.3		
3/4		26.7		38.1	6 x 6	168.3	168.3	142.7	142.7
1/2		21.3		38.1	5		141.3		136.7
1-1/4 x 1-1/4	42.2	42.2	47.8	47.8	4		114.3		130.0
1		33.4		47.8	3-1/2		101.6		127.0
3/4		26.7		47.8	3		88.9		124.0
1/2		21.3		47.8	2-1/2		73.0		120.7
1-1/2 x 1-1/2	48.3	48.3	57.2	57.2	2*		60.3		
1-1/4		42.2		57.2	8 x 8	219.1	219.1	177.8	177.8
1		33.4		57.2	6		168.3		168.1
3/4		26.7		57.2	5		141.3		162.1
1/2		21.3		57.2	4		114.3		155.5
2 x 2	60.3	60.3	63.5	63.5	3-1/2		101.6		152.4
1-1/2		48.3		60.5	3*		88.9		
1-1/4		42.2		57.2	10 x 10	273.0	273.0	215.9	215.9
1		33.4		50.8	8		219.1		203.2
3/4		26.7		44.5	6		168.3		193.5
1/2*		21.3			5		141.3		190.5
2-1/2 x 2-1/2	73.0	73.0	76.2	76.2	4		114.3		184.2
2		60.3		69.9	12 x 12	323.8	323.8	254.0	254.0
1-1/2		48.3		66.5	10		273.1		241.3
1-1/4		42.2		63.5	8		219.1		228.6
1		33.4		57.2	6		168.3		218.9
3 x 3	88.9	88.9	85.9	85.9	5		141.3		215.9
2-1/2		73.0		82.6	14 x 14	355.6	355.6	279.4	279.4
2		60.3		76.2	12		323.8		269.7
1-1/2		48.3		73.2	10		273.0		257.0
1-1/4		42.2		69.9	8		219.1		247.7
1*		33.4			6		168.3		238.3
3-1/2 x 3-1/2	101.6	101.6	95.3	95.3	16 x 16	406.4	406.4	304.8	304.8
3		88.9		91.9	14		355.6		304.8
2-1/2		73.0		88.9	12		323.8		295.1
2		60.3		82.6	10		273.0		282.4
1-1/2		48.3		79.2	8		219.1		273.1
4 x 4	114.3	114.3	104.6	104.6	6		168.3		263.7
3-1/2		101.6		101.6	18 x 18	457.2	457.2	342.9	342.9
3		88.9		98.6	16		406.4		330.2
2-1/2		73.0		95.3	14		355.6		330.2
2		60.3		88.9	12		323.8		320.5
1-1/2		48.3		85.9	10		273.0		307.8
1-1/4*		42.2			8		219.1		298.5
1*		33.5							

Note (1) Outlet dimension "M" for NPS 26 and larger is recommended but not required.

Note (2) Outlet dimension "M" for run sizes NPS 14 and larger is recommended but not required.

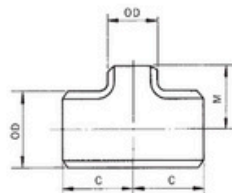
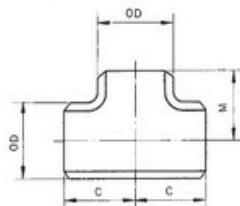


