



PANTECH STAINLESS & ALLOY INDUSTRIES SDN BHD

PRODUCT CATALOGUE



MANUFACTURER OF STAINLESS STEEL WELDED PIPES AND BUTT-WELD FITTINGS

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p10 Stainless Steel Butt-weld Fittings

- *Applicable standard: ASTM/ASME A/SA 403*

- *90D LR Elbow*
- *90D SR Elbow*
- *45D LR Elbow*
- *Equal Tee*
- *Reducing Tee*
- *Concentric Reducer*
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- *Stub-end*
- *Cap*

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- *Applicable standard : ASTM A276*

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COMPANY BACKGROUND

Pantech Stainless & Alloy Industries Sdn. Bhd. is a member of Pantech Group Holdings Berhad, a listed company on the Main market of Bursa Malaysia. In year 2010, the company is established on a 110,000m² (26 acres) industrial land in Pasir Gudang, Johor, Malaysia with a built-up area of 30,000m² (8 acres).

With the state-of-the-art machineries, Pantech Stainless & Alloy is now capable of producing ½" to 16" of Stainless Steel Welded Pipes and ½" to 16" of Stainless Steel Welded & Seamless Butt-Weld Fittings. Our vision is to be one of the most Reliable Global Stainless Steel Welded Pipes and Fittings Manufacturer.

To date, Pantech Stainless & Alloy is exporting to more than 25 countries such as North America, South America, Europe, Asia & Australia and has received numerous prestigious awards and obtained most of the international certifications including ISO 9001: 2015 & Pressure Equipment Directive 2014/68/EU (PED) by Lloyd's Register.

Our products also certified by local authority – Standards & Industrial Research Institute of Malaysia (SIRIM) & National Water Services Commission (SPAN) and are widely accepted by oil and gas, refineries, water treatment, pulp and paper, pharmaceutical, chemical and petrochemical industries.

Pantech Stainless & Alloy is committed to meet our customer's requirement and expectation on product quality through the continual improvement of our processes, staff development, setting and reviewing objectives. Customer's satisfaction is the goal of our quality system.





TYPES OF TESTING



Universal Tensile Testing Machine



Hardness Machine



Inter - Granular Corrosion Test



Metallographic Analysis



On-line Eddy Current Machine



Hydrostatic Test



Spectrometer



MECHANICAL PROPERTIES



ASTM / ASME A/SA 312

Grade	UNS Designation	Tensile Strength	Yield Strength	Elongation in 2' or 50mm (or 4D), Min %	
		Min Ksi (MPA)	Min Ksi (MPA)	Longitudinal	Transverse
TP304	S30400	75 (515)	30 (205)	35	25
TP304L	S30403	70 (485)	25 (170)		
TP316	S31600	75 (515)	30 (205)		
TP316L	S31603	70 (485)	25 (170)		

ASTM A778

Grade	UNS Designation	Tensile Strength	Yield Strength	Elongation in 2' or 50mm (or 4D), Min %	
		Min Ksi (MPA)	Min Ksi (MPA)	Longitudinal	Transverse
TP304L	S30403	70 (485)	25 (170)	35	25
TP316L	S31603	70 (485)	25 (170)		

JIS 3459

Grade	UNS Designation	Tensile Strength	Yield Strength	Elongation in 2' or 50mm (or 4D), Min %	
		Min Ksi (MPA)	Min Ksi (MPA)	Longitudinal	Transverse
TP304	SUS304TP	520	205	30	22
TP304L	SUS304LTP	520	205		
TP316	SUS316TP	520	205		
TP316L	SUS316LTP	520	205		

ASTM / ASME A/SA 403

Grade	UNS Designation	Tensile Strength	Yield Strength	Elongation in 2' or 50mm (or 4D), Min %	
		Min Ksi (MPA)	Min Ksi (MPA)	Longitudinal	Transverse
TP304	S30400	75 (515)	30 (205)	28	20
TP304L	S30403	70 (485)	25 (170)		
TP316	S31600	75 (515)	30 (205)		
TP316L	S31603	70 (485)	25 (170)		



CHEMICAL COMPOSITION

ASTM / ASME A/SA 312

Grade	UNS Designation	Carbon	Maganese	Phosphorus	Sulfur	Silicon	Chromium		Nickel		Molybdenum	
		Max	Max	Max	Max	Max	Min	Max	Min	Max	Min	Max
TP304	S30400	0.080	2.00	0.045	0.030	1.00	18.00	20.00	8.00	11.00	-	-
TP304L	S30403	0.035	2.00	0.045	0.030	1.00	18.00	20.00	8.00	13.00	-	-
TP316	S31600	0.080	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	2.00	3.00
TP316L	S31603	0.035	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	2.00	3.00

ASTM A778

Grade	UNS Designation	Carbon	Maganese	Phosphorus	Sulfur	Silicon	Chromium		Nickel		Molybdenum	
		Max	Max	Max	Max	Max	Min	Max	Min	Max	Min	Max
TP304L	S30403	0.030	2.00	0.045	0.030	1.00	18.00	20.00	8.00	13.00	-	-
TP316L	S31603	0.030	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	-	-

JIS 3459

Grade	UNS Designation	Carbon	Maganese	Phosphorus	Sulfur	Silicon	Chromium		Nickel		Molybdenum	
		Max	Max	Max	Max	Max	Min	Max	Min	Max	Min	Max
304	SUS304TP	0.080	2.00	0.045	0.030	1.00	18.00	20.00	8.00	11.00	-	-
304L	SUS304LTP	0.030	2.00	0.045	0.030	1.00	18.00	20.00	9.00	13.00	-	-
316	SUS316TP	0.080	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	2.00	3.00
316L	SUS316LTP	0.030	2.00	0.045	0.030	1.00	16.00	18.00	12.00	16.00	2.00	3.00

ASTM / ASME A/SA 403

Grade	UNS Designation	Carbon	Maganese	Phosphorus	Sulfur	Silicon	Chromium		Nickel		Molybdenum	
		Max	Max	Max	Max	Max	Min	Max	Min	Max	Min	Max
TP304	S30400	0.080	2.00	0.045	0.030	1.00	18.00	20.00	8.00	11.00	-	-
TP304L	S30403	0.030	2.00	0.045	0.030	1.00	18.00	20.00	8.00	13.00	-	-
TP316	S31600	0.080	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	2.00	3.00
TP316L	S31603	0.030	2.00	0.045	0.030	1.00	16.00	18.00	10.00	14.00	2.00	3.00

HYDROSTATIC TEST PRESSURE STANDARD REQUIREMENT (Mpa / Psi)



Mpa

Psi = Kgf/cm²

ASTM/ASME A/SA 312 & ASTM A778					JIS 3459		
Designation	Inches	5s	10s	40s	Designation	Inches	JIS Sch 20s
15	1/2	175	175	175	15	1/2	180
		2,500	2,500	2,500			2,500
20	3/4	175	175	175	20	3/4	180
		2,500	2,500	2,500			2,500
25	1	175	175	175	25	1	180
		2,500	2,500	2,500			2,500
32	1¼	170	175	175	32	1¼	180
		2,400	2,500	2,500			2,500
40	1½	145	175	175	40	1½	160
		2,100	2,500	2,500			2,300
50	2	120	175	175	50	2	150
		1,700	2,500	2,500			2,100
65	2½	125	175	175	65	2½	120
		1,800	2,500	2,500			1,700
80	3	105	145	175	80	3	120
		1,500	2,100	2,500			1,700
90	3½	90	125	175			
		1,300	1,800	2,500			
100	4	75	115	175	100	4	90
		1,100	1,600	2,500			1,300
125	5	85	105	175	125	5	90
		1,200	1,500	2,500			1,300
150	6	70	90	175	150	6	80
		1,000	1,300	2,500			1,100
200	8	60	80	160	200	8	80
		800	1,100	2,300			1,100
250	10	55	70	155	250	10	65
		750	950	2,100			900
300	12	55	60	125	300	12	60
		750	850	1,800			800
350	14	50	60	115			
		700	800	1,600			
400	16	45	50	100			
		650	700	1,400			



**STAINLESS STEEL
WELDED PIPES**

WELDED AUSTENITIC STAINLESS STEEL PIPES



For 5s, 10s, 40s, JIS 20s:

OD's = mm

Wall thickness (WT) = mm

Weight = kg/m (plain end mass)

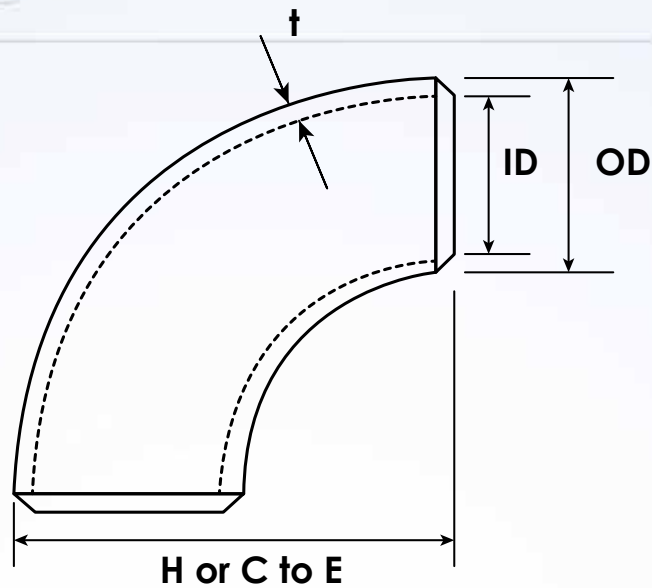
**METRIC
ANSI PIPE SCHEDULE
SI-UNITS (METRIC)**

Nominal									
ASME B36.19						JIS 3459			
Designation	Inches	OD	5s	10s	40s	Designation	Inches	OD	JIS Sch 20s
			WT/ Weight						WT/ Weight
15	1/2	21.30	1.65	2.11	2.77	15	1/2	21.70	2.50
			0.82	1.01	1.30				1.20
20	3/4	26.70	1.65	2.11	2.87	20	3/4	27.20	2.50
			1.04	1.31	1.71				1.54
25	1	33.40	1.65	2.77	3.38	25	1	34.00	3.00
			1.33	2.13	2.55				2.32
32	1¼	42.20	1.65	2.77	3.56	32	1¼	42.70	3.00
			1.68	2.76	3.46				2.97
40	1½	48.30	1.65	2.77	3.68	40	1½	48.60	3.00
			1.95	3.11	4.13				3.41
50	2	60.30	1.65	2.77	3.91	50	2	60.50	3.50
			2.44	4.01	5.54				4.97
65	2½	73.00	2.11	3.05	5.16	65	2½	76.30	3.50
			3.77	5.36	8.81				6.35
80	3	88.90	2.11	3.05	5.49	80	3	89.10	4.00
			4.60	6.59	11.52				8.48
90	3½	101.60	2.11	3.05	5.74	90	3½	101.60	4.00
			5.29	7.55	13.57				11.00
100	4	114.30	2.11	3.05	6.02	100	4	114.30	4.00
			5.96	8.52	16.40				17.00
125	5	141.30	2.77	3.40	6.55	125	5	139.80	5.00
			9.67	11.82	22.20				19.95
150	6	168.30	2.77	3.40	7.11	150	6	165.20	5.00
			11.55	14.13	28.83				33.97
200	8	219.10	2.77	3.76	8.18	200	8	216.30	6.50
			15.09	20.37	43.39				42.24
250	10	273.10	3.40	4.19	9.27	250	10	267.40	6.50
			23.08	28.34	61.52				6.50
300	12	323.90	3.96	4.57	9.53	300	12	318.50	6.50
			31.89	36.73	75.32				50.52
350	14	355.60	3.96	4.78	9.53	350	14	355.60	6.50
			35.06	42.14	81.33				93.27
400	16	406.40	4.19	4.78	9.53	400	16	406.40	6.50
			42.41	48.26	93.27				108.37
450	18	457.20	4.19	4.78	9.53	450	18	457.20	6.50
			47.77	54.36	108.37				117.15
500	20	508.00	4.78	5.54	9.53	500	20	508.00	6.50
			60.46	70.00	117.15				-
550	22	558.80	4.87	5.54	-	550	22	558.80	-
			66.57	77.06	-				-
600	24	609.60	5.54	6.35	9.53	600	24	609.60	6.50
			84.16	96.37	141.12				50.52



