

NEFIT

Material Specification

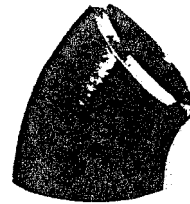


NEFIT TIANJIN MINMETALS Co. Ltd.

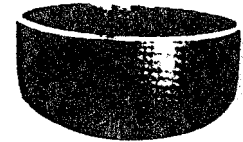
**Seamless Carbon Steel
Butt-Weld Fittings**

TECHNICAL SPECIFICATIONS

WROUGHT CARBON STEEL BUTT-WELD FITTINGS



45° Elbow (Long)



Cap



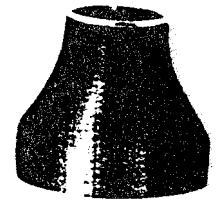
90° Elbow (Long)



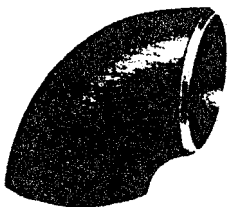
180° Elbow (Long)



T (Straight)



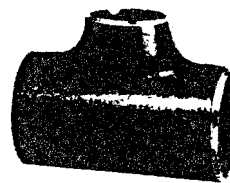
Reducer (Concentric)



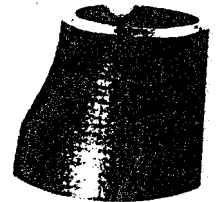
90° Elbow (Short)



180° Elbow (Short)



T (Reducing)



Reducer (Eccentric)

APPLICABLE STANDARDS

1. Nefit butt-welding fitting are manufactured, in accordance with ANSI standards B16.9 and B16.28 for dimensions, shapes and dimensional tolerances.
2. Nefit butt-welding fittings are machined in accordance with ANSI B16.25 standards for welding end preparation.
3. Manufacturing methods, quality and so on are based upon ASTM A234 and MSS-SP-25 specifications.

ANSI Standards

- B16.9 Wrought Steel Butt-Welding Fittings.
- B16.28 Wrought Steel Butt-Welding Short Radius Elbows and Returns.
- B16.25 Butt-Welding Ends
- B16.11 Forged Steel Fittings, Socket-Welding and Threaded.
- B36.10 Welded and Seamless Wrought Steel Pipe.

ASTM Standards

- A234 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
- A403 Wrought Austenitic Stainless Steel Piping Fittings.
- A420 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low Temperature Service.
- A182 Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
- A105 Forgings, Carbon Steel, For Piping Components.



INSPECTION PROCEDURES

NEFIT butt-weld fittings are subjected to strict in-process inspection at each stage of the production process - from raw materials handling to finished product shipping. They are visually examined for conformity to company specifications, and tested under the applicable ASTM, ANSI, ASME, and MSS standards. They are also tested to make sure they conform to their intended use. Nefit butt-welding fittings are manufactured in conformity with the following standards.

APPLICABLE STANDARDS

ASTM A234	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderated and Elevated Temperatures
ASTM A403	Wrought Austenitic Stainless Steel Piping Fittings.
ASTM A420	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low Temperature Service.
ANSI B16.9	Factory-Made Wrought Steel Butt-Welding Fittings
ANSI B16.28	Wrought Steel Butt-Welding Short Radius Elbows and Returns.
MSS SP-43	Wrought Stainless Steel. Butt-Welding Fittings.
MSS SP-75	Specification for High Test Wrought Welding Fittings.

RAW MATERIALS RECEIVING INSPECTION

NEFIT butt-weld fittings are made of materials which meet ASTM and intracompany specifications.

Raw materials inspections are carried out as follows:

1) Dimensional Inspections:

Dimensions are inspected at each end of the sub-contracted raw material.

2) Visual Inspection

Inspections are performed according to NEFIT's "acceptable surface conditions" standard.

3) Collating

Judgement is made as to whether it is worthy of the inspection by collating the described items with the raw materials certificates.

The following other inspections are performed if necessary.

- Ultrasonic Examination
- Magnetic Particle Examinations
- Radiographic Examination
- Liquid Penetrant Examination
- Ultrasonic Thickness Meter

IN-PROCESS INSPECTION

NEFIT butt-weld fittings are manufactured with carefully selected materials of the finest metallurgical quality on well-controlled jigs, tools or molds based on NEFIT various working standards. Meeting quality specifications is a key feature of NEFIT butt-weld fittings.

The following are the major in-process inspection items.

- Visual Inspection
- Dimensional Inspection
- Shape Inspection
- Hardness Test
- Temperature Check
- Processing Conditions Check
- Raw Materials Identification (by marking)

FINAL INSPECTION

The final inspection of NEFIT butt-weld fittings is performed as follows:

1) STANDARD PRODUCT INSPECTION

Applicable for NEFIT butt-weld fittings produced under ANSI B16.9, B16.28 and other specifications.

Visual Inspection

NEFIT butt-weld fittings are visually inspected to confirm that both internal and external surfaces are smooth and without harmful defects. NEFIT "acceptable surface condition" standard is used as the standard for visual tests.

Dimensional Inspection

NEFIT butt-weld fittings are inspected for conformity with ANSI or MSS dimensional tolerances

2) SPECIAL PRODUCT INSPECTION

Applicable for products manufactured to meet specifications requested by customers. Generally, all goods are inspected.

Visual Inspection

NEFIT butt-weld fittings are visually inspected. Criteria are based on those of the standards product. Special specifications are determined by agreement between Nefit and the customer.

Dimensional Inspection

The inspection is usually based on specifications stipulated by the customer.

Special Inspection

In the case of "special requirements" specified by the customer, nondestructive examinations and mechanical tests are performed.

ANSI & MSS DIMENSIONAL TOLERANCES

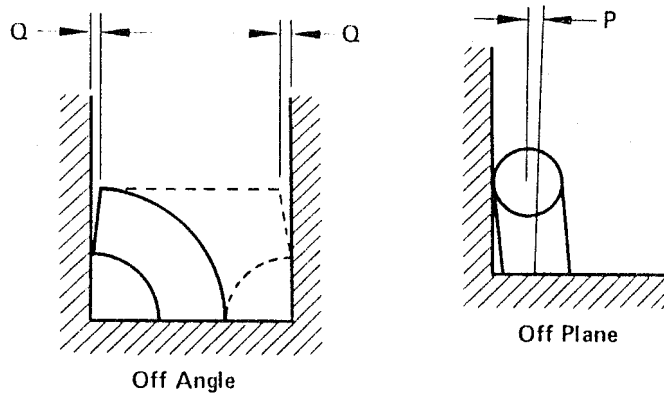
ANSI B16.9, B16.28

(in mm)

All Fittings				90° and 45° Elbows	Tees	Reducers	Caps	180° Returns		
Nominal Pipe Size	Outside Diameter at Bevel OD	Inside Diameter at End ID	Wall Thickness T	Center-to-End Dimension A, B	Centre-to-End Dimension C, M	Overall Length H	Overall Length E	Centre-to-Centre Dimension P	Back-to-Face Dimension K	Alignment of Ends U
1/2 - 2 1/2	+ 1.5 - 0.7	± 0.7	Not less than 87 1/2% of nominal thickness	± 1.5	± 1.5	± 1.5	± 3.0	± 6.3	± 6.3	± 0.7
3 - 4	± 1.5	± 1.5								
5 - 8	+ 2.2 - 1.5									
10-18	+ 4.0 - 3.0	± 3.0		± 2.2	± 2.2	± 2.2	± 6.3	± 9.6	± 9.6	± 0.7
20-24	+ 6.3 - 4.8	± 4.8		± 3.0	± 3.0	± 4.8	± 9.6			
26 - 30				± 4.8	± 4.8					
32 - 48				± 9.5	± 9.5	± 9.5	± 9.5			
50 - 60	+ 9.5 - 6.4	± 6.4		± 12.7						
62 - 70	+ 12.7 - 9.5	± 9.5		± 15.9						
72-80	+ 15.9 - 11.9	± 11.9								

(in mm)

