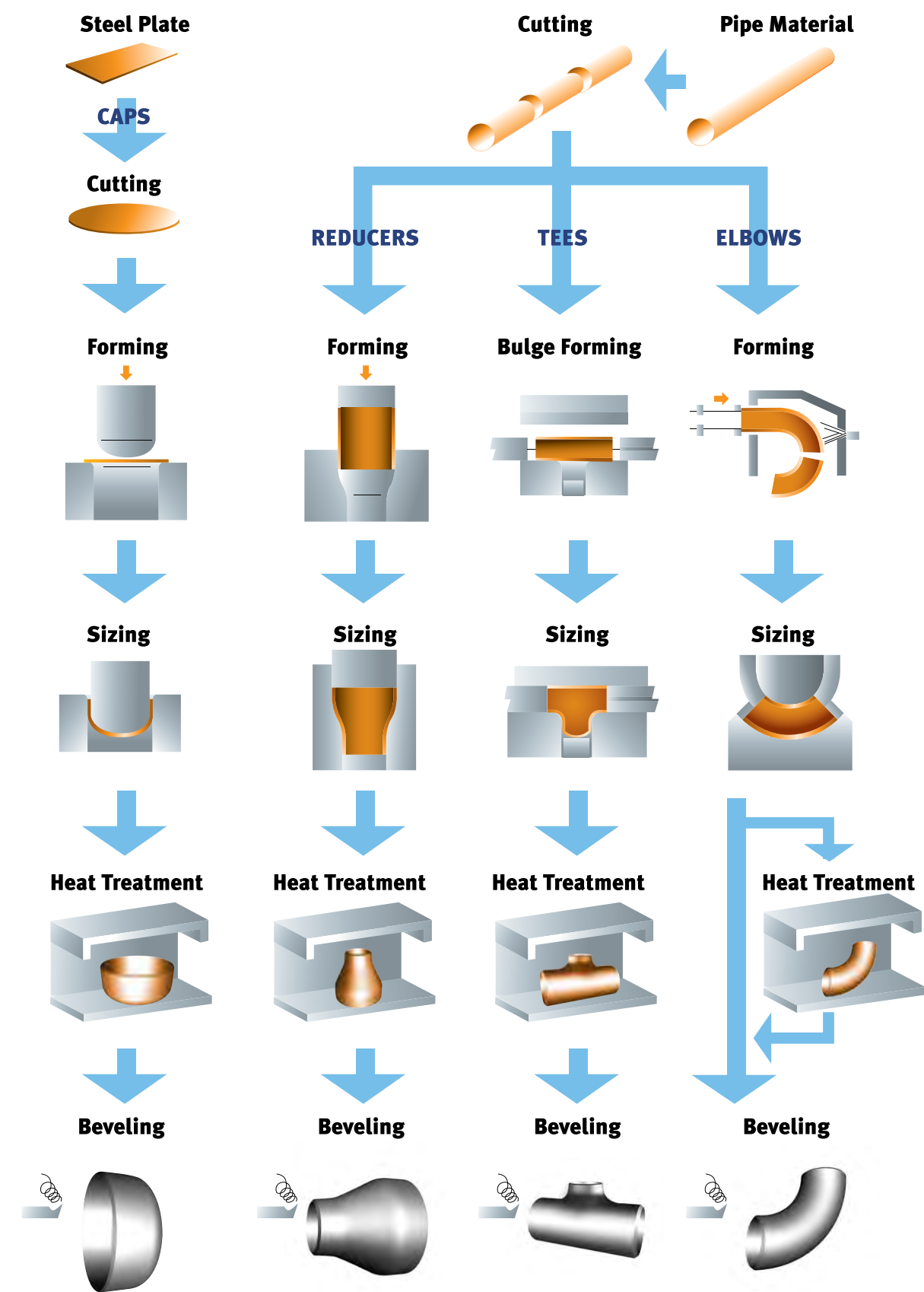




SSF

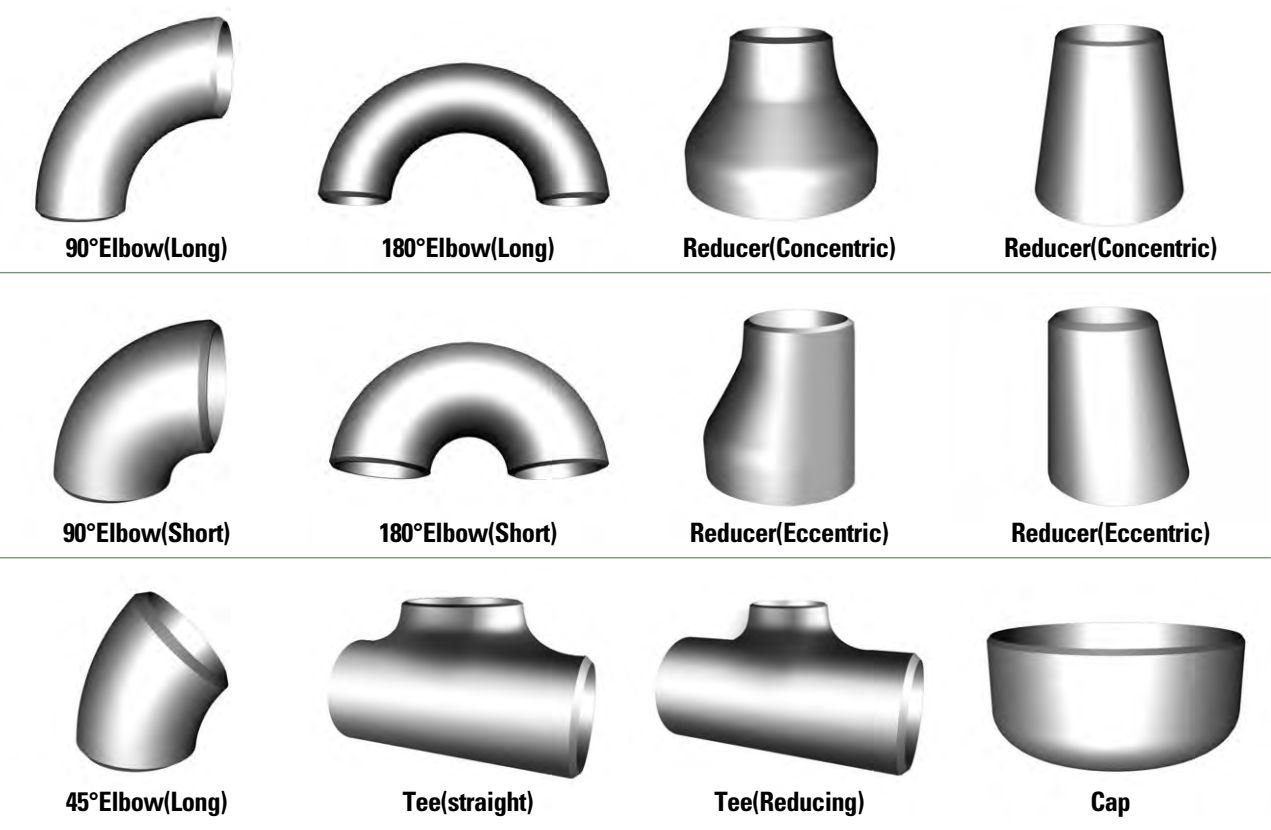
Sam Sung Fitting

Manufacturing Process

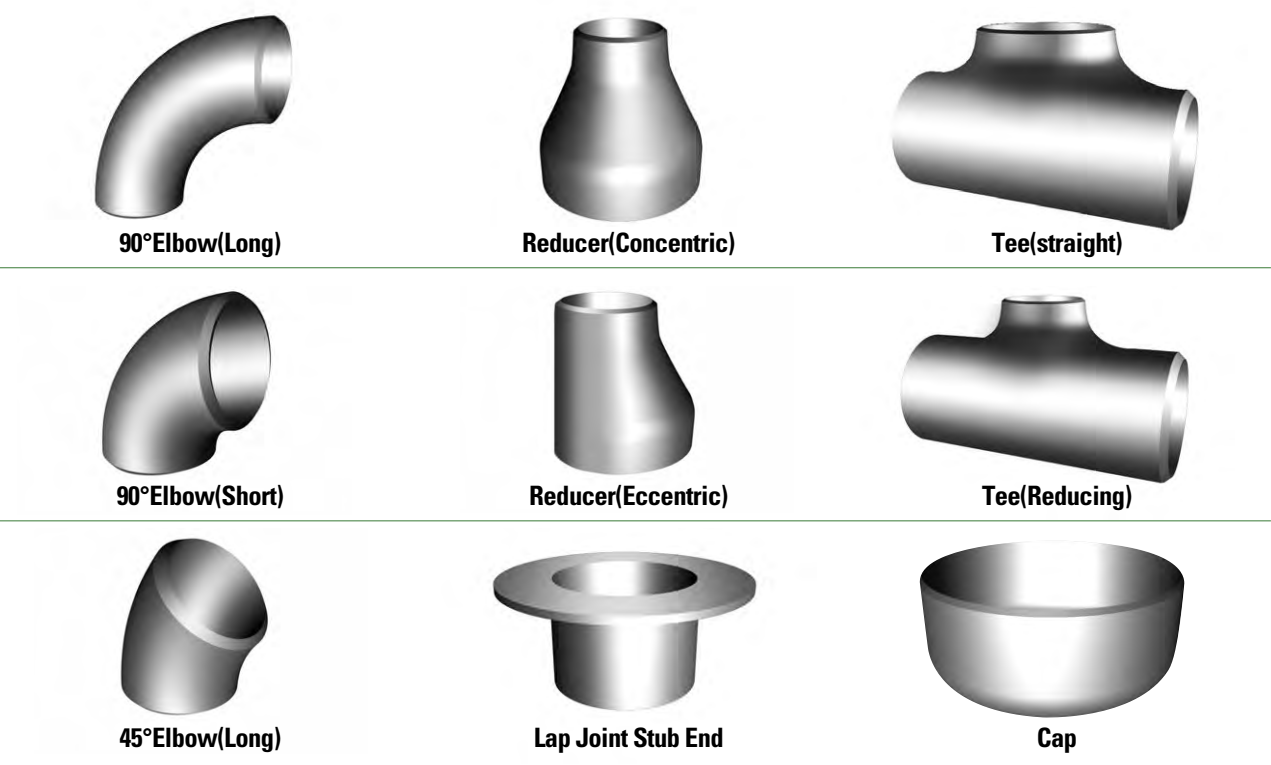


Products

Wrought Steel Butt-Welding Fittings (Carbon & Alloy Steel)



Stainless Steel Butt-Welding Fittings



STEEL BUTT-WELDING FITTINGS

STEEL
BUTT-WELDING
FITTINGS

ASME

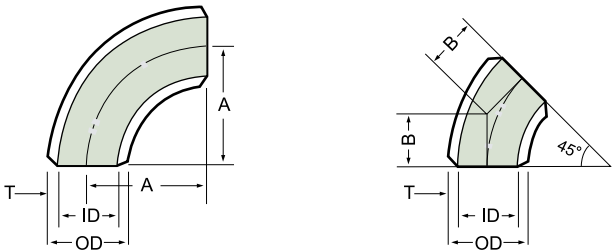
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WROUGHT STEEL BUTT-WELDING FITTINGS

90° Elbow (Long, Short)
45° Elbow (Long)

STD, Sch40, X-S, Sch80,
Sch160, XX-S



90° Elbow

45° Elbow

ASME B16.9

Unit : inch

Nominal Pipe Size	Outside Diameter O.D	Center to End					STD		Sch 40	
		Long		Shot	3D		T	I.D	T	I.D
		A	B	A	A	B				
½	0.840	1.50	0.62	-	-	-	0.109	0.622	0.109	0.622
¾	1.050	1.50	0.75	-	57	24	0.113	0.824	0.113	0.824
1	1.315	1.50	0.88	1.00	76	31	0.133	1.049	0.133	1.049
1 ¼	1.660	1.88	1.00	1.25	95	39	0.140	1.380	0.140	1.380
1 ½	1.900	2.25	1.12	1.50	114	47	0.145	1.610	0.145	1.610
2	2.375	3.00	1.38	2.00	152	63	0.154	2.067	0.154	2.067
2 ½	2.875	3.75	1.75	2.50	190	79	0.203	2.469	0.203	2.469
3	3.500	4.50	2.00	3.00	229	95	0.216	3.068	0.216	3.068
3 ½	4.000	5.25	2.25	3.50	267	111	0.226	3.548	0.226	6.548
4	4.500	6.00	2.50	4.00	305	127	0.237	4.026	0.237	4.026
5	5.563	7.50	3.12	5.00	381	157	0.258	5.047	0.258	5.047
6	6.625	9.00	3.75	6.00	457	189	0.280	6.065	0.280	6.065
8	8.625	12.00	5.00	8.00	610	252	0.322	7.981	0.322	7.981
10	10.750	15.00	6.25	10.00	762	316	0.365	10.020	0.365	10.020
12	12.750	18.00	7.50	12.00	914	378	0.375	12.000	0.406	11.938
14	14.000	21.00	8.75	14.00	1037	441	0.375	13.250	0.438	13.124
16	16.000	24.00	10.00	16.00	1219	505	0.375	15.250	0.500	15.000
18	18.000	27.00	11.25	18.00	1372	568	0.375	17.250	0.562	16.876
20	20.000	30.00	12.50	20.00	1524	632	0.375	19.250	0.594	18.812
22	22.000	33.00	13.50	22.00	1676	694	0.375	21.250	*0.594	20.812
24	24.000	36.00	15.00	24.00	1829	757	0.375	23.250	0.688	22.624
26	26.000	39.00	16.00	*26.00	1981	821	0.375	25.250	*0.688	24.624
28	28.000	42.00	17.25	*28.00	2134	883	0.375	27.250	*0.688	26.624
30	30.000	45.00	18.50	*30.00	2286	964	0.375	29.250	*0.688	28.624
32	32.000	48.00	19.75	*32.00	4238	1010	0.375	31.250	0.688	30.624
34	34.000	51.00	21.00	*34.00	2591	1073	0.375	33.250	0.688	32.624
36	36.000	54.00	22.25	*36.00	2743	1135	0.375	35.250	0.750	34.624
38	38.000	57.00	23.62	*38.00	2896	1200	0.375	37.250	-	-
40	40.000	60.00	24.88	*40.00	3048	1264	0.375	39.250	-	-
42	42.000	63.00	26.00	*42.00	3200	1326	0.375	41.250	-	-
44	44.000	66.00	27.38	*44.00	3353	1389	0.375	43.250	-	-
46	46.000	69.00	28.62	*46.00	3505	1453	0.375	45.250	-	-
48	48.000	72.00	29.88	*48.00	3658	1516	0.375	47.250	-	-
*50	50.000	75.00	31.06	-50.00	-	-	0.375	49.250	-	-
*52	52.000	78.00	32.30	*52.00	-	-	0.375	51.250	-	-
*54	54.000	81.00	33.55	-54.00	-	-	0.375	53.250	-	-
*56	56.000	84.00	34.79	-56.00	-	-	0.375	55.250	-	-
*58	58.000	87.00	36.04	-58.00	-	-	0.375	57.250	-	-
*60	60.000	90.00	37.28	-60.00	-	-	0.375	59.250	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	½
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	¾
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1 ¼
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1 ½
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2 ½
0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.300	3
0.318	3.364	0.318	3.364	-	-	-	-	3 ½
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.562	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188	-	-	14
0.500	15.000	0.844	14.312	1.594	12.812	-	-	16
0.500	17.000	0.938	16.124	1.781	14.438	-	-	18
0.500	19.000	1.031	17.938	1.969	16.062	-	-	20
0.500	21.000	1.125	19.750	2.125	17.750	-	-	22
0.500	23.000	1.219	21.562	2.344	19.312	-	-	24
0.500	25.000	-	-	-	-	-	-	26
0.500	27.000	-	-	-	-	-	-	28
0.500	29.000	-	-	-	-	-	-	30
0.500	31.000	-	-	-	-	-	-	32
0.500	33.000	-	-	-	-	-	-	34
0.500	35.000	-	-	-	-	-	-	36
0.500	37.000	-	-	-	-	-	-	38
0.500	39.000	-	-	-	-	-	-	40
0.500	41.000	-	-	-	-	-	-	42
0.500	43.000	-	-	-	-	-	-	44
0.500	45.000	-	-	-	-	-	-	46
0.500	47.000	-	-	-	-	-	-	48
0.500	49.000	-	-	-	-	-	-	*50
0.500	51.000	-	-	-	-	-	-	*52
0.500	53.000	-	-	-	-	-	-	*54
0.500	55.000	-	-	-	-	-	-	*56
0.500	57.000	-	-	-	-	-	-	*58
0.500	59.000	-	-	-	-	-	-	*60

WROUGHT STEEL BUTT-WELDING FITTINGS

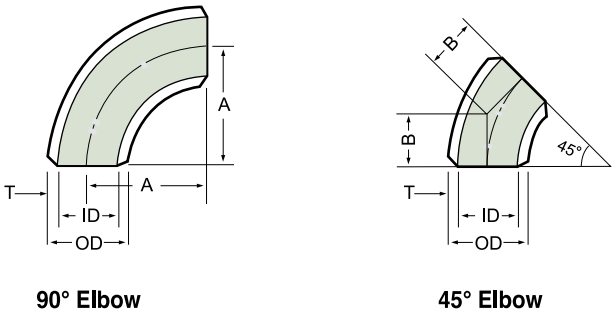
90° Elbow (Long, Short)
45° Elbow (Long)

Sch20, Sch30, Sch60, Sch100,
Sch120, Sch140

ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Center to End					Sch 20		Sch 30	
		Long		Shot	3D		T	I.D	T	I.D
		A	B	A	A	B				
4	4.500	6.00	2.50	4.00	305	127	-	-	-	-
5	5.563	7.50	3.12	5.00	381	157	-	-	-	-
6	6.625	9.00	3.75	6.00	457	189	-	-	-	-
8	8.625	12.00	5.00	8.00	610	252	0.250	8.125	0.277	8.071
10	10.750	15.00	6.25	10.00	762	316	0.250	10.250	0.307	10.136
12	12.750	18.00	7.50	12.00	914	378	0.250	12.250	0.330	12.090
14	14.000	21.00	8.75	14.00	1037	441	0.312	13.376	0.375	13.250
16	16.000	24.00	10.00	16.00	1219	505	0.312	15.376	0.378	15.250
18	18.000	27.00	11.25	18.00	1372	568	0.312	17.376	0.438	17.124
20	20.000	30.00	12.50	20.00	1524	632	0.375	19.250	0.500	19.000
22	22.000	33.00	13.50	22.00	1676	694	0.375	21.250	0.562	21.000
24	24.000	36.00	15.00	24.00	1829	757	0.375	23.250	-	22.876
26	26.000	39.00	16.00	*26.00	1981	821	0.500	25.000	0.625	-
28	28.000	42.00	17.25	*28.00	2134	883	0.500	27.000	0.625	26.750
30	30.000	45.00	18.50	*30.00	2286	964	0.500	29.000	0.625	28.750
32	32.000	48.00	19.75	*32.00	4238	1010	0.500	31.000	0.625	30.750
34	34.000	51.00	21.00	*34.00	2591	1073	0.500	33.000	0.625	32.750
36	36.000	54.00	22.25	*36.00	2743	1135	0.500	35.000	0.625	34.750

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.