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Quezon City, Philippines

Straight and Reducing Tees



MSS SP-75
ASME B16.9

*BENKAN's Standards (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End	
	Run	Outlet	Run C	Outlet(1)(2) M		Run	Outlet	Run C	Outlet(1)(2) M
20 x 20	508.0	508.0	381.0	381.0	30 x 12	762.0	323.8	558.8	472.6
18		457.2		368.3	10		273.0		460.2
16		406.4		355.6	32 x 32	812.8	812.8	596.9	596.9
14		355.6		355.6	30		762.0		584.2
12		323.8		345.9	28		711.2		571.5
10		273.0		333.2	26		660.4		571.5
8		219.1		323.9	24		609.6		558.8
22 x 22	558.8	558.8	419.1	419.1	22		558.8		546.1
20		508.0		406.4	20		508.0		533.4
18		457.2		393.7	18		457.2		520.7
16		406.4		381.0	16		406.4		508.0
14		355.6		381.0	14		355.6		508.0
12		323.8		371.3	34 x 34	863.6	863.6	635.0	635.0
10		273.0		358.6	32		812.8		622.3
24 x 24	609.6	609.6	431.8	431.8	30		762.0		609.6
22		558.8		431.8	28		711.2		596.9
20		508.0		431.8	26		660.4		596.9
18		457.2		419.1	24		609.6		584.2
16		406.4		406.4	22		558.8		571.5
14		355.6		406.4	20		508.0		558.8
12		323.8		396.7	18		457.2		546.1
10		273.0		384.0	16		406.4		533.4
26 x 26	660.4	660.4	495.3	495.3	36 x 36	914.4	914.4	673.1	673.1
24		609.6		482.6	34		863.6		660.4
22		558.8		469.9	32		812.8		647.7
20		508.0		457.2	30		762.0		635.0
18		457.2		444.5	28		711.2		622.3
16		406.4		431.8	26		660.4		622.3
14		355.6		431.8	24		609.6		609.6
12		323.8		422.1	22		558.8		596.9
28 x 28	711.2	711.2	520.7	520.7	20		508.0		584.2
26		660.4		520.7	18		457.2		571.5
24		609.6		508.0	16		406.4		558.8
22		558.8		495.3	38 x 38	965.2	965.2	711.2	711.2
20		508.0		482.6	36		914.4		711.2
18		457.2		469.9	34		863.6		698.5
16		406.4		457.2	32		812.8		685.8
14		355.6		457.2	30		762.0		673.1
12		323.8		447.5	28		711.2		647.7
30 x 30	762.0	762.0	558.8	558.8	26		660.4		647.7
28		711.2		546.1	24		609.6		635.0
26		660.4		546.1	22		558.8		622.3
24		609.6		533.4	20		508.0		609.6
22		558.8		520.7	18		457.2		596.9
20		508.0		508.0					
18		457.2		495.3					
16		406.4		482.6					
14		355.6		482.6					

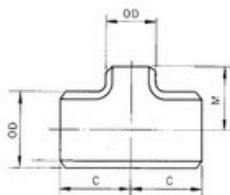
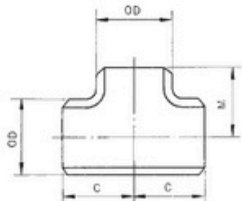


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Straight and Reducing Tees



MSS SP-75
ASME B16.9

*BENKAN's Standards (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD		Center-to-End	
	Run	Outlet	Run C	Outlet(1)(2) M		Run	Outlet	Run C	Outlet(1)(2) M
40 x 40	1016.0	1016.0	749.3	749.3	46 x 26	1168.4	660.4	850.9	736.6
38		965.2		749.3	24		609.6		723.9
36		914.4		736.6	22		558.8		723.9
34		863.6		723.9	20*		508.0		723.9
32		812.8		711.2	48 x 48	1219.2		889.0	838.2
30		762.0		698.5	46		1168.4		838.2
28		711.2		673.1	44		1117.6		838.2
26		660.4		673.1	42		1066.8		812.8
24		609.6		660.4	40		1016.0		812.8
22		558.8		647.7	38		965.2		812.8
20		508.0		635.0	36		914.4		787.4
18		457.2		622.3	34		863.6		787.4
42 x 42	1066.8	1066.8	762.0	711.2	32		812.8		787.4
40		1016.0		711.2	30		762.0		762.0
38		965.2		711.2	28		711.2		762.0
36		914.4		711.2	26		660.4		762.0
34		863.6		711.2	24		609.6		736.6
32		812.8		711.2	22		558.8		736.6
30		762.0		711.2	52 x 52*	1320.8	1320.8	965.2	914.4
28		711.2		698.5	48*		1219.2		863.6
26		660.4		698.5	44*		1117.6		812.8
24		609.6		660.4	40*		1016.0		762.0
22		558.8		660.4	54 x 54*	1371.6	1371.6	1003.3	952.5
20		508.0		660.4	52*		1320.8		914.4
18		457.2		647.7	48*		1219.2		863.6
16		406.4		635.0	44*		1117.6		863.6
44 x 44	1117.6	1117.6	812.8	762.0	40*		1016.0		812.8
42		1066.8		762.0	28*		711.2		787.4
40		1016.0		749.3	20*		508.0		787.4
38		965.2		736.6	56 x 56*	1422.4	1422.4	1041.4	965.2
36		914.4		723.9	52*		1320.8		914.4
34		863.6		723.9	48*		1219.2		863.6
32		812.8		711.2	44*		1117.6		812.8
30		762.0		711.2	40*		1016.0		812.8
28		711.2		698.5	28*		711.2		812.8
26		660.4		698.5	20*		508.0		812.8
24		609.6		698.5	60 x 60*	1524.0	1524.0	1117.6	1016.0
22		558.8		685.8	56*		1422.4		965.2
20		508.0		685.8	52*		1320.8		914.4
46 x 46	1168.4	1168.4	850.9	800.1	48*		1219.2		863.6
44		1117.6		800.1	40*		1016.0		863.6
42		1066.8		787.4	28*		711.2		863.6
40		1016.0		774.7	20*		508.0		863.6
38		965.2		762.0	66 x 66*	1676.4	1676.4	1219.2	1066.8
36		914.4		762.0					
34		863.6		749.3					
32		812.8		749.3					
30		762.0		736.6					
28		711.2		736.6					