STAINLESS STEEL BUTT-WELD FITTINGS

DIMENSION OF 90° LONG RADIUS ELBOW (10s & 40s)



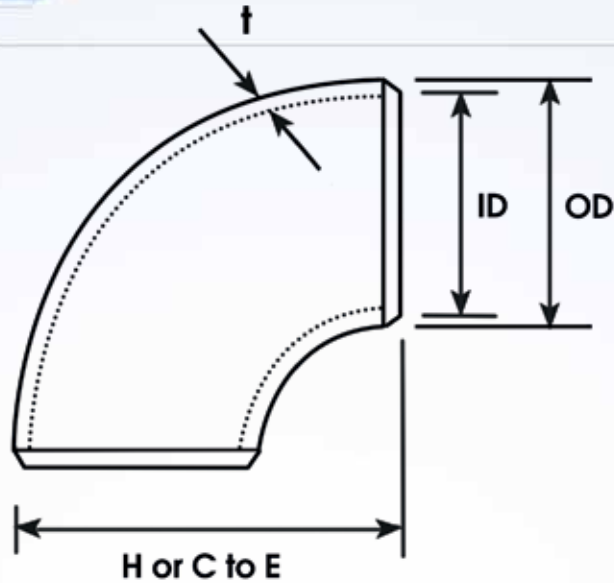
Size	Outside Diameter (OD)	10s			40s			Height (H) / C to E
		Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	
	Nom.	Nom.	Nom.		Nom.	Nom.		Nom.
½"	21.34	17.12	2.11	0.06	15.8	2.77	0.08	48.65
¾"	26.67	22.45	2.11	0.08	20.93	2.87	0.1	51.5
1"	33.4	27.86	2.77	0.13	26.64	3.38	0.15	54.7
1¼"	42.16	36.62	2.77	0.21	35.04	3.56	0.26	69.1
1½"	48.26	42.72	2.77	0.28	40.9	3.68	0.37	81.15
2"	60.33	54.79	2.77	0.48	52.51	3.91	0.65	106.15
2½"	73.03	66.93	3.05	0.81	62.71	5.16	1.37	131.5
3"	88.9	82.8	3.05	1.14	77.92	5.49	2.04	158.45
3½"	101.6	95.5	3.05	1.7	90.12	5.74	2.83	183.8
4"	114.3	108.2	3.05	1.97	102.26	6.02	2.56	209.15
5"	141.3	134.5	3.4	3.42	128.2	6.55	4.34	260.65
6"	168.28	161.48	3.4	3.6	154.06	7.11	10.9	313.15
8"	219.08	211.56	3.76	10	202.72	8.18	20.1	414.55
10"	273.05	264.67	4.19	11.7	254.51	9.27	35.4	517.5
12"	323.85	314.71	4.57	28	304.79	9.53	54	618.9
14"	355.6	346.04	4.78	36.29	336.54	9.53	70.31	710.8
16"	406.4	396.84	4.78	47.63	387.34	9.53	91.63	813.2
18"	457.2	447.44	4.78	59.87	437.94	9.53	122.02	914.5
20"	508	496.92	5.54	82.09	488.94	9.53	149.69	1016
22"	558.8	547.92	5.54	99.44	-	-	-	1117.5
24"	609.6	597.3	6.35	135.59	590.94	9.53	210.47	1219

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9



DIMENSION OF 90° SHORT RADIUS ELBOW (10s & 40s)

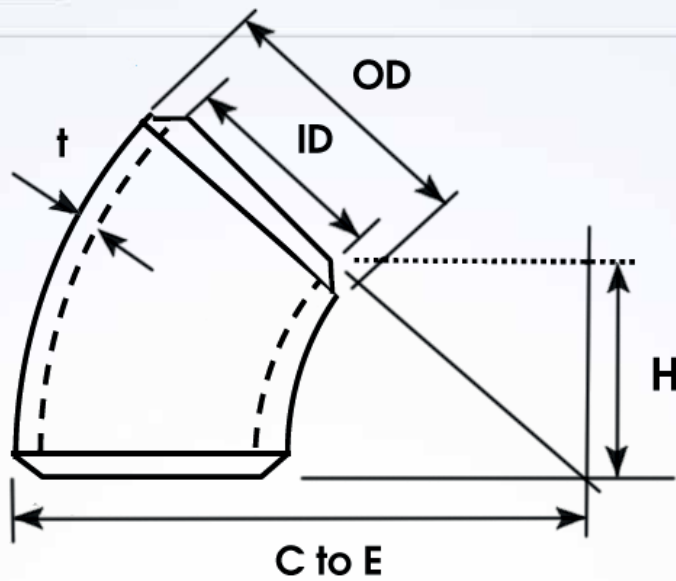


Size	Outside Diameter (OD)	10s			40s			Height (H) / C to E
		Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	
	Nom.	Nom.	Nom.		Nom.	Nom.		Nom.
1"	33.4	27.86	2.77	0.1	26.64	3.38	0.18	41.7
1¼"	42.16	36.62	2.77	0.17	35.04	3.56	0.21	53.1
1½"	48.26	42.72	2.77	0.22	40.9	3.68	0.29	62.15
2"	60.33	54.79	2.77	0.31	52.51	3.91	0.51	81.15
2½"	73.03	66.93	3.05	0.52	62.71	5.16	1.02	100.5
3"	88.9	82.8	3.05	0.77	77.92	5.49	1.5	120.45
3½"	101.6	95.5	3.05	1.38	90.12	5.74	2.06	139.8
4"	114.3	108.2	3.05	1.72	102.26	6.02	3.12	159.15
5"	141.3	134.5	3.4	2.78	128.2	6.55	5.28	197.65
6"	168.28	161.48	3.4	4.15	154.06	7.11	7.94	236.15
8"	219.08	211.56	3.76	8	202.72	8.18	17.06	312.55
10"	273.05	264.67	4.19	15.88	254.51	9.27	28.58	390.5
12"	323.85	314.71	4.57	18.14	304.79	9.53	36.29	466.9
14"	355.6	346.04	4.78	23.59	336.54	9.53	45.81	533.8
16"	406.4	396.84	4.78	30.84	387.34	9.53	59.42	609.2
18"	457.2	447.44	4.78	39.01	437.94	9.53	79.38	685.5
20"	508	496.92	5.54	64.86	488.94	9.53	97.52	762
22"	558.8	547.92	5.54	76.38	-	-	-	838.5
24"	609.6	597.3	6.35	91.63	590.94	9.53	136.99	915

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF 45° LONG RADIUS ELBOW (10s & 40s)



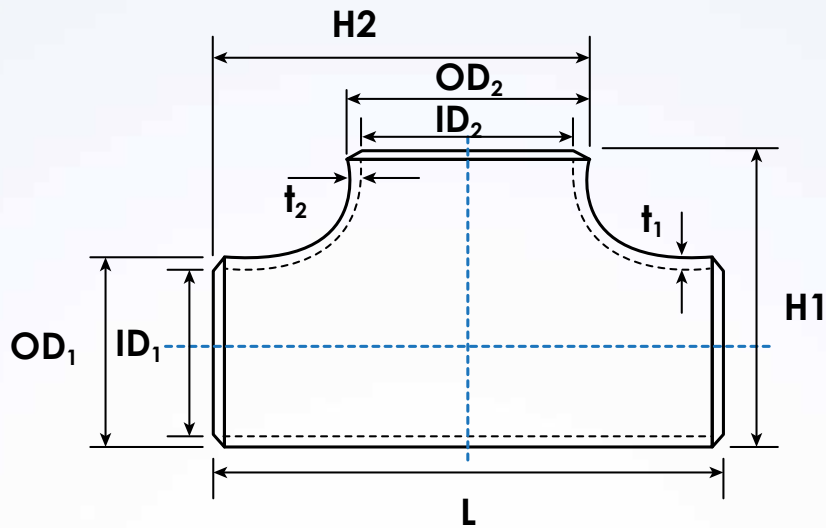
Size	Outside Diameter (OD)	10s			Height (H)	40s			Height (H)	C to E
		Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)		Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)		
		Nom.	Nom.	Nom.		Nom.	Nom.	Nom.		
½"	21.34	17.12	2.11	0.03	21.27	15.8	2.77	0.04	21.74	49.27
¾"	26.67	22.45	2.11	0.04	24.48	20.93	2.87	0.06	25.02	59.21
1"	33.4	27.86	2.77	0.09	27.7	26.64	3.38	0.11	28.14	69.81
1¼"	42.16	36.62	2.77	0.11	29.71	35.04	3.56	0.17	30.27	81.45
1½"	48.26	42.72	2.77	0.17	34.38	40.9	3.68	0.23	35.03	94.15
2"	60.33	54.79	2.77	0.25	40.38	52.51	3.91	0.4	41.19	114.64
2½"	73.03	66.93	3.05	0.48	51.45	62.71	5.16	0.77	52.95	142.71
3"	88.9	82.8	3.05	0.63	57.78	77.92	5.49	1.08	59.51	167.56
3½"	101.6	95.5	3.05	0.75	63.53	90.12	5.74	1.42	65.44	188.39
4"	114.3	108.2	3.05	1.08	70.99	102.26	6.02	2.09	73.09	211.64
5"	141.3	134.5	3.4	1.81	87.3	128.2	6.55	3.43	85.53	261.35
6"	168.28	161.48	3.4	2.72	105.06	154.06	7.11	5.44	107.69	313.47
8"	219.08	211.56	3.76	5.33	141.98	202.72	8.18	10.77	145.11	416.11
10"	273.05	264.67	4.19	9.75	177.85	254.51	9.27	19.28	181.44	520.3
12"	323.85	314.71	4.57	13.61	213.08	304.81	9.53	29.71	216.58	620.53
14"	355.6	346.04	4.78	18.14	256.61	336.54	9.53	35.15	259.96	713.68
16"	406.4	396.84	4.78	23.81	293.27	387.34	9.53	45.81	296.63	816.32
18"	457.2	445.92	5.54	29.94	330	437.94	9.53	59.42	333.36	918.87
20"	508	496.92	5.54	49.9	367.13	488.94	9.53	74.84	369.95	1021.61
22"	558.8	547.92	5.54	58.32	391.77	-	-	-	-	1107.46
24"	609.6	597.3	6.35	70.31	439.18	590.94	9.53	105.23	441.43	1224.68

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9



DIMENSIONS OF EQUAL TEE (10s)