Unit : inch

Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
-	-	-	-	0.438	3.624	-	-	4
-	-	-	-	0.500	4.563	-	-	5
-	-	-	-	0.562	5.501	-	-	6
0.406	7.813	0.594	7.437	0.719	7.187	0.812	7.001	8
0.500	9.750	0.719	9.312	0.844	9.062	1.000	8.750	10
0.562	11.626	0.844	11.062	1.000	10.750	1.125	10.500	12
0.594	12.812	0.938	12.124	1.094	11.812	1.250	11.500	14
0.656	14.688	1.031	13.938	1.219	13.562	1.438	13.124	16
0.750	16.500	1.156	15.688	1.375	15.250	1.562	14.876	18
0.812	18.376	1.281	17.438	1.500	17.000	1.750	16.500	20
0.875	20.250	1.375	19.250	1.625	18.750	1.875	18.250	22
0.969	22.062	1.531	20.938	1.812	20.376	2.062	19.876	24
-	-	-	-	-	-	-	-	26
-	-	-	-	-	-	-	-	28
-	-	-	-	-	-	-	-	30
-	-	-	-	-	-	-	-	32
-	-	-	-	-	-	-	-	34
-	-	-	-	-	-	-	-	36

WROUGHT STEEL BUTT-WELDING FITTINGS

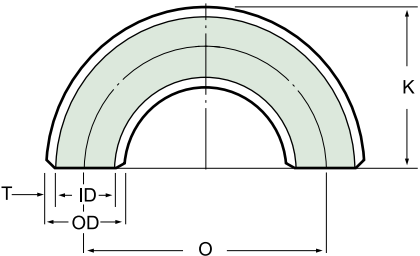
180° Elbow (Long, Short)	STD, Sch40, X-S, Sch80, Sch160, XX-S Sch20, Sch30, Sch60, Sch100, Sch120, Sch140
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ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Long		Short		STD		Sch 40	
		Center to Center O	Back to Face K	Center to Center O	Back to Face K	T	I.D	T	I.D
1/2	0.840	3.00	1.88	-	-	0.109	0.622	0.109	0.622
3/4	1.050	3.00	2.00	-	-	0.113	0.824	0.113	0.824
1	1.315	3.00	2.19	2.00	1.62	0.133	1.049	0.133	1.049
1 1/4	1.660	3.75	2.75	2.50	2.06	0.140	1.380	0.140	1.380
1 1/2	1.900	4.50	3.25	3.00	2.44	0.145	1.610	0.145	1.610
2	2.375	6.00	4.19	4.00	3.19	0.154	2.067	0.154	2.067
2 1/2	2.875	7.50	5.19	5.00	3.94	0.203	2.469	0.203	2.469
3	3.500	9.00	6.25	6.00	4.75	0.216	3.068	0.216	3.068
3 1/2	4.000	10.50	7.25	7.00	5.50	0.226	3.548	0.226	3.548
4	4.500	12.00	8.25	8.00	6.25	0.237	4.026	0.237	4.026
5	5.563	15.00	10.31	10.00	7.75	0.258	5.047	0.258	5.047
6	6.625	18.00	12.31	12.00	9.31	0.280	6.065	0.280	6.065
8	8.625	24.00	16.31	16.00	12.31	0.322	7.981	0.322	7.981
10	10.750	30.00	20.38	20.00	15.38	0.365	10.020	0.365	10.020
12	12.750	36.00	24.38	24.00	18.38	0.375	12.000	0.406	11.938
14	14.000	42.00	28.00	28.00	21.00	0.375	13.250	0.438	13.124
16	16.000	48.00	32.00	32.00	24.00	0.375	15.250	0.500	15.000
18	18.000	54.00	36.00	36.00	27.00	0.375	17.250	0.562	16.876
20	20.000	60.00	40.00	40.00	30.00	0.375	19.250	0.594	18.812
22	22.000	66.00	44.00	44.00	33.00	0.375	21.250	*0.594	20.812
24	24.000	72.00	48.00	48.00	36.00	0.375	23.250	0.688	22.624

Nominal Pipe Size	Outside Diameter O.D	Long		Short		STD 20		Sch 30	
		Center to Center O	Back to Face K	Center to Center O	Back to Face K	T	I.D	T	I.D
4	4.500	12.00	8.25	8.00	6.25	-	-	-	-
5	5.563	15.00	10.31	10.00	7.75	-	-	-	-
6	6.625	18.00	12.31	12.00	9.31	-	-	-	-
8	8.625	24.00	16.31	16.00	12.31	0.250	8.125	0.277	8.071
10	10.750	30.00	20.38	20.00	15.38	0.250	10.250	0.307	10.136
12	12.750	36.00	24.38	24.00	18.38	0.250	12.250	0.330	12.090
14	14.000	42.00	28.00	28.00	21.00	0.312	13.376	0.375	13.250
16	16.000	48.00	32.00	32.00	24.00	0.312	15.376	0.375	15.250
18	18.000	54.00	36.00	36.00	27.00	0.312	17.376	0.438	17.124
20	20.000	60.00	40.00	40.00	30.00	0.375	19.250	0.500	19.000
22	22.000	66.00	44.00	44.00	33.00	0.375	21.250	0.500	21.000
24	24.000	72.00	48.00	48.00	36.00	0.375	23.250	0.562	22.876

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54 Asterisks(*))
- denote Samsung Fitting Standard.



180° Elbow

Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1 1/4
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1 1/2
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2 1/2
0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.300	3
0.318	3.364	0.318	3.364	-	-	-	-	3 1/2
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.562	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188	-	-	14
0.500	15.000	0.844	14.312	1.594	12.812	-	-	16
0.500	17.000	0.938	16.124	1.781	14.438	-	-	18
0.500	19.000	1.031	17.938	1.969	16.062	-	-	20
0.500	21.000	1.125	19.750	2.125	17.750	-	-	22
0.500	23.000	1.219	21.562	2.344	19.312	-	-	240

Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
-	-	-	-	0.438	3.624	-	-	4
-	-	-	-	0.500	4.563	-	-	5
-	-	-	-	0.562	5.501	-	-	6
0.406	7.813	0.594	7.437	0.719	7.187	0.812	7.001	8
0.500	9.750	0.719	9.312	0.844	9.062	1.000	8.750	10
0.562	11.626	0.844	11.062	1.000	10.750	1.125	10.500	12
0.594	12.812	0.938	12.124	1.094	11.812	1.250	11.500	14
0.656	14.688	1.031	13.938	1.219	13.562	1.438	13.124	16
0.750	16.500	1.156	15.688	1.375	15.250	1.562	14.876	18
0.812	18.376	1.281	17.438	1.500	17.000	1.750	16.500	20
0.875	20.250	1.375	19.250	1.625	18.750	1.875	18.250	22
0.969	22.062	1.531	20.938	1.812	20.376	2.062	19.876	24

WROUGHT STEEL BUTT-WELDING FITTINGS

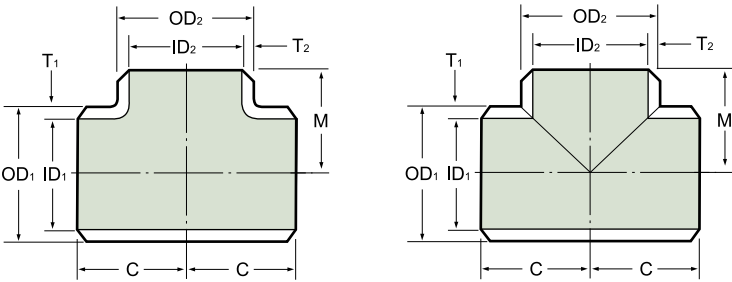
Straight Tee

STD, Sch40, X-S, Sch80,
Sch160, XX-S

ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Center to End		STD		Sch 40	
		Run C	Outlet M	T	I.D	T	I.D
1/2	0.840	1.00	1.00	0.109	0.622	0.109	0.622
3/4	1.050	1.12	1.12	0.113	0.824	0.113	0.824
1	1.315	1.50	1.50	0.133	1.049	0.133	1.049
1 1/4	1.660	1.88	1.88	0.140	1.380	0.140	1.380
1 1/2	1.900	2.25	2.25	0.145	1.610	0.145	1.610
2	2.375	2.50	2.50	0.154	2.067	0.154	2.067
2 1/2	2.875	3.00	3.00	0.203	2.469	0.203	2.469
3	3.500	3.38	3.38	0.216	3.068	0.216	3.068
3 1/2	4.000	3.75	3.75	0.226	3.548	0.226	3.548
4	4.500	4.12	4.12	0.237	4.026	0.237	4.026
5	5.563	4.88	4.88	0.258	5.047	0.258	5.047
6	6.625	5.62	5.62	0.280	6.065	0.280	6.065
8	8.625	7.00	7.00	0.322	7.981	0.322	7.981
10	10.750	8.50	8.50	0.365	10.020	0.365	10.020
12	12.750	10.00	10.00	0.375	12.000	0.406	11.938
14	14.000	11.00	11.00	0.375	13.250	0.438	13.124
16	16.000	12.00	12.00	0.375	15.250	0.500	15.000
18	18.000	13.50	13.50	0.375	17.250	0.562	16.876
20	20.000	15.00	15.00	0.375	19.250	0.594	18.812
22	22.000	16.50	16.50	0.375	21.250	*0.594	*20.812
24	24.000	17.00	17.00	0.375	23.250	0.688	22.624
26	26.000	19.50	19.50	0.375	25.250	*0.688	*24.624
28	28.000	20.50	20.50	0.375	27.250	*0.688	*26.624
30	30.000	22.00	22.00	0.375	29.250	*0.688	*28.624
32	32.000	23.50	23.50	0.375	31.250	0.688	30.624
34	34.000	25.00	25.00	0.375	33.250	0.688	32.624
36	36.000	26.50	26.50	0.375	35.250	0.750	34.500
38	38.000	28.00	28.00	0.375	37.250	-	-
40	40.000	29.50	29.50	0.375	39.250	-	-
42	42.000	30.00	28.00	0.375	41.250	-	-
44	44.000	32.00	30.00	0.375	43.250	-	-
46	46.000	33.50	31.50	0.375	45.250	-	-
48	48.000	35.00	33.00	0.375	47.250	-	-
*50	50.000	37.16	37.16	-	-	-	-
*52	52.000	38.16	38.16	-	-	-	-
*54	54.000	39.16	39.16	-	-	-	-
*56	56.000	40.16	40.16	-	-	-	-
*58	58.000	41.16	4 .16	-	-	-	-
*60	60.000	42.16	42.16	-	-	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.



Straight (I)

Straight (II)

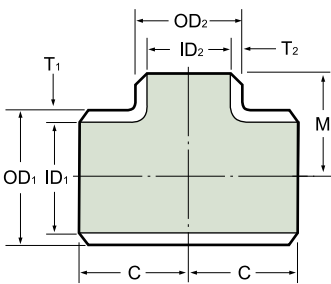
Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1 1/4
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1 1/2
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2 1/2
0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.300	3
0.318	3.364	0.318	3.364	-	-	-	-	3 1/2
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.562	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188	-	-	14
0.500	15.000	0.844	14.312	1.594	12.812	-	-	16
0.500	17.000	0.938	16.124	1.781	14.438	-	-	18
0.500	19.000	1.031	17.938	1.969	16.062	-	-	20
0.500	21.000	1.125	19.750	2.125	17.750	-	-	22
0.500	23.000	1.219	21.562	2.344	19.312	-	-	24
0.500	25.000	-	-	-	-	-	-	26
0.500	27.000	-	-	-	-	-	-	28
0.500	29.000	-	-	-	-	-	-	30
0.500	31.000	-	-	-	-	-	-	32
0.500	33.000	-	-	-	-	-	-	34
0.500	35.000	-	-	-	-	-	-	36
0.500	37.000	-	-	-	-	-	-	38
0.500	39.000	-	-	-	-	-	-	40
0.500	41.000	-	-	-	-	-	-	42
0.500	43.000	-	-	-	-	-	-	44
0.500	45.000	-	-	-	-	-	-	46
0.500	47.000	-	-	-	-	-	-	48
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

WROUGHT STEEL BUTT-WELDING FITTINGS

Reducing Tee

STD, Sch40, X-S, Sch80, Sch160, XX-S



Reducing

Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		STD		Sch 40	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
1/2 X 1/2 X 3/8	0.840	0.675	1.00	1.00	0.109	0.091	0.109	0.091
1/2 X 1/2 X 1/4	0.840	0.540	1.00	1.00	0.109	0.088	0.109	0.088
3/4 X 3/4 X 1/2	1.050	0.840	1.12	1.12	0.113	0.109	0.113	0.109
3/4 X 3/4 X 3/8	1.050	0.675	1.12	1.12	0.113	0.091	0.113	0.091
1 X 1 X 3/4	1.315	1.050	1.50	1.50	0.133	0.113	0.133	0.113
1 X 1 X 1/2	1.315	0.840	1.50	1.50	0.133	0.109	0.133	0.109
1 1/4 X 1 1/4 X 1	1.660	1.315	1.88	1.88	0.140	0.133	0.140	0.133
1 1/4 X 1 1/4 X 3/4	1.660	1.050	1.88	1.88	0.140	0.113	0.140	0.113
1 1/4 X 1 1/4 X 1/2	1.660	0.840	1.88	1.88	0.140	0.109	0.140	0.109
1 1/2 X 1 1/2 X 1 1/4	1.900	1.660	2.25	2.25	0.145	0.140	0.145	0.140
1 1/2 X 1 1/2 X 1	1.900	1.315	2.25	2.25	0.145	0.133	0.145	0.133
1 1/2 X 1 1/2 X 3/4	1.900	1.050	2.25	2.25	0.145	0.113	0.145	0.113
1 1/2 X 1 1/2 X 1/2	1.900	0.840	2.25	2.25	0.145	0.109	0.145	0.109
2 X 2 X 1 1/2	2.375	1.900	2.50	2.38	0.154	0.145	0.154	0.145
2 X 2 X 1 1/4	2.375	1.660	2.50	2.25	0.154	0.140	0.154	0.140
2 X 2 X 1	2.375	1.315	2.50	2.00	0.154	0.133	0.154	0.133
2 X 2 X 3/4	2.375	1.050	2.50	1.75	0.154	0.113	0.154	0.113
2 1/2 X 2 1/2 X 2	2.875	2.375	3.00	2.75	0.203	0.154	0.203	0.154
2 1/2 X 2 1/2 X 1 1/2	2.875	1.900	3.00	2.62	0.203	0.145	0.203	0.145
2 1/2 X 2 1/2 X 1 1/4	2.875	1.660	3.00	2.50	0.203	0.140	0.203	0.140
2 1/2 X 2 1/2 X 1	2.875	1.315	3.00	2.25	0.203	0.133	0.203	0.133
3 X 3 X 2 1/2	3.500	2.875	3.38	3.25	0.216	0.203	0.216	0.203
3 X 3 X 2	3.500	2.375	3.38	3.00	0.216	0.154	0.216	0.154
3 X 3 X 1 1/2	3.500	1.900	3.38	2.88	0.216	0.145	0.216	0.145
3 X 2 X 1 1/4	3.500	1.660	3.38	2.75	0.216	0.140	0.216	0.140
3 1/2 X 3 1/2 X 3	4.000	3.500	3.75	3.62	0.226	0.216	0.226	0.216
3 1/2 X 3 1/2 X 2 1/2	4.000	2.875	3.75	3.50	0.226	0.203	0.226	0.203
3 1/2 X 3 1/2 X 2	4.000	2.375	3.75	3.25	0.226	0.154	0.226	0.154
3 1/2 X 3 1/2 X 1 1/2	4.000	1.900	3.75	3.12	0.226	0.145	0.226	0.145
4 X 4 X 3 1/2	4.500	4.000	4.12	4.00	0.237	0.226	0.237	0.226
4 X 4 X 3	4.500	3.500	4.12	3.88	0.237	0.216	0.237	0.216
4 X 4 X 2 1/2	4.500	2.875	4.12	3.75	0.237	0.203	0.237	0.203
4 X 4 X 2	4.500	2.375	4.12	3.50	0.237	0.154	0.237	0.154
4 X 4 X 1 1/2	4.500	1.900	4.12	3.38	0.237	0.145	0.237	0.145
5 X 5 X 4	5.563	4.500	4.88	4.62	0.258	0.237	0.258	0.237
5 X 5 X 3 1/2	5.563	4.000	4.88	4.50	0.258	0.226	0.258	0.226
5 X 5 X 3	5.563	3.500	4.88	4.38	0.258	0.216	0.258	0.216
5 X 5 X 2 1/2	5.563	2.875	4.88	4.25	0.258	0.203	0.258	0.203
5 X 5 X 2	5.563	2.375	4.88	4.12	0.258	0.154	0.258	0.154
6 X 6 X 5	6.625	5.563	5.62	5.38	0.280	0.258	0.280	0.258
6 X 6 X 4	6.625	4.500	5.62	5.12	0.280	0.237	0.280	0.237
6 X 6 X 3 1/2	6.625	4.000	5.62	5.00	0.280	0.226	0.280	0.226
6 X 6 X 3	6.625	3.500	5.62	4.88	0.280	0.216	0.280	0.216
6 X 6 X 2 1/2	6.625	2.875	5.62	4.75	0.280	0.203	0.280	0.203

X-S		S 80		S 160		XX-S		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.147	0.126	0.147	0.126	-	-	-	-	1/2 X 1/2 X 3/8
0.147	0.119	0.147	0.119	-	-	-	-	1/2 X 1/2 X 1/4
0.154	0.147	0.154	0.147	0.219	0.188	0.308	0.294	3/4 X 3/4 X 1/2
0.154	0.126	0.154	0.126	-	-	-	-	3/4 X 3/4 X 3/8
0.179	0.154	0.179	0.154	0.250	0.219	0.358	0.308	1 X 1 X 3/4
0.179	0.147	0.179	0.147	0.250	0.188	0.358	0.294	1 X 1 X 1/2
0.191	0.179	0.191	0.179	0.250	0.250	0.382	0.358	1 1/4 X 1 1/4 X 1
0.191	0.154	0.191	0.154	0.250	0.218	0.382	0.308	1 1/4 X 1 1/4 X 3/4
0.191	0.147	0.191	0.147	0.250	0.188	0.382	0.294	1 1/4 X 1 1/4 X 1/2
0.200	0.191	0.200	0.191	0.281	0.250	0.400	0.382	1 1/2 X 1 1/2 X 1 1/4
0.200	0.179	0.200	0.179	0.281	0.250	0.400	0.358	1 1/2 X 1 1/2 X 1
0.200	0.154	0.200	0.154	0.281	0.218	0.400	0.308	1 1/2 X 1 1/2 X 3/4
0.200	0.147	0.200	0.147	0.281	0.188	0.400	0.294	1 1/2 X 1 1/2 X 1/2
0.218	0.200	0.218	0.200	0.344	0.281	0.436	0.400	2 X 2 X 1 1/2
0.218	0.191	0.218	0.191	0.344	0.250	0.436	0.382	2 X 2 X 1 1/4
0.218	0.179	0.218	0.179	0.344	0.250	0.436	0.358	2 X 2 X 1
0.218	0.154	0.218	0.154	0.344	0.218	0.436	0.308	2 X 2 X 3/4
0.276	0.218	0.276	0.218	0.375	0.344	0.552	0.436	2 1/2 X 2 1/2 X 2
0.276	0.200	0.276	0.200	0.375	0.281	0.552	0.400	2 1/2 X 2 1/2 X 1 1/2
0.276	0.191	0.276	0.191	0.375	0.250	0.552	0.382	2 1/2 X 2 1/2 X 1 1/4
0.276	0.179	0.276	0.179	0.375	0.250	0.552	0.358	2 1/2 X 2 1/2 X 1
0.300	0.276	0.300	0.276	0.438	0.375	0.600	0.552	3 X 3 X 2 1/2
0.300	0.218	0.300	0.218	0.438	0.344	0.600	0.436	3 X 3 X 2
0.300	0.200	0.300	0.200	0.438	0.281	0.600	0.400	3 X 3 X 1 1/2
0.300	0.191	0.300	0.191	0.438	0.250	0.600	0.382	3 X 2 X 1 1/4
0.318	0.300	0.318	0.300	-	-	-	-	3 1/2 X 3 1/2 X 3
0.318	0.276	0.318	0.276	-	-	-	-	3 1/2 X 3 1/2 X 2 1/2
0.318	0.218	0.318	0.218	-	-	-	-	3 1/2 X 3 1/2 X 2
0.318	0.200	0.318	0.200	-	-	-	-	3 1/2 X 3 1/2 X 1 1/2
0.337	0.318	0.337	0.318	-	-	-	-	4 X 4 X 3 1/2
0.337	0.300	0.337	0.300	0.531	0.438	0.674	0.600	4 X 4 X 3
0.337	0.276	0.337	0.276	0.531	0.375	0.674	0.552	4 X 4 X 2 1/2
0.337	0.218	0.337	0.218	0.531	0.344	0.674	0.436	4 X 4 X 2
0.337	0.200	0.337	0.200	0.531	0.281	0.674	0.400	4 X 4 X 1 1/2
0.375	0.337	0.375	0.337	0.625	0.531	0.750	0.674	5 X 5 X 4
0.375	0.318	0.375	0.318	-	-	-	-	5 X 5 X 3 1/2
0.375	0.300	0.375	0.300	0.625	0.438	0.750	0.600	5 X 5 X 3
0.375	0.276	0.375	0.276	0.625	0.375	0.750	0.552	5 X 5 X 2 1/2
0.375	0.218	0.375	0.218	0.625	0.344	0.75	0.436	5 X 5 X 2
0.432	0.375	0.432	0.375	0.719	0.625	0.864	0.750	6 X 6 X 5
0.432	0.337	0.432	0.337	0.719	0.531	0.864	0.674	6 X 6 X 4
0.432	0.318	0.432	0.318	-	-	-	-	6 X 6 X 3 1/2
0.432	0.300	0.432	0.300	0.719	0.438	0.864	0.600	6 X 6 X 3
0.432	0.276	0.432	0.276	0.719	0.375	0.864	0.552	6 X 6 X 2 1/2

-For Bevel Details See Page 53, -Dimensional Tolerances See Page 54
-Asterisks(*) denote Samsung Fitting Standard.

