



## **ANSI B16.9 standard is Factory-Made Wrought Steel Butt-welding Fittings.**

The B16.9 standard covers the information of general scope, pressure ratings, sizes, marking requirement, material, pipe fittings dimensions, butt welding ends preparation, design proof test, test and inspection for products, and the tolerance requirements. And ASME B16.9 standard have the same requirements with it.

Hebei haihao group steel pipe engineering department, design, produce, inspect and supply our butt welding pipe fittings according to the ASME/ANSI B16.9-2012 standard.

### **Butt welding pipe fittings manufacture scope.**

#### **Material:**

Carbon steel, Stainless steel, Alloy steel, duplex stainless steel material.

#### **Sizes:**

1/2 inch -48 inch. DN15-DN1200.

#### **Specification:**

SCH10-SCH160 , STD(Standard), XS(Extra-standard), XXS(Double Extra standard).

The standard indicates the full information of the pipe fittings dimensions and tolerances.

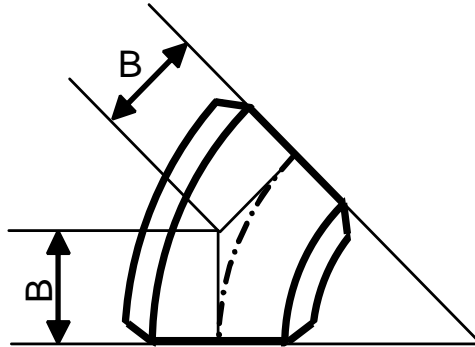
#### **Tables**

- 1 Dimensions of Long Radius Elbows
- 2 Dimensions of Long Radius Reducing Elbows
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- 7 Dimensions of Straight Tees and Crosses
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- 10 Dimensions of Caps
- 11 Dimensions of Reducers
- 12 Welding Bevels and Root Face
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Followings are the dimensions information as per standard:

## W ALL THICKNESS SCHEDULES

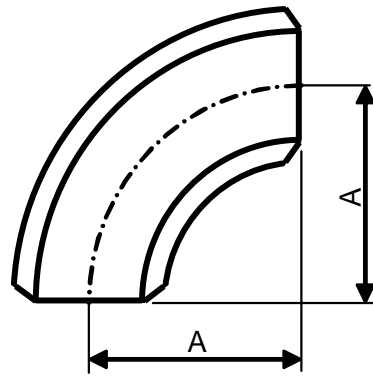
SIZE		OUTSIDE DIAMETER		SGP	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
m m	inch	JIS	ANSI		m m															
15	1/2	21.7	21.3	2.80	1.65	2.10	2.50	---	---	---	2.80	2.80	3.20	3.70	3.70	---	---	---	4.78	7.50
20	3/4	27.2	26.7	2.80	1.65	2.10	2.50	---	---	---	2.90	2.90	3.40	3.90	3.90	---	---	---	5.50	7.80
25	1	34.0	33.4	3.20	1.65	2.80	3.00	---	---	---	3.40	3.40	3.90	4.55	4.55	---	---	---	6.40	9.10
32	1.1/4	42.7	42.2	3.50	1.65	2.80	3.00	---	---	---	3.60	3.60	4.50	4.90	4.90	---	---	---	6.40	9.70
40	1.1/2	48.6	48.3	3.50	1.65	2.80	3.00	---	---	---	3.70	3.70	4.50	5.10	5.10	---	---	---	7.14	10.20
50	2	60.5	60.3	3.80	1.65	2.80	3.50	---	---	---	3.90	3.90	4.90	5.54	5.54	---	---	---	8.70	11.10
65	2.1/2	76.3	73.0	4.20	2.10	3.00	3.50	---	---	---	5.50	5.50	6.00	7.00	7.00	---	---	---	9.53	14.00
80	3	89.1	88.9	4.20	2.10	3.00	4.00	---	---	---	5.74	5.74	6.60	7.60	7.60	---	---	---	11.13	15.24
90	3.1/2	101.6	101.6	4.20	2.10	3.00	4.00	---	---	---	5.70	5.70	7.00	8.10	8.10	---	---	---	12.70	---
100	4	114.3	114.3	4.50	2.10	3.00	4.00	---	---	---	6.00	6.00	7.10	8.60	8.60	---	11.10	---	13.50	17.10
125	5	139.8	141.3	4.50	2.80	3.40	5.00	---	---	---	6.60	6.60	8.10	9.50	9.50	---	12.70	---	15.90	19.00
150	6	165.2	168.3	5.00	2.80	3.40	5.00	---	---	---	7.10	7.10	9.30	11.00	11.00	---	14.30	---	18.26	21.90
200	8	216.3	219.1	5.80	2.80	3.80	6.50	---	6.40	7.00	8.20	8.20	10.30	12.70	12.70	15.10	18.26	20.60	23.00	22.20
250	10	267.4	273.1	6.60	3.40	4.20	6.50	---	6.40	7.80	9.30	9.30	12.70	12.70	15.10	18.30	21.44	25.40	28.60	25.40
300	12	318.5	323.9	6.90	4.00	4.60	6.50	---	6.40	8.40	9.50	10.30	14.30	12.70	17.48	21.44	25.40	28.60	33.30	25.40
350	14	355.6	355.6	7.90	4.00	4.80	7.90	6.40	7.90	9.50	9.50	11.10	15.10	12.70	19.05	23.80	27.80	31.80	35.70	---
400	16	406.4	406.4	7.90	4.20	4.80	7.90	6.40	7.90	9.50	9.50	12.70	16.70	12.70	21.44	26.20	30.96	36.50	40.50	---
450	18	457.2	457.2	7.90	4.20	4.80	7.90	6.40	7.90	11.10	9.50	14.30	19.05	12.70	23.80	29.40	34.90	39.70	45.24	---
500	20	508.0	508.0	7.90	4.80	5.50	7.90	6.40	9.50	12.70	9.50	15.10	20.60	12.70	26.20	32.54	38.10	44.45	50.00	---
550	22	558.8	558.8	---	---	---	---	6.40	9.50	12.70	9.50	---	22.20	12.70	28.60	34.90	41.30	47.60	54.00	---
600	24	609.6	609.6	---	5.50	6.40	---	6.40	9.50	14.30	9.50	17.50	24.60	12.70	31.00	38.90	46.00	52.40	59.54	---
650	26	660.4	660.4	---	---	---	---	7.90	12.70	---	9.50	---	---	12.70	---	---	---	---	---	---
700	28	711.2	711.2	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
750	30	762.0	762.0	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
800	32	812.8	812.8	---	---	---	---	7.90	12.70	15.90	9.50	17.50	---	12.70	---	---	---	---	---	---
850	34	863.6	863.6	---	---	---	---	7.90	12.70	15.90	9.50	17.50	---	12.70	---	---	---	---	---	---
900	36	914.4	914.4	---	---	---	---	7.90	12.70	15.90	9.50	19.10	---	12.70	---	---	---	---	---	---
950	38	965.2	965.2	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
1000	40	1016.0	1016.0	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
1050	42	1066.8	1066.8	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
1100	44	1117.6	1117.6	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
1150	46	1168.4	1168.4	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---
1200	48	1219.2	1219.2	---	---	---	---	7.90	12.70	15.90	9.50	---	---	12.70	---	---	---	---	---	---



### 45D ELBOW

ELBOW 45D LR (CENTER TO END & WEIGHT)																			
SIZE		OUTSIDE DIAMETER		B		WEIGHT													
mm	inch	mm	mm	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
15	1/2	21.3	13.23	0.01	0.01	0.02	---	---	---	0.02	0.02	0.02	0.02	0.02	---	---	---	0.03	0.04
20	3/4	26.7	16.59	0.02	0.03	0.03	---	---	---	0.04	0.04	0.04	0.05	0.05	---	---	---	0.06	0.08
25	1	33.4	20.75	0.04	0.06	0.07	---	---	---	0.08	0.08	0.08	0.10	0.10	---	---	---	0.13	0.16
32	1 1/4	42.2	26.22	0.06	0.10	0.11	---	---	---	0.13	0.13	0.16	0.17	0.17	---	---	---	0.21	0.29
40	1 1/2	48.3	30.01	0.09	0.14	0.15	---	---	---	0.18	0.18	0.22	0.24	0.24	---	---	---	0.33	0.43
50	2	60.3	37.47	0.14	0.24	0.29	---	---	---	0.32	0.32	0.40	0.45	0.45	---	---	---	0.66	0.81
65	2 1/2	73.0	45.36	0.27	0.39	0.45	---	---	---	0.68	0.68	0.74	0.85	0.85	---	---	---	1.12	1.52
80	3	88.9	47.34	0.40	0.57	0.75	---	---	---	1.06	1.06	1.20	1.37	1.37	---	---	---	1.92	2.48
90	3 1/2	101.6	55.24	0.54	0.76	1.01	---	---	---	1.41	1.41	1.71	1.96	1.96	---	---	---	2.91	---
100	4	114.3	63.13	0.70	0.99	1.30	---	---	---	1.92	1.92	2.25	2.68	2.68	---	3.38	---	4.01	4.90
125	5	141.3	78.91	1.43	1.73	2.51	---	---	---	3.28	3.28	3.98	4.62	4.62	---	6.02	---	7.35	8.57
150	6	168.3	94.69	2.05	2.48	3.61	---	---	---	5.06	5.06	6.54	7.66	7.66	---	9.75	---	12.12	14.19
200	8	219.1	126.25	3.57	4.83	8.15	---	8.03	8.76	10.20	10.20	12.69	15.47	15.47	18.18	21.64	24.13	26.61	25.79
250	10	273.1	157.82	6.76	8.33	12.78	---	12.59	15.26	18.09	18.09	24.39	24.39	28.73	34.39	39.79	46.40	51.57	46.40
300	12	323.9	189.38	11.33	13.00	18.26	---	17.98	23.46	26.43	28.59	39.18	34.98	47.41	57.39	67.10	74.75	85.65	67.10
350	14	355.6	220.94	14.52	17.39	28.36	23.08	28.36	33.95	33.95	39.48	53.09	44.97	66.20	81.54	94.10	106.32	117.92	---
400	16	406.4	252.50	19.93	22.75	37.15	30.21	37.15	44.49	44.49	59.00	76.80	59.00	97.40	117.55	137.17	159.32	174.87	---
450	18	457.2	284.07	25.26	28.83	47.12	38.30	47.12	55.74	56.46	84.08	110.81	74.94	136.94	166.97	195.66	220.04	247.42	---
500	20	508.0	315.63	35.63	40.77	58.28	47.35	69.86	92.79	69.86	109.79	148.10	92.79	186.20	228.22	264.09	303.94	337.79	---
550	22	558.8	347.19	---	---	---	57.36	84.67	112.53	84.67	---	193.29	112.53	246.04	296.68	346.79	394.83	442.30	---
600	24	609.6	378.76	58.81	68.33	---	68.33	100.91	150.68	100.91	183.41	254.73	134.18	317.49	392.97	458.91	516.82	579.72	---
650	26	660.4	410.32	---	---	---	98.85	157.74	---	118.58	---	---	157.74	---	---	---	---	---	---
700	28	711.2	441.88	---	---	---	114.74	183.20	228.30	137.66	---	---	183.20	---	---	---	---	---	---
750	30	762.0	473.45	---	---	---	131.81	210.56	262.48	158.17	---	---	210.56	---	---	---	---	---	---
800	32	812.8	505.01	---	---	---	150.07	239.82	299.04	180.11	328.48	---	239.82	---	---	---	---	---	---
850	34	863.6	536.57	---	---	---	169.52	270.99	337.99	203.47	371.30	---	270.99	---	---	---	---	---	---
900	36	914.4	568.14	---	---	---	190.14	304.06	379.32	228.25	454.04	---	304.06	---	---	---	---	---	---
950	38	965.2	599.70	---	---	---	211.96	339.03	423.03	254.46	---	---	339.03	---	---	---	---	---	---
1000	40	1016.0	631.26	---	---	---	234.95	375.91	469.12	282.09	---	---	375.91	---	---	---	---	---	---
1050	42	1066.8	662.82	---	---	---	259.13	414.69	517.60	311.14	---	---	414.69	---	---	---	---	---	---
1100	44	1117.6	694.39	---	---	---	284.49	455.37	568.46	341.62	---	---	455.37	---	---	---	---	---	---
1150	46	1168.4	725.95	---	---	---	311.04	497.96	621.70	373.52	---	---	497.96	---	---	---	---	---	---
1200	48	1219.2	757.51	---	---	---	338.77	542.45	677.33	406.84	---	---	542.45	---	---	---	---	---	---

ELBOW 45D SR (CENTER TO END & WEIGHT)																			
SIZE		OUTSIDE DIAMETER		B		WEIGHT													
mm	inch	mm	mm	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
15	1/2	21.3	8.82	0.01	0.01	0.01	---	---	---	0.01	0.01	0.01	0.02	0.02	---	---	---	0.02	0.03
20	3/4	26.7	11.06	0.02	0.02	0.02	---	---	---	0.03	0.03	0.03	0.03	0.03	---	---	---	0.04	0.05
25	1	33.4	13.83	0.03	0.04	0.04	---	---	---	0.05	0.05	0.06	0.06	0.06	---	---	---	0.08	0.11
32	1 1/4	42.2	17.48	0.04	0.07	0.07	---	---	---	0.09	0.09	0.10	0.11	0.11	---	---	---	0.14	0.19
40	1 1/2	48.3	20.01	0.06	0.09	0.10	---	---	---	0.12	0.12	0.15	0.16	0.16	---	---	---	0.22	0.29
50	2	60.3	24.98	0.10	0.16	0.20	---	---	---	0.22	0.22	0.27	0.30	0.30	---	---	---	0.44	0.54
65	2 1/2	73.0	26.30	0.18	0.26	0.30	---	---	---	0.46	0.46	0.49	0.57	0.57	---	---	---	0.74	1.02
80	3	88.9	31.56	0.27	0.38	0.50	---	---	---	0.70	0.70	0.80	0.91	0.91	---	---	---	1.28	1.66
90	3 1/2	101.6	36.82	0.36	0.51	0.67	---	---	---	0.94	0.94	1.14	1.30	1.30	---	---	---	1.94	---
100	4	114.3	42.08	0.46	0.66	0.87	---	---	---	1.28	1.28	1.50	1.79	1.79	---	2.25	---	2.68	3.27
125	5	141.3	52.61	0.95	1.15	1.68	---	---	---	2.19	2.19	2.65	3.08	3.08	---	4.02	---	4.90	5.71
150	6	168.3	63.13	1.37	1.65	2.41	---	---	---	3.38	3.38	4.36	5.10	5.10	---	6.50	---	8.08	9.46
200	8	219.1	84.17	2.38	3.22	5.44	---	5.35	5.84	6.80	8.80	8.46	10.31	10.31	12.12	14.43	16.08	17.74	17.19
250	10	273.1	105.21	4.51	5.55	8.52	---	8.39	10.17	12.06	12.06	16.26	16.26	19.16	22.93	26.53	30.94	34.38	30.94
300	12	323.9	126.25	7.55	8.67	12.17	---	11.99	15.64	17.62	19.06	26.12	23.32	31.60	38.26	44.74	49.83	57.10	44.74
350	14	355.6	147.29	9.68	11.59	18.91	15.38	18.91	22.63	22.63	26.32	35.39	29.98	44.13	54.36	62.73	70.88	78.61	---
400	16	406.4	168.34	13.29	15.17	24.77	20.14	24.77	29.66	29.66	39.34	51.20	39.34	64.93	78.37	91.44	106.22	116.58	---
450	18	457.2	189.38	16.84	19.22	31.41	25.53	31.41	43.82	37.64	56.05	73.87	49.96	91.29	111.32	130.44	146.69	164.95	---
500	20	508.0	210.42	23.75	27.18	38.85	31.57	46.57	61.86	46.57	73.19	98.74	61.86	124.13	152.14	176.06	202.62	225.20	---
550	22	558.8	231.46	---	---	---	38.24	56.45	75.02	56.45	---	128.86	75.02	164.03	197.78	231.19	263.22	294.87	---
600	24	609.6	252.50	39.21	45.56	---	45.56	67.27	100.46	67.27	122.28	169.82	89.46	211.66	261.98	305.94	344.55	386.48	---
650	26	660.4	273.55	---	---	---	65.90	105.16	---	79.05	---	---	105.16	---	---	---	---	---	---
700	28	711.2	294.59	---	---	---	76.49	122.13	152.20	91.78	---	---	122.13	---	---	---	---	---	---
750	30	762.0	315.63	---	---	---	87.88	140.37	174.99	105.45	---	---	140.37	---	---	---	---	---	---
800	32	812.8	336.67	---	---	---	100.05	159.88	199.36	120.07	218.98	---	159.88	---	---	---	---	---	---
850	34	863.6	357.71	---	---	---	113.01	180.66	225.33	135.65	247.53	---	180.66	---	---	---	---	---	---
900	36	914.4	378.76	---	---	---	126.76	202.70	252.88	152.17	302.69	---	202.70	---	---	---	---	---	---
950	38	965.2	399.80	---	---	---	141.30	226.02	282.02	169.64	---	---	226.02	---	---	---	---	---	---
1000	40	1016.0	420.84	---	---	---	156.63	250.60	312.75	188.06	---	---	250.60	---	---	---	---	---	---
1050	42	1066.8	441.88	---	---	---	172.75	276.46	345.07	207.43	---	---	276.46	---	---	---	---	---	---
1100	44	1117.6	462.93	---	---	---	189.66	303.58	378.97	227.75	---	---	303.58	---	---	---	---	---	---
1150	46	1168.4	483.97	---	---	---	207.36	331.97	414.47	249.01	---	---	331.97	---	---	---	---	---	---
1200	48	1219.2	505.01	---	---	---	225.85	361.63	451.55	271.23	---	---	361.63	---	---	---	---	---	---