Nominal Pipe Size	Angularity Tolerance	
	Off Angle Q	Off Plane P
1/2 - 4	0.7	1.5
5 - 8	1.5	3.0
10 - 12	2.2	4.8
14 - 16		6.3
18 - 24	3.0	9.6
26 - 30	4.8	12.7
32 - 42		19.0
44 - 48		
*50 60	6.4	
*62 - 70	9.5	
*72 - 80	11.9	



MSS SP-43

(in mm)

Nominal Pipe Size	All Fittings		90° Elbows 45° Elbows Tees	Reducers Lap Joint Stub Ends	180° Returns			Caps	
	Outside(1) Diameter at Welding End	Wall Thickness	Centre-to-End Dimension A, B, C, M	Overall Length F, H	Centre-to-Centre Dimension O	Back-to-Face Dimension K	Alignment of Ends U	Overall Length E	
1/2 - 1 1/2	± 0.8	Not less than 87 - 1/2% of nominal thickness	± 1.6	± 1.6	± 6.4	± 6.4	± 0.8	± 3.0	
2 - 3 1/2	± 0.8		± 1.6	± 1.6	± 6.4	± 6.4	± 0.8	± 3.0	
4	+ 1.6 - 0.8		± 1.6	± 1.6	± 6.4	± 6.4	± 0.8	± 3.0	
5 - 8	+ 2.3 - 0.8		± 1.6	± 1.6	± 1.6	± 6.4	± 6.4	± 0.8	± 6.4
10 - 18	+ 3.0		± 2.3	± 2.3	± 2.3	± 9.7	± 6.4	± 1.6	± 6.4
20 - 24	- 0.8		± 2.3	± 2.3	± 2.3	± 9.7	± 6.4	± 1.6	± 6.4



(in mm)

Nominal Pipe Size	All Fittings		Lap Joint Stub Ends	
	Outside(1) Diameter at Welding End	Wall Thickness	Fillet (2) Radius of Lap A	Outside Diameter of Lap G
1/2 - 1 1/2	± 0.8	Not less than 87 - 1/2% of nominal thickness	+0 ± 0.8	+0 ± 0.8
2 - 3 1/2	± 0.8		+0 ± 0.8	+0 ± 0.8
4	± 0.8		+0 + 1.6	+0 ± 0.8
5 - 8	+ 1.6 - 0.8		+0 + 1.6	+0 ± 0.8
10 - 18	+ 2.3 - 0.8		+0 + 1.6	+0 + 1.6
20 - 24	+3.0 - 0.8		+0 + 1.6	+0 + 1.6

Notes:

- (1) Out of roundness is the vector sum of the plus and minus tolerance.
- (2) Fillet B radius is the maximum

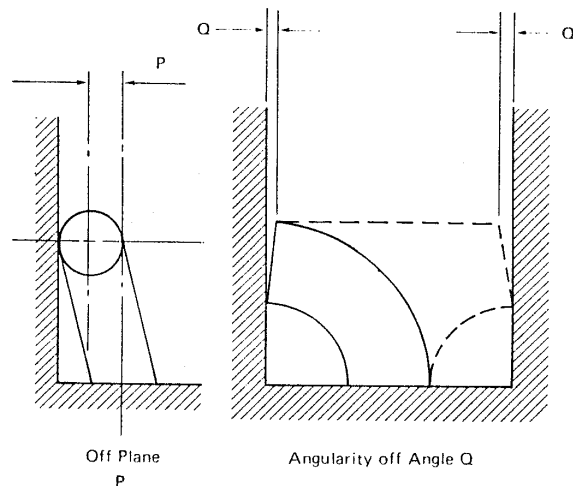
MSS SP-75

(in mm)

Nominal Pipe Size	Inside (1) Diameter At End	Minimum (3) Wall Thickness	Out-of-Roundness(2)		Throughout (4) Body of Elbows	90°, 60°, 45°, 30° Elbows & Tees Centre-to-End Dimension A, B, C, M		Reducers Overall Length H	Caps Overall Length E
			At Ends of Fittings			1 - 1 1/2 R & Tee	3R		
			Elbows (5)	Other					
16 - 24	± 2.3	Nominal	4.8	3.0	2.5%	± 2.3	± 3.0	± 2.3	± 6.4
26 - 36	± 2.3	- 0.25	(5)	3.0	2.5%	± 3.0	± 6.4	± 4.8	± 9.6
38 - 48	± 3.0		(5)	3.0	2.5%	± 4.8	± 9.6	± 9.6	± 9.6

(in mm)

NPS	Angularity Off Angle Q	Elbows Off Plane P	Eccentric and Concentric Reducers Off Plane P (6)
16 - 24	1.5	6.4	2.5%
26 - 36	2.3	12.7	2.5%
38 - 48	3.0	19.1	2.5%



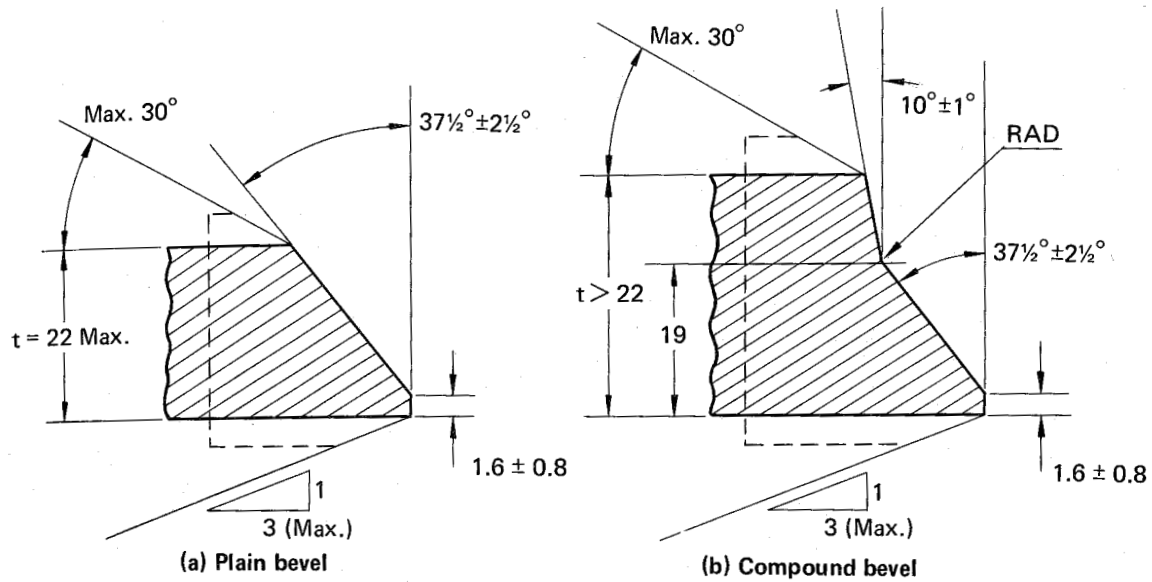
NOTE:

- (1) The inside diameter at end shall be determined by circumferential measurement, and the tolerance refers to variations from nominal I.D. calculation (OD nom - 2t nom).
- (2) Out-of-roundness tolerances shall be the difference between the maximum and minimum diameters measured on any radial cross-section.
- (3) Minus 0.01 in. except that isolated non-continuous reductions are permitted in accordance with subsection 13.2.1. Excess thickness whether on inside or outside is to be treated in accordance with sketch given in Figure 3.
- (4) When elbows are intended for field segmenting, out-of-roundness tolerance may be furnished to 1% by agreement between the Manufacturer and the Purchase. It is recognized that extra thickness, if any, may be on the I.D.
- (5) Out-of-roundness tolerance at ends shall be 1% of diameter for NPS 26 and larger.
- (6) Percent of O.D.

NOTE: Outside diameter may be tapered at angle up to 30° beyond weld bevel.



Welding End Preparation



(in mm)

Nominal Pipe Wall Thickness (t)	End Preparation
Less than X*	Cut square or slightly chamfer, at mfr.'s option
X* to 22 incl.	Plain bevel as in sketch "a" above
More than 22	Compound bevel as in sketch "b" above

*X= for carbon steel, ferritic alloy steel or wrought iron;
4 for austenitic alloy steel

- Note: 1. End preparations are in accordance with ANSI B16:25
2. End preparations conforming to customer specifications will be specially manufactured upon consultation.