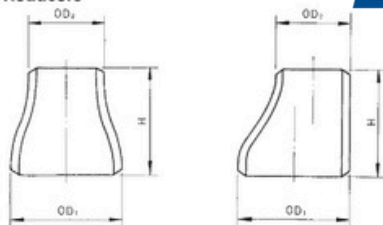


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Concentric and Eccentric Reducers



MSS SP-75

ASME B16.9

*BENKAN's Standards (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End H	Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End H	Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End H
	Large End OD ₁	Small End OD ₂			Large End OD ₁	Small End OD ₂			Large End OD ₁	Small End OD ₂	
3/4 x 1/2	26.7	21.3	38.1	10 x 8	273.0	219.1	177.8	34 x 32	863.6	812.8	609.6
3/8		17.3		6		168.3		30		762.0	
1 x 3/4	33.4	26.7	50.8	5		141.3		26		660.4	
1/2		21.3		4		114.3		24		609.6	
1-1/4 x 1	42.2	33.4	50.8	12 x 10	323.8	273.0	203.2	36 x 34	914.4	863.6	609.6
3/4		26.7		8		219.1		32		812.8	
1/2		21.3		6		168.3		30		762.0	
1-1/2 x 1-1/4	48.3	42.2	63.5	5		141.3		26		660.4	
1		33.4		14 x 12	355.6	323.8	330.2	24		609.6	
3/4		26.7		10		273.0		38 x 36	965.2	914.4	609.6
1/2		21.3		8		219.1		34		863.6	
2 x 1-1/2	60.3	48.3	76.2	6		168.3		32		812.8	
1-1/4		42.2		16 x 14	406.4	355.6	355.6	30		762.0	
1		33.4		12		323.8		28		711.2	
3/4		26.7		10		273.0		26		660.4	
2-1/2 x 2	73.0	60.3	88.9	8		219.1		40 x 38	1016.0	965.2	609.6
1-1/2		48.3		18 x 16	457.2	406.4	381.0	36		914.4	
1-1/4		42.2		14		355.6		34		863.6	
1		33.4		12		323.8		32		812.8	
3 x 2-1/2	88.9	73.0	88.9	10		273.0		30		762.0	
2		60.3		20 x 18	508.0	457.2	508.0	42 x 40	1066.8	1016.0	609.6
1-1/2		48.3		16		406.4		38		965.2	
1-1/4		42.2		14		355.6		36		914.4	
3-1/2 x 3	101.6	88.9	101.6	12		323.8		34		863.6	
2-1/2		73.0		22 x 20	558.8	508.0	508.0	32		812.8	
2		60.3		18		457.2		30		762.0	
1-1/2		48.3		16		406.4		44 x 42	1117.6	1066.8	609.6
1-1/4		42.2		14		355.6		40		1016.0	
4 x 3-1/2	114.3	101.6	101.6	24 x 22	609.6	558.8	508.0	38		965.2	
3		88.9		20		508.0		36		914.4	
2-1/2		73.0		18		457.2		46 x 44	1168.4	1117.6	711.2
2		60.3		16		406.4		42		1066.8	
1-1/2		48.3		26 x 24	660.4	609.6	609.6	40		1016.0	
5 x 4	141.3	114.3	127.0	22		558.8		38		965.2	
3-1/2		101.6		20		508.0		48 x 46	1219.2	1168.4	711.2
3		88.9		18		457.2		44		1117.6	
2-1/2		73.0		28 x 26	711.2	660.4	609.6	42		1066.8	
2		60.3		24		609.6		40		1016.0	
6 x 5	168.3	141.3	139.7	20		508.0					
4		114.3		18		457.2					
3-1/2		101.6		30 x 28	762.0	711.2	609.6				
3		88.9		26		660.4					
2-1/2		73.0		24		609.6					
8 x 6	219.1	168.3	152.4	20		508.0					
5		141.3		32 x 30	812.8	762.0	609.6				
4		114.3		28		711.2					
3-1/2		101.6		26		660.4					
				24		609.6					

Note (1) The shape of Reducer sizes 16" and larger may be manufactured to conical type without the tangent.

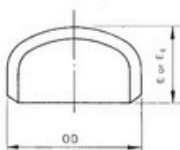
(2) 48" and larger can be manufactured. Please contact us for size capability.