90D ELBOW

ELBOW 90D LR (CENTER TO END & WEIGHT)																			
SIZE			A	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
m m	inch	m m	KG																
15	1/2	38.10	0.048	0.059	0.069	---	---	---	0.076	0.076	0.085	0.096	0.096	---	---	---	---	0.116	0.153
20	3/4	38.10	0.061	0.076	0.089	---	---	---	0.102	0.102	0.117	0.131	0.131	---	---	---	---	0.172	0.217
25	1	38.10	0.077	0.126	0.135	---	---	---	0.150	0.150	0.170	0.194	0.194	---	---	---	---	0.255	0.326
32	1 1/4	47.63	0.123	0.203	0.217	---	---	---	0.256	0.256	0.313	0.337	0.337	---	---	---	---	0.422	0.581
40	1 1/2	57.15	0.170	0.282	0.301	---	---	---	0.365	0.365	0.436	0.487	0.487	---	---	---	---	0.650	0.860
50	2	76.20	0.285	0.475	0.586	---	---	---	0.649	0.649	0.801	0.895	0.895	---	---	---	---	1.32	1.61
65	2 1/2	95.25	0.549	0.774	0.897	---	---	---	1.37	1.37	1.48	1.70	1.70	---	---	---	---	2.23	3.05
80	3	114.30	0.807	1.14	1.50	---	---	---	2.11	2.11	2.40	2.73	2.73	---	---	---	---	3.83	4.97
90	3 1/2	133.35	1.08	1.53	2.02	---	---	---	2.82	2.82	3.42	3.91	3.91	---	---	---	---	5.83	---
100	4	152.40	1.39	1.97	2.60	---	---	---	3.83	3.83	4.49	5.36	5.36	---	6.76	---	---	8.03	9.81
125	5	190.50	2.86	3.46	5.03	---	---	---	6.56	6.56	7.96	9.23	9.23	---	12.05	---	---	14.71	17.14
150	6	228.60	4.10	4.96	7.23	---	---	---	10.13	10.13	13.09	15.31	15.31	---	19.49	---	---	24.25	28.38
200	8	304.80	7.15	9.65	16.31	---	16.06	17.52	20.41	20.41	25.38	30.93	30.93	36.35	43.28	48.25	53.22	51.58	---
250	10	381.00	13.53	16.66	25.56	---	25.18	30.52	36.19	36.19	48.78	48.78	57.47	68.78	79.59	92.81	103.15	92.81	---
300	12	457.20	22.65	26.00	36.52	---	35.97	46.91	52.87	57.18	78.37	69.96	94.81	114.79	134.21	149.49	171.29	134.21	---
350	14	533.40	29.04	34.77	56.73	46.15	56.73	67.90	67.90	78.97	106.18	89.93	132.40	163.08	188.19	212.64	235.84	---	---
400	16	609.60	39.87	45.50	74.30	60.42	74.30	88.99	88.99	118.01	153.60	118.01	194.79	235.10	274.33	318.65	349.75	---	---
450	18	685.80	50.52	57.66	94.24	76.60	94.24	131.47	112.93	168.16	221.62	149.89	273.88	333.95	391.32	440.08	494.84	---	---
500	20	762.00	71.26	81.54	116.55	94.71	139.71	185.57	139.71	219.57	296.21	185.57	372.40	456.43	528.17	607.87	675.59	---	---
550	22	838.20	---	---	---	114.73	169.34	225.07	169.34	---	386.58	225.07	492.09	593.35	693.58	789.65	884.61	---	---
600	24	914.40	117.62	136.67	---	136.67	201.82	301.37	201.82	366.83	509.47	268.37	634.99	785.93	917.82	1033.64	1159.43	---	---
650	26	990.60	---	---	---	197.70	315.48	---	237.15	---	---	---	315.48	---	---	---	---	---	---
700	28	1066.80	---	---	---	229.48	366.39	456.61	275.33	---	---	366.39	---	---	---	---	---	---	---
750	30	1143.00	---	---	---	263.63	421.11	524.97	316.35	---	---	421.11	---	---	---	---	---	---	---
800	32	1219.20	---	---	---	300.15	479.64	598.09	360.22	656.95	---	---	479.64	---	---	---	---	---	---
850	34	1295.40	---	---	---	339.03	541.97	675.98	406.94	742.60	---	---	541.97	---	---	---	---	---	---
900	36	1371.60	---	---	---	380.29	608.11	758.64	456.50	908.07	---	---	608.11	---	---	---	---	---	---
950	38	1447.80	---	---	---	423.91	678.06	846.06	508.91	---	---	---	678.06	---	---	---	---	---	---
1000	40	1524.00	---	---	---	469.90	751.81	938.24	564.17	---	---	---	751.81	---	---	---	---	---	---
1050	42	1600.20	---	---	---	518.26	829.37	1035.20	622.28	---	---	---	829.37	---	---	---	---	---	---
1100	44	1676.40	---	---	---	568.98	910.74	1136.92	683.24	---	---	---	910.74	---	---	---	---	---	---
1150	46	1752.60	---	---	---	622.08	995.91	1243.40	747.04	---	---	---	995.91	---	---	---	---	---	---
1200	48	1828.80	---	---	---	677.54	1084.90	1354.65	813.69	---	---	---	1084.90	---	---	---	---	---	---

ELBOW 90D SR (CENTER TO END & WEIGHT)																			
SIZE			A	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
m m	inch	m m	KG																
15	1/2	25.40	0.032	0.040	0.046	---	---	---	0.051	0.051	0.057	0.064	0.064	---	---	---	---	0.078	0.102
20	3/4	25.40	0.041	0.051	0.059	---	---	---	0.068	0.068	0.078	0.087	0.087	---	---	---	---	0.115	0.145
25	1	25.40	0.052	0.084	0.090	---	---	---	0.100	0.100	0.113	0.129	0.129	---	---	---	---	0.170	0.217
32	1 1/4	31.75	0.082	0.136	0.145	---	---	---	0.171	0.171	0.209	0.225	0.225	---	---	---	---	0.282	0.388
40	1 1/2	38.10	0.114	0.188	0.200	---	---	---	0.243	0.243	0.291	0.325	0.325	---	---	---	---	0.433	0.573
50	2	50.80	0.190	0.317	0.391	---	---	---	0.433	0.433	0.534	0.597	0.597	---	---	---	---	0.883	1.07
65	2 1/2	63.50	0.366	0.516	0.598	---	---	---	0.913	0.913	1.088	1.14	1.14	---	---	---	---	1.49	2.03
80	3	76.20	0.538	0.760	1.00	---	---	---	1.41	1.41	1.60	1.82	1.82	---	---	---	---	2.55	3.31
90	3 1/2	88.90	0.719	1.02	1.34	---	---	---	1.88	1.88	2.28	2.61	2.61	---	---	---	---	3.89	---
100	4	101.60	0.927	1.31	1.74	---	---	---	2.56	2.56	2.99	3.58	3.58	---	4.51	---	---	5.35	6.54
125	5	127.00	1.91	2.31	3.35	---	---	---	4.37	4.37	5.30	6.16	6.16	---	8.03	---	---	9.80	11.43
150	6	152.40	2.73	3.31	4.82	---	---	---	6.75	6.75	8.72	10.21	10.21	---	12.99	---	---	16.17	18.92
200	8	203.20	4.76	6.44	10.87	---	10.71	11.68	13.61	13.61	16.92	20.62	20.62	24.23	28.85	32.17	35.48	34.39	---
250	10	254.00	9.02	11.11	17.04	---	16.79	20.35	24.13	24.13	32.52	32.52	38.31	45.85	53.06	61.87	68.77	61.87	---
300	12	304.80	15.10	17.33	24.35	---	23.98	31.27	35.25	38.12	52.24	46.64	63.21	76.52	89.47	99.66	114.19	89.47	---
350	14	355.60	19.36	23.18	37.82	30.77	37.82	45.27	45.27	52.65	70.79	59.95	88.27	108.72	125.46	141.76	157.23	---	---
400	16	406.40	26.58	30.33	49.53	40.28	49.53	59.33	59.33	78.67	102.40	78.67	129.86	156.73	182.89	212.43	233.16	---	---
450	18	457.20	33.68	38.44	62.83	51.07	62.83	87.65	75.28	112.11	147.75	99.92	182.58	222.63	260.88	293.39	329.89	---	---
500	20	508.00	47.50	54.36	77.70	63.14	93.14	123.72	93.14	146.38	197.47	123.72	248.27	304.29	352.12	405.25	450.39	---	---
550	22	558.80	---	---	---	76.49	112.90	150.05	112.90	---	257.72	150.05	328.06	395.57	462.39	526.43	589.74	---	---
600	24	609.60	78.42	91.11	---	91.11	134.55	200.91	134.55	244.55	339.65	178.91	423.33	523.95	611.88	689.09	772.96	---	---
650	26	660.40	---	---	---	131.80	210.32	---	158.10	---	---	---	210.32	---	---	---	---	---	---
700	28	711.20	---	---	---	152.99	244.26	304.40	183.55	---	---	---	244.26	---	---	---	---	---	---
750	30	762.00	---	---	---	175.75	280.74	349.98	210.90	---	---	---	280.74	---	---	---	---	---	---
800	32	812.80	---	---	---	200.10	319.76	398.73	240.15	437.97	---	---	319.76	---	---	---	---	---	---
850	34	863.60	---	---	---	226.02	361.31	450.65	271.29	495.07	---	---	361.31	---	---	---	---	---	---
900	36	914.40	---	---	---	253.53	405.41	505.76	304.33	605.38	---	---	405.41	---	---	---	---	---	---
950	38	965.20	---	---	---	282.61	452.04	564.04	339.28	---	---	---	452.04	---	---				





HEBEI HAIHAO GROUP  
Mengcun, Cangzhou, Hebei, China  
www.haihaopiping.com

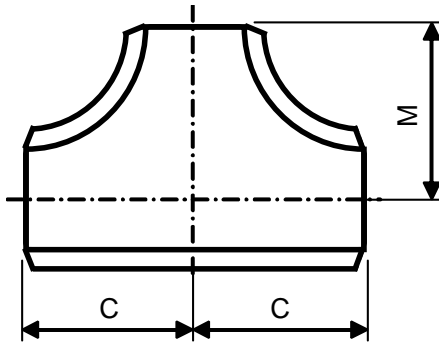
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Professional Steel Piping Solution  
Email: sales@haihaogroup.com

**ELBOW BENDS 3D (CENTER TO END & WEIGHT)**

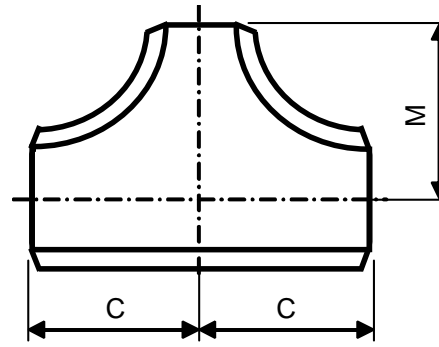
SIZE		OD		A		WEIGHT																		
mm	inch	mm	mm	mm	mm	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS			
15	1/2	21.3	38.10	0.048	0.059	0.069	...	...	...	...	...	0.076	0.076	0.085	0.096	0.096	...	...	...	...	0.116	0.153		
20	3/4	26.7	57.15	0.091	0.114	0.134	...	...	...	...	...	0.153	0.153	0.175	0.197	0.197	...	...	...	...	0.258	0.326		
25	1	33.4	76.20	0.155	0.253	0.289	...	...	...	...	...	0.301	0.301	0.339	0.387	0.387	...	...	...	...	0.510	0.652		
32	1 1/4	42.2	95.25	0.247	0.407	0.434	...	...	...	...	...	0.512	0.512	0.626	0.674	0.674	...	...	...	...	0.845	1.16		
40	1 1/2	48.3	114.30	0.341	0.564	0.601	...	...	...	...	...	0.730	0.730	0.872	0.975	0.975	...	...	...	...	1.30	1.72		
50	2	60.3	152.40	0.571	0.950	1.17	...	...	...	...	...	1.30	1.30	1.60	1.79	1.79	...	...	...	...	2.65	3.22		
65	2 1/2	73.0	190.50	1.10	1.55	1.79	...	...	...	...	...	2.74	2.74	2.96	3.41	3.41	...	...	...	...	4.46	6.09		
80	3	88.9	228.60	1.61	2.28	3.01	...	...	...	...	...	4.22	4.22	4.81	5.47	5.47	...	...	...	...	7.66	9.94		
90	3 1/2	101.6	266.70	2.16	3.05	4.03	...	...	...	...	...	5.64	5.64	6.84	7.82	7.82	...	...	...	...	11.66	...		
100	4	114.3	304.80	2.78	3.94	5.21	...	...	...	...	...	7.67	7.67	8.98	10.73	10.73	...	13.52	...	...	16.06	19.61		
125	5	141.3	381.00	5.72	6.92	10.05	...	...	...	...	...	13.11	13.11	15.91	18.47	18.47	...	24.09	...	...	29.41	34.28		
150	6	168.3	457.20	8.20	9.92	14.45	...	...	...	...	...	20.26	20.26	26.17	30.63	30.63	...	38.98	...	...	48.50	56.75		
200	8	219.1	609.60	14.29	19.31	32.61	...	...	...	...	...	32.13	35.04	40.82	40.82	50.76	61.87	61.87	72.70	86.55	96.51	106.45	103.17	
250	10	273.1	762.00	27.05	33.32	51.12	...	...	...	...	...	50.36	61.05	72.38	72.38	97.56	97.56	114.93	137.56	159.18	185.61	206.30	185.61	
300	12	323.9	914.40	45.30	52.00	73.04	...	...	...	...	...	71.94	93.82	105.74	114.35	156.73	139.92	189.62	229.57	268.41	298.99	342.58	268.41	
350	14	355.6	1066.80	58.09	69.55	113.45	92.31	113.45	135.80	148.60	177.98	135.80	157.94	212.36	179.86	264.80	326.16	376.38	425.28	475.69	471.69	...	...	
400	16	406.4	1219.20	79.74	90.99	148.60	120.84	148.60	177.98	177.98	236.01	177.98	236.01	307.19	236.01	389.59	470.20	548.66	637.30	699.49	...	...	...	
450	18	457.2	1371.60	101.03	115.31	188.49	153.21	188.49	262.95	225.85	336.33	262.95	336.33	443.24	299.77	547.75	667.89	782.64	880.17	989.68	...	...	...	
500	20	508.0	1524.00	142.51	163.07	233.11	189.41	279.42	371.15	279.42	439.15	279.42	439.15	592.42	371.15	744.81	912.87	1056.35	1215.75	1351.17	...	...	...	
550	22	558.8	1676.40	...	...	...	...	...	...	...	...	773.16	773.16	450.14	984.18	1186.70	1387.17	1579.30	1769.22	...	...	...	...	
600	24	609.6	1828.80	235.25	273.34	...	...	...	...	...	...	273.34	403.65	602.74	403.65	733.65	1018.94	536.74	1269.98	1571.86	1835.63	2067.28	2318.87	...
650	26	660.4	1981.20	...	...	...	...	...	...	...	...	395.39	630.95	...	...	...	...	...	...	...	...	...	...	...
700	28	711.2	2133.60	...	...	...	...	...	...	...	...	458.96	732.78	913.21	560.65	...	...	...	...	...	...	...	...	...
750	30	762.0	2286.00	...	...	...	...	...	...	...	...	527.26	842.22	1049.93	632.70	...	...	...	...	...	...	...	...	...
800	32	812.8	2438.40	...	...	...	...	...	...	...	...	600.29	959.28	1196.18	720.44	1313.91	...	...	...	...	...	...	...	...
850	34	863.6	2590.80	...	...	...	...	...	...	...	...	678.07	1083.94	1351.96	813.87	1485.20	...	...	...	...	...	...	...	...
900	36	914.4	2743.20	...	...	...	...	...	...	...	...	760.58	1216.22	1517.27	913.00	1816.14	...	...	...	...	...	...	...	...
950	38	965.2	2895.60	...	...	...	...	...	...	...	...	847.82	1356.12	1692.11	1107.83	...	...	...	...	...	...	...	...	...
1000	40	1016.0	3048.00	...	...	...	...	...	...	...	...	939.80	1503.63	1876.49	1128.35	...	...	...	...	...	...	...	...	...
1050	42	1066.8	3200.40	...	...	...	...	...	...	...	...	1036.52	1658.75	2070.40	1244.56	...	...	...	...	...	...	...	...	...
1100	44	1117.6	3352.80	...	...	...	...	...	...	...	...	1137.97	1821.48	2273.83	1366.47	...	...	...	...	...	...	...	...	...
1150	46	1168.4	3505.20	...	...	...	...	...	...	...	...	1244.16	1991.83	2486.80	1494.08	...	...	...	...	...	...	...	...	...
1200	48	1219.2	3657.60	...	...	...	...	...	...	...	...	1355.08	2169.79	2709.30	1627.38	...	...	...	...	...	...	...	...	...

