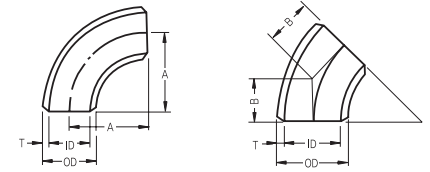


90° Elbow (Long, Short)
45° Elbow (Long)

STD, Sch40, X-S, Sch80, Sch160, XX-S



ASME B16.9

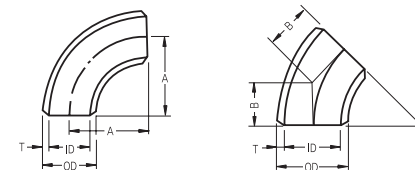
(Unit : mm)

Nominal Pipe Size	Outside Diameter O.D	Center to End			STD		Sch40	
		Long		Short	T	I.D	T	I.D
		A	B	A				
1/2	21.3	38	16		2.77	15.8	2.77	15.8
3/4	26.7	38	19		2.87	21.0	2.87	21.0
1	33.4	38	22	25	3.38	26.6	3.38	26.6
1-1/4	42.2	48	25	32	3.56	35.1	3.56	35.1
1-1/2	48.3	57	29	38	3.68	40.9	3.68	40.9
2	60.3	76	35	51	3.91	52.5	3.91	52.5
2-1/2	73.0	95	44	64	5.16	62.7	5.16	62.7
3	88.9	114	51	76	5.49	77.9	5.49	77.9
3-1/2	101.6	133	57	89	5.74	90.1	5.74	90.1
4	114.3	152	64	102	6.02	102.3	6.02	102.3
5	141.3	190	79	127	6.55	128.2	6.55	128.2
6	168.3	229	95	152	7.11	154.1	7.11	154.1
8	219.1	305	127	203	8.18	202.7	8.18	202.7
10	273.0	381	159	254	9.27	254.5	9.27	254.5
12	323.8	457	190	305	9.53	304.7	10.31	303.2
14	355.6	533	222	356	9.53	336.5	11.13	333.3
16	406.4	610	254	406	9.53	387.3	12.70	381.0
18	457.0	686	286	457	9.53	437.9	14.27	428.5
20	508.0	762	318	508	9.53	488.9	15.09	477.8
22	559.0	838	343	559	9.53	539.9		
24	610.0	914	381	610	9.53	590.9	17.48	575.0
26	660.0	991	406		9.53	640.9		
28	711.0	1067	438		9.53	691.9		
30	762.0	1143	470		9.53	742.9		
32	813.0	1219	502		9.53	793.9	17.48	778.0

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
3.73	13.8	3.73	13.8	4.78	11.7	7.47	6.4	1/2
3.91	18.9	3.91	18.9	5.56	15.6	7.82	11.1	3/4
4.55	24.3	4.55	24.3	6.35	20.7	9.09	15.2	1
4.85	32.5	4.85	32.5	6.35	29.5	9.70	22.8	1-1/4
5.08	38.1	5.08	38.1	7.14	34.0	10.15	28.0	1-1/2
5.54	49.2	5.54	49.2	8.74	42.8	11.07	38.2	2
7.01	59.0	7.01	59.0	9.53	53.9	14.02	45.0	2-1/2
7.62	73.7	7.62	73.7	11.13	66.6	15.24	58.4	3
8.08	85.4	8.08	85.4					3-1/2
8.56	97.2	8.56	97.2	13.49	87.3	17.12	80.1	4
9.53	122.2	9.53	122.2	15.88	109.5	19.05	103.2	5
10.97	146.4	10.97	146.4	18.26	131.8	21.95	124.4	6
12.70	193.7	12.70	193.7	23.01	173.1	22.23	174.6	8
12.70	247.6	15.09	242.8	28.58	215.8	25.40	222.2	10
12.70	298.4	17.48	288.8	33.32	257.2	25.40	273.0	12
12.70	330.2	19.05	317.5	35.71	284.2			14
12.70	381.0	21.44	363.5	40.49	325.4			16
12.70	431.6	23.83	409.3	45.24	366.5			18
12.70	482.6	26.19	455.6	50.01	408.0			20
12.70	533.6	28.58	501.8	53.98	451.0			22
12.70	584.6	30.96	548.1	59.54	490.9			24
12.70	634.6							26
12.70	685.6							28
12.70	736.6							30
12.70	787.6							32

