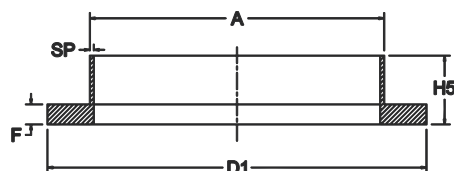


Butt Weld Fittings

ISO

Collars PN10-PN16 in accordance with EN 13480 and EN 1092-1



						Weight Kg/pce/Design Pressure Bar	
DN	A	SP	F	D1	H5	EN 13480 ¹⁾	EN 1092-1 type 37 ²⁾
10	17.2	2.0	2.5	40	7	0.02/16	0.02/16
15	21.3	2.0	2.5	45	7	0.03/16	0.03/16
20	26.9	2.0	3.0	58	8	0.06/16	0.06/16
		3.0	4.0		8	0.07/16	
25	33.7	2.0	3.0	68	10	0.08/16	0.08/16
		3.2	4.0		10	0.10/16	
32	42.4	2.0	3.0	78	12	0.10/16	0.10/16
		3.2	4.0		12	0.13/16	
40	44.5	2.0	3.0	88	17	0.14/16	0.14/16
	48.3	2.0	3.0		15	0.13/16	0.13/16
		3.2	4.0		15	0.17/16	
50	57.0	3.0	4.0	102	18	0.23/16	
	60.3	2.0	3.0		20	0.18/16	0.18/6
		3.2	4.0		20	0.23/16	0.23/16
65	76.1	2.0	3.0		20	0.24/16	0.24/6
		3.2	4.0		20	0.32/16	
80	88.9	2.0	3.0	138	25	0.31/16	
		3.2	4.0		25	0.42/16	0.42/16
100	114.3	2.0	2.5		25	0.31/10	
		3.2	4.0		25	0.49/16	0.49/16
125	139.7	2.0	2.5		25	0.39/10	
		3.2 (3.5)*	4.0		25	0.64/16	0.64/16
150	168.3	2.0	2.5	212	25	0.47/10	
		3.0	3.5		25	0.64/10	
		3.2 (3.5)*	4.0		25	0.73/10	0.73/10
		4.0	5.0		25	0.93/16	
200	219.1	2.0	2.5	268	30	0.67/6	
		3.2	4.0		30	1.06/10	

1) Design pressure is calculated for grade EN 1,4307 at 20°C and fulfils the requirements in EN 13480, Part 2, Part 3 and Part 5, EN 13445-3. Full face gasket with thickness ≥ 1.0 mm.

Gasket factor 3.50 and design seating stress ≥ 45 Mpa. See also appendix H in EN13445-3.

2) Collars according to EN 1092-1 are calculated according to EN 1591-1.

The designation of a EN 1092-1 DN 50 collar is: Collar EN 1092-1/37/60.3x2/PN16/1,4432/LotNo.

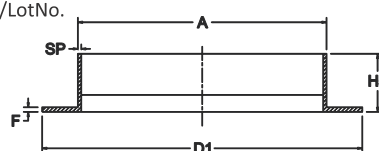
*) Corresponds to thickness S acc. to EN 1092-1.

Stock standard: EN 1,4307 and 1,4432

OT 500

ISO

Collars welded and pressed



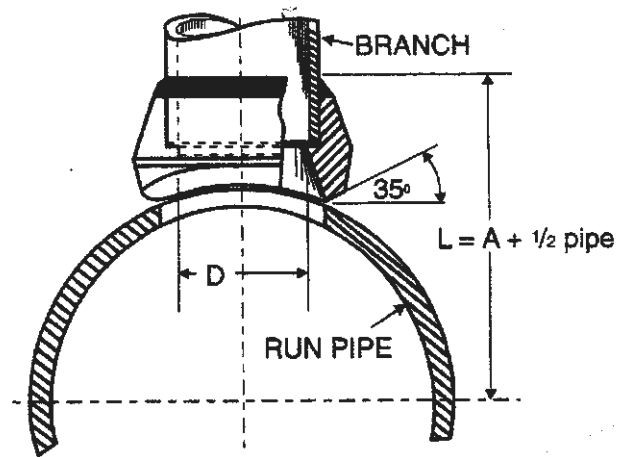
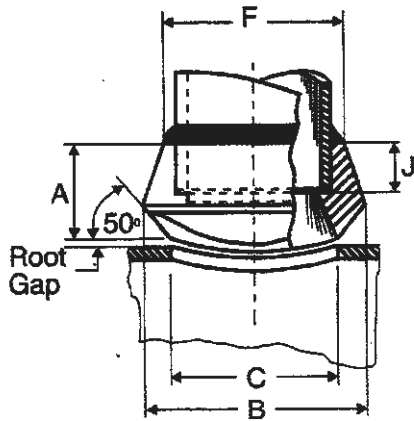
DN	A	F=SP	D1	H5	Weight Kg/pce/ Design Pressure Bar
250	273.00	3	320	31	1.18/6
		4		31	1.58/10
300	323.90	3	378	35	1.50/4
		4		35	1.90/10

The pressures are calculated for grade EN 1.4307 at 20°C. Full face gasket with thickness ≥ 1.5 mm. Gasket factor 2.85 and design seating stress ≥ 30 Mpa. See also appendix H in EN 13445-3.

Stock standard: EN 1,4307 and 1,4432

Sockolets

3000 LBS and 6000 LBS

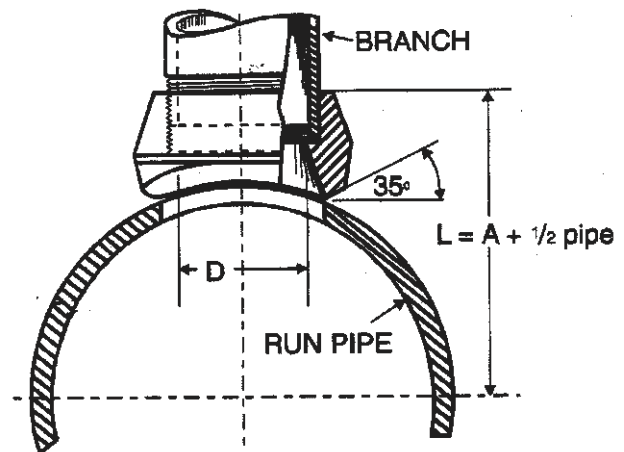
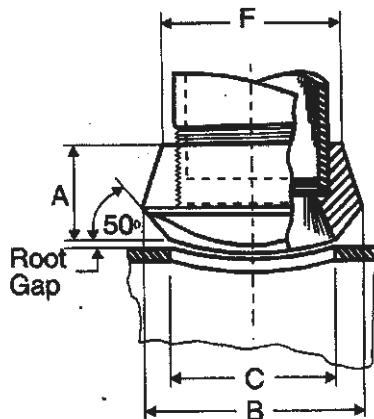


Dimensions in mm

Run Pipe Size (in)	Outlet Pipe NPS	A	B	C	D	F	J
3000 LBS Standard and extra strong							
36-3/8	1/8	19.1	25.4	15.9	10.9	17.3	9.5
3/8	1/4	19.1	25.4	15.9	14.4	22.0	9.5
1/2	3/8	20.6	31.8	19.1	17.8	25.8	9.5
3/4	1/2	25.4	34.9	23.8	22.0	31.3	11.1
1	3/4	26.9	44.5	30.2	27.3	37.1	12.7
1-1/4	1	33.3	54.0	36.5	34.1	45.5	13.5
1-1/2	1-1/4	33.3	65.1	44.5	42.8	54.9	15.1
2	1-1/2	35.1	73.1	50.8	48.9	61.6	15.1
2-1/2	2	38.1	88.9	65.1	61.4	75.3	17.5
3	2-1/2	39.6	103.2	76.2	74.2	91.7	23.8
4	3	44.5	122.2	93.7	90.1	109.1	28.6
6	4	47.8	152.4	120.7	115.8	137.2	29.4
6000 LB Schedule 160 and double extra strong							
36-3/4	1/2	31.8	44.5	19.1	22.0	33.9	9.5
1	3/4	36.6	50.8	25.4	27.3	41.2	14.3
1-1/4	1	39.6	61.9	33.3	34.1	49.9	15.9
1-1/2	1-1/4	41.2	69.9	38.1	42.8	58.6	20.6
2	1-1/2	42.9	82.6	49.2	48.9	66.7	20.6
2-1/2	2	52.3	103.2	58.7	61.4	83.2	22.2