**ELBOW BENDS 4D (CENTER TO END & WEIGHT)**

SIZE		OD		A		WEIGHT																	
mm	inch	mm	mm	mm	mm	S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS		
15	1/2	21.3	81.45	0.128	0.159	0.185	...	...	...	...	...	0.204	0.204	0.228	0.256	0.256	...	...	...	...	0.311	0.407	
20	3/4	26.7	89.55	0.244	0.305	0.357	...	...	...	...	...	0.407	0.407	0.467	0.525	0.525	...	...	...	...	0.688	0.870	
25	1	33.4	118.30	0.412	0.674	0.717	...	...	...	...	...	0.802	0.802	0.905	1.03	1.03	...	...	...	...	1.36	1.74	
32	1 1/4	42.2	148.10	0.658	1.08	1.16	...	...	...	...	...	1.37	1.37	1.67	1.80	1.80	...	...	...	...	2.25	3.10	
40	1 1/2	48.3	176.55	0.908	1.50	1.60	...	...	...	...	...	1.95	1.95	2.33	2.60	2.60	...	...	...	...	3.47	4.59	
50	2	60.3	233.35	1.52	2.53	3.13	...	...	...	...	...	3.46	3.46	4.27	4.77	4.77	...	...	...	...	7.06	8.59	
65	2 1/2	73.0	298.50	2.93	4.13	4.78	...	...	...	...	...	7.30	7.30	7.91	9.09	9.09	...	...	...	...	11.90	16.25	
80	3	88.9	349.25	4.30	6.08	8.01	...	...	...	...	...	11.27	11.27	12.82	14.58	14.58	...	...	...	...	20.43	26.49	
90	3 1/2	101.6	406.40	5.75	8.14	10.75	...	...	...	...	...	15.05	15.05	18.23	20.85	20.85	...	...	...	...	31.09	...	
100	4	114.3	463.55	7.41	10.51	13.88	...	...	...	...	...	20.45	20.45	23.95	28.61	28.61	...	...	...	...	42.82	52.30	
125	5	141.3	578.65	15.25	18.44	26.81	...	...	...	...	...	34.97	34.97	42.44	49.25	49.25	...	...	...	...	78.43	91.40	
150	6	168.3	693.75	21.87	26.46	38.54	...	...	...	...	...	54.02	54.02	69.80	81.67	81.67	...	...	...	...	103.95	...	
200	8	219.1	922.35	38.12	51.49	86.97	...	...	...	...	...	85.67	93.44	108.84	135.35	164.97	164.97	193.87	230.81	257.35	283.86	275.11	...
250	10	273.1	1152.55	72.14	88.85	136.33	...	...	...	...	...	134.28	162.80	193.01	260.17	260.17	306.49	366.83	424.48	494.96	550.12	494.96	...
300	12	323.9	1381.15	120.80	138.66	194.77	...	...	...	...	...	191.83	250.19	281.97	304.94	417.96	373.11	505.65	612.19	715.77	797.31	913.56	715.77
350	14	355.6	1600.20	154.90	185.46	302.53	246.15	302.53	362.13	362.13	421.17	566.29	479.64	706.13	869.75	1003.68	1134.09	1257.84	...	...	...	...	...
400	16	406.4	1828.80	212.63	242.64	396.27	322.24	396.27	474.61	474.61	629.37	819.18	629.37	1038.90	1253.86	1463.11	1699.46	1865.31	...	...	...	...	...
450	18	457.2	2057.40	269.42	307.50	502.63	408.56	502.63	701.20	602.28	896.87	1181.96	799.40	1460.67	1781.04	2087.05	2347.11	2639.15	...	...	...	...	...
500	20	508.0	2286.00	380.04	434.85	621.62	505.11	621.62	889.73	745.13	1171.06	1579.78	889.73	1986.15	2434.31	2816.92	3242.00	3603.13	...	...	...	...	...
550	22	558.8	2514.60	...																			

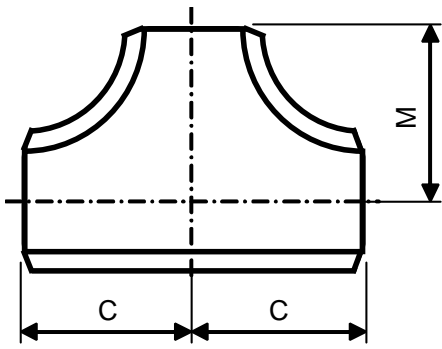


STRAIGHT TEE

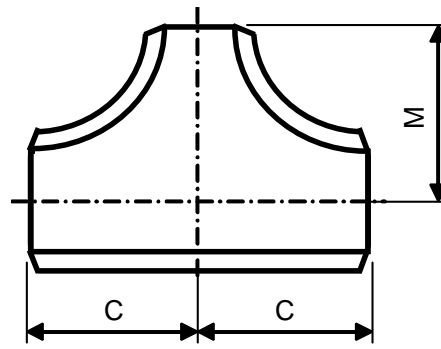


REDUCING TEE

SIZE		OUTSIDE DIAMETER				C	M	WEIGHT															
		Large End	Small End	mm	mm			S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
		mm	mm					KG															
15	1/2	21.34	21.34	25.40	25.40	0.052	0.065	0.076	---	---	---	0.084	0.084	0.094	0.105	0.105	---	---	---	0.126	0.168		
15 x 15 x 10	1/2 x 1/2 x 3/8	21.34	17.27	25.40	25.40	0.050	0.062	0.072	---	---	---	0.080	0.080	0.089	0.100	0.100	---	---	---	0.119	0.157		
15 x 15 x 8	1/2 x 1/2 x 1/4	21.34	13.72	25.40	25.40	0.048	0.059	0.069	---	---	---	0.076	0.076	0.085	0.095	0.095	---	---	---	0.113	0.147		
20	3/4	26.67	26.67	28.45	28.45	0.073	0.092	0.107	---	---	---	0.122	0.122	0.140	0.158	0.158	---	---	---	0.207	0.261		
20 x 20 x 15	3/4 x 3/4 x 1/2	26.67	21.34	28.45	28.45	0.070	0.087	0.102	---	---	---	0.117	0.117	0.134	0.150	0.150	---	---	---	0.196	0.246		
20 x 20 x 10	3/4 x 3/4 x 3/8	26.67	17.27	28.45	28.45	0.068	0.084	0.099	---	---	---	0.112	0.112	0.129	0.144	0.144	---	---	---	0.187	0.234		
25	1	33.53	33.53	38.10	38.10	0.127	0.207	0.220	---	---	---	0.246	0.246	0.278	0.317	0.317	---	---	---	0.418	0.535		
25 x 25 x 20	1 x 1 x 3/4	33.53	26.67	38.10	38.10	0.121	0.197	0.209	---	---	---	0.234	0.234	0.264	0.301	0.301	---	---	---	0.395	0.502		
25 x 25 x 15	1 x 1 x 1/2	33.53	21.34	38.10	38.10	0.116	0.189	0.201	---	---	---	0.225	0.225	0.253	0.288	0.288	---	---	---	0.377	0.476		
32	1 1/4	42.16	42.16	47.75	47.75	0.201	0.332	0.354	---	---	---	0.418	0.418	0.511	0.550	0.550	---	---	---	0.690	0.949		
32 x 32 x 25	1 1/4 x 1 1/4 x 1	42.16	33.53	47.75	47.75	0.192	0.316	0.337	---	---	---	0.398	0.398	0.485	0.522	0.522	---	---	---	0.653	0.894		
32 x 32 x 20	1 1/4 x 1 1/4 x 3/4	42.16	26.67	47.75	47.75	0.185	0.304	0.323	---	---	---	0.382	0.382	0.465	0.500	0.500	---	---	---	0.624	0.850		
32 x 32 x 15	1 1/4 x 1 1/4 x 1/2	42.16	21.34	47.75	47.75	0.179	0.294	0.313	---	---	---	0.369	0.369	0.449	0.483	0.483	---	---	---	0.602	0.816		
40	1 1/2	48.26	48.26	57.15	57.15	0.279	0.462	0.493	---	---	---	0.599	0.599	0.715	0.800	0.800	---	---	---	1.07	1.41		
40 x 40 x 32	1 1/2 x 1 1/2 x 1 1/4	48.26	42.16	57.15	57.15	0.271	0.449	0.478	---	---	---	0.581	0.581	0.693	0.774	0.774	---	---	---	1.03	1.36		
40 x 40 x 25	1 1/2 x 1 1/2 x 1	48.26	33.53	57.15	57.15	0.260	0.429	0.457	---	---	---	0.555	0.555	0.661	0.738	0.738	---	---	---	0.981	1.29		
40 x 40 x 20	1 1/2 x 1 1/2 x 3/4	48.26	26.67	57.15	57.15	0.250	0.413	0.441	---	---	---	0.534	0.534	0.636	0.710	0.710	---	---	---	0.941	1.23		
40 x 40 x 15	1 1/2 x 1 1/2 x 1/2	48.26	21.34	57.15	57.15	0.243	0.401	0.428	---	---	---	0.518	0.518	0.617	0.688	0.688	---	---	---	0.910	1.19		
50	2	60.45	60.45	63.50	63.50	0.383	0.638	0.788	---	---	---	0.872	0.872	1.08	1.20	1.20	---	---	---	1.78	2.17		
50 x 50 x 40	2 x 2 x 1 1/2	60.45	48.26	63.50	60.45	0.361	0.600	0.741	---	---	---	0.820	0.820	1.01	1.13	1.13	---	---	---	1.67	2.02		
50 x 50 x 32	2 x 2 x 1 1/4	60.45	42.16	63.50	57.15	0.348	0.579	0.714	---	---	---	0.790	0.790	0.974	1.09	1.09	---	---	---	1.60	1.95		
50 x 50 x 25	2 x 2 x 1	60.45	33.53	63.50	50.80	0.331	0.549	0.678	---	---	---	0.749	0.749	0.924	1.03	1.03	---	---	---	1.52	1.84		
50 x 50 x 20	2 x 2 x 3/4	60.45	26.67	63.50	44.45	0.318	0.529	0.653	---	---	---	0.722	0.722	0.890	0.994	0.994	---	---	---	1.47	1.78		
65	2 1/2	73.15	73.15	76.20	76.20	0.707	0.997	1.15	---	---	---	1.76	1.76	1.91	2.19	2.19	---	---	---	2.87	3.92		
65 x 65 x 50	2 1/2 x 2 1/2 x 2	73.15	60.45	76.20	69.85	0.661	0.932	1.08	---	---	---	1.65	1.65	1.78	2.05	2.05	---	---	---	2.68	3.65		
65 x 65 x 40	2 1/2 x 2 1/2 x 1 1/2	73.15	48.26	76.20	66.55	0.632	0.891	1.03	---	---	---	1.57	1.57	1.70	1.95	1.95	---	---	---	2.55	3.47		
65 x 65 x 32	2 1/2 x 2 1/2 x 1 1/4	73.15	42.16	76.20	63.50	0.617	0.869	1.01	---	---	---	1.53	1.53	1.66	1.90	1.90	---	---	---	2.49	3.37		
65 x 65 x 25	2 1/2 x 2 1/2 x 1	73.15	33.53	76.20	57.15	0.594	0.837	0.969	---	---	---	1.48	1.48	1.60	1.83	1.83	---	---	---	2.40	3.25		
80	3	88.90	88.90	85.85	85.85	0.958	1.35	1.79	---	---	---	2.51	2.51	2.86	3.25	3.25	---	---	---	4.55	5.90		
80 x 80 x 65	3 x 3 x 2 1/2	88.90	73.15	85.85	82.55	0.912	1.29	1.70	---	---	---	2.39	2.39	2.71	3.08	3.08	---	---	---	4.31	5.58		
80 x 80 x 50	3 x 3 x 2	88.90	60.45	85.85	76.20	0.868	1.23	1.62	---	---	---	2.27	2.27	2.58	2.93	2.93	---	---	---	4.10	5.29		
80 x 80 x 40	3 x 3 x 1 1/2	88.90	48.26	85.85	73.15	0.840	1.19	1.56	---	---	---	2.19	2.19	2.50	2.84	2.84	---	---	---	3.96	5.11		
80 x 80 x 32	3 x 3 x 1 1/4	88.90	42.16	85.85	69.85	0.825	1.17	1.53	---	---	---	2.15	2.15	2.45	2.78	2.78	---	---	---	3.88	5.01		
90	3 1/2	101.60	101.60	95.25	95.25	1.21	1.71	2.26	---	---	---	3.17	3.17	3.84	4.39	4.39	---	---	---	6.54	---		
90 x 90 x 80	3 1/2 x 3 1/2 x 3	101.60	88.90	95.25	91.95	1.17	1.65	2.18	---	---	---	3.05	3.05	3.69	4.22	4.22	---	---	---	6.29	---		
90 x 90 x 65	3 1/2 x 3 1/2 x 2 1/2	101.60	73.15	95.25	88.90	1.12	1.59	2.09	---	---	---	2.93	2.93	3.55	4.05	4.05	---	---	---	6.03	---		
90 x 90 x 50	3 1/2 x 3 1/2 x 2	101.60	60.45	95.25	82.55	1.08	1.53	2.01	---	---	---	2.81	2.81	3.40	3.89	3.89	---	---	---	5.78	---		
90 x 90 x 40	3 1/2 x 3 1/2 x 1 1/2	101.60	48.26	95.25	79.25	1.05	1.49	1.96	---	---	---	2.74	2.74	3.31	3.79	3.79	---	---	---	5.62	---		
100	4	114.30	114.30	104.65	104.65	1.49	2.11	2.79	---	---	---	4.12	4.12	4.82	5.76	5.76	---	7.25	---	8.62	10.53		
100 x 100 x 90	4 x 4 x 3 1/2	114.30	101.60	104.65	101.60	1.45	2.05	2.71	---	---	---	3.98	3.98	4.66	5.57	5.57	---	7.01	---	8.33	10.16		
100 x 100 x 80	4 x 4 x 3	114.30	88.90	104.65	98.55	1.40	1.99	2.62	---	---	---	3.86	3.86	4.52	5.40	5.40	---	6.79	---	8.06	9.83		
100 x 100 x 65	4 x 4 x 2 1/2	114.30	73.15	104.65	95.25	1.36	1.92	2.54	---	---	---	3.73	3.73	4.37	5.21	5.21	---	6.56	---	7.78	9.48		
100 x 100 x 50	4 x 4 x 2	114.30	60.45	104.65	88.90	1.31	1.86	2.45	---	---	---	3.61	3.61	4.23	5.04	5.04	---	6.34	---	7.52	9.16		
100 x 100 x 40	4 x 4 x 1 1/2	114.30	48.26	104.65	85.85	1.29	1.82	2.40	---	---	---	3.53	3.53	4.14	4.93	4.93	---	6.20	---	7.36	8.96		
125	5	141.22	141.22	123.95	123.95	2.88	3.48	5.06	---	---	---	6.60	6.60	8.01	9.30	9.30	---	12.13	---	14.80	17.25		
125 x 125 x 100	5 x 5 x 4	141.22	114.30	123.95	117.35	2.73	3.30	4.79	---	---	---	6.25	6.25	7.58	8.80	8.80	---	11.47	---	13.99	16.28		
125 x 125 x 90	5 x 5 x 3 1/2	141.22	101.60	123.95	114.30	2.67	3.22	4.68	---	---	---	6.11	6.11	7.41	8.59	8.59	---	11.20	---	13.65	15.89		
125 x 125 x 80	5 x 5 x 3	141.22	88.90	123.95	111.25	2.61	3.16	4.58	---	---	---	5.98	5.98	7.25	8.41	8.41	---	10.95	---	13.35	15.53		
125 x 125 x 65	5 x 5 x 2 1/2	141.22	73.15	123.95	107.95	2.55	3.08	4.48	---	---	---	5.84	5.84	7.08	8.21	8.21	---	10.69	---	13.02	15.14		
125 x 125 x 50	5 x 5 x 2	141.22	60.45	123.95	104.65	2.51	3.03	4.40	---	---	---	5.73	5.73	6.95	8.06	8.06	---	10.49	---	12.78	14.86		
150	6	168.15	168.15	142.75	142.75	3.93	4.75	6.92	---	---	---	9.71	9.71	12.54	14.67	14.67	---	18.67	---	23.23	27.18		
150 x 150 x 125	6 x 6 x 5	168.15	141.22	142.75	136.65	3.76	4.55	6.63	---	---	---	9.29	9.29	11.99	14.03	14.03	---	17.84	---	22.18	25.94		
150 x 150 x 100	6 x 6 x 4	168.15	114.30	142.75	130.05	3.61	4.37	6.36	---	---	---	8.91	8.91	11.51	13.46	13.46	---	17.11	---	21.26	24.84		
150 x 150 x 90	6 x 6 x 3 1/2	168.15	101.60	142.75	127.00	3.55	4.30	6.25	---	---	---	8.76	8.76	11.31	13.23	13.23	---	16.81	---	20.88	24.40		
150 x 150 x 80	6 x 6 x 3	168.15	88.90	142.75	123.95	3.50	4.23	6.16	---	---	---	8.62	8.62	11.13	13.01	13.01	---	16.54	---	20.54	23.99		
150 x 150 x 65	6 x 6 x 2 1/2	168.15	73.15	142.75	120.65	3.44	4.16	6.05	---	---	---	8.47	8.47	10.94	12.79	12.79	---	16.25	---	20.17	23.56		



