

**KANZEN TETSU**

S E N D I R I A N B E R H A D







ASTM A 312 and ASTM A 778  
DIMENSION AND WEIGHTS

Nominal Pipe Size (inch)	Outside Diameter (mm)	Schedule 10S			Schedule 40S		
		Nominal Wall Thickness (mm)	Weight (kg/m)		Nominal Wall Thickness (mm)	Weight (kg/m)	
			TP 304/ TP 304L	TP 316/ TP 316L		TP 304/ TP 304L	TP 316/ TP 316L
3/8	17.15	1.65	0.637	0.641	2.31	0.854	0.859
1/2	21.34	2.11	1.011	1.017	2.77	1.281	1.290
3/4	26.67	2.11	1.291	1.299	2.87	1.702	1.712
1	33.40	2.77	2.113	2.127	3.38	2.528	2.544
1 1/4	42.16	2.77	2.718	2.735	3.56	3.423	3.445
1 1/2	48.26	2.77	3.139	3.159	3.68	4.087	4.113
2	60.33	2.77	3.972	3.997	3.91	5.495	5.530
2 1/2	73.03	3.05	5.317	5.351	5.16	8.724	8.780
3	88.90	3.05	6.522	6.564	5.49	11.407	11.480
3 1/2	101.60	3.05	7.487	7.535	5.74	13.706	13.794
4	114.30	3.05	8.452	8.507	6.02	16.237	16.342
5	141.30	3.40	11.679	11.754	6.55	21.986	22.127
6	168.28	3.40	13.964	14.054	7.11	28.545	28.728
8	219.08	3.76	20.167	20.297	8.18	42.974	43.250
10	273.05	4.19	28.062	28.242	9.27	60.911	61.302
12	323.85	4.57	36.346	36.580	9.52	74.541	75.020

WELDED  
AUSTENITIC  
STAINLESS  
STEEL PIPES

Permissible Variation in Dimension			
Dimension	NPS		Tolerance (mm)
Outside Diameter (According to ASTM A 999)	3/8" to 1 1/2"		+ 0.4, -0.8
	2" to 4"		+ 0.8, -0.8
	5" to 8"		+ 1.6, -0.8
	10" to 12"		+ 2.4, -0.8
Wall Thickness	For ASTM A 312,		
	NPS Designator	Tolerance, % from Nominal	
		Over (+)	Under (-)
	1/8" to 2 1/2" incl., all t/D ratios	20.0	12.5
	3" to 18" incl., t/D up to 5%	22.5	12.5
	3" to 18" incl., t/D > 5%	15.0	12.5
Where t = Nominal Wall Thickness D = Nominal Outside Diameter of Pipe			
For ASTM A 778 Tolerance = ± 12.5% from Nominal			







**ASTM A554**  
**DIMENSION AND WEIGHTS**

ROUND TUBE (O.D.)					
Outside Diameter		Weight (kg/m)			
		Nominal Wall Thickness (mm)			
(inch)	(mm)	1.2	1.5	2.0	3.0
3/8	9.5	0.248	0.299	0.374	0.486
1/2	12.7	0.344	0.418	0.533	0.725
5/8	15.9	0.439	0.538	0.692	0.964
3/4	19.1	0.535	0.658	0.852	1.203
7/8	22.2	0.628	0.773	1.006	1.435
1	25.4	0.723	0.893	1.166	1.674
1 1/8	28.6	0.819	1.013	1.325	1.913
1 1/4	31.8	0.915	1.132	1.485	2.152
1 1/2	38.1	1.103	1.368	1.799	2.623
1 5/8	41.3	1.199	1.487	1.958	2.862
1 3/4	44.5	1.294	1.607	2.117	3.101
2	50.8	1.483	1.842	2.431	3.572
2 1/2	63.5	1.862	2.317	3.064	4.521
3	76.2	2.242	2.791	3.697	5.470
3 1/2	88.9	2.622	3.266	4.329	6.419
4	101.6	3.001	3.740	4.962	7.368

SQUARE TUBE (S.Q.)				
Nominal Outside Dimension Across Flats		Weight (kg/m)		
		Nominal Wall Thickness (mm)		
(inch)	(mm)	1.2	1.5	2.0
1/2	12.7	0.436	0.531	0.677
5/8	15.9	0.558	0.683	0.880
3/4	19.1	0.680	0.836	1.083
7/8	22.2	0.798	0.983	1.280
1	25.4	0.919	1.135	1.483
1 1/4	31.8	1.163	1.440	1.889
1 1/2	38.1	1.403	1.740	2.288
2	50.8	1.886	2.344	3.094

RECTANGULAR TUBE (R.T.)			
Nominal Outside Dimension Across Flats		Weight (kg/m)	
		Nominal Wall Thickness (mm)	
(inch)	(mm)	1.2	1.5
1/2 x 1	12.7 x 25.4	0.678	0.833
3/4 x 1-1/2	19.1 x 38.1	1.041	1.288
1 x 2	25.4 x 50.8	1.403	1.740

The above weight - list is applicable to 304 grade only

**WELDED**  
**STAINLESS**  
**STEEL**  
**MECHANICAL/**  
**ORNAMENTAL**  
**TUBING**



WELDED  
STAINLESS  
STEEL  
MECHANICAL/  
ORNAMENTAL  
TUBING

SURFACE FINISH

Item	Finish	Description
Round Tubes (O.D.)	Mill Finish	As welded
	# 180	Buffed after polishing by # 180
	# 180 Hairline	Hairline finished after polishing by # 180
	# 400	Buffed after polishing by # 400
Square Tubes (S.Q.)	# 600	Buffed after polishing by # 600
	Mill Finish	As welded
	# 180 Hairline	Hairline finished after polishing by # 180
Rectangular Tubes (R.T.)	# 400	Buffed after polishing by # 400
	Mill Finish	As welded

OUTSIDE DIAMETER TOLERANCE

ROUND TUBE (O. D.)		
Outside Diameter (mm)	Wall Thickness <sup>A</sup> (mm)	Outside Diameter Tolerance (mm)
Under 12.7	0.51 to 1.24	± 0.10
12.7 to 25.4, incl.	0.51 to 1.65	± 0.13
	Over 1.65 to 3.40	± 0.25
Over 25.4 to 38.1, incl.	0.64 to 1.65	± 0.20
	Over 1.65 to 3.40	± 0.25
Over 38.1 to 50.8, incl.	0.64 to 1.24	± 0.25
	Over 1.24 to 2.11	± 0.28
	Over 2.11 to 3.78	± 0.30
Over 50.8 to 63.5, incl.	0.81 to 1.65	± 0.30
	Over 1.65 to 2.77	± 0.33
	Over 2.77 to 4.19	± 0.36
Over 63.5 to 88.9, incl.	0.81 to 4.19	± 0.36
Over 88.9 to 127.0, incl.	0.89 to 4.19	± 0.51

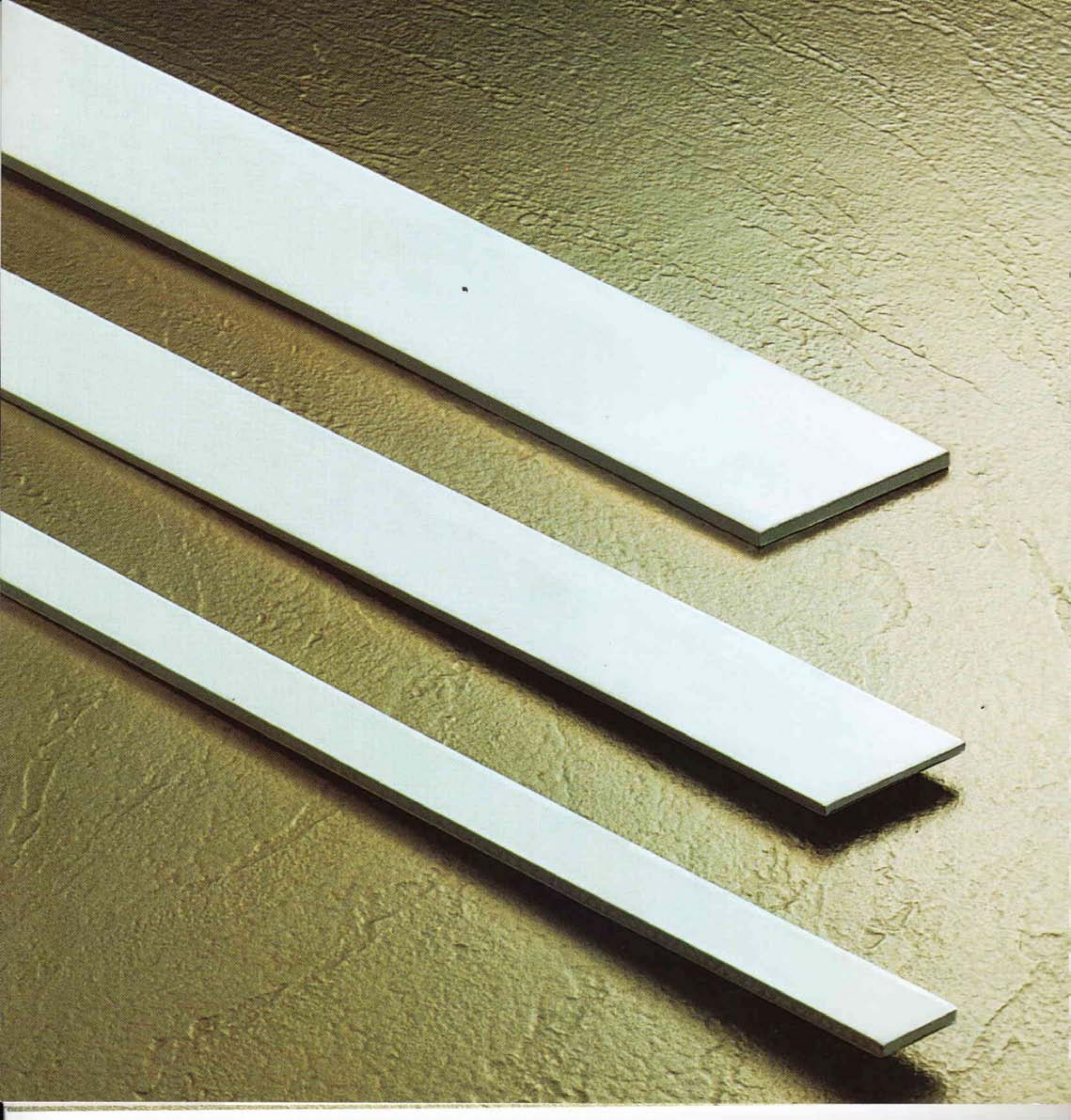
<sup>A</sup> Wall thickness tolerance ±10%  
of nominal wall thickness

