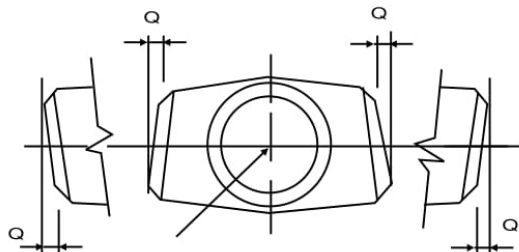


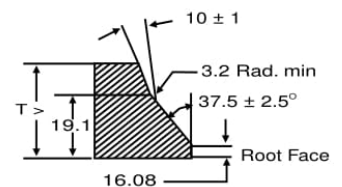
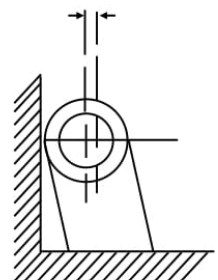
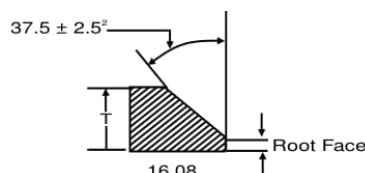
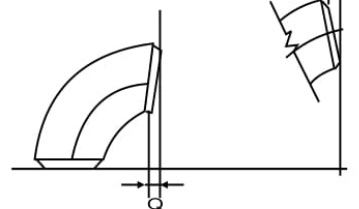
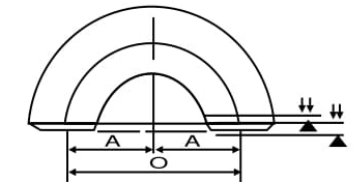
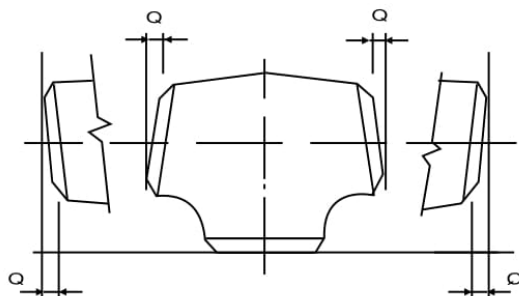
DIMENSIONAL TOLERANCES AS PER ANSI B 16.9 / B 16.28 / MSS SP -43

BUTT WELD FITTING

ALL FITTINGS						90°/60°/45° /30° ELBOWS & TEES		REDUCERS		180° RETURNS						CAPS		ANGULARITY TOLERANCE ± 1/6" (1.6mm)			
Overall Length mm	Outside Diameter at Level	Inside Dia meter	Wall Thickness at End		Centre to End		Overall Length Dimensions		Centre to End		Back to Face Dimensions		Alignment of End Dimensions		Overall length		Nominal Pipe Size	Off Angle Inch/mm		C Pla	
	D		T		A,B,C,M		H		O		K		U		E			Q			
	(1) B16.9	MSS SP43	(2) B16.9	B16.9	MSS SP43	B16.9	MSS SP43	B16.9	MSS SP43	B16.9	MSS SP43	B16.9	MSS SP43	B16.9	MSS SP43	B16.9	MSS SP43		B16.9	MSS SP43	BT
TO 2" 65	±1.0		±0.8			FROM 1/2"TO10" 15TO250	FROM 3/4"	FROM 1/2"TO10" 15TO250	FROM 1/2"TO8" 15TO200							±4	±3.17	1/2" TO 4" 15 TO 100	1		
3 1/2" 90		±0.79																5" TO 8" 125 TO 200	2		
6" 150	+2 -1		±1.6			±2	±1.59	±2	±1.59	±7	±6.35	±7	±6.35	±1.0	±0.79			10" TO 12" 250 TO 300	3		
8" 200	+3 -1	±1.59														±7	±6.35	14"TO16" 350TO 400	3	16"TO 24" 400 TO 600	
10" 250	±2	-0.79		Not Less Than 87.5% Nominal Thk.	Not Less Than 87.5% Nominal Thk.	FROM 12"TO30" ±3	±2.38	FROM 12"TO30" ±3	10"TO24" +2.38	of Contact Face								18"TO 24" 450 TO 600	4	26"TO 36" 650 TO 900	
12" 300	+4 -3	+2.38 -0.79	±3.2			300TO750		300TO 750	250TO 600			±10"	±9.53			±2.0"	±1.59			26"TO 30" 650 TO 750	5
14" 350	+6 -5	3.17 0.79														±10		32"TO 42" 800 TO1050	5	950 TO 1200 3.2	
16" 400	+7 -5		±4.8															44" TO 48" 1100 TO1200	5	38"TO 48"	2
18" 450						±5												42" TO 48" 1050 TO 1200	±5	950 TO 1200 3.2	±
20" 500	+7 -5																				