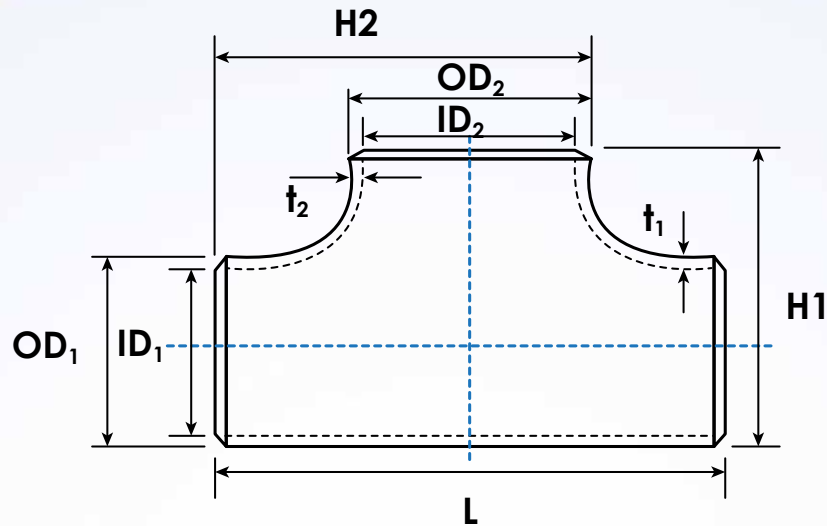


Size	Outside Diameter (OD ₁ , OD ₂)	Inside Diameter (ID ₁ , ID ₂)	Wall Thickness (t ₁ , t ₂)	Height (H ₁ , H ₂)	Approximate Weight (Kg)	L
	Nom.	Nom.	Nom.	Nom.		Nom.
½"	21.34	17.12	2.11	35.67	0.1	50
¾"	26.67	22.45	2.11	42.34	0.15	58
1"	33.4	27.86	2.77	54.7	0.3	76
1¼"	42.16	36.62	2.77	69.08	0.49	96
1½"	48.26	42.72	2.77	81.13	0.68	114
2"	60.33	54.79	2.77	94.17	1.01	128
2½"	73.03	66.93	3.05	112.52	1.47	152
3"	88.9	82.8	3.05	130.45	2.02	172
3½"	101.6	95.5	3.05	145.8	2.55	190
4"	114.3	108.2	3.05	162.15	3.18	210
5"	141.3	134.5	3.4	194.65	4.97	248
6"	168.28	161.48	3.4	227.14	6.81	286
8"	219.08	211.56	3.76	287.54	11.77	356
10"	273.05	264.67	4.19	352.53	19.19	432
12"	323.85	314.71	4.57	415.93	28.54	508
14"	355.6	346.04	4.78	456.8	35.66	558
16"	406.4	396.84	4.78	508.2	44.11	610
18"	457.2	447.44	4.78	571.5	55.88	686
20"	508	496.92	5.54	635	77.32	762
22"	558.8	547.92	5.54	698.5	93.67	838
24"	609.6	597.3	6.35	737	115.52	864

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSIONS OF EQUAL TEE (40s)



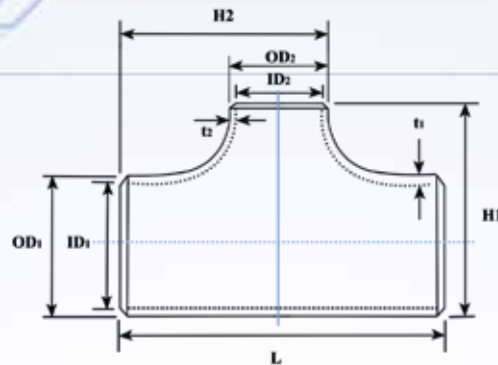
Size	Outside Diameter (OD1, OD2)	Inside Diameter (ID1 / ID2)	Wall Thickness (t1 / t2)	Height (H1, H2)	Approximate Weight (Kg)	L
	Nom.	Nom.	Nom.	Nom.		Nom.
½"	21.34	15.8	2.77	35.67	0.12	50
¾"	26.67	20.96	2.87	42.34	0.18	58
1"	33.4	26.64	3.38	54.7	0.33	76
1¼"	42.16	35.04	3.56	69.08	0.57	96
1½"	48.26	40.9	3.68	81.13	0.81	114
2"	60.33	52.51	3.91	94.15	1.19	128
2½"	73.03	62.71	5.16	112.52	2.09	152
3"	88.9	77.92	5.49	130.45	3.02	172
3½"	101.6	90.12	5.74	145.8	3.95	190
4"	114.3	102.26	6.02	162.15	5.11	210
5"	141.3	128.2	6.55	194.65	7.97	248
6"	168.28	154.06	7.11	227.14	11.69	286
8"	219.08	202.72	8.18	287.54	21.22	356
10"	273.05	254.51	9.27	352.53	35.62	432
12"	323.85	304.79	9.53	415.93	51.05	508
14"	355.6	336.54	9.53	456.8	61.78	558
16"	406.4	387.34	9.53	508.2	76.55	610
18"	457.2	437.94	9.53	571.5	97.1	686
20"	508	488.94	9.53	635	120.17	762
22"	558.8	-	-	-	-	-
24"	609.6	590.94	9.53	737	161.45	864

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9



DIMENSIONS OF REDUCING TEE (10s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height		Long	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2	H1	H2	L	
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
3/4" x 1/2"	26.7	21.34	22.45	17.12	2.11	2.11	42.34	39.67	58	0.12
1" x 1/2"	33.4	21.34	27.86	17.12	2.77	2.11	54.7	48.67	76	0.08
1" x 3/4"	33.4	26.67	27.86	22.45	2.77	2.11	54.7	51.34	76	0.08
1 1/4" x 1/2"	42.16	21.34	36.62	17.12	2.77	2.11	69.08	58.67	96	0.09
1 1/4" x 3/4"	42.16	26.67	36.62	22.45	2.77	2.11	69.08	61.34	96	0.11
1 1/4" x 1"	42.16	33.4	36.62	27.86	2.77	2.77	69.08	64.7	96	0.11
1 1/2" x 1/2"	48.26	21.34	42.72	17.12	2.77	2.11	81.13	67.67	114	0.24
1 1/2" x 3/4"	48.26	26.67	42.72	22.45	2.77	2.11	81.13	68.34	114	0.25
1 1/2" x 1"	48.26	33.4	42.72	27.86	2.77	2.77	81.13	73.7	114	0.25
1 1/2" x 1 1/4"	48.26	42.16	42.72	36.62	2.77	2.77	81.13	78.08	114	0.43
2" x 3/4"	60.3	26.67	54.79	22.45	2.77	2.11	74.17	77.34	128	0.44
2" x 1"	60.3	33.4	54.79	27.86	2.77	2.77	81.17	80.7	128	0.45
2" x 1 1/4"	60.3	42.16	54.79	36.62	2.77	2.77	87.17	85.08	128	0.58
2" x 1 1/2"	60.3	48.26	54.79	42.76	2.77	2.77	90.17	88.13	128	0.59
2 1/2" x 1"	73.03	33.4	66.9	27.86	3.05	2.77	93.52	92.7	152	0.6
2 1/2" x 1 1/4"	73.03	42.16	66.9	36.62	3.05	2.77	100.52	97.08	152	0.61
2 1/2" x 1 1/2"	73.03	48.26	66.9	42.72	3.05	2.77	103.52	100.13	152	0.72
2 1/2" x 2"	73.03	60.3	66.9	54.79	3.05	2.77	106.52	106.17	152	0.73
3" x 1 1/4"	88.9	42.16	82.8	36.62	3.05	2.77	114.45	107.8	172	0.76
3" x 1 1/2"	88.9	48.26	82.8	42.72	3.05	2.77	117.45	110.13	172	1.19
3" x 2"	88.9	60.3	82.8	54.79	3.05	2.77	120.45	116.17	172	1.21
3" x 2 1/2"	88.9	73.03	82.8	66.93	3.05	2.77	127.45	122.5	172	1.24
3 1/2" x 1 1/2"	101.6	48.26	95.5	42.72	3.05	2.77	129.8	119.13	190	1.27
3 1/2" x 2"	101.6	60.3	95.5	54.79	3.05	2.77	133.8	125.17	190	1.48
3 1/2" x 2 1/2"	101.6	73.03	95.5	66.93	3.05	3.05	139.8	131.52	190	1.5
3 1/2" x 3"	101.6	88.9	95.5	82.8	3.05	3.05	142.8	139.45	190	1.52
4" x 1 1/2"	114.3	48.26	108.2	42.72	3.05	2.77	143.15	129.13	210	1.56
4" x 2"	114.3	60.3	108.2	54.79	3.05	2.77	146.15	135.17	210	1.59
4" x 2 1/2"	114.3	73.03	108.2	66.93	3.05	3.05	152.15	141.52	210	2.26
4" x 3"	114.3	88.9	108.2	82.8	3.05	3.05	155.15	149.45	210	2.29
4" x 3 1/2"	114.3	101.6	108.2	95.5	3.05	3.05	159.15	155.8	210	2.35
5" x 2"	141.3	60.3	134.5	54.79	3.4	2.77	175.65	154.17	248	2.4
5" x 2 1/2"	141.3	73.03	134.5	66.93	3.4	3.05	178.65	160.52	248	2.9
5" x 3"	141.3	88.9	134.5	82.8	3.4	3.05	181.65	168.45	248	2.94
5" x 3 1/2"	141.3	101.6	134.5	95.5	3.4	3.05	184.65	174.8	248	2.98