ANSI

WROUGHT STEEL BUTT-WELDING FITTINGS

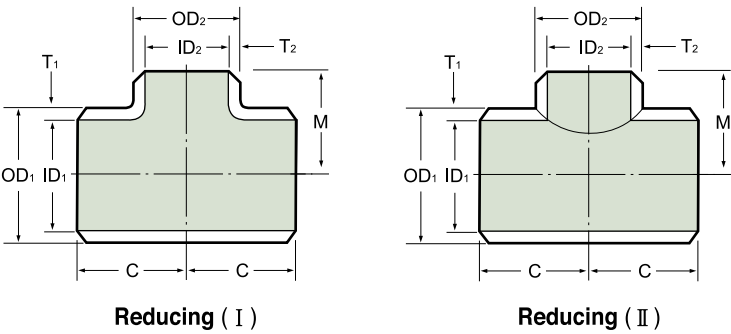
Reducing Tee

STD, Sch40, X-S, Sch80, Sch160, XX-S

ASME B16.9

Nominal Pipe Size	Outside Diameter		Center to End		STD		Sch 40	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
8 x 8 x 6	8.625	6.625	7.00	6.62	0.322	0.280	0.322	0.280
8 x 8 x 5	8.625	5.563	7.00	6.38	0.322	0.258	0.322	0.258
8 x 8 x 4	8.625	4.500	7.00	6.12	0.322	0.237	0.322	0.237
8 x 8 x 3 1/2	8.625	4.000	7.00	6.00	0.322	0.226	0.322	0.226
10 x 10 x 8	10.750	8.625	8.50	8.00	0.365	0.322	0.365	0.322
10 x 10 x 6	10.750	6.625	8.50	7.62	0.365	0.280	0.365	0.280
10 x 10 x 5	10.750	5.563	8.50	7.50	0.365	0.258	0.365	0.258
10 x 10 x 4	10.750	4.500	8.50	7.25	0.365	0.237	0.365	0.237
12 x 12 x 10	12.750	10.750	10.00	9.50	0.375	0.365	0.406	0.365
12 x 12 x 8	12.750	8.625	10.00	9.00	0.375	0.322	0.406	0.322
12 x 12 x 6	12.750	6.625	10.00	8.62	0.375	0.280	0.406	0.280
12 x 12 x 5	12.750	5.563	10.00	8.50	0.375	0.258	0.406	0.258
14 x 14 x 12	14.000	12.750	11.00	10.62	0.375	0.375	0.438	0.406
14 x 14 x 10	14.000	10.750	11.00	10.12	0.375	0.365	0.438	0.365
14 x 14 x 8	14.000	8.625	11.00	9.75	0.375	0.322	0.438	0.322
14 x 14 x 6	14.000	6.625	11.00	9.38	0.375	0.280	0.438	0.280
16 x 16 x 14	16.000	14.000	12.00	12.00	0.375	0.375	0.500	0.438
16 x 16 x 12	16.000	12.750	12.00	11.62	0.375	0.375	0.500	0.406
16 x 16 x 10	16.000	10.750	12.00	11.12	0.375	0.365	0.500	0.365
16 x 16 x 8	16.000	8.625	12.00	10.75	0.375	0.322	0.500	0.322
16 x 16 x 6	16.000	6.625	12.00	10.38	0.375	0.280	0.500	0.280
18 x 18 x 16	18.000	16.000	13.50	13.00	0.375	0.375	0.562	0.500
18 x 18 x 14	18.000	14.000	13.50	13.00	0.375	0.375	0.562	0.438
18 x 18 x 12	18.000	12.750	13.50	12.62	0.375	0.375	0.562	0.406
18 x 18 x 10	18.000	10.750	13.50	12.12	0.375	0.365	0.562	0.365
18 x 18 x 8	18.000	8.625	13.50	11.75	0.375	0.322	0.562	0.322
20 x 20 x 18	20.000	18.000	15.00	14.50	0.375	0.375	0.594	0.562
20 x 20 x 16	20.000	16.000	15.00	14.00	0.375	0.375	0.594	0.500
20 x 20 x 14	20.000	14.000	15.00	14.00	0.375	0.375	0.594	0.438
20 x 20 x 12	20.000	12.750	15.00	13.62	0.375	0.375	0.594	0.406
20 x 20 x 10	20.000	10.750	15.00	13.12	0.375	0.365	0.594	0.365
20 x 20 x 8	20.000	8.625	15.00	12.75	0.375	0.322	0.594	0.322
22 x 22 x 20	22.000	20.000	16.50	16.00	0.375	0.375	*0.594	0.594
22 x 22 x 18	22.000	18.000	16.50	15.50	0.375	0.375	*0.594	0.562
22 x 22 x 16	22.000	16.000	16.50	15.00	0.375	0.375	*0.594	0.500
22 x 22 x 14	22.000	14.000	16.50	15.00	0.375	0.375	*0.594	0.438
22 x 22 x 12	22.000	12.750	16.50	14.62	0.375	0.375	*0.594	0.406
22 x 22 x 10	22.000	10.750	16.50	14.12	0.375	0.365	*0.594	0.365
24 x 24 x 22	24.000	22.000	17.00	17.00	0.375	0.375	0.688	0.594
24 x 24 x 20	24.000	20.000	17.00	17.00	0.375	0.375	0.688	0.594
24 x 24 x 18	24.000	18.000	17.00	16.50	0.375	0.375	0.688	0.562
24 x 24 x 16	24.000	16.000	17.00	16.00	0.375	0.375	0.688	0.500
24 x 24 x 14	24.000	14.000	17.00	16.00	0.375	0.375	0.688	0.438
24 x 24 x 12	24.000	12.750	17.00	15.62	0.375	0.375	0.688	0.406
24 x 24 x 10	24.000	10.750	17.00	15.12	0.375	0.365	0.688	0.365

-For Bevel Details See Page 53, -Dimensional Tolerances See Page 54
-Asterisks(*) denote Samsung Fitting Standard.



Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.500	0.432	0.500	0.432	0.906	0.719	0.875	0.864	8 x 8 x 6
0.500	0.375	0.500	0.375	0.906	0.625	0.875	0.750	8 x 8 x 5
0.500	0.337	0.337	0.318	0.906	0.531	0.875	0.674	8 x 8 x 4
0.500	0.318	0.318	0.300	-	-	-	-	8 x 8 x 3 1/2
0.500	0.500	0.594	0.500	1.125	0.906	1.000	0.875	10 x 10 x 8
0.500	0.432	0.594	0.432	1.125	0.719	1.000	0.864	10 x 10 x 6
0.500	0.375	0.594	0.375	1.125	0.625	1.000	0.750	10 x 10 x 5
0.500	0.337	0.594	0.337	1.125	0.531	1.000	0.674	10 x 10 x 4
0.500	0.500	0.688	0.594	1.312	1.125	1.000	1.000	12 x 12 x 10
0.500	0.500	0.688	0.500	1.312	0.906	1.000	0.875	12 x 12 x 8
0.500	0.432	0.688	0.432	1.312	0.719	1.000	0.864	12 x 12 x 6
0.500	0.375	0.688	0.375	1.312	0.625	1.000	0.750	12 x 12 x 5
0.500	0.500	0.750	0.688	1.406	1.312	-	-	14 x 14 x 12
0.500	0.500	0.750	0.594	1.406	1.125	-	-	14 x 14 x 10
0.500	0.500	0.750	0.500	1.406	0.906	-	-	14 x 14 x 8
0.500	0.432	0.750	0.432	1.406	0.719	-	-	14 x 14 x 6
0.500	0.500	0.844	0.750	1.594	1.406	-	-	16 x 16 x 14
0.500	0.500	0.844	0.688	1.594	1.312	-	-	16 x 16 x 12
0.500	0.500	0.844	0.594	1.594	1.125	-	-	16 x 16 x 10
0.500	0.500	0.844	0.500	1.594	0.906	-	-	16 x 16 x 8
0.500	0.432	0.844	0.432	1.594	0.719	-	-	16 x 16 x 6
0.500	0.500	0.938	0.844	1.781	1.594	-	-	18 x 18 x 16
0.500	0.500	0.938	0.750	1.781	1.406	-	-	18 x 18 x 14
0.500	0.500	0.938	0.688	1.781	1.312	-	-	18 x 18 x 12
0.500	0.500	0.938	0.594	1.781	1.125	-	-	18 x 18 x 10
0.500	0.500	0.938	0.500	1.781	0.906	-	-	18 x 18 x 8
0.500	0.500	1.031	0.938	1.969	1.781	-	-	20 x 20 x 18
0.500	0.500	1.031	0.844	1.969	1.594	-	-	20 x 20 x 16
0.500	0.500	1.031	0.750	1.969	1.406	-	-	20 x 20 x 14
0.500	0.500	1.031	0.688	1.969	1.312	-	-	20 x 20 x 12
0.500	0.500	1.031	0.594	1.969	1.125	-	-	20 x 20 x 10
0.500	0.500	1.031	0.500	1.969	0.906	-	-	20 x 20 x 8
0.500	0.500	1.125	1.031	2.125	1.969	-	-	22 x 22 x 20
0.500	0.500	1.125	0.938	2.125	1.781	-	-	22 x 22 x 18
0.500	0.500	1.125	0.844	2.125	1.594	-	-	22 x 22 x 16
0.500	0.500	1.125	0.750	2.125	1.406	-	-	22 x 22 x 14
0.500	0.500	1.125	0.688	2.125	1.312	-	-	22 x 22 x 12
0.500	0.500	1.125	0.594	2.125	1.125	-	-	22 x 22 x 10
0.500	0.500	1.219	1.125	2.344	2.125	-	-	24 x 24 x 22
0.500	0.500	1.219	1.031	2.344	1.969	-	-	24 x 24 x 20
0.500	0.500	1.219	0.938	2.344	1.781	-	-	24 x 24 x 18
0.500	0.500	1.219	0.844	2.344	1.594	-	-	24 x 24 x 16
0.500	0.500	1.219	0.750	2.344	1.406	-	-	24 x 24 x 14
0.500	0.500	1.219	0.688	2.344	1.312	-	-	24 x 24 x 12
0.500	0.500	1.219	0.594	2.344	1.125	-	-	24 x 24 x 10

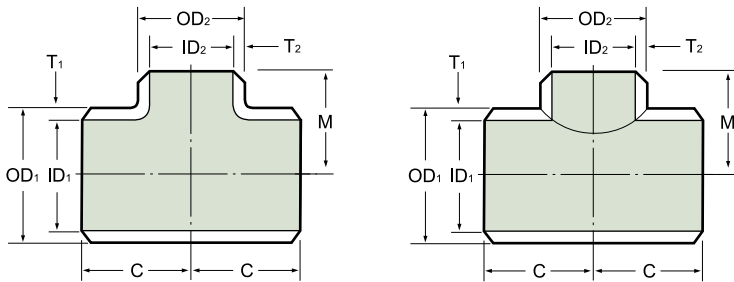
WROUGHT STEEL BUTT-WELDING FITTINGS

Reducing Tee STD, Sch40, X-S

ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		STD		Sch 40		X-S	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂
26 x 26 x 24	26.000	24.000	19.50	19.00	0.375	0.375	*0.688	0.688	0.500	0.500
26 x 26 x 22	26.000	22.000	19.50	18.50	0.375	0.375	*0.688	*0.594	0.500	0.500
26 x 26 x 20	26.000	20.000	19.50	18.00	0.375	0.375	*0.688	0.594	0.500	0.500
26 x 26 x 18	26.000	18.000	19.50	17.50	0.375	0.375	*0.688	0.562	0.500	0.500
26 x 26 x 16	26.000	16.000	19.50	17.00	0.375	0.375	*0.688	0.500	0.500	0.500
26 x 26 x 14	26.000	14.000	19.50	17.00	0.375	0.375	*0.688	0.438	0.500	0.500
26 x 26 x 12	26.000	12.750	19.50	16.62	0.375	0.375	*0.688	0.406	0.500	0.500
28 x 28 x 26	28.000	26.000	20.50	20.50	0.375	0.375	*0.688	*0.688	0.500	0.500
28 x 28 x 24	28.000	24.000	20.50	20.00	0.375	0.375	*0.688	0.688	0.500	0.500
28 x 28 x 22	28.000	22.000	20.50	19.50	0.375	0.375	*0.688	*0.594	0.500	0.500
28 x 28 x 20	28.000	20.000	20.50	19.00	0.375	0.375	*0.688	0.594	0.500	0.500
28 x 28 x 18	28.000	18.000	20.50	18.50	0.375	0.375	*0.688	0.562	0.500	0.500
28 x 28 x 16	28.000	16.000	20.50	18.00	0.375	0.375	*0.688	0.500	0.500	0.500
28 x 28 x 14	28.000	14.000	20.50	18.00	0.375	0.375	*0.688	0.438	0.500	0.500
28 x 28 x 12	28.000	12.750	20.50	17.62	0.375	0.375	*0.688	0.406	0.500	0.500
30 x 30 x 26	30.000	28.000	22.00	21.50	0.375	0.375	*0.688	*0.688	0.500	0.500
30 x 30 x 24	30.000	26.000	22.00	21.50	0.375	0.375	*0.688	*0.688	0.500	0.500
30 x 30 x 22	30.000	24.000	22.00	21.00	0.375	0.375	*0.688	0.688	0.500	0.500
30 x 30 x 20	30.000	22.000	22.00	20.50	0.375	0.375	*0.688	*0.594	0.500	0.500
30 x 30 x 18	30.000	20.000	22.00	20.00	0.375	0.375	*0.688	*0.594	0.500	0.500
30 x 30 x 16	30.000	18.000	22.00	19.50	0.375	0.375	*0.688	0.562	0.500	0.500
30 x 30 x 14	30.000	16.000	22.00	19.00	0.375	0.375	*0.688	0.500	0.500	0.500
30 x 30 x 12	30.000	14.000	22.00	19.00	0.375	0.375	*0.688	0.438	0.500	0.500
30 x 30 x 10	30.000	12.750	22.00	18.62	0.375	0.375	*0.688	0.406	0.500	0.500
30 x 30 x 10	30.000	10.750	22.00	18.12	0.375	0.375	*0.688	0.365	0.500	0.500
32 x 32 x 30	32.000	30.000	23.50	23.00	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 32 x 28	32.000	28.000	23.50	22.50	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 32 x 26	32.000	26.000	23.50	22.50	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 32 x 24	32.000	24.000	23.50	22.00	0.375	0.375	0.688	0.688	0.500	0.500
32 x 32 x 22	32.000	22.000	23.50	21.50	0.375	0.375	0.688	*0.594	0.500	0.500
32 x 32 x 20	32.000	20.000	23.50	21.00	0.375	0.375	0.688	0.594	0.500	0.500
32 x 32 x 18	32.000	18.000	23.50	20.50	0.375	0.375	0.688	0.562	0.500	0.500
32 x 32 x 16	32.000	16.000	23.50	20.00	0.375	0.375	0.688	0.500	0.500	0.500
32 x 32 x 14	32.000	14.000	23.50	20.00	0.375	0.375	0.688	0.438	0.500	0.500

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.



Reducing (I) Reducing (II)

ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		STD		Sch 40		X-S	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂
34 x 34 x 32	34.000	32.000	25.00	24.50	0.375	0.375	0.688	0.688	0.500	0.500
34 x 34 x 30	34.000	30.000	25.00	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
34 x 34 x 28	34.000	28.000	25.00	23.50	0.375	0.375	0.688	*0.688	0.500	0.500
34 x 34 x 26	34.000	26.000	25.00	23.50	0.375	0.375	0.688	*0.688	0.500	0.500
34 x 34 x 24	34.000	24.000	25.00	23.00	0.375	0.375	0.688	0.688	0.500	0.500
34 x 34 x 22	34.000	22.000	25.00	22.50	0.375	0.375	0.688	*0.594	0.500	0.500
34 x 34 x 20	34.000	20.000	25.00	22.00	0.375	0.375	0.688	0.594	0.500	0.500
34 x 34 x 18	34.000	18.000	25.00	21.50	0.375	0.375	0.688	0.562	0.500	0.50
34 x 34 x 16	34.000	16.000	25.00	21.00	0.375	0.375	0.688	0.500	0.500	0.500
36 x 36 x 34	36.000	34.000	26.50	26.00	0.375	0.375	0.750	0.688	0.500	0.50
36 x 36 x 32	36.000	32.000	26.50	25.50	0.375	0.375	0.750	0.688	0.500	0.500
36 x 36 x 30	36.000	30.000	26.50	25.00	0.375	0.375	0.750	*0.688	0.500	0.500
36 x 36 x 28	36.000	28.000	26.50	24.50	0.375	0.375	0.750	*0.688	0.500	0.500
36 x 36 x 26	36.000	26.000	26.50	24.50	0.375	0.375	0.750	*0.688	0.500	0.500
36 x 36 x 24	36.000	24.000	26.50	24.00	0.375	0.375	0.750	0.688	0.500	0.500
36 x 36 x 22	36.000	22.000	26.50	23.50	0.375	0.375	0.750	*0.594	0.500	0.500
36 x 36 x 20	36.000	20.000	26.50	23.00	0.375	0.375	0.750	0.594	0.500	0.500
36 x 36 x 18	36.000	18.000	26.50	22.50	0.375	0.375	0.750	0.562	0.500	0.500
36 x 36 x 16	36.000	16.000	26.50	22.00	0.375	0.375	0.750	0.500	0.500	0.500
38 x 38 x 36	38.000	36.000	28.00	28.00	0.375	0.375	-	-	0.500	0.500
38 x 38 x 34	38.000	34.000	28.00	27.50	0.375	0.375	-	-	0.500	0.500
38 x 38 x 32	38.000	32.000	28.00	27.00	0.375	0.375	-	-	0.500	0.500
38 x 38 x 30	38.000	30.000	28.00	26.50	0.375	0.375	-	-	0.500	0.500
38 x 38 x 28	38.000	28.000	28.00	25.50	0.375	0.375	-	-	0.500	0.500
38 x 38 x 26	38.000	26.000	28.00	25.50	0.375	0.375	-	-	0.500	0.500
38 x 38 x 24	38.000	24.000	28.00	25.00	0.375	0.375	-	-	0.500	0.500
38 x 38 x 22	38.000	22.000	28.00	24.50	0.375	0.375	-	-	0.500	0.500
38 x 38 x 20	38.000	20.000	28.00	24.00	0.375	0.375	-	-	0.500	0.500
38 x 38 x 18	38.000	18.000	28.00	23.50	0.375	0.375	-	-	0.500	0.500

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.

WROUGHT STEEL BUTT-WELDING FITTINGS

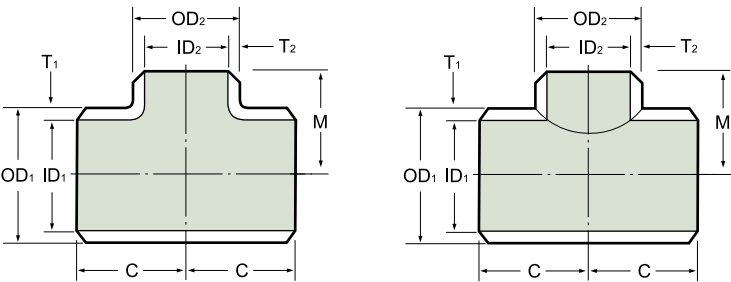
Reducing Tee

STD, X-S

ASME B16.9Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		Sch 80		Sch 80	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
40 X 40 X 38	40.000	38.000	29.50	29.50	0.375	0.375	0.500	0.500
40 X 40 X 36	40.000	36.000	29.50	29.00	0.375	0.375	0.500	0.500
40 X 40 X 34	40.000	34.000	29.50	28.50	0.375	0.375	0.500	0.500
40 X 40 X 32	40.000	32.000	29.50	28.00	0.375	0.375	0.500	0.500
40 X 40 X 30	40.000	30.000	29.50	27.50	0.375	0.375	0.500	0.500
40 X 40 X 28	40.000	28.000	29.50	26.50	0.375	0.375	0.500	0.500
40 X 40 X 26	40.000	26.000	29.50	26.50	0.375	0.375	0.500	0.500
40 X 40 X 24	40.000	24.000	29.50	26.00	0.375	0.375	0.500	0.500
40 X 40 X 22	40.000	22.000	29.50	25.50	0.375	0.375	0.500	0.500
40 X 40 X 20	40.000	20.000	29.50	25.00	0.375	0.375	0.500	0.500
40 X 40 X 18	40.000	18.000	29.50	24.50	0.375	0.375	0.500	0.500
42 X 42 X 40	42.000	40.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 38	42.000	38.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 36	42.000	36.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 34	42.000	34.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 32	42.000	32.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 30	42.000	30.000	30.00	28.00	0.375	0.375	0.500	0.500
42 X 42 X 28	42.000	28.000	30.00	27.50	0.375	0.375	0.500	0.500
42 X 42 X 26	42.000	26.000	30.00	27.50	0.375	0.375	0.500	0.500
42 X 42 X 24	42.000	24.000	30.00	26.00	0.375	0.375	0.500	0.500
42 X 42 X 22	42.000	22.000	30.00	26.00	0.375	0.375	0.500	0.500
42 X 42 X 20	42.000	20.000	30.00	26.00	0.375	0.375	0.500	0.500
42 X 42 X 18	42.000	18.000	30.00	25.50	0.375	0.375	0.500	0.500
42 X 42 X 16	42.000	16.000	30.00	25.00	0.375	0.375	0.500	0.500
44 X 44 X 42	44.000	42.000	32.00	28.00	0.375	0.375	0.500	0.500
44 X 44 X 40	44.000	40.000	32.00	29.50	0.375	0.375	0.500	0.500
44 X 44 X 38	44.000	38.000	32.00	29.00	0.375	0.375	0.500	0.500
44 X 44 X 36	44.000	36.000	32.00	28.50	0.375	0.375	0.500	0.500
44 X 44 X 34	44.000	34.000	32.00	28.50	0.375	0.375	0.500	0.500
44 X 44 X 32	44.000	32.000	32.00	28.00	0.375	0.375	0.500	0.500
44 X 44 X 30	44.000	30.000	32.00	28.00	0.375	0.375	0.500	0.500
44 X 44 X 28	44.000	28.000	32.00	27.50	0.375	0.375	0.500	0.500
44 X 44 X 26	44.000	26.000	32.00	27.50	0.375	0.375	0.500	0.500
44 X 44 X 24	44.000	24.000	32.00	27.50	0.375	0.375	0.500	0.500
44 X 44 X 22	44.000	22.000	32.00	27.00	0.375	0.375	0.500	0.500
44 X 44 X 20	44.000	20.000	32.00	27.00	0.375	0.375	0.500	0.500

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Reducing (I)Reducing (II)

