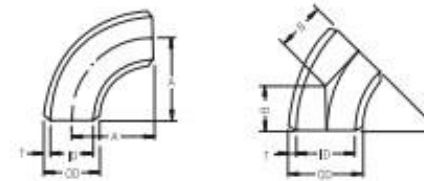


90° Elbow (Long, Short)  
45° Elbow (Long)

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



ASME (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				
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

(Unit : mm)

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

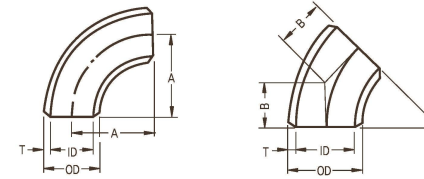
**90° Elbow (Long, Short)**  
**45° Elbow (Long)**

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

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		

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications



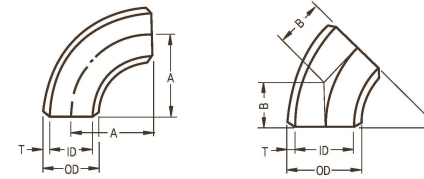
(Unit : mm)

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

ASME (mm)

**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

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

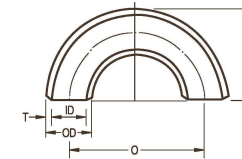
(Unit : mm)

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

ASME (mm)

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

- Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E."
- Length E<sub>1</sub> applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS 24 and smaller for NPS 26 and larger, length E<sub>1</sub> shall be by agreement between manufacturer and Purchaser.

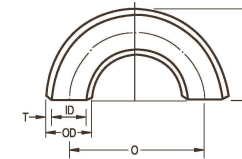
(Unit : mm)

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		

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

## 180° Elbow (Long, Short)

Sch20, Sch60, Sch100, Sch120, Sch140



ASME (mm)

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

- Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E."
- Length E1 applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS 24 and smaller for NPS 26 and larger, length E1 shall be by agreement between manufacturer and Purchaser.

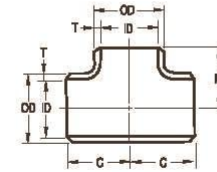
(Unit : mm)

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

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

Tee (Straight)

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



ASME (mm)

ASME B16.9

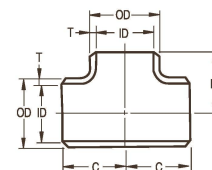
Nominal Pipe Size	Outside Diameter O.D	Center to End		STD		Sch40	
		Run C	Outlet M	T	I.D	T	I.D
1/2	21.3	25	25	2.77	15.8	2.77	15.8
3/4	26.7	29	29	2.87	21.0	2.87	21.0
1	33.4	38	38	3.38	26.6	3.38	26.6
1-1/4	42.2	48	48	3.56	35.1	3.56	35.1
1-1/2	48.3	57	57	3.68	40.9	3.68	40.9
2	60.3	64	64	3.91	52.5	3.91	52.5
2-1/2	73.0	76	76	5.16	62.7	5.16	62.7
3	88.9	86	86	5.49	77.9	5.49	77.9
3-1/2	101.6	95	95	5.74	90.1	5.74	90.1
4	114.3	105	105	6.02	102.3	6.02	102.3
5	141.3	124	124	6.55	128.2	6.55	128.2
6	168.3	143	143	7.11	154.1	7.11	154.1
8	219.1	178	178	8.18	202.7	8.18	202.7
10	273.0	216	216	9.27	254.5	9.27	254.5
12	323.8	254	254	9.53	304.7	10.31	303.2
14	355.6	279	279	9.53	336.5	11.13	333.3
16	406.4	305	305	9.53	387.3	12.70	381.0
18	457.0	343	343	9.53	437.9	14.27	428.5
20	508.0	381	381	9.53	488.9	15.09	477.8
22	559.0	419	419	9.53	539.9		
24	610.0	432	432	9.53	590.9	17.48	575.0
26	660.0	495	495	9.53	640.9		
28	711.0	521	521	9.53	691.9		
30	762.0	559	559	9.53	742.9		
32	813.0	597	597	9.53	793.9	17.48	778.0
34	864.0	635	635	9.53	844.9	17.48	829.0