DIMENSIONS OF REDUCING TEE (10s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height		Long	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2	H1	H2	L	
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	134.5	108.2	3.4	3.05	187.65	181.15	248	3.04
6" x 2½"	168.28	73.03	161.48	66.93	3.4	3.05	205.14	179.52	286	3.11
6" x 3"	168.28	88.9	161.48	82.8	3.4	3.05	208.14	187.45	286	5.12
6" x 3½"	168.28	101.6	161.48	95.5	3.4	3.05	211.14	193.8	286	5.18
6" x 4"	168.28	114.3	161.48	108.2	3.4	3.05	214.14	200.15	286	5.24
6" x 5"	168.28	141.3	161.48	134.5	3.4	3.4	221.14	213.65	286	5.37
8" x 3½"	219.08	101.6	211.56	95.5	3.76	3.05	261.54	228.8	356	6.78
8" x 4"	219.08	114.3	211.56	108.2	3.76	3.05	265.54	235.15	356	6.86
8" x 5"	219.08	141.3	211.56	134.5	3.76	3.4	271.54	248.65	356	6.94
8" x 6"	219.08	168.28	211.56	161.48	3.76	3.4	277.54	262.14	356	7.1
10" x 4"	273.05	114.3	264.67	108.2	4.19	3.05	320.53	273.15	432	7.27
10" x 5"	273.05	141.3	264.67	134.5	4.19	3.4	327.53	286.65	432	13.15
10" x 6"	273.05	168.28	264.67	161.48	4.19	3.4	330.53	300.15	432	13.3
10" x 8"	273.05	219.08	264.67	211.56	4.19	3.76	339.53	325.54	432	13.46
12" x 5"	323.85	141.3	314.71	134.5	4.57	3.4	377.93	324.65	508	13.77
12" x 6"	323.85	168.28	314.71	161.48	4.57	3.4	380.93	338.14	508	14.08
12" x 8"	323.85	219.08	314.71	211.56	4.57	3.76	390.93	363.54	508	22.75
12" x 10"	323.85	273.05	314.71	264.67	4.57	4.19	402.93	390.53	508	23.02
14" x 6"	355.6	168.28	346.04	161.48	4.78	3.4	415.8	363.14	558	23.55
14" x 8"	355.6	219.08	346.04	211.56	4.78	3.76	425.8	388.54	558	24.09
14" x 10"	355.6	273.05	346.04	264.67	4.78	4.19	434.8	415.53	558	33.54
14" x 12"	355.6	323.85	346.04	314.71	4.78	4.57	447.8	440.93	558	33.94
16" x 6"	406.4	168.28	396.84	161.48	4.78	3.4	467.2	389.14	610	34.73
16" x 8"	406.4	219.08	396.84	211.56	4.78	3.76	476.2	414.54	610	35.52
16" x 10"	406.4	273.05	396.84	264.67	4.78	4.19	486.2	441.53	610	41.25
16" x 12"	406.4	323.85	396.84	314.71	4.78	4.57	498.2	466.93	610	41.74
16" x 14"	406.4	355.6	396.84	346.04	4.78	4.78	508.2	482.8	610	42.71
18" x 8"	457.2	219.08	447.44	211.56	4.78	3.76	526.5	452.55	686	43.68
18" x 10"	457.2	273.05	447.44	264.67	4.78	4.19	536.5	479.5	686	49.44
18" x 12"	457.2	323.85	447.44	314.71	4.78	4.57	549.5	504.9	686	49.9
18" x 14"	457.2	355.6	447.44	346.04	4.78	4.78	558.5	520.8	686	50.8
18" x 16"	457.2	406.4	447.44	396.84	4.78	4.78	558.5	546.2	686	51.71
20" x 8"	508	219.08	496.92	211.56	5.54	3.76	578	490.55	762	53.07
20" x 10"	508	273.05	496.92	264.67	5.54	4.19	587	517.5	762	64.41
20" x 12"	508	323.85	496.92	314.71	5.54	4.57	600	542.9	762	64.86
20" x 14"	508	355.6	496.92	346.04	5.54	4.78	610	558.8	762	65.77
20" x 16"	508	406.4	496.92	396.84	5.54	4.78	610	584.2	762	67.13
20" x 18"	508	457.2	496.92	447.44	5.54	4.78	622	609.5	762	68.95
22" x 10"	558.8	273.05	547.92	264.67	5.54	4.19	638.5	555.5	838	63.5
22" x 12"	558.8	323.85	547.92	314.71	5.54	4.57	650.5	580.9	838	67.53
22" x 14"	558.8	355.6	547.92	346.04	5.54	4.78	660.5	596.8	838	70.1
22" x 16"	558.8	406.4	547.92	396.84	5.54	4.78	660.5	622.2	838	78.77
22" x 18"	558.8	457.2	547.92	447.44	5.54	4.78	673.5	647.5	838	86.57
22" x 20"	558.8	508	547.92	496.92	5.54	5.54	685.5	673	838	92.1



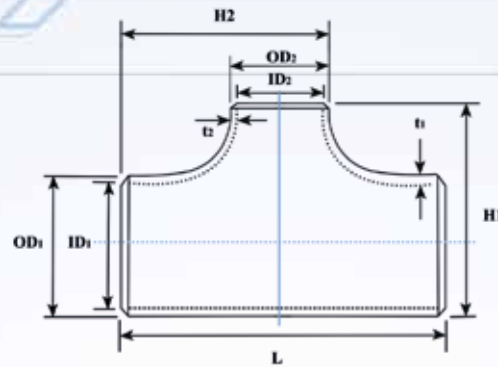
DIMENSIONS OF REDUCING TEE (10s)

Size	Outside Diameter		Inside Diameter		Wall Thickness		Height		Long	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2	H1	H2	L	
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
24" x 10"	609.6	273.05	597.3	264.67	6.35	4.19	689	568.5	864	85.73
24" x 12"	609.6	323.85	597.3	314.71	6.35	4.57	702	593.9	864	86.64
24" x 14"	609.6	355.6	597.3	346.04	6.35	4.78	711	609.8	864	87.54
24" x 16"	609.6	406.4	597.3	396.84	6.35	4.78	711	635.2	864	88.9
24" x 18"	609.6	457.2	597.3	447.44	6.35	4.78	724	660.5	864	90.72
24" x 20"	609.6	508	597.3	496.92	6.35	5.54	737	686	864	92.99
24" x 22"	609.6	558.8	597.3	547.92	6.35	5.54	737	711.5	864	95.34

GENERAL NOTE:

- 1) All dimension are in millimeters
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF REDUCING TEE (40s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height		Long	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2	H1	H2	L	
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
3/4" x 1/2"	26.7	21.34	20.93	15.8	2.87	2.77	42.34	39.67	58	0.12
1" x 1/2"	33.4	21.34	26.64	15.8	3.38	2.77	54.7	48.67	76	0.1
1" x 3/4"	33.4	26.67	26.64	20.93	3.38	2.87	54.7	51.34	76	0.23
1 1/4" x 1/2"	42.16	21.34	35.04	15.8	3.56	2.77	69.08	58.67	96	0.31
1 1/4" x 3/4"	42.16	26.67	35.04	20.93	3.56	2.87	69.08	61.34	96	0.37
1 1/4" x 1"	42.16	33.4	35.04	26.64	3.56	3.38	69.08	64.7	96	0.39
1 1/2" x 1/2"	48.26	21.34	40.9	15.8	3.68	2.77	81.13	67.67	114	0.51
1 1/2" x 3/4"	48.26	26.67	40.9	20.93	3.68	2.87	81.13	68.34	114	0.52
1 1/2" x 1"	48.26	33.4	40.9	26.64	3.68	3.38	81.13	73.7	114	0.55
1 1/2" x 1 1/4"	48.26	42.16	40.9	35.04	3.68	3.56	81.13	78.08	114	0.57
2" x 3/4"	60.3	26.67	52.51	20.93	3.91	2.87	74.17	77.34	128	0.52
2" x 1"	60.3	33.4	52.51	26.64	3.91	3.38	81.17	80.7	128	0.74
2" x 1 1/4"	60.3	42.16	52.51	35.04	3.91	3.56	87.17	85.08	128	0.8
2" x 1 1/2"	60.3	48.26	52.51	40.9	3.91	3.68	90.17	88.13	128	0.83
2 1/2" x 1"	73.03	33.4	62.71	26.64	5.16	3.38	93.52	92.7	152	1.21
2 1/2" x 1 1/4"	73.03	42.16	62.71	35.04	5.16	3.56	100.52	97.08	152	1.38
2 1/2" x 1 1/2"	73.03	48.26	62.71	40.9	5.16	3.68	103.52	100.13	152	1.49
2 1/2" x 2"	73.03	60.3	62.71	52.51	5.16	3.91	106.52	106.17	152	1.53
3" x 1 1/4"	88.9	42.16	77.92	35.04	5.49	3.56	114.45	107.8	172	1.85
3" x 1 1/2"	88.9	48.26	77.92	40.9	5.49	3.68	117.45	110.13	172	2.05
3" x 2"	88.9	60.3	77.92	52.51	5.49	3.91	120.45	116.17	172	2.16
3" x 2 1/2"	88.9	73.03	77.92	62.71	5.49	5.16	127.45	122.5	172	2.29
3 1/2" x 1 1/2"	101.6	48.26	90.12	40.9	5.74	3.68	129.8	119.13	190	1.98
3 1/2" x 2"	101.6	60.3	90.12	52.51	5.74	3.91	133.8	125.17	190	2.78
3 1/2" x 2 1/2"	101.6	73.03	90.12	62.71	5.74	5.16	139.8	131.52	190	2.81
3 1/2" x 3"	101.6	88.9	90.12	77.92	5.74	5.49	142.8	139.45	190	2.85
4" x 1 1/2"	114.3	48.26	102.26	40.9	6.02	3.68	143.15	129.13	210	3.41
4" x 2"	114.3	60.3	102.26	52.21	6.02	3.91	146.15	135.17	210	3.52
4" x 2 1/2"	114.3	73.03	102.26	62.71	6.02	5.16	152.15	141.52	210	3.7
4" x 3"	114.3	88.9	102.26	77.92	6.02	5.49	155.15	149.45	210	3.83
4" x 3 1/2"	114.3	101.6	102.26	90.12	6.02	5.74	159.15	155.8	210	4.07
5" x 2"	141.3	60.3	128.2	52.51	6.55	3.91	175.65	154.17	248	5.53
5" x 2 1/2"	141.3	73.03	128.2	62.71	6.55	5.16	178.65	160.52	248	5.71
5" x 3"	141.3	88.9	128.2	77.92	6.55	5.49	181.65	168.45	248	5.85
5" x 3 1/2"	141.3	101.6	128.2	90.12	6.55	5.74	184.65	174.8	248	6.05



DIMENSION OF REDUCING TEE (40s)