ASME B16.9Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		STD		XS	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
46 X 46 X 44	46.000	44.000	33.50	31.50	0.375	0.375	0.500	0.500
46 X 46 X 42	46.000	42.000	33.50	31.00	0.375	0.375	0.500	0.500
46 X 46 X 40	46.000	40.000	33.50	30.50	0.375	0.375	0.500	0.500
46 X 46 X 38	46.000	38.000	33.50	30.00	0.375	0.375	0.500	0.500
46 X 46 X 36	46.000	36.000	33.50	30.00	0.375	0.375	0.500	0.500
46 X 46 X 34	46.000	34.000	33.50	29.50	0.375	0.375	0.500	0.500
46 X 46 X 32	46.000	32.000	33.50	29.50	0.375	0.375	0.500	0.500
46 X 46 X 30	46.000	30.000	33.50	29.00	0.375	0.375	0.500	0.500
46 X 46 X 28	46.000	28.000	33.50	29.00	0.375	0.375	0.500	0.500
46 X 46 X 26	46.000	26.000	33.50	29.00	0.375	0.375	0.500	0.500
46 X 46 X 24	46.000	24.000	33.50	28.50	0.375	0.375	0.500	0.500
46 X 46 X 22	46.000	22.000	33.50	28.50	0.375	0.375	0.500	0.500
48 X 48 X 46	48.000	46.000	35.00	33.00	0.375	0.375	0.500	0.500
48 X 48 X 44	48.000	44.000	35.00	33.00	0.375	0.375	0.500	0.500
48 X 48 X 42	48.000	42.000	35.00	32.00	0.375	0.375	0.500	0.500
48 X 48 X 40	48.000	40.000	35.00	32.00	0.375	0.375	0.500	0.500
48 X 48 X 38	48.000	38.000	35.00	32.00	0.375	0.375	0.500	0.500
48 X 48 X 36	48.000	36.000	35.00	31.00	0.375	0.375	0.500	0.500
48 X 48 X 34	48.000	34.000	35.00	31.00	0.375	0.375	0.500	0.500
48 X 48 X 32	48.000	32.000	35.00	31.00	0.375	0.375	0.500	0.500
48 X 48 X 30	48.000	30.000	35.00	30.00	0.375	0.375	0.500	0.500
48 X 48 X 28	48.000	28.000	35.00	30.00	0.375	0.375	0.500	0.500
48 X 48 X 26	48.000	26.000	35.00	30.00	0.375	0.375	0.500	0.500
48 X 48 X 24	48.000	24.000	35.00	29.00	0.375	0.375	0.500	0.500
48 X 48 X 22	48.000	22.000	35.00	29.00	0.375	0.375	0.500	0.500

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

WROUGHT STEEL BUTT-WELDING FITTINGS

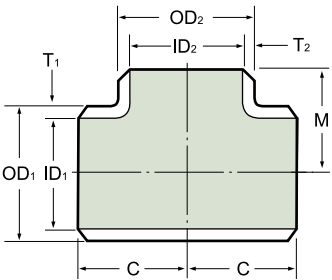
Reducing Tee

Sch20, Sch30, Sch60, Sch100,
Sch120, Sch140

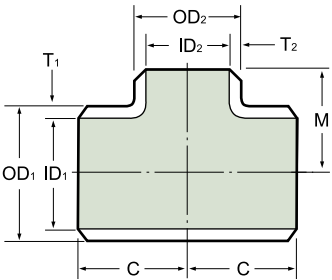
ASME B16.9

Nominal Pipe Size	Outside Diameter		Center to End		Sch 20		Sch 30	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
4 x 4 x 4	4.500	4.500	4.12	4.12	-	-	-	-
5 x 5 x 5	5.563	5.563	4.88	4.88	-	-	-	-
5 x 5 x 4	5.563	4.500	4.88	4.62	-	-	-	-
6 x 6 x 6	6.625	6.625	5.62	5.62	-	-	-	-
6 x 6 x 5	6.625	5.563	5.62	5.38	-	-	-	-
6 x 6 x 4	6.625	4.500	5.62	5.12	-	-	-	-
8 x 8 x 8	8.625	8.625	7.00	7.00	0.250	0.250	0.277	0.277
8 x 8 x 6	8.625	6.625	7.00	6.62	-	-	-	-
8 x 8 x 5	8.625	5.563	7.00	6.38	-	-	-	-
8 x 8 x 4	8.625	4.500	7.00	6.12	-	-	-	-
10 x 10 x 10	10.750	10.750	8.50	8.50	0.250	0.250	0.307	0.307
10 x 10 x 8	10.750	8.625	8.50	8.00	0.250	0.250	0.307	0.277
10 x 10 x 6	10.750	6.625	8.50	7.62	-	-	-	-
10 x 10 x 5	10.750	5.563	8.50	7.50	-	-	-	-
10 x 10 x 4	10.750	4.500	8.50	7.25	-	-	-	-
12 x 12 x 12	12.750	12.750	10.00	10.00	0.250	0.250	0.330	0.330
12 x 12 x 10	12.750	10.750	10.00	9.50	0.250	0.250	0.330	0.307
12 x 12 x 8	12.750	8.625	10.00	9.00	0.250	0.250	0.330	0.277
12 x 12 x 6	12.750	6.625	10.00	8.62	-	-	-	-
12 x 12 x 5	12.750	5.563	10.00	8.50	-	-	-	-
14 x 14 x 14	14.000	14.000	11.00	11.00	0.312	0.312	0.375	0.375
14 x 14 x 12	14.000	12.750	11.00	10.62	0.312	0.250	0.375	0.330
14 x 14 x 10	14.000	10.750	11.00	10.12	0.312	0.250	0.375	0.307
14 x 14 x 8	14.000	8.625	11.00	9.75	0.312	0.250	0.375	0.277
14 x 14 x 6	14.000	6.625	11.00	9.38	-	-	-	-
16 x 16 x 16	16.000	16.000	12.00	12.00	0.312	0.312	0.375	0.375
16 x 16 x 14	16.000	14.000	12.00	12.00	0.312	0.312	0.375	0.375
16 x 16 x 12	16.000	12.750	12.00	11.62	0.312	0.250	0.375	0.330
16 x 16 x 10	16.000	10.750	12.00	11.12	0.312	0.250	0.375	0.307
16 x 16 x 8	16.000	8.625	12.00	10.75	0.312	0.250	0.375	0.277
16 x 16 x 6	16.000	6.625	12.00	10.38	-	-	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Straight



Reducing

Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
-	-	-	-	0.438	0.438	-	-	4 x 4 x 4
-	-	-	-	0.500	0.500	-	-	5 x 5 x 5
-	-	-	-	0.500	0.438	-	-	5 x 5 x 4
-	-	-	-	0.562	0.562	-	-	6 x 6 x 6
-	-	-	-	0.562	0.500	-	-	6 x 6 x 5
-	-	-	-	0.562	0.438	-	-	6 x 6 x 4
0.406	0.406	0.594	0.594	0.719	0.719	0.812	0.812	8 x 8 x 8
-	-	-	-	0.719	0.562	-	-	8 x 8 x 6
-	-	-	-	0.719	0.500	-	-	8 x 8 x 5
-	-	-	-	0.719	0.438	-	-	8 x 8 x 4
0.500	0.500	0.719	0.719	0.844	0.844	1.000	1.000	10 x 10 x 10
0.500	0.406	0.719	0.594	0.844	0.719	1.000	0.812	10 x 10 x 8
-	-	-	-	0.844	0.562	-	-	10 x 10 x 6
-	-	-	-	0.844	0.500	-	-	10 x 10 x 5
-	-	-	-	0.844	0.438	-	-	10 x 10 x 4
0.562	0.562	0.844	0.844	1.000	1.000	1.125	1.125	12 x 12 x 1
0.562	0.500	0.844	0.719	1.000	0.844	1.125	1.000	12 x 12 x 10
0.562	0.406	0.844	0.594	1.000	0.719	1.125	0.812	12 x 12 x 8
-	-	-	-	1.000	0.562	-	-	12 x 12 x 6
-	-	-	-	1.000	0.500	-	-	12 x 12 x 5
0.594	0.594	0.938	0.936	1.094	1.094	1.250	1.250	14 x 14 x 14
0.594	0.562	0.938	0.844	1.094	1.000	1.250	1.125	14 x 14 x 12
0.594	0.500	0.938	0.719	1.094	0.844	1.250	1.000	14 x 14 x 10
0.594	0.406	0.938	0.594	1.094	0.719	1.250	0.812	14 x 14 x 8
-	-	-	-	1.094	0.562	-	-	14 x 14 x 6
0.656	0.656	1.031	1.031	1.219	1.219	1.438	1.438	16 x 16 x 16
0.656	0.594	1.031	0.938	1.219	1.094	1.438	1.250	16 x 16 x 14
0.656	0.562	1.031	0.844	1.219	1.000	1.438	1.125	16 x 16 x 12
0.656	0.500	1.031	0.719	1.219	0.844	1.438	1.000	16 x 16 x 10
0.656	0.406	1.031	0.594	1.219	0.719	1.438	0.812	16 x 16 x 8
-	-	-	-	1.219	0.562	-	-	16 x 16 x 6

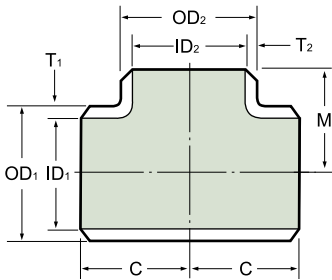
WROUGHT STEEL BUTT-WELDING FITTINGS

Tee
Sch20, Sch30, Sch60,
Sch100, Sch120, Sch140

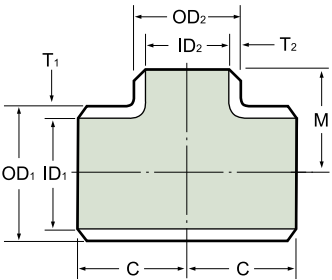
ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		Sch 20		Sch 30	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
18 x 18 x 18	18.000	18.000	13.50	13.50	0.312	0.312	0.438	0.438
18 x 18 x 16	18.000	16.000	13.50	13.00	0.312	0.312	0.438	0.375
18 x 18 x 14	18.000	14.000	13.50	13.00	0.312	0.312	0.438	0.375
18 x 18 x 12	18.000	12.750	13.50	12.62	0.312	0.250	0.438	0.330
18 x 18 x 10	18.000	10.750	13.50	12.12	0.312	0.250	0.438	0.307
18 x 18 x 8	18.000	8.625	13.50	11.75	0.312	0.250	0.438	0.277
20 x 20 x 20	20.000	20.000	15.00	15.00	0.375	0.375	0.500	0.500
20 x 20 x 18	20.000	18.000	15.00	14.50	0.375	0.312	0.500	0.438
20 x 20 x 16	20.000	16.000	15.00	14.00	0.375	0.312	0.500	0.375
20 x 20 x 14	20.000	14.000	15.00	14.00	0.375	0.312	0.500	0.375
20 x 20 x 12	20.000	12.750	15.00	13.62	0.375	0.250	0.500	0.330
20 x 20 x 10	20.000	10.750	15.00	13.12	0.375	0.250	0.500	0.307
20 x 20 x 8	20.000	8.625	15.00	12.75	0.375	0.250	0.500	0.277
22 x 22 x 22	22.000	22.000	16.50	16.50	0.375	0.375	0.500	0.500
22 x 22 x 20	22.000	20.000	16.50	16.00	0.375	0.375	0.500	0.500
22 x 22 x 18	22.000	18.000	16.50	15.50	0.375	0.312	0.500	0.438
22 x 22 x 16	22.000	16.000	16.50	15.00	0.375	0.312	0.500	0.375
22 x 22 x 14	22.000	14.000	16.50	15.00	0.375	0.312	0.500	0.375
22 x 22 x 12	22.000	12.750	16.50	14.62	0.375	0.250	0.500	0.330
22 x 22 x 10	22.000	10.750	16.50	14.12	0.375	0.250	0.500	0.307
24 x 24 x 24	24.000	24.000	17.00	17.00	0.375	0.375	0.562	0.562
24 x 24 x 22	24.000	22.000	17.00	17.00	0.375	0.375	0.562	0.500
24 x 24 x 20	24.000	20.000	17.00	17.00	0.375	0.375	0.562	0.500
24 x 24 x 18	24.000	18.000	17.00	16.50	0.375	0.312	0.562	0.438
24 x 24 x 16	24.000	16.000	17.00	16.00	0.375	0.312	0.562	0.375
24 x 24 x 14	24.000	14.000	17.00	16.00	0.375	0.312	0.562	0.375
24 x 24 x 12	24.000	12.750	17.00	15.62	0.375	0.250	0.562	0.330
24 x 24 x 10	24.000	10.750	17.00	15.12	0.375	0.250	0.562	0.307
26 x 26 x 26	26.000	26.000	19.50	19.50	0.500	0.500	-	-
26 x 26 x 24	26.000	24.000	19.50	19.00	0.500	0.375	-	-
26 x 26 x 22	26.000	22.000	19.50	18.50	0.500	0.375	-	-
26 x 26 x 20	26.000	20.000	19.50	18.00	0.500	0.375	-	-
26 x 26 x 18	26.000	18.000	19.50	17.50	0.500	0.312	-	-
26 x 26 x 16	26.000	16.000	19.50	17.00	0.500	0.312	-	-
26 x 26 x 14	26.000	14.000	19.50	17.00	0.500	0.312	-	-
26 x 26 x 12	26.000	12.750	19.50	16.62	0.500	0.250	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Straight



Reducing

ASME B16.9 Unit : inch

Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.750	0.750	1.156	1.156	1.375	1.375	1.562	1.562	18 x 18 x 18
0.750	0.656	1.156	1.031	1.375	1.219	1.562	1.438	18 x 18 x 16
0.750	0.594	1.156	0.938	1.375	1.094	1.562	1.250	18 x 18 x 14
0.750	0.562	1.156	0.844	1.375	1.000	1.562	1.125	18 x 18 x 12
0.750	0.500	1.156	0.719	1.375	0.844	1.562	1.000	18 x 18 x 10
0.750	0.406	1.156	0.594	1.375	0.719	1.562	0.812	18 x 18 x 8
0.812	0.812	1.281	1.281	1.500	1.500	1.750	1.750	20 x 20 x 20
0.812	0.750	1.281	1.156	1.500	1.375	1.750	1.562	20 x 20 x 18
0.812	0.656	1.281	1.031	1.500	1.219	1.750	1.438	20 x 20 x 16
0.812	0.594	1.281	0.938	1.500	1.094	1.750	1.250	20 x 20 x 14
0.812	0.562	1.281	0.844	1.500	1.000	1.750	1.125	20 x 20 x 12
0.812	0.500	1.281	0.719	1.500	0.844	1.750	1.000	20 x 20 x 10
0.812	0.406	1.281	0.594	1.500	0.719	1.750	0.812	20 x 20 x 8
0.875	0.875	1.375	1.375	1.625	1.625	1.875	1.875	22 x 22 x 22
0.875	0.812	1.375	1.281	1.625	1.500	1.875	1.750	22 x 22 x 20
0.875	0.750	1.375	1.156	1.625	1.375	1.875	1.562	22 x 22 x 18
0.875	0.656	1.375	1.031	1.625	1.219	1.875	1.438	22 x 22 x 16
0.875	0.594	1.375	0.938	1.625	1.094	1.875	1.250	22 x 22 x 14
0.875	0.562	1.375	0.844	1.625	1.000	1.875	1.125	22 x 22 x 12
0.875	0.500	1.375	0.719	1.625	0.844	1.875	1.000	22 x 22 x 10
0.969	0.969	1.531	1.531	1.812	1.812	2.062	2.062	24 x 24 x 24
0.969	0.875	1.531	1.375	1.812	1.625	2.062	1.875	24 x 24 x 22
0.969	0.812	1.531	1.281	1.812	1.500	2.062	1.750	24 x 24 x 20
0.969	0.750	1.531	1.156	1.812	1.375	2.062	1.562	24 x 24 x 18
0.969	0.656	1.531	1.031	1.812	1.219	2.062	1.438	24 x 24 x 16
0.969	0.594	1.531	0.938	1.812	1.094	2.062	1.250	24 x 24 x 14
0.969	0.562	1.531	0.844	1.812	1.000	2.062	1.125	24 x 24 x 12
0.969	0.500	1.531	0.719	1.812	0.844	2.062	1.000	24 x 24 x 10
-	-	-	-	-	-	-	-	26 x 26 x 26
-	-	-	-	-	-	-	-	26 x 26 x 24
-	-	-	-	-	-	-	-	26 x 26 x 22
-	-	-	-	-	-	-	-	26 x 26 x 20
-	-	-	-	-	-	-	-	26 x 26 x 18
-	-	-	-	-	-	-	-	26 x 26 x 16
-	-	-	-	-	-	-	-	26 x 26 x 14
-	-	-	-	-	-	-	-	26 x 26 x 12

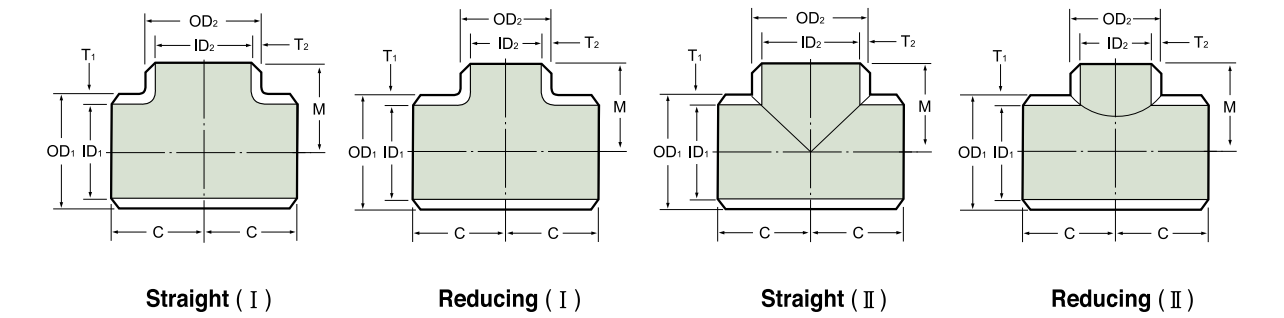
WROUGHT STEEL BUTT-WELDING FITTINGS

Tee Sch20, Sch30

ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		Sch 20		Sch 30	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
28 x 28 x 28	28.000	28.000	20.50	20.50	0.500	0.500	0.625	0.625
28 x 28 x 26	28.000	26.000	20.50	20.50	0.500	0.500	-	-
28 x 28 x 24	28.000	24.000	20.50	20.00	0.500	0.375	0.625	0.562
28 x 28 x 22	28.000	22.000	20.50	19.50	0.500	0.375	0.625	0.500
28 x 28 x 20	28.000	20.000	20.50	19.00	0.500	0.375	0.625	0.500
28 x 28 x 18	28.000	18.000	20.50	18.50	0.500	0.312	0.625	0.438
28 x 28 x 16	28.000	16.000	20.50	18.00	0.500	0.312	0.625	0.375
28 x 28 x 14	28.000	14.000	20.50	18.00	0.500	0.312	0.625	0.375
28 x 28 x 12	28.000	12.750	20.50	17.62	0.500	0.250	0.625	0.330
30 x 30 x 30	30.000	30.000	22.00	22.00	0.500	0.500	0.625	0.625
30 x 30 x 28	30.000	28.000	22.00	21.50	0.500	0.500	0.625	0.625
30 x 30 x 26	30.000	26.000	22.00	21.50	0.500	0.500	-	-
30 x 30 x 24	30.000	24.000	22.00	21.00	0.500	0.375	0.625	0.562
30 x 30 x 22	30.000	22.000	22.00	20.50	0.500	0.375	0.625	0.500
30 x 30 x 20	30.000	20.000	22.00	20.00	0.500	0.375	0.625	0.500
30 x 30 x 18	30.000	18.000	22.00	19.50	0.500	0.312	0.625	0.438
30 x 30 x 16	30.000	16.000	22.00	19.00	0.500	0.312	0.625	0.375
30 x 30 x 14	30.000	14.000	22.00	19.00	0.500	0.312	0.625	0.375
30 x 30 x 12	30.000	12.750	22.00	18.62	0.500	0.250	0.625	0.330
30 x 30 x 10	30.000	10.750	22.00	18.12	0.500	0.250	0.625	0.307
32 x 32 x 32	32.000	32.000	23.50	23.50	0.500	0.500	0.625	0.625
32 x 32 x 30	32.000	30.000	23.50	23.00	0.500	0.500	0.625	0.625
32 x 32 x 28	32.000	28.000	23.50	22.50	0.500	0.500	0.625	0.625
32 x 32 x 26	32.000	26.000	23.50	22.50	0.500	0.500	-	-
32 x 32 x 24	32.000	24.000	23.50	22.00	0.500	0.375	0.625	0.562
32 x 32 x 22	32.000	22.000	23.50	21.50	0.500	0.375	0.625	0.500
32 x 32 x 20	32.000	20.000	23.50	21.00	0.500	0.375	0.625	0.500
32 x 32 x 18	32.000	18.000	23.50	20.50	0.500	0.312	0.625	0.438
32 x 32 x 16	32.000	16.000	23.50	20.00	0.500	0.312	0.625	0.375
32 x 32 x 14	32.000	14.000	23.50	20.00	0.500	0.312	0.625	0.375