Thredolets

3000 LBS and 6000 LBS

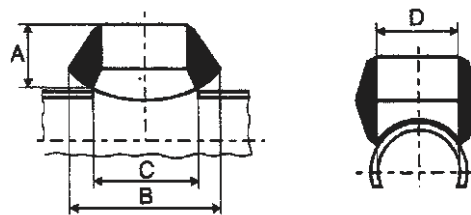


Dimensions in mm

Run Pipe Size (in)	Outlet Pipe NPS	A	B	C	F
3000 LBS Standard and extra strong					
36- 3/8	1/8	19.1	25.4	15.9	17.3
3/8	1/4	19.1	25.4	15.9	22.0
1/2	3/8	20.6	31.8	19.1	25.8
3/4	1/2	25.4	34.9	23.8	31.3
1	3/4	26.9	44.5	30.2	37.1
1 - 1/4	1	33.3	54.0	36.5	45.5
1 - 1/2	1 - 1/4	33.3	65.1	44.5	54.9
2	1 - 1/2	35.1	73.0	50.8	61.6
2 - 1/2	2	38.1	88.9	65.1	75.3
3	2 - 1/2	46.0	103.2	76.2	91.7
4	3	50.8	122.4	93.7	109.1
6	4	57.2	152.4	120.7	137.2
6000 LB Schedule 160 and double extra strong					
36- 3/4	1/2	31.8	44.5	19.1	33.9
1	3/4	36.6	50.8	25.4	41.2
1 - 1/4	1	39.6	61.9	33.3	49.9
1 - 1/2	1 - 1/4	41.2	69.9	38.1	58.6
2	1 - 1/2	42.9	82.6	49.2	66.7
2 - 1/2	2	52.3	103.2	69.9	83.2

Weldolets

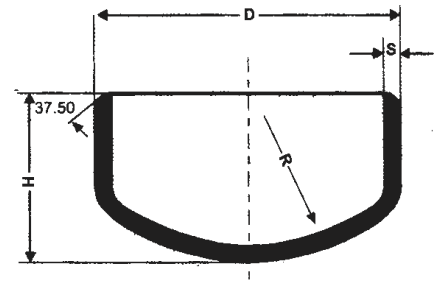
Outlet, full sizes and reducing sizes
Sch 40S, 80S, 160 and XXS.



Outlet Size In	Nominal Run Pipe Size In	Dimensions A MM	B MM	C MM	D MM	Weight KG
Schedule 40S-80S						
1/8	3/8 to 36	14.3	25.4	15.9	-	0.04
1/4	3/8 to 36	14.3	5.4	15.9	-	0.04
3/8	1/2 to 36	19.1	31.8	19.1	-	0.07
1/2	1/2 to 36	19.1	34.9	23.8	15.9	0.07
3/4	3/4 to 36	22.2	41.3	30.2	20.6	0.11
1	1 to 36	27.0	50.8	36.5	26.2	0.18
1-1/4	1-1/4 to 36	31.8	60.3	44.5	34.9	0.32
1-1/2	1-1/2 to 36	33.3	73.0	50.8	41.3	0.36
2	2 to 36	38.1	88.9	65.1	52.4	0.68
2-1/2	2-1/2 to 36	41.3	103.2	76.2	61.9	1.02
3	3 to 36	44.5	122.2	93.7	77.8	1.70
4	4 to 36	50.8	152.4	120.7	101.6	3.04
5	5 to 36	54.0	181.0	147.6	128.6	3.8
6	6 to 36	60.3	215.9	169.9	154.0	5.58
8	8 to 36	69.9	263.5	220.7	201.6	9.53
10	10 to 36	77.8	319.1	274.6	254.0	15.88
12	12 to 36	85.7	377.8	325.8	304.8	26.30
Schedule 160-XXS						
1/2	1/2 to 24	28.6	34.9	14.3	-	0.11
3/4	3/4 to 24	31.8	44.5	19.1	-	0.32
1	1 to 24	38.1	50.8	25.4	-	0.38
1-1/4	1 – 1/4 to 24	44.5	61.9	33.3	-	0.57
1-1/2	1-1/2 to 24	50.8	69.9	38.1	-	0.79
2	2 to 24	55.6	81.0	42.9	-	0.97
2-1/2	2-1/2 to 24	61.9	96.8	54.0	-	1.53
3	3 to 24	73.7	120.7	73.0	-	2.87
4	4 to 24	84.1	152.4	98.4	-	4.76
5	5 to 24	93.7	187.3	122.2	-	6.46
6	6 to 24	104.8	220.7	146.1	-	12.70
8	8 to 24	111.1	284.2	173.0	-	20.41
10	10 to 24	136.5	342.9	215.9	-	39.46
12	12 to 24	158.8	422.3	257.2	-	62.14

Caps

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9



DIMENSIONS (unit: mm)

Nominal Pipe Size	Outside Dia (OD)	Wall Thickness (T)			DISH Radius (R)	Centre to End (A)
		Std	XS	Length (H)		
1/2"	21.34	2.80	3.65	25	13.7	25.40
3/4"	26.67	2.95	3.95	25	18.3	25.40
1"	33.50	3.40	4.55	38	23.4	38.10
1-1/4"	42.16	3.55	4.85	38	34.3	38.10
1-1/2"	48.26	3.70	5.10	38	35.8	38.10
2"	60.33	3.90	5.55	38	46.0	38.10
2-1/2"	73.03	5.20	7.10	38	54.6	50.80
3"	88.90	5.45	7.60	51	68.3	63.50
3-1/2"	101.60	5.70	8.15	64	79.0	76.20
4"	114.30	5.95	8.50	64	89.4	88.90
5"	141.30	6.45	9.55	76	112.3	101.60
6"	168.28	7.10	11.05	89	134.9	127.00
8"	219.08	8.25	12.70	102	177.3	152.40
10"	273.00	9.27	12.70	127	222.8	177.80
12"	323.85	9.53	12.70	152	266.7	190.50
14"	355.60	9.53	12.70	165	294.6	203.20
16"	406.40	9.53	12.70	178	338.8	228.60
18"	457.20	9.53	12.70	203	383.0	254.00
20"	508.00	9.53	12.70	229	427.7	304.80
22"	558.60	9.53	12.70	254	472.4	-
24"	609.60	9.53	12.70	267	516.6	
26"	660.40	9.53	12.70	267	561.3	
30"	762.00	9.53	12.70	267	650.2	
34"	863.60	9.53	12.70	267	739.1	
36"	914.40	9.53	12.70	267	783.6	
42"	1066.80	9.53	12.70	305	960.9	

WEIGHTS (unit: kg)

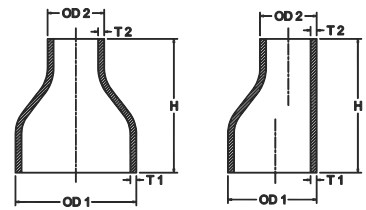
Nominal Pipe Sizes	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.036	0.040	0.046	0.045
3/4	0.049	0.052	0.059	0.086
1	0.053	0.090	0.109	0.109
1-1/4	0.066	0.113	0.145	0.159
1-1/2	0.076	0.130	0.171	0.222
2	0.099	0.168	0.234	0.344
2-1/2	0.169	0.242	0.420	0.512
3	0.253	0.362	0.664	0.888
4	0.409	0.585	1.17	1.51
5	0.805	0.978	1.90	2.89
6	1.11	1.35	2.83	4.24
8	1.74	2.49	5.11	7.76
10	3.26	3.84	8.92	13.11
12	5.47	6.15	14.10	17.94
14	7.19	7.85	16.35	21.11
16	10.99	9.56	18.60	25.73
18	13.92	12.10	23.54	32.57
20	17.19	17.90	29.06	40.21
24	27.43	30.15	41.85	57.86
-	-	-	-	-