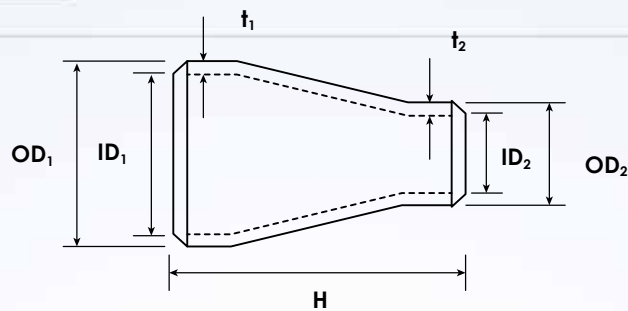
Size	Outside Diameter		Inside Diameter		Wall Thickness		Height		Long	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2	H1	H2	L	
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	128.2	102.26	6.55	6.02	187.65	181.15	248	6.14
6" x 2½"	168.28	73.03	154.06	62.71	7.11	5.16	205.14	179.52	286	8.32
6" x 3"	168.28	88.9	154.06	77.92	7.11	5.49	208.14	187.45	286	8.52
6" x 3½"	168.28	101.6	154.06	90.12	7.11	5.74	211.14	193.8	286	8.63
6" x 4"	168.28	114.3	154.06	102.26	7.11	6.02	214.14	200.15	286	8.81
6" x 5"	168.28	141.3	154.06	128.2	7.11	6.55	221.14	213.65	286	9.21
8" x 3½"	219.08	101.6	202.72	90.12	8.18	5.74	261.54	228.8	356	15.64
8" x 4"	219.08	114.3	202.72	102.26	8.18	6.02	265.54	235.15	356	15.9
8" x 5"	219.08	141.3	202.72	128.2	8.18	6.55	271.54	248.65	356	16.3
8" x 6"	219.08	168.28	202.72	154.06	8.18	7.11	277.54	262.14	356	16.8
10" x 4"	273.05	114.3	254.51	102.26	9.27	6.02	320.53	273.15	432	26.87
10" x 5"	273.05	141.3	254.51	128.2	9.27	6.55	327.53	286.65	432	27.1
10" x 6"	273.05	168.28	254.51	154.06	9.27	7.11	330.53	300.15	432	27.6
10" x 8"	273.05	219.08	254.51	202.72	9.27	8.18	339.53	325.54	432	28.9
12" x 5"	323.85	141.3	304.79	128.2	9.53	6.55	377.93	324.65	508	38.46
12" x 6"	323.85	168.28	304.79	154.06	9.53	7.11	380.93	338.14	508	39.1
12" x 8"	323.85	219.08	304.79	202.72	9.53	8.18	390.93	363.54	508	40.3
12" x 10"	323.85	273.05	304.79	254.51	9.53	9.27	402.93	390.53	508	42.3
14" x 6"	355.6	168.28	336.54	154.06	9.53	7.11	415.8	363.14	558	46.65
14" x 8"	355.6	219.08	336.54	202.72	9.53	8.18	425.8	388.54	558	48.4
14" x 10"	355.6	273.05	336.54	254.51	9.53	9.27	434.8	415.53	558	50.2
14" x 12"	355.6	323.85	336.54	304.79	9.53	9.53	447.8	440.93	558	52.2
16" x 6"	406.4	168.28	387.34	154.06	9.53	7.11	467.2	389.14	610	56.15
16" x 8"	406.4	219.08	387.34	202.72	9.53	8.18	476.2	414.54	610	58.9
16" x 10"	406.4	273.05	387.34	254.51	9.53	9.27	486.2	441.53	610	61.6
16" x 12"	406.4	323.85	387.34	304.79	9.53	9.53	498.2	466.93	610	63.6
16" x 14"	406.4	355.6	387.34	336.54	9.53	9.53	508.2	482.8	610	65.1
18" x 8"	457.2	219.08	437.94	202.72	9.53	8.18	526.5	452.55	686	74.35
18" x 10"	457.2	273.05	437.94	254.51	9.53	9.27	536.5	479.5	686	76.76
18" x 12"	457.2	323.85	437.94	304.79	9.53	9.53	549.5	504.9	686	78.9
18" x 14"	457.2	355.6	437.94	336.54	9.53	9.53	558.5	520.8	686	80.3
18" x 16"	457.2	406.4	437.94	387.34	9.53	9.53	558.5	546.2	686	81.5
20" x 8"	508	219.08	488.94	202.72	9.53	8.18	578	490.55	762	91.05
20" x 10"	508	273.05	488.94	254.51	9.53	9.27	587	517.5	762	92.26
20" x 12"	508	323.85	488.94	304.79	9.53	9.53	600	542.9	762	94.85
20" x 14"	508	355.6	488.94	336.54	9.53	9.53	610	558.8	762	97.4
20" x 16"	508	406.4	488.94	387.34	9.53	9.53	610	584.2	762	98.6
20" x 18"	508	457.2	488.94	437.94	9.53	9.53	622	609.5	762	101
24" x 10"	609.6	273.05	590.94	254.51	9.53	9.27	689	568.5	864	124.2
24" x 12"	609.6	323.85	590.94	304.79	9.53	9.53	702	593.9	864	127.65
24" x 14"	609.6	355.6	590.94	336.54	9.53	9.53	711	609.8	864	130.4
24" x 16"	609.6	406.4	590.94	387.34	9.53	9.53	711	635.2	864	132.86
24" x 18"	609.6	457.2	590.94	437.94	9.53	9.53	724	660.5	864	134
24" x 20"	609.6	508	590.94	488.94	9.53	9.53	737	686	864	137

GENERAL NOTE:

1) All dimension are in millimetres

2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF CONCENTRIC REDUCER (10s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
¾" x ½"	26.7	21.34	22.45	17.12	2.11	2.11	38	0.04
1" x ½"	33.4	21.34	27.86	17.12	2.77	2.11	51	0.09
1" x ¾"	33.4	26.67	27.86	22.45	2.77	2.11	51	0.1
1¼" x ½"	42.16	21.34	36.62	17.12	2.77	2.11	51	0.1
1¼" x ¾"	42.16	26.67	36.62	22.45	2.77	2.11	51	0.11
1¼" x 1"	42.16	33.4	36.62	27.86	2.77	2.77	51	0.12
1½" x ½"	48.26	21.34	42.72	17.12	2.77	2.11	64	0.14
1½" x ¾"	48.26	26.67	42.72	22.45	2.77	2.11	64	0.15
1½" x 1"	48.26	33.4	42.72	27.86	2.77	2.77	64	0.17
1½" x 1¼"	48.26	42.16	42.72	36.62	2.77	2.77	64	0.18
2" x ¾"	60.3	26.67	54.79	22.45	2.77	2.11	76	0.22
2" x 1"	60.3	33.4	54.79	27.86	2.77	2.77	76	0.23
2" x 1¼"	60.3	42.16	54.79	36.62	2.77	2.77	76	0.25
2" x 1½"	60.3	48.26	54.79	42.76	2.77	2.77	76	0.27
2½" x 1"	73.03	33.4	66.9	27.86	3.05	2.77	89	0.34
2½" x 1¼"	73.03	42.16	66.9	36.62	3.05	2.77	89	0.37
2½" x 1½"	73.03	48.26	66.9	42.72	3.05	2.77	89	0.39
2½" x 2"	73.03	60.3	66.9	54.79	3.05	2.77	89	0.43
3" x 1¼"	88.9	42.16	82.8	36.62	3.05	2.77	89	0.43
3" x 1½"	88.9	48.26	82.8	42.72	3.05	2.77	89	0.45
3" x 2"	88.9	60.3	82.8	54.79	3.05	2.77	89	0.48
3" x 2½"	88.9	73.03	82.8	66.93	3.05	2.77	89	0.52
3½" x 1½"	101.6	48.26	95.5	42.72	3.05	2.77	102	0.62
3½" x 2"	101.6	60.3	95.5	54.79	3.05	2.77	102	0.71
3½" x 2½"	101.6	73.03	95.5	66.93	3.05	3.05	102	0.78
3½" x 3"	101.6	88.9	95.5	82.8	3.05	3.05	102	0.8
4" x 1½"	114.3	48.26	108.2	42.72	3.05	2.77	102	0.63
4" x 2"	114.3	60.3	108.2	54.79	3.05	2.77	102	0.67
4" x 2½"	114.3	73.03	108.2	66.93	3.05	3.05	102	0.71
4" x 3"	114.3	88.9	108.2	82.8	3.05	3.05	102	0.76
4" x 3½"	114.3	101.6	108.2	95.5	3.05	3.05	102	0.82
5" x 2"	141.3	60.3	134.5	54.79	3.4	2.77	127	1.05
5" x 2½"	141.3	73.03	134.5	66.93	3.4	3.05	127	1.14
5" x 3"	141.3	88.9	134.5	82.8	3.4	3.05	127	1.22
5" x 3½"	141.3	101.6	134.5	95.5	3.4	3.05	127	1.28



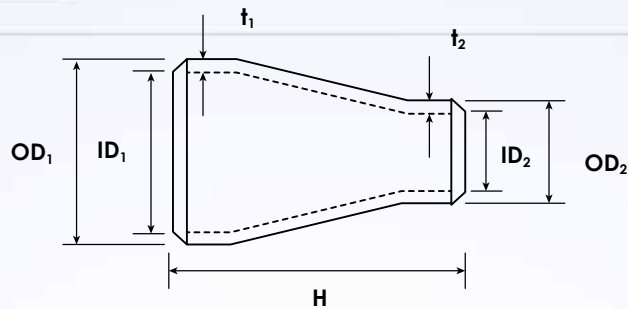
DIMENSION OF CONCENTRIC REDUCER (10s)

Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	134.5	108.2	3.4	3.05	127	1.33
6" x 2½"	168.28	73.03	161.48	66.93	3.4	3.05	140	1.3
6" x 3"	168.28	88.9	161.48	82.8	3.4	3.05	140	1.46
6" x 3½"	168.28	101.6	161.48	95.5	3.4	3.05	140	1.53
6" x 4"	168.28	114.3	161.48	108.2	3.4	3.05	140	1.65
6" x 5"	168.28	141.3	161.48	134.5	3.4	3.4	140	1.78
8" x 3½"	219.08	101.6	211.56	95.5	3.76	3.05	152	2.32
8" x 4"	219.08	114.3	211.56	108.2	3.76	3.05	152	2.43
8" x 5"	219.08	141.3	211.56	134.5	3.76	3.4	152	2.57
8" x 6"	219.08	168.28	211.56	161.48	3.76	3.4	152	2.72
10" x 4"	273.05	114.3	264.67	108.2	4.19	3.05	178	3.65
10" x 5"	273.05	141.3	264.67	134.5	4.19	3.4	178	3.98
10" x 6"	273.05	168.28	264.67	161.48	4.19	3.4	178	4.14
10" x 8"	273.05	219.08	264.67	211.56	4.19	3.76	178	4.49
12" x 5"	323.85	141.3	314.71	134.5	4.57	3.4	203	5.5
12" x 6"	323.85	168.28	314.71	161.48	4.57	3.4	203	5.92
12" x 8"	323.85	219.08	314.71	211.56	4.57	3.76	203	6.31
12" x 10"	323.85	273.05	314.71	264.67	4.57	4.19	203	6.78
14" x 6"	355.6	168.28	346.04	161.48	4.78	3.4	330	10.05
14" x 8"	355.6	219.08	346.04	211.56	4.78	3.76	330	11.2
14" x 10"	355.6	273.05	346.04	264.67	4.78	4.19	330	12.1
14" x 12"	355.6	323.85	346.04	314.71	4.78	4.57	330	13
16" x 8"	406.4	219.08	396.84	211.56	4.78	3.76	356	12.9
16" x 10"	406.4	273.05	396.84	264.67	4.78	4.19	356	14.4
16" x 12"	406.4	323.85	396.84	314.71	4.78	4.57	356	15.2
16" x 14"	406.4	355.6	396.84	346.04	4.78	4.78	356	15.8
18" x 10"	457.2	273.05	447.44	264.67	4.78	4.19	381	16.25
18" x 12"	457.2	323.85	447.44	314.71	4.78	4.57	381	17.6
18" x 14"	457.2	355.6	447.44	346.04	4.78	4.78	381	18.2
18" x 16"	457.2	406.4	447.44	396.84	4.78	4.78	381	19.2
20" x 12"	508	323.85	496.92	314.71	5.54	4.57	508	26.78
20" x 14"	508	355.6	496.92	346.04	5.54	4.78	508	29.9
20" x 16"	508	406.4	496.92	396.84	5.54	4.78	508	31.7
20" x 18"	508	457.2	496.92	447.44	5.54	4.78	508	33.1
22" x 14"	558.8	355.6	547.92	346.04	5.54	4.78	508	31.8
22" x 16"	558.8	406.4	547.92	396.84	5.54	4.78	508	33.4
22" x 18"	558.8	457.2	547.92	447.44	5.54	4.78	508	35
22" x 20"	558.8	508	547.92	496.92	5.54	5.54	508	36.6
24" x 16"	609.6	406.4	597.3	396.84	6.35	4.78	508	40.1
24" x 18"	609.6	457.2	597.3	447.44	6.35	4.78	508	42.4
24" x 20"	609.6	508	597.3	496.92	6.35	5.54	508	44.1
24" x 22"	609.6	558.8	597.3	547.92	6.35	5.54	508	46