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		Center to End		Sch 20		Sch 30	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂
34 x 34 x 34	34.000	34.000	25.00	25.00	0.500	0.500	0.625	0.625
34 x 34 x 32	34.000	32.000	25.00	24.50	0.500	0.500	0.625	0.625
34 x 34 x 30	34.000	30.000	25.00	24.00	0.500	0.500	0.625	0.625
34 x 34 x 28	34.000	28.000	25.00	23.50	0.500	0.500	0.625	0.625
34 x 34 x 26	34.000	26.000	25.00	23.50	0.500	0.500	-	-
34 x 34 x 24	34.000	24.000	25.00	23.00	0.500	0.375	0.625	0.562
34 x 34 x 22	34.000	22.000	25.00	22.50	0.500	0.375	0.625	0.500
34 x 34 x 20	34.000	20.000	25.00	22.00	0.500	0.375	0.625	0.500
34 x 34 x 18	34.000	18.000	25.00	21.50	0.500	0.312	0.625	0.438
34 x 34 x 16	34.000	16.000	25.00	21.50	0.500	0.312	0.625	0.375
36 x 36 x 36	36.000	36.000	26.50	26.50	0.500	0.500	0.625	0.625
36 x 36 x 34	36.000	34.000	26.50	26.00	0.500	0.500	0.625	0.625
36 x 36 x 32	36.000	32.000	26.50	25.50	0.500	0.500	0.625	0.625
36 x 36 x 30	36.000	30.000	26.50	25.00	0.500	0.500	0.625	0.625
36 x 36 x 28	36.000	28.000	26.50	24.50	0.500	0.500	0.625	0.625
36 x 36 x 26	36.000	26.000	26.50	24.50	0.500	0.500	-	-
36 x 36 x 24	36.000	24.000	26.50	24.00	0.500	0.375	0.625	0.562
36 x 36 x 22	36.000	22.000	26.50	23.50	0.500	0.375	0.625	0.500
36 x 36 x 20	36.000	20.000	26.50	23.00	0.500	0.375	0.625	0.500
36 x 36 x 18	36.000	18.000	26.50	22.50	0.500	0.312	0.625	0.438
36 x 36 x 16	36.000	16.000	26.50	22.00	0.500	0.312	0.625	0.375

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

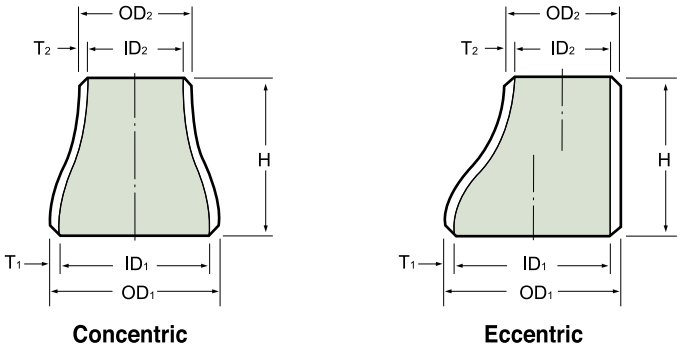
WROUGHT STEEL BUTT-WELDING FITTINGS

Reducer STD, Sch40, X-S, Sch80, Sch160, XX-S

ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	STD		Sch 40	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
3/4 x 1/2	1.050	0.840	1.50	0.113	0.109	0.113	0.109
3/4 x 3/8	1.050	0.675	1.50	0.113	0.091	0.113	0.091
1 x 3/4	1.315	1.050	2.00	0.133	0.113	0.133	0.113
1 x 1/2	1.315	0.840	2.00	0.133	0.109	0.133	0.109
1 1/4 x 1	1.660	1.315	2.00	0.140	0.133	0.140	0.133
1 1/4 x 3/4	1.660	1.050	2.00	0.140	0.113	0.140	0.113
1 1/4 x 1/2	1.660	0.840	2.00	0.140	0.109	0.140	0.109
1 1/2 x 1 1/4	1.900	1.660	2.50	0.145	0.140	0.145	0.140
1 1/2 x 1	1.900	1.315	2.50	0.145	0.133	0.145	0.133
1 1/2 x 3/4	1.900	1.050	2.50	0.145	0.113	0.145	0.113
1 1/2 x 1/2	1.900	0.840	2.50	0.145	0.109	0.145	0.109
2 x 1 1/2	2.375	1.900	3.00	0.154	0.145	0.154	0.145
2 x 1 1/4	2.375	1.660	3.00	0.154	0.140	0.154	0.140
2 x 1	2.375	1.315	3.00	0.154	0.133	0.154	0.133
2 x 3/4	2.375	1.050	3.00	0.154	0.113	0.154	0.113
2 1/2 x 2	2.875	2.375	3.50	0.203	0.154	0.203	0.154
2 1/2 x 1 1/2	2.875	1.900	3.50	0.203	0.145	0.203	0.145
2 1/2 x 1 1/4	2.875	1.660	3.50	0.203	0.140	0.203	0.140
2 1/2 x 1	2.875	1.315	3.50	0.203	0.133	0.203	0.133
3 x 2 1/2	3.500	2.875	3.50	0.216	0.203	0.216	0.203
3 x 2	3.500	2.375	3.50	0.216	0.154	0.216	0.154
3 x 1 1/2	3.500	1.900	3.50	0.216	0.145	0.216	0.145
3 x 1 1/4	3.500	1.660	3.50	0.216	0.140	0.216	0.140
3 1/2 x 3	4.000	3.500	4.00	0.226	0.216	0.226	0.216
3 1/2 x 2 1/2	4.000	2.875	4.00	0.226	0.203	0.226	0.203
3 1/2 x 2	4.000	2.375	4.00	0.226	0.154	0.226	0.154
3 1/2 x 1 1/2	4.000	1.900	4.00	0.226	0.145	0.226	0.145
3 1/2 x 1 1/4	4.000	1.660	4.00	0.226	0.140	0.226	0.140
4 x 3 1/2	4.500	4.000	4.00	0.237	0.226	0.237	0.226
4 x 3	4.500	3.500	4.00	0.237	0.216	0.237	0.216
4 x 2 1/2	4.500	2.875	4.00	0.237	0.203	0.237	0.203
4 x 2	4.500	2.375	4.00	0.237	0.154	0.237	0.154
4 x 1 1/2	4.500	1.900	4.00	0.237	0.145	0.237	0.145

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.154	0.147	0.154	0.147	0.219	0.188	0.308	0.294	3/4 x 1/2
0.154	0.126	0.154	0.126	0.219	-	-	-	3/4 x 3/8
0.179	0.154	0.179	0.154	0.250	0.219	0.358	0.308	1 x 3/4
0.179	0.147	0.179	0.147	0.250	0.188	0.358	0.294	1 x 1/2
0.191	0.179	0.191	0.179	0.250	0.250	0.382	0.358	1 1/4 x 1
0.191	0.154	0.191	0.154	0.250	0.219	0.382	0.308	1 1/4 x 3/4
0.191	0.147	0.191	0.147	0.250	0.188	0.382	0.294	1 1/4 x 1/2
0.200	0.191	0.200	0.191	0.281	0.250	0.400	0.382	1 1/2 x 1 1/4
0.200	0.179	0.200	0.179	0.281	0.250	0.400	0.358	1 1/2 x 1
0.200	0.154	0.200	0.154	0.281	0.219	0.400	0.308	1 1/2 x 3/4
0.200	0.147	0.200	0.147	0.281	0.188	0.400	0.294	1 1/2 x 1/2
0.218	0.200	0.218	0.200	0.344	0.281	0.436	0.400	2 x 1 1/2
0.218	0.191	0.218	0.191	0.344	0.250	0.436	0.382	2 x 1 1/4
0.218	0.179	0.218	0.179	0.344	0.250	0.436	0.358	2 x 1
0.218	0.154	0.218	0.154	0.344	0.219	0.436	0.308	2 x 3/4
0.276	0.218	0.276	0.218	0.375	0.344	0.552	0.436	2 1/2 x 2
0.276	0.200	0.276	0.200	0.375	0.281	0.552	0.400	2 1/2 x 1 1/2
0.276	0.191	0.276	0.191	0.375	0.250	0.552	0.382	2 1/2 x 1 1/4
0.276	0.179	0.276	0.179	0.375	0.250	0.552	0.358	2 1/2 x 1
0.300	0.276	0.300	0.276	0.438	0.375	0.600	0.552	3 x 2 1/2
0.300	0.218	0.300	0.218	0.438	0.344	0.600	0.436	3 x 2
0.300	0.200	0.300	0.200	0.438	0.281	0.600	0.400	3 x 1 1/2
0.300	0.191	0.300	0.191	0.438	0.250	0.600	0.382	3 x 1 1/4
0.318	0.300	0.318	0.300	-	-	-	-	3 1/2 x 3
0.318	0.276	0.318	0.276	-	-	-	-	3 1/2 x 2 1/2
0.318	0.218	0.318	0.218	-	-	-	-	3 1/2 x 2
0.318	0.200	0.318	0.200	-	-	-	-	3 1/2 x 1 1/2
0.318	0.191	0.318	0.191	-	-	-	-	3 1/2 x 1 1/4
0.337	0.318	0.337	0.318	-	-	-	-	4 x 3 1/2
0.337	0.300	0.337	0.300	0.531	0.438	0.674	0.600	4 x 3
0.337	0.276	0.337	0.276	0.531	0.375	0.674	0.552	4 x 2 1/2
0.337	0.218	0.337	0.218	0.531	0.344	0.674	0.436	4 x 2
0.337	0.200	0.337	0.200	0.531	0.281	0.674	0.400	4 x 1 1/2

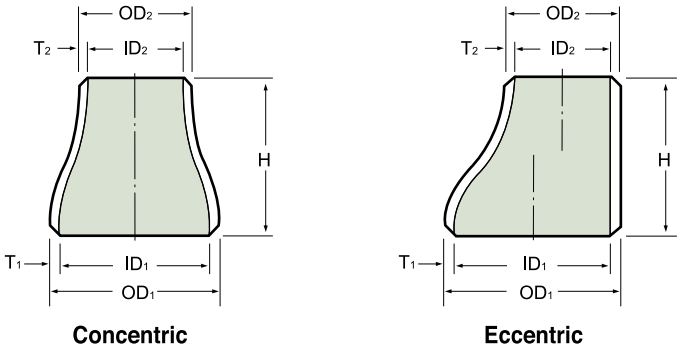
WROUGHT STEEL BUTT-WELDING FITTINGS

Reducer STD, Sch40, X-S, Sch80, Sch160, XX-S

ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	STD		Sch 40	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
5 x 4	5.563	4.500	5.00	0.258	0.237	0.258	0.237
5 x 3 1/2	5.563	4.000	5.00	0.258	0.226	0.258	0.226
5 x 3	5.563	3.500	5.00	0.258	0.216	0.258	0.216
5 x 2 1/2	5.563	2.875	5.00	0.258	0.203	0.258	0.203
5 x 2	5.563	2.375	5.00	0.258	0.154	0.258	0.154
6 x 5	6.625	5.563	5.50	0.280	0.258	0.280	0.258
6 x 4	6.625	4.500	5.50	0.280	0.237	0.280	0.237
6 x 3 1/2	6.625	4.000	5.50	0.280	0.226	0.280	0.226
6 x 3	6.625	3.500	5.50	0.280	0.216	0.280	0.216
6 x 2 1/2	6.625	2.875	5.50	0.280	0.203	0.280	0.203
8 x 6	8.625	6.625	6.00	0.322	0.280	0.322	0.280
8 x 5	8.625	5.563	6.00	0.322	0.258	0.322	0.258
8 x 4	8.625	4.500	6.00	0.322	0.237	0.322	0.237
8 x 3 1/2	8.625	4.000	6.00	0.322	0.226	0.322	0.226
10 x 8	10.750	8.625	7.00	0.365	0.322	0.365	0.322
10 x 6	10.750	6.625	7.00	0.365	0.280	0.365	0.280
10 x 5	10.750	5.563	7.00	0.365	0.258	0.365	0.258
10 x 4	10.750	4.500	7.00	0.365	0.237	0.365	0.237
12 x 10	12.750	10.750	8.00	0.375	0.365	0.406	0.365
12 x 8	12.750	8.625	8.00	0.375	0.322	0.406	0.322
12 x 6	12.750	6.625	8.00	0.375	0.280	0.406	0.280
12 x 5	12.750	5.563	8.00	0.375	0.258	0.406	0.258
14 x 12	14.000	12.750	13.00	0.375	0.375	0.438	0.406
14 x 10	14.000	10.750	13.00	0.375	0.365	0.438	0.365
14 x 8	14.000	8.625	13.00	0.375	0.322	0.438	0.322
14 x 6	14.000	6.625	13.00	0.375	0.280	0.438	0.280

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.375	0.337	0.375	0.337	0.625	0.531	0.750	0.674	5 x 4
0.375	0.318	0.375	0.318	-	-	-	-	5 x 3 1/2
0.375	0.300	0.375	0.300	0.625	0.438	0.750	0.600	5 x 3
0.375	0.276	0.375	0.276	0.625	0.375	0.750	0.552	5 x 2 1/2
0.375	0.218	0.375	0.218	0.625	0.344	0.750	0.436	5 x 2
0.432	0.375	0.432	0.375	0.719	0.625	0.864	0.750	6 x 5
0.432	0.337	0.432	0.337	0.719	0.531	0.864	0.674	6 x 4
0.432	0.318	0.432	0.318	-	-	-	-	6 x 3 1/2
0.432	0.300	0.432	0.300	0.719	0.438	0.864	0.600	6 x 3
0.432	0.276	0.432	0.276	0.719	0.375	0.864	0.552	6 x 2 1/2
0.500	0.432	0.500	0.432	0.906	0.719	0.875	0.864	8 x 6
0.500	0.375	0.500	0.375	0.906	0.625	0.875	0.750	8 x 5
0.500	0.337	0.500	0.337	0.906	0.531	0.875	0.674	8 x 4
0.500	0.318	0.500	0.318	-	-	-	-	8 x 3 1/2
0.500	0.500	0.594	0.500	1.125	0.906	1.000	0.875	10 x 8
0.500	0.432	0.594	0.432	1.125	0.719	1.000	0.864	10 x 6
0.500	0.375	0.594	0.375	1.125	0.625	1.000	0.750	10 x 5
0.500	0.337	0.594	0.337	1.125	0.531	1.000	0.674	10 x 4
0.500	0.500	0.688	0.594	1.312	1.125	1.000	1.000	12 x 10
0.500	0.500	0.688	0.500	1.312	0.906	1.000	0.875	12 x 8
0.500	0.432	0.688	0.432	1.312	0.719	1.000	0.864	12 x 6
0.500	0.375	0.688	0.375	1.312	0.625	1.000	0.750	12 x 5
0.500	0.500	0.750	0.688	1.406	1.312	-	-	14 x 12
0.500	0.500	0.750	0.594	1.406	1.125	-	-	14 x 10
0.500	0.500	0.750	0.500	1.406	0.906	-	-	14 x 8
0.500	0.432	0.750	0.432	1.406	0.719	-	-	14 x 6

WROUGHT STEEL BUTT-WELDING FITTINGS

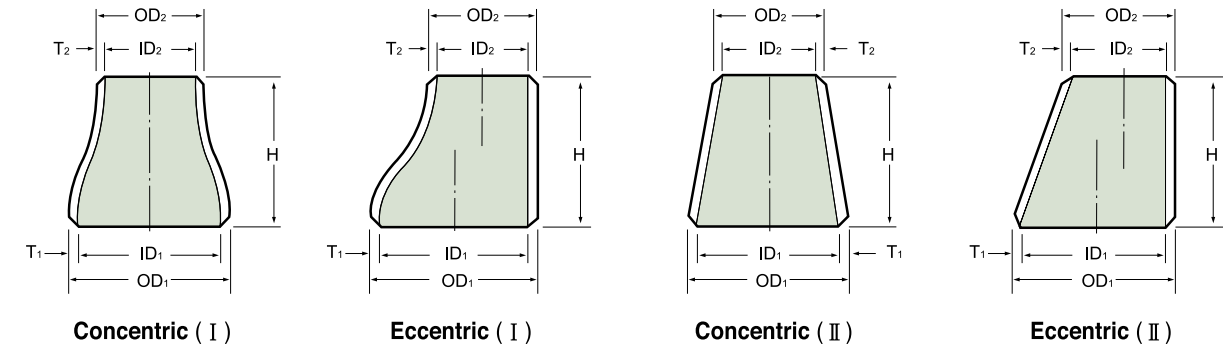
Reducer

STD, Sch40, X-S, Sch80, Sch160

ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	STD		Sch 40	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
16 x 14	16.000	14.000	14.00	0.375	0.375	0.500	0.438
16 x 12	16.000	12.750	14.00	0.375	0.375	0.500	0.406
16 x 10	16.000	10.750	14.00	0.375	0.365	0.500	0.365
16 x 8	16.000	8.625	14.00	0.375	0.322	0.500	0.322
18 x 16	18.000	16.000	15.00	0.375	0.375	0.562	0.500
18 x 14	18.000	14.000	15.00	0.375	0.375	0.562	0.438
18 x 12	18.000	12.750	15.00	0.375	0.375	0.562	0.406
18 x 10	18.000	10.750	15.00	0.375	0.365	0.562	0.365
20 x 18	20.000	18.000	20.00	0.375	0.375	0.594	0.562
20 x 16	20.000	16.000	20.00	0.375	0.375	0.594	0.500
20 x 14	20.000	14.000	20.00	0.375	0.375	0.594	0.438
20 x 12	20.000	12.750	20.00	0.375	0.375	0.594	0.406
22 x 20	22.000	20.000	20.00	0.375	0.375	*0.594	0.594
22 x 18	22.000	18.000	20.00	0.375	0.375	*0.594	0.562
22 x 16	22.000	16.000	20.00	0.375	0.375	*0.594	0.500
22 x 14	22.000	14.000	20.00	0.375	0.375	*0.594	0.438
24 x 22	24.000	22.000	20.00	0.375	0.375	0.688	*0.594
24 x 20	24.000	20.000	20.00	0.375	0.375	0.688	0.594
24 x 18	24.000	18.000	20.00	0.375	0.375	0.688	0.562
24 x 16	24.000	16.000	20.00	0.375	0.375	0.688	0.500
26 x 24	26.000	24.000	24.00	0.375	0.375	*0.688	0.688
26 x 22	26.000	22.000	24.00	0.375	0.375	*0.688	*0.594
26 x 20	26.000	20.000	24.00	0.375	0.375	*0.688	0.594
26 x 18	26.000	18.000	24.00	0.375	0.375	*0.688	0.562
28 x 26	28.000	26.000	24.00	0.375	0.375	*0.688	*0.688
28 x 24	28.000	24.000	24.00	0.375	0.375	*0.688	0.688
28 x 20	28.000	20.000	24.00	0.375	0.375	*0.688	0.594
28 x 18	28.000	18.000	24.00	0.375	0.375	*0.688	0.562

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.



Unit : inch

X-S		Sch 80		Sch 160		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.500	0.500	0.844	0.750	1.594	1.406	16 x 14
0.500	0.500	0.844	0.688	1.594	1.312	16 x 12
0.500	0.500	0.844	0.594	1.594	1.125	16 x 10
0.500	0.500	0.844	0.500	1.594	0.906	16 x 8
0.500	0.500	0.938	0.844	1.781	1.594	18 x 16
0.500	0.500	0.938	0.750	1.781	1.406	18 x 14
0.500	0.500	0.938	0.688	1.781	1.312	18 x 12
0.500	0.500	0.938	0.594	1.781	1.125	18 x 10
0.500	0.500	1.031	0.938	1.969	1.781	20 x 18
0.500	0.500	1.031	0.844	1.969	1.594	20 x 16
0.500	0.500	1.031	0.750	1.969	1.406	20 x 14
0.500	0.500	1.031	0.688	1.969	1.312	20 x 12
0.500	0.500	1.125	1.031	2.125	1.969	22 x 20
0.500	0.500	1.125	0.938	2.125	1.781	22 x 18
0.500	0.500	1.125	0.844	2.125	1.594	22 x 16
0.500	0.500	1.125	0.750	2.125	1.406	22 x 14
0.500	0.500	1.219	1.125	2.344	2.125	24 x 22
0.500	0.500	1.219	1.031	2.344	1.969	24 x 20
0.500	0.500	1.219	0.938	2.344	1.781	24 x 18
0.500	0.500	1.219	0.844	2.344	1.594	24 x 16
0.500	0.500	-	-	-	-	26 x 24
0.500	0.500	-	-	-	-	26 x 22
0.500	0.500	-	-	-	-	26 x 20
0.500	0.500	-	-	-	-	26 x 18
0.500	0.500	-	-	-	-	28 x 26
0.500	0.500	-	-	-	-	28 x 24
0.500	0.500	-	-	-	-	28 x 20
0.500	0.500	-	-	-	-	28 x 18

WROUGHT STEEL BUTT-WELDING FITTINGS

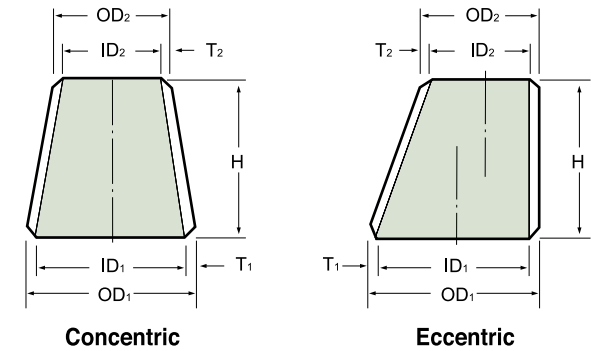
Reducer

STD, Sch40, X-S

ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		End to End	STD		Sch 40		X-S	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂
30 x 28	30.000	28.000	24.00	0.375	0.375	*0.688	*0.688	0.500	0.500
30 x 26	30.000	26.000	24.00	0.375	0.375	*0.688	*0.688	0.500	0.500
30 x 24	30.000	24.000	24.00	0.375	0.375	*0.688	0.688	0.500	0.500
30 x 20	30.000	20.000	24.00	0.375	0.375	*0.688	0.594	0.500	0.500
32 x 30	32.000	30.000	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 28	32.000	28.000	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 26	32.000	26.000	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
32 x 24	32.000	24.000	24.00	0.375	0.375	0.688	0.688	0.500	0.500
34 x 32	34.000	32.000	24.00	0.375	0.375	0.688	0.688	0.500	0.500
34 x 30	34.000	30.000	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
34 x 26	34.000	26.000	24.00	0.375	0.375	0.688	*0.688	0.500	0.500
34 x 24	34.000	24.000	24.00	0.375	0.375	0.688	0.688	0.500	0.500
36 x 34	36.000	34.000	24.00	0.375	0.375	0.750	0.688	0.500	0.500
36 x 32	36.000	32.000	24.00	0.375	0.375	0.750	0.688	0.500	0.500
36 x 30	36.000	30.000	24.00	0.375	0.375	0.750	*0.688	0.500	0.500
36 x 26	36.000	26.000	24.00	0.375	0.375	0.750	*0.688	0.500	0.500
36 x 24	36.000	24.000	24.00	0.375	0.375	0.750	0.688	0.500	0.500
38 x 36	38.000	36.000	24.00	0.375	0.375	-	-	0.500	0.500
38 x 34	38.000	34.000	24.00	0.375	0.375	-	-	0.500	0.500
38 x 32	38.000	32.000	24.00	0.375	0.375	-	-	0.500	0.500
38 x 30	38.000	30.000	24.00	0.375	0.375	-	-	0.500	0.500
38 x 28	38.000	28.000	24.00	0.375	0.375	-	-	0.500	0.500
38 x 26	38.000	26.000	24.00	0.375	0.375	-	-	0.500	0.500
40 x 38	40.000	38.000	24.00	0.375	0.375	-	-	0.500	0.500
40 x 36	40.000	36.000	24.00	0.375	0.375	-	-	0.500	0.500
40 x 34	40.000	34.000	24.00	0.375	0.375	-	-	0.500	0.500
40 x 32	40.000	32.000	24.00	0.375	0.375	-	-	0.500	0.500
40 x 30	40.000	30.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 40	42.000	40.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 38	42.000	38.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 36	42.000	36.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 34	42.000	34.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 32	42.000	32.000	24.00	0.375	0.375	-	-	0.500	0.500
42 x 30	42.000	30.000	24.00	0.375	0.375	-	-	0.500	0.500

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.



ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter		End to End	STD		X-S	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
44 x 42	44.000	42.000	24.00	0.375	0.375	0.500	0.500
44 x 40	44.000	40.000	24.00	0.375	0.375	0.500	0.500
44 x 38	44.000	38.000	24.00	0.375	0.375	0.500	0.500
44 x 36	44.000	36.000	24.00	0.375	0.375	0.500	0.50
46 x 44	46.000	44.000	28.00	0.375	0.375	0.500	0.50
46 x 42	46.000	42.000	28.00	0.375	0.375	0.500	0.500
46 x 40	46.000	40.000	28.00	0.375	0.375	0.500	0.50
46 x 38	46.000	38.000	28.00	0.375	0.375	0.500	0.500
48 x 46	48.000	46.000	28.00	0.375	0.375	0.500	0.500
48 x 44	48.000	44.000	28.00	0.375	0.375	0.500	0.500
48 x 42	48.000	42.000	28.00	0.375	0.375	0.500	0.500
48 x 40	48.000	40.000	28.00	0.375	0.375	0.500	0.500
*50 x 48	50.000	48.000	30.00	-	-	-	-
*50 x 46	50.000	46.000	30.00	-	-	-	-
*50 x 44	50.000	44.000	30.00	-	-	-	-
*50 x 42	50.000	42.000	30.00	-	-	-	-
*52 x 50	52.000	50.000	30.00	-	-	-	-
*52 x 48	52.000	48.000	30.00	-	-	-	-
*52 x 46	52.000	46.000	30.00	-	-	-	-
*52 x 44	52.000	44.000	30.00	-	-	-	-
*54 x 52	54.000	52.000	30.00	-	-	-	-
*54 x 50	54.000	50.000	30.00	-	-	-	-
*54 x 48	54.000	48.000	30.00	-	-	-	-
*54 x 46	54.000	46.000	30.00	-	-	-	-
*56 x 54	56.000	54.000	30.00	-	-	-	-
*56 x 52	56.000	52.000	30.00	-	-	-	-
*56 x 50	56.000	50.000	30.00	-	-	-	-
*56 x 48	56.000	48.000	30.00	-	-	-	-
*58 x 56	58.000	56.000	30.00	-	-	-	-
*58 x 54	58.000	54.000	30.00	-	-	-	-
*58 x 52	58.000	52.000	30.00	-	-	-	-
*58 x 50	58.000	50.000	30.00	-	-	-	-
*60 x 58	60.000	58.000	30.00	-	-	-	-
*60 x 56	60.000	56.000	30.00	-	-	-	-
*60 x 54	60.000	54.000	30.00	-	-	-	-
*60 x 52	60.000	52.000	30.00	-	-	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54
- Asterisks(*) denote Samsung Fitting Standard.

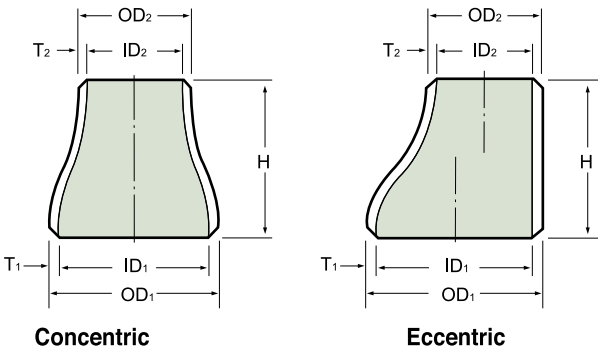
WROUGHT STEEL BUTT-WELDING FITTINGS

Reducer	Sch20, Sch30, Sch60, Sch100, Sch120, Sch140
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ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	Sch 20		Sch 30	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
5 x 4	5.563	4.500	5.00	-	-	-	-
6 x 5	6.625	5.563	5.50	-	-	-	-
6 x 4	6.625	4.500	5.50	-	-	-	-
8 x 6	8.625	6.625	6.00	-	-	-	-
8 x 5	8.625	5.563	6.00	-	-	-	-
8 x 4	8.625	4.500	6.00	-	-	-	-
10 x 8	10.750	8.625	7.00	0.250	0.250	0.307	0.277
10 x 6	10.750	6.625	7.00	-	-	-	-
10 x 5	10.750	5.563	7.00	-	-	-	-
10 x 4	10.750	4.500	7.00	-	-	-	-
12 x 10	12.750	10.750	8.00	0.250	0.250	0.330	0.307
12 x 8	12.750	8.625	8.00	0.250	0.250	0.330	0.277
12 x 6	12.750	6.625	8.00	-	-	-	-
12 x 5	12.750	5.563	8.00	-	-	-	-
14 x 12	14.000	12.750	13.00	0.312	0.250	0.375	0.330
14 x 10	14.000	10.750	13.00	0.312	0.250	0.375	0.307
14 x 8	14.000	8.625	13.00	0.312	0.250	0.375	0.277
14 x 6	14.000	6.625	13.00	-	-	-	-
16 x 14	16.000	14.000	14.00	0.312	0.312	0.375	0.375
16 x 12	16.000	12.750	14.00	0.312	0.250	0.375	0.330
16 x 10	16.000	10.750	14.00	0.312	0.250	0.375	0.307
16 x 8	16.000	8.625	14.00	0.312	0.250	0.375	0.277
18 x 16	18.000	16.000	15.00	0.312	0.312	0.438	0.375
18 x 14	18.000	14.000	15.00	0.312	0.312	0.438	0.375
18 x 12	18.000	12.750	15.00	0.312	0.250	0.438	0.330
18 x 10	18.000	10.750	15.00	0.312	0.250	0.438	0.307
20 x 18	20.000	18.000	20.00	0.375	0.312	0.500	0.438
20 x 16	20.000	16.000	20.00	0.375	0.312	0.500	0.375
20 x 14	20.000	14.000	20.00	0.375	0.312	0.500	0.375
20 x 12	20.000	12.000	20.00	0.375	0.250	0.500	0.330

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Unit : inch

Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
-	-	-	-	0.500	0.438	-	-	5 x 4
-	-	-	-	0.562	0.500	-	-	6 x 5
-	-	-	-	0.562	0.438	-	-	6 x 4
-	-	-	-	0.719	0.562	-	-	8 x 6
-	-	-	-	0.719	0.500	-	-	8 x 5
-	-	-	-	0.719	0.438	-	-	8 x 4
0.500	0.406	0.719	0.594	0.844	0.719	1.000	0.812	10 x 8
-	-	-	-	0.844	0.562	-	-	10 x 6
-	-	-	-	0.844	0.500	-	-	10 x 5
-	-	-	-	0.844	0.438	-	-	10 x 4
0.562	0.500	0.844	0.719	1.000	0.844	1.125	1.000	12 x 10
0.562	0.406	0.844	0.594	1.000	0.719	1.125	0.812	12 x 8
-	-	-	-	1.000	0.562	-	-	12 x 6
-	-	-	-	1.000	0.500	-	-	12 x 5
0.594	0.562	0.938	0.844	1.094	1.000	1.250	1.125	14 x 12
0.594	0.500	0.938	0.719	1.094	0.844	1.250	1.000	14 x 10
0.594	0.406	0.938	0.594	1.094	0.719	1.250	0.812	14 x 8
-	-	-	-	1.094	0.562	-	-	14 x 6
0.656	0.594	1.031	0.938	1.219	1.094	1.438	1.250	16 x 14
0.656	0.562	1.031	0.844	1.219	1.000	1.438	1.125	16 x 12
0.656	0.500	1.031	0.719	1.219	0.844	1.438	1.000	16 x 10
0.656	0.406	1.031	0.594	1.219	0.719	1.438	0.812	16 x 8
0.750	0.656	1.156	1.031	1.375	1.219	1.562	1.438	18 x 16
0.750	0.594	1.156	0.938	1.375	1.094	1.562	1.250	18 x 14
0.750	0.562	1.156	0.844	1.375	1.000	1.562	1.125	18 x 12
0.750	0.500	1.156	0.719	1.375	0.844	1.562	1.000	18 x 10
0.812	0.750	1.281	1.156	1.500	1.375	1.750	1.562	20 x 18
0.812	0.656	1.281	1.031	1.500	1.219	1.750	1.438	20 x 16
0.812	0.594	1.281	0.938	1.500	1.094	1.750	1.250	20 x 14
0.812	0.562	1.281	0.844	1.500	1.000	1.750	1.125	20 x 12

WROUGHT STEEL BUTT-WELDING FITTINGS

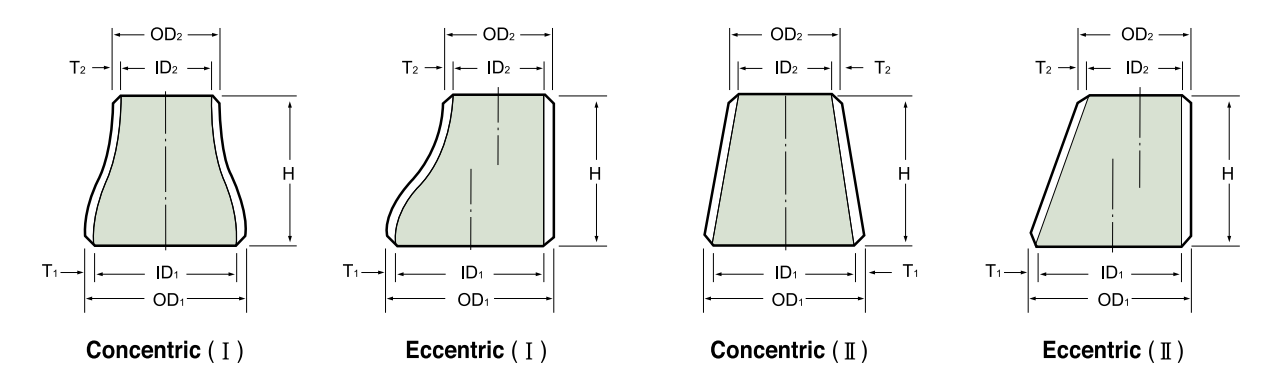
Reducer

Sch20, Sch30, Sch60, Sch100,
Sch120, Sch140

ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	Sch 20		Sch 30	
	OD ₁	OD ₂	H	T ₁	T ₂	T ₁	T ₂
22 x 20	22.000	20.000	20.00	0.375	0.375	0.500	0.500
22 x 18	22.000	18.000	20.00	0.375	0.312	0.500	0.438
22 x 16	22.000	16.000	20.00	0.375	0.312	0.500	0.375
22 x 14	22.000	14.000	20.00	0.375	0.312	0.500	0.375
24 x 22	24.000	22.000	20.00	0.375	0.375	0.562	0.500
24 x 20	24.000	20.000	20.00	0.375	0.375	0.562	0.500
24 x 18	24.000	18.000	20.00	0.375	0.312	0.562	0.438
24 x 16	24.000	16.000	20.00	0.375	0.312	0.562	0.375
26 x 24	26.000	24.000	24.00	0.500	0.375	-	-
26 x 22	26.000	22.000	24.00	0.500	0.375	-	-
26 x 20	26.000	20.000	24.00	0.500	0.375	-	-
26 x 18	26.000	18.000	24.00	0.500	0.312	-	-
28 x 26	28.000	26.000	24.00	0.500	0.500	-	-
28 x 24	28.000	24.000	24.00	0.500	0.375	0.625	0.562
28 x 20	28.000	20.000	24.00	0.500	0.375	0.625	0.500
28 x 18	28.000	18.000	24.00	0.500	0.312	0.625	0.438
30 x 28	30.000	28.000	24.00	0.500	0.500	0.625	0.625
30 x 26	30.000	26.000	24.00	0.500	0.500	-	-
30 x 24	30.000	24.000	24.00	0.500	0.375	0.625	0.562
30 x 20	30.000	20.000	24.00	0.500	0.375	0.625	0.500
32 x 30	32.000	30.000	24.00	0.500	0.500	0.625	0.625
32 x 28	32.000	28.000	24.00	0.500	0.500	0.625	0.625
32 x 26	32.000	26.000	24.00	0.500	0.500	-	-
32 x 24	32.000	24.000	24.00	0.500	0.375	0.625	0.562
34 x 32	34.000	32.000	24.00	0.500	0.500	0.625	0.625
34 x 30	34.000	30.000	24.00	0.500	0.500	0.625	0.625
34 x 28	34.000	28.000	24.00	0.500	0.500	0.625	0.625
34 x 26	34.000	26.000	24.00	0.500	0.500	-	-
36 x 34	36.000	34.000	24.00	0.500	0.500	0.625	0.625
36 x 32	36.000	32.000	24.00	0.500	0.500	0.625	0.625
36 x 30	36.000	30.000	24.00	0.500	0.500	0.625	0.625
36 x 28	36.000	28.000	24.00	0.500	0.500	0.625	0.625

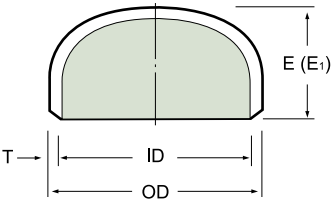
- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54



Sch 60		Sch 100		Sch 120		Sch 140		Nominal Pipe Size
T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
0.875	0.812	1.375	1.281	1.625	1.500	1.875	1.750	22 x 20
0.875	0.750	1.375	1.156	1.625	1.375	1.875	1.562	22 x 18
0.875	0.656	1.375	1.031	1.625	1.219	1.875	1.438	22 x 16
0.875	0.594	1.375	0.938	1.625	1.094	1.875	1.250	22 x 14
0.969	0.875	1.531	1.375	1.812	1.625	2.062	1.875	24 x 22
0.969	0.812	1.531	1.281	1.812	1.500	2.062	1.750	24 x 20
0.969	0.750	1.531	1.156	1.812	1.375	2.062	1.562	24 x 18
0.969	0.656	1.531	1.031	1.812	1.219	2.062	1.438	24 x 16
-	-	-	-	-	-	-	-	26 x 24
-	-	-	-	-	-	-	-	26 x 22
-	-	-	-	-	-	-	-	26 x 20
-	-	-	-	-	-	-	-	26 x 18
-	-	-	-	-	-	-	-	28 x 26
-	-	-	-	-	-	-	-	28 x 24
-	-	-	-	-	-	-	-	28 x 20
-	-	-	-	-	-	-	-	28 x 18
-	-	-	-	-	-	-	-	30 x 28
-	-	-	-	-	-	-	-	30 x 26
-	-	-	-	-	-	-	-	30 x 24
-	-	-	-	-	-	-	-	30 x 20
-	-	-	-	-	-	-	-	32 x 30
-	-	-	-	-	-	-	-	32 x 28
-	-	-	-	-	-	-	-	32 x 26
-	-	-	-	-	-	-	-	32 x 24
-	-	-	-	-	-	-	-	34 x 32
-	-	-	-	-	-	-	-	34 x 30
-	-	-	-	-	-	-	-	34 x 28
-	-	-	-	-	-	-	-	34 x 26
-	-	-	-	-	-	-	-	36 x 34
-	-	-	-	-	-	-	-	36 x 32
-	-	-	-	-	-	-	-	36 x 30
-	-	-	-	-	-	-	-	36 x 28

WROUGHT STEEL BUTT-WELDING FITTINGS

Cap	STD, Sch40, X-S, Sch80, Sch160, XX-S
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Cap

ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Length	Limting Wall Thickness for Length	Length	STD		Sch 40	
		E		E 1	T	I.D	T	I.D
1/2	0.840	1.00	0.18	1.00	0.109	0.622	0.109	0.622
3/4	1.050	1.00	0.15	1.00	0.113	0.824	0.113	0.824
1	1.315	1.50	0.18	1.50	0.133	1.049	0.133	1.049
1 1/4	1.660	1.50	0.19	1.50	0.140	1.380	0.140	1.380
1 1/2	1.900	1.50	0.20	1.50	0.145	1.610	0.145	1.610
2	2.375	1.50	0.22	1.75	0.154	2.067	0.154	2.067
2 1/2	2.875	1.50	0.28	2.00	0.203	2.469	0.203	2.469
3	3.500	2.00	0.30	2.50	0.216	3.068	0.216	3.068
3 1/2	4.000	2.50	0.32	3.00	0.226	3.548	0.226	3.548
4	4.500	2.50	0.34	3.00	0.237	4.026	0.237	4.026
5	5.563	3.00	0.38	3.50	0.258	5.047	0.258	5.047
6	6.625	3.50	0.43	4.00	0.280	6.065	0.280	6.065
8	8.625	4.00	0.50	5.00	0.322	7.981	0.322	7.981
10	10.750	5.00	0.50	6.00	0.365	10.020	0.365	10.020
12	12.750	6.00	0.50	7.00	0.375	12.000	0.406	11.938
14	14.000	6.50	0.50	7.50	0.375	13.250	0.438	13.124
16	16.000	7.00	0.50	8.00	0.375	15.250	0.500	15.000
18	18.000	8.00	0.50	9.00	0.375	17.250	0.562	16.876
20	20.000	9.00	0.50	10.00	0.375	19.250	0.594	18.812
22	22.000	10.00	0.50	10.00	0.375	21.250	*0.594	20.812
24	24.000	10.50	0.50	12.00	0.375	23.250	0.688	22.624
26	26.000	10.50	-	-	0.375	25.250	*0.688	24.624
28	28.000	10.50	-	-	0.375	27.250	*0.688	26.624
30	30.000	10.50	-	-	0.375	29.250	*0.688	28.624
32	32.000	10.50	-	-	0.375	31.250	0.688	30.624
34	34.000	10.50	-	-	0.375	33.250	0.688	32.624
36	36.000	10.50	-	-	0.375	35.250	0.750	34.500
38	38.000	12.00	-	-	0.375	37.250	-	-
40	40.000	12.00	-	-	0.375	39.250	-	-
42	42.000	12.00	-	-	0.375	41.250	-	-
44	44.000	13.50	-	-	0.375	43.250	-	-
46	46.000	13.50	-	-	0.375	45.250	-	-
48	48.000	13.50	-	-	0.375	47.250	-	-
*50	50.000	14.07	-	-	-	-	-	-
*52	52.000	14.57	-	-	-	-	-	-
*54	54.000	15.15	-	-	-	-	-	-
*56	56.000	15.65	-	-	-	-	-	-
*58	58.000	16.23	-	-	-	-	-	-
*60	60.000	16.53	-	-	-	-	-	-

• For Bevel Details See Page 53
• Dimensional Tolerances See Page 54
• Asterisks(*) denote Samsung Fitting Standard.