Chemical composition and Mechanical properties of material for fittings of Wrought Carbon Steel and Alloy-steel for moderate and elevated temperatures according to ASTM A-234 Specifications.

ASTM A234

Type of the Steel	ASTM Grade	Chemical Composition (%)								Mechanical Properties				
		C	Mn	P	S	Si	Cr	Mo	Ni	Cu	R min. Tensile Strength MPa	S min. Yield Strength MPa	A% min. (2"/4D) Elongation	
		max		max	max								Long.	Trasv.
Carbon Steel	WPB	0.30	0.29-1.06	0.050	0.058	0.10 min.					415	240	30	20
	WPC	0.35	0.29-1.06	0.050	0.058	0.10 min.					485	275	30	20
Alloy Steel	WP1	0.28	0.30-0.90	0.045	0.045	0.10-0.50		0.44-0.65			380	205	30	20
	WP12	0.20	0.30-0.80	0.045	0.045	0.60 max	0.80-1.25	0.44-0.65			415	205	30	20
	WP11	0.20	0.30-0.80	0.040	0.040	0.50-1.00	1.00-1.50	0.44-0.65			415	205	30	20
	WP22	0.15	0.30-0.60	0.040	0.040	0.50 max	1.90-2.60	0.87-1.13			415	205	30	20
	WP5	0.15	0.30-0.60	0.040	0.030	0.50 max	4.00-6.00	0.44-0.65			415	205	30	20
	WP7	0.15	0.30-0.60	0.040	0.030	0.50-1.00	6.00-8.00	0.44-0.65			415	205	30	20
	WP9	0.15	0.30-0.60	0.030	0.030	0.25-1.00	8.00-10.00	0.90-1.0			415	205	30	20
	WPR	0.20	0.40-1.06	0.045	0.050				1.60-2.24	0.75-1.25	435	315	28	-



MARKINGS

NEFIT butt weld fittings, where the size and design permit, are marked with the following identification data in accordance with MSS SP-25 and ANSI B16.9;

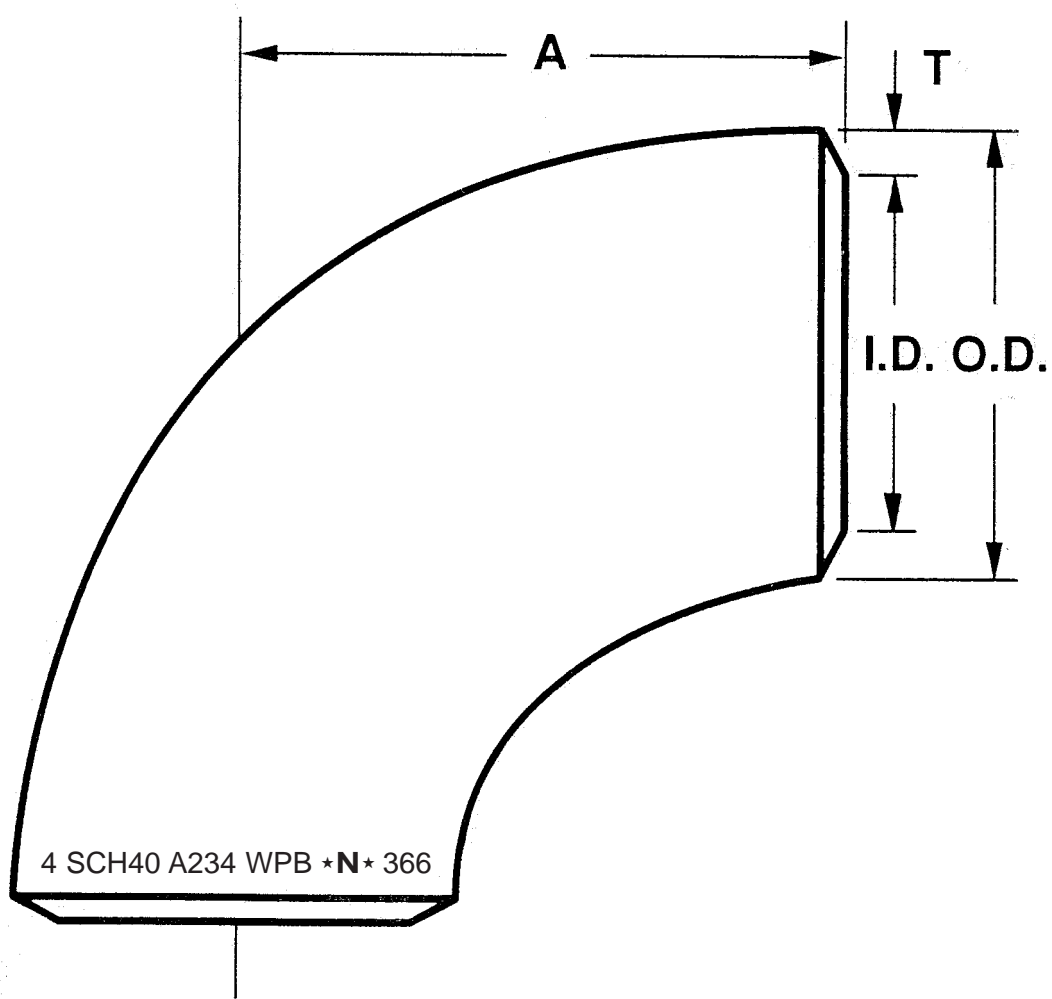
Nominal size

Wall thickness

A234 WPB

★N★

Heat code



Note: The marking may be re-arranged depending on the size and type of Butt weld fitting.



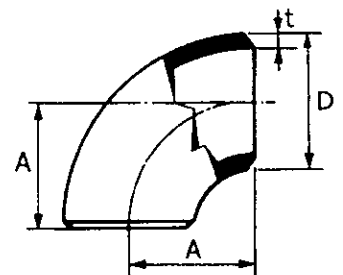


ELBOW 90 DEG, LONG RADIUS

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to End A	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1/2	21,30	2,80	3,70	38,10	0,08	0,10
3/4	26,70	2,90	3,90	38,10	0,09	0,11
1	33,40	3,38	4,55	38,10	0,15	0,20
1 1/4	42,16	3,56	4,85	47,62	0,26	0,35
1 1/2	48,26	3,68	5,08	57,15	0,38	0,51
2	60,32	3,91	5,54	76,20	0,68	0,94
2 1/2	73,02	5,16	7,01	95,25	1,35	1,79
3	88,90	5,49	7,62	114,30	2,15	2,87
4	114,30	6,02	8,56	152,40	4,10	5,65
5	141,30	6,55	9,52	190,50	6,85	9,70
6	168,27	7,11	10,97	228,60	10,65	16,00
8	219,07	8,18	12,70	304,80	21,30	32,20
10	273,05	9,27	12,70	381,00	37,60	50,80
12	323,85	9,52	12,70	457,20	55,80	73,40
14	355,60	9,52	12,70	533,40	71,60	94,30
16	406,40	9,52	12,70	609,60	93,80	123,70
18	457,20	9,52	12,70	685,80	118,00	159,00
20	508,00	9,52	12,70	762,00	147,00	195,00
22	558,80	9,52	12,70	838,20	196,00	226,00
24	609,60	9,52	12,70	914,40	211,00	281,00
26	660,40	9,52	12,70	990,60	244,50	323,40
28	711,20	9,52	12,70	1066,80	308,00	385,00
30	762,00	9,52	12,70	1143,00	326,60	452,30
32	812,80	9,52	12,70	1219,20	386,00	511,00
34	863,60	9,52	12,70	1295,40	420,00	557,60
36	914,40	9,52	12,70	1371,60	471,70	626,00
38	965	9,52	12,70	1447,80	544,00	717,00
40	1016	9,52	12,70	1524,00	590,00	794,00
42	1067	9,52	12,70	1600,20	644,10	852,70
44	1118	9,52	12,70	1676,40	726,00	975,00
46	1168	9,52	12,70	1752,60	816,00	1055,00
48	1219	9,52	12,70	1828,80	907,00	1134,00