Concentric & Eccentric Reducers Buttweld

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



Dimensions (unit: mm)												
Nominal Pipe Size		Outside Dia. OD ₁	Outside Dia. OD ₂	Sch. 5S		STD Sch. 10S		STD Sch. 40S		XS Sch. 80S		Length H
				T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
3/4	1/2	26.67	21.34	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	38.10
1	1/2	33.40	21.34	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	50.80
1	3/4	33.40	26.67	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	50.80
1-1/4	1	42.16	33.40	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	50.80
1-1/2	1/2	48.26	21.34	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	63.50
1-1/2	3/4	48.26	26.67	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	63.50
1-1/2	1	48.26	33.40	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	63.50
1-1/2	1-1/4	48.26	42.16	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	63.50
2	3/4	60.32	26.67	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	76.20
2	1	60.32	33.40	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	76.20
2	1-1/4	60.32	42.16	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	76.20
2	1-1/2	60.32	48.26	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	76.20
2-1/2	1	73.02	33.40	2.11	1.65	3.05	2.77	5.16	3.38	7.01	4.55	88.90
2-1/2	1-1/4	73.02	42.16	2.11	1.65	3.05	2.77	5.16	3.56	7.01	4.85	88.90
2-1/2	1-1/2	73.02	48.26	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	88.90
2-1/2	2	73.02	60.32	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	88.90
3	1	88.90	33.40	2.11	1.65	3.05	2.77	5.49	3.38	7.62	4.55	88.90
3	1-1/4	88.90	42.16	2.11	1.65	3.05	2.77	5.49	3.56	7.62	4.85	88.90
3	1-1/2	88.90	48.26	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	88.90
3	2	88.90	60.32	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	88.90
3	2-1/2	88.90	73.02	2.11	2.11	3.05	2.77	5.49	5.16	7.62	7.01	88.90
4	1-1/2	114.30	48.26	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	101.60
4	2	114.30	60.32	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	101.60
4	2-1/2	114.30	73.02	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	101.60
4	3	114.30	88.90	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	101.60
5	3	141.30	88.90	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	127.00
5	4	141.30	114.30	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	127.00
6	2-1/2	168.27	73.02	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	139.70
6	3	168.27	88.90	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	139.70
6	4	168.27	114.30	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	139.70
6	5	168.27	141.30	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	139.70
8	4	219.08	141.30	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	152.40
8	5	219.08	141.30	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	152.40
8	6	219.08	168.27	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	152.40
10	5	273.05	141.30	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	177.80
10	6	273.05	168.27	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	177.80
10	8	273.05	219.08	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	177.80
12	6	323.85	168.27	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	203.20
12	8	323.85	219.08	3.96	2.77	4.57	3.76	9.53	8.18	12.70	12.70	203.20
12	10	323.85	273.05	3.96	3.40	4.57	4.19	9.53	9.27	12.70	12.70	203.20

Weights (unit: kg)					
Nominal Pipe Size		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
3/4	1/2	0.054	0.090	0.105	0.159
1	1/2	0.060	0.089	0.105	0.163
1	3/4	0.060	0.098	0.116	0.168
1-1/4	1	0.066	0.125	0.157	0.245
1-1/2	1/2	0.091	0.154	0.204	0.276
1-1/2	3/4	0.095	0.156	0.201	0.294
1-1/2	1	0.103	0.170	0.219	0.308
1-1/2	1-1/4	0.118	0.195	0.263	0.331
2	3/4	0.121	0.214	0.298	0.458
2	1	0.143	0.237	0.322	0.458
2	1-1/4	0.156	0.258	0.352	0.525
2	1-1/2	0.164	0.273	0.372	0.544
2-1/2	1	0.453	0.349	0.793	0.793
2-1/2	1-1/4	0.276	0.394	0.670	0.825
2-1/2	1-1/2	0.281	0.396	0.661	0.856
2-1/2	2	0.307	0.432	0.724	0.938
3	1	0.281	0.408	0.716	0.888
3	1-1/4	0.299	0.430	0.775	1.037
3	1-1/2	0.315	0.444	0.783	1.105
3	2	0.339	0.478	0.846	1.178
3	2-1/2	0.376	0.458	0.983	1.291
4	1-1/2	0.435	0.630	1.241	1.730
4	2	0.464	0.656	1.27	1.780
4	2-1/2	0.499	0.706	1.37	2.007
4	3	0.528	0.748	1.45	2.129
5	3	0.991	1.20	2.27	3.547
5	4	0.107	1.32	2.50	3.769
6	2-1/2	1.12	1.35	2.74	4.51
6	3	1.24	1.50	3.04	5.03
6	4	1.34	1.62	3.30	5.44
6	5	1.45	1.75	3.57	5.71
8	4	1.80	2.56	5.10	8.43
8	5	1.90	2.70	5.40	8.83
8	6	2.01	2.85	5.71	9.24
10	5	2.82	3.30	8.21	13.00
10	6	3.30	3.87	8.78	13.50
10	8	3.59	4.21	9.58	14.22
12	6	4.97	5.73	12.40	18.39
12	10	5.45	6.11	13.70	19.07
12	8	5.83	6.55	14.70	19.48

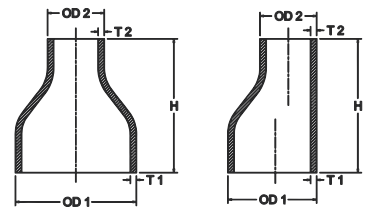
Note: Sch 40S and 80S apply up to 12" only

Concentric & Eccentric Reducers Buttweld

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



DIMENSIONS (unit: mm)													WEIGHTS (unit: kg)					
			Wall Thickness (T ₁ T ₂)										Nominal Pipe		Sch. 10S	Sch. 20S	STD Sch. 40S	XS Sch. 80S
Nominal Pipe		Outside Dia OD ₁	Outside Dia OD ₂	Sch. 10S		STD Sch. 20S		STD Sch. 40S		XS Sch. 80S		Length H						
				T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂							
14	12	355.60	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	330.20	14	12	14.27	25.65	28.55	37.18
14	10	355.60	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	330.20	14	10	13.21	23.73	26.41	34.40
14	8	355.60	219.08	4.78	3.76	7.92	6.35	9.53	8.18	12.70	12.70	330.20	16	14	17.24	30.98	34.48	44.90
14	6	355.60	168.27	4.78	3.40	7.92	-	9.53	7.11	12.70	10.97	330.20	16	12	16.52	29.69	33.05	43.03
16	14	406.40	355.60	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	355.60	16	10	15.37	27.62	30.75	40.04
16	12	406.40	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	355.60	16	8	14.15	25.43	28.30	36.86
16	10	406.40	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	355.60	18	16	20.94	37.62	41.87	54.52
16	8	406.40	219.08	4.78	3.76	7.92	6.35	9.53	8.18	12.70	12.70	355.60	18	14	19.71	35.41	39.41	51.32
18	16	457.20	406.40	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	381.00	18	12	18.94	34.02	37.87	49.32
18	14	457.20	355.60	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	381.00	18	10	17.70	31.81	35.41	46.11
18	12	457.20	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	381.00	20	18	38.01	62.40	62.40	81.25
18	10	457.20	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	381.00	20	16	36.01	59.11	59.11	76.97
20	18	508.00	457.20	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	20	14	33.98	55.83	55.83	72.70
20	16	508.00	406.40	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	20	12	32.76	53.78	53.78	70.02
20	14	508.00	355.60	5.54	4.78	9.53	7.92	9.53	12.70	12.70	12.70	508.00	22	20	42.01	68.96	68.96	89.80
20	12	508.00	323.85	5.54	4.57	9.53	6.35	9.53	9.53	12.70	12.70	508.00	22	15	40.01	65.68	65.68	85.53
22	20	558.80	508.00	5.54	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00	22	16	38.01	62.40	62.40	81.25
22	18	558.80	547.20	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	22	14	36.01	59.08	59.08	76.97
24	16	558.80	406.40	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	24	22	52.91	75.53	75.53	98.36
24	14	558.80	355.60	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	24	20	50.61	72.25	72.25	94.08
24	22	609.60	558.80	6.35	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00	24	18	48.31	68.96	68.96	89.80
24	20	609.60	508.00	6.35	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00	24	16	46.01	65.68	65.68	85.53
24	18	609.60	457.20	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	24	14	43.71	62.40	62.40	81.25
26	16	609.60	406.40	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	26	24		128.28	98.53	128.03
26	14	609.60	355.60	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00	26	20		118.02	90.65	117.79
26	24	660.40	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60	26	18		112.88	86.70	112.66
26	20	660.40	508.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60	26	16		107.76	82.76	107.54
28	18	660.40	457.20			12.70	7.92	9.53	9.53	12.70	12.70	609.60	28	26		138.54	106.41	138.27
28	16	660.40	406.40			12.70	7.92	9.53	9.53	12.70	12.70	609.60	28	24		133.41	102.47	133.15
28	26	711.20	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60	28	20		123.15	94.59	122.91
28	24	711.20	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60	28	18		118.02	90.65	117.78
30	20	711.20	508.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60	30	28		148.80	114.29	148.51
30	18	711.20	457.20			12.70	7.92	9.53	9.53	12.70	12.70	609.60	30	26		143.67	110.34	143.39
30	28	762.00	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60	30	24		138.54	106.41	138.27
30	26	762.00	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60	30	20		128.28	98.53	128.03
32	24	762.00	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60	32	30		159.07	122.17	158.75
30	20	762.00	508.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60	32	28		153.93	118.23	153.63
32	30	812.80	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60						
32	28	812.80	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60						