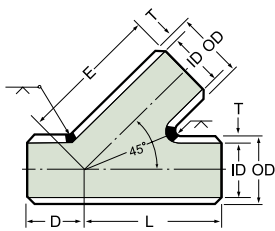
Unit : inch

X-S		Sch 80		Sch 160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1 1/4
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1 1/2
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2 1/2
0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.300	3
0.318	3.364	0.318	3.364	-	-	-	-	3 1/2
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.562	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188	-	-	14
0.500	15.000	0.844	14.312	1.594	12.812	-	-	16
0.500	17.000	0.938	16.124	1.781	14.438	-	-	18
0.500	19.000	1.031	17.938	1.969	16.062	-	-	20
0.500	21.000	1.125	19.750	2.125	17.750	-	-	22
0.500	23.000	1.219	21.562	2.344	19.312	-	-	24
0.500	25.000	-	-	-	-	-	-	26
0.500	27.000	-	-	-	-	-	-	28
0.500	29.000	-	-	-	-	-	-	30
0.500	31.000	-	-	-	-	-	-	32
0.500	33.000	-	-	-	-	-	-	34
0.500	35.000	-	-	-	-	-	-	36
0.500	37.000	-	-	-	-	-	-	38
0.500	39.000	-	-	-	-	-	-	40
0.500	41.000	-	-	-	-	-	-	42
0.500	43.000	-	-	-	-	-	-	44
0.500	45.000	-	-	-	-	-	-	46
0.500	47.000	-	-	-	-	-	-	48
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

WROUGHT STEEL BUTT-WELDING FITTINGS

Lateral

STD, X-S



Type B

Unit : inch

Nominal Pipe Size	Outside Diameter O.D	STD					X-S				
		E & L	D	T	ID	WT(kg)	E & L	D	T	ID	WT(kg)
1	1.315	5.75	1.75	0.133	1.049	0.77	6.50	2.00	0.179	0.957	1.13
1 1/4	1.660	6.25	1.75	0.140	1.380	1.09	7.25	2.25	0.191	1.278	1.72
1 1/2	1.990	7.00	2.00	0.145	1.610	1.45	8.50	2.50	0.200	1.500	2.45
2	2.375	8.00	2.50	0.154	2.067	2.27	*8.00 **9.00	2.50	0.218	1.939	3.40
2 1/2	2.875	9.50	2.50	0.203	2.469	4.17	10.50	2.50	0.276	2.323	6.15
3	3.500	10.00	3.00	0.216	3.068	5.72	11.00	3.00	0.300	2.900	8.53
3 1/2	4.000	11.50	3.00	0.226	3.548	7.80	12.50	3.00	0.318	3.364	11.61
4	4.500	12.00	3.00	0.237	4.026	9.43	*12.00 **13.50	3.00	0.337	3.826	14.88
5	5.562	13.50	3.50	0.258	5.047	14.24	15.00	3.50	0.375	4.813	22.59
6	6.625	14.50	3.50	0.280	6.065	19.23	*14.50 **17.50	*3.50 **4.00	0.432	5.761	35.83
8	8.625	17.50	4.50	0.322	7.981	34.47	20.50	5.00	0.500	7.625	63.50
10	10.750	20.50	5.00	0.365	10.020	56.25	24.00	5.50	0.500	9.750	96.63
12	12.750	24.50	5.50	0.375	12.000	81.65	27.50	6.00	0.500	11.750	123.83
14	14.000	27.00	6.00	0.375	13.250	98.88	31.00	6.50	0.500	13.000	154.22
16	16.000	30.00	6.50	0.375	15.250	124.74	34.50	7.50	0.500	15.000	196.41
18	18.000	32.00	7.00	0.375	17.250	147.87	37.50	8.00	0.500	17.000	238.59
20	20.000	35.00	8.00	0.375	19.250	179.63	40.50	8.50	0.500	19.000	284.86
24	24.000	40.50	9.00	0.375	23.250	246.76	47.50	10.00	0.500	23.000	400.08

-For Bevel Details See Page 53,
-Dimensional Tolerances See Page 54
-Asterisks(*) denote Samsung Fitting Standard.

STAINLESS STEEL
BUTT-WELDING
FITTINGS

ASME

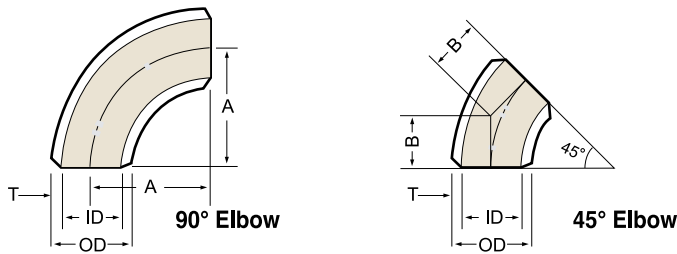
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STAINLESS STEEL BUTT-WELDING FITTINGS

90° Elbow (Long, Short)
45° Elbow (Long)

Sch5s, Sch10s, Sch40s, Sch80s



ASME B16.9 Unit : inch

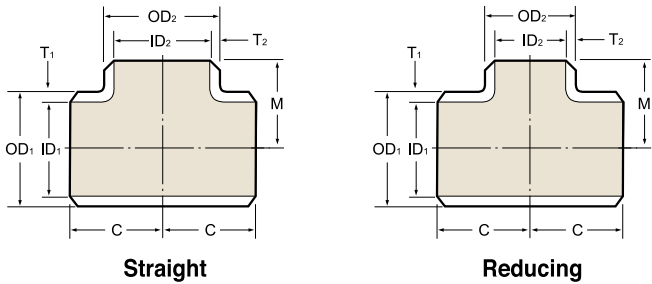
Nominal Pipe Size	Outside Diameter O.D	Center to End			Sch 5s		Sch 10s		Sch 40s		Sch 80s	
		Long		Short	T	I.D	T	I.D	T	I.D	T	I.D
		A	B	A								
1/2	0.840	1.50	0.62	-	0.065	0.710	0.083	0.674	0.109	0.622	0.147	0.546
3/4	1.050	1.50	0.75	-	0.065	0.920	0.083	0.884	0.113	0.824	0.154	0.742
1	1.315	1.50	0.88	1.00	0.065	1.185	0.109	1.097	0.133	1.049	0.179	0.957
1 1/4	1.660	1.88	1.00	1.25	0.065	1.530	0.109	1.442	0.140	1.380	0.191	1.278
1 1/2	1.900	2.25	1.12	1.50	0.065	1.770	0.109	1.682	0.145	1.610	0.200	1.500
2	2.375	3.00	1.38	2.00	0.065	2.245	0.109	2.157	0.154	2.067	0.218	1.939
2 1/2	2.875	3.75	1.75	2.50	0.083	2.709	0.120	2.635	0.203	2.469	0.276	2.323
3	3.500	4.50	2.00	3.00	0.083	3.334	0.120	3.260	0.216	3.068	0.300	2.900
3 1/2	4.000	5.25	2.25	3.50	0.083	3.834	0.120	3.760	0.226	3.548	0.318	3.364
4	4.500	6.00	2.50	4.00	0.083	4.417	0.120	4.260	0.237	4.026	0.337	3.826
5	5.563	7.50	3.12	5.00	0.109	5.345	0.134	5.295	0.258	5.047	0.375	4.813
6	6.625	9.00	3.75	6.00	0.109	6.407	0.134	6.357	0.280	6.065	0.432	5.761
8	8.625	12.00	5.00	8.00	0.109	8.407	0.148	8.329	0.322	7.981	0.500	7.625
10	10.750	15.00	6.25	10.00	0.134	10.482	0.165	10.420	0.365	10.020	0.500	9.7 50
12	12.750	18.00	7.50	12.00	0.156	12.438	0.180	12.390	0.375	12.000	0.500	11. 750
14	14.000	21.00	8.75	14.00	0.156	13.688	0.188	13.624	-	-	-	-
16	16.000	24.00	10.00	16.00	0.165	15.670	0.188	15.624	-	-	-	-
18	18.000	27.00	11.25	18.00	0.165	17.670	0.188	17.624	-	-	-	-
20	20.000	30.00	12.50	20.00	0.188	19.624	0.218	19.564	-	-	-	-
22	22.000	33.00	13.50	22.00	0.188	21.624	0.218	21.564	-	-	-	-
24	24.000	36.00	15.00	24.00	0.218	23.564	0.250	23.500	-	-	-	-
30	30.000	45.00	18.50	30.00	0.250	29.500	0.312	29.376	-	-	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

STAINLESS STEEL BUTT-WELDING FITTINGS

Tee

Sch5s, Sch10s, Sch40s, Sch80s



ASME B16.9, ASME B36.19 Unit : mm

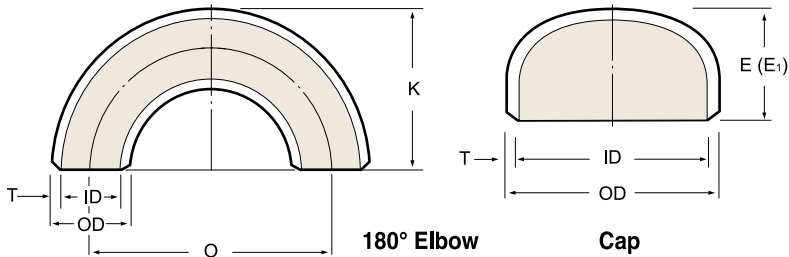
Nominal Pipe Size	Outside Diameter		Center to End		Sch 5s		Sch 10s		Sch 40s		Sch 80s	
	OD ₁	OD ₂	Run C	Outlet M	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂
1/2 x 1/2 x 1/2	0.840	0.840	1.00	1.00	0.065	0.065	0.083	0.083	0.109	0.109	0.147	0.147
1/2 x 1/2 x 3/8	0.840	0.675	1.00	1.00	0.065	-	0.083	0.065	0.109	0.091	0.147	0.126
1/2 x 1/2 x 1/4	0.840	0.540	1.00	1.00	0.065	-	0.083	0.065	0.109	0.088	0.147	0.119
3/4 x 3/4 x 3/4	1.050	1.050	1.12	1.12	0.065	0.065	0.083	0.083	0.113	0.113	0.154	0.154
3/4 x 3/4 x 1/2	1.050	0.840	1.12	1.12	0.065	0.065	0.083	0.083	0.113	0.109	0.154	0.147
3/4 x 3/4 x 3/8	1.050	0.675	1.12	1.12	-	-	0.083	0.065	0.113	0.091	0.154	0.126
1 x 1 x 1	1.315	1.315	1.50	1.50	0.065	0.065	0.109	0.109	0.133	0.133	0.179	0.179
1 x 1 x 3/4	1.315	1.050	1.50	1.50	0.065	0.065	0.109	0.083	0.133	0.113	0.179	0.154
1 x 1 x 1/2	1.315	0.840	1.50	1.50	0.065	0.065	0.109	0.083	0.133	0.109	0.179	0.147
1 1/4 x 1 1/4 x 1 1/4	1.660	1.660	1.88	1.88	0.065	0.065	0.109	0.109	0.140	0.140	0.191	0.191
1 1/4 x 1 1/4 x 1	1.660	1.315	1.88	1.88	0.065	0.065	0.109	0.109	0.140	0.133	0.191	0.179
1 1/4 x 1 1/4 x 3/4	1.660	1.050	1.88	1.88	0.065	0.065	0.109	0.083	0.140	0.113	0.191	0.154
1 1/4 x 1 1/4 x 1/2	1.660	0.840	1.88	1.88	0.065	0.065	0.109	0.083	0.140	0.109	0.191	0.147
1 1/2 x 1 1/2 x 1 1/2	1.900	1.900	2.25	2.25	0.065	0.065	0.109	0.109	0.145	0.145	0.200	0.200
1 1/2 x 1 1/2 x 1 1/4	1.900	1.660	2.25	2.25	0.065	0.065	0.109	0.109	0.145	0.140	0.200	0.191
1 1/2 x 1 1/2 x 1	1.900	1.315	2.25	2.25	0.065	0.065	0.109	0.109	0.145	0.133	0.200	0.179
1 1/2 x 1 1/2 x 3/4	1.900	1.050	2.25	2.25	0.065	0.065	0.109	0.083	0.145	0.113	0.200	0.154
1 1/2 x 1 1/2 x 1/2	1.900	0.840	2.25	2.25	0.065	0.065	0.109	0.083	0.145	0.109	0.200	0.147
2 x 2 x 2	2.375	2.375	2.50	2.50	0.065	0.065	0.109	0.109	0.154	0.154	0.218	0.218
2 x 2 x 1 1/2	2.375	1.900	2.50	2.38	0.065	0.065	0.109	0.109	0.154	0.145	0.218	0.200
2 x 2 x 1 1/4	2.375	1.660	2.50	2.25	0.065	0.065	0.109	0.109	0.154	0.140	0.218	0.191
2 x 2 x 1	2.375	1.315	2.50	2.00	0.065	0.065	0.109	0.109	0.154	0.133	0.218	0.179
2 x 2 x 3/4	2.375	1.050	2.50	1.75	0.065	0.065	0.109	0.083	0.154	0.113	0.218	0.154
2 1/2 x 2 1/2 x 2 1/2	2.875	2.875	3.00	3.00	0.083	0.083	0.120	0.120	0.203	0.203	0.276	0.276
2 1/2 x 2 1/2 x 2	2.875	2.375	3.00	2.75	0.083	0.065	0.120	0.109	0.203	0.154	0.276	0.218
2 1/2 x 2 1/2 x 1 1/2	2.875	1.900	3.00	2.62	0.083	0.065	0.120	0.109	0.203	0.145	0.276	0.200
2 1/2 x 2 1/2 x 1 1/4	2.875	1.660	3.00	2.50	0.083	0.065	0.120	0.109	0.203	0.140	0.276	0.191
2 1/2 x 2 1/2 x 1	2.875	1.315	3.00	2.25	0.083	0.065	0.120	0.109	0.203	0.133	0.276	0.179
3 x 3 x 3	3.500	3.500	3.38	3.38	0.083	0.083	0.120	0.120	0.216	0.216	0.300	0.300
3 x 3 x 2 1/2	3.500	2.875	3.38	3.25	0.083	0.083	0.120	0.120	0.216	0.203	0.300	0.276
3 x 3 x 2	3.500	2.375	3.38	3.00	0.083	0.065	0.120	0.109	0.216	0.154	0.300	0.218
3 x 3 x 1 1/2	3.500	1.900	3.38	2.88	0.083	0.065	0.120	0.109	0.216	0.145	0.300	0.200
3 x 3 x 1 1/4	3.500	1.660	3.38	2.75	0.083	0.065	0.120	0.109	0.216	0.140	0.300	0.191
3 1/2 x 3 1/2 x 3 1/2	4.000	4.000	3.75	3.75	0.083	0.083	0.120	0.120	0.226	0.226	0.318	0.318
3 1/2 x 3 1/2 x 3	4.000	3.500	3.75	3.62	0.083	0.083	0.120	0.120	0.226	0.216	0.318	0.300
3 1/2 x 3 1/2 x 2 1/2	4.000	2.875	3.75	3.50	0.083	0.083	0.120	0.120	0.226	0.203	0.318	0.276
3 1/2 x 3 1/2 x 2	4.000	2.375	3.75	3.25	0.083	0.065	0.120	0.109	0.226	0.154	0.318	0.218
3 1/2 x 3 1/2 x 1 1/2	4.000	1.900	3.75	3.12	0.083	0.065	0.120	0.109	0.226	0.145	0.318	0.200

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

STAINLESS STEEL BUTT-WELDING FITTINGS

180° Elbow (Long, Short) Cap

Sch5s, Sch10s, Sch40s, Sch80s



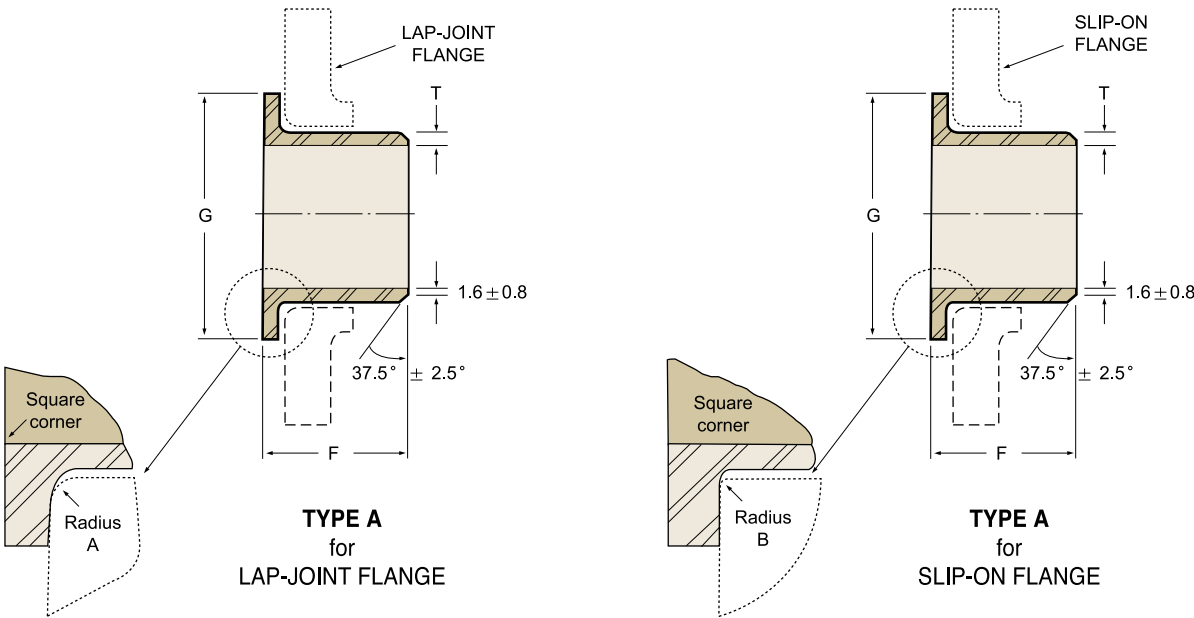
ASME B16.9 Unit : inch

Nominal Pipe Size	Outside Diameter O.D	Wall Thickens T				Length E	Limiting Wall Thickness For Length E	Length E1	180° Elbow			
		5s	10s	40s	80s				Long		Short	
									O	K	O	K
1/2	0.840	0.065	0.083	0.109	0.147	1.00	0.18	1.00	3.00	1.88	-	-
3/4	1.050	0.065	0.083	0.113	0.154	1.00	0.15	1.00	3.00	2.0	-	-
1	1.315	0.065	0.109	0.133	0.179	1.50	0.18	1.50	3.00	2.19	2.00	1.62
1 1/4	1.660	0.065	0.109	0.140	0.191	1.50	0.19	1.50	3.75	2.75	2.50	2.06
1 1/2	1.900	0.065	0.109	0.145	0.200	1.50	0.20	1.50	4.50	3.25	3.00	2.44
2	2.375	0.065	0.109	0.154	0.218	1.50	0.22	1.75	6.00	4.19	4.00	3.19
2 1/2	2.875	0.083	0.120	0.203	0.276	1.50	0.28	2.00	7.50	5.19	5.00	3.94
3	3.500	0.083	0.120	0.216	0.300	2.00	0.30	2.50	9.00	6.25	6.00	4.75
3 1/2	4.000	0.083	0.120	0.226	0.318	2.50	0.32	3.00	10.50	7.25	7.00	5.50
4	4.500	0.083	0.120	0.237	0.337	2.50	0.34	3.00	12.00	8.25	8.00	6.25
5	5.563	0.109	0.134	0.258	0.375	3.00	0.38	3.50	15.00	10.31	10.00	7.75
6	6.625	0.109	0.134	0.280	0.432	3.50	0.43	4.00	18.00	12.31	12.00	9.31
8	8.625	0.109	0.148	0.322	0.500	4.00	0.50	5.00	24.00	16.31	16.00	12.31
10	10.750	0.134	0.165	0.365	0.500	5.00	0.50	6.00	30.00	20.38	20.00	15.38
12	12.750	0.156	0.180	0.375	0.500	6.00	0.50	7.00	36.00	24.38	24.00	18.38
14	14.000	0.156	0.188	-	-	6.50	0.50	7.50	42.00	28.00	28.00	21.00
16	16.000	0.165	0.188	-	-	7.00	0.50	8.00	48.00	32.00	32.00	24.00
18	18.000	0.165	0.188	-	-	8.00	0.50	9.00	54.00	36.00	36.00	27.00
20	20.000	0.188	0.218	-	-	9.00	0.50	10.00	60.00	40.00	40.00	30.00
22	22.000	0.188	0.218	-	-	10.00	0.50	10.00	66.00	44.00	44.00	33.00
24	24.000	0.218	0.250	-	-	10.50	0.50	12.00	72.00	48.00	48.00	36.00
30	30.000	0.250	0.312	-	-	10.50	-	-	-	-	-	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