SQUARE TUBE (S.Q.)/RECTANGULAR TUBE (R.T.)	
Largest Nominal Outside Dimension Across Flats (mm)	± mm, across Flats, Convexity or Concavity. incl.
To 31.8, incl.	0.38
Over 31.8 to 63.5, incl.	0.51
Over 63.5 to 139.7, incl.	0.76

MAXIMUM RADII OF CORNERS (SQUARE TUBE / RECTANGULAR TUBE)

Wall Thickness (mm)	Radii of Corners, max, (mm)
Over 0.51 to 1.24, incl.	2.4
Over 1.24 to 1.65, incl.	3.2
Over 1.65 to 2.11, incl.	3.6
Over 2.11 to 2.42, incl.	4.8
Over 2.42 to 2.77, incl.	5.2
Over 2.77 to 3.40, incl.	5.6







ASTM A276

DIMENSION AND WEIGHTS

Nominal width (mm)	Weight (kg/m)									
	AISI 304 / 304L					AISI 316 / 316L				
	Nominal Wall Thickness (mm)					Nominal Wall Thickness (mm)				
	3.0	4.0	4.5	5.0	6.0	3.0	4.0	4.5	5.0	6.0
12.0	0.285	0.381	0.428	0.476	0.571	0.287	0.383	0.431	0.479	0.575
20.0	0.476	0.634	0.714	0.793	0.952	0.479	0.638	0.718	0.798	0.958
25.0	0.595	0.793	0.892	0.991	1.190	0.599	0.798	0.898	0.998	1.197
30.0	0.714	0.952	1.071	1.190	1.427	0.718	0.958	1.077	1.197	1.436
38.0	0.904	1.205	1.356	1.507	1.808	0.910	1.213	1.365	1.516	1.819
40.0	0.952	1.269	1.427	1.586	1.903	0.958	1.277	1.436	1.596	1.915
50.0	1.190	1.586	1.784	1.983	2.379	1.197	1.596	1.796	1.995	2.394
60.0	1.427	1.903	2.141	2.379	2.855	1.436	1.915	2.155	2.394	2.873
65.0	1.546	2.062	2.320	2.577	3.093	1.556	2.075	2.334	2.594	3.112
75.0	1.784	2.379	2.676	2.974	3.569	1.796	2.394	2.693	2.993	3.591
100.0	2.379	3.172	3.569	3.965	4.758	2.394	3.192	3.591	3.990	4.788
125.0	2.974	3.965	4.461	4.956	5.948	2.993	3.990	4.489	4.988	5.985
150.0	3.569	4.758	5.353	5.948	7.137	3.591	4.788	5.387	5.985	7.182

Permissible Variation in Dimensions According to ASTM A484	
Dimension	Tolerance (mm)
Wall Thickness over 2.90 to 3.30, incl. over 3.30 to 3.70, incl. over 3.70 to 4.80, excl. 4.80 to 9.00, excl.	+ 0.25 mm , - 0.25 mm + 0.30 mm , - 0.30 mm + 0.35 mm , - 0.35 mm + 1.25 mm , - 0.25 mm
Width	+ 2.4 mm , - 0.8 mm

STAINLESS  
STEEL  
FLAT BARS





## **KANZEN TETSU SDN BHD**

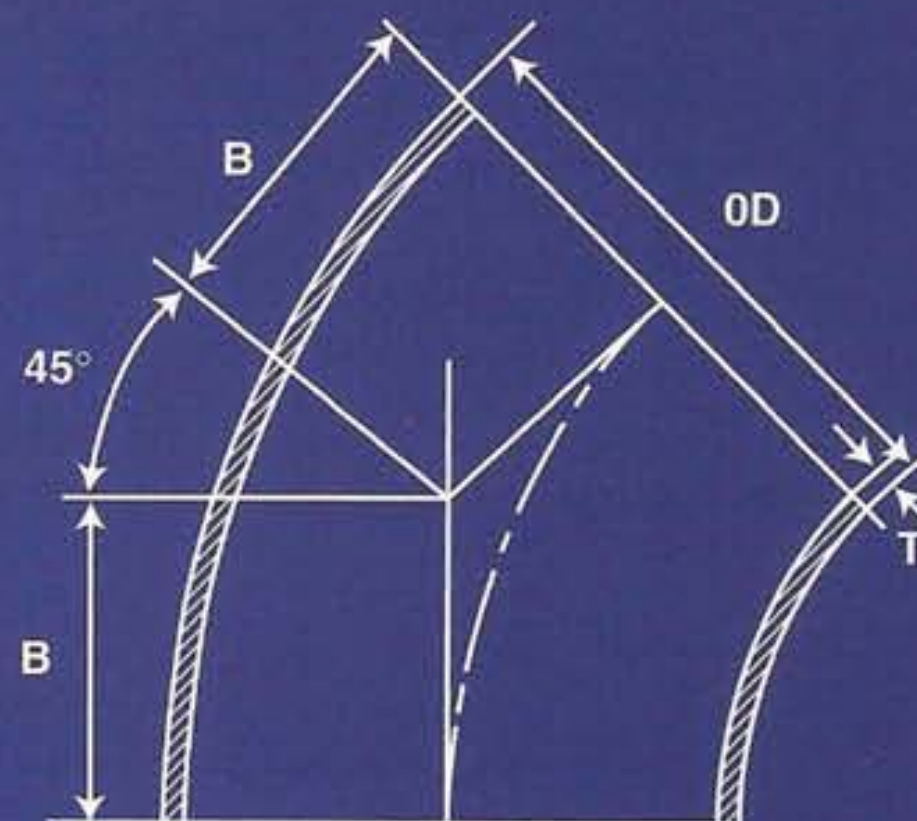
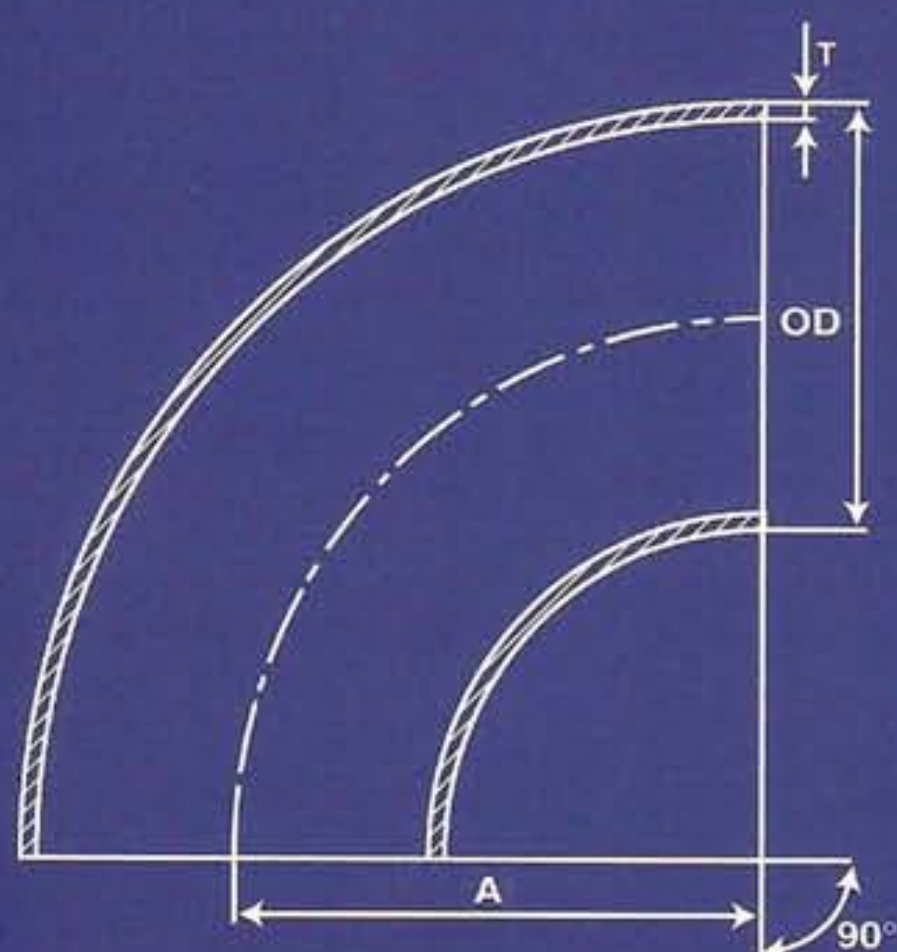
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## ASTM A403 ASME B16.9