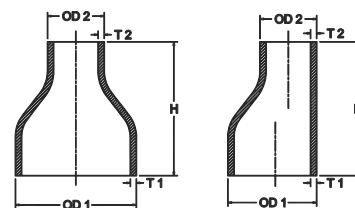
Note: Sch 40S and 80S apply up to 12" only

Concentric & Eccentric Reducers Buttweld

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



DIMENSIONS (unit: mm)												WEIGHTS (unit: kg)						
				Wall Thickness (T ₁ T ₂)												STD	XS	
Nominal Pipe Size		Outside Dia OD ₁	Outside Dia OD ₂	Sch. 10S		STD Sch. 20S		STD Sch. 40S		XS Sch. 80S		Length	Nominal Pipe		Sch. 10S	Sch. 20S	Sch. 40S	Sch. 80S
				T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂							
32	26	812.80	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60	32	26		148.80	114.29	148.51
32	24	812.80	609.60			12.70	12.70	9.53	9.53	12.70	12.70	609.60	32	24		143.67	110.40	143.39
34	32	863.60	812.80			12.70	12.70	9.53	9.53	12.70	12.70	609.60	34	32		169.33	130.06	168.99
34	30	863.60	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60	34	30		164.20	126.12	163.88
34	28	863.60	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60	34	28		159.07	122.17	158.75
34	26	863.60	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60	34	26		153.93	118.51	153.63
36	34	914.40	863.60			12.70	12.70	9.53	9.53	12.70	12.70	609.60	36	34		179.59	137.94	179.24
36	32	914.40	812.80			12.70	12.70	9.53	9.53	12.70	12.70	609.60	36	32		174.46	133.99	174.12
36	30	914.40	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60	36	30		169.33	130.06	168.99
36	28	914.40	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60	36	28		164.20	126.12	163.88
38	36	965.20	914.40					9.53	9.53	12.70	12.70	609.60	38	36			145.82	189.48
38	34	965.20	863.60					9.53	9.53	12.70	12.70	609.60	38	34			141.88	184.36
38	32	965.20	812.80					9.53	9.53	12.70	12.70	609.60	38	32			137.94	179.24
38	30	965.20	762.00					9.53	9.53	12.70	12.70	609.60	38	30			133.99	174.12
38	28	965.20	711.20					9.53	9.53	12.70	12.70	609.60	38	28			130.06	168.99
38	26	965.20	660.40					9.53	9.53	12.70	12.70	609.60	38	26			126.12	163.88
40	38	1016.00	965.20					9.53	9.53	12.70	12.70	609.60	40	38			153.70	199.72
40	36	1016.00	914.40					9.53	9.53	12.70	12.70	609.60	40	36			149.76	194.60
40	34	1016.00	863.60					9.53	9.53	12.70	12.70	609.60	40	34			145.82	189.46
40	32	1016.00	812.80					9.53	9.53	12.70	12.70	609.60	40	32			141.88	184.36
40	30	1016.00	762.00					9.53	9.53	12.70	12.70	609.60	40	30			137.94	179.24
42	40	1066.80	1016.00					9.53	9.53	12.70	12.70	609.60	42	40			161.59	209.97
42	38	1066.80	965.20					9.53	9.53	12.70	12.70	609.60	42	38			157.64	204.85
42	36	1066.80	914.40					9.53	9.53	12.70	12.70	609.60	42	36			153.70	199.72
42	34	1066.80	863.60					9.53	9.53	12.70	12.70	609.60	42	34			149.76	194.60
42	32	1066.80	812.80					9.53	9.53	12.70	12.70	609.60	42	32			145.82	189.48
42	30	1066.80	762.00					9.53	9.53	12.70	12.70	609.60	42	30			141.88	184.36
44	42	1117.60	1066.80					9.53	9.53	12.70	12.70	609.60	44	42			169.47	220.21
44	40	1117.60	1016.00					9.53	9.53	12.70	12.70	609.60	44	40			165.53	215.09
44	38	1117.60	965.20					9.53	9.53	12.70	12.70	609.60	44	38			161.59	209.97
44	36	1117.60	914.40					9.53	9.53	12.70	12.70	609.60	44	36			157.64	204.85
46	44	1168.40	1117.60					9.53	9.53	12.70	12.70	711.20	46	44			177.35	230.45
46	42	1168.40	1066.80					9.53	9.53	12.70	12.70	711.20	46	42			173.41	225.33
46	40	1168.40	1016.00					9.53	9.53	12.70	12.70	711.20	46	40			169.47	220.21
46	38	1168.40	965.20					9.53	9.53	12.70	12.70	711.20	46	38			165.53	215.09
46	36	1168.40	914.40					9.53	9.53	12.70	12.70	711.20	46	36			165.53	215.09
48	44	1219.20	1117.60					9.53	9.53	12.70	12.70	711.20	48	44			181.29	235.57
48	42	1219.20	1066.80					9.53	9.53	12.70	12.70	711.20	48	42			177.35	230.45
48	40	1219.20	1016.00					9.53	9.53	12.70	12.70	711.20	48	40			173.41	225.33

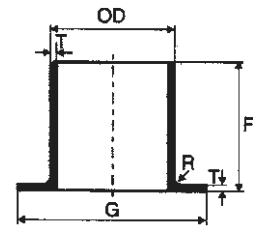
Note: Sch 40S and 80S apply up to 12" only