**STRAIGHT TEE**

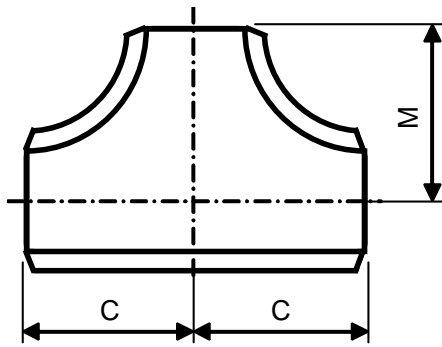


**REDUCING TEE**

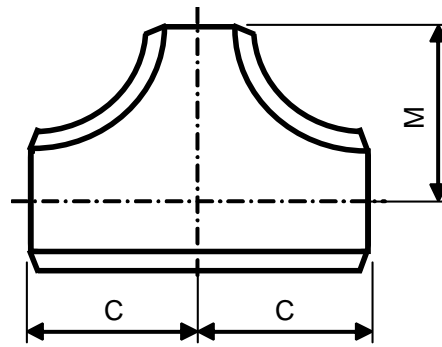
**STRAIGHT & REDUCING TEE (DIMENSION & WEIGHT)**

SIZE	OUTSIDE DIAMETER		C	M	WEIGHT																
	Large End	Small End			S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS	
	mm	inch	mm	mm																	KG
200	8	218.95	218.95	177.80	177.80	6.33	8.55	14.44	---	14.22	15.51	18.07	18.07	22.47	27.38	27.38	32.18	38.31	42.72	47.11	45.66
200 x 200 x 150	8 x 8 x 6	218.95	168.15	177.80	168.15	5.98	8.07	13.63	---	13.43	14.64	17.05	17.05	21.20	25.83	25.83	30.34	36.10	40.23	44.35	42.99
200 x 200 x 125	8 x 8 x 5	218.95	141.22	177.80	162.05	5.81	7.85	13.25	---	13.05	14.23	16.57	16.57	20.59	25.09	25.09	29.46	35.05	39.05	43.05	41.73
200 x 200 x 100	8 x 8 x 4	218.95	114.30	177.80	155.45	5.66	7.65	12.90	---	12.71	13.86	16.14	16.14	20.06	24.43	24.43	28.69	34.12	38.02	41.90	40.62
200 x 200 x 90	8 x 8 x 3 1/2	218.95	101.60	177.80	152.40	5.60	7.56	12.76	---	12.57	13.71	15.97	15.97	19.84	24.16	24.16	28.38	33.75	37.60	41.43	40.17
250	10	273.05	273.05	215.90	215.90	11.56	14.23	21.84	---	21.51	26.08	30.92	30.92	41.68	49.10	58.77	68.00	79.29	88.13	79.29	---
250 x 250 x 200	10 x 10 x 8	273.05	218.95	215.90	203.20	10.97	13.51	20.72	---	20.41	24.74	29.32	29.32	39.51	46.54	55.68	64.40	75.06	83.40	75.06	---
250 x 250 x 150	10 x 10 x 6	273.05	168.15	215.90	193.55	10.55	12.99	19.93	---	19.63	23.79	28.20	28.20	37.98	44.73	53.50	61.87	72.08	80.06	72.08	---
250 x 250 x 125	10 x 10 x 5	273.05	141.22	215.90	190.50	10.39	12.79	19.61	---	19.32	23.42	27.75	27.75	37.38	44.01	52.64	60.86	70.90	78.73	70.90	---
250 x 250 x 100	10 x 10 x 4	273.05	114.30	215.90	184.15	10.21	12.57	19.27	---	18.98	23.01	27.27	27.27	36.72	43.23	51.70	59.78	69.63	77.32	69.63	---
300	12	323.85	323.85	254.00	254.00	18.93	21.73	30.53	---	30.06	39.21	44.19	44.19	57.99	65.50	79.25	95.94	112.18	124.96	143.17	112.18
300 x 300 x 250	12 x 12 x 10	323.85	273.05	254.00	241.30	18.13	20.81	29.23	---	28.79	37.55	42.31	42.31	55.98	63.72	77.83	91.78	107.28	119.47	136.83	107.28
300 x 300 x 200	12 x 12 x 8	323.85	218.95	254.00	228.60	17.44	20.02	28.11	---	27.69	36.10	40.68	40.68	53.81	62.07	75.83	88.19	103.05	114.73	131.37	103.05
300 x 300 x 150	12 x 12 x 6	323.85	168.15	254.00	218.95	16.95	19.46	27.32	---	26.91	35.08	39.53	39.53	52.28	60.55	73.79	85.65	100.06	111.39	127.52	100.06
300 x 300 x 125	12 x 12 x 5	323.85	141.22	254.00	215.90	16.76	19.23	27.01	---	26.60	34.68	39.08	39.08	52.25	60.57	73.84	85.68	100.07	111.59	127.99	98.88
350	14	355.60	355.60	279.40	279.40	22.90	27.42	44.73	36.40	44.73	53.55	53.55	62.28	70.92	83.73	104.41	128.60	148.41	167.69	185.99	---
350 x 350 x 300	14 x 14 x 12	355.60	323.85	279.40	269.75	22.28	26.68	43.51	35.40	43.51	52.08	52.08	60.57	71.42	86.97	101.51	125.01	144.24	162.95	180.70	---
350 x 350 x 250	14 x 14 x 10	355.60	273.05	279.40	257.05	21.48	25.72	41.95	34.13	41.95	50.20	50.20	58.38	70.46	86.47	97.80	120.41	138.90	156.88	173.93	---
350 x 350 x 200	14 x 14 x 8	355.60	218.95	279.40	247.65	20.86	24.97	40.72	33.14	40.72	48.74	48.74	56.67	76.15	94.52	116.82	141.73	152.14	168.64	---	---
350 x 350 x 150	14 x 14 x 6	355.60	168.15	279.40	238.25	20.36	24.37	39.74	32.34	39.74	47.56	47.56	55.29	74.30	92.95	113.94	131.39	148.35	164.42	---	---
400	16	406.40	406.40	304.80	304.80	29.63	33.81	55.21	44.90	55.21	66.13	66.13	77.69	92.11	114.14	141.61	174.70	203.86	236.79	259.90	---
400 x 400 x 350	16 x 16 x 14	406.40	355.60	304.80	304.80	29.09	33.20	54.21	44.08	54.21	64.92	64.92	76.07	90.12	111.01	139.52	172.26	204.48	231.74	254.74	---
400 x 400 x 300	16 x 16 x 12	406.40	323.85	304.80	295.15	28.44	32.45	52.99	43.09	52.99	63.45	63.45	74.42	89.46	109.46	133.78	167.43	195.30	226.74	248.79	---
400 x 400 x 250	16 x 16 x 10	406.40	273.05	304.80	282.45	27.60	31.50	51.42	41.82	51.42	61.58	61.58	72.11	87.13	106.20	131.63	162.38	189.38	219.84	241.18	---
400 x 400 x 200	16 x 16 x 8	406.40	218.95	304.80	273.05	26.95	30.75	50.20	40.83	50.20	60.11	60.11	70.68	85.65	103.65	129.37	158.44	184.76	214.43	235.22	---
400 x 400 x 150	16 x 16 x 6	406.40	168.15	304.80	263.65	26.42	30.15	49.21	40.03	49.21	58.93	58.93	68.11	82.11	101.60	127.76	155.29	181.07	210.13	230.48	---
450	18	457.20	457.20	342.90	342.90	37.54	42.85	70.03	56.93	70.03	83.92	83.92	98.14	116.69	141.38	176.25	214.92	259.79	327.03	367.72	---
450 x 450 x 400	18 x 18 x 16	457.20	406.40	342.90	330.20	36.41	41.55	67.92	55.21	67.92	81.74	81.74	95.38	114.16	139.65	174.26	219.26	270.48	316.78	356.12	---
450 x 450 x 350	18 x 18 x 14	457.20	355.60	342.90	330.20	35.87	40.94	66.91	54.39	66.91	80.32	80.32	93.37	111.34	137.22	172.38	217.29	267.31	313.73	350.37	---
450 x 450 x 300	18 x 18 x 12	457.20	323.85	342.90	320.55	35.22	40.20	65.69	53.40	65.69	78.70	78.70	91.15	109.15	134.33	168.43	212.33	257.12	305.89	343.77	---
450 x 450 x 250	18 x 18 x 10	457.20	273.05	342.90	307.85	34.38	39.24	64.12	52.13	64.12	76.82	76.82	89.14	106.12	130.62	164.70	209.20	255.49	298.41	335.33	---
450 x 450 x 200	18 x 18 x 8	457.20	218.95	342.90	298.45	33.73	38.50	62.90	51.14	62.90	75.36	75.36	87.72	104.15	128.12	161.44	205.30	250.32	292.57	328.72	---
500	20	508.00	508.00	381.00	381.00	52.95	60.59	86.61	70.38	103.82	137.90	137.90	163.17	202.11	250.11	317.90	392.18	491.71	602.03	---	---
500 x 500 x 450	20 x 20 x 18	508.00	457.20	381.00	368.30	51.51	58.94	84.24	68.46	100.98	134.11	134.11	159.68	201.02	254.11	326.03	412.67	515.21	638.90	487.70	---
500 x 500 x 400	20 x 20 x 16	508.00	406.40	381.00	355.60	50.22	57.46	82.13	66.74	98.44	130.73	130.73	154.66	196.58	250.73	322.10	405.78	513.58	642.96	474.96	---
500 x 500 x 350	20 x 20 x 14	508.00	355.60	381.00	355.60	49.61	56.76	81.12	65.92	97.23	129.11	129.11	151.74	193.96	247.96	316.06	399.43	504.84	628.84	468.60	---
500 x 500 x 300	20 x 20 x 12	508.00	323.85	381.00	345.95	48.86	55.90	79.80	64.93	95.76	127.16	127.16	149.43	191.82	245.88	312.22	391.10	493.34	615.34	461.36	---
500 x 500 x 250	20 x 20 x 10	508.00	273.05	381.00	333.25	47.90	54.81	78.33	63.66	93.88	124.66	124.66	146.77	189.83	242.66	306.02	384.91	491.04	609.14	452.11	---
500 x 500 x 200	20 x 20 x 8	508.00	218.95	381.00	323.85	47.16	53.96	77.11	62.67	92.42	122.71	122.71	144.16	187.71	241.90	301.17	380.29	488.04	605.86	444.86	---
550	22	558.80	558.80	419.10	419.10	---	---	---	85.26	125.84	167.25	125.84	---	287.27	365.67	460.92	575.40	718.96	896.79	657.36	---
550 x 550 x 500	22 x 22 x 20	558.80	508.00	419.10	406.40	---	---	---	83.13	122.70	163.06	122.70	---	280.01	363.06	456.37	575.14	717.60	890.23	640.23	---
550 x 550 x 450	22 x 22 x 18	558.80	457.20	419.10	393.70	---	---	---	81.21	119.85	159.27	119.85	---	273.45	354.97	447.48	566.19	707.92	878.22	624.82	---
550 x 550 x 400	22 x 22 x 16	558.80	406.40	419.10	381.00	---	---	---	79.49	117.31	155.88	117.31	---	267.60	347.58	438.51	556.75	697.55	867.55	611.13	---
550 x 550 x 350	22 x 22 x 14	558.80	355.60	419.10	381.00	---	---	---	78.68	116.10	154.27	116.10	---	264.78	346.87	436.87	556.08	697.43	867.43	604.25	---
550 x 550 x 300	22 x 22 x 12	558.80	323.85	419.10	371.35	---	---	---	77.68	114.64	152.32	114.64	---	261.42	343.58	433.58	552.80	693.78	862.78	596.49	---
550 x 550 x 250	22 x 22 x 10	558.80	273.05	419.10	358.65	---	---	---	76.41	112.76	149.82	112.76	---	257.12	341.10	430.18	549.48	690.48	859.34	586.56	---
600	24	609.60	609.60	431.80	431.80	81.16	94.31	---	94.31	139.26	207.95	139.26	253.12	351.55	448.18	542.31	633.32	713.24	800.04	---	---
600 x 600 x 550	24 x 24 x 22	609.60	558.80	431.80	431.80	80.29	93.29	---	93.29	137.75	205.68	137.75	250.34	347.63	433.23	526.12	620.00	704.90	790.57	---	---
600 x 600 x 500	24 x 24 x 20	609.60	508.00	431.80	431.80	79.41	92.27	---	92.27	136.24	203.40	136.24	247.55	343.72	429.14	522.93	618.68	706.56	781.09	---	---
600 x 600 x 450	24 x 24 x 18	609.60	457.20	431.80	419.10	77.76	90.35	---	90.35	1											