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF CONCENTRIC REDUCER (40s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
3/4" x 1/2"	26.7	21.34	20.93	15.8	2.87	2.77	38	0.06
1" x 1/2"	33.4	21.34	26.64	15.8	3.38	2.77	51	0.11
1" x 3/4"	33.4	26.67	26.64	20.93	3.38	2.87	51	0.12
1 1/4" x 1/2"	42.16	21.34	35.04	15.8	3.56	2.77	51	0.13
1 1/4" x 3/4"	42.16	26.67	35.04	20.93	3.56	2.87	51	0.14
1 1/4" x 1"	42.16	33.4	35.04	26.64	3.56	3.38	51	0.16
1 1/2" x 1/2"	48.26	21.34	40.9	15.8	3.68	2.77	64	0.18
1 1/2" x 3/4"	48.26	26.67	40.9	20.93	3.68	2.87	64	0.2
1 1/2" x 1"	48.26	33.4	40.9	26.64	3.68	3.38	64	0.22
1 1/2" x 1 1/4"	48.26	42.16	40.9	35.04	3.68	3.56	64	0.24
2" x 3/4"	60.3	26.67	52.51	20.93	3.91	2.87	76	0.3
2" x 1"	60.3	33.4	52.51	26.64	3.91	3.38	76	0.32
2" x 1 1/4"	60.3	42.16	52.51	35.04	3.91	3.56	76	0.35
2" x 1 1/2"	60.3	48.26	52.51	40.9	3.91	3.68	76	0.37
2 1/2" x 1"	73.03	33.4	62.71	26.64	5.16	3.38	89	0.59
2 1/2" x 1 1/4"	73.03	42.16	62.71	35.04	5.16	3.56	89	0.63
2 1/2" x 1 1/2"	73.03	48.26	62.71	40.9	5.16	3.68	89	0.66
2 1/2" x 2"	73.03	60.3	62.71	52.51	5.16	3.91	89	0.72
3" x 1 1/4"	88.9	42.16	77.92	35.04	5.49	3.56	89	0.75
3" x 1 1/2"	88.9	48.26	77.92	40.9	5.49	3.68	89	0.78
3" x 2"	88.9	60.3	77.92	52.51	5.49	3.91	89	0.85
3" x 2 1/2"	88.9	73.03	77.92	62.71	5.49	5.16	89	0.93
3 1/2" x 1 1/2"	101.6	48.26	90.12	40.9	5.74	3.68	102	1.03
3 1/2" x 2"	101.6	60.3	90.12	52.51	5.74	3.91	102	1.16
3 1/2" x 2 1/2"	101.6	73.03	90.12	62.71	5.74	5.16	102	1.29
3 1/2" x 3"	101.6	88.9	90.12	77.92	5.74	5.49	102	1.38
4" x 1 1/2"	114.3	48.26	102.26	40.9	6.02	3.68	102	1.18
4" x 2"	114.3	60.3	102.26	52.21	6.02	3.91	102	1.27
4" x 2 1/2"	114.3	73.03	102.26	62.71	6.02	5.16	102	1.37
4" x 3"	114.3	88.9	102.26	77.92	6.02	5.49	102	1.45
4" x 3 1/2"	114.3	101.6	102.26	90.12	6.02	5.74	102	1.58
5" x 2"	141.3	60.3	128.2	52.51	6.55	3.91	127	1.92
5" x 2 1/2"	141.3	73.03	128.2	62.71	6.55	5.16	127	2.16
5" x 3"	141.3	88.9	128.2	77.92	6.55	5.49	127	2.27
5" x 3 1/2"	141.3	101.6	128.2	90.12	6.55	5.74	127	2.35



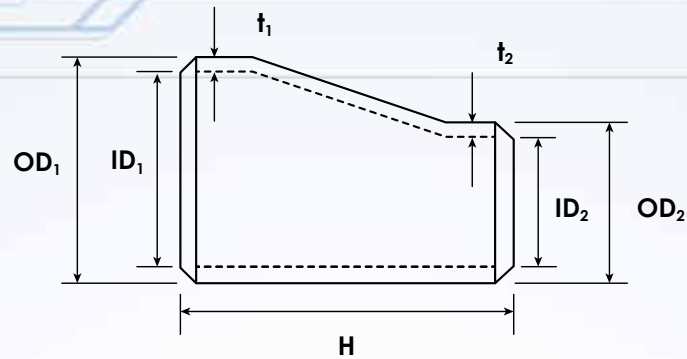
DIMENSION OF CONCENTRIC REDUCER (40s)

Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	128.2	102.26	6.55	6.02	127	2.5
6" x 2½"	168.28	73.03	154.06	62.71	7.11	5.16	140	2.85
6" x 3"	168.28	88.9	154.06	77.92	7.11	5.49	140	3.04
6" x 3½"	168.28	101.6	154.06	90.12	7.11	5.74	140	3.16
6" x 4"	168.28	114.3	154.06	102.26	7.11	6.02	140	3.3
6" x 5"	168.28	141.3	154.06	128.2	7.11	6.55	140	3.57
8" x 3½"	219.08	101.6	202.72	90.12	8.18	5.74	152	4.78
8" x 4"	219.08	114.3	202.72	102.26	8.18	6.02	152	5.1
8" x 5"	219.08	141.3	202.72	128.2	8.18	6.55	152	5.4
8" x 6"	219.08	168.28	202.72	154.06	8.18	7.11	152	5.71
10" x 4"	273.05	114.3	254.51	102.26	9.27	6.02	178	8.05
10" x 5"	273.05	141.3	254.51	128.2	9.27	6.55	178	8.42
10" x 6"	273.05	168.28	254.51	154.06	9.27	7.11	178	9.58
10" x 8"	273.05	219.08	254.51	202.72	9.27	8.18	178	9.78
12" x 5"	323.85	141.3	304.79	128.2	9.53	6.55	203	10.55
12" x 6"	323.85	168.28	304.79	154.06	9.53	7.11	203	11.8
12" x 8"	323.85	219.08	304.79	202.72	9.53	8.18	203	12.7
12" x 10"	323.85	273.05	304.79	254.51	9.53	9.27	203	13.6
14" x 6"	355.6	168.28	336.54	154.06	9.53	7.11	330	19.4
14" x 8"	355.6	219.08	336.54	202.72	9.53	8.18	330	21.8
14" x 10"	355.6	273.05	336.54	254.51	9.53	9.27	330	23.6
14" x 12"	355.6	323.85	336.54	304.79	9.53	9.53	330	25.4
16" x 8"	406.4	219.08	387.34	202.72	9.53	8.18	356	24.74
16" x 10"	406.4	273.05	387.34	254.51	9.53	9.27	356	27.8
16" x 12"	406.4	323.85	387.34	304.79	9.53	9.53	356	29.6
16" x 14"	406.4	355.6	387.34	336.54	9.53	9.53	356	31
18" x 10"	457.2	273.05	437.94	254.51	9.53	9.27	381	30.57
18" x 12"	457.2	323.85	437.94	304.79	9.53	9.53	381	34.3
18" x 14"	457.2	355.6	437.94	336.54	9.53	9.53	381	35.7
18" x 16"	457.2	406.4	437.94	387.34	9.53	9.53	381	37.8
20" x 12"	508	323.85	488.94	304.79	9.53	9.53	508	46.5
20" x 14"	508	355.6	488.94	336.54	9.53	9.53	508	50.8
20" x 16"	508	406.4	488.94	387.34	9.53	9.53	508	53.5
20" x 18"	508	457.2	488.94	437.94	9.53	9.53	508	56.4
24" x 16"	609.6	406.4	590.94	387.34	9.53	9.53	508	63
24" x 18"	609.6	457.2	590.94	437.94	9.53	9.53	508	65.7
24" x 20"	609.6	508	590.94	488.94	9.53	9.53	508	69.75

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF ECCENTRIC REDUCER (10s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
3/4" x 1/2"	26.7	21.34	22.45	17.12	2.11	2.11	38	0.04
1" x 1/2"	33.4	21.34	27.86	17.12	2.77	2.11	51	0.09
1" x 3/4"	33.4	26.67	27.86	22.45	2.77	2.11	51	0.1
1 1/4" x 1/2"	42.16	21.34	36.62	17.12	2.77	2.11	51	0.1
1 1/4" x 3/4"	42.16	26.67	36.62	22.45	2.77	2.11	51	0.11
1 1/4" x 1"	42.16	33.4	36.62	27.86	2.77	2.77	51	0.12
1 1/2" x 1/2"	48.26	21.34	42.72	17.12	2.77	2.11	64	0.14
1 1/2" x 3/4"	48.26	26.67	42.72	22.45	2.77	2.11	64	0.15
1 1/2" x 1"	48.26	33.4	42.72	27.86	2.77	2.77	64	0.17
1 1/2" x 1 1/4"	48.26	42.16	42.72	36.62	2.77	2.77	64	0.18
2" x 3/4"	60.3	26.67	54.79	22.45	2.77	2.11	76	0.22
2" x 1"	60.3	33.4	54.79	27.86	2.77	2.77	76	0.23
2" x 1 1/4"	60.3	42.16	54.79	36.62	2.77	2.77	76	0.25
2" x 1 1/2"	60.3	48.26	54.79	42.76	2.77	2.77	76	0.27
2 1/2" x 1"	73.03	33.4	66.9	27.86	3.05	2.77	89	0.34
2 1/2" x 1 1/4"	73.03	42.16	66.9	36.62	3.05	2.77	89	0.37
2 1/2" x 1 1/2"	73.03	48.26	66.9	42.72	3.05	2.77	89	0.39
2 1/2" x 2"	73.03	60.3	66.9	54.79	3.05	2.77	89	0.43
3" x 1 1/4"	88.9	42.16	82.8	36.62	3.05	2.77	89	0.43
3" x 1 1/2"	88.9	48.26	82.8	42.72	3.05	2.77	89	0.45
3" x 2"	88.9	60.3	82.8	54.79	3.05	2.77	89	0.48
3" x 2 1/2"	88.9	73.03	82.8	66.93	3.05	2.77	89	0.52
3 1/2" x 1 1/2"	101.6	48.26	95.5	42.72	3.05	2.77	102	0.62
3 1/2" x 2"	101.6	60.3	95.5	54.79	3.05	2.77	102	0.71
3 1/2" x 2 1/2"	101.6	73.03	95.5	66.93	3.05	3.05	102	0.78
3 1/2" x 3"	101.6	88.9	95.5	82.8	3.05	3.05	102	0.8
4" x 1 1/2"	114.3	48.26	108.2	42.72	3.05	2.77	102	0.63
4" x 2"	114.3	60.3	108.2	54.79	3.05	2.77	102	0.67
4" x 2 1/2"	114.3	73.03	108.2	66.93	3.05	3.05	102	0.71
4" x 3"	114.3	88.9	108.2	82.8	3.05	3.05	102	0.76
4" x 3 1/2"	114.3	101.6	108.2	95.5	3.05	3.05	102	0.82
5" x 2"	141.3	60.3	134.5	54.79	3.4	2.77	127	1.05
5" x 2 1/2"	141.3	73.03	134.5	66.93	3.4	3.05	127	1.14
5" x 3"	141.3	88.9	134.5	82.8	3.4	3.05	127	1.22
5" x 3 1/2"	141.3	101.6	134.5	95.5	3.4	3.05	127	1.28



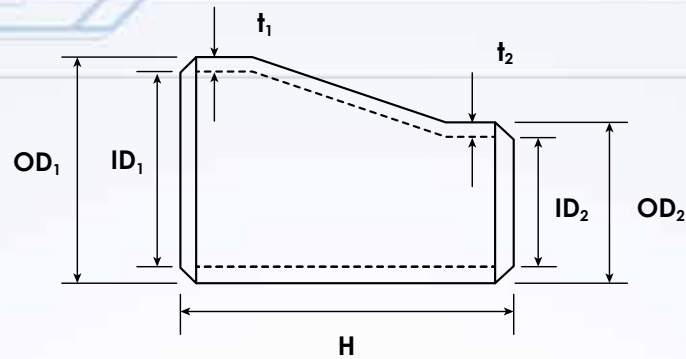
DIMENSION OF ECCENTRIC REDUCER (10s)

Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	134.5	108.2	3.4	3.05	127	1.33
6" x 2½"	168.28	73.03	161.48	66.93	3.4	3.05	140	1.3
6" x 3"	168.28	88.9	161.48	82.8	3.4	3.05	140	1.46
6" x 3½"	168.28	101.6	161.48	95.5	3.4	3.05	140	1.53
6" x 4"	168.28	114.3	161.48	108.2	3.4	3.05	140	1.65
6" x 5"	168.28	141.3	161.48	134.5	3.4	3.4	140	1.78
8" x 3½"	219.08	101.6	211.56	95.5	3.76	3.05	152	2.32
8" x 4"	219.08	114.3	211.56	108.2	3.76	3.05	152	2.43
8" x 5"	219.08	141.3	211.56	134.5	3.76	3.4	152	2.57
8" x 6"	219.08	168.28	211.56	161.48	3.76	3.4	152	2.72
10" x 4"	273.05	114.3	264.67	108.2	4.19	3.05	178	3.65
10" x 5"	273.05	141.3	264.67	134.5	4.19	3.4	178	3.98
10" x 6"	273.05	168.28	264.67	161.48	4.19	3.4	178	4.14
10" x 8"	273.05	219.08	264.67	211.56	4.19	3.76	178	4.49
12" x 5"	323.85	141.3	314.71	134.5	4.57	3.4	203	5.5
12" x 6"	323.85	168.28	314.71	161.48	4.57	3.4	203	5.92
12" x 8"	323.85	219.08	314.71	211.56	4.57	3.76	203	6.31
12" x 10"	323.85	273.05	314.71	264.67	4.57	4.19	203	6.78
14" x 6"	355.6	168.28	346.04	161.48	4.78	3.4	330	10.5
14" x 8"	355.6	219.08	346.04	211.56	4.78	3.76	330	11.2
14" x 10"	355.6	273.05	346.04	264.67	4.78	4.19	330	12.1
14" x 12"	355.6	323.85	346.04	314.71	4.78	4.57	330	13
16" x 8"	406.4	219.08	396.84	211.56	4.78	3.76	356	12.9
16" x 10"	406.4	273.05	396.84	264.67	4.78	4.19	356	14.4
16" x 12"	406.4	323.85	396.84	314.71	4.78	4.57	356	15.2
16" x 14"	406.4	355.6	396.84	346.04	4.78	4.78	356	15.8
18" x 10"	457.2	273.05	447.44	264.67	4.78	4.19	381	16.25
18" x 12"	457.2	323.85	447.44	314.71	4.78	4.57	381	17.6
18" x 14"	457.2	355.6	447.44	346.04	4.78	4.78	381	18.2
18" x 16"	457.2	406.4	447.44	396.84	4.78	4.78	381	19.2
20" x 12"	508	323.85	496.92	314.71	5.54	4.57	508	26.78
20" x 14"	508	355.6	496.92	346.04	5.54	4.78	508	29.9
20" x 16"	508	406.4	496.92	396.84	5.54	4.78	508	31.7
20" x 18"	508	457.2	496.92	447.44	5.54	4.78	508	33.1
22" x 12"	558.8	355.6	547.92	346.04	5.54	4.78	508	31.8
22" x 14"	558.8	406.4	547.92	396.84	5.54	4.78	508	33.4
22" x 16"	558.8	457.2	547.92	447.44	5.54	4.78	508	35
22" x 18"	558.8	508	547.92	496.92	5.54	5.54	508	36.6
24" x 16"	609.6	406.4	597.3	396.84	6.35	4.78	508	40.1
24" x 18"	609.6	457.2	597.3	447.44	6.35	4.78	508	42.4
24" x 20"	609.6	508	597.3	496.92	6.35	5.54	508	44.1
24" x 22"	609.6	558.8	597.3	547.92	6.35	5.54	508	46

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF ECCENTRIC REDUCER (40s)



Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
3/4" x 1/2"	26.7	21.34	20.93	15.8	2.87	2.77	38	0.06
1" x 1/2"	33.4	21.34	26.64	15.8	3.38	2.77	51	0.11
1" x 3/4"	33.4	26.67	26.64	20.93	3.38	2.87	51	0.12
1 1/4" x 1/2"	42.16	21.34	35.04	15.8	3.56	2.77	51	0.13
1 1/4" x 3/4"	42.16	26.67	35.04	20.93	3.56	2.87	51	0.14
1 1/4" x 1"	42.16	33.4	35.04	26.64	3.56	3.38	51	0.16
1 1/2" x 1/2"	48.26	21.34	40.9	15.8	3.68	2.77	64	0.18
1 1/2" x 3/4"	48.26	26.67	40.9	20.93	3.68	2.87	64	0.2
1 1/2" x 1"	48.26	33.4	40.9	26.64	3.68	3.38	64	0.22
1 1/2" x 1 1/4"	48.26	42.16	40.9	35.04	3.68	3.56	64	0.24
2" x 3/4"	60.3	26.67	52.51	20.93	3.91	2.87	76	0.3
2" x 1"	60.3	33.4	52.51	26.64	3.91	3.38	76	0.32
2" x 1 1/4"	60.3	42.16	52.51	35.04	3.91	3.56	76	0.35
2" x 1 1/2"	60.3	48.26	52.51	40.9	3.91	3.68	76	0.37
2 1/2" x 1"	73.03	33.4	62.71	26.64	5.16	3.38	89	0.59
2 1/2" x 1 1/4"	73.03	42.16	62.71	35.04	5.16	3.56	89	0.63
2 1/2" x 1 1/2"	73.03	48.26	62.71	40.9	5.16	3.68	89	0.66
2 1/2" x 2"	73.03	60.3	62.71	52.51	5.16	3.91	89	0.72
3" x 1 1/4"	88.9	42.16	77.92	35.04	5.49	3.56	89	0.75
3" x 1 1/2"	88.9	48.26	77.92	40.9	5.49	3.68	89	0.78
3" x 2"	88.9	60.3	77.92	52.51	5.49	3.91	89	0.85
3" x 2 1/2"	88.9	73.03	77.92	62.71	5.49	5.16	89	0.93
3 1/2" x 1 1/2"	101.6	48.26	90.12	40.9	5.74	3.68	102	1.03
3 1/2" x 2"	101.6	60.3	90.12	52.51	5.74	3.91	102	1.16
3 1/2" x 2 1/2"	101.6	73.03	90.12	62.71	5.74	5.16	102	1.29
3 1/2" x 3"	101.6	88.9	90.12	77.92	5.74	5.49	102	1.38
4" x 1 1/2"	114.3	48.26	102.26	40.9	6.02	3.68	102	1.18
4" x 2"	114.3	60.3	102.26	52.21	6.02	3.91	102	1.27
4" x 2 1/2"	114.3	73.03	102.26	62.71	6.02	5.16	102	1.37
4" x 3"	114.3	88.9	102.26	77.92	6.02	5.49	102	1.45
4" x 3 1/2"	114.3	101.6	102.26	90.12	6.02	5.74	102	1.58
5" x 2"	141.3	60.3	128.2	52.51	6.55	3.91	127	1.92
5" x 2 1/2"	141.3	73.03	128.2	62.71	6.55	5.16	127	2.16
5" x 3"	141.3	88.9	128.2	77.92	6.55	5.49	127	2.27
5" x 3 1/2"	141.3	101.6	128.2	90.12	6.55	5.74	127	2.35



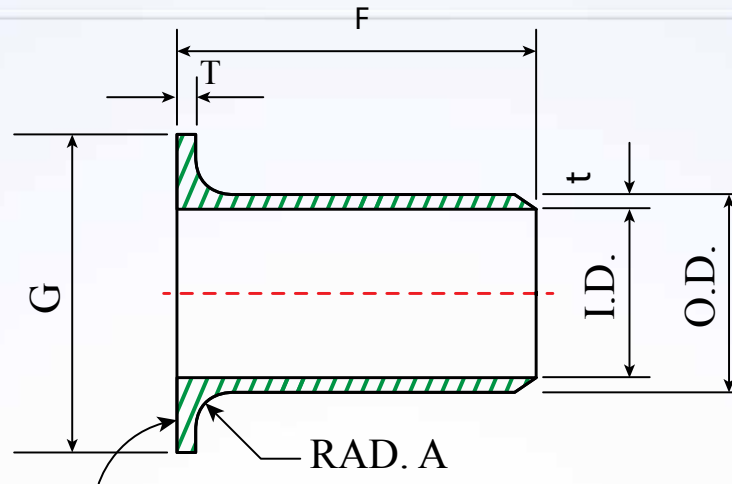
DIMENSION OF ECCENTRIC REDUCER (40s)

Size	Outside Diameter		Inside Diameter		Wall Thickness		Height	Approximate Weight (kg)
	OD1	OD2	ID1	ID2	t1	t2		
	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	
5" x 4"	141.3	114.3	128.2	102.26	6.55	6.02	127	2.5
6" x 2½"	168.28	73.03	154.06	62.71	7.11	5.16	140	2.85
6" x 3"	168.28	88.9	154.06	77.92	7.11	5.49	140	3.04
6" x 3½"	168.28	101.6	154.06	90.12	7.11	5.74	140	3.16
6" x 4"	168.28	114.3	154.06	102.26	7.11	6.02	140	3.3
6" x 5"	168.28	141.3	154.06	128.2	7.11	6.55	140	3.57
8" x 3½"	219.08	101.6	202.72	90.12	8.18	5.74	152	4.78
8" x 4"	219.08	114.3	202.72	102.26	8.18	6.02	152	5.1
8" x 5"	219.08	141.3	202.72	128.2	8.18	6.55	152	5.4
8" x 6"	219.08	168.28	202.72	154.06	8.18	7.11	152	5.71
10" x 4"	273.05	114.3	254.51	102.26	9.27	6.02	178	8.05
10" x 5"	273.05	141.3	254.51	128.2	9.27	6.55	178	8.42
10" x 6"	273.05	168.28	254.51	154.06	9.27	7.11	178	9.58
10" x 8"	273.05	219.08	254.51	202.72	9.27	8.18	178	9.78
12" x 5"	323.85	141.3	304.79	128.2	9.53	6.55	203	10.55
12" x 6"	323.85	168.28	304.79	154.06	9.53	7.11	203	11.8
12" x 8"	323.85	219.08	304.79	202.72	9.53	8.18	203	12.7
12" x 10"	323.85	273.05	304.79	254.51	9.53	9.27	203	13.6
14" x 6"	355.6	168.28	336.54	154.06	9.53	7.11	330	19.4
14" x 8"	355.6	219.08	336.54	202.72	9.53	8.18	330	21.8
14" x 10"	355.6	273.05	336.54	254.51	9.53	9.27	330	23.6
14" x 12"	355.6	323.85	336.54	304.79	9.53	9.53	330	25.4
16" x 8"	406.4	219.08	387.34	202.72	9.53	8.18	356	24.74
16" x 10"	406.4	273.05	387.34	254.51	9.53	9.27	356	27.8
16" x 12"	406.4	323.85	387.34	304.79	9.53	9.53	356	29.6
16" x 14"	406.4	355.6	387.34	336.54	9.53	9.53	356	31
18" x 10"	457.2	273.05	437.94	254.51	9.53	9.27	381	30.57
18" x 12"	457.2	323.85	437.94	304.79	9.53	9.53	381	34.3
18" x 14"	457.2	355.6	437.94	336.54	9.53	9.53	381	35.7
18" x 16"	457.2	406.4	437.94	387.34	9.53	9.53	381	37.8
20" x 12"	508	323.85	488.94	304.79	9.53	9.53	508	46.5
20" x 14"	508	355.6	488.94	336.54	9.53	9.53	508	50.8
20" x 16"	508	406.4	488.94	387.34	9.53	9.53	508	53.5
20" x 18"	508	457.2	488.94	437.94	9.53	9.53	508	56.4
24" x 16"	609.6	406.4	590.94	387.34	9.53	9.53	508	63
24" x 18"	609.6	457.2	590.94	437.94	9.53	9.53	508	65.7
24" x 20"	609.6	508	590.94	488.94	9.53	9.53	508	69.75