Stub Ends, Type A.B

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



Dimensions (unit: mm)											Nominal Pipe Sizes	F	Sch. 5S	Sch. 10S	Sch. 40S	XS Sch. 80S
Nominal Pipe Sizes	Outside Dia (OD)	Wall Thickness (T)			XS Sch. 80S	Dia. Of Lap (G)	Length (F)		Radius (R)							
		Sch. 5S	Sch. 10S	Sch. 40S			ANSI	MSS	Type A (Max)	Type B (Max)						
1/2	21.34	1.65	2.11	2.77	3.73	34.93	76.20	50.80	3.30	0.76	1/2	MSS	0.059	0.077	0.118	0.127
3/4	26.67	1.65	2.11	2.87	3.91	42.88	76.20	50.80	3.30	0.76	3/4	MSS	0.068	0.086	0.154	0.168
1	33.40	1.65	2.77	3.38	4.55	50.80	101.60	50.80	3.30	0.76	1	MSS	0.091	0.140	0.186	0.240
1-1/4	42.16	1.65	2.77	3.56	4.85	63.50	101.60	50.80	4.83	0.76	1-1/4	MSS	0.131	0.208	0.263	0.349
1-1/2	48.26	1.65	2.77	3.68	5.08	73.02	101.60	50.80	6.35	0.76	1-1/2	MSS	0.159	0.249	0.376	0.458
2	60.32	1.65	2.77	3.91	5.54	92.07	152.40	63.50	7.87	0.76	2	MSS	0.245	0.376	0.539	0.743
2-1/2	73.02	2.11	3.05	5.16	7.01	104.77	152.40	63.50	11.18	0.76	2-1/2	MSS	0.349	0.471	0.797	1.060
3	88.90	2.11	3.05	5.49	7.62	127.00	152.40	63.50	11.18	1.52	3	MSS	0.467	0.638	1.133	1.508
4	114.13	2.11	3.05	6.02	8.56	157.18	152.40	76.20	12.70	1.52	4	MSS	0.711	0.978	1.812	2.523
5	141.30	2.77	3.40	6.55	9.53	185.75	203.20	76.20	12.70	1.52	5	MSS	1.046	1.237	2.537	3.601
6	168.27	2.77	3.40	7.11	10.97	215.90	203.20	88.90	12.70	1.52	6	MSS	1.62	1.95	3.72	5.57
8	219.08	2.77	3.76	8.18	12.70	269.88	203.20	101.60	12.70	1.52	8	MSS	2.45	3.10	5.89	10.12
10	273.05	3.40	4.19	9.27	12.70	323.85	254.00	127.00	12.70	1.52	10	MSS	4.04	4.86	10.42	13.95
12	323.85	3.96	4.57	9.53	12.70	381.00	254.00	152.40	12.70	1.52	12	MSS	6.60	7.11	14.95	19.93
14	355.60	3.96	4.78	9.53	12.70	412.75	304.80	152.40	12.70	1.52	14	MSS	6.43	7.75	15.46	20.62
16	406.40	4.19	4.78	9.53	12.70	469.90	304.80	152.40	12.70	1.52	16	MSS	7.91	9.02	17.98	23.98
18	457.20	4.19	4.78	9.53	12.70	533.40	304.80	152.40	12.70	1.52	18	MSS	9.24	10.53	21.00	28.00
20	508.00	4.78	5.54	9.53	12.70	584.20	304.80	152.40	12.70	1.52	20	MSS	11.68	13.54	23.30	31.07
22	558.90	4.78	5.54	9.53	12.70	641.35	304.80	-	12.70	1.52	22	MSS	-	-	-	-
24	609.60	4.78	6.35	9.53	12.70	692.15	304.80	152.40	12.70	1.52	24	MSS	16.52	18.94	28.41	37.88

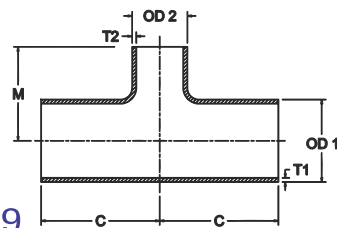
Note: Sch 40S and 80S apply up to 12" only

Unequal Tees

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



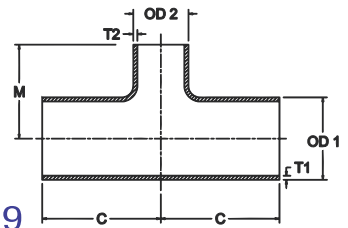
DIMENSIONS (unit: mm)													
				Wall Thickness (T ₁ T ₂)									
Nom. Pipe Size Run	Outlet	Outside Dia OD ₁	Outside Dia OD ₂	Sch. 5S		STD Sch. 10S		STD Sch. 40S		XS Sch. 80S		Center To End C	Center To End M
				T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂		
3/4 1	1/2 1/2	26.7 33.40	21.34 21.34	2.77 2.77	2.11 2.77	2.11 2.77	2.11 2.11	2.87 3.38	2.77 2.77	3.91 4.55	3.73 3.73	28.70 38.10	28.70 38.10
1 1-1/4	3/4 3/4	33.40 42.16	26.67 26.67	2.77 3.40	2.77 2.77	2.77 2.77	2.11 2.11	3.38 9.56	2.87 2.87	4.55 4.85	3.91 3.91	38.10 47.75	38.10 47.75
1-1/4 1-1/2	1 1/2	42.16 48.26	33.40 21.34	3.40 3.40	2.77 2.77	2.77 2.77	2.11 2.11	3.56 3.68	3.38 2.77	4.85 5.08	4.55 3.73	47.75 57.15	47.75 57.15
1-1/2 1-1/2	3/4 1	48.26 48.26	26.67 33.40	3.96 3.96	2.77 2.77	2.77 2.77	2.11 2.77	3.68 3.68	2.87 3.38	5.08 5.08	3.91 4.55	57.15 57.15	57.15 57.15
1-1/2 2	1-1/4 3/4	48.26 60.32	42.16 26.67	3.96 4.78	2.64 3.76	2.77 2.77	2.77 0.84	3.68 3.91	3.56 2.87	5.08 5.54	4.85 3.91	57.15 63.50	57.15 44.45
2 2	1 1-1/4	60.32 60.32	33.40 42.16	4.78 4.78	4.09 4.57	2.77 2.77	2.77 2.77	3.91 3.91	3.38 3.56	5.54 5.54	4.55 4.85	63.50 63.50	50.80 57.15
2 2-1/2	1-1/2 1-1/2	60.32 73.02	48.26 48.26	4.78 4.78	4.19 4.57	2.77 3.05	2.77 2.77	3.91 5.16	3.68 3.68	5.54 7.01	5.08 5.08	63.50 76.20	60.45 66.80
2-1/2 3	2 2-1/2	73.02 88.90	60.32 48.26	4.78 4.78	4.78 4.57	3.05 3.05	2.77 2.77	5.16 5.49	3.91 3.68	7.01 7.62	5.54 5.08	76.20 79.50	69.58 73.15
3 3	2 2-1/2	88.90 88.90	60.32 73.02	4.78 4.78	4.78 4.57	3.05 3.05	2.77 3.05	5.49 5.49	3.91 5.16	7.62 7.62	5.54 7.01	85.85 85.85	76.20 82.55
4 4	1-1/2 2	114.30 114.30	48.26 60.32	5.54 5.54	4.78 4.78	3.05 3.05	2.77 2.77	6.02 6.02	3.68 3.91	8.56 8.56	5.08 5.54	104.90 104.90	85.85 88.90
4 4	2-1/2 3	114.30 114.30	73.02 88.90	5.54 5.54	4.78 4.78	3.05 3.05	3.05 3.05	6.02 6.02	5.16 5.49	8.56 8.56	7.01 7.62	104.90 104.90	95.25 98.55
5 5	3 4	114.30 114.30	88.90 114.30	5.54 5.54	4.78 5.54	3.40 3.40	3.05 3.05	6.55 6.55	5.49 6.02	9.53 9.53	7.62 8.56	123.95 123.95	111.25 117.60
6 6	2-1/2 3	168.27 168.27	73.02 88.90	6.35 6.35	4.78 4.78	3.40 3.40	3.05 3.05	7.11 7.11	5.16 5.49	10.97 10.97	7.01 7.62	143.00 143.00	120.65 123.95
6 6	4 5	168.27 168.27	114.30 141.30	6.35 6.35	5.54 5.54	3.40 3.40	3.05 9.40	7.11 7.11	6.02 6.55	10.97 10.97	8.56 9.53	143.00 143.00	130.30 136.65

WEIGHTS (unit: kg)					
Nom. Pipe Size		Sch. 5S	Sch. 10S	STD Sch. 40S	STD Sch. 80S
Run	Outlet				
3/4 1	1/2 1/2	0.083 0.187	0.123 0.204	0.200 0.234	0.230 0.349
1 1-1/4	3/4 3/4	0.187 0.290	0.212 0.327	0.244 0.423	0.353 0.612
1-1/4 1-1/2	1 1/2	0.312 0.397	0.339 0.431	0.441 0.561	0.643 0.897
1-1/2 1-1/2	3/4 1	0.397 0.421	0.446 0.461	0.578 0.600	0.901 0.929
1-1/2 2	1-1/4 3/4	0.422 0.625	0.482 0.702	0.629 1.11	0.978 1.44
2 2	1 1-1/4	0.643 0.680	0.725 0.747	1.14 1.18	1.46 1.51
2 2-1/2	1-1/2 1-1/2	0.734 0.824	0.766 1.18	1.23 2.08	1.57 2.61
2-1/2 3	2 2-1/2	0.838 1.33	1.21 1.60	2.12 2.98	2.66 3.84
3 3	2 2-1/2	1.42 1.58	1.63 1.69	3.01 3.15	3.86 3.97
4 4	1-1/2 2	2.45 2.47	2.51 2.53	5.04 5.08	6.63 6.70
4 4	2-1/2 3	2.52 2.55	2.59 2.61	5.22 5.27	6.79 6.93
5 5	3 4	3.38 3.43	4.17 4.24	8.13 8.36	10.95 11.18
6 6	2-1/2 3	4.62 4.67	5.69 5.75	11.87 11.92	17.05 17.07
6 6	4 5	4.75 4.80	5.85 5.92	12.10 12.34	17.19 17.47

