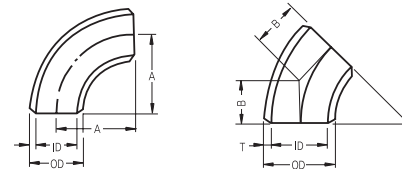


90° Elbow (Long, Short)
45° Elbow (Long)

Sch5s, Sch10s, Sch40s, Sch80s



ASME B16.9

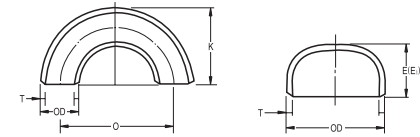
(Unit : mm)

Nominal Pipe Size	Outside Diameter O.D	Center to End			5S	
		Long		Short	T	I.D
		A	B	A		
1/2	21.3	38	16		1.65	18.0
3/4	26.7	38	19		1.65	23.4
1	33.4	38	22	25	1.65	30.1
1-1/4	42.2	48	25	32	1.65	38.9
1-1/2	48.3	57	29	38	1.65	45.0
2	60.3	76	35	51	1.65	57.0
2-1/2	73.0	95	44	64	2.11	68.8
3	88.9	114	51	76	2.11	84.7
3-1/2	101.6	133	57	89	2.11	97.4
4	114.3	152	64	102	2.11	110.1
5	141.3	190	79	127	2.77	135.8
6	168.3	229	95	152	2.77	162.8
8	219.1	305	127	203	2.77	213.6
10	273.0	381	159	254	3.40	266.2
12	323.8	457	190	305	3.96	315.9
14	355.6	533	222	356	3.96	347.7
16	406.4	610	254	406	4.19	398.0
18	457.0	686	286	457	4.19	448.6
20	508.0	762	318	508	4.78	498.4
22	559.0	838	343	559	4.78	549.4
24	610.0	914	381	610	5.54	598.9
30	762.0	1143	470		6.35	749.3

10S		40S		80S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	
2.11	17.1	2.77	15.8	3.73	13.8	1/2
2.11	22.5	2.87	21.0	3.91	18.9	3/4
2.77	27.9	3.38	26.6	4.55	24.3	1
2.77	36.7	3.56	35.1	4.85	32.5	1-1/4
2.77	42.8	3.68	40.9	5.08	38.1	1-1/2
2.77	54.8	3.91	52.5	5.54	49.2	2
3.05	66.9	5.16	62.7	7.01	59.0	2-1/2
3.05	82.8	5.49	77.9	7.62	73.7	3
3.05	95.5	5.74	90.1	8.08	85.4	3-1/2
3.05	108.2	6.02	102.3	8.56	97.2	4
3.40	134.5	6.55	128.2	9.53	122.2	5
3.40	161.5	7.11	154.1	10.97	146.4	6
3.76	211.6	8.18	202.7	12.70	193.7	8
4.19	264.6	9.27	254.5	12.70	247.6	10
4.57	314.7	9.53	304.7	12.70	298.4	12
4.78	346.0	9.53	336.5	12.70	330.2	14
4.78	396.8	9.53	387.3	12.70	381.0	16
4.78	447.4	9.53	437.9	12.70	431.6	18
5.54	496.9	9.53	488.9	12.70	482.6	20
5.54	547.9					22
6.35	597.3	9.53	590.9	12.70	584.6	24
7.92	746.2					30

180° Elbow (Long, Short) Cap

Sch5s, Sch10s, Sch40s, Sch80s



ASME B16.9, MSS SP-43

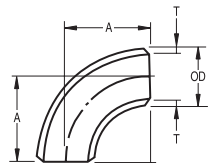
Nominal Pipe Size	Outside Diameter O.D	Wall Thickness				Length
		5S	10S	40S	80S	E
1/2	21.3	1.65	2.11	2.77	3.73	25
3/4	26.7	1.65	2.11	2.87	3.91	25
1	33.4	1.65	2.77	3.38	4.55	38
1-1/4	42.2	1.65	2.77	3.56	4.85	38
1-1/2	48.3	1.65	2.77	3.68	5.08	38
2	60.3	1.65	2.77	3.91	5.54	38
2-1/2	73.0	2.11	3.05	5.16	7.01	38
3	88.9	2.11	3.05	5.49	7.62	51
3-1/2	101.6	2.11	3.05	5.74	8.08	64
4	114.3	2.11	3.05	6.02	8.56	64
5	141.3	2.77	3.40	6.55	9.53	76
6	168.3	2.77	3.40	7.11	10.97	89
8	219.1	2.77	3.76	8.18	12.70	102
10	273.0	3.40	4.19	9.27	12.70	127
12	323.8	3.96	4.57	9.53	12.70	152
14	355.6	3.96	4.78	9.53	12.70	165
16	406.4	4.19	4.78	9.53	12.70	178
18	457.0	4.19	4.78	9.53	12.70	203
20	508.0	4.78	5.54	9.53	12.70	229
22	559.0	4.78	5.54			254
24	610.0	5.54	6.35	9.53	12.70	267
30	762.0	6.35	7.92			267