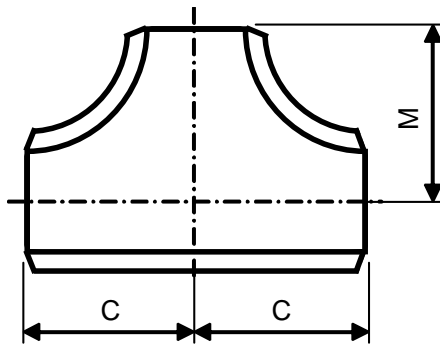


STRAIGHT TEE

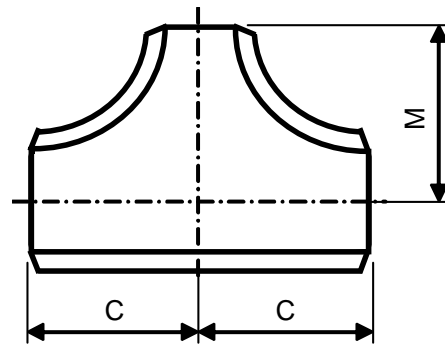


REDUCING TEE

STRAIGHT & REDUCING TEE (DIMENSION & WEIGHT)																					
SIZE		OUTSIDE DIAMETER		C	M	WEIGHT															
		Large End	Small End			S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
mm	inch	mm	mm	mm	mm	KG															
700	28	711.20	711.20	520.70	520.70	---	---	---	165.31	263.93	328.92	198.33	---	---	---	263.93	---	---	---	---	---
700 x 700 x 650	28 x 28 x 26	711.20	660.40	520.70	520.70	---	---	---	163.67	261.30	325.63	196.37	---	---	---	261.30	---	---	---	---	---
700 x 700 x 600	28 x 28 x 24	711.20	609.60	520.70	508.00	---	---	---	160.55	256.30	319.39	192.62	---	---	---	256.30	---	---	---	---	---
700 x 700 x 550	28 x 28 x 22	711.20	558.80	520.70	495.30	---	---	---	157.68	251.71	313.65	189.17	---	---	---	251.71	---	---	---	---	---
700 x 700 x 500	28 x 28 x 20	711.20	508.00	520.70	482.60	---	---	---	155.06	247.51	308.41	186.02	---	---	---	247.51	---	---	---	---	---
700 x 700 x 450	28 x 28 x 18	711.20	457.20	520.70	469.90	---	---	---	152.69	243.73	303.69	183.18	---	---	---	243.73	---	---	---	---	---
700 x 700 x 400	28 x 28 x 16	711.20	406.40	520.70	457.20	---	---	---	150.57	240.34	299.47	180.64	---	---	---	240.34	---	---	---	---	---
700 x 700 x 350	28 x 28 x 14	711.20	355.60	520.70	457.20	---	---	---	149.57	238.73	297.44	179.43	---	---	---	238.73	---	---	---	---	---
700 x 700 x 300	28 x 28 x 12	711.20	323.85	520.70	447.55	---	---	---	148.35	236.77	295.01	177.96	---	---	---	236.77	---	---	---	---	---
750	30	762.00	762.00	558.80	558.80	---	---	---	190.31	303.99	378.96	228.36	---	---	---	303.99	---	---	---	---	---
750 x 750 x 700	30 x 30 x 28	762.00	711.20	558.80	546.10	---	---	---	186.81	298.38	371.95	224.16	---	---	---	298.38	---	---	---	---	---
750 x 750 x 650	30 x 30 x 26	762.00	660.40	558.80	546.10	---	---	---	185.17	295.75	368.67	222.20	---	---	---	295.75	---	---	---	---	---
750 x 750 x 600	30 x 30 x 24	762.00	609.60	558.80	533.40	---	---	---	182.05	290.75	362.42	218.45	---	---	---	290.75	---	---	---	---	---
750 x 750 x 550	30 x 30 x 22	762.00	558.80	558.80	520.70	---	---	---	179.18	286.16	356.68	215.00	---	---	---	286.16	---	---	---	---	---
750 x 750 x 500	30 x 30 x 20	762.00	508.00	558.80	508.00	---	---	---	176.56	281.96	351.45	211.85	---	---	---	281.96	---	---	---	---	---
750 x 750 x 450	30 x 30 x 18	762.00	457.20	558.80	495.30	---	---	---	174.19	278.18	346.72	209.01	---	---	---	278.18	---	---	---	---	---
750 x 750 x 400	30 x 30 x 16	762.00	406.40	558.80	482.60	---	---	---	172.07	274.79	342.50	206.47	---	---	---	274.79	---	---	---	---	---
750 x 750 x 350	30 x 30 x 14	762.00	355.60	558.80	482.60	---	---	---	171.07	273.18	340.48	205.26	---	---	---	273.18	---	---	---	---	---
750 x 750 x 300	30 x 30 x 12	762.00	323.85	558.80	472.95	---	---	---	169.85	271.22	338.05	203.79	---	---	---	271.22	---	---	---	---	---
750 x 750 x 250	30 x 30 x 10	762.00	273.05	558.80	460.25	---	---	---	168.28	268.73	334.94	201.91	---	---	---	268.73	---	---	---	---	---
800	32	812.80	812.80	596.90	596.90	---	---	---	217.07	346.87	432.54	260.51	475.11	---	---	346.87	---	---	---	---	---
800 x 800 x 750	32 x 32 x 30	812.80	762.00	596.90	584.20	---	---	---	213.32	340.86	425.03	256.00	466.85	---	---	340.86	---	---	---	---	---
800 x 800 x 700	32 x 32 x 28	812.80	711.20	596.90	571.50	---	---	---	209.82	335.26	418.02	251.80	459.15	---	---	335.26	---	---	---	---	---
800 x 800 x 650	32 x 32 x 26	812.80	660.40	596.90	571.50	---	---	---	208.18	332.63	414.74	249.84	455.53	---	---	332.63	---	---	---	---	---
800 x 800 x 600	32 x 32 x 24	812.80	609.60	596.90	558.80	---	---	---	205.06	327.63	408.49	246.09	448.67	---	---	327.63	---	---	---	---	---
800 x 800 x 550	32 x 32 x 22	812.80	558.80	596.90	546.10	---	---	---	202.19	323.03	402.75	242.64	442.36	---	---	323.03	---	---	---	---	---
800 x 800 x 500	32 x 32 x 20	812.80	508.00	596.90	533.40	---	---	---	199.57	318.84	397.52	239.49	436.61	---	---	318.84	---	---	---	---	---
800 x 800 x 450	32 x 32 x 18	812.80	457.20	596.90	520.70	---	---	---	197.20	315.05	392.79	236.65	431.42	---	---	315.05	---	---	---	---	---
800 x 800 x 400	32 x 32 x 16	812.80	406.40	596.90	508.00	---	---	---	195.08	311.67	388.57	234.11	426.78	---	---	311.67	---	---	---	---	---
800 x 800 x 350	32 x 32 x 14	812.80	355.60	596.90	508.00	---	---	---	194.08	310.05	386.55	232.90	424.55	---	---	310.05	---	---	---	---	---
850	34	863.60	863.60	635.00	635.00	---	---	---	245.59	392.59	489.66	294.77	537.92	---	---	392.59	---	---	---	---	---
850 x 850 x 800	34 x 34 x 32	863.60	812.80	635.00	622.30	---	---	---	241.58	386.17	481.64	289.96	529.10	---	---	386.17	---	---	---	---	---
850 x 850 x 750	34 x 34 x 30	863.60	762.00	635.00	609.60	---	---	---	237.83	380.16	474.13	285.46	520.85	---	---	380.16	---	---	---	---	---
850 x 850 x 700	34 x 34 x 28	863.60	711.20	635.00	596.90	---	---	---	234.33	374.56	467.13	281.26	513.15	---	---	374.56	---	---	---	---	---
850 x 850 x 650	34 x 34 x 26	863.60	660.40	635.00	596.90	---	---	---	232.70	371.93	463.84	279.29	509.53	---	---	371.93	---	---	---	---	---
850 x 850 x 600	34 x 34 x 24	863.60	609.60	635.00	584.20	---	---	---	229.58	366.93	457.60	275.54	502.66	---	---	366.93	---	---	---	---	---
850 x 850 x 550	34 x 34 x 22	863.60	558.80	635.00	571.50	---	---	---	226.71	362.33	451.86	272.09	496.35	---	---	362.33	---	---	---	---	---
850 x 850 x 500	34 x 34 x 20	863.60	508.00	635.00	558.80	---	---	---	224.09	358.14	446.63	268.95	490.60	---	---	358.14	---	---	---	---	---
850 x 850 x 450	34 x 34 x 18	863.60	457.20	635.00	546.10	---	---	---	221.72	354.35	441.90	266.10	485.41	---	---	354.35	---	---	---	---	---
850 x 850 x 400	34 x 34 x 16	863.60	406.40	635.00	533.40	---	---	---	219.60	350.97	437.68	263.56	480.77	---	---	350.97	---	---	---	---	---
900	36	914.40	914.40	673.10	673.10	---	---	---	275.87	441.13	550.32	331.15	658.73	---	---	441.13	---	---	---	---	---
900 x 900 x 850	36 x 36 x 34	914.40	863.60	673.10	660.40	---	---	---	271.61	434.31	541.80	326.04	648.51	---	---	434.31	---	---	---	---	---
900 x 900 x 800	36 x 36 x 32	914.40	812.80	673.10	647.70	---	---	---	267.61	427.90	533.79	321.23	638.90	---	---	427.90	---	---	---	---	---
900 x 900 x 750	36 x 36 x 30	914.40	762.00	673.10	635.00	---	---	---	263.86	421.89	526.28	316.73	629.90	---	---	421.89	---	---	---	---	---
900 x 900 x 700	36 x 36 x 28	914.40	711.20	673.10	622.30	---	---	---	260.36	416.28	519.27	312.52	621.50	---	---	416.28	---	---	---	---	---
900 x 900 x 650	36 x 36 x 26	914.40	660.40	673.10	622.30	---	---	---	258.72	413.65	515.98	310.56	617.55	---	---	413.65	---	---	---	---	---
900 x 900 x 600	36 x 36 x 24	914.40	609.60	673.10	609.60	---	---	---	255.60	408.65	509.74	306.81	610.07	---	---	408.65	---	---	---	---	---
900 x 900 x 550	36 x 36 x 22	914.40	558.80	673.10	596.90	---	---	---	252.73	404.05	504.00	303.36	603.19	---	---	404.05	---	---	---	---	---
900 x 900 x 500	36 x 36 x 20	914.40	508.00	673.10	584.20	---	---	---	250.11	399.86	498.77	300.21	596.93	---	---	399.86	---	---	---	---	---
900 x 900 x 450	36 x 36 x 18	914.40	457.20	673.10	571.50	---	---	---	247.74	396.07	494.04	297.37	591.27	---	---	396.07	---	---	---	---	---
900 x 900 x 400	36 x 36 x 16	914.40	406.40	673.10	558.80	---	---	---	245.63	392.69	489.82	294.83	586.22	---	---	392.69	---	---	---	---	---
950	38	965.20	965.20	711.20	711.20	---	---	---	307.90	492.50	614.53	369.65	---	---	---	492.50	---	---	---	---	---
950 x 950 x 900	38 x 38 x 36	965.20	914.40	711.20	711.20	---	---	---	305.64	488.87	609.97	366.93	---	---	---	488.87	---	---	---	---	---
950 x 950 x 840	38 x 38 x 34	965.20	863.60	711.20	698.50	---	---	---	301.26	481.85	601.20	361.66	---	---	---	481.85	---	---	---	---	---
950 x 950 x 800	38 x 38 x 32	965.20	812.80	711.20	685.80	---	---	---	297.13	475.23	592.93	356.70	---	---	---	475.23	---	---	---	---	---
950 x 950 x 750	38 x 38 x 30	965.20	762.00	711.20	673.10	---	---	---	293.26	469.01	585.17	352.05	---	---	---	469.01	---	---	---	---	---
950 x 950 x 700	38 x 38 x 28	965.20	711.20	711.20	647.70	---	---	---	287.89	460.43	574.45	345.60	---	---	---	460.43	---	---	---	---	---
950 x 950 x 650	38 x 38 x 26	965.20	660.40	711.20	647.70	---	---	---	286.26	457.80	571.16	343.64	---	---	---	457.80	---	---	---	---	---
950 x 950 x 600																					