Note: Sch 40S and 80S apply up to 12" only

Unequal Tees

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9
ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9
ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9

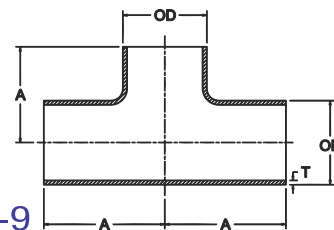


DIMENSIONS (unit: mm)														WEIGHTS (unit: kg)									
				Wall Thickness (T ₁ T ₂)														Nom. Pipe Size		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
Nom. Pipe Size Run	Outlet	Outside Dia OD ₁	Outside Dia OD ₂	Sch. 5S		STD Sch. 10S		STD Sch. 40S		XS Sch. 80S		Center To End C	Center To End M										
				T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂			Run	Outlet								
8	4	219.08	114.30	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	177.80	155.70	8	4	7.35	9.80	21.26	30.76				
8	5	219.08	141.30	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	177.80	162.05	8	5	7.41	9.83	21.36	30.85				
8	6	219.08	168.27	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	177.80	168.40	8	6	7.44	9.90	21.62	31.25				
10	5	273.05	141.30	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	215.90	190.50	10	5	13.43	16.47	36.14	47.47				
10	6	273.05	168.27	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	215.90	193.80	10	6	13.49	16.58	36.27	47.95				
10	8	273.05	219.08	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	215.90	203.20	10	8	13.54	16.69	36.85	48.39				
12	6	323.85	168.27	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	254.00	219.20	12	6	22.93	25.10	51.96	67.48				
12	8	323.85	219.08	3.96	2.77	4.57	3.76	9.53	8.18	12.70	12.70	254.00	228.60	12	8	23.01	25.32	52.38	67.92				
12	10	323.85	273.05	3.96	2.64	4.57	4.19	9.53	9.27	12.70	12.70	254.00	241.30	12	10	23.13	25.48	53.72	68.81				
14	12	355.60	323.85	4.78	4.57	4.78	4.57	9.53	9.53	12.70	12.70	279.40	270.00	14	12	29.14	52.73	58.81	76.57				
14	10	355.60	273.05	4.78	4.19	4.78	4.78	9.53	9.27	12.70	12.70	304.80	282.70	14	10	34.26	61.89	68.88	89.51				
16	14	406.40	335.60	4.78	4.78	4.78	4.78	9.53	9.53	12.70	12.70	304.80	304.80	16	14	34.67	62.76	69.98	91.13				
16	12	406.40	323.85	4.78	4.58	4.78	4.78	9.53	9.53	12.70	12.70	342.90	320.80	16	12	43.37	78.33	87.17	113.28				
18	16	457.20	406.40	4.78	4.78	5.54	4.78	9.53	9.53	12.70	12.70	342.90	330.20	18	16	43.89	79.43	88.57	115.33				
18	14	457.20	355.60	5.54	4.78	5.54	4.78	9.53	9.53	12.70	12.70	381.00	355.60	18	14	64.47	107.63	107.63	139.86				
20	18	508.00	457.20	5.54	4.78	5.54	4.78	9.53	9.53	12.70	12.70	381.00	368.30	20	18	65.24	109.24	109.14	142.39				
20	16	508.00	406.40	5.54	4.78	5.54	4.78	9.53	9.53	12.70	12.70	419.10	381.00	20	16	78.00	130.23	130.23	169.22				
22	20	558.80	508.00	5.54	5.54	5.54	5.54	9.53	9.53	12.70	12.70	419.10	406.40	22	20	78.94	132.06	132.06	172.28				
24	16	609.60	406.40	6.35	4.78	6.53	4.78	9.53	9.53	12.70	12.70	431.80	406.40	24	16	96.84	138.24	138.24	179.64				
24	18	609.60	457.20	6.35	4.78	6.53	4.78	9.53	9.53	12.70	12.70	431.80	419.10	24	18	97.69	139.21	139.21	181.25				
24	20	609.60	508.00	6.35	5.54	6.53	5.54	9.53	9.53	12.70	12.70	431.80	431.80	24	20	98.00	140.18	140.18	182.89				
24	22	609.60	558.80	6.35	5.54	6.53	5.54	9.53	9.53	12.70	12.70	431.80	431.80	24	22	98.59	141.18	141.16	184.53				

Note: Sch 40S and 80S apply up to 12" only

Equal Tees

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9
 ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9
 ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



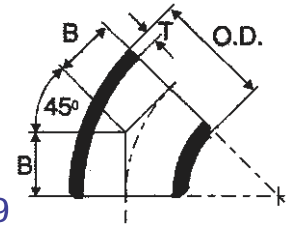
Dimensions (unit: mm)						
Nominal Pipe Sizes	Outside Dia (OD)	Wall Thickness (T)				Centre to End (A)
		Sch. 5S	Sch. 10S	Sch. 40S	XS Sch. 80S	
1/2	21.34	1.65	2.11	2.77	3.73	25.40
3/4	26.67	1.65	2.11	2.87	3.91	28.70
1	33.40	1.65	2.77	3.38	4.55	38.10
1-1/4	42.16	1.65	2.77	3.56	4.85	47.75
1-1/2	48.26	1.65	2.77	3.68	5.08	57.15
2	60.32	1.65	2.77	3.91	5.54	63.50
2-1/2	73.02	2.11	3.05	5.16	7.01	76.20
3	88.90	2.11	3.05	5.49	7.62	85.85
4	114.60	2.11	3.05	6.02	8.56	104.90
5	141.30	2.77	3.40	6.55	9.53	123.95
6	168.27	2.77	3.40	7.11	10.97	143.00
8	219.08	2.77	3.76	8.18	12.70	177.80
10	273.05	3.40	4.19	9.27	12.70	215.90
12	323.85	3.96	4.57	9.53	12.70	254.00
14	355.60	3.96	4.78	9.53	12.70	279.40
16	406.40	3.96	4.78	9.53	12.70	304.80
18	457.20	3.96	4.78	9.53	12.70	342.90
20	508.00	4.78	5.54	9.53	12.70	381.00
22	558.80	4.78	5.54	9.53	12.70	419.10
24	609.60	5.54	6.35	9.53	12.70	431.80

Weights (unit: kg)				
Nominal Pipe Sizes	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.080	0.090	0.181	0.204
3/4	0.090	0.129	0.258	0.294
1	0.160	0.223	0.256	0.399
1-1/4	0.290	0.356	0.463	0.725
1-1/2	0.400	0.497	0.648	1.02
2	0.500	0.681	0.893	1.81
2-1/2	0.900	1.20	1.98	3.17
3	1.20	1.57	2.61	3.85
4	1.80	2.46	4.76	7.11
5	4.04	4.04	7.84	11.78
6	5.50	5.50	9.54	18.12
8	11.07	11.07	19.56	33.98
10	19.87	19.87	32.61	47.57
12	27.86	27.86	56.65	72.48
14	28.74	35.98	71.21	91.78
16	35.69	44.69	88.56	114.23
18	45.21	56.62	112.33	144.98
20	69.97	83.69	138.99	179.66
22	86.98	101.35	170.07	217.46
24	113.23	132.24	192.66	243.13

Note: Sch 40S and 80S apply up to 12" only

45° Elbows Butt Weld

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9
 ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9
 ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9