### 90° Long Radius Elbows

Unit: inch

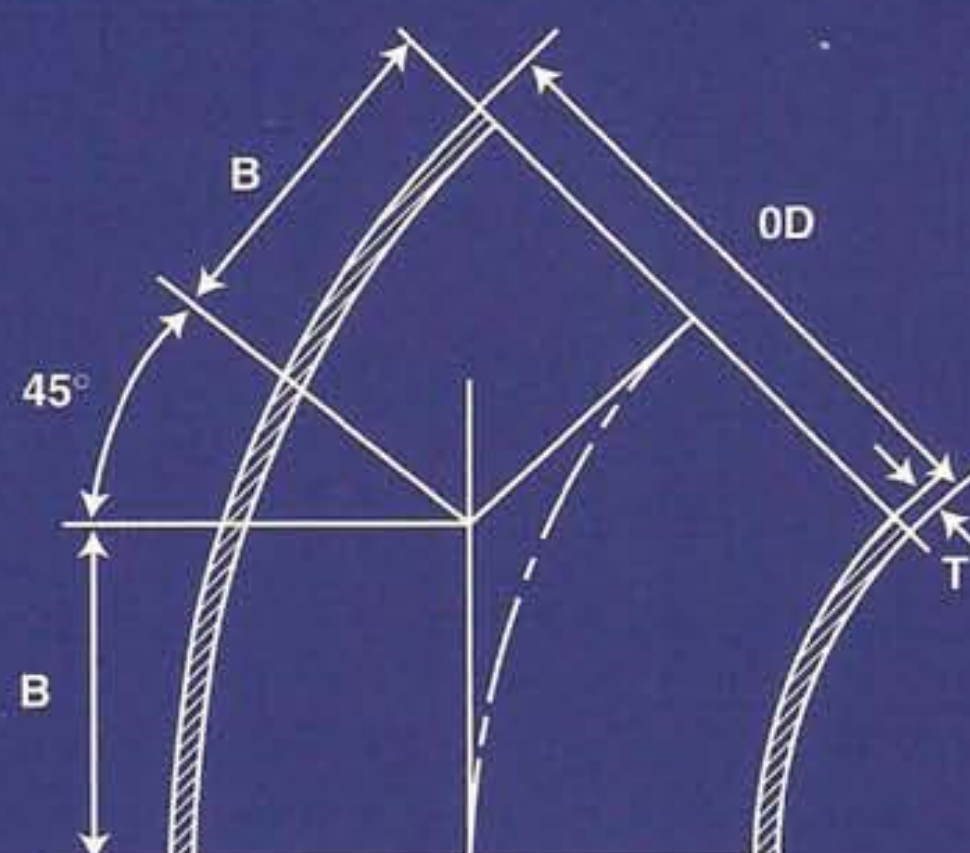
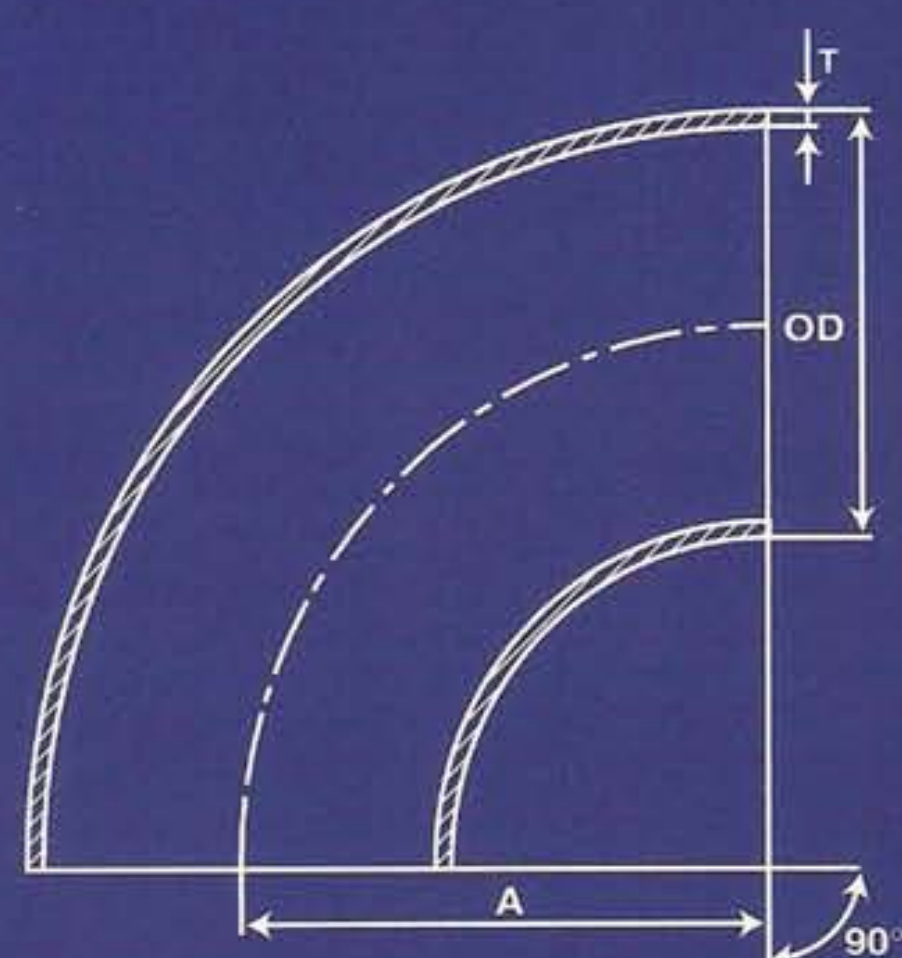
Nominal Pipe Size	Outside Diameter (OD)	Wall Thickness (T)		Center to End (A)	Weights (Kg)	
		Sch 10S	Sch 40S		Sch 10S	Sch 40S
1/2	0.840	0.083	0.109	1.500	0.06	0.076
3/4	1.050	0.083	0.113	1.125	0.07	0.076
1	1.315	0.109	0.133	1.500	0.156	0.160
1 1/4	1.660	0.109	0.140	1.875	0.201	0.253
1 1/2	1.900	0.109	0.145	2.250	0.279	0.363
2	2.375	0.109	0.154	3.000	0.470	0.651
2 1/2	2.875	0.120	0.203	3.750	0.786	1.290
3	3.500	0.120	0.216	4.500	1.160	2.020
4	4.500	0.120	0.237	6.000	2.000	3.840
5	5.563	0.134	0.258	7.500	3.460	6.510
6	6.625	0.134	0.280	9.000	4.960	10.100
8	8.625	0.148	0.322	12.000	9.550	20.300

### 45° Long Radius Elbows

Unit: inch

Nominal Pipe Size	Outside Diameter (OD)	Wall Thickness (T)		Center to End (B)	Weights (Kg)	
		Sch 10S	Sch 40S		Sch 10S	Sch 40S
1/2	0.840	0.083	0.109	0.625	0.030	0.038
3/4	1.050	0.083	0.113	0.438	0.030	0.038
1	1.315	0.109	0.133	0.875	0.078	0.095
1 1/4	1.660	0.109	0.140	1.000	0.101	0.126
1 1/2	1.900	0.109	0.145	1.125	0.140	0.182
2	2.375	0.109	0.154	1.375	0.235	0.326
2 1/2	2.875	0.120	0.203	1.750	0.393	0.645
3	3.500	0.120	0.216	2.000	0.580	1.010
4	4.500	0.120	0.237	2.500	1.000	1.920
5	5.563	0.134	0.258	3.125	1.730	3.260
6	6.625	0.134	0.280	3.750	2.480	5.050
8	8.625	0.148	0.322	5.000	4.740	10.20




**90° Long Radius Elbows**

Unit: mm

Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)				Center to End (A)	Weights (Kg)			
			5S	10S	20S	40S		5S	10S	20S	40S
15	1/2	21.7	1.65	2.1	2.5	2.8	38.1	0.05	0.06	0.07	0.08
20	3/4	27.2	1.65	2.1	2.5	2.9	38.1	0.06	0.09	0.10	0.11
25	1	34.0	1.65	2.8	3.0	3.4	38.1	0.08	0.13	0.14	0.15
32	1 1/4	42.7	1.65	2.8	3.0	3.6	47.6	0.15	0.21	0.22	0.25
40	1 1/2	48.6	1.65	2.8	3.0	3.7	57.2	0.20	0.30	0.32	0.39
50	2	60.5	1.65	2.8	3.5	3.9	76.2	0.33	0.56	0.60	0.75
65	2 1/2	76.3	2.1	3.0	3.5	5.2	95.3	0.71	0.75	1.06	1.45
80	3	89.1	2.1	3.0	4.0	5.5	114.3	0.92	1.28	1.53	2.25
100	4	114.3	2.1	3.0	4.0	6.0	152.4	1.89	2.18	2.73	4.06
125	5	139.8	2.8	3.4	5.0	6.6	190.5	(3.96)	3.96	5.21	6.83
150	6	165.2	2.8	3.4	5.0	7.1	228.6	(5.75)	5.75	7.71	10.54
200	8	216.3	2.8	4.0	6.5	8.2	304.8	(10.30)	10.30	18.40	20.20

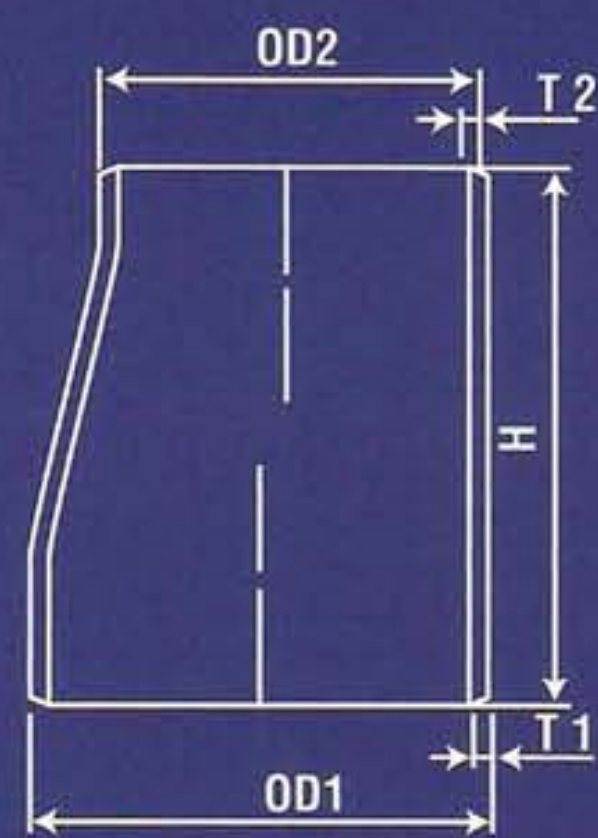
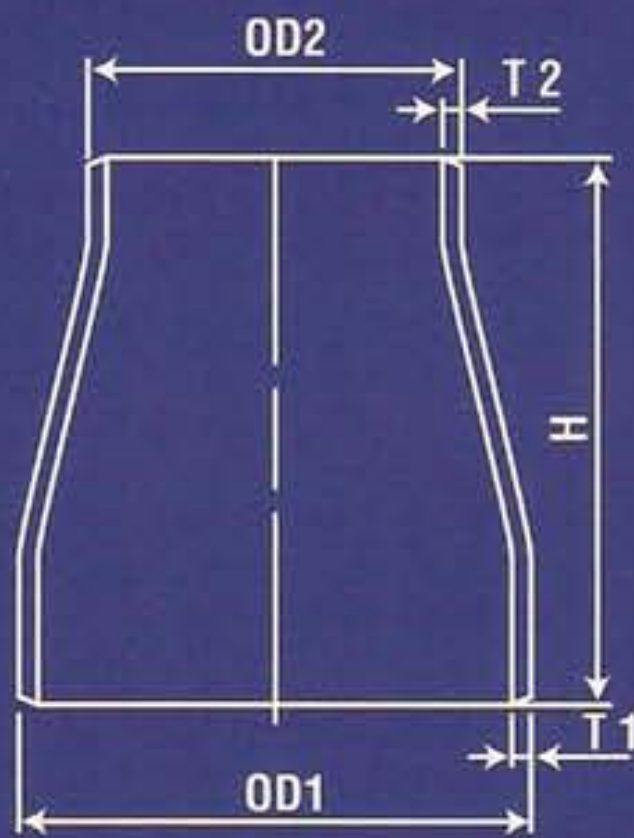
**45° Long Radius Elbows**