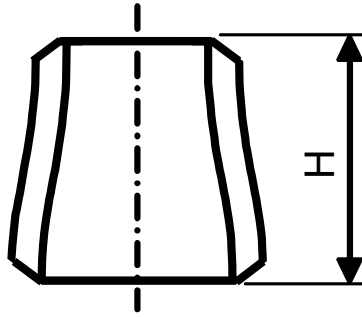


STRAIGHT TEE

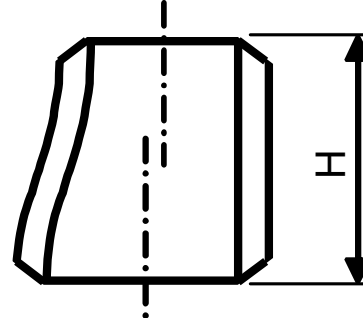


REDUCING TEE

SIZE		OUTSIDE DIAMETER		C	M	WEIGHT															
mm	inch	Large End	Small End			S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
STRAIGHT & REDUCING TEE (DIMENSION & WEIGHT)																					
KG																					
1000	40	1016.00	1016.00	749.30	749.30				341.70	546.70	682.27	410.26			546.70						
1000 x 1000 x 950	40 x 40 x 38	1016.00	965.20	749.30	749.30				339.31	542.87	677.47	407.38			542.87						
1000 x 1000 x 900	40 x 40 x 36	1016.00	914.40	749.30	736.60				334.68	535.44	668.19	401.82			535.44						
1000 x 1000 x 850	40 x 40 x 34	1016.00	863.60	749.30	723.90				330.30	528.42	659.41	396.56			528.42						
1000 x 1000 x 800	40 x 40 x 32	1016.00	812.80	749.30	711.20				326.18	521.80	651.14	391.60			521.80						
1000 x 1000 x 750	40 x 40 x 30	1016.00	762.00	749.30	698.50				322.30	515.59	643.38	386.94			515.59						
1000 x 1000 x 700	40 x 40 x 28	1016.00	711.20	749.30	673.10				316.93	507.00	632.66	380.50			507.00						
1000 x 1000 x 650	40 x 40 x 26	1016.00	660.40	749.30	673.10				315.30	504.37	629.37	378.54			504.37						
1000 x 1000 x 600	40 x 40 x 24	1016.00	609.60	749.30	660.40				312.18	499.37	623.13	374.78			499.37						
1000 x 1000 x 550	40 x 40 x 22	1016.00	558.80	749.30	647.70				309.31	494.78	617.39	371.34			494.78						
1000 x 1000 x 500	40 x 40 x 20	1016.00	508.00	749.30	635.00				306.69	490.58	612.16	368.19			490.58						
1000 x 1000 x 450	40 x 40 x 18	1016.00	457.20	749.30	622.30				304.32	486.80	607.43	365.35			486.80						
1050	42	1066.80	1066.80	762.00	711.20				351.06	561.81	701.23	421.53			561.81						
1050 x 1050 x 1000	42 x 42 x 40	1066.80	1016.00	762.00	711.20				349.30	558.98	697.69	419.41			558.98						
1050 x 1050 x 950	42 x 42 x 38	1066.80	965.20	762.00	711.20				347.54	556.15	694.15	417.29			556.15						
1050 x 1050 x 900	42 x 42 x 36	1066.80	914.40	762.00	711.20				346.78	553.32	690.61	415.18			553.32						
1050 x 1050 x 850	42 x 42 x 34	1066.80	863.60	762.00	711.20				344.02	550.49	687.06	413.06			550.49						
1050 x 1050 x 800	42 x 42 x 32	1066.80	812.80	762.00	711.20				342.26	547.66	683.52	410.95			547.66						
1050 x 1050 x 750	42 x 42 x 30	1066.80	762.00	762.00	711.20				340.50	544.84	679.98	408.83			544.84						
1050 x 1050 x 700	42 x 42 x 28	1066.80	711.20	762.00	698.50				337.01	539.23	672.98	404.63			539.23						
1050 x 1050 x 650	42 x 42 x 26	1066.80	660.40	762.00	698.50				335.37	536.60	669.69	402.66			536.60						
1050 x 1050 x 600	42 x 42 x 24	1066.80	609.60	762.00	660.40				329.27	526.85	657.53	395.34			526.85						
1050 x 1050 x 550	42 x 42 x 22	1066.80	558.80	762.00	660.40				328.01	524.83	655.00	393.83			524.83						
1050 x 1050 x 500	42 x 42 x 20	1066.80	508.00	762.00	660.40				326.76	522.81	652.47	392.32			522.81						
1050 x 1050 x 450	42 x 42 x 18	1066.80	457.20	762.00	647.70				324.39	519.02	647.74	389.47			519.02						
1050 x 1050 x 400	42 x 42 x 16	1066.80	406.40	762.00	635.00				322.27	515.64	643.52	386.93			515.64						
1100	44	1117.60	1117.60	812.80	762.00				395.36	632.83	789.99	474.75			632.83						
1100 x 1100 x 1050	44 x 44 x 42	1117.60	1066.80	812.80	762.00				393.35	629.60	785.94	472.33			629.60						
1100 x 1100 x 1000	44 x 44 x 40	1117.60	1016.00	812.80	749.30				388.84	622.37	776.91	466.92			622.37						
1100 x 1100 x 950	44 x 44 x 38	1117.60	965.20	812.80	736.60				384.59	615.55	768.39	461.81			615.55						
1100 x 1100 x 900	44 x 44 x 36	1117.60	914.40	812.80	723.90				380.59	609.14	760.38	457.00			609.14						
1100 x 1100 x 850	44 x 44 x 34	1117.60	863.60	812.80	723.90				378.95	606.51	757.09	455.03			606.51						
1100 x 1100 x 800	44 x 44 x 32	1117.60	812.80	812.80	711.20				375.33	600.70	749.83	450.68			600.70						
1100 x 1100 x 750	44 x 44 x 30	1117.60	762.00	812.80	711.20				373.82	598.28	746.79	448.86			598.28						
1100 x 1100 x 700	44 x 44 x 28	1117.60	711.20	812.80	698.50				370.57	593.08	740.30	444.96			593.08						
1100 x 1100 x 650	44 x 44 x 26	1117.60	660.40	812.80	698.50				369.19	590.85	737.51	443.30			590.85						
1100 x 1100 x 600	44 x 44 x 24	1117.60	609.60	812.80	698.50				367.81	588.63	734.73	441.64			588.63						
1100 x 1100 x 550	44 x 44 x 22	1117.60	558.80	812.80	685.80				365.06	584.24	729.25	438.34			584.24						
1100 x 1100 x 500	44 x 44 x 20	1117.60	508.00	812.80	685.80				363.80	582.21	726.72	436.83			582.21						
1150	46	1168.40	1168.40	850.90	800.10				433.56	694.10	866.59	520.65			694.10						
1150 x 1150 x 1100	46 x 46 x 44	1168.40	1117.60	850.90	800.10				431.42	690.67	862.29	518.08			690.67						
1150 x 1150 x 1050	46 x 46 x 42	1168.40	1066.80	850.90	787.40				428.66	683.04	852.75	512.36			683.04						
1150 x 1150 x 1000	46 x 46 x 40	1168.40	1016.00	850.90	774.70				422.16	675.82	843.73	506.95			675.82						
1150 x 1150 x 950	46 x 46 x 38	1168.40	965.20	850.90	762.00				417.91	669.00	835.20	501.84			669.00						
1150 x 1150 x 900	46 x 46 x 36	1168.40	914.40	850.90	762.00				416.15	666.17	831.66	499.72			666.17						
1150 x 1150 x 850	46 x 46 x 34	1168.40	863.60	850.90	749.30				412.27	659.95	823.90	495.07			659.95						
1150 x 1150 x 800	46 x 46 x 32	1168.40	812.80	850.90	749.30				410.63	657.33	820.61	493.10			657.33						
1150 x 1150 x 750	46 x 46 x 30	1168.40	762.00	850.90	736.60				407.14	651.72	813.61	488.90			651.72						
1150 x 1150 x 700	46 x 46 x 28	1168.40	711.20	850.90	736.60				405.63	649.30	810.57	487.08			649.30						
1150 x 1150 x 650	46 x 46 x 26	1168.40	660.40	850.90	736.60				404.12	646.87	807.54	485.27			646.87						
1150 x 1150 x 600	46 x 46 x 24	1168.40	609.60	850.90	723.90				401.12	642.07	801.54	481.67			642.07						
1150 x 1150 x 550	46 x 46 x 22	1168.40	558.80	850.90	723.90				399.74	639.85	798.76	480.01			639.85						
1200	48	1219.20	1219.20	889.00	838.20				473.51	758.20	946.73	568.66			758.20						
1200 x 1200 x 1150	48 x 48 x 46	1219.20	1168.40	889.00	838.20				471.25	754.57	942.17	565.94			754.57						
1200 x 1200 x 1100	48 x 48 x 44	1219.20	1117.60	889.00	838.20				468.99	750.93	937.62	563.22			750.93						
1200 x 1200 x 1050	48 x 48 x 42	1219.20	1066.80	889.00	812.80				461.49	738.91	922.60	554.21			738.91						
1200 x 1200 x 1000	48 x 48 x 40	1219.20	1016.00	889.00	812.80				459.48	736.67	918.55	551.79			736.67						
1200 x 1200 x 950	48 x 48 x 38	1219.20	965.20	889.00	812.80				457.47	732.44	914.51	549.37			732.44						
1200 x 1200 x 900	48 x 48 x 36	1219.20	914.40	889.00	787.40				450.97	722.04	901.51	541.57			722.04						
1200 x 1200 x 850	48 x 48 x 34	1219.20	863.60	889.00	787.40				449.21	719.21	897.97	539.46			719.21						
1200 x 1200 x 800	48 x 48 x 32	1219.20	812.80	889.00	787.40				447.45	716.38	894.43	537.34			716.38						
1200 x 1200 x 750	48 x 48 x 30	1219.20	762.00	889.00	762.00				441.96	707.59	883.46	530.75			707.59						
1200 x 1200 x 700	48 x 48 x 28	1219.20	711.20	889.00	762.00				440.45	705.16	880.42	528.93			705.16						



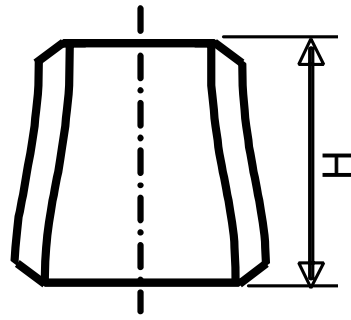
CONCENTRIC REDUCER



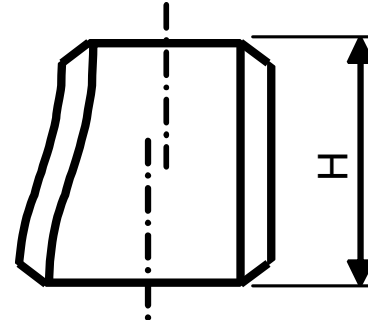
ECCENTRIC REDUCER

**CONCENTRIC & ECCENTRIC REDUCER (DIMENSION & WEIGHT)**

SIZE		OUTSIDE DIAMETER		H	WEIGHT															
mm	inch	Large End	Small End		SSS	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
		mm	mm	mm																
20 x 15	3/4 x 1/2	26.67	21.34	38.10	0.04	0.04	0.05	---	---	---	0.06	0.06	0.07	0.07	0.07	---	---	---	0.10	0.12
20 x 10	3/4 x 3/8	26.67	17.27	38.10	0.03	0.04	0.05	---	---	---	0.05	0.05	0.06	0.07	0.07	---	---	---	0.09	0.10
25 x 20	1 x 3/4	33.53	26.67	50.80	0.06	0.10	0.10	---	---	---	0.11	0.11	0.13	0.15	0.15	---	---	---	0.19	0.24
25 x 15	1 x 1/2	33.53	21.34	50.80	0.05	0.09	0.09	---	---	---	0.10	0.10	0.12	0.13	0.13	---	---	---	0.17	0.21
32 x 25	1 1/4 x 1	42.16	33.53	50.80	0.08	0.12	0.13	---	---	---	0.15	0.15	0.19	0.20	0.20	---	---	---	0.25	0.34
32 x 20	1 1/4 x 3/4	42.16	26.67	50.80	0.07	0.11	0.12	---	---	---	0.14	0.14	0.17	0.18	0.18	---	---	---	0.23	0.30
32 x 15	1 1/4 x 1/2	42.16	21.34	50.80	0.06	0.10	0.11	---	---	---	0.13	0.13	0.15	0.17	0.17	---	---	---	0.20	0.27
40 x 32	1 1/2 x 1 1/4	48.26	42.16	63.50	0.11	0.19	0.20	---	---	---	0.24	0.24	0.29	0.32	0.32	---	---	---	0.43	0.56
40 x 25	1 1/2 x 1	48.26	33.53	63.50	0.10	0.17	0.18	---	---	---	0.22	0.22	0.26	0.29	0.29	---	---	---	0.38	0.49
40 x 20	1 1/2 x 3/4	48.26	26.67	63.50	0.09	0.15	0.16	---	---	---	0.20	0.20	0.23	0.26	0.26	---	---	---	0.34	0.44
40 x 15	1 1/2 x 1/2	48.26	21.34	63.50	0.09	0.14	0.15	---	---	---	0.18	0.18	0.21	0.24	0.24	---	---	---	0.31	0.39
50 x 40	2 x 1 1/2	60.45	48.26	76.20	0.16	0.27	0.33	---	---	---	0.37	0.37	0.46	0.51	0.51	---	---	---	0.75	0.90
50 x 32	2 x 1 1/4	60.45	42.16	76.20	0.15	0.26	0.31	---	---	---	0.35	0.35	0.43	0.48	0.48	---	---	---	0.70	0.84
50 x 25	2 x 1	60.45	33.53	76.20	0.14	0.23	0.29	---	---	---	0.32	0.32	0.39	0.43	0.43	---	---	---	0.63	0.75
50 x 20	2 x 3/4	60.45	26.67	76.20	0.13	0.21	0.26	---	---	---	0.29	0.29	0.36	0.40	0.40	---	---	---	0.57	0.68
65 x 50	2 1/2 x 2	73.15	60.45	88.90	0.30	0.42	0.49	---	---	---	0.74	0.74	0.80	0.92	0.92	---	---	---	1.20	1.62
65 x 40	2 1/2 x 1 1/2	73.15	48.26	88.90	0.27	0.38	0.44	---	---	---	0.67	0.67	0.72	0.82	0.82	---	---	---	1.07	1.43
65 x 32	2 1/2 x 1 1/4	73.15	42.16	88.90	0.26	0.36	0.42	---	---	---	0.63	0.63	0.68	0.78	0.78	---	---	---	1.01	1.34
65 x 25	2 1/2 x 1	73.15	33.53	88.90	0.24	0.33	0.38	---	---	---	0.58	0.58	0.62	0.71	0.71	---	---	---	0.92	1.21
80 x 65	3 x 2 1/2	88.90	73.15	88.90	0.36	0.51	0.68	---	---	---	0.95	0.95	1.08	1.22	1.22	---	---	---	1.71	2.20
80 x 50	3 x 2	88.90	60.45	88.90	0.33	0.47	0.62	---	---	---	0.87	0.87	0.99	1.12	1.12	---	---	---	1.55	1.99
80 x 40	3 x 1 1/2	88.90	48.26	88.90	0.31	0.43	0.57	---	---	---	0.79	0.79	0.90	1.02	1.02	---	---	---	1.40	1.78
80 x 32	3 x 1 1/4	88.90	42.16	88.90	0.29	0.41	0.54	---	---	---	0.75	0.75	0.85	0.97	0.97	---	---	---	1.33	1.68
90 x 80	3 1/2 x 3	101.60	88.90	101.60	0.49	0.69	0.91	---	---	---	1.28	1.28	1.55	1.77	1.77	---	---	---	2.63	---
90 x 65	3 1/2 x 2 1/2	101.60	73.15	101.60	0.45	0.63	0.84	---	---	---	1.17	1.17	1.41	1.61	1.61	---	---	---	2.38	---
90 x 50	3 1/2 x 2	101.60	60.45	101.60	0.42	0.59	0.77	---	---	---	1.08	1.08	1.30	1.48	1.48	---	---	---	2.17	---
90 x 40	3 1/2 x 1 1/2	101.60	48.26	101.60	0.38	0.54	0.71	---	---	---	0.99	0.99	1.19	1.36	1.36	---	---	---	1.98	---
90 x 32	3 1/2 x 1 1/4	101.60	42.16	101.60	0.37	0.52	0.68	---	---	---	0.95	0.95	1.14	1.29	1.29	---	---	---	1.88	---
100 x 90	4 x 3 1/2	114.30	101.60	101.60	0.56	0.79	1.04	---	---	---	1.53	1.53	1.79	2.14	2.14	---	2.69	---	3.20	3.89
100 x 80	4 x 3	114.30	88.90	101.60	0.52	0.74	0.98	---	---	---	1.44	1.44	1.68	2.00	2.00	---	2.52	---	2.98	3.62
100 x 65	4 x 2 1/2	114.30	73.15	101.60	0.48	0.68	0.90	---	---	---	1.32	1.32	1.54	1.83	1.83	---	2.30	---	2.71	3.28
100 x 50	4 x 2	114.30	60.45	101.60	0.45	0.63	0.84	---	---	---	1.22	1.22	1.43	1.70	1.70	---	2.12	---	2.50	3.01
100 x 40	4 x 1 1/2	114.30	48.26	101.60	0.42	0.59	0.77	---	---	---	1.13	1.13	1.32	1.57	1.57	---	1.95	---	2.29	2.75
125 x 100	5 x 4	141.22	114.30	127.00	1.10	1.32	1.92	---	---	---	2.50	2.50	3.04	3.52	3.52	---	4.58	---	5.57	6.47
125 x 90	5 x 3 1/2	141.22	101.60	127.00	1.04	1.26	1.82	---	---	---	2.37	2.37	2.87	3.33	3.33	---	4.32	---	5.25	6.09
125 x 80	5 x 3	141.22	88.90	127.00	0.98	1.19	1.72	---	---	---	2.24	2.24	2.71	3.14	3.14	---	4.07	---	4.94	5.72
125 x 65	5 x 2 1/2	141.22	73.15	127.00	0.92	1.11	1.60	---	---	---	2.08	2.08	2.51	2.91	2.91	---	3.76	---	4.55	5.25
125 x 50	5 x 2	141.22	60.45	127.00	0.86	1.04	1.50	---	---	---	1.95	1.95	2.35	2.72	2.72	---	3.51	---	4.23	4.87
150 x 125	6 x 5	168.15	141.22	139.70	1.47	1.77	2.58	---	---	---	3.61	3.61	4.66	5.45	5.45	---	6.92	---	8.58	10.02
150 x 100	6 x 4	168.15	114.30	139.70	1.34	1.61	2.35	---	---	---	3.28	3.28	4.23	4.94	4.94	---	6.25	---	7.74	9.00
150 x 90	6 x 3 1/2	168.15	101.60	139.70	1.27	1.54	2.24	---	---	---	3.13	3.13	4.02	4.69	4.69	---	5.94	---	7.34	8.52
150 x 80	6 x 3	168.15	88.90	139.70	1.21	1.47	2.13	---	---	---	2.97	2.97	3.82	4.45	4.45	---	5.63	---	6.94	8.04
150 x 65	6 x 2 1/2	168.15	73.15	139.70	1.14	1.37	1.99	---	---	---	2.78	2.78	3.57	4.16	4.16	---	5.24	---	6.44	7.45
200 x 150	8 x 6	218.95	168.15	152.40	2.01	2.71	4.57	---	4.50	4.91	5.71	5.71	7.09	8.63	8.63	10.13	12.03	13.39	14.74	14.30
200 x 125	8 x 5	218.95	141.22	152.40	1.87	2.52	4.24	---	4.18	4.55	5.30	5.30	6.57	7.99	7.99	9.36	11.11	12.35	13.58	13.17
200 x 100	8 x 4	218.95	114.30	152.40	1.72	2.33	3.91	---	3.85	4.20	4.88	4.88	6.05	7.35	7.35	8.60	10.18	11.31	12.42	12.05
200 x 90	8 x 3 1/2	218.95	101.60	152.40	1.66	2.24	3.76	---	3.70	4.03	4.69	4.69	5.81	7.04	7.04	8.24	9.75	10.81	11.87	11.52
250 x 200	10 x 8	273.05	218.95	177.80	3.62	4.45	6.83	---	6.72	8.15	9.65	9.65	12.99	15.29	15.29	18.27	21.11	24.57	27.26	24.57
250 x 150	10 x 6	273.05	168.15	177.80	3.24	3.99	6.10	---	6.01	7.28	8.62	8.62	11.58	13.61	13.61	16.23	18.72	21.74	24.08	21.74
250 x 125	10 x 5	273.05	141.22	177.80	3.04	3.74	5.72	---	5.63	6.82	8.07	8.07	10.83	12.83	12.83	15.15	17.46	20.24	22.39	20.24
250 x 100	10 x 4	273.05	114.30	177.80	2.84	3.49	5.33	---	5.26	6.36	7.52	7.52	10.08	11.82	11.82	14.07	16.19	18.74	20.70	18.74
300 x 250	12 x 10	323.85	273.05	203.20	5.90	6.77	9.51	---	9.37	12.21	13.76	14.87	20.36	24.61	24.61	29.76	34.75	38.67	44.24	34.75
300 x 200	12 x 8	323.85	218.95	203.20	5.36	6.15	8.63	---	8.50	11.07	12.47	13.48	18.42	22.84	22.84	26.85	31.31	34.80	39.73	31.31
300 x 150	12 x 6	323.85	168.15	203.20	4.85	5.56	7.80	---	7.68	10.00	11.26	12.17	16.60	20.02	20.02	24.13	28.08	31.16	35.49	28.08
300 x 125	12 x 5	323.85	141.22	203.20	4.58	5.25	7.36	---	7.25	9.43	10.62	11.47	15.64	18.99	18.99	22.68	26.36	29.23	33.25	26.36
350 x 300	14 x 12	355.60	323.85	330.20	10.94	13.09	21.35	17.37	21.35	25.55	25.55	29.70	39.91	33.82	49.74	61.23	70.61	79.73	88.38	---
350 x 250	14 x 10	355.60	273.05	330.20	10.11	12.10	19.71	16.05	19.71	23.58	23.58	27.41	36.79	31.19	45.80	56.30	64.86	73.16	81.00	---
350 x 200	14 x 8	355.60	218.95	330.20	9.23	11.04	17.97	14.64	17.97	21.49	21.49	24.96	33.47	28.39	41.61	51.06	58.74	66.15	73.13	---
350 x 150	14 x 6	355.60	168.15	330.20	8.40	10.05	16.34	13.31	16.34	19.52	19.52	22.67	30.34	25.77	37.67	46.14	52.99	59.58	65.75	---
400 x 350	16 x 14	406.40	355.60	355.60	13.88	15.84	25.85	21.02	25.85	30.95	30.95	41.02	53.35	41.02	67.60	81.52	95.03	110.27	120.93	---
400 x 300	16 x 12	406.40	323.85	355.60	13.29	15.17	24.75	20.13	24.75	29.63	29.63	39.25	51.03	39.25	64.62	77.87	90.72	105.18	115.29	---</