Dimensions (unit: mm)							Weights (unit: kg)				
Nominal Pipe Sizes	Outside Dia (OD)	Wall Thickness (T)				Centre to End (B)	Nominal Pipe Sizes	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
		Sch. 5S	Sch. 10S	Sch. 40S	Sch. 80S						
1/2	21.34	1.65	2.11	2.77	3.73	15.88	1/2	0.024	0.030	0.039	0.050
3/4	26.67	1.65	2.11	2.87	3.91	11.13	3/4	0.031	0.039	0.052	0.078
1	33.40	1.65	2.77	3.38	4.55	22.22	1	0.039	0.064	0.077	0.100
1-1/4	42.16	1.65	2.77	3.56	4.85	25.40	1-1/4	0.063	0.103	0.130	0.177
1-1/2	48.26	1.65	2.77	3.68	5.08	28.45	1-1/2	0.085	0.142	0.184	0.254
2	60.32	1.65	2.77	3.91	5.54	35.05	2	0.143	0.239	0.326	0.471
2-1/2	73.02	1.65	3.05	5.16	7.01	44.45	2-1/2	0.288	0.406	0.683	0.897
3	88.90	1.65	3.05	5.49	7.62	50.80	3	0.405	0.571	1.02	1.44
4	114.30	2.11	3.05	6.02	8.56	63.50	4	0.696	0.985	1.92	2.81
5	141.30	2.11	3.40	6.55	9.53	79.25	5	1.42	1.71	3.24	4.85
6	168.27	2.11	3.40	7.11	10.97	95.25	6	2.01	2.43	4.97	8.02
8	219.08	2.77	3.76	8.18	12.70	127.00	8	3.53	5.01	10.10	16.22
10	273.05	2.77	4.19	9.27	12.70	158.75	10	6.62	7.77	17.70	25.37
12	323.85	2.77	4.57	9.53	12.70	190.50	12	11.10	12.50	28.10	36.69
14	355.60	3.40	4.78	9.53	12.70	222.25	14	17.30	28.63	32.93	42.40
16	406.40	3.96	4.78	9.53	12.70	254.00	16	22.60	34.84	43.31	55.76
18	457.20	4.78	4.78	9.53	12.70	285.75	18	28.70	44.21	54.99	70.94
20	508.00	4.78	5.54	9.53	12.70	317.50	20	41.00	68.13	68.13	88.02
22	558.80	4.78	5.54	9.53	12.70	342.90	22	49.70	81.13	81.13	104.87
24	609.60	5.54	6.35	9.53	12.70	381.00	24	68.00	98.57	98.57	127.52
26	660.40	5.54	7.92	9.53	12.70	406.40	26	99.00	147.63	114.11	147.68
28	711.20	6.35	7.92	9.53	12.70	438.15	28	115.00	171.82	132.73	171.82
30	762.00	7.92	7.92	9.53	12.70	469.90	30	132.00	197.78	152.75	197.78
32	812.80	7.92	7.92	9.53	12.70	501.65	32	151.00	225.59	156.24	225.59
34	863.60	7.92	7.92	9.53	12.70	533.40	34	170.00	255.22	196.96	255.13
36	914.40	7.92	7.92	9.53	12.70	565.15	36	191.00	286.66	221.20	286.57
38	965.20	7.92		9.53	12.70	599.95	38	213.00		248.15	321.58
40	1016.00	7.92		9.53	12.70	631.95	40	236.00		257.35	356.69
42	1066.80	7.92		9.53	12.70	660.40	42	260.00		301.34	391.85
44	1117.60	7.92		9.53	12.70	695.45	44	286.00		333.68	432.66
46	1168.40	7.92		9.53	12.70	726.95	46	312.00		365.07	473.25
48	1219.20	7.92		9.53	12.70	758.95	48	340.00		397.69	515.74

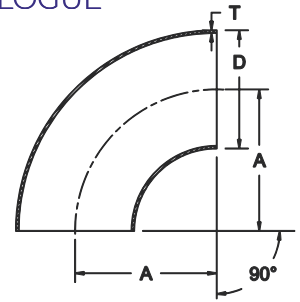
Note: Sch 40S and 80S apply up to 12" only

90° Elbows Butt Weld Long Radius

ASME/ASTM SA/A403 WPS (Seamless) ANSI B16-9

ASME/ASTM SA/A403 WPW (Welded) ANSI B16-9

ASME/ASTM SA/A403 WPWX (Welded/100% X Ray) ANSI B16-9

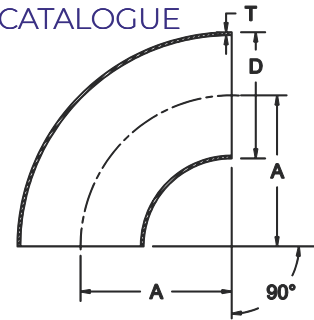


DIMENSIONS (unit: mm)						
Nominal Pipe Sizes	Outside Dia. (OD)	Wall Thickness (T)				Centre to End (A)
		Sch. 5S	Sch. 10S	Sch. 40S	XS Sch. 80S	
1/2	21.34	1.65	2.11	2.77	3.73	38.10
3/4	26.67	1.65	2.11	2.87	3.91	38.10
1	33.40	1.65	2.77	3.38	4.55	38.10
1-1/4	42.16	1.65	2.77	3.56	4.85	47.75
1-1/2	48.26	1.65	2.77	3.68	5.08	57.15
2	60.32	1.65	2.77	3.91	5.54	76.20
2-1/2	73.02	1.65	3.05	5.16	7.01	95.25
3	88.90	1.65	3.05	5.49	7.62	114.30
3-1/2	101.60	2.11	3.05	5.74	8.08	133.35
4	114.30	2.11	3.05	6.02	8.08	152.40
5	141.30	2.11	3.40	6.55	8.56	190.50
6	168.27	2.11	3.40	7.11	9.53	228.60
8	219.08	2.77	3.76	8.18	10.97	304.08
10	273.05	2.77	4.19	9.27	12.70	381.00
12	323.85	2.77	4.57	9.53	12.70	457.20
14	355.60	3.40	7.92	9.53	12.70	533.40
16	406.40	3.96	7.92	9.53	12.70	609.60
18	457.20	4.78	7.92	9.53	12.70	685.80
20	508.00	4.78	9.53	9.53	12.70	762.00
22	558.80	4.78	9.53	9.53	12.70	838.20
24	609.60	5.54	9.53	9.53	12.70	914.40
26	660.40	5.54	12.70	9.53	12.70	990.60
28	711.20	6.35	12.70	9.53	12.70	1066.80
30	762.00	7.92	12.70	9.53	12.70	1143.00
32	812.80	7.92	12.70	9.53	12.70	1219.20
34	863.60	7.92	12.70	9.53	12.70	1295.40
36	914.40	7.92	12.70	9.53	12.70	1371.60
38	965.20	7.92		9.53	12.70	1447.80
40	1016.00	7.92		9.53	12.70	1524.00
42	1066.80	7.92		9.53	12.70	1600.20
44	1117.60	7.92		9.53	12.70	1676.40
46	1168.40	7.92		9.53	12.70	1752.60
48	1219.20	7.92		9.53	12.70	1828.80

WEIGHTS (unit: mm)				
Nominal Pipe Sizes	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.049	0.061	0.078	0.100
3/4	0.062	0.078	0.103	0.104
1	0.078	0.128	0.154	0.204
1-1/4	0.125	0.206	0.260	0.349
1-1/2	0.170	0.283	0.368	0.507
2	0.286	0.478	0.652	0.938
2-1/2	0.576	0.812	1.37	1.79
3	0.810	1.14	2.04	2.87
3-1/2	1.08	1.53	2.82	4.10
4	1.39	1.97	3.84	5.62
5	2.83	3.42	6.48	9.69
6	4.03	4.87	9.94	15.99
8	7.06	10.00	20.10	32.16
10	13.20	15.50	35.40	49.83
12	22.30	25.90	58.20	72.48
14	34.60	57.58	66.36	85.53
16	45.20	70.03	87.11	112.34
18	57.30	89.01	110.67	142.79
20	82.00	136.99	136.99	176.90
22	99.40	163.03	163.03	210.83
24	136.00	198.05	198.05	256.13
26	198.00	296.76	229.17	296.53
28	230.00	345.05	266.50	344.96
30	264.00	397.15	306.59	396.74
32	301.00	453.00	349.53	452.68
34	339.00	512.16	395.24	511.98
36	381.00	575.13	443.17	574.95
38	425.00		497.71	644.75
40	471.00		551.98	715.51
42	520.00		606.16	785.77
44	571.00		669.04	867.40
46	624.00		731.69	948.81
48	679.00		797.28	1033.84