90° ELBOWS LONG RADIUS

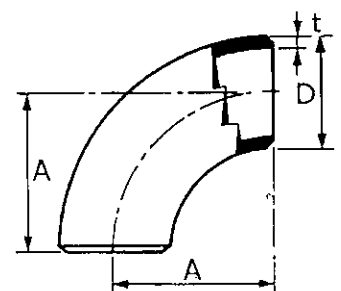


ELBOW 90 DEG, SHORT RADIUS

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.28

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to End A	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1	33,40	3,38	4,55	25,40	0,11	0,14
1 1/4	42,16	3,56	4,85	31,75	0,18	0,23
1 1/2	48,26	3,68	5,08	38,10	0,25	0,34
2	60,32	3,91	5,54	50,80	0,45	0,62
2 1/2	73,02	5,16	7,01	63,50	0,89	1,19
3	88,90	5,49	7,62	76,20	1,40	1,90
4	114,30	6,02	8,56	101,60	2,66	3,71

90° ELBOWS SHORT RADIUS



(ANSI 16.28)





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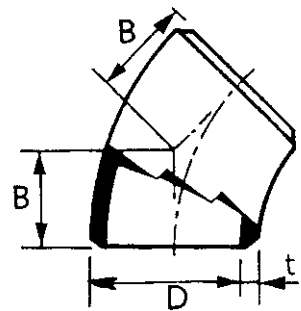
5	141,30	6,55	9,52	127,00	4,55	6,44
6	168,27	7,11	10,97	152,40	7,02	10,58
8	219,07	8,18	12,70	203,20	14,22	21,61
10	273,05	9,27	12,70	254,00	25,23	34,06
12	323,85	9,52	12,70	304,80	36,86	48,60
14	355,60	9,52	12,70	355,80	47,56	62,97
16	406,40	9,52	12,70	406,40	62,50	82,45
18	457,20	9,52	12,70	457,20	74,90	97,60
20	508,00	9,52	12,70	508,00	105,50	140,50
24	609,60	9,52	12,70	609,60	134,00	177,00

ELBOW 45 DEG

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to End B	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1/2	21,30	2,80	3,70	15,70	0,04	0,05
3/4	26,70	2,90	3,90	11,20	0,05	0,06
1	33,40	3,38	4,55	22,22	0,08	0,10
1 1/4	42,16	3,56	4,85	25,40	0,13	0,18
1 1/2	48,26	3,68	5,08	28,57	0,19	0,26
2	60,32	3,91	5,54	34,92	0,34	0,47
2 1/2	73,02	5,16	7,01	44,45	0,67	0,89
3	88,90	5,49	7,62	50,80	1,08	1,44
4	114,30	6,02	8,56	63,50	2,05	2,83
5	141,30	6,55	9,52	70,37	3,43	4,85
6	168,27	7,11	10,97	95,25	5,33	8,02
8	219,07	8,18	12,70	127,00	10,65	16,10
10	273,05	9,27	12,70	158,75	18,80	25,40
12	323,85	9,52	12,70	190,50	27,90	36,70
14	355,60	9,52	12,70	222,25	35,80	47,15
16	406,40	9,52	12,70	254,00	46,90	62,06
18	457,20	9,52	12,70	285,75	59,00	79,50
20	508,00	9,52	12,70	317,50	73,50	97,50
22	558,80	9,52	12,70	342,90	98,00	113,00
24	609,60	9,52	12,70	381,00	105,50	140,50
26	660	9,52	12,70	406,40	122,25	192,50
28	711	9,52	12,70	438,20	154,00	192,50
30	762	9,52	12,70	469,90	163,30	226,15
32	813	9,52	12,70	501,70	193,00	255,50
34	864	9,52	12,70	533,40	210,00	278,95
36	914	9,52	12,70	565,20	235,85	313,00
38	965	9,52	12,70	600,10	272,00	358,50
40	1016	9,52	12,70	631,80	295,00	397,00
42	1067	9,52	12,70	660,40	322,05	426,35
44	1118	9,52	12,70	695,30	363,00	487,50
46	1168	9,52	12,70	727,10	408,00	527,50
48	1219	9,52	12,70	758,80	453,50	567,00

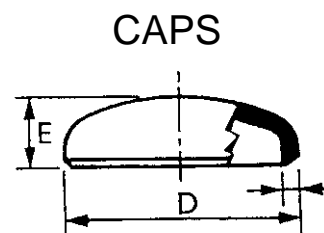
45° ELBOWS



CAPS

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Length E	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1/2	21,34	2,77	3,73	25,40	0,03	0,04
1/2	26,67	2,87	3,91	25,40	0,06	0,08
1	33,40	3,38	4,55	38,10	0,10	0,12
1 1/2	42,16	3,56	4,85	38,10	0,14	0,18
1 1/2	48,26	3,68	5,08	38,10	0,16	0,22
2	60,32	3,91	5,54	38,10	0,23	0,32
2 1/2	73,02	5,16	7,01	38,10	0,37	0,47
3	88,90	5,49	7,62	50,80	0,65	0,85
4	114,30	6,02	8,56	63,50	1,15	1,58
5	141,30	6,55	9,52	76,20	1,90	2,65
6	168,27	7,11	10,97	88,90	2,92	4,30
8	219,07	8,18	12,70	101,60	5,07	7,60
10	273,05	9,27	12,70	127,00	9,10	12,00
12	323,85	9,52	12,70	152,40	13,40	17,20
14	355,60	9,52	12,70	165,10	16,10	20,50
16	406,40	9,52	12,70	177,80	20,30	26,20
18	457,20	9,52	12,70	203,20	26,00	33,50
20	508,00	9,52	12,70	228,60	32,20	42,60
22	558,80	9,52	12,70	254,00	42,00	51,00
24	609,60	9,52	12,70	266,70	46,20	59,40
26	660,40	9,52	12,70	266,70	49,80	66,10
28	711,20	9,52	12,70	266,70	56,00	74,80
30	762	9,52	12,70	266,70	62,00	82,80
32	812,80	9,52	12,70	266,70	68,00	93,40
34	863,6	9,52	12,70	266,70	72,60	96,60
36	914,40	9,52	12,70	266,70	79,40	107,00
38	965,20	9,52	12,70	304,80	86,20	124,70
40	1016	9,52	12,70	304,80	95,30	129,30
42	1066,80	9,52	12,70	304,80	104,00	136,00
44	1117,60	9,52	12,70	342,90	120,20	167,80
46	1168,40	9,52	12,70	342,90	136,00	186,00
48	1219,50	9,52	12,70	342,90	159,00	215,50

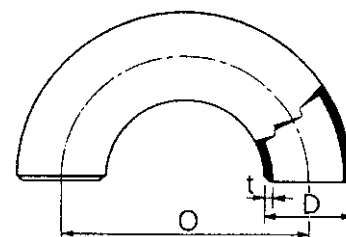


* 180 DEG, RETURN BEND LONG RADIUS

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to Centre O	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1	33,40	3,38	4,56	76,20	0,30	0,41
1 1/4	42,16	3,56	4,85	95,24	0,53	0,70
1 1/2	48,26	3,68	5,08	114,30	0,76	1,00
2	60,32	3,91	5,54	152,40	1,40	1,90
2 1/2	73,02	5,16	7,01	190,50	2,70	3,60
3	88,90	5,49	7,62	228,60	4,26	5,75

180° RETURN BEND LONG RADIUS



* Non stock items. Minimum order quantity 500 nos



Continued

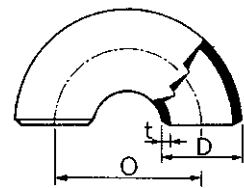
4	114,30	6,02	8,56	304,80	8,10	11,30
5	141,30	6,56	9,52	381,00	13,70	19,47
6	168,27	7,11	10,97	457,20	21,30	32,00
8	219,07	8,18	12,70	609,60	42,60	64,80
10	273,05	9,27	12,70	762,00	75,70	101,40
12	323,85	9,52	12,70	914,40	111,00	146,80
14	355,60	9,52	12,70	1066,80	143,20	188,60
16	406,40	9,52	12,70	1219,20	187,60	247,40
18	457,20	9,52	12,70	1371,60	236,00	318,00
20	508,00	9,52	12,70	1524,00	294,00	390,00
22	558,00	9,52	12,70	1676,40	350,00	463,00
24	609,60	9,52	12,70	1828,80	422,00	562,00