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MSS SP-75
ASME B16.9
 (mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD	Length ⁽²⁾ E	Limiting Wall Thickness for Length E	Length ⁽³⁾ E
1/2	21.3	25.4	4.6	25.4
3/4	26.7	25.4	3.8	25.4
1	33.4	38.1	4.6	38.1
1-1/4	42.2	38.1	4.8	38.1
1-1/2	48.3	38.1	5.1	38.1
2	60.3	38.1	5.6	44.5
2-1/2	73.0	38.1	7.1	50.8
3	88.9	50.8	7.6	63.5
3-1/2	101.6	63.5	8.1	76.2
4	114.3	63.5	8.6	76.2
5	141.3	76.2	9.7	88.9
6	168.3	88.9	10.9	101.6
8	219.1	101.6	12.7	127.0
10	273.0	127.0	12.7	152.4
12	323.8	152.4	12.7	177.8
14	355.6	165.1	12.7	190.5
16	406.4	177.8	12.7	203.2
18	457.2	203.2	12.7	228.6
20	508.0	228.6	12.7	254.0
22	558.8	254.0	12.7	254.0
24	609.6	266.7	12.7	304.8

Nominal Pipe Size (NPS)	Outside Diameter at Bevel OD	Length E
26	660.4	266.7
28	711.2	266.7
30	762.0	266.7
32	812.8	266.7
34	863.6	266.7
36	914.4	266.7
38	965.2	304.8
40	1016.0	304.8
42	1066.8	304.8
44	1117.6	342.9
46	1168.4	342.9
48	1219.2	342.9

- Wall thickness for Caps up to and including 36" conform to ASME B36.10 Specifications; Caps 38" and larger conform to XS Specifications for wall thicknesses of 36". These are BENKAN Standards as no Internationally Recognized Standards have been set for such large size wall thickness.

- (1) 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.
- (2) Length E applies for thickness not exceeding that given in column "Limiting wall Thickness for Length E".
- (3) Length E: applies for thickness greater than that given in column "Limiting wall Thickness" for NPS 24 and smaller. For NPS 26 and larger, Length E: shall be by agreement between manufacturer and purchaser.
- (4) 48" and larger can be manufactured. Please contact us for size capability.

Material Specification for Butt-Welding Fittings



ASTM A234/A234M

Standard Specification for

Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service

Grade and Marking Symbol
WPB, WPC, WP1, WP12 CL1, WP12 CL2, WP11 CL1, WP11 CL2, WP11 CL3, WP22 CL1, WP22 CL3, WP5 CL1, WP5 CL3, WP9 CL1, WP9 CL3, WPR, WP91, WP911, WP92

ASTM A420/A420M

Standard Specification for

Piping Fittings of Wrought Carbon and Alloy Steel for Low-Temperature Service

Grade and Marking Symbol
WPL6, WPL9, WPL3, WPL8

ASTM A403/A403M

Standard Specification for

Wrought Austenitic Stainless Steel Piping Fittings

Grade and Marking Symbol
WPXM-19, WP304, WP304L, WP304H, WP304L, WP309, WP310S, WPS31254, WP316, WP316L, WP316H, WP316N, WP316LN, WP317, WP317L, WPS31725, WP31726, WP321, WP321H, WPS33228, WPS34565, WP347, WP347H, WP348, WP348H, WPS38815

ASTM A815/A815M

Standard Specification for

Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Steel

Grade and Marking Symbol (extract)
Ferritic/Austenitic Stainless Steel WPS31803, WPS32101, WPS32750, WPS32950, WPS32760, WPS39274, WPS32550 WPS32205

**ASTM A860/A860M**

Standard Specification for
Wrought High-Strength Low-Alloy Steel Butt-Welding Fittings

Grade and Marking Symbol
WPHY42, WPHY46, WPHY52, WPHY60, WPHY65, WPHY70

ASTM B366

Standard Specification for
Factory-Made Wrought Nickel and Nickel Alloy Fittings

Grade and Marking Symbol (extract)
WPN, WPNL, WPMC, WPHX, WPHG, WPHC22, WPHG30, WPHC4, WPNC1, WPNCMC, WPHG3, WP20CB, WPNIC, WPNIC10, WPNIC11, WPNICMC, WP904L, WPHB, WPHC276, WPHB-2

MSS SP-75

Standard Specification for
High-Test, Wrought, Butt-Welding Fittings

Grade and Marking Symbol
WPHY-42, WPHY-46, WPHY-52, WPHY-56, WPHY-60, WPHY-65, WPHY-70

FITTINGS WE OFFER



**ELBOW
(90° OR 45°)
LR/SR**



**TEE
REDUCER**



**TEE OR
TEE EQUAL**



**ECCENTRIC
REDUCER**



**CONCENTRIC
REDUCER**

SPECIFICATIONS:

STANDARDS:

ASTM A105 , API, ASME, AND ANSI B16.5

- size: 1/4" - 48"
- Thickness: Class 150-2,500
- All Items will have an accompanying Mill Test Certificate upon request

APPLICATIONS:

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