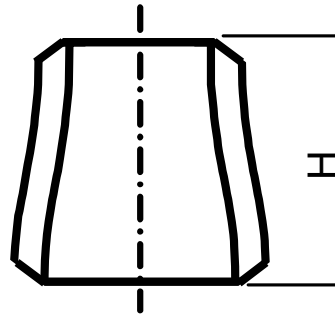
CONCENTRIC REDUCER



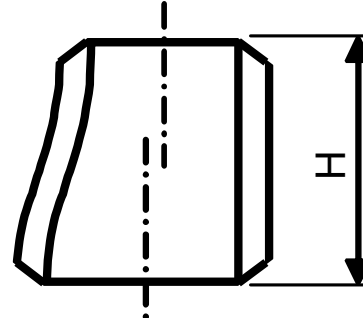
ECCENTRIC REDUCER

CONCENTRIC & ECCENTRIC REDUCER (DIMENSION & WEIGHT)

SIZE		OUTSIDE DIAMETER			H	WEIGHT																
		Large End	Small End	mm		S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS	
						KG																
mm	inch	mm	mm	mm																		
450 x 400	18 x 16	457.20	406.40	381.00	16.87	19.26	31.46	25.58	31.46	43.88	37.69	56.09	73.88	50.01	91.23	111.15	130.14	146.25	164.31	---		
450 x 350	18 x 14	457.20	355.60	381.00	15.87	18.11	29.58	24.05	29.58	41.23	35.43	52.68	69.33	46.98	85.55	104.14	121.82	136.78	153.51	---		
450 x 300	18 x 12	457.20	323.85	381.00	15.25	17.40	28.40	23.10	28.40	39.57	34.01	50.55	66.49	45.08	82.00	99.75	116.61	130.86	146.76	---		
450 x 250	18 x 10	457.20	273.05	381.00	14.24	16.25	26.52	21.57	26.52	36.92	31.74	47.14	61.94	42.05	76.32	92.74	108.28	121.38	135.97	---		
500 x 450	20 x 18	508.00	457.20	508.00	28.73	32.87	46.98	38.18	56.30	74.76	56.30	88.43	119.23	74.76	149.80	183.46	212.16	243.98	270.97	---		
500 x 400	20 x 16	508.00	406.40	508.00	27.20	31.12	44.47	36.14	53.28	70.72	53.28	83.63	112.67	70.72	141.46	173.11	200.03	229.84	255.06	---		
500 x 350	20 x 14	508.00	355.60	508.00	25.68	29.37	41.95	34.11	50.26	66.68	50.26	78.82	106.12	66.68	133.12	162.75	187.91	215.69	239.15	---		
500 x 300	20 x 12	508.00	323.85	508.00	24.72	28.28	40.38	32.83	48.37	64.15	48.37	75.82	102.02	64.15	127.91	156.28	180.33	206.85	229.20	---		
550 x 500	22 x 20	558.80	508.00	508.00	---	---	---	42.25	62.35	82.84	62.35	---	142.17	82.84	180.86	217.95	254.60	289.68	324.30	---		
550 x 450	22 x 18	558.80	457.20	508.00	---	---	---	40.22	59.33	78.80	59.33	---	135.10	78.80	171.76	206.84	241.46	274.54	307.12	---		
550 x 400	22 x 16	558.80	406.40	508.00	---	---	---	38.18	56.30	74.76	56.30	---	128.04	74.76	162.66	195.74	228.32	259.39	289.94	---		
550 x 350	22 x 14	558.80	355.60	508.00	---	---	---	36.14	53.28	70.72	53.28	---	120.98	70.72	153.56	184.63	215.18	244.24	272.75	---		
600 x 550	24 x 22	609.60	558.80	508.00	39.87	46.33	---	46.33	68.40	102.09	68.40	124.24	172.45	90.92	214.83	265.73	310.14	349.09	391.33	---		
600 x 500	24 x 20	609.60	508.00	508.00	38.12	44.29	---	44.29	65.37	97.54	65.37	118.67	164.63	86.88	204.97	253.35	295.50	332.42	372.39	---		
600 x 450	24 x 18	609.60	457.20	508.00	36.37	42.25	---	42.25	62.35	92.99	62.35	113.10	156.80	82.84	195.11	240.98	280.87	315.74	353.44	---		
600 x 400	24 x 16	609.60	406.40	508.00	34.62	40.22	---	40.22	59.33	88.44	59.33	107.53	148.97	78.80	185.24	228.60	266.23	299.07	334.50	---		
650 x 600	26 x 24	660.40	609.60	609.60	---	---	---	74.47	118.81	---	89.33	---	---	118.81	---	---	---	---	---	---		
650 x 550	26 x 22	660.40	558.80	609.60	---	---	---	71.46	113.96	---	85.70	---	---	113.96	---	---	---	---	---	---		
650 x 500	26 x 20	660.40	508.00	609.60	---	---	---	68.44	109.11	---	82.07	---	---	109.11	---	---	---	---	---	---		
650 x 450	26 x 18	660.40	457.20	609.60	---	---	---	65.42	104.26	---	78.45	---	---	104.26	---	---	---	---	---	---		
700 x 650	28 x 26	711.20	660.40	609.60	---	---	---	80.51	128.51	160.12	96.58	---	---	128.51	---	---	---	---	---	---		
700 x 600	28 x 24	711.20	609.60	609.60	---	---	---	77.49	123.66	154.05	92.96	---	---	123.66	---	---	---	---	---	---		
700 x 500	28 x 20	711.20	508.00	609.60	---	---	---	71.46	113.96	141.91	85.70	---	---	113.96	---	---	---	---	---	---		
700 x 450	28 x 18	711.20	457.20	609.60	---	---	---	68.44	109.11	135.84	82.07	---	---	109.11	---	---	---	---	---	---		
750 x 700	30 x 28	762.00	711.20	609.60	---	---	---	86.54	138.20	172.26	103.84	---	---	138.20	---	---	---	---	---	---		
750 x 650	30 x 26	762.00	660.40	609.60	---	---	---	83.52	133.36	166.19	100.21	---	---	133.36	---	---	---	---	---	---		
750 x 600	30 x 24	762.00	609.60	609.60	---	---	---	80.51	128.51	160.12	96.58	---	---	128.51	---	---	---	---	---	---		
750 x 500	30 x 20	762.00	508.00	609.60	---	---	---	74.47	118.81	147.98	89.33	---	---	118.81	---	---	---	---	---	---		
800 x 750	32 x 30	812.80	762.00	609.60	---	---	---	92.57	147.90	184.40	111.09	202.54	---	147.90	---	---	---	---	---	---		
800 x 700	32 x 28	812.80	711.20	609.60	---	---	---	89.56	143.05	178.33	107.47	195.86	---	143.05	---	---	---	---	---	---		
800 x 650	32 x 26	812.80	660.40	609.60	---	---	---	86.54	138.20	172.26	103.84	189.18	---	138.20	---	---	---	---	---	---		
800 x 600	32 x 24	812.80	609.60	609.60	---	---	---	83.52	133.36	166.19	100.21	182.49	---	133.36	---	---	---	---	---	---		
850 x 800	34 x 32	863.60	812.80	609.60	---	---	---	98.61	157.60	196.55	118.35	215.90	---	157.60	---	---	---	---	---	---		
850 x 750	34 x 30	863.60	762.00	609.60	---	---	---	95.59	152.75	190.48	114.72	209.22	---	152.75	---	---	---	---	---	---		
850 x 650	34 x 26	863.60	660.40	609.60	---	---	---	89.56	143.05	178.33	107.47	195.86	---	143.05	---	---	---	---	---	---		
850 x 600	34 x 24	863.60	609.60	609.60	---	---	---	86.54	138.20	172.26	103.84	189.18	---	138.20	---	---	---	---	---	---		
900 x 850	36 x 34	914.40	863.60	609.60	---	---	---	104.64	167.30	208.69	125.60	249.77	---	167.30	---	---	---	---	---	---		
900 x 800	36 x 32	914.40	812.80	609.60	---	---	---	101.62	162.45	202.62	121.98	242.48	---	162.45	---	---	---	---	---	---		
900 x 750	36 x 30	914.40	762.00	609.60	---	---	---	98.61	157.60	196.55	118.35	235.18	---	157.60	---	---	---	---	---	---		
900 x 650	36 x 26	914.40	660.40	609.60	---	---	---	92.57	147.90	184.40	111.09	220.60	---	147.90	---	---	---	---	---	---		
900 x 600	36 x 24	914.40	609.60	609.60	---	---	---	89.56	143.05	178.33	107.47	213.31	---	143.05	---	---	---	---	---	---		
950 x 900	38 x 36	965.20	914.40	609.60	---	---	---	110.67	177.00	220.83	132.86	---	---	177.00	---	---	---	---	---	---		
950 x 850	38 x 34	965.20	863.60	609.60	---	---	---	107.66	172.15	214.76	129.23	---	---	172.15	---	---	---	---	---	---		
950 x 800	38 x 32	965.20	812.80	609.60	---	---	---	104.64	167.30	208.69	125.60	---	---	167.30	---	---	---	---	---	---		
950 x 750	38 x 30	965.20	762.00	609.60	---	---	---	101.62	162.45	202.62	121.98	---	---	162.45	---	---	---	---	---	---		
950 x 700	38 x 28	965.20	711.20	609.60	---	---	---	98.61	157.60	196.55	118.35	---	---	157.60	---	---	---	---	---	---		
950 x 650	38 x 26	965.20	660.40	609.60	---	---	---	95.59	152.75	190.48	114.72	---	---	152.75	---	---	---	---	---	---		
1000 x 950	40 x 38	1016.00	965.20	609.60	---	---	---	116.70	186.70	232.97	140.11	---	---	186.70	---	---	---	---	---	---		
1000 x 900	40 x 36	1016.00	914.40	609.60	---	---	---	113.69	181.85	226.90	136.48	---	---	181.85	---	---	---	---	---	---		
1000 x 850	40 x 34	1016.00	863.60	609.60	---	---	---	110.67	177.00	220.83	132.86	---	---	177.00	---	---	---	---	---	---		
1000 x 800	40 x 32	1016.00	812.80	609.60	---	---	---	107.66	172.15	214.76	129.23	---	---	172.15	---	---	---	---	---	---		
1000 x 750	40 x 30	1016.00	762.00	609.60	---	---	---	104.64	167.30	208.69	125.60	---	---	167.30	---	---	---	---	---	---		



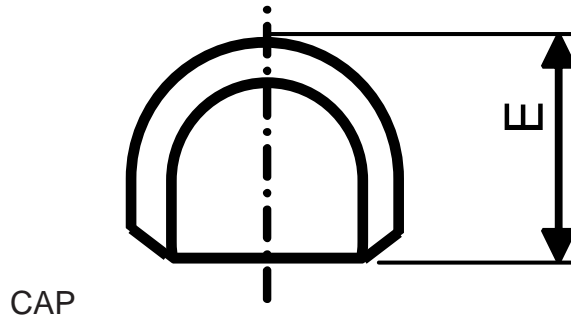
CONCENTRIC REDUCER



ECCENTRIC REDUCER

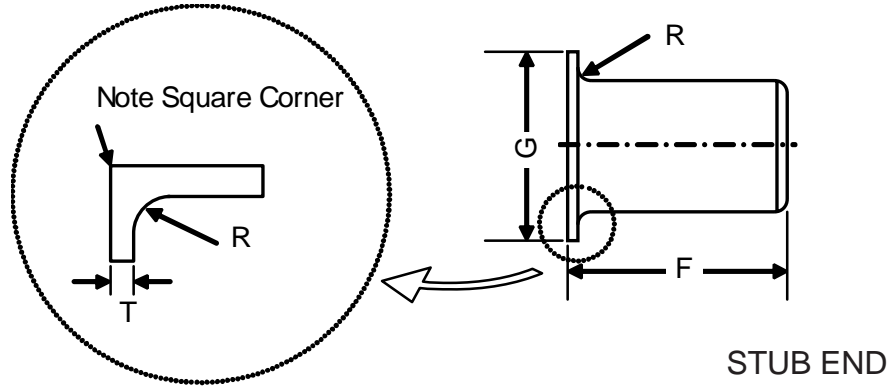
**CONCENTRIC & ECCENTRIC REDUCER (DIMENSION & WEIGHT)**

SIZE		OUTSIDE DIAMETER		H	WEIGHT															
		Large End	Small End		S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
mm	inch	mm	mm	mm	KG															
1050 x 1000	42 x 40	1066.80	1016.00	609.60	---	---	---	122.74	196.40	245.12	147.37	---	---	196.40	---	---	---	---	---	---
1050 x 950	42 x 38	1066.80	965.20	609.60	---	---	---	119.72	191.55	239.04	143.74	---	---	191.55	---	---	---	---	---	---
1050 x 900	42 x 36	1066.80	914.40	609.60	---	---	---	116.70	186.70	232.97	140.11	---	---	186.70	---	---	---	---	---	---
1050 x 850	42 x 34	1066.80	863.60	609.60	---	---	---	113.69	181.85	226.90	136.48	---	---	181.85	---	---	---	---	---	---
1050 x 800	42 x 32	1066.80	812.80	609.60	---	---	---	110.67	177.00	220.83	132.86	---	---	177.00	---	---	---	---	---	---
1050 x 750	42 x 30	1066.80	762.00	609.60	---	---	---	107.66	172.15	214.76	129.23	---	---	172.15	---	---	---	---	---	---
1100 x 1050	44 x 42	1117.60	1066.80	609.60	---	---	---	128.77	206.09	257.26	154.62	---	---	206.09	---	---	---	---	---	---
1100 x 1000	44 x 40	1117.60	1016.00	609.60	---	---	---	125.75	201.24	251.19	150.99	---	---	201.24	---	---	---	---	---	---
1100 x 950	44 x 38	1117.60	965.20	609.60	---	---	---	122.74	196.40	245.12	147.37	---	---	196.40	---	---	---	---	---	---
1100 x 900	44 x 36	1117.60	914.40	609.60	---	---	---	119.72	191.55	239.04	143.74	---	---	191.55	---	---	---	---	---	---
1150 x 1100	46 x 44	1168.40	1117.60	711.20	---	---	---	157.27	251.76	314.30	188.86	---	---	251.76	---	---	---	---	---	---
1150 x 1050	46 x 42	1168.40	1066.80	711.20	---	---	---	153.75	246.10	307.22	184.62	---	---	246.10	---	---	---	---	---	---
1150 x 1000	46 x 40	1168.40	1016.00	711.20	---	---	---	150.23	240.44	300.13	180.39	---	---	240.44	---	---	---	---	---	---
1150 x 950	46 x 38	1168.40	965.20	711.20	---	---	---	146.71	234.79	293.05	176.16	---	---	234.79	---	---	---	---	---	---
1200 x 1150	48 x 46	1219.20	1168.40	711.20	---	---	---	164.31	263.07	328.47	197.32	---	---	263.07	---	---	---	---	---	---
1200 x 1100	48 x 44	1219.20	1117.60	711.20	---	---	---	160.79	257.42	321.38	193.09	---	---	257.42	---	---	---	---	---	---
1200 x 1050	48 x 42	1219.20	1066.80	711.20	---	---	---	157.27	251.76	314.30	188.86	---	---	251.76	---	---	---	---	---	---
1200 x 1000	48 x 40	1219.20	1016.00	711.20	---	---	---	153.75	246.10	307.22	184.62	---	---	246.10	---	---	---	---	---	---