*** 180 DEG, RETURN BEND SHORT RADIUS**

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.28

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to Centre O	Weight Kg.	
		Standard t	Extra Strong t		Standard	Extra Strong
1 1/2	48,26	3,68	5,08	76,20	0,50	0,68
2	60,32	3,91	5,54	101,60	0,90	1,14
2 1/2	73,02	5,16	7,01	127,00	1,78	2,37
3	88,90	5,49	7,62	152,40	2,81	3,80
4	114,30	6,02	8,56	203,20	5,36	7,42
5	141,30	6,55	9,52	254,00	9,09	13,00
6	168,27	7,11	10,97	304,80	14,13	21,30
8	219,07	8,18	12,70	406,40	28,54	43,03

180° RETURN BEND SHORT RADIUS

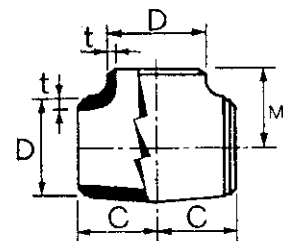


EQUAL TEE

ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipes Size	Outside Diameter D	Wall Thickness		Centre to End C	Centre to End M	Weight Kg.	
		Standard t	Extra Strong t			Standard	Extra Strong
1/2	21,34	2,77	3,73	25,40	25,40	0,15	0,21
3/4	26,27	2,87	3,91	28,57	28,57	0,20	0,27
1	33,40	3,38	4,55	38,10	38,10	0,40	0,82
1 1/4	42,16	3,56	4,85	47,62	47,62	0,77	0,86
1 1/2	48,26	3,68	5,08	57,15	57,15	1,08	1,22
2	60,32	3,91	5,54	63,50	63,50	1,48	1,86
2 1/2	73,02	5,16	7,01	76,20	76,20	2,45	3,07
3	88,90	5,49	7,62	85,72	85,72	3,80	4,29
4	114,30	6,02	8,56	104,77	104,77	5,90	7,24
5	141,30	6,55	9,52	123,82	123,82	9,50	12,95
6	168,27	7,11	10,97	142,87	142,87	14,90	19,25
8	219,07	8,18	12,70	177,80	177,80	27,18	34,42
10	273,05	9,27	12,70	215,90	215,90	41,30	58,40
12	323,85	9,52	12,70	254,00	254,00	56,60	79,30
14	355,60	9,52	12,70	279,40	279,40	81,54	117,78
16	406,40	9,52	12,70	304,80	304,80	99,66	142,69
18	457	9,52	12,70	343	343	126,80	170,00

EQUAL TEES



* Non stock items. Minimum order quantity 500 nos





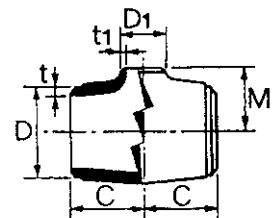
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20	508	9,52	12,70	381	381	168,00	245,00
24	610	9,52	12,70	432	432	240,00	340,00
26	660	9,52	12,70	495	495	268,00	350,00
28	711	9,52	12,70	521	521	308,00	390,00
30	762	9,52	12,70	559	559	347,00	448,00
32	813	9,52	12,70	597	597	406,00	520,00
34	864	9,52	12,70	635	635	452,00	570,00
36	914	9,52	12,70	673	673	505,00	649,00
38	965	9,52	12,70	711	711	569,00	727,00
40	1016	9,52	12,70	749	749	627,00	792,00
42	1067	9,52	12,70	762	711	659,00	836,00
44	1118	9,52	12,70	813	762	724,00	925,00
46	1168	9,52	12,70	851	800	780,00	995,00
48	1219	9,52	12,70	889	838	847,00	1080,00

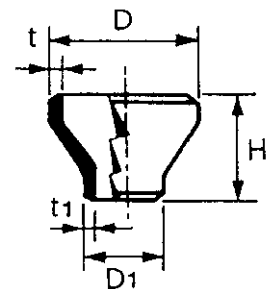
RED TEE, CONCENTRIC REDUCER ECCENTRIC REDUCER
 ASTM A - 234 WPB (EQ. BS 1640), DIMENSIONS AS PER ANSI B16.9

Nominal Pipe size	Outside Diameter D	Outside Diameter D1	Centre to End C	Centre to End M	Length H	Weight Kg.			
						Standard		Extra Strong	
						Tees	Red	Tees	Red
1/2 x 1/4	21,34	13,70	25,40	25,40	--	0,16	--	0,25	--
1/2 x 3/8	21,34	17,10	25,40	25,40	--	0,16	--	0,25	--
3/4 x 3/8	26,67	17,10	28,57	28,57	38,10	0,23	0,07	0,38	0,10
3/4 x 1/2	26,67	21,34	28,57	28,57	38,10	0,22	0,07	0,24	0,10
1 x 1/2	33,40	21,34	38,10	38,10	50,80	0,45	0,10	0,68	0,15
1 x 3/4	33,40	26,67	38,10	38,10	50,80	0,45	0,10	0,68	0,15
1 1/4 x 1/2	42,16	21,34	47,62	47,62	50,80	0,68	0,15	0,81	0,20
1 1/4 x 3/4	42,16	26,67	47,62	47,62	50,80	0,68	0,15	0,81	0,20
1 1/4 x 1	42,16	33,40	47,62	47,62	50,80	0,70	0,15	0,83	0,20
1 1/2 x 1/2	48,26	21,34	57,15	57,15	63,50	0,86	0,25	1,13	0,32
1 1/2 x 3/4	48,26	26,67	57,15	57,15	63,50	0,91	0,27	1,13	0,33
1 1/2 x 1	48,26	33,40	57,15	57,15	63,50	0,95	0,27	1,17	0,35
1 1/2 x 1 1/4	48,26	42,16	57,15	57,15	63,50	0,99	0,29	1,22	0,35
2 x 3/4	60,32	26,67	63,50	44,45	76,20	1,13	0,40	1,49	0,50
2 x 1	60,32	33,40	63,50	50,80	76,20	1,17	0,40	1,54	0,50
2 x 1 1/4	60,32	42,16	63,50	57,15	76,20	1,26	0,43	1,58	0,52
2 x 1 1/2	60,32	48,26	63,50	60,32	76,20	1,35	0,45	1,63	0,54
2 1/2 x 1	73,02	33,40	76,20	57,15	88,90	2,00	0,68	2,44	0,84
2 1/2 x 1 1/4	73,02	42,16	76,20	63,50	88,90	2,12	0,68	2,49	0,84
2 1/2 x 1 1/2	73,02	48,26	76,20	66,67	88,90	2,25	0,72	2,55	0,91
2 1/2 x 2	73,02	60,32	76,20	69,85	88,90	2,35	0,77	2,62	0,97
3 x 1 1/4	88,90	42,16	85,72	69,85	88,90	2,89	0,86	3,40	1,18
3 x 1 1/2	88,90	48,26	85,72	73,02	88,90	2,98	0,90	3,48	1,23
3 x 2	88,90	60,32	85,72	76,20	88,90	3,01	0,96	3,62	1,26
3 x 2 1/2	88,90	73,02	85,72	82,55	88,90	3,17	1,04	3,73	1,39
3 1/2 x 3	101,6	88,9	95,3	92,1	101,6	3,72	1,38	4,68	1,85
3 1/2 x 2 1/2	101,6	73,0	95,3	88,9	101,6	3,65	1,33	4,6	1,84
3 1/2 x 2	101,6	60,3	95,3	82,6	101,6	3,3	1,29	4,16	1,8
3 1/2 x 1 1/2	101,6	48,3	95,3	79,4	101,6	3,23	1,25	4,07	1,75
4 x 1 1/2	114,30	48,26	104,77	85,72	101,60	4,30	1,54	5,88	2,04

