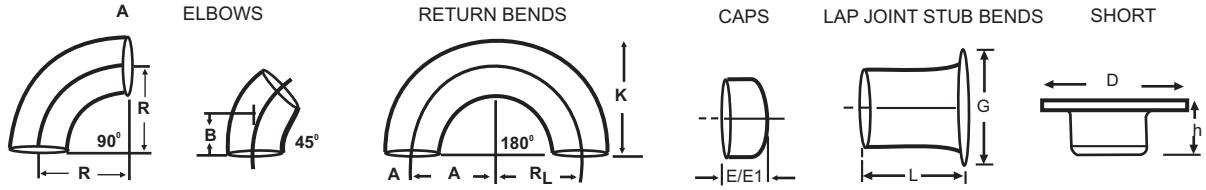


**DIMENSION OF BUTT WELDING FITTINGS TO ANSI B 16.9/MSS SP 43**

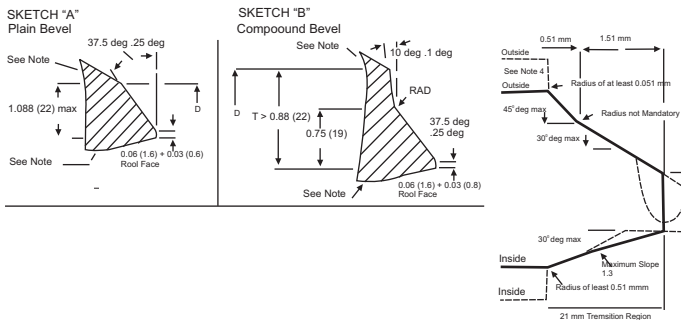


NOM BORE	PIPE OD	RADIUS 'R'				K	E/E1	G	LENGTH 'L'			
		1 D	1.5 D	B 1.5 D					MSS SP 43	ANSI B 16.9	D	H
1/2	21.3	12.7	38.1	15.9	48	25.4	34.9	50.8	76.2	45	8	
3/4	26.7	19.05	38.1	19.0	51	25.4	42.8	50.8	76.2	54	8	
1	33.4	25.4	38.1	22.2	56	38.1	50.8	50.8	101.6	64	10	
1 1/4	42.1	31.75	47.6	25.0	70	38.1	63.5	50.8	101.6	74	12	
1 1/2	48.3	38.1	57.15	28.6	83	38.1	73.0	50.8	101.6	84	12	
2	60.3	50.8	76.2	35.0	106	44*	92.0	63.5	152.4	102	16	
2 1/2	73.0	63.5	95.25	44.0	132	51	106	63.5	152.4	122	16	
3	88.9	76.2	114.3	50.8	159	64*	127.0	63.5	152.4	138	18	
3 1/2	101.6	88.9	133.35	57.2	184	76*	139.7	76.2	152.4	148	18	
4	114.3	101.3	152.4	63.5	210	76*	157.2	76.2	152.4	158	20	
5	141.3	127.0	190.5	79.4	262	89*	185.7	76.2	208.2	188	20	
6	168.3	152.4	228.6	95.3	313	102*	218	88.9	203.2	212	25	
8	219.1	203.2	304.8	127.0	414	127*	270.0	101.6	203.2	270	30	
10	373.1	254.0	381.0	158.7	518	152*	324.0	127.0	254.0	325	30	
12	323.9	304.8	457.2	190.5	619	178*	381.0	152.4	254.0	380	35	
14	355.6	355.6	533.4	222.2	711	191*	412.8	152.4	305.0	415	40	
16	406.4	406.4	609.6	254.0		203*	470.0	152.4	305.0	470	40	

NOM BORE	PIPE OD	RADIUS 'R'				K	E/E1	G	LENGTH 'L'			
		1 D	1.5 D	B 1.5 D					MSS SP 43	ANSI B 16.9	D	H
18	457.2	457.2	685.8	285.7	914	229*	533.4	152.4	305.0	535	40	
20	508.0	508.0	762.0	317.6	1016	254*	584.2	152.4	305.0	585	40	
22	558.8	558.8	838.2	343.0	1118	254*	641.4	152.4	305.0	642	40	
24	609.6	609.6	914.4	381.0	1219	305*	692.2	152.4	305.0	693	40	
26	660.0	660.0	991.0	405.0	—	267.0	—	—	—	—	—	
28	711.0	711.0	1067.0	438.0	—	267.0	—	—	—	—	—	
30	762.0	762.0	1143.0	470.0	—	267.0	—	—	—	—	—	
32	813.0	813.0	1219.0	502.0	—	267.0	—	—	—	—	—	
34	864.0	864.0	1295.0	533.0	—	267.0	—	—	—	—	—	
36	914.0	914.0	1372.0	565.0	—	267.0	—	—	—	—	—	
38	965.0	965.0	1448.0	600.0	—	305.0	—	—	—	—	—	
40	1016.0	1016.0	1524.0	632.0	—	305.0	—	—	—	—	—	
42	1067.0	1067.0	1600.0	660.0	—	305.0	—	—	—	—	—	
44	1118.0	1118.0	1676.0	695.0	—	343.0	—	—	—	—	—	
46	1168.0	1168.0	1753.0	727.0	—	343.0	—	—	—	—	—	
48	1219.0	1219.0	1829.0	759.0	—	343.0	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	