This End Flush Against Square

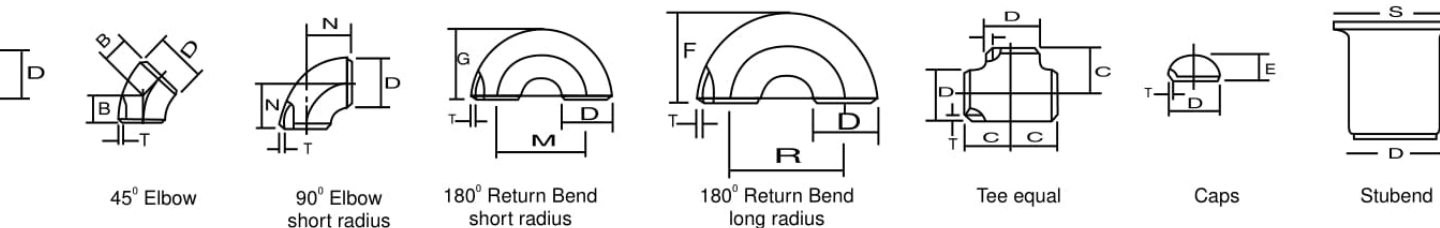


1. Out of round is the sum of absolute values of plus and minus tolerance.
2. The inside diameter at ends and the nominal wall thickness are to be specified by the purchaser.
3. Out of roundness tolerances shall be the difference between the Max. dia measured on any radial cross-section.
4. All dimensions are in millimeters except nominal pipe sizes which are in inches.

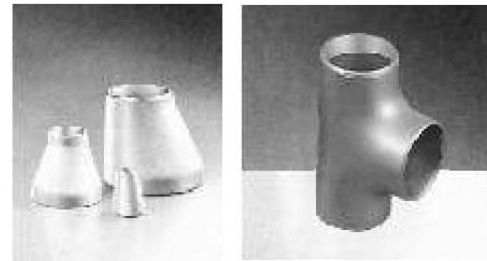
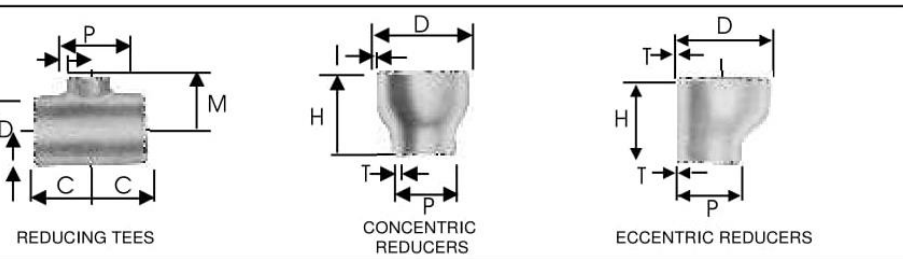
WELDING BEVEL STANDARDS ANSI B 16.25

BUTT WELDING PIPE FITTING DIMENSIONAL STANDARD

ANSI B-16.9 / 16.28 / MSS SP-43

[illegible]