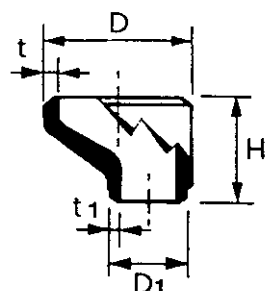
REDUCING TEES



CONCENTRIC REDUCERS



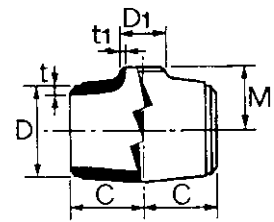
ECCENTRIC REDUCERS



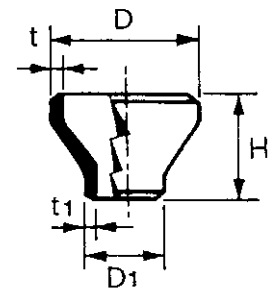
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4 x 2	114,30	60,32	104,77	88,90	101,60	4,57	1,63	6,11	2,13
4 x 2 1/2	114,30	73,02	104,77	95,25	101,60	4,80	1,72	6,11	2,20
4 x 3	114,30	88,90	104,77	98,42	101,60	4,98	1,77	6,34	2,26
4 x 3 1/2	114,3	101,6	104,8	101,6	101,6	5,2	1,64	6,08	2,3
5 x 2	141,3	60,3	123,8	104,8	127	7,2	2,58	10,08	3,2
5 x 2 1/2	141,30	73,02	123,82	107,95	127,00	7,33	2,66	10,64	3,27
5 x 3	141,30	88,90	123,82	111,12	127,00	7,56	2,72	10,96	3,49
5 x 3 1/2	141,3	101,6	123,8	114,3	127	8,05	2,72	11,24	3,6
5 x 4	141,30	114,30	123,82	117,47	127,00	8,15	2,81	11,77	3,71
6 x 2 1/2	168,27	73,02	142,87	120,65	139,70	12,32	3,71	15,85	5,17
6 x 3	168,27	88,90	142,87	123,82	139,70	12,45	3,80	16,16	5,39
6 x 3 1/2	168,3	101,6	142,9	127	139,7	12,6	3,93	17,36	5,55
6 x 4	168,27	114,30	142,87	130,17	139,70	12,91	3,94	16,76	5,62
6 x 5	168,27	141,30	142,87	136,50	139,70	13,13	4,03	17,20	5,84
8 x 3	219,07	88,90	177,80	152,40	152,40	23,50	6,46	30,00	7,20
8 x 3 1/2	219,1	101,6	177,8	152,4	152,4	22,96	6,56	32,33	8,13
8 x 4	219,07	114,30	177,80	155,57	152,40	22,42	5,62	30,12	9,06
8 x 5	219,07	141,30	177,80	161,92	152,40	23,10	5,84	30,80	9,36
8 x 6	219,07	168,27	177,80	168,27	152,40	23,80	6,34	31,71	9,76
10 x 4	273,1	114,3	215,9	184,2	177,8	33,85	10,1	47,72	13
10 x 5	273,05	141,30	215,90	190,50	177,80	33,79	10,19	46,20	13,50
10 x 6	273,05	168,27	215,90	193,67	177,80	34,65	10,42	47,86	14,04
10 x 8	273,05	219,07	215,90	203,20	177,80	35,33	10,69	48,92	14,45
12 x 5	323,85	141,30	254,00	215,90	203,20	45,75	14,50	63,40	18,91
12 x 6	323,85	168,27	254,00	219,07	203,20	47,11	14,72	66,59	19,39
12 x 8	323,85	219,07	254,00	228,60	203,20	48,92	14,95	69,76	10,80
12 x 10	323,85	273,05	254,00	241,30	203,20	50,14	15,40	72,45	20,38
14 x 6	355,6	168,3	279,4	238,1	330,2	72,35	26,1	78,14	35
14 x 8	355,60	219,07	279,40	247,65	330,20	74,75	26,27	104,19	35,10
14 x 10	355,60	273,05	279,40	257,17	330,20	76,59	26,58	107,81	35,56
14 x 12	355,60	323,85	279,40	269,67	330,20	77,01	26,52	112,79	35,83
16 x 6	406,4	168,3	304,8	263,5	-	84,32	-	118	-
16 x 8	402,40	219,07	304,80	273,05	355,60	87,88	32,39	126,84	42,67
16 x 10	406,40	273,05	304,80	282,57	355,60	90,60	32,84	130,00	43,26
16 x 12	406,40	323,85	304,80	295,27	355,60	95,27	35,80	92,86	43,49
16 x 14	406,40	355,60	304,80	304,80	355,60	95,13	33,98	137,26	44,62
18 x 8	457,2	219,1	342,9	298,5	-	110,5	-	154	-
18 x 10	457,20	273,05	342,90	307,97	381,00	115,50	38,50	149,49	51,64
18 x 12	457,20	323,85	342,90	320,67	381,00	120,00	38,96	154,00	52,10
18 x 14	457,20	355,60	342,90	330,20	381,00	124,10	39,41	161,82	52,55
18 x 16	457,20	406,40	342,90	330,20	381,20	126,00	39,84	167,61	53,00
20 x 8	508	219,1	381	323,9	-	163,5	-	195	-
20 x 10	508,00	273,05	381,00	333,37	508,00	163,50	50,70	214,00	76,19
20 x 12	508,00	323,85	381,00	346,07	508,00	163,50	57,08	214,00	76,19
20 x 14	508,00	355,60	381,00	355,60	508,00	163,50	57,98	214,00	77,19
20 x 16	508,00	406,40	381,00	355,60	508,00	168,00	58,44	218,00	77,73
20 x 18	508,00	487,20	381,00	368,30	508,00	168,00	58,89	218,00	78,37
22 x 20	558,8	508,0	419,1	406,4	508	200,2	71,3	240	87,5
22 x 18	558,8	457,2	419,1	393,7	508	197,5	66,44	269	86,5
22 x 16	558,8	406,4	419,1	381	508	195	65,22	269	85,5
22 x 14	558,8	355,6	419,1	381	508	192,75	65	257	86