Unit: mm

Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)				Center to End (B)	Weights (Kg)			
			5S	10S	20S	40S		5S	10S	20S	40S
15	1/2	21.7	1.65	2.1	2.5	2.8	15.8	0.02	0.03	0.04	0.04
20	3/4	27.2	1.65	2.1	2.5	2.9	15.8	0.03	0.03	0.04	0.04
25	1	34.0	1.65	2.8	3.0	3.4	15.8	0.05	0.10	0.10	0.11
32	1 1/4	42.7	1.65	2.8	3.0	3.6	19.7	0.09	0.11	0.11	0.18
40	1 1/2	48.6	1.65	2.8	3.0	3.7	23.7	0.12	0.18	0.18	0.23
50	2	60.5	1.65	2.8	3.5	3.9	31.6	0.15	0.29	0.30	0.39
65	2 1/2	76.3	2.1	3.0	3.5	5.2	39.5	0.34	0.47	0.50	0.79
80	3	89.1	2.1	3.0	4.0	5.5	47.3	0.50	0.68	0.75	1.12
100	4	114.3	2.1	3.0	4.0	6.0	63.1	0.94	1.09	1.30	1.98
125	5	139.8	2.8	3.4	5.0	6.6	78.9	(1.86)	1.86	2.49	3.45
150	6	165.2	2.8	3.4	5.0	7.1	94.7	(2.76)	2.76	3.54	5.50
200	8	216.3	2.8	4.0	6.5	8.2	126.3	(5.37)	5.37	8.05	10.90



# ASTM A403 ASME B16.9

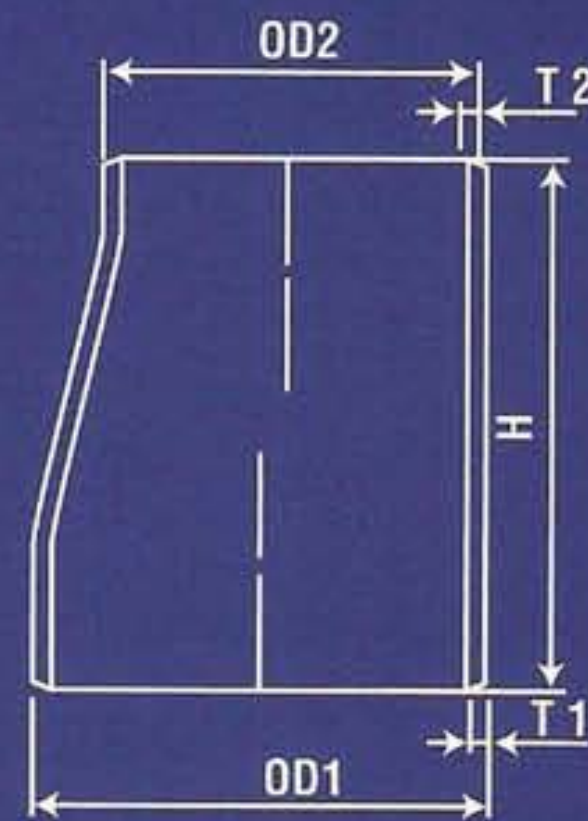
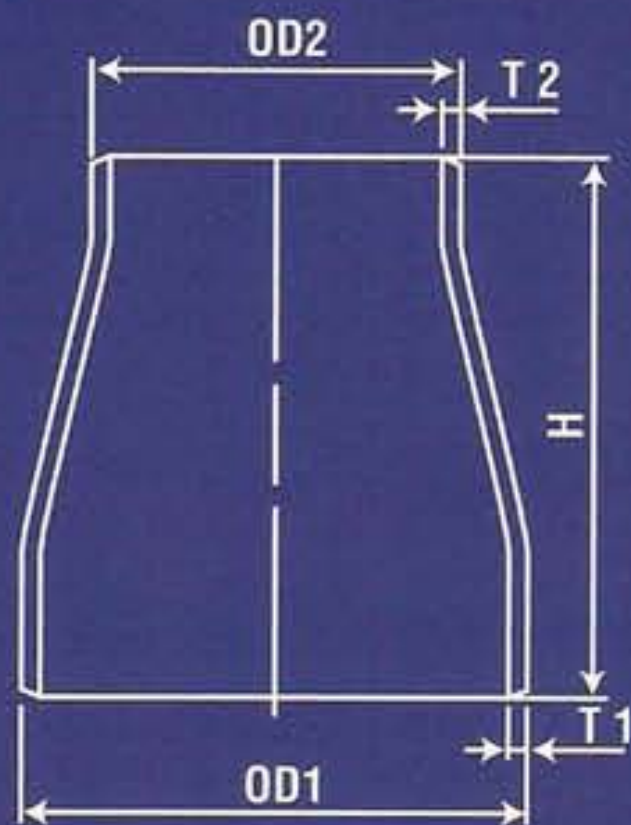


## CON. & ECC. Reducers

Unit: inch

Nominal Pipe Size	OD1	OD2	Wall Thickness (T)				Length (H)	Weights (kg)	
			10S		40S			10S	40S
			T1	T2	T1	T2			
1/2 x 3/8	0.840	0.675	0.083	0.065	0.109	0.091	1.50	0.07	0.09
3/4 x 3/8	1.050	0.675	0.083	0.065	0.113	0.091	1.50	0.07	0.09
3/4 x 1/2	1.050	0.840	0.083	0.083	0.113	0.109	1.50	0.09	0.105
1 x 3/8	1.315	0.675	0.109	0.065	0.133	0.091	2.00	0.089	0.105
1 x 1/2	1.315	0.840	0.109	0.083	0.133	0.109	2.00	0.089	0.105
1 x 3/4	1.315	1.050	0.109	0.083	0.133	0.113	2.00	0.098	0.116
1 1/4 x 1/2	1.660	0.840	0.109	0.083	0.140	0.109	2.00	0.125	0.157
1 1/4 x 3/4	1.660	1.050	0.109	0.083	0.140	0.113	2.00	0.125	0.157
1 1/4 x 1	1.660	1.315	0.109	0.109	0.140	0.133	2.00	0.125	0.157
1 1/2 x 1/2	1.900	0.840	0.109	0.083	0.145	0.109	2.50	0.154	0.204
1 1/2 x 3/4	1.900	1.050	0.109	0.083	0.145	0.113	2.50	0.156	0.201
1 1/2 x 1	1.900	1.315	0.109	0.109	0.145	0.133	2.50	0.170	0.219
1 1/2 x 1 1/4	1.900	1.660	0.109	0.109	0.145	0.140	2.50	0.195	0.263
2 x 1/2	2.375	0.840	0.109	0.083	0.154	0.109	3.00	0.214	0.298
2 x 3/4	2.375	1.050	0.109	0.083	0.154	0.113	3.00	0.214	0.298
2 x 1	2.375	1.315	0.109	0.109	0.154	0.133	3.00	0.237	0.322
2 x 1 1/4	2.375	1.660	0.109	0.109	0.154	0.140	3.00	0.258	0.352
2 x 1 1/2	2.375	1.900	0.109	0.109	0.154	0.145	3.00	0.273	0.372
2 1/2 x 1	2.875	1.315	0.120	0.109	0.203	0.133	3.00	0.349	0.793
2 1/2 x 1 1/4	2.875	1.660	0.120	0.109	0.203	0.140	3.50	0.394	0.670
2 1/2 x 1 1/2	2.875	1.900	0.120	0.109	0.203	0.145	3.50	0.396	0.661
2 1/2 x 2	2.875	2.375	0.120	0.109	0.203	0.154	3.50	0.432	0.724
3 x 1	3.500	1.315	0.120	0.109	0.216	0.133	3.50	0.408	0.716
3 x 1 1/4	3.500	1.660	0.120	0.109	0.216	0.140	3.50	0.430	0.775
3 x 1 1/2	3.500	1.900	0.120	0.109	0.216	0.145	3.50	0.444	0.783
3 x 2	3.500	2.375	0.120	0.109	0.216	0.154	3.50	0.478	0.846
3 x 2 1/2	3.500	2.875	0.120	0.120	0.216	0.203	3.50	0.548	0.983
4 x 2 1/2	4.500	1.900	0.120	0.109	0.237	0.145	4.00	0.630	1.241
4 x 2	4.500	2.375	0.120	0.109	0.237	0.154	4.00	0.656	1.27
4 x 1 1/2	4.500	2.875	0.120	0.120	0.237	0.203	4.00	0.706	1.37
4 x 3	4.500	3.500	0.120	0.120	0.237	0.216	4.00	0.748	1.45
5 x 2 1/2	5.563	2.875	0.134	0.120	0.258	0.203	5.00	1.20	2.27
5 x 3	5.563	3.500	0.134	0.120	0.258	0.216	5.00	1.20	2.27
5 x 4	5.563	4.500	0.134	0.120	0.258	0.237	5.00	1.32	2.50
6 x 3	6.625	3.500	0.134	0.120	0.280	0.216	5.50	1.50	3.04
6 x 4	6.625	4.500	0.134	0.120	0.280	0.237	5.50	1.62	3.30
6 x 5	6.625	5.563	0.134	0.134	0.280	0.258	5.50	1.75	3.57