BUTT - WELDING PIPE FITTINGS ANSI B 16.9 / 16.28



Pipe	Outside Diameter		Center to End		Length
mm	D	P	C	M	H
15 x 10	21.3	17.1	25	25	-
15 x 8	21.3	13.7	25	25	-
20 x 15	26.7	21.3	29	29	38
20 x 10	26.7	17.1	29	29	38
25 x 20	33.4	26.7	38	38	51
25 x 15	33.4	21.3	38	38	51
32 x 25	42.2	33.4	48	48	51
32 x 20	42.2	26.7	48	48	51
32 x 15	42.2	21.3	48	48	51
40 x 32	48.3	42.2	57	57	64
40 x 25	48.3	33.4	57	57	64
40 x 20	48.3	26.7	57	57	64
40 x 15	48.3	21.3	57	57	64
50 x 40	60.3	48.2	64	60	76
50 x 32	60.3	42.2	64	57	76
50 x 25	60.3	33.4	64	51	76
50 x 20	60.3	26.7	64	44	76
65 x 50	73.0	60.3	76	70	89
65 x 40	73.0	48.3	76	67	89
65 x 32	73.0	42.2	76	64	89
65 x 25	73.0	33.4	76	57	89
80 x 65	88.9	73.0	86	83	89
80 x 50	88.9	60.3	86	76	89
80 x 40	88.9	48.3	86	73	89
80 x 32	88.9	42.2	86	70	89
90 x 80	101.6	88.9	95	92	102
90 x 65	101.6	73.0	95	89	102
90 x 50	101.6	60.3	95	83	102
90 x 40	101.6	48.3	95	79	102
90 x 32	101.6	42.2	-	-	102
100 x 90	114.3	101.6	105	102	102
100 x 80	114.3	88.9	105	98	102
100 x 65	114.3	73.0	105	95	102
100 x 50	114.3	60.3	105	89	102
100 x 40	114.3	48.3	105	86	102
125 x 100	141.3	114.3	124	117	127
125 x 90	141.3	101.6	124	114	127
125 x 80	141.3	88.9	124	111	127
125 x 65	141.3	73.0	124	108	127
125 x 50	141.3	60.3	124	105	127
150 x 125	168.3	141.3	143	137	140
150 x 100	168.3	114.3	143	130	140
150 x 90	168.3	101.6	143	127	140
150 x 80	168.3	88.9	143	124	140
150 x 65	168.3	73.0	143	121	140

Nominal Pipe Size		Outside Diameter		Center to End		Length
Inch.	mm	D	P	C	M	H
8 x 6	200 x 150	219.1	168.3	178	168	152
8 x 5	200 x 125	219.1	141.3	178	162	152
8 x 4	200 x 100	219.1	114.3	178	156	152
8 x 3 1/2	200 x 90	219.1	101.6	178	152	152
10 x 8	250 x 200	273.1	219.1	216	203	178
10 x 6	250 x 150	273.1	168.1	216	194	178
10 x 5	250 x 125	273.1	141.3	216	191	178
10 x 4	250 x 100	273.1	114.3	216	184	178
12 x 10	300 x 250	323.9	273.1	254	241	203
12 x 8	300 x 200	323.9	219.1	254	229	203
12 x 6	300 x 150	323.9	168.3	254	219	203
12 x 5	300 x 125	323.9	141.3	254	216	203
14 x 12	350 x 300	355.6	323.9	279	270	330
14 x 10	350 x 250	355.6	273.1	279	257	330
14 x 8	350 x 200	355.6	219.1	279	248	330
14 x 6	350 x 150	355.6	168.3	279	238	330
16 x 14	400 x 350	406.4	355.6	305	305	356
16 x 12	400 x 300	406.4	323.9	305	295	356
16 x 10	400 x 250	406.4	273.1	305	283	356
16 x 8	400 x 200	406.4	219.1	305	273	356
16 x 6	400 x 150	406.4	168.3	305	264	356
18 x 16	450 x 400	457.0	406.4	343	330	381
18 x 14	450 x 350	457.0	355.6	343	330	381
18 x 12	450 x 300	457.0	323.9	343	321	381
18 x 10	450 x 250	457.0	273.1	343	308	381
18 x 8	450 x 200	457.0	219.1	343	298	381
20 x 18	500 x 450	508.0	457.0	381	368	508
20 x 16	500 x 400	508.0	406.4	381	356	508
20 x 14	500 x 350	508.0	355.6	381	356	508
20 x 12	500 x 300	508.0	323.9	381	346	508
20 x 10	500 x 250	508.0	273.1	381	333	508
20 x 8	500 x 200	508.0	219.1	381	324	508
22 x 20	550 x 500	559.0	508.0	419	406	508
22 x 18	550 x 450	559.0	457.0	419	394	508
22 x 16	550 x 400	559.0	406.4	419	381	508
22 x 14	550 x 350	559.0	355.6	419	381	508
22 x 12	550 x 300	559.0	323.9	419	371	508
24 x 10	550 x 250	559.0	273.1	419	359	508
24 x 22	600 x 550	610.0	559.0	432	432	508
24 x 20	600 x 500	610.0	508.0	432	432	508
24 x 18	600 x 450	610.0	457.0	432	419	508
24 x 16	600 x 400	610.0	406.4	432	406	508
24 x 14	600 x 350	610.0	355.6	432	406	508
24 x 12	600 x 300	610.0	323.9	432	397	508
24 x 10	600 x 250	610.0	273.1	432	384	508