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

STD, Sch40, X-S, Sch80, Sch160, XX-S



(Unit : mm)

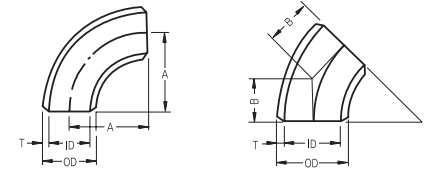
ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Center to End			STD		Sch40	
		Long		Short	T	I.D	T	I.D
		A	B	A				
34	864.0	1295	533		9.53	844.9	17.48	829.0
36	914.0	1372	565		9.53	894.9	19.05	875.9
38	965.0	1448	600		9.53	945.9		
40	1016.0	1524	632		9.53	996.9		
42	1067.0	1600	660		9.53	1047.9		
44	1118.0	1676	695		9.53	1098.9		
46	1168.0	1753	727		9.53	1148.9		
48	1219.0	1829	759		9.53	1199.9		

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
12.70	838.6							34
12.70	888.6							36
12.70	939.6							38
12.70	990.6							40
12.70	1041.6							42
12.70	1092.6							44
12.70	1142.6							46
12.70	1193.6							48

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

Sch20, Sch60, Sch100, Sch120, Sch140



ASME B16.9

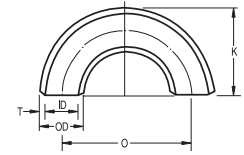
Nominal Pipe Size	Outside Diameter O.D	Center to End			Sch20		Sch60	
		Long		Short	T	I.D	T	I.D
		A	B	A				
4	114.3	152	64	64				
5	141.3	190	79	79				
6	168.3	229	95	95				
8	219.1	305	127	127	6.35	206.4	10.31	198.5
10	273.0	381	159	159	6.35	260.3	12.70	247.6
12	323.8	457	190	190	6.35	311.1	14.27	295.3
14	355.6	533	222	222	7.92	339.8	15.09	325.4
16	406.4	610	254	254	7.92	390.6	16.66	373.1
18	457.0	686	286	286	7.92	441.2	19.05	418.9
20	508.0	762	318	318	9.53	488.9	20.62	466.8
22	559.0	838	343	343	9.53	539.9	22.23	514.5
24	610.0	914	381	381	9.53	590.9	24.61	560.8

(Unit : mm)

Sch100		Sch120		Sch140		-	-	Nominal Pipe Size
T	I.D	T	I.D	T	I.D	-	-	
		11.13	92.0					4
		12.70	115.9					5
		14.27	139.8					6
15.09	188.9	18.26	182.6	20.62	177.9			8
18.26	236.5	21.44	230.1	25.40	222.2			10
21.44	280.9	25.40	273.0	28.58	266.6			12
23.83	307.9	27.79	300.0	31.75	292.1			14
26.19	354.0	30.96	344.5	36.53	333.3			16
29.36	398.3	34.93	387.1	39.67	377.7			18
32.54	442.9	38.10	431.8	44.45	419.1			20
34.93	489.1	41.28	476.4	47.63	463.7			22
38.89	532.2	46.02	518.0	52.37	505.3			24

180° Elbow (Long, Short)

STD, Sch40, X-S, Sch80, Sch160, XX-S



ASME (mm)

ASME B16.9

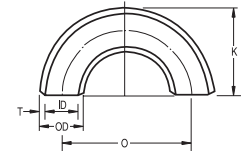
Nominal Pipe Size	Outside Diameter O.D.	Long		Short		STD	
		O	K	O	K	T	I.D.
1/2	21.3	76	48			2.77	15.8
3/4	26.7	76	51			2.87	21.0
1	33.4	76	56	51	41	3.38	26.6
1-1/4	42.2	95	70	64	52	3.56	35.1
1-1/2	48.3	114	83	76	62	3.68	40.9
2	60.3	152	106	102	81	3.91	52.5
2-1/2	73.0	190	132	127	100	5.16	62.7
3	88.9	229	159	152	121	5.49	77.9
3-1/2	101.6	267	184	178	140	5.74	90.1
4	114.3	305	210	203	159	6.02	102.3
5	141.3	381	262	254	197	6.55	128.2
6	168.3	457	313	305	237	7.11	154.1
8	219.1	610	414	406	313	8.18	202.7
10	273.0	762	518	508	391	9.27	254.5
12	323.8	914	619	610	467	9.53	304.7
14	355.6	1067	711	711	533	9.53	336.5
16	406.4	1219	813	813	610	9.53	387.3
18	457.0	1372	914	914	686	9.53	437.9
20	508.0	1524	1016	1016	762	9.53	488.9
22	559.0	1676	1118	1118	838	9.53	539.9
24	610.0	1829	1219	1219	914	9.53	590.9