**CON. & ECC. Reducers**

Unit: mm

Nominal Pipe Size		OD1	OD2	Wall Thickness (T)						Length (H)	Weights (kg)		
				10S		20S		40S			10S	20S	40S
				T1	T2	T1	T2	T1	T2				
15 x 10	1/2 x 3/8	21.7	17.3	2.1	1.65	2.5	2.0	2.8	2.3	38.1	0.07	0.07	0.09
20 x 10	3/4 x 3/8	27.2	17.3	2.1	1.65	2.5	2.0	2.9	2.3	38.1	0.07	0.07	0.09
20 x 15	3/4 x 1/2	27.2	21.7	2.1	2.1	2.5	2.5	2.9	2.8	38.1	0.07	0.07	0.09
25 x 10	1 x 3/8	34.0	17.3	2.8	1.65	3.0	2.0	3.4	2.3	50.8	0.10	0.10	0.12
25 x 15	1 x 1/2	34.0	21.7	2.8	2.1	3.0	2.5	3.4	2.8	50.8	0.10	0.10	0.12
25 x 20	1 x 3/4	34.0	27.2	2.8	2.1	3.0	2.5	3.4	2.9	50.8	0.10	0.10	0.12
32 x 15	1 1/4 x 1/2	42.7	21.7	2.8	2.1	3.0	2.5	3.6	2.8	50.8	0.13	0.13	0.16
32 x 20	1 1/4 x 3/4	42.7	27.2	2.8	2.1	3.0	2.5	3.6	2.9	50.8	0.13	0.13	0.16
32 x 25	1 1/4 x 1	42.7	34.0	2.8	2.8	3.0	3.0	3.6	3.4	50.8	0.13	0.13	0.16
40 x 15	1 1/2 x 1/2	48.6	21.7	2.8	2.1	3.0	2.5	3.7	2.8	63.5	0.19	0.20	0.25
40 x 20	1 1/2 x 3/4	48.6	27.2	2.8	2.1	3.0	2.5	3.7	2.9	63.5	0.19	0.20	0.25
40 x 25	1 1/2 x 1	48.6	34.0	2.8	2.8	3.0	3.0	3.7	3.4	63.5	0.19	0.20	0.25
40 x 32	1 1/2 x 1 1/4	48.6	42.7	2.8	2.8	3.0	3.0	3.7	3.6	63.5	0.19	0.20	0.25
50 x 15	2 x 1/2	60.5	21.7	2.8	2.1	3.5	2.5	3.9	2.8	76.2	0.28	0.34	0.38
50 x 20	2 x 3/4	60.5	27.2	2.8	2.1	3.5	2.5	3.9	2.9	76.2	0.28	0.34	0.38
50 x 25	2 x 1	60.5	34.0	2.8	2.8	3.5	3.0	3.9	3.4	76.2	0.28	0.34	0.38
50 x 32	2 x 1 1/4	60.5	42.7	2.8	2.8	3.5	3.0	3.9	3.6	76.2	0.28	0.34	0.38
50 x 40	2 x 1 1/2	60.5	48.6	2.8	2.8	3.5	3.0	3.9	3.7	76.2	0.28	0.34	0.38
65 x 25	2 1/2 x 1	76.3	34.0	3.0	2.8	3.5	3.0	5.2	3.4	88.9	0.44	0.50	0.73
65 x 32	2 1/2 x 1 1/4	76.3	42.7	3.0	2.8	3.5	3.0	5.2	3.6	88.9	0.44	0.50	0.73
65 x 40	2 1/2 x 1 1/2	76.3	48.6	3.0	2.8	3.5	3.0	5.2	3.7	88.9	0.44	0.50	0.73
65 x 50	2 1/2 x 2	76.3	60.5	3.0	2.8	3.5	3.5	5.2	3.9	88.9	0.44	0.50	0.73
80 x 25	3 x 1	89.1	34.0	3.0	2.8	4.0	3.0	5.5	3.4	88.9	0.53	0.69	0.94
80 x 32	3 x 1 1/4	89.1	42.7	3.0	2.8	4.0	3.0	5.5	3.6	88.9	0.53	0.69	0.94
80 x 40	3 x 1 1/2	89.1	48.6	3.0	2.8	4.0	3.0	5.5	3.7	88.9	0.53	0.69	0.94
80 x 50	3 x 2	89.1	60.5	3.0	2.8	4.0	3.5	5.5	3.9	88.9	0.53	0.69	0.94
80 x 65	3 x 2 1/2	89.1	76.3	3.0	3.0	4.0	3.5	5.5	5.2	88.9	0.53	0.69	0.94
90 x 40	3 1/2 x 1 1/2	101.6	48.6	3.0	2.8	4.0	3.0	5.7	3.7	101.6	0.70	0.92	1.28
90 x 50	3 1/2 x 2	101.6	60.5	3.0	2.8	4.0	3.5	5.7	3.9	101.6	0.70	0.92	1.28
90 x 65	3 1/2 x 2 1/2	101.6	76.3	3.0	3.0	4.0	3.5	5.7	5.2	101.6	0.70	0.92	1.28
90 x 80	3 1/2 x 3	101.6	89.1	3.0	3.0	4.0	4.0	5.7	5.5	101.6	0.70	0.92	1.28
100 x 40	4 x 1 1/2	114.3	48.6	3.0	2.8	4.0	3.0	6.0	3.7	101.6	0.80	0.99	1.54
100 x 50	4 x 2	114.3	60.5	3.0	2.8	4.0	3.5	6.0	3.9	101.6	0.80	0.99	1.54
100 x 65	4 x 2 1/2	114.3	76.3	3.0	3.0	4.0	3.5	6.0	5.2	101.6	0.80	0.99	1.54
100 x 80	4 x 3	114.3	89.1	3.0	3.0	4.0	4.0	6.0	5.5	101.6	0.80	0.99	1.54
100 x 90	4 x 3 1/2	114.3	101.6	3.0	3.0	4.0	4.0	6.0	5.7	101.6	0.80	0.99	1.54
125 x 65	5 x 2 1/2	139.8	76.3	3.4	3.0	5.0	3.5	6.6	5.2	127.0	1.32	1.92	2.50
125 x 80	5 x 3	139.8	89.1	3.4	3.0	5.0	4.0	6.6	5.5	127.0	1.32	1.92	2.50
125 x 100	5 x 4	139.8	114.3	3.4	3.0	5.0	4.0	6.6	6.0	127.0	1.32	1.92	2.50
150 x 80	6 x 3	165.2	89.1	3.4	3.0	5.0	4.0	7.1	5.5	139.7	1.75	2.55	3.57
150 x 100	6 x 4	165.2	114.3	3.4	3.0	5.0	4.0	7.1	6.0	139.7	1.75	2.55	3.57
150 x 125	6 x 5	165.2	139.8	3.4	3.4	5.0	5.0	7.1	6.6	139.7	1.75	2.55	3.57



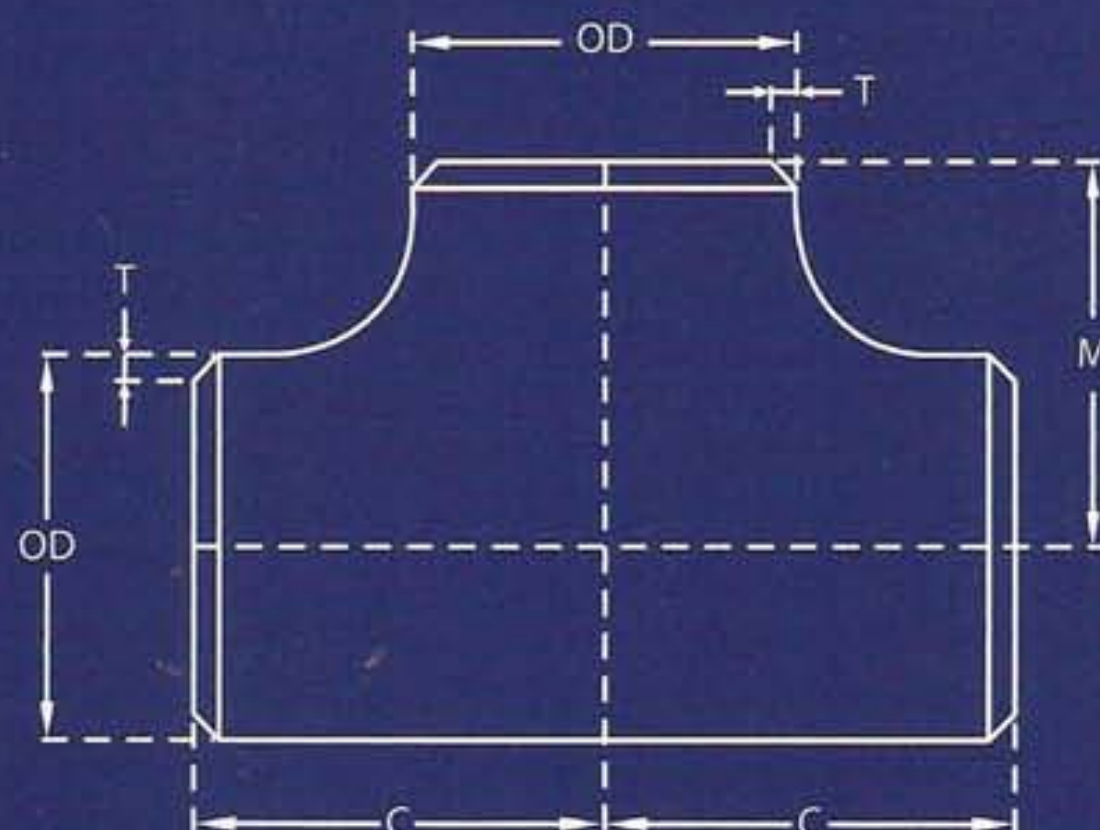


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(Company No : 368524 W)