\* All dimensions are in mm

**EDGE PREPRATON AS PER ANSI B 16.9 - B 16.25**

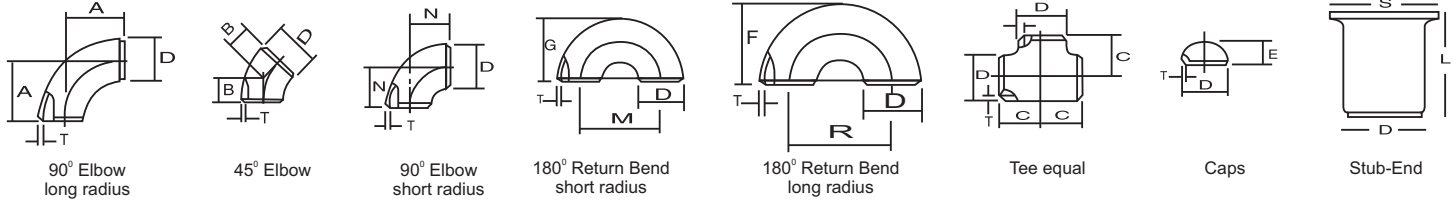


Normal Wall Thickness	End Preparation
Less than X*	Cut square or slightly Chamfer, at mrfs option
X* to 0.88 incl (22)	Chamfer, at mrfs option A above
More than 0.88 (22)	Compound bevel as in sketch B above
	X* = 0.19 (5) for Carbon Steel or Ferritic Alloy Steel and 0.12 (4) For Austenitic Alloy Steel

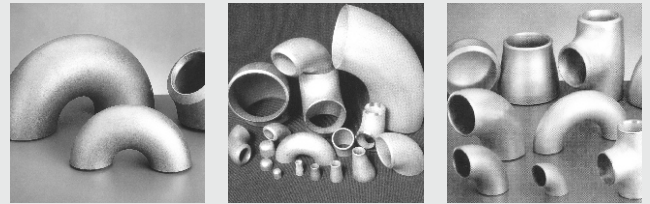
- The Value 1 min is whichever of the following is applicable
    - the minim ordered wall thickness of the pipe;
    - 0.875 time the nominal wall thickness of pipe ordered to a pipe schedule wall thickness which has as under tolerance of 12.5%
  - The Maximum thickness at the end of the component is :
    - the greater of 1 min. + 0.15 in. (4 mm) or 1.15 in. (4 mm) or 1.15 t min, when ordered on a minium wall basis
    - the greater of t min, +0.15 in (4 mm) or 1.10 t nom. When ordered on a nominal wall basis
  - Weid bevel is shown for illustration only.
  - When transitions using maximum slope do no intersect outside surface, as shown by phantom outline, maximum Slopes shown or alternate radii shown in phantom outlines shall be used.
  - Dimension is parenthesis are in millimeters. Other are in inches.
- Note : 2. The shape of cap shall be ellipsoidal  
 Note : 2. Of Specification ANSI b 16.9 for cap E1 & e2 to be consider  
 Length E1 applies for thickness greater than that given in coloumn " Limiting Wall Thickness" for NPS 24 (DIN 600) & Smaller, For NPS 26 (DN 650) and larger, length E1 Shall by agreement between manufacturer and purchaser