(Unit : mm)

Sch40		X-S		Sch80		Sch160		XX-S	
T	I.D.	T	I.D.	T	I.D.	T	I.D.	T	I.D.
2.77	15.8	3.73	13.8	3.73	13.8	4.78	11.7	7.47	6.4
2.87	21.0	3.91	18.9	3.91	18.9	5.56	15.6	7.82	11.1
3.38	26.6	4.55	24.3	4.55	24.3	6.35	20.7	9.09	15.2
3.56	35.1	4.85	32.5	4.85	32.5	6.35	29.5	9.70	22.8
3.68	40.9	5.08	38.1	5.08	38.1	7.14	34.0	10.15	28.0
3.91	52.5	5.54	49.2	5.54	49.2	8.74	42.8	11.07	38.2
5.16	62.7	7.01	59.0	7.01	59.0	9.53	53.9	14.02	45.0
5.49	77.9	7.62	73.7	7.62	73.7	11.13	66.6	15.24	58.4
5.74	90.1	8.08	85.4	8.08	85.4				
6.02	102.3	8.56	97.2	8.56	97.2	13.49	87.3	17.12	80.1
6.55	128.2	9.53	122.2	9.53	122.2	15.88	109.5	19.05	103.2
7.11	154.1	10.97	146.4	10.97	146.4	18.26	131.8	21.95	124.4
8.18	202.7	12.70	193.7	12.70	193.7	23.01	173.1	22.23	174.6
9.27	254.5	12.70	247.6	15.09	242.8	28.58	215.8	25.40	222.2
10.31	303.2	12.70	298.4	17.48	288.8	33.32	257.2	25.40	273.0
11.13	333.3	12.70	330.2	19.05	317.5	35.71	284.2		
12.70	381.0	12.70	381.0	21.44	363.5	40.49	325.4		
14.27	428.5	12.70	431.6	23.83	409.3	45.24	366.5		
15.09	477.8	12.70	482.6	26.19	455.6	50.01	408.0		
		12.70	533.6	28.58	501.8	53.98	451.0		
17.48	575.0	12.70	584.6	30.96	548.1	59.54	490.9		

180° Elbow (Long, Short)

Sch20, Sch60, Sch100, Sch120, Sch140



ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Long		Short		Sch20	
		O	K	O	K	T	I.D
4	114.3	305	210	203	159		
5	141.3	381	262	254	197		
6	168.3	457	313	305	237		
8	219.1	610	414	406	313	6.35	206.4
10	273.0	762	518	508	391	6.35	260.3
12	323.8	914	619	610	467	6.35	311.1
14	355.6	1067	711	711	533	7.92	339.8
16	406.4	1219	813	813	610	7.92	390.6
18	457.0	1372	914	914	686	7.92	441.2
20	508.0	1524	1016	1016	762	9.53	488.9
22	559.0	1676	1118	1118	838	9.53	539.9
24	610.0	1829	1219	1219	914	9.53	590.9

(Unit : mm)

Sch60		Sch100		Sch120		Sch140		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
				11.13	92.0			4
				12.70	115.9			5
				14.27	139.8			6
10.31	198.5	15.09	188.9	18.26	182.6	20.62	177.9	8
12.70	247.6	18.26	236.5	21.44	230.1	25.40	222.2	10
14.27	295.3	21.44	280.9	25.40	273.0	28.58	266.6	12
15.09	325.4	23.83	307.9	27.79	300.0	31.75	292.1	14
16.66	373.1	26.19	354.0	30.96	344.5	36.53	333.3	16
19.05	418.9	29.36	398.3	34.93	387.1	39.67	377.7	18
20.62	466.8	32.54	442.9	38.10	431.8	44.45	419.1	20
22.23	514.5	34.93	489.1	41.28	476.4	47.63	463.7	22
24.61	560.8	38.89	532.2	46.02	518.0	52.37	505.3	24