ISO 9001:2008 Cert No: KLR0403952

## ASTM A403 ASME B16.9



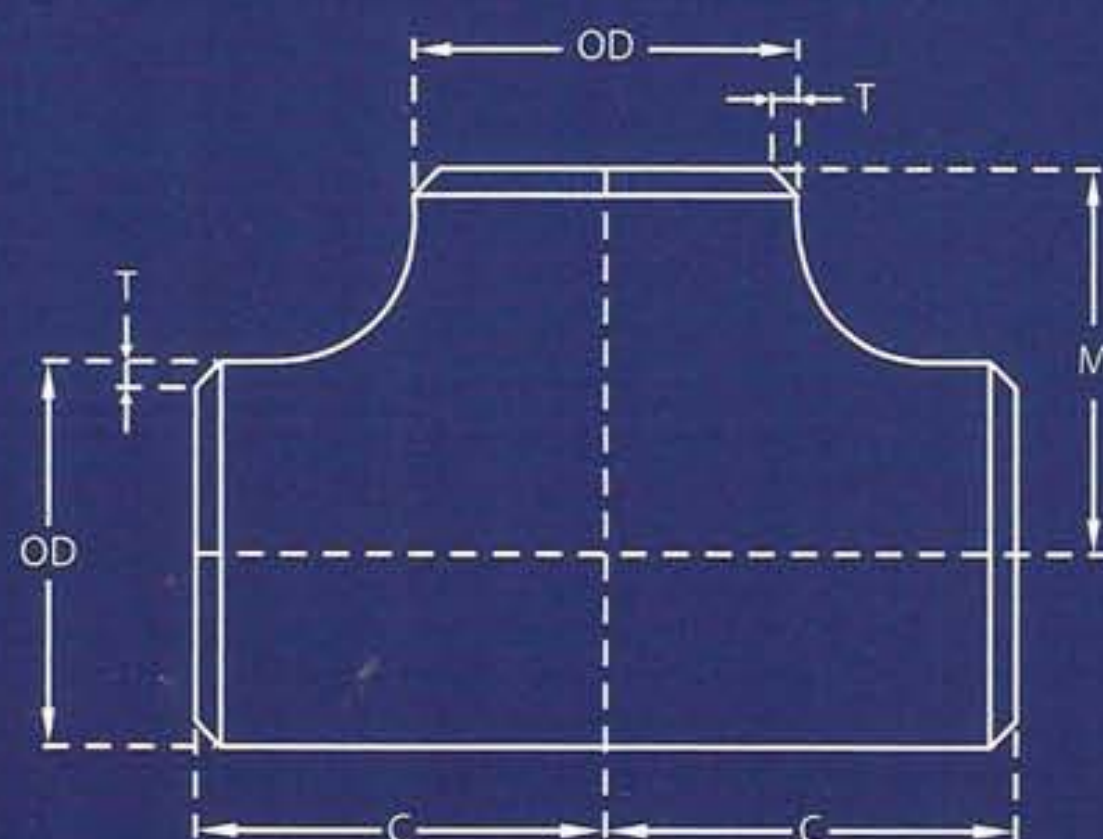
### Straight Tee

Unit : inch

Nominal Pipe Size	Outside Diameter OD	Wall Thickness (T)		Center to End		Weight (kg)	
		10S	40S	C	M	10S	40S
1/2	0.84	0.083	0.109	1.00	1.00	0.10	0.12
3/4	1.05	0.083	0.113	1.12	1.12	0.14	0.17
1	1.32	0.109	0.133	1.50	1.50	0.31	0.35
1 1/4	1.66	0.109	0.140	1.88	1.88	0.47	0.64
1 1/2	1.90	0.109	0.145	2.25	2.25	0.68	0.85
2	2.38	0.109	0.154	2.50	2.50	0.85	1.10
2 1/2	2.88	0.120	0.203	3.00	3.00	1.43	2.17
3	3.50	0.120	0.216	3.38	3.38	1.80	3.02
4	4.50	0.120	0.237	4.12	4.12	2.90	5.16
5	5.56	0.134	0.258	4.88	4.88	4.48	7.57
6	6.62	0.134	0.280	5.62	5.62	6.00	11.53
8	8.62	0.148	0.322	7.00	7.00	13.01	20.16



## JIS B2313



### Straight Tee

Unit : mm

Nominal Pipe Size	Outside Diameter	Wall Thickness (T)			Center to End		Weight (kg)		
		10S	20S	S40	C	M	10S	20S	S40
1/2	21.7	2.1	2.5	2.8	25.4	25.4	0.10	0.11	0.12
3/4	27.2	2.1	2.5	2.9	28.6	28.6	0.14	0.15	0.17
1	34.0	2.8	3.0	3.4	38.1	38.1	0.31	0.31	0.35
1 1/4	42.7	2.8	3.0	3.6	47.6	47.6	0.47	0.50	0.64
1 1/2	48.6	2.8	3.0	3.7	57.2	57.2	0.68	0.68	0.85
2	60.5	2.8	3.5	3.9	63.5	63.5	0.85	1.07	1.10
2 1/2	76.3	3.0	3.5	5.2	76.2	76.2	1.43	1.60	2.17
3	89.1	3.0	4.0	5.5	85.7	85.7	1.80	2.29	3.02
4	114.3	3.0	4.0	6.0	104.8	104.8	2.90	3.51	5.16
5	139.8	3.4	5.0	6.6	123.8	123.8	4.48	5.90	7.57
6	165.2	3.4	5.0	7.1	142.9	142.9	6.00	8.61	11.53
8	216.3	4.0	6.5	8.2	177.8	177.8	13.01	16.24	20.16

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# RELIABILITY & EXCELLENCY IN THE MAKING



SPI  
WP-S 304/304L TYPE A  
2 1/2 x Sch 10s  
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SPI  
WP-S 304/304L TYPE A  
2 1/2 x Sch 10s  
88AC42B

SPI  
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2 1/2 x Sch 10s  
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# MANUFACTURING OF PIPE JOINTS



S.P. United Industry Sdn. Bhd. is dedicated to produce high quality products to perfectly fit every extreme requirement. We understand that in today's demanding industrial world only products of a high grade of quality will suit. That is why we constantly strive to produce only the best.



Our unsurpassed durable Lap Joint Stub Ends are one piece type made from welded or seamless pipes. Only state of the art technology is used to make our Lap Joint Stub Ends, ensuring a great degree of confidence in our products world wide.

Our highly skilled workforce maintains strict quality control standards at every manufacturing stage to ensure that

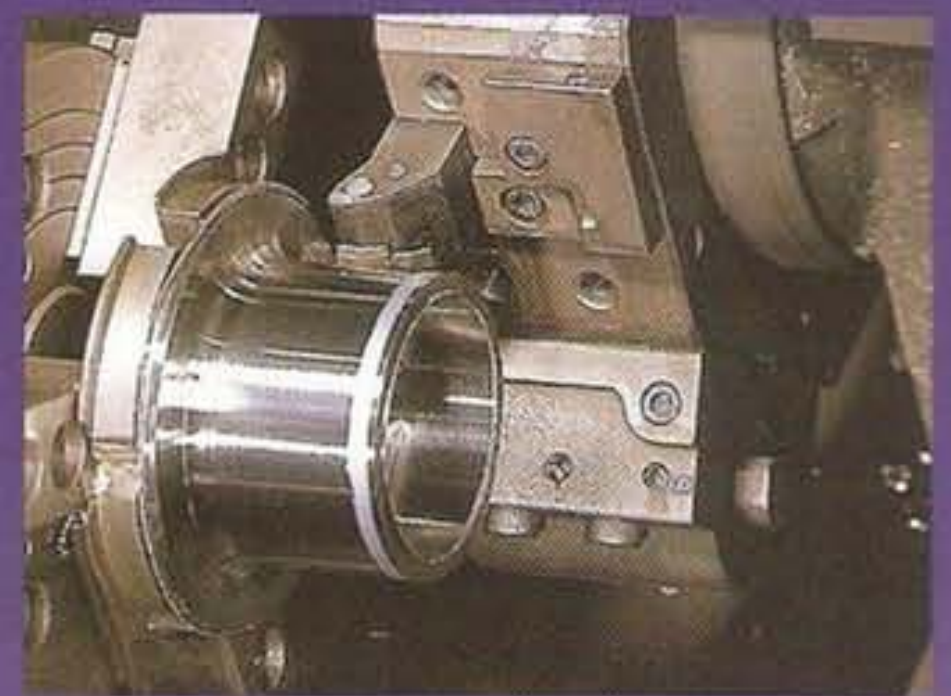


from the raw materials stage to the finished product, our clients will only get the best possible product in its class.

Our unrivalled service ensures that we will be available to you whatever your requirements. We aim



to be the foremost world wide manufacturer of Lap Joint Stub Ends and we are confident that we can live up to our high standards to continue to grow in size and in stature.





# MSS SP - 43

(unit : inch)