STAINLESS STEEL BUTT-WELDING FITTINGS

Lap joint, Stub End



ASME B16.9 MSS SP-43 Unit : inch

Nominal Pipe Size	Outside Diameter O.D	Length F			Dia.of Lap-G Nominal & Maximum	Radius of Fillet		Wall Thickens T		
		MSS	ASME			A Min.	B Max.	Sch 5s	Sch 10s	Sch 40s
			Long	Short						
1/2	0.840	2.00	3.00	2.00	1.38	0.12	0.03	0.065	0.083	0.109
3/4	1.050	2.00	3.00	2.00	1.69	0.12	0.03	0.065	0.083	0.113
1	1.32	2.00	4.00	2.00	2.00	0.12	0.03	0.065	0.109	0.133
1 1/4	1.660	2.00	4.00	2.00	2.50	0.19	0.03	0.065	0.109	0.140
1 1/2	1.900	2.00	4.00	2.00	2.88	0.25	0.03	0.065	0.109	0.145
2	2.38	2.50	6.00	2.50	3.62	0.31	0.03	0.065	0.109	0.154
2 1/2	2.88	2.50	6.00	2.50	4.12	0.31	0.03	0.083	0.120	0.203
3	3.500	2.50	6.00	2.50	5.00	0.38	0.03	0.083	0.120	0.216
3 1/2	4.000	3.00	6.00	3.00	5.50	0.38	0.03	0.083	0.120	0.226
4	4.500	3.00	6.00	3.00	6.19	0.44	0.03	0.083	0.120	0.237
5	5.563	3.00	8.00	3.00	7.31	0.44	0.06	0.109	0.134	0.258
6	6.62	3.50	8.00	3.50	8.50	0.50	0.06	0.109	0.134	0.280
8	8.62	4.00	8.00	4.00	10.62	0.50	0.06	0.109	0.148	0.322
10	10.750	5.00	10.00	5.00	12.75	0.50	0.06	0.134	0.165	0.365
12	12.750	6.00	10.00	6.00	15.00	0.50	0.06	0.156	0.180	0.375
14	14.000	6.00	12.00	6.00	16.25	0.50	0.06	0.156	0.188	-
16	16.000	6.00	12.00	6.00	18.50	0.50	0.06	0.165	0.188	-
18	18.000	6.00	12.00	6.00	21.00	0.50	0.06	0.165	0.188	-
20	20.000	6.00	12.00	6.00	23.00	0.50	0.06	0.188	0.218	-
22	22.000	6.00	12.00	6.00	25.24	0.50	0.06	0.188	0.218	-
24	24.000	6.00	12.00	6.00	27.25	0.50	0.06	0.218	0.250	-

- For Bevel Details See Page 53
- Dimensional Tolerances See Page 54

ENGINEERING DATA

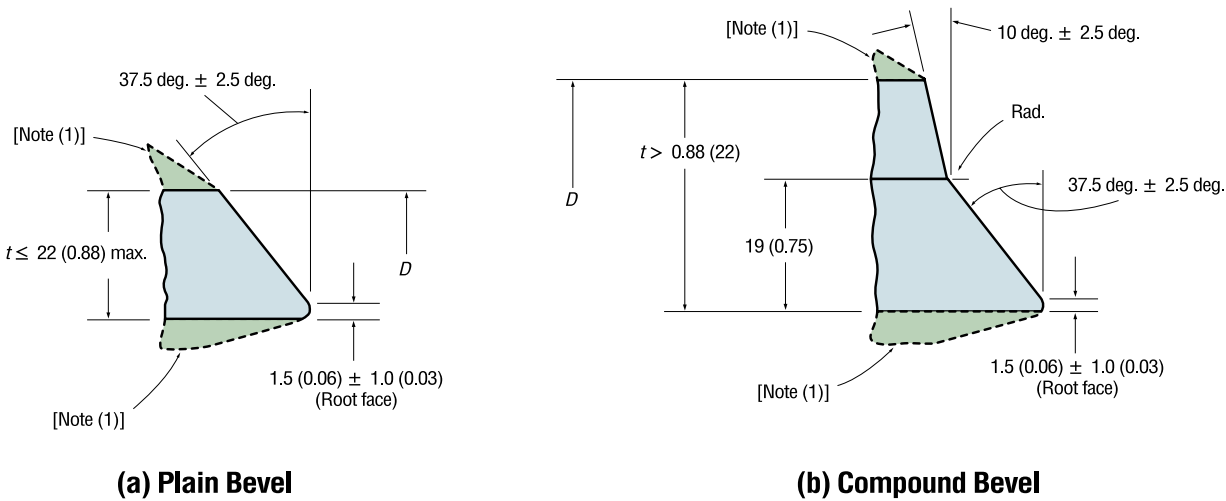
ENGINEERING DATA

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WELDING END PREPARATIONS

ASME B16.9



Nominal Wall Thickness, <i>t</i>	End Preparation
Less than <i>x</i> [Note (2)]	Cut square or slightly chamfer, at manufacturer's option (not illustrated)
<i>x</i> to 22 (0.88), inclusive	Plain bevel as in illustraion (a) above
More than 22 (0.88)	Compound bevel as in illustration (b) above

GENERAL NOTES :
(a) Dimensions in parentheses are in inches.
(b) Other dimensions are in millimeters.

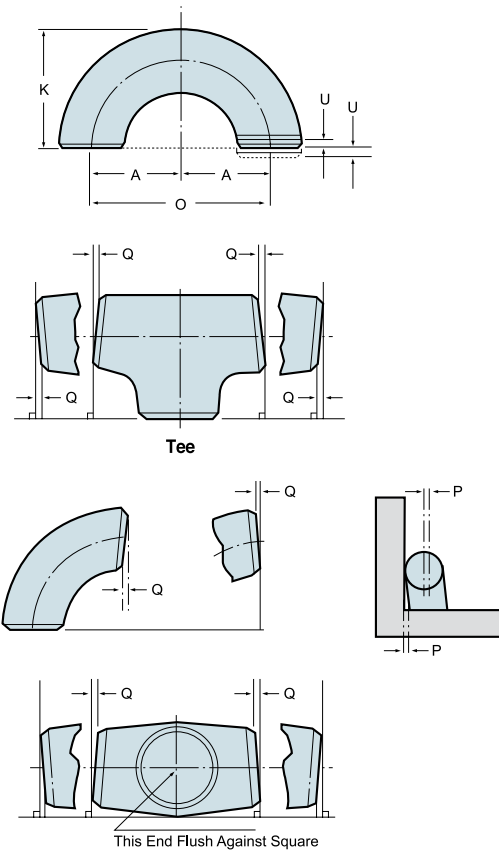
NOTES :
(1) See section 8 and Fig. 1 in ASME B16.9 for transition contours.
(2) *x* = 5 (0.19) for carbon steel or ferritic alloy steel and 3 (0.12) for austenitic alloy steel.

DIMENSIONAL TOLERANCES

ASME B16.9

1. Wrought Steel Butt Welding Fittings

All Fittings				90° and 45° Elbows	Tees	Reducers	Caps	180° Returns		
Nominal Pipe Size	Outside Diameter at Bevel OD	Inside Diameter at End ID	Wall Thickness T	Center-to-End Dimension A, B	Center-to-End Dimension C, M	End to End H	Back to Face E	Center-to-Center Dimension O	Back-to-Face Dimension K	Alignments of Ends U
1/2 ~ 2 1/2	+1.6 -0.8	±0.8	Not less than 87 1/2 % of nominal thickness	±2.0	±2.0	±2.0	±3.0	±6.0	±6.0	±1.0
3 ~ 4	±1.6	±6.0								
5 ~ 8	+2.4 -1.6						±6.0	±10.0		
10 ~ 18	+4.0 -3.2	±3.2		±2.0	±2.0	±2.0				
20 ~ 24	+6.4 -4.8	±4.8		±3.0	±3.0	±5.0	±10.0	-	-	-
26 ~ 30										
32 ~ 48						±5.0	±5.0			



Nominal Pipe Size	Angularity Tolerance	
	Off Angle Q	Off Plane P
1/2 ~ 4	1	2
5 ~ 8	2	4
10 ~ 12	3	5
14 ~ 16		6
18 ~ 24	4	10
26 ~ 30	5	
32 ~ 42		13
44 ~ 48		19

• Dimensions are in mm

COMPARISON OF ASTM SPECIFICATIONS AND SIMILAR STANDRADS

Steel Composition	ASTM Specification and Grade				KS Specification and Grade		
	Marking symbol	Pipe	Plate	forging	Marking symbol	Pipe	Plate
Carbon Steel	-	A120	A283-A	-	SPP	SPP	SB41
	-	A53-B	A284	-	PS38(W), PS38, PT38(W), PT38	SPPS38	SWS41B
	-	A53-B	A284	-	PS42(W), PS42, PT42(W), PT42	SPPS42	SWS41B
					HT38, HT38(W)	SPHT38	SBB42
	WPB	A106-B	A515-60 or 65 A516-60 or 65	A105	HT42, HT42(W)	SPHT42	SBB42
	WPC	A106-C	A515-70 A516-70	A105	HT49, HT49(W)	SPHT49	SBB49
Low Temperature Steel	WPL6	A333 and A334-6	A516-60	A350-LF2	PL39	STPL39	SLAL39
	WPL3	A333 and A334-3	A203-D	A350-LF3	-	-	-
	WPL9	A333 and A334-9	A203-A	A350-LF9	-	-	-
Alloy Steel	WP1	A335-P1	A203-B	A182-F1	PA12, FA12	SPA12	SBB46M
	WP12	A335-P12	A387-12	A182-F12	PA22, FA22	SPA22	SCMV2
	WP11	A335-P11	A387-11	A182-F11	PA23, FA23	SPA23	SCMV3
	WP22	A335-P22	A387-22	A182-F22	PA24, FA24	SPA24	SCMV4
	WP5	A335-P5	A387-5	A182-F5	PA25, FA25	SPA25	SCMV6
	WP7	A335-P7	A387-7	A182-F7	-	-	-
	WP9	A335-P9	A387-9	A182-F9	-	-	-
	WP91	A335-P91	A387-91	A182-F91	-	-	-
Stainless Steel	WP304	A312-TP304	A240-Type 304	A182-F304	STS304, STS304W, STS304F	STS304TP	STS304
	WP304H	A312-TP304H	A240-Type 304H	A182-F304H	-	-	-
	WP304L	A312-TP304L	A240-Type 304L	A182-F304L	STS304L, STS304LW, STS304LF	STS304LTP	STS304L
	WP309	A312-TP309	A240-Type 309S	-	STS309S, STS309SW, STS309SF	STS309STP	STS309S
	WP310	A312-TP310	A240-Type 310S	A182-F310	STS310S, STS310SW, STS310SF	STS310STP	STS310S
	WP316	A312-TP316	A240-Type 316	A182-F316	STS316, STS316W, STS316F	STS316TP	STS316
	WP316H	A312-TP316H	A240-Type 316H	A182-F316H	STS316H, STS316HF	STS316HTP	-
	WP316L	A312-TP316L	A240-Type 316L	A182-F316L	STS316L, STS316LW, STS316LF	STS316LTP	STS316L
	WP317L	A312-TP317L	A240-Type 317L	A182-F317L	STS317L, STS317LW	STS317LTP	STS317L
	WP321	A312-TP321	A240-Type 321	A182-F321	STS321, STS321W, STS321F	STS321TP	STS321
	WP321H	A312-TP321H	A240-Type 321H	A182-F321H	-	-	-
	WP347	A312-TP347	A240-Type 347	A182-F347	STS347, STS347W, STS347F	STS347TP	STS347
	WP347H	A312-TP347H	A240-Type 347H	A182-F347H	STS347H, STS347HF	STS347HTP	-

JIS Specification and Grade			B.S.Specification and grade	DIN Specification and grade	Steel Composition
Marking symbol	Pipe	Plate	Pipe	Pipe	
FSGP or SGP	SGP(STPY400)	SS400	1387-M	2440-ST33-1	Carbon Steel
PG370(W), PS370(W), PT370(W), PT370	STPG370	SM41B	3602-ERW23	1626-ST37	Carbon Steel
PG410(W), PS410(W), PT410(W), PT410	STPG410	SM41B	3602-ERW27	-	Carbon Steel
PS370, PT370(W)	STPT370	SB42	3602-ERW23	17175-ST35.8	Carbon Steel
PS410, PT410(W)	STPT410	SB42	3602-ERW27	17175-ST45.8	Carbon Steel
PS480, PT480(W)	STPT480	SB49	3602-ERW35	-	Carbon Steel
PL380(W)	STPL380	-	3603-Steel 27 LT30	-	Carbon Steel
PL450(W)	STPL450	-	3603-Steel 503 LT100	-	31/2% Ni Steel
PL690(W)	STPL690	-	-	-	3% Ni-1% Cu Steel
PA12(W), FA12	STPA12	-	-	17175-15 Mo3	Carbon-Molybdenum Steel
PA22(W), FA22	STPA22	-	3603-HF620	17175-13 Cr Mo44	1% Cr-1/2% Molybdenum Steel
PA23(W), FA23	STPA23	-	3603-HF621	-	11/4% Cr-1/2% Molybdenum Steel
PA24(W), FA24	STPA24	SCMV4	3603-HF622ú	17175-10 Cr Mo910	21/4% Cr-1% Molybdenum Steel
PA25(W), FA25	STPA25	-	3603-HF625	-	5% Cr-1/2% Molybdenum Steel
-	-	-	-	-	7% Cr-1/2% Molybdenum Steel
PA26(W), FA26	STPA26	-	-	-	9% Cr-1% Molybdenum Steel
-	STPA29	-	-	-	9% Cr-1% Mo-0.2%V+Cb+N
SUS304, SUS304W, SUS304F	SUS304TP	SUS304	3605-801	17440-X5 Cr Ni189	18% Cr-8% Ni Steel
SUS304H, SUS304HF	SUS304HTP	-	3605-811	-	18% Cr-8% Ni-(0.04-0.10)% C Steel
SUS304L, SUS304LW	SUS304LTP	SUS304L	3605-811L	17440-X2 Cr Ni189	18% Ni-0.035% C Steel
SUS309S, SUS309SW, SUS309SF	SUS309STP	SUS309S	-	-	22% Cr-12% Ni Steel
SUS310S, SUS310SW, SUS310SF	SUS310STP	SUS310S	3605-805S	-	25% Cr-20% Ni Steel
SUS316, SUS316W, SUS316F	SUS316TP	SUS316	3605-845	17440-X5 Cr Ni Mo1810	18% Cr-8% Ni-Mo Steel
SUS316H, SUS316HF	SUS316HTP	-	3605-855	-	18% Cr-8% Ni-Mo(0.04-0.10)% C Steel
SUS316L, SUS316LW	SUS316LTP	SUS316L	3605-845L	17440-X2 Cr Ni Mo1810	18% Cr-8% Ni-Mo-0.035% C Steel
SUS317L	SUS317LTP	SUS317L	-	-	18% Cr-12% Ni-3.5% Mo-Low C
SUS321, SUS321W, SUS321F	SUS321TP	SUS321	3605-822Ti	17440-X10 Cr Ni Ti189	18% Cr-8% Ni-Ti Steel
SUS321H, SUS321HF	SUS321HTP	-	3605-832Ti	-	18% Cr-8% Ni Ti(0.04-0.10)% C Steel
SUS347, SUS347W, SUS347F	SUS347TP	SUS347	3605-822Nb	17440-X1 Cr Ni Nb189	18% Cr-8% Ni-Cb+Ta Steel
SUS347H, SUS347HF	SUS347HTP	-	3605-832Nb	-	18% Cr-8% Ni-Cb+Ta(0.04-0.10)% C Steel

WALL THICKNESS OF WELDED AND SEAMLESS PIPE

Nominal Pipe Size		Outside diameter		Nominal Wall Thickness							
A	B	KS/JIS	ANSI	SGP	Sch 5s	Sch 10s	Sch 10	Sch 20s	Sch 20	Sch 30	Sch 40s
6	1/8	10.50	10.29	-	-	1.24	-	1.5	-	-	1.73
8	1/4	13.80	13.72	-	-	1.65	-	2.0	-	-	2.24
10	3/8	17.30	17.14	-	-	1.65	-	2.0	-	-	2.31
15	1/2	21.70	21.34	2.8	1.65	2.11	-	2.5	-	-	2.77
20	3/4	27.20	26.67	2.8	1.65	2.11	-	2.5	-	-	2.87
25	1	34.00	33.40	3.2	1.65	2.77	-	3.0	-	-	3.38
32	1 1/4	42.70	42.16	3.5	1.65	2.77	-	3.0	-	-	3.56
40	1 1/2	48.60	48.26	3.5	1.65	2.77	-	3.0	-	-	3.68
50	2	60.50	60.32	3.8	1.65	2.77	-	3.5	3.20	-	3.91
65	2 1/2	76.30	73.02	4.2	2.11	3.05	-	3.5	4.50	-	5.16
80	3	89.10	88.90	4.2	2.11	3.05	-	4.0	4.50	-	5.49
90	3 1/2	101.60	101.60	4.2	2.11	3.05	-	4.0	4.50	-	5.74
100	4	114.30	114.30	4.5	2.11	3.05	-	4.0	4.90	-	6.02
125	5	139.80	141.30	4.5	2.77	3.40	-	5.0	5.10	-	6.55
150	6	165.20	168.30	5.0	2.77	3.40	-	5.0	5.50	-	7.11
200	8	216.30	219.08	5.8	2.77	3.76	-	6.5	6.35	7.04	8.18
250	10	267.40	273.05	6.6	3.40	4.19	-	6.5	6.35	7.80	9.27
300	12	318.50	323.85	6.9	3.96	4.57	-	6.5	6.35	8.38	9.53
350	14	355.60	355.60	7.9	3.96	4.78	6.35	8.0	7.92	9.52	9.53
400	16	406.40	406.40	7.9	4.19	4.78	6.35	8.0	7.92	9.52	9.53
450	18	457.20	457.20	7.9	4.19	4.78	6.35	8.0	7.92	11.12	9.53
500	20	508.00	508.00	7.9	4.78	5.54	6.35	9.5	9.52	12.70	9.53
550	22	558.80	558.80	-	4.78	5.54	6.35	-	9.52	12.70	9.53
600	24	609.60	609.60	-	5.54	6.35	6.35	-	9.52	14.27	9.53
650	26	660.40	660.40	-	-	*7.92	7.92	-	12.70	-	9.53
700	28	711.20	711.20	-	-	*7.92	7.92	-	12.70	15.88	9.53
750	30	762.00	762.00	-	6.35	*7.92	7.92	-	12.70	15.88	9.53
800	32	812.80	812.80	-	-	*7.92	7.92	-	12.70	15.88	9.53
850	34	863.60	863.60	-	-	*7.92	7.92	-	12.70	15.88	9.53
900	36	914.40	914.40	-	-	*7.92	7.92	-	12.70	15.88	9.53
950	38	965.20	965.20	-	-	*7.92	-	-	-	-	9.53
1000	40	1016.00	1016.00	-	-	*7.92	-	-	-	-	9.53
1050	42	1066.80	1066.80	-	-	*7.92	-	-	-	-	9.53
1100	44	1117.60	1117.60	-	-	*7.92	-	-	-	-	9.53
1150	46	1168.40	1168.40	-	-	*7.92	-	-	-	-	9.53
1200	48	1219.20	1219.20	-	-	*7.92	-	-	-	-	9.53

•Asterisks(*) denote Samsung Fitting Standard as no internationally Recognized Standards available for these wall thickness.

Unit : mm

Nominal Wall Thickness											Nominal Pipe Size Inch
STD	Sch 40	Sch 60	Sch 80s	X-S	Sch 80	Sch 100	Sch 120	Sch 140	Sch 160	XX-S	
1.73	1.73	2.20	2.41	2.41	2.41	-	-	-	3.15	4.83	1/8
2.24	2.24	2.40	3.02	3.02	3.02	-	-	-	3.68	6.05	1/4
2.31	2.31	2.80	3.20	3.20	3.20	-	-	-	4.01	6.40	3/8
2.77	2.77	3.20	3.73	3.73	3.73	-	-	-	4.78	7.47	1/2
2.87	2.87	3.40	3.91	3.91	3.91	-	-	-	5.56	7.82	3/4
3.38	3.38	3.90	4.55	4.55	4.55	-	-	-	6.35	9.09	1
3.56	3.56	4.50	4.85	4.85	4.85	-	-	-	6.35	9.70	1 1/4
3.68	3.68	4.50	5.08	5.08	5.08	-	-	-	7.14	10.16	1 1/2
3.91	3.91	4.90	5.54	5.54	5.54	-	-	-	8.74	11.07	2
5.16	5.16	6.00	7.01	7.01	7.01	-	-	-	9.52	14.02	2 1/2
5.49	5.49	6.60	7.62	7.62	7.62	-	-	-	11.12	15.24	3
5.74	5.74	7.00	8.08	8.08	8.08	-	-	-	-	-	3 1/2
6.02	6.02	7.10	8.56	8.56	8.56	-	11.12	-	13.49	17.12	4
6.55	6.55	8.10	9.53	9.53	9.53	-	12.70	-	15.88	19.05	5
7.11	7.11	9.30	10.97	10.97	10.97	-	14.27	-	18.26	21.94	6
8.18	8.18	10.31	12.70	12.70	12.70	15.09	18.26	20.62	23.01	22.22	8
9.27	9.27	12.70	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40	10
9.53	10.31	14.27	*12.70	12.70	17.48	21.44	25.40	28.58	33.32	25.40	12
9.53	11.13	15.09	*12.70	12.70	19.05	23.83	27.79	31.75	35.71	-	14
9.53	12.70	16.66	*12.70	12.70	21.44	26.19	30.96	36.52	40.49	-	16
9.53	14.27	19.05	*12.70	12.70	23.82	29.36	34.92	39.67	45.24	-	18
9.53	15.09	20.62	*12.70	12.70	26.19	32.54	38.10	44.45	50.01	-	20
9.53	-	22.22	*12.70	12.70	28.58	34.92	41.28	47.62	53.98	-	22
9.53	17.48	24.61	*12.70	12.70	30.96	38.89	46.02	52.37	59.54	-	24
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	26
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	28
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	30
9.53	17.48	-	*12.70	12.70	-	-	-	-	-	-	32
9.53	17.48	-	*12.70	12.70	-	-	-	-	-	-	34
9.53	19.05	-	*12.70	12.70	-	-	-	-	-	-	36
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	38
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	40
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	42
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	44
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	46
9.53	-	-	*12.70	12.70	-	-	-	-	-	-	48

•Asterisks(*) denote Samsung Fitting Standard as no internationally Recognized Standards available for these wall thickness.