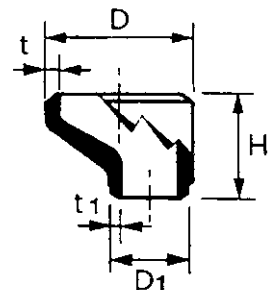
REDUCING TEES



CONCENTRIC REDUCERS



ECCENTRIC REDUCERS

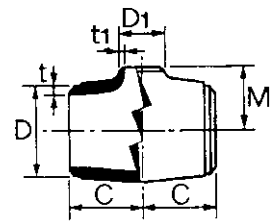




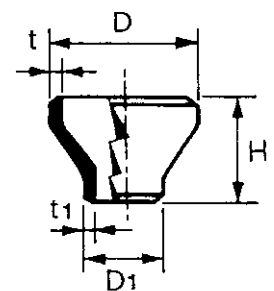
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22 x 12	558,8	323,9	419,1	371,5	-	190,75	-	257	86,5
22 x 10	558,8	273,1	419,1	358,8	-	183,75	-	257	85,8
24 x 10	609,60	273,05	431,80	384,20	508,00	204,00	72,00	300,00	95,40
24 x 12	609,60	323,85	431,80	396,90	508,00	218,00	72,00	300,00	95,40
24 x 14	609,60	355,60	431,80	406,40	508,00	222,00	72,00	300,00	95,40
24 x 16	609,60	406,40	431,80	406,40	508,00	222,00	72,00	320,00	95,40
24 x 18	609,60	457,20	431,80	419,10	508,00	227,00	74,00	320,00	95,40
24 x 20	609,60	508,00	431,80	431,80	508,00	227,00	75,00	350,00	95,40
24 x 22	609,6	558,8	431,8	431,8	508	230	75,8	350	95,4
26 x 24	660,0	610,0	495,0	483	610	268,00	98	340,00	123,00
26 x 22	660,0	559,0	495,0	470	610	268,00	98	340,00	123,00
26 x 20	660,0	508,0	495,0	457	610	268,00	98	340,00	123,00
26 x 18	660,0	457,0	495,0	444	610	268,00	98	340,00	123,00
26 x 16	660,0	406,4	495,0	432	--	268,00	--	340,00	--
26 x 14	660,0	355,6	495,0	432	--	268,00	--	340,00	--
26 x 12	660,0	323,8	495,0	422	--	268,00	--	340,00	--
28 x 26	711,0	660,0	521,0	521	610	308,00	105	390,00	132,00
28 x 24	711,0	610,0	521,0	508	610	308,00	105	390,00	132,00
28 x 22	711,0	559,0	521,0	495	--	308,00	--	390,00	--
28 x 20	711,0	508,0	521,0	483	610	308,00	105	390,00	132,00
28 x 18	711,0	457,0	521,0	470	610	308,00	105	390,00	132,00
28 x 16	711,0	406,4	521,0	457	--	308,00	--	390,00	--
28 x 14	711,0	355,6	521,0	457	--	308,00	--	390,00	--
28 x 12	711,0	323,8	521,0	448	--	308,00	--	390,00	--
30 x 28	762,0	711,0	559,0	546	610	347,00	113	448,00	143,00
30 x 26	762,0	660,0	559,0	546	610	347,00	113	448,00	143,00
30 x 24	762,0	610,0	559,0	533	610	347,00	113	448,00	143,00
30 x 22	762,0	559,0	559,0	521	--	347,00	--	448,00	--
30 x 20	762,0	508,0	559,0	508	610	347,00	113	448,00	143,00
30 x 18	762,0	457,0	559,0	495	--	347,00	--	448,00	--
30 x 16	762,0	406,4	559,0	483	--	347,00	--	448,00	--
30 x 14	762,0	355,6	559,0	483	--	347,00	--	448,00	--
30 x 12	762,0	323,8	559,0	473	--	347,00	--	448,00	--
30 x 10	762,0	273,0	559,0	460	--	347,00	--	448,00	--
32 x 30	813,0	762,0	597,0	584	610	406,00	121	520,00	150,00
32 x 28	813,0	711,0	597,0	572	610	406,00	121	520,00	150,00
32 x 26	813,0	660,0	597,0	572	610	406,00	121	520,00	150,00
32 x 24	813,0	610,0	597,0	559	610	406,00	121	520,00	150,00
32 x 22	813,0	559,0	597,0	546	--	406,00	--	520,00	--
32 x 20	813,0	508,0	597,0	533	--	406,00	--	520,00	--
32 x 18	813,0	457,0	597,0	521	--	406,00	--	520,00	--
32 x 16	813,0	406,4	597,0	508	--	406,00	--	520,0	--
32 x 14	813,0	355,6	597,0	508	--	406,00	--	520,00	--
34 x 32	864,0	813,0	635,0	622	610	452,00	129	570,00	157,00
34 x 30	864,0	762,0	635,0	610	610	452,00	129	570,00	157,00
34 x 28	864,0	711,0	635,0	597	--	452,00	--	570,00	--
34 x 26	864,0	660,0	635,0	597	610	452,00	129	570,00	157,00
34 x 24	864,0	610,0	635,0	584	610	452,00	129	570,00	157,00
34 x 22	864,0	559,0	635,0	572	--	452,00	--	570,00	--
34 x 20	864,0	508,0	635,0	559	--	452,00	--	570,00	--
34 x 18	864,0	457,0	635,0	546	--	452,00	--	570,00	--

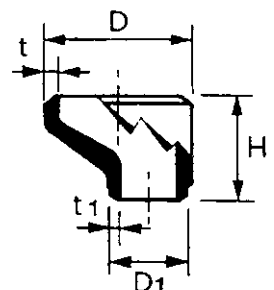
REDUCING TEES



CONCENTRIC REDUCERS



ECCENTRIC REDUCERS

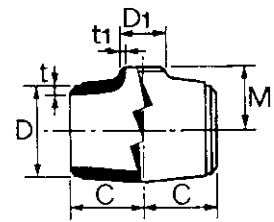




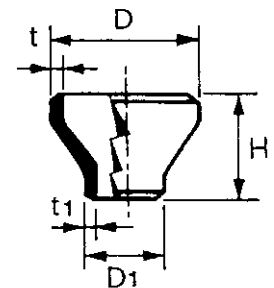
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34 x 16	864,0	406,4	635,0	533	--	452,00	--	570,00	--
36 x 34	914,0	864,0	673,0	660	610	505,00	136	649,00	172,00
36 x 32	914,0	813,0	673,0	648	610	505,00	136	649,00	172,00
36 x 30	914,0	762,0	673,0	635	610	505,00	136	649,00	172,00
36 x 28	914,0	711,0	673,0	622	--	505,00	--	649,00	--
36 x 26	914,0	660,0	673,0	622	610	505,00	136	649,00	172,00
36 x 24	914,0	610,0	673,0	610	610	505,00	136	649,00	172,00
36 x 22	914,0	559,0	673,0	597	--	505,00	--	649,00	--
36 x 20	914,0	508,0	673,0	584	--	505,00	--	649,00	--
36 x 18	914,0	457,0	673,0	572	--	505,00	--	649,00	--
36 x 16	914,0	406,4	673,0	559	--	505,00	--	649,00	--
38 x 36	965,0	914,0	711,0	711	610	569,00	143	727,00	186,00
38 x 34	965,0	864,0	711,0	698	610	569,00	143	727,00	186,00
38 x 32	965,0	813,0	711,0	686	610	569,00	143	727,00	186,00
38 x 30	965,0	762,0	711,0	673	610	569,00	143	727,00	186,00
38 x 28	965,0	711,0	711,0	648	610	569,00	143	727,00	186,00
38 x 26	965,0	660,0	711,0	648	610	569,00	143	727,00	186,00
38 x 24	965,0	610,0	711,0	635	--	569,00	--	727,00	--
38 x 22	965,0	559,0	711,0	622	--	569,00	--	727,00	--
38 x 20	965,0	508,0	711,0	610	--	569,00	--	727,00	--
38 x 18	965,0	457,0	711,0	597	--	569,00	--	727,00	--
40 x 38	1016,0	965,0	749,0	749	610	627,00	151	792,00	193,00
40 x 36	1016,0	914,0	749,0	737	610	627,00	151	792,00	193,00
40 x 34	1016,0	864,0	749,0	724	610	627,00	151	792,00	193,00
40 x 32	1016,0	813,0	749,0	711	610	627,00	151	792,00	193,00
40 x 30	1016,0	762,0	749,0	698	610	627,00	151	792,00	193,00
40 x 28	1016,0	711,0	749,0	673	--	627,00	--	792,00	--
40 x 26	1016,0	660,0	749,0	673	--	627,00	--	792,00	--
40 x 24	1016,0	610,0	749,0	660	--	627,00	--	792,00	--
40 x 22	1016,0	559,0	749,0	648	--	627,00	--	792,00	--
40 x 20	1016,0	508,0	749,0	635	--	627,00	--	792,00	--
40 x 18	1016,0	457,0	749,0	622	--	627,00	--	792,00	--
42 x 40	1067,0	1016,0	762,0	711	610	659,00	159	836,00	209,00
42 x 38	1067,0	968,0	762,0	711	610	659,00	159	836,00	209,00
42 x 36	1067,0	914,0	762,0	711	610	659,00	159	836,00	209,00
42 x 34	1067,0	864,0	762,0	711	610	659,00	159	836,00	209,00
42 x 32	1067,0	813,0	762,0	711	610	659,00	159	836,00	209,00
42 x 30	1067,0	762,0	762,0	711	610	659,00	159	836,00	209,00
42 x 28	1067,0	711,0	762,0	698	--	659,00	--	836,00	--
42 x 26	1067,0	660,0	762,0	698	--	659,00	--	836,00	--
42 x 24	1067,0	610,0	762,0	660	--	659,00	--	836,00	--
42 x 22	1067,0	559,0	762,0	660	--	659,00	--	836,00	--
42 x 20	1067,0	508,0	762,0	660	--	659,00	--	836,00	--
42 x 18	1067,0	457,0	762,0	648	--	659,00	--	836,00	--
42 x 16	1067,0	406,4	762,0	635	--	659,00	--	836,00	--
44 x 42	1118,0	1067,0	813,0	762	610	724,00	163	925,00	217,00
44 x 40	1118,0	1016,0	813,0	749	610	724,00	163	925,00	217,00
44 x 38	1118,0	965,0	813,0	737	610	724,00	163	925,00	217,00
44 x 36	1118,0	914,0	813,0	724	610	724,00	163	925,00	217,00
44 x 34	1118,0	864,0	813,0	724	--	--	724,00	--	925,00
44 x 32	1118,0	813,0	813,0	711	--	724,00	--	925,00	--