\* E1 Height

## BUTT WELDING PIPE FITTING DIMENSIONAL STANDARD ANSI B-16.9 / 16.28 / MSS SP-43



Nominal Pipe Size		Outside Diameter D	Center to Face				Back to Face			Center to Center			Length 'L'	
Inch.	mm		A	B	C	N	E	F	G	R	M	S	MSS SP43	ANSI B 16.9
1/2	15	21.3	19	16	25	—	25	48	—	38	—	34.9	50.8	76.2
3/4	20	26.7	29	11	29	—	25	43	—	57	—	42.8	50.8	76.2
1	25	33.4	38	22	38	25	38	56	41	76	51	50.8	50.8	101.6
1 1/4	32	42.2	48	25	48	32	38	70	52	95	64	63.5	50.8	101.6
1 1/2	40	48.3	57	29	57	38	38	83	62	114	76	73	50.8	101.6
2	50	60.3	76	35	64	51	38	106	81	152	102	92	63.5	152.4
2 1/2	65	73.0	95	44	76	64	38	132	100	191	127	104.8	63.5	152.4
3	80	88.9	114	51	86	76	51	159	121	229	152	127	63.5	152.4
3 1/2	90	101.6	133	57	95	89	64	184	140	267	178	139.7	76.2	152.4
4	100	114.3	152	64	105	102	64	210	159	305	203	157.2	76.2	152.4
5	125	141.3	190	79	124	127	76	262	197	381	254	185.7	76.2	203.2
6	150	168.3	229	95	143	152	89	313	237	457	305	215.9	88.9	203.2
8	200	219.1	305	127	178	203	102	414	313	610	406	270	101.6	203.2
10	250	273.1	381	159	216	254	127	518	391	762	508	324	127.0	254.0
12	300	323.9	457	190	254	305	152	619	467	914	610	381	152.4	254.0
14	350	355.6	533	222	279	356	165	711	533	1067	711	412.8	152.4	305.0
16	400	406.4	610	254	305	406	178	813	610	1219	813	470	152.4	305.0
18	450	457.2	686	286	343	457	203	914	686	1372	914	533.4	152.4	305.0
20	500	508.0	762	318	381	508	229	1016	762	1524	1016	584.2	152.4	305.0
22	550	559.0	838	343	419	559	254	1118	838	1676	1118	614.4	152.4	305.0
24	600	610.0	914	381	432	610	267	1219	914	1829	1219	692.2	152.4	305.0
26	650	660.0	991	406	495	660	267	—	—	—	—	—	—	—
28	700	711.0	1067	438	521	711	267	—	—	—	—	—	—	—
30	750	762.0	1143	470	559	762	267	—	—	—	—	—	—	—
32	800	813.0	1219	502	597	813	267	—	—	—	—	—	—	—
34	850	864.0	1295	533	635	864	267	—	—	—	—	—	—	—
36	900	914.0	1372	565	673	914	267	—	—	—	—	—	—	—
38	950	965.0	1448	600	711	965	305	—	—	—	—	—	—	—
40	1000	1016.0	1524	632	749	1016	305	—	—	—	—	—	—	—
42	1050	1067.0	1600	660	762	1067	305	—	—	—	—	—	—	—
44	1100	1118.0	1676	695	813	1118	343	—	—	—	—	—	—	—
46	1150	1168.0	1753	727	851	1168	343	—	—	—	—	—	—	—
48	1200	1219.0	1829	759	889	1219	343	—	—	—	—	—	—	—





## DIMENSIONAL TOLERANCE ANSI B16.9/B16.28/MSS SP-43

ALL FITTINGS				90°/60°/45° 30° ELBOWS & TEES		REDUCERS		180° RETURNS				CAPS		ANGULARITY TOLERANCE									
Nominal Pipe size INCH/MM	Outside Diameter at Bevel		Inside Dia Meter	Wall Thickness at End		Center to End		Overall Length Dimension		Center to End	Back to Face Dimension	Alignment of End Dimensions		Overall Length	Nominal Pipe Size	Off Angel Inch/mm	Off Plane						
	D			T		A,B,C,M		H		O		K		U		E		Q		P			
	(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 SP75	B16.9				
½" - 2½" 15 - 65	±1.6 -0.8		±0.8			FROM ½" TO 18 15 TO 600	FROM ¾"	FROM 1½" - 24" 15 - 600	FROM 1½" - 8" 15 - 200							±3	±3.17	½" - 4" 15 - 100	±1	±2			
3" - 3½" 80 - 90	±1.6	±0.80	±1.6	Not Less Than 87.5% Nominal Thk	Not Less Than 87.5% Nominal Thk		±1.60	±2	±1.60	±6	±6.35	±6.0	±6.4	±1	±0.8	±6	±6.35	5" - 8" 125 - 200	±2	±4			
4" 100																		10" - 12" 250 - 300	±3	±5			
5" - 6" 125 - 150																		14" - 16" 350 - 400	±3	±7			
8" 200	+2.4 -1.6	+1.60 -0.80																	18" - 24" 450 - 600	±4	16" - 24" 400 - 600 1.6	±10	
10" - 18" 250 - 450	+4 -3.2	+2.38 -0.80	±3.2					±2.40		10" - 24" +2.38 250 - 600		±10	±10							26" - 30" 650 - 750	±5	26" - 36" 650 - 900 2.4	±10
20" - 24" 500 - 600	+6.4 -4.8	3.17 0.79																		32" - 42" 800 - 1050	±5	±13	
26" - 30" 650 - 750	+6.4 -4.8	±4.8	±4.8					±3		FROM 26" - 48" 650NB - 1200 NB ±5										44" - 48" 1100 - 1200	±5	32" - 48" 950 - 1200 3.2	±20
32" - 48" 800 - 1200	+6.4 -4.8							±5												42 - 48" 1050 - 1200	±5	±20	