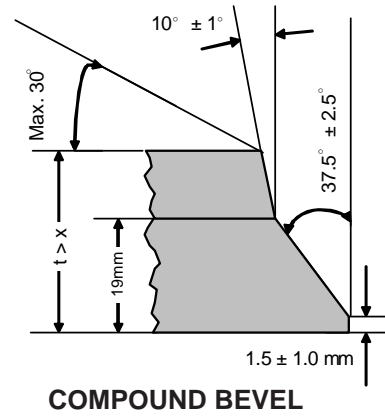
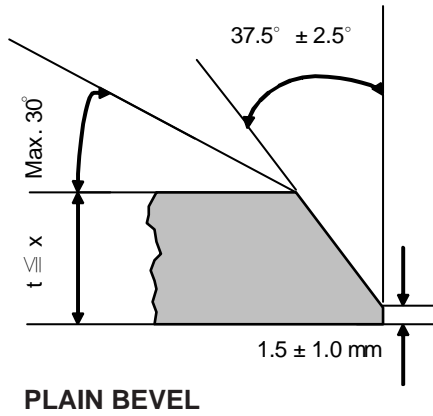
**CAPS (DIMENSION & WEIGHT)**

SIZE		OUTSIDE DIAMETER	E	WEIGHT															
				S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
mm	inch	mm	mm	KG															
15	1/2	21.3	25.4	0.022	0.028	0.034	---	---	---	0.038	0.038	0.043	0.050	0.050	---	---	---	0.064	0.101
20	3/4	26.7	25.4	0.028	0.035	0.042	---	---	---	0.049	0.049	0.057	0.065	0.065	---	---	---	0.092	0.131
25	1	33.4	38.1	0.052	0.088	0.095	---	---	---	0.107	0.107	0.123	0.143	0.143	---	---	---	0.202	0.287
32	1 1/4	42.2	38.1	0.066	0.111	0.119	---	---	---	0.143	0.143	0.179	0.195	0.195	---	---	---	0.254	0.386
40	1 1/2	48.3	38.1	0.076	0.129	0.138	---	---	---	0.170	0.170	0.207	0.235	0.235	---	---	---	0.329	0.469
50	2	60.3	38.1	0.098	0.167	0.209	---	---	---	0.233	0.233	0.293	0.331	0.331	---	---	---	0.519	0.663
65	2 1/2	73.0	38.1	0.160	0.228	0.266	---	---	---	0.419	0.419	0.457	0.533	0.533	---	---	---	0.725	1.07
80	3	88.9	50.8	0.253	0.361	0.481	---	---	---	0.691	0.691	0.794	0.914	0.914	---	---	---	1.34	1.83
90	3 1/2	101.6	63.5	0.353	0.504	0.672	---	---	---	0.958	0.958	1.18	1.36	1.36	---	---	---	2.13	---
100	4	114.3	63.5	0.409	0.585	0.780	---	---	---	1.17	1.17	1.38	1.68	1.68	---	2.16	---	2.63	3.33
125	5	141.3	76.2	0.817	0.992	1.46	---	---	---	1.93	1.93	2.36	2.77	2.77	---	3.70	---	4.64	5.54
150	6	168.3	88.9	1.14	1.39	2.04	---	---	---	2.90	2.90	3.79	4.49	4.49	---	5.83	---	7.45	8.93
200	8	219.1	101.6	1.78	2.41	4.12	---	4.06	4.44	5.20	5.20	6.53	8.05	8.05	9.58	11.58	13.06	14.58	14.08
250	10	273.1	127.0	3.36	4.15	6.42	---	6.32	7.70	9.18	9.18	12.53	12.53	14.90	18.06	21.16	25.07	28.23	25.07
300	12	323.9	152.4	5.60	6.43	9.09	---	8.95	11.75	13.29	14.41	20.00	17.76	24.45	29.99	35.53	40.00	46.58	35.53
350	14	355.6	165.1	6.69	8.02	13.21	10.70	13.21	15.88	15.88	18.56	25.24	21.23	31.84	39.78	46.47	53.16	59.68	---
400	16	406.4	177.8	8.84	10.10	16.62	13.47	16.62	19.99	19.99	26.72	35.14	26.72	45.11	55.13	65.15	76.80	85.22	---
450	18	457.2	203.2	11.29	12.91	21.24	17.21	21.24	29.85	25.55	38.45	51.22	34.15	64.00	79.05	93.84	106.75	121.65	---
500	20	508.0	228.6	16.06	18.40	26.43	21.41	31.78	42.48	31.78	50.51	68.91	42.48	87.64	108.85	127.45	148.70	167.26	---
550	22	558.8	254.0	---	---	---	26.07	38.70	51.73	38.70	---	90.42	51.73	116.49	142.15	168.22	193.88	219.95	---
600	24	609.6	266.7	26.04	30.30	---	30.30	44.98	67.70	44.98	82.85	116.47	60.13	146.77	184.17	217.78	248.08	281.89	---
650	26	660.4	266.7	---	---	---	41.86	67.30	---	50.34	---	---	67.30	---	---	---	---	---	---
700	28	711.2	266.7	---	---	---	46.58	74.88	93.75	56.01	---	---	74.88	---	---	---	---	---	---
750	30	762.0	266.7	---	---	---	51.54	82.86	103.74	61.98	---	---	82.86	---	---	---	---	---	---
800	32	812.8	266.7	---	---	---	56.76	91.25	114.24	68.25	125.73	---	91.25	---	---	---	---	---	---
850	34	863.6	266.7	---	---	---	62.23	100.04	125.24	74.83	137.84	---	100.04	---	---	---	---	---	---
900	36	914.4	266.7	---	---	---	67.95	109.23	136.75	81.71	164.27	---	109.23	---	---	---	---	---	---
950	38	965.2	304.8	---	---	---	78.56	126.29	158.11	94.47	---	---	126.29	---	---	---	---	---	---
1000	40	1016.0	304.8	---	---	---	84.97	136.60	171.01	102.18	---	---	136.60	---	---	---	---	---	---
1050	42	1066.8	304.8	---	---	---	91.63	147.31	184.42	110.19	---	---	147.31	---	---	---	---	---	---
1100	44	1117.6	342.9	---	---	---	103.89	167.02	209.10	124.94	---	---	167.02	---	---	---	---	---	---
1150	46	1168.4	342.9	---	---	---	111.25	178.84	223.90	133.78	---	---	178.84	---	---	---	---	---	---
1200	48	1219.2	342.9	---	---	---	118.85	191.07	239.21	142.92	---	---	191.07	---	---	---	---	---	---



STUB END (DIMENSION & WEIGHT)																					
SIZE		Outside Diameter	G	F	R	WEIGHT															
						S5S	S10S	S20S	S10	S20	S30	STD	S40	S60	XS	S80	S100	S120	S140	S160	XXS
mm	inch	mm	mm	mm	mm	KG															
15	1/2	21.34	35.05	50.8	3.05	0.049	0.061	0.071	---	---	---	0.078	0.078	0.088	0.099	0.099	---	---	---	0.122	0.166
20	3/4	26.67	42.93	50.8	3.05	0.063	0.079	0.093	---	---	---	0.107	0.107	0.123	0.138	0.138	---	---	---	0.184	0.239
25	1	33.53	50.80	50.8	3.05	0.081	0.133	0.142	---	---	---	0.159	0.159	0.180	0.206	0.206	---	---	---	0.275	0.360
32	1 1/4	42.16	63.50	50.8	4.83	0.107	0.177	0.189	---	---	---	0.224	0.224	0.275	0.297	0.297	---	---	---	0.376	0.529
40	1 1/2	48.26	73.15	50.8	6.35	0.127	0.212	0.226	---	---	---	0.275	0.275	0.331	0.371	0.371	---	---	---	0.501	0.68
50	2	60.45	91.95	63.5	7.87	0.201	0.336	0.416	---	---	---	0.461	0.461	0.57	0.64	0.64	---	---	---	0.96	1.19
65	2 1/2	73.15	104.65	63.5	7.87	0.306	0.433	0.50	---	---	---	0.77	0.77	0.84	0.97	0.97	---	---	---	1.28	1.78
80	3	88.90	127.00	63.5	9.65	0.392	0.56	0.74	---	---	---	1.04	1.04	1.19	1.35	1.35	---	---	---	1.92	2.53
90	3 1/2	101.60	139.70	76.2	9.65	0.512	0.73	0.96	---	---	---	1.35	1.35	1.64	1.88	1.88	---	---	---	2.84	---
100	4	114.30	157.23	76.2	11.18	0.59	0.84	1.12	---	---	---	1.65	1.65	1.94	2.33	2.33	---	2.95	---	3.53	4.35
125	5	141.22	185.67	76.2	11.18	0.98	1.19	1.73	---	---	---	2.26	2.26	2.75	3.20	3.20	---	4.21	---	5.17	6.07
150	6	168.15	215.90	88.9	12.70	1.33	1.61	2.35	---	---	---	3.31	3.31	4.29	5.03	5.03	---	6.44	---	8.07	9.50
200	8	218.95	269.75	101.6	12.70	1.95	2.63	4.46	---	4.39	4.79	5.59	5.59	6.96	8.51	8.51	10.02	11.98	13.39	14.81	14.34
250	10	273.05	323.85	127.0	12.70	3.51	4.32	6.64	---	6.54	7.94	9.42	9.42	12.73	12.73	15.02	18.02	20.90	24.45	27.24	24.45
300	12	323.85	381.00	152.4	12.70	5.80	6.66	9.37	---	9.23	12.05	13.58	14.70	20.19	18.01	24.47	29.69	34.80	38.84	44.63	34.80
350	14	355.60	412.75	152.4	12.70	6.37	7.63	12.46	10.13	12.46	14.93	14.93	17.38	23.41	19.81	29.25	36.12	41.78	47.31	52.59	---
400	16	406.40	469.90	152.4	12.70	7.79	8.89	14.54	11.82	14.54	17.43	17.43	23.15	30.19	23.15	38.38	46.43	54.31	63.27	69.59	---
450	18	457.20	533.40	152.4	12.70	9.11	10.40	17.02	13.82	17.02	23.78	20.41	30.46	40.24	27.13	49.84	60.95	71.64	80.77	91.10	---
500	20	508.00	584.20	152.4	12.70	11.54	13.21	18.90	15.35	22.67	30.16	22.67	35.72	48.31	30.16	60.89	74.85	86.84	100.25	111.72	---
550	22	558.80	641.35	152.4	12.70	---	---	---	17.20	25.42	33.82	25.42	---	58.33	33.82	74.46	90.04	105.55	120.53	135.44	---
600	24	609.60	692.15	152.4	12.70	16.13	18.75	---	18.75	27.72	41.47	27.72	50.54	70.39	36.91	87.95	109.21	127.92	144.45	162.54	---

## WELDING END PREPARATION



## WELDING BEVELS AND ROOT FACE

Nominal Wall Thickness, t	End Preparation
Less than x [Note]	Cut square or slightly chamfer, at manufacturer option. (Not illustrated)
x to 22mm	Plain bevel as in sketch (a) above
More than 22mm	Compound bevel as in sketch (b) above

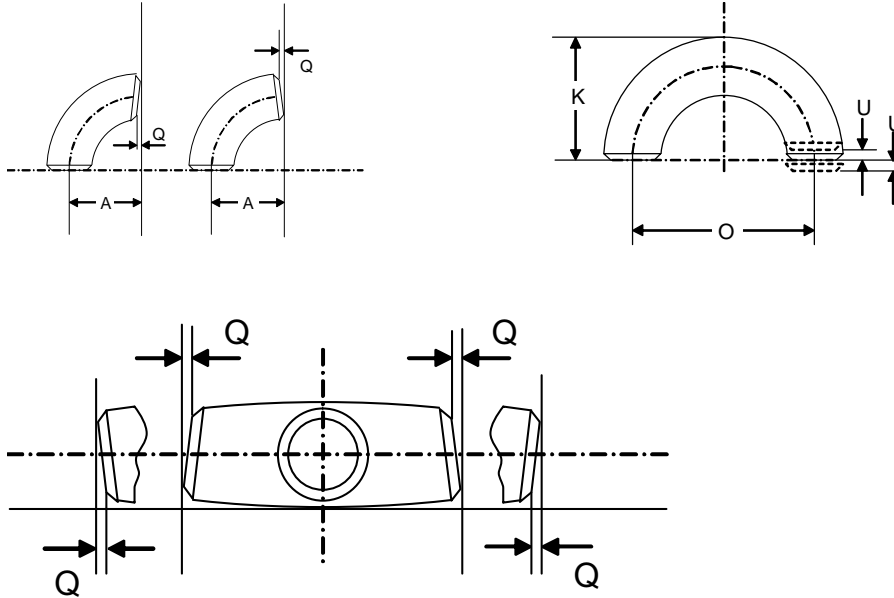
**General Notes :** Dimensions in parentheses are in inches. Others are in mm.

**Note :** x = 5mm for carbon steel or ferritic alloy steel

**Note :** x = 3mm for austenitic alloy steel



## DIMENSIONAL TOLERANCES AS PER ASME/ANSI B16.9



Pipe Size	All Fittings			45D & 90D Elbows, Tee	Reducers & Stub Ends	Caps	180D Return Bends		
	Outside Diameter at Bevel	Inside Diameter at End	Wall Thickness	Center to End	Overall Length	Overall Length	Center to Center Dimension	Back to Face Dimension	Alignment of Ends
inch	mm	mm		mm	mm	mm	mm	mm	mm
1/2-2.1/2	+1.6	±0.8			±2	±2	±3		
3-2.1/2	-0.8	±1.6							
4	±1.6								
5-8	+2.4		Not less than 87.5% of nominal thickness				±6		
	-1.6								
10-18	+4	±3.2							
	-3.2								
20-24	+6.4	-4.8	±4.8						
26-30					±3	±5	±10		
32-48					±5				

Pipe Size	Off Angle	Off Plane
inch	mm	mm
1/2-4	±1	±2
5-8	±2	±4
10-12	±2	±5
14-16	±3	±6
18-24	±4	±10
26-30	±5	±10
32-42	±5	±13
44-48	±5	±19