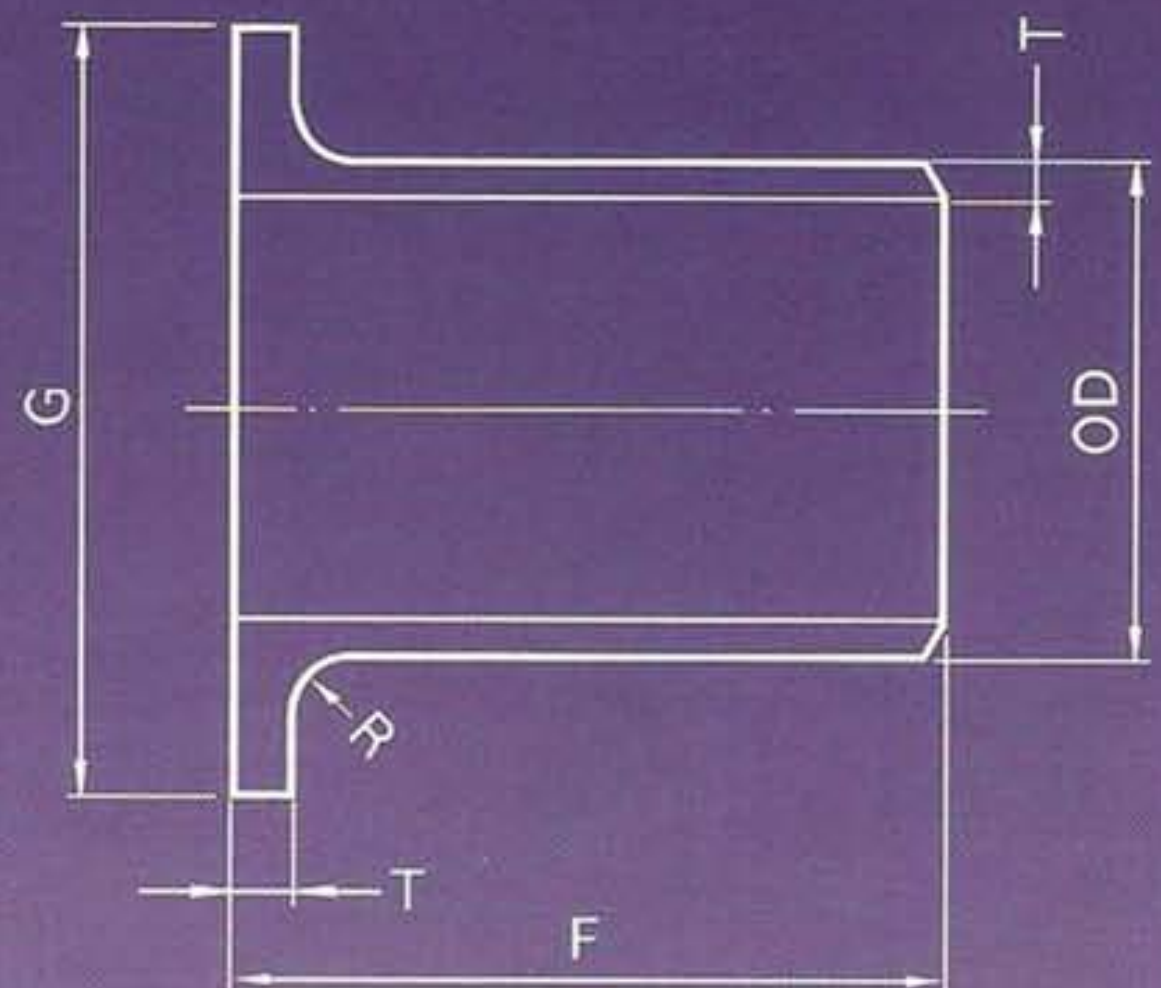
Nominal Pipe Size	Outside Dia (OD)	Wall Thickness (T)			Dia of Lap (G)	Length F	Radius R	
		Sch. 5S	Sch. 10S	Sch. 40S			Type A (Max)	Type B (Max)
1/2	0.840	0.065	0.083	0.109	1.375	2.0	0.13	0.03
3/4	1.050	0.065	0.083	0.113	1.688	2.0	0.13	0.03
1	1.315	0.065	0.109	0.133	2.000	2.0	0.13	0.03
1 1/4	1.660	0.065	0.109	0.140	2.500	2.0	0.19	0.03
1 1/2	1.900	0.065	0.109	0.145	2.875	2.0	0.25	0.03
2	2.375	0.065	0.109	0.154	3.625	2.5	0.31	0.03
2 1/2	2.875	0.083	0.120	0.203	4.125	2.5	0.31	0.03
3	3.500	0.083	0.120	0.216	5.000	2.5	0.38	0.03
4	4.500	0.083	0.120	0.237	6.188	3.0	0.44	0.03
5	5.563	0.109	0.134	0.258	7.313	3.0	0.44	0.06
6	6.625	0.109	0.134	0.280	8.500	3.5	0.50	0.06
8	8.625	0.109	0.148	0.322	10.625	4.0	0.50	0.06
10	10.750	0.134	0.165	0.365	12.750	5.0	0.50	0.06
12	12.750	0.156	0.180	0.375	15.000	6.0	0.50	0.06
14	14.000	0.156	0.188	*	16.250	6.0	0.50	0.06
16	16.000	0.165	0.188	*	18.500	6.0	0.50	0.06

\*Std = 0.375 \*\*XS = 0.500

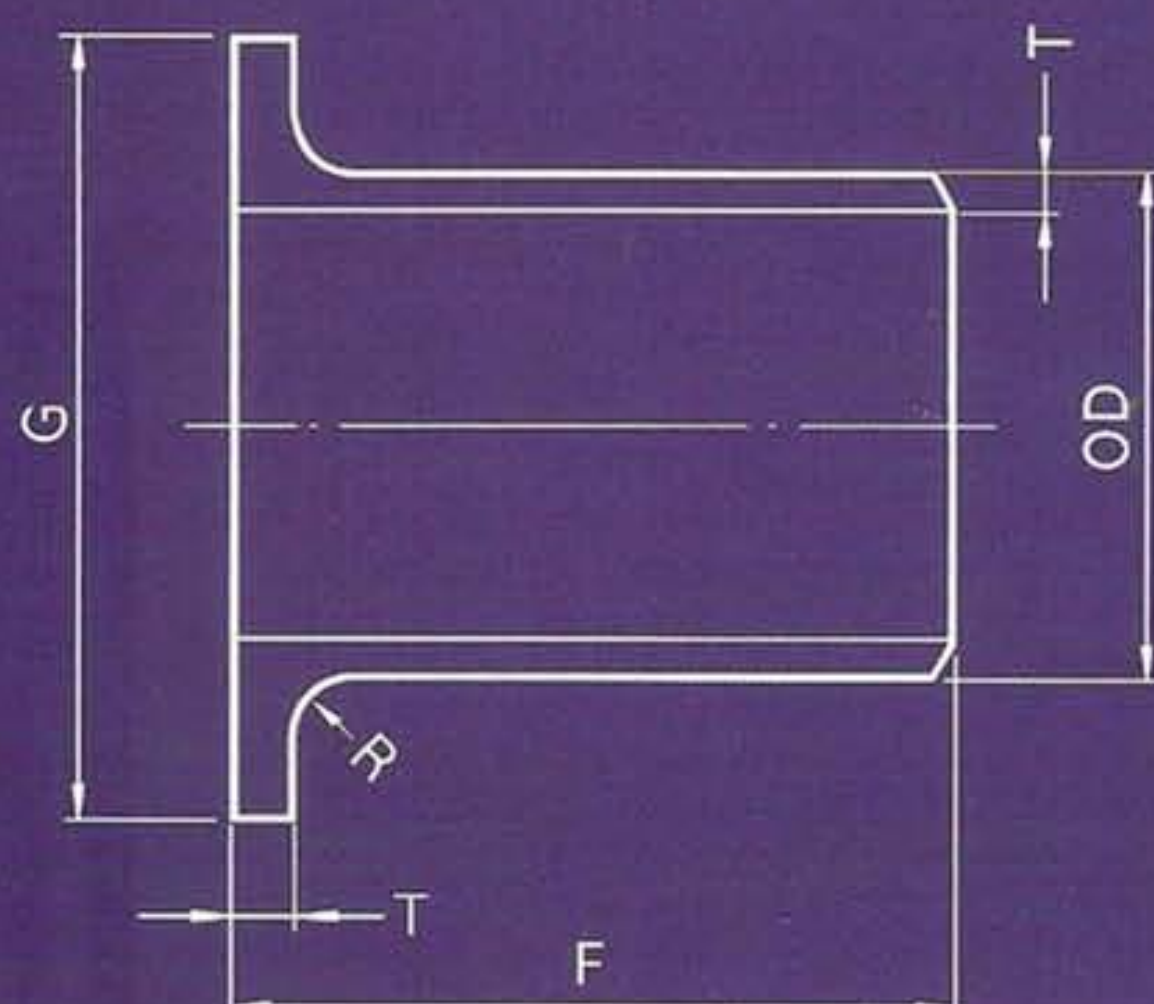
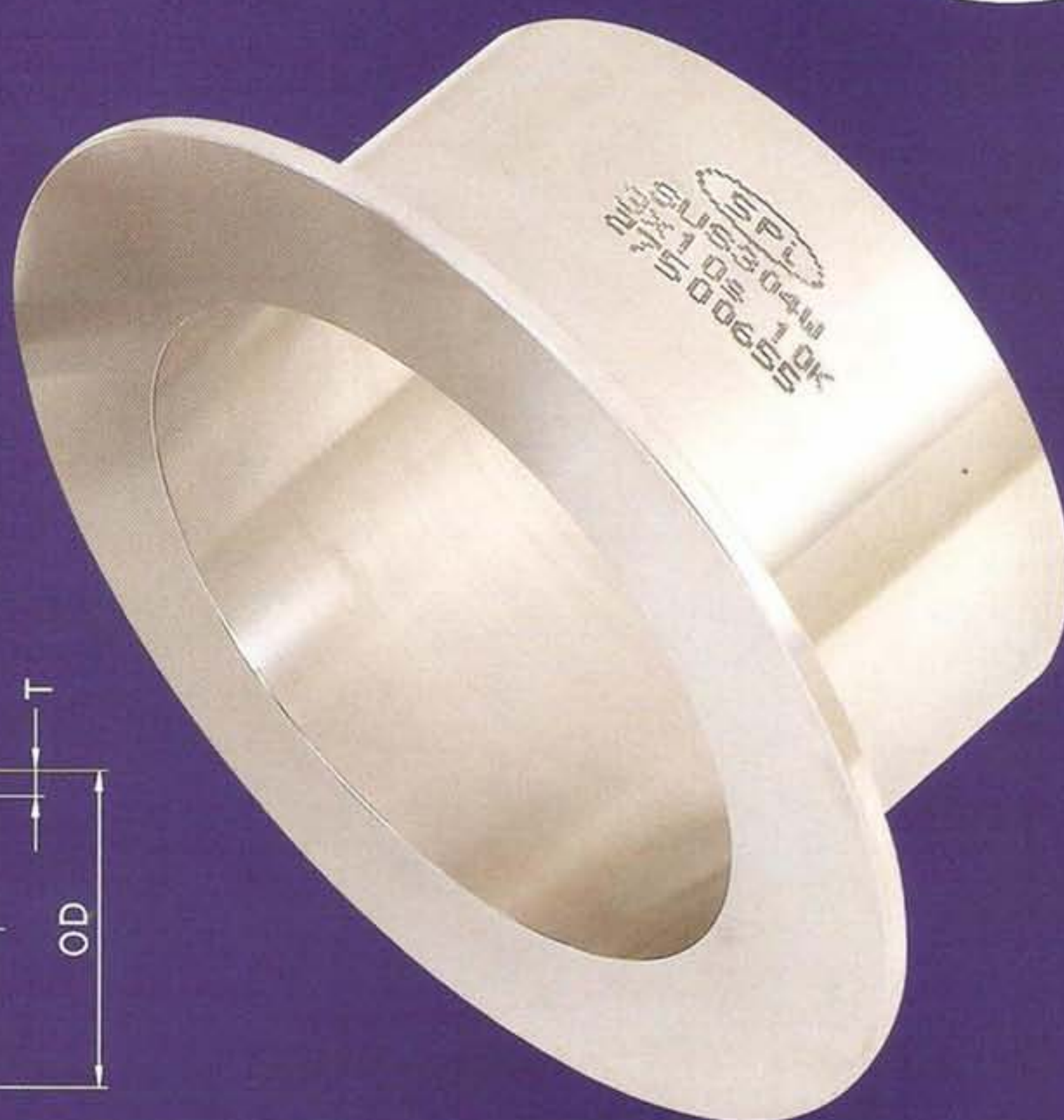
# WEIGHTS