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSION OF STUB-END TYPE A (10s & 40s)



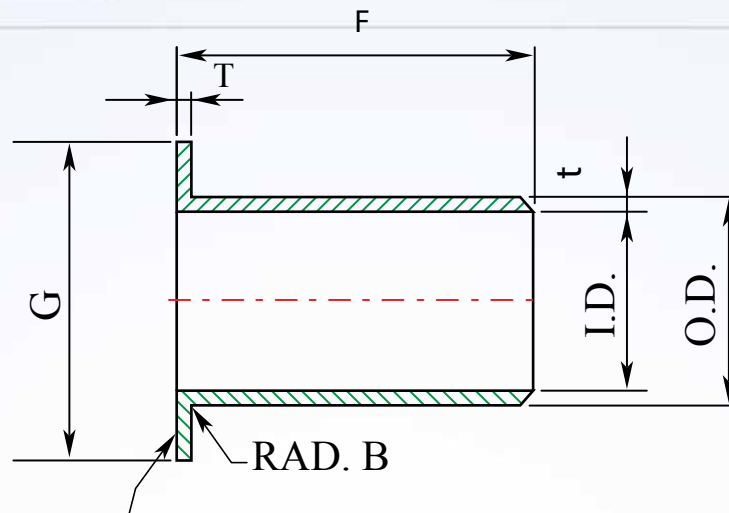
Size	Outside Diameter (OD)	10s				40s				G	Short Pattern, F	R
		Inside Diameter (ID)	Wall Thickness (t)	Lap Thickness (T)	Approximate Weight (Kg)	Inside Diameter (ID)	Wall Thickness (t)	Lap Thickness (T)	Approximate Weight (Kg)			
		Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.			
½"	21.34	17.12	2.11	2.11	0.06	15.8	2.77	2.77	0.08	34.93	50.8	3
¾"	26.67	22.45	2.11	2.11	0.08	20.93	2.87	2.87	0.1	42.88	50.8	3
1"	33.4	27.86	2.77	2.77	0.13	26.64	3.38	3.38	0.16	50.8	50.8	3
1¼"	42.16	36.62	2.77	2.77	0.18	35.04	3.56	3.56	0.23	63.5	50.8	5
1½"	48.26	42.72	2.77	2.77	0.21	40.9	3.68	3.68	0.28	73.02	50.8	6
2"	60.32	54.79	2.77	2.77	0.34	52.5	3.91	3.91	0.47	92.07	63.5	8
2½"	73.02	66.93	3.05	3.05	0.45	62.7	5.16	5.16	0.74	104.77	63.5	8
3"	88.9	82.8	3.05	3.05	0.57	77.92	5.49	5.49	1.01	127	63.5	10
4"	114.3	108.2	3.05	3.05	0.87	102.26	6.02	6.02	1.68	157.18	76.2	11
5"	141.3	135.2	3.4	3.4	1.21	128.2	6.55	6.55	2.28	186	76.2	11
6"	168.28	161.48	3.4	3.4	1.64	154.06	7.11	7.11	3.37	215.9	89	13
8"	219.08	211.56	3.76	3.76	2.65	202.72	8.18	8.18	5.67	269.87	102	13
10"	273.05	264.67	4.19	4.19	4.38	254.51	9.27	9.27	9.55	323.85	127	13
12"	323.85	314.71	4.57	4.57	6.74	304.79	9.52	9.53	13.8	381	152	13

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9



DIMENSION OF STUB-END TYPE B (10s & 40s)

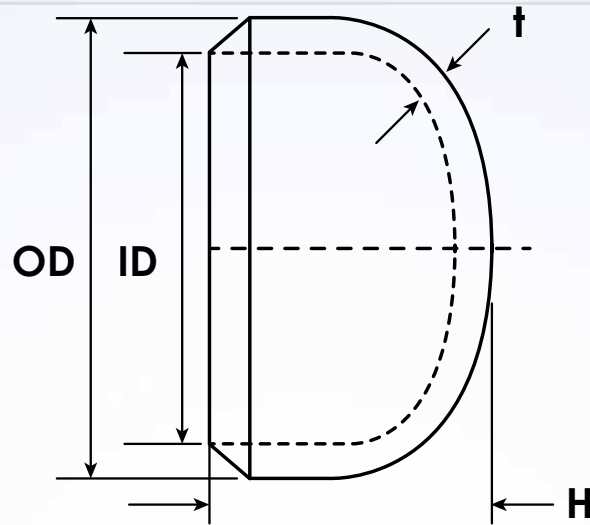


Size	Outside Diameter (OD)	10s				40s				G	Short Pattern, F	R
		Inside Diameter (ID)	Wall Thickness (t)	Lap Thickness (T)	Approximate Weight (Kg)	Inside Diameter (ID)	Wall Thickness (t)	Lap Thickness (T)	Approximate Weight (Kg)			
		Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.			
½"	21.34	17.12	2.11	2.11	0.06	15.8	2.77	2.77	0.08	34.93	50.8	0
¾"	26.67	22.45	2.11	2.11	0.08	20.93	2.87	2.87	0.1	42.88	50.8	0
1"	33.4	27.86	2.77	2.77	0.13	26.64	3.38	3.38	0.16	50.8	50.8	0
1¼"	42.16	36.62	2.77	2.77	0.18	35.04	3.56	3.56	0.23	63.5	50.8	0
1½"	48.26	42.72	2.77	2.77	0.21	40.9	3.68	3.68	0.28	73.02	50.8	0
2"	60.32	54.79	2.77	2.77	0.34	52.5	3.91	3.91	0.47	92.07	63.5	0
2½"	73.02	66.93	3.05	3.05	0.45	62.7	5.16	5.16	0.74	104.77	63.5	0
3"	88.9	82.8	3.05	3.05	0.57	77.92	5.49	5.49	1.01	127	63.5	0
4"	114.3	108.2	3.05	3.05	0.87	102.26	6.02	6.02	1.68	157.18	76.2	0
5"	141.3	135.2	3.4	3.4	1.21	128.2	6.55	6.55	2.28	186	76.2	0
6"	168.28	161.48	3.4	3.4	1.64	154.06	7.11	7.11	3.37	215.9	89	0
8"	219.08	211.56	3.76	3.76	2.65	202.72	8.18	8.18	5.67	269.87	102	0
10"	273.05	264.67	4.19	4.19	4.38	254.51	9.27	9.27	9.55	323.85	127	0
12"	323.85	314.71	4.57	4.57	6.74	304.79	9.52	9.53	13.8	381	152	0

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9

DIMENSIONS OF CAP (10s & 40s)



Size	Outside Diameter (OD)	10s			40s			Height (H) / C to E
		Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	Inside Diameter (ID)	Wall Thickness (t)	Approximate Weight (Kg)	
	Nom.	Nom.	Nom.		Nom.	Nom.		Nom.
½"	21.34	17.12	2.11	0.03	15.8	2.77	0.04	25
¾"	26.67	22.45	2.11	0.04	20.93	2.87	0.05	25
1"	33.4	27.86	2.77	0.09	26.64	3.38	0.11	38
1¼"	42.16	36.62	2.77	0.11	35.04	3.56	0.14	38
1½"	48.26	42.72	2.77	0.13	40.9	3.68	0.17	38
2"	60.33	54.79	2.77	0.17	52.51	3.91	0.23	38
2½"	73.02	66.92	3.05	0.23	62.71	5.16	0.39	38
3"	88.9	82.8	3.05	0.37	77.92	5.49	0.66	51
3½"	101.6	95.5	3.05	0.46	90.12	5.74	0.92	64
4"	114.3	108.2	3.05	0.59	102.26	6.02	1.17	76
5"	141.3	134.5	3.4	0.99	128.2	6.55	1.91	89
6"	168.28	161.48	3.4	1.39	154.06	7.11	2.9	102
8"	219.08	211.56	3.76	2.38	202.72	8.18	5.19	127
10"	273.05	264.67	4.19	4.14	254.51	9.27	9.15	152
12"	323.85	314.71	4.57	6.39	304.81	9.53	13.3	178
14"	355.6	346.04	4.78	7.98	336.54	9.53	15.9	191
16"	406.4	396.84	4.78	10	387.34	9.53	20	203
18"	457.2	447.44	4.78	12.8	437.94	9.53	25.6	229
20"	508	496.92	5.54	18.5	488.94	9.53	31.9	254
22"	558.8	547.92	5.54	22.6	-	-	-	254
24"	609.6	597.3	6.35	30.1	590.94	9.53	45.1	305

GENERAL NOTE:

- 1) All dimension are in millimetres
- 2) Dimension tolerance are followed by ASME B16.9



**STAINLESS STEEL
FLAT BAR**

STAINLESS STEEL FLAT BAR



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	7.0	8.0	9.0	3.0	4.0	4.5	5.0	6.0	7.0	8.0	9.0
30.0	0.714	0.952	1.071	1.190	1.427	1.665	1.903	2.141	0.718	0.958	1.077	1.197	1.436	1.676	1.915	2.155
38.0	0.904	1.205	1.356	1.507	1.808	2.109	2.411	2.712	0.910	1.213	1.365	1.516	1.819	2.123	2.426	2.729
40.0	0.952	1.269	1.427	1.586	1.903	2.220	2.538	2.855	0.958	1.277	1.436	1.596	1.915	2.234	2.554	2.873
50.0	1.190	1.586	1.784	1.983	2.379	2.776	3.172	3.569	1.197	1.596	1.796	1.995	2.394	2.793	3.192	3.591
60.0	1.427	1.903	2.141	2.379	2.855	3.331	3.806	4.282	1.436	1.915	2.155	2.394	2.873	3.352	3.830	4.309
65.0	1.546	2.062	2.320	2.577	3.093	3.608	4.124	4.639	1.556	2.075	2.334	2.594	3.112	3.631	4.150	4.668
75.0	1.784	2.379	2.676	2.974	3.569	4.163	4.758	5.353	1.796	2.394	2.693	2.993	3.591	4.190	4.788	5.387
100.0	2.379	3.172	3.569	3.965	4.758	5.551	6.344	7.137	2.394	3.192	3.591	3.990	4.788	5.586	6.384	7.182
125.0	2.974	3.965	4.461	4.956	5.948	6.939	7.930	8.921	2.993	3.990	4.489	4.988	5.985	6.983	7.980	8.978

Permissible Variation In Dimension According TO ASTM A484

Dimension	Tolerance
Wall Thickness	
over 2.90 to 3.30, incl	+0.25 mm , -0.25 mm
over 3.30 to 3.70, incl	+0.30 mm , -0.30 mm
over 3.70 to 4.80, incl	+0.35 mm , -0.35 mm
4.80 to 9.00, excl	+1.25 mm , -0.25 mm
Width	+2.4 mm , -0.8 mm



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