Note: Sch 40S and 80S apply up to 12" only

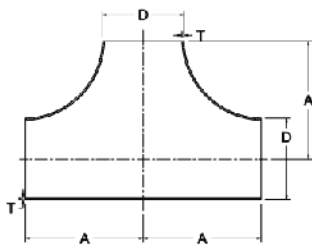
Bends 90° 1.5D ISO / Metric



D mm	T mm	A mm	Weight Kg/pce
17.2 x	1.6	25	0.020
17.2 x	2.35	28	0.025
18.0 x	1.5	22.5	0.030
20.0 x	1.5	30	0.030
20.0 x	2.0	30	0.040
21.3 x	1.65	27	0.030
21.3 x	2.0	27	0.040
21.3 x	2.6	27	0.060
23.0 x	1.5	30	0.040
25.0 x	2.0	37	0.060
26.9 x	1.65	28	0.040
26.9 x	2.0	28	0.050
26.9 x	2.65	28.5	0.060
28.0 x	1.5	37.5	0.060
30.0 x	2.0	38	0.080
33.7 x	1.65	38	0.070
33.7 x	2.0	38	0.100
33.7 x	3.2	38	0.140
38.0 x	2.0	45	0.130
38.0 x	2.6	45	0.140
42.4 x	1.65	48	0.120
42.4 x	2.0	48	0.150
42.4 x	3.2	48	0.230
44.5 x	2.0	51	0.220
48.3 x	1.65	57	0.160
48.3 x	2.0	57	0.220
48.3 x	3.2	57	0.320
51.0 x	2.6	67.5	0.350
54.0 x	2.0	75	0.420
60.3 x	1.65	76	0.270
60.3 x	2.0	76	0.340
60.3 x	2.6	76	0.440
60.3 x	3.6	76	0.620
70.0 x	2.0	92	0.500

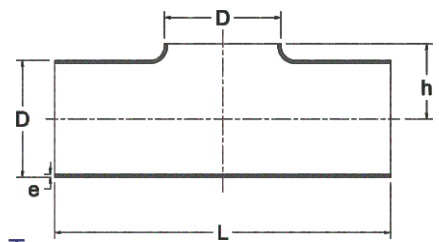
D mm	T mm	A mm	Weight Kg/pce
76.1 x	2.0	95	0.550
76.1 x	2.9	95	0.620
76.1 x	3.6	95	1.080
84.0 x	2.0	120	0.930
88.9 x	2.0	114	0.760
88.9 x	2.6	114	1.020
88.9 x	4.0	114	1.650
104.0 x	2.0	150	1.200
108.0 x	4.0	142.5	2.100
114.3 x	2.0	152	1.300
114.3 x	2.6	152	1.600
114.3 x	4.5	152	3.050
129.0 x	2.0	188	1.900
139.7 x	2.0	190	2.000
154.0 x	2.0	225	2.600
168.3 x	2.0	229	2.900
168.3 x	3.0	229	3.800
204.0 x	2.0	300	4.700
219.1 x	2.0	305	5.100
219.1 x	3.0	305	7.900
219.1 x	4.0	305	10.400
254.0 x	2.0	375	7.100
273.0 x	2.0	381	8.000
273.0 x	3.0	381	12.000
273.0 x	4.0	381	27.300
304.0 x	2.0	457	9.600
306.0 x	3.0	457	16.100
323.9 x	3.0	457	17.200
355.6 x	3.0	533	22.500
406.4 x	3.0	610	29.000

Equal Tees / Welded Equal Tees ISO / Metric



Equal Tees

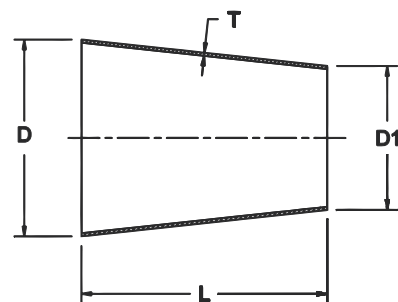
D mm	T mm	A mm	Weight Kg/pce
20.0 x	2	25	0.060
21.3 x	2	25	0.150
25.0 x	2	30	0.100
26.9 x	2	29	0.120
30.0 x	2	35	0.140
33.7 x	2	38	0.200
38.0 x	2	43	0.240
42.4 x	2	48	0.360
44.0 x	2	50	0.340
48.3 x	2	57	0.500
54.0 x	2	61	0.650
60.3 x	2	64	0.630
76.1 x	2	76	0.730
76.1 x	2.6	76	1.100
84.0 x	2	82	1.100
88.9 x	2	86	1.180
104.0 x	2	98	1.400
114.3 x	2	105	1.730
129.0 x	2	115	2.800
139.7 x	2.6	124	3.100
156.0 x	3	135	4.600
168.3 x	2.6	143	6.200
206.0 x	3	170	7.500
219.1 x	2.6	178	8.300
256.0 x	3	200	11.300



Welded Equal Tees

D mm	e mm	L mm	h mm	Weight Kg/pce
21.3	1.6	51	12	0.035
21.3	2	51	12	0.042
26.9	1.6	57	15	0.055
26.9	2	57	15	0.065
33.7	1.6	76	19	0.090
33.7	2	76	19	0.110
42.4	1.6	95	23	0.165
42.4	2	95	23	0.180
48.3	1.6	114	26	0.180
48.3	2	114	26	0.250
60.3	1.6	127	33	0.270
60.3	2	127	33	0.340
76.1	2	152	41	0.520
88.9	2	171	47	0.690
88.9	3	171	47	1.110
114.3	2	210	61	1.060
114.3	3	210	61	1.760
139.7	2	248	76	1.750
168.3	2	286	92	2.360

Concentric Reducers Conical L=3 (D-d)



D mm	D1 mm	T mm	L=3 (D-d) Mm	Weight Kg/pce
21.3 x	17.2	2	12	0.015
26.9 x	17.2	2	29	0.025
26.9 x	21.3	2	17	0.020
30.0 x	20.0	2	30	0.060
30.0 x	25.0	2	15	0.070
33.7 x	21.3	2	37	0.050
33.7 x	26.9	2	20	0.030
42.4 x	26.9	2	46	0.080
42.4 x	33.7	2	26	0.050
44.0 x	30.0	2	42	0.060
48.3 x	21.3	2	81	0.150
48.3 x	26.9	2	64	0.120
48.3 x	33.7	2	44	0.080
48.3 x	42.4	2	18	0.040
54.0 x	30.0	2	72	0.180
54.0 x	34.0	2	60	0.120
54.0 x	44.0	2	30	0.070
57.0 x	30.0	2	81	0.200
60.3 x	21.3	2	117	0.260
60.3 x	26.9	2	100	0.210
60.3 x	33.7	2	80	0.180
60.3 x	42.4	2	54	0.130
60.3 x	48.3	2	36	0.100
76.1 x	33.7	3	127	0.465
76.1 x	42.4	3	101	0.373
76.1 x	48.3	3	83	0.320
76.1 x	60.3	3	47	0.213
84.0 x	54.0	2	90	0.330
88.9 x	48.3	2	122	0.420
88.9 x	60.3	2	86	0.330
88.9 x	76.1	3	38	0.267
104.0 x	54.0	2	150	0.590
104.0 x	84.0	2	60	0.270
114.3 x	60.3	2	162	0.700
114.3 x	76.1	3	115	0.693
114.3 x	88.9	2	76	0.410
129.0 x	84.0	2	135	0.700
129.0 x	104.0	2	75	0.440

D mm	D1 mm	T mm	L=3 (D-d) mm	Weight Kg/pce
139.7 x	88.9	2	152	1.740
139.7 x	114.3	2	76	0.490
154.0 x	84.0	2	210	1.300
154.0 x	104.0	2	150	1.000
154.0 x	129.0	2	75	0.500
168.3 x	88.9	2	238	1.550
168.3 x	114.3	2	162	1.160
168.3 x	139.7	2	86	0.670
204.0 x	104.0	2	300	2.300
204.0 x	154.0	2	150	1.400
219.1 x	114.3	2	314	2.660
219.1 x	139.7	2	238	2.170
219.1 x	168.3	2	152	1.500
254.0 x	129.0	2	375	3.800
254.0 x	154.0	2	300	3.000
254.0 x	204.0	2	150	1.800
304.0 x	204.0	2	300	5.000