(unit : kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 40S
1/2	0.059	0.077	0.118
3/4	0.068	0.086	0.154
1	0.091	0.140	0.186
1 1/4	0.131	0.208	0.263
1 1/2	0.159	0.249	0.376
2	0.245	0.376	0.539
2 1/2	0.349	0.471	0.797
3	0.467	0.638	1.133
4	0.711	0.978	1.812
5	1.046	1.237	2.537
6	1.62	1.95	3.72
8	2.45	3.10	5.89
10	4.04	4.86	10.42
12	6.60	7.11	14.95
14	6.43	7.75	*15.46
16	7.91	9.02	*17.98







## JPF SP - 001

(unit : mm)

Nominal Pipe Size	Outside Dia (OD)	Wall Thickness (T)				Dia of Lap (G)		Length F	Radius R
		Sch. 5S	Sch. 10S	Sch. 20S	Sch. 40S	5K	10K		
1/2	21.7	1.65	2.1	2.5	2.8	44	51	30	3
3/4	27.2	1.65	2.1	2.5	2.9	49	56	30	3
1	34.0	1.65	2.8	3.0	3.4	59	67	50	3
1 1/4	42.7	1.65	2.8	3.0	3.6	70	76	50	4
1 1/2	48.6	1.65	2.8	3.0	3.7	75	81	50	4
2	60.5	1.65	2.8	3.5	3.9	85	96	50	4
2 1/2	76.3	2.1	3.0	3.5	5.2	110	116	50	5
3	89.1	2.1	3.0	4.0	5.5	121	126	50	5
4	114.3	2.1	3.0	4.0	6.0	141	151	50	5
5	139.8	2.8	3.4	5.0	6.6	176	182	50	6
6	165.2	2.8	3.4	5.0	7.1	206	212	50	6
8	216.3	2.8	4.0	6.5	8.2	252	262	65	6
10	267.4	3.4	4.0	6.5	9.3	317	324	65	6
12	318.5	4.0	4.5	6.5	10.3	360	368	65	9

## WEIGHTS

(unit : kg)

Nominal Pipe Size	Sch. 5S	Sch. 10S	Sch. 20S	Sch. 40S
1/2	0.047	0.058	0.069	0.077
3/4	0.056	0.071	0.084	0.096
1	0.101	0.167	0.178	0.201
1 1/4	0.125	0.209	0.223	0.264
1 1/2	0.140	0.233	0.249	0.304
2	0.178	0.299	0.370	0.411
2 1/2	0.295	0.417	0.485	0.709
3	0.332	0.471	0.623	0.846
4	0.422	0.599	0.794	1.18
5	0.716	0.867	1.27	1.66
6	0.876	1.06	1.55	2.18
8	1.35	1.92	3.10	3.89
10	2.17	2.55	4.11	5.84
12	2.89	3.25	4.67	7.34



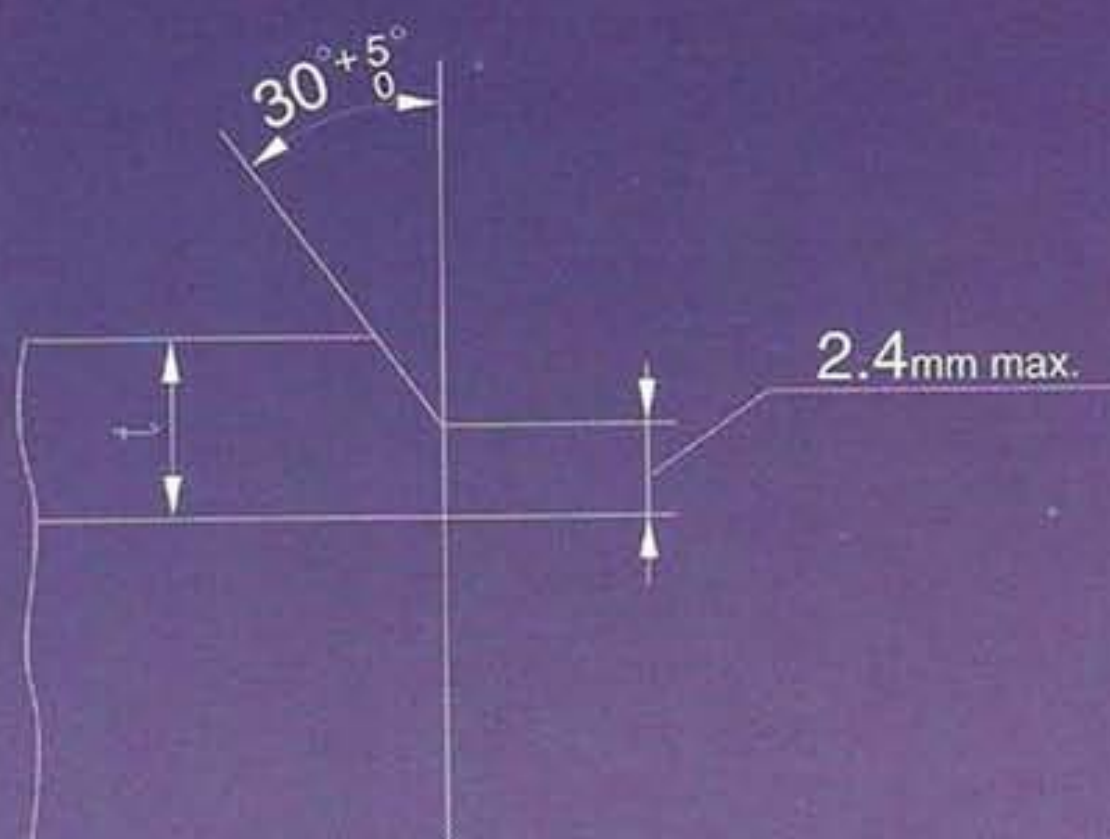
## TABLE OF THE CHEMICAL COMPOSITION

Grade		C	Si	Mn	P	S	Ni	Cr	Mo
JIS	SUS304	$\leq 0.08$	$\leq 1.00$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	8.00~11.00	18.00~20.00	
	SUS304L	$\leq 0.03$	$\leq 1.00$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	9.00~13.00	18.00~20.00	
	SUS316	$\leq 0.08$	$\leq 1.00$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	10.00~14.00	16.00~18.00	2.00~3.00
	SUS316L	$\leq 0.03$	$\leq 1.00$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	12.00~16.00	16.00~18.00	2.00~3.00
ASTM	TP 304	$\leq 0.08$	$\leq 0.75$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	8.00~11.00	18.00~20.00	
	TP 304L	$\leq 0.035$	$\leq 0.75$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	8.00~13.00	18.00~20.00	
	TP 316	$\leq 0.08$	$\leq 0.75$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	11.00~14.00	16.00~18.00	2.00~3.00
	TP 316L	$\leq 0.035$	$\leq 0.75$	$\leq 2.00$	$\leq 0.04$	$\leq 0.03$	10.00~15.00	16.00~18.00	2.00~3.00

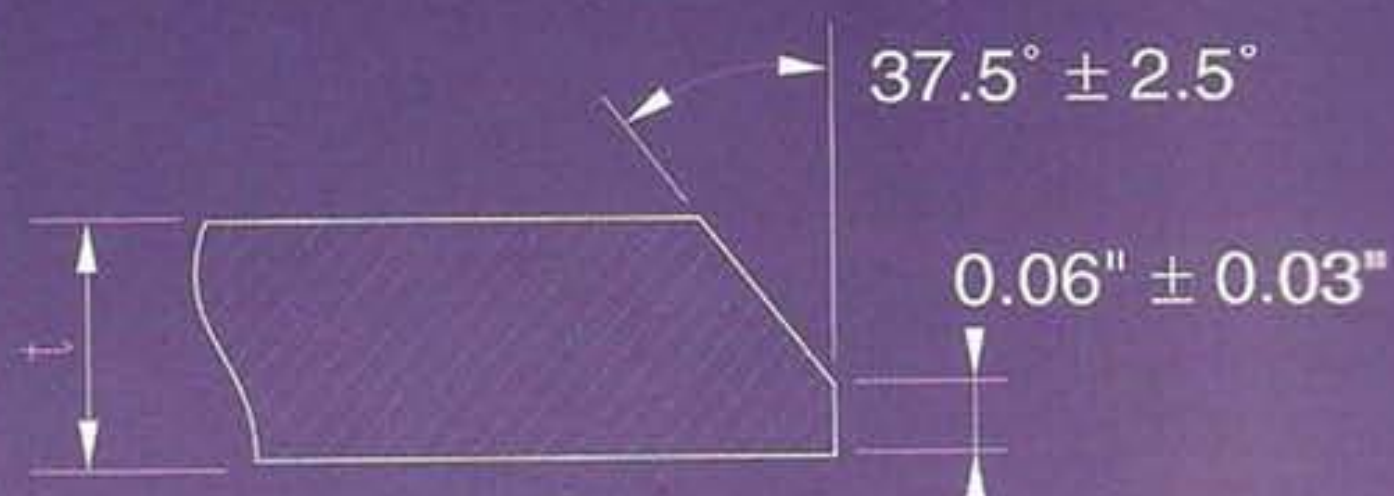
## TOLERANCE

Grade	Item	Outside Diameter		Thickness	
JIS		$\geq 30.0\text{mm}$	$\pm 1\%$	$\geq 2\text{mm}$	$\pm 10\%$
ASTM		$\leq 48.26\text{mm}$ $> 48.26 \leq 114.3\text{mm}$ $> 114.3 \leq 219.08\text{mm}$ $> 219.08 \leq 457.2\text{mm}$ $> 457.2 \leq 660.4\text{mm}$ $> 660.4 \leq 863.6\text{mm}$	$+0.40\text{mm}$ $-0.80\text{mm}$ $\pm 0.80\text{mm}$ $+1.60\text{mm}$ $-0.80\text{mm}$ $+2.40\text{mm}$ $-0.80\text{mm}$ $+3.20\text{mm}$ $-0.80\text{mm}$ $+4.00\text{mm}$ $-0.80\text{mm}$	free to $\pm 12.5\%$ x Wall specified thickness	

## Shape of bevel end



t : 22 mm max. in thickness



Nominal pipe wall thickness 0.125" thought 0.875"



# RELIABLE GLOBALLY



**S. P. UNITED INDUSTRY SDN. BHD.**

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