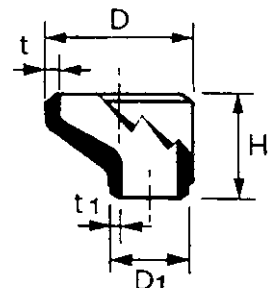
REDUCING TEES



CONCENTRIC REDUCERS



ECCENTRIC REDUCERS





Continued

44 x 30	1118,0	762,0	813,0	711	--	724,00	--	925,00	--
44 x 28	1118,0	711,0	813,0	698	--	724,00	--	925,00	--
44 x 26	1118,0	660,0	813,0	698	--	724,00	--	925,00	--
44 x 24	1118,0	610,0	813,0	698	--	724,00	--	925,00	--
44 x 22	1118,0	559,0	813,0	686	--	724,00	--	925,00	--
44 x 20	1118,0	508,0	813,0	686	--	724,00	--	925,00	--
46 x 44	1168,0	1118,0	851,0	800	711	780,00	182	995,00	225,00
46 x 42	1168,0	1067,0	851,0	787	711	780,00	182	995,00	225,00
46 x 40	1168,0	1016,0	851,0	775	711	780,00	182	995,00	225,00
46 x 38	1168,0	965,0	851,0	762	711	780,00	182	995,00	225,00
46 x 36	1168,0	914,0	851,0	762	--	780,00	--	995,00	--
46 x 34	1168,0	864,0	851,0	749	--	780,00	--	995,00	--
46 x 32	1168,0	813,0	851,0	749	--	780,00	--	995,00	--
46 x 30	1168,0	762,0	851,0	737	--	780,00	--	995,00	--
46 x 28	1168,0	711,0	851,0	737	--	780,00	--	995,00	--
46 x 26	1168,0	660,0	851,0	737	--	780,00	--	995,00	--
46 x 24	1168,0	610,0	851,0	724	--	780,00	--	995,00	--
46 x 22	1168,0	559,0	851,0	724	--	780,00	--	995,00	--
48 x 46	1219,0	1168,0	889,0	838	711	847,00	187	1080,00	247,00
48 x 44	1219,0	1118,0	889,0	838	711	847,00	187	1080,00	247,00
48 x 42	1219,0	1067,0	889,0	813	711	847,00	187	1080,00	247,00
48 x 40	1219,0	1016,0	889,0	813	711	847,00	187	1080,00	247,00
48 x 38	1219,0	965,0	889,0	813	--	847,00	--	1080,00	--
48 x 36	1219,0	914,0	889,0	787	--	847,00	--	1080,00	--
48 x 34	1219,0	864,0	889,0	787	--	847,00	--	1080,00	--
48 x 32	1219,0	813,0	889,0	787	--	847,00	--	1080,00	--
48 x 30	1219,0	762,0	889,0	762	--	847,00	--	1080,00	--
48 x 28	1219,0	711,0	889,0	762	--	847,00	--	1080,00	--
48 x 26	1219,0	660,0	889,0	762	--	847,00	--	1080,00	--
48 x 24	1219,0	610,0	889,0	737	--	847,00	--	1080,00	--
48 x 22	1219,0	559,0	889,0	737	--	847,00	--	1080,00	--

Note : For wall thickness (dimension) refer below table

DIMENSIONS AND WALL THICKNESS OF BUTTWELD PIPE FITTINGS

Nominal Pipe size	O. D mm	Schedule 10	Schedule 20	Schedule 30	Standard	Schedule 40	Extra Strong	Schedule 80
1/8	10,3	--	--	--	1,7	1,7	2,4	2,4
1/4	13,7	--	--	--	2,2	2,2	3,0	3,0
3/8	17,1	--	--	--	2,3	2,3	3,2	3,2
1/2	21,3	--	--	--	2,8	2,8	3,7	3,7
3/4	26,7	--	--	--	2,9	2,9	3,9	3,9
1	33,4	--	--	--	3,4	3,4	4,5	4,5
1 1/4	42,2	--	--	--	3,7	3,7	4,9	4,9
1 1/2	48,3	--	--	--	3,7	3,7	5,1	5,1
2	60,3	--	--	--	3,9	3,9	5,5	5,5
2 1/2	73,0	--	--	--	5,2	5,2	7,0	7,0
3	88,9	--	--	--	5,5	5,5	7,6	7,6
3 1/2	101,6	--	--	--	5,7	5,7	8,1	8,1
4	114,3	--	--	--	6,0	6,0	8,6	8,6
5	141,3	--	--	--	6,6	6,6	9,5	9,5





Continued

6	168,3	--	--	--	7,1	7,1	11,0	11,0
8	219,1	--	6,4	7,0	8,2	8,2	12,7	12,7
10	273,0	--	6,4	7,8	9,3	9,3	12,7	15,1
12	323,9	--	6,4	8,4	9,5	10,3	12,7	17,4
14	355,6	6,4	7,9	9,5	9,5	11,1	12,7	19,0
16	406,4	6,4	7,9	9,5	9,5	12,7	12,7	21,4
18	457,2	6,4	7,9	11,1	9,5	14,3	12,7	23,8
20	508,0	6,4	9,5	12,7	9,5	15,1	12,7	26,2
22	558,8	6,4	9,5	12,7	9,5	--	12,7	28,6
24	690,6	6,4	9,5	14,3	9,5	17,4	12,7	31,0
26	660,4	--	--	--	9,5	--	12,7	--
28	711,2	7,9	12,7	15,9	9,5	--	12,7	--
30	762,0	7,9	12,7	15,9	9,5	--	12,7	--
32	812,8	7,9	12,7	15,9	9,5	17,4	12,7	--
34	863,6	7,9	12,7	15,9	9,5	17,4	12,7	--
36	914,4	7,9	12,7	15,9	9,5	19,0	12,7	--
38	965,0	--	--	--	9,5	--	12,7	--
40	1016,0	--	--	--	9,5	--	12,7	--
42	1067	--	--	--	9,5	--	12,7	--
44	1118	--	--	--	9,5	--	12,7	--
48	1168	--	--	--	9,5	--	12,7	--
48	1219	--	--	--	9,5	--	12,7	--

BUTT WELD FITTINGS TO ANSI B 16.9 AND 16.28

Dimensions : Dimensions of Elbows, Tees, Caps and Reducers form 1/2" n.b. to 48" n.b. Short Radius elbows and Returns bends from 1" n.b to 24" n.b. and Long Radius Return bends from 1/2" n.b. are as stated in the current editions of ANSI B 16.9 and 16.28 Wall thickness are as listed in ANSI B36.10M.

Material : Material conforms to ASTM A234 WPB, except that the carbon content of our stock is limited to 0.23% max. The carbon equivalent (as calculated in accordance with BS5135) is not more than 0.43%

Manufacture : Fitting are manufactured according by section 5 of ASTM A234

Heat Treatment : Heat treatment is as required by section 6 of ASTM A234

Marking : Fittings are marked with the nominal size (or size) : schedule or wall thickness : material grade (WPB) : heat reference : manufacturer's mark. Where the size of fitting does not permit full marking, then the nominal size (s) : schedule or wall thickness : and material grade are omitted.

Test Certificates : fittings test certificates to DIN EN 10204 3.1 are available where requested and agreed during enquiry and order stage.

Protection : All fittings are dipped in black semi-gloss lacquer coating to protect them against rust.

Other Products available : Other larger sizes schedules/wall thicknesses are available from stock or on short delivery time