(Unit : mm)

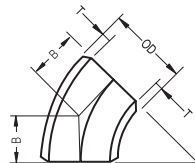
Nominal Pipe Size	Limiting Wall Thickness for Length E	Length E1	180° Elbow			
			Long		Short	
			O	K	O	K
1/2	4.57	25		48		
3/4	3.81	25		51		
1	4.57	38		56	51	41
1-1/4	4.83	38	95	70	64	52
1-1/2	5.08	38	114	83	76	62
2	5.59	44	152	106	102	81
2-1/2	7.11	51	190	132	127	100
3	7.62	64	229	159	152	121
3-1/2	8.13	76	267	184	178	140
4	8.64	76	305	210	203	159
5	9.65	89	381	262	254	197
6	10.92	102	457	313	305	237
8	12.70	127	610	414	406	313
10	12.70	152	762	518	508	391
12	12.70	178	914	619	610	467
14	12.70	191	1067	711	711	533
16	12.70	203	1219	813	813	610
18	12.70	229	1372	914	914	686
20	12.70	254	1524	1016	1016	762
22	12.70	254	1676	1118	1118	838
24	12.70	305	1829	1219	1219	914
30						

Special Fittings Elbow (90°,45°)

90° Elbow



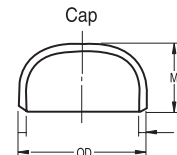
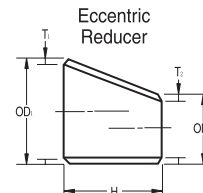
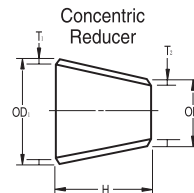
45° Elbow



(Unit : mm)

Nominal Pipe Size	ELBOW					
	OD	Wall Thickness		LONG		SHORT
		STD	X-S	A	B	A
50	1270.0	9.53	12.70	1905.0	789.1	1270.0
52	1320.8	9.53	12.70	1981.2	820.6	1320.8
54	1371.6	9.53	12.70	2057.4	852.2	1371.6
56	1422.4	9.53	12.70	2133.6	883.8	1422.4
58	1473.2	9.53	12.70	2209.8	915.3	1473.2
60	1524.0	9.53	12.70	2286.0	946.9	1524.0
62	1574.8	9.53	12.70	2362.2	978.5	1574.8
64	1625.6	9.53	12.70	2438.4	1010.0	1625.6
66	1676.4	9.53	12.70	2514.6	1041.6	1676.4
68	1727.2	9.53	12.70	2590.8	1073.2	1727.2
70	1778.0	9.53	12.70	2667.0	1104.7	1778.0
72	1828.8	9.53	12.70	2743.2	1136.3	1828.8
74	1879.6	9.53	12.70	2819.4	1167.8	1879.6
76	1930.4	9.53	12.70	2895.6	1199.4	1930.4
78	1981.2	9.53	12.70	2971.8	1231.0	1981.2
80	2032.0	9.53	12.70	3048.0	1211.7	2032.0
82	2082.8	9.53	12.70	3124.2	1294.1	2082.8

Special Fittings Reducer, Cap



(Unit : mm)

Nominal Pipe Size	REDUCER / CAP		
	OD	Wall Thickness	
		STD	X-S
50	1270.0	9.53	12.70
52	1320.8	9.53	12.70
54	1371.6	9.53	12.70
56	1422.4	9.53	12.70
58	1473.2	9.53	12.70
60	1524.0	9.53	12.70
62	1574.8	9.53	12.70
64	1625.6	9.53	12.70
66	1676.4	9.53	12.70
68	1727.2	9.53	12.70
70	1778.0	9.53	12.70
72	1828.8	9.53	12.70
74	1879.6	9.53	12.70
76	1930.4	9.53	12.70
78	1981.2	9.53	12.70
80	2032.0	9.53	12.70
82	2082.8	9.53	12.70