(Unit : mm)

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
12.70	838.6							34

# Tee (Straight)

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



ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Center to End		STD		Sch40	
		Run C	Outlet M	T	I.D	T	I.D
36	914.0	673	673	9.53	894.9	19.05	875.9
38	965.0	711	711	9.53	945.9		
40	1016.0	749	749	9.53	996.9		
42	1067.0	762	711	9.53	1047.9		
44	1118.0	813	762	9.53	1098.9		
46	1168.0	851	800	9.53	1148.9		
48	1219.0	889	838	9.53	1199.9		

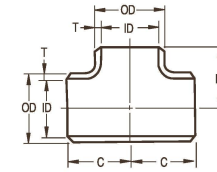
(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
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

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

# Tee (Straight)

Sch20, Sch60, Sch100, Sch120



ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Center to End		Sch20	
		Run C	Outlet M	T	I.D
4	114.3	105	105		
5	141.3	124	124		
6	168.3	143	143		
8	219.1	178	178	6.35	206.4
10	273.0	216	216	6.35	260.3
12	323.8	254	254	6.35	311.1
14	355.6	279	279	7.92	339.8
16	406.4	305	305	7.92	390.6
18	457.0	343	343	7.92	441.2
20	508.0	381	381	9.53	488.9
22	559.0	419	419	9.53	539.9
24	610.0	432	432	9.53	590.9

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

(Unit : mm)

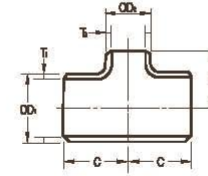
Nominal Pipe Size	Sch60		Sch100		Sch120	
	T	I.D	T	I.D	T	I.D
4					11.13	92.0
5					12.70	115.9
6					14.27	139.8
8	10.31	198.5	15.09	188.9	18.26	182.6
10	12.70	247.6	18.26	236.5	21.44	230.1
12	14.27	295.3	21.44	280.9	25.40	273.0
14	15.09	325.4	23.83	307.9	27.79	300.0
16	16.66	373.1	26.19	354.0	30.96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

ASME (mm)



Tee (Reducing)

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



ASME (mm)

ASME B16.9

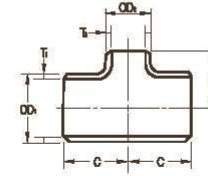
Nominal Pipe Size	Outside Diameter		Center to End		STD	
	OD1	OD2	Run C	Outlet M	T1	T2
3/4 X 3/4 X 1/2	26.7	21.3	29	29	2.87	2.77
1 X 1 X 3/4	33.4	26.7	38	38	3.38	2.87
1 X 1 X 1/2	33.4	21.3	38	38	3.38	2.77
1-1/4 X 1-1/4 X 1	42.2	33.4	48	48	3.56	3.38
1-1/4 X 1-1/4 X 3/4	42.2	26.7	48	48	3.56	2.87
1-1/2 X 1-1/2 X 1-1/4	48.3	42.2	57	57	3.68	3.56
1-1/2 X 1-1/2 X 1	48.3	33.4	57	57	3.68	3.38
1-1/2 X 1-1/2 X 3/4	48.3	26.7	57	57	3.68	2.87
2 X 2 X 1-1/2	60.3	48.3	64	60	3.91	3.68
2 X 2 X 1-1/4	60.3	42.2	64	57	3.91	3.56
2 X 2 X 1	60.3	33.4	64	51	3.91	3.38
2-1/2 X 2-1/2 X 2	73.0	60.3	76	70	5.16	3.91
2-1/2 X 2-1/2 X 1-1/2	73.0	48.3	76	67	5.16	3.68
2-1/2 X 2-1/2 X 1-1/4	73.0	42.2	76	64	5.16	3.56
3 X 3 X 2-1/2	88.9	73.0	86	83	5.49	5.16
3 X 3 X 2	88.9	60.3	86	76	5.49	3.91
3 X 3 X 1-1/2	88.9	48.3	86	73	5.49	3.68
3-1/2 X 3-1/2 X 3	101.6	88.9	95	92	5.74	5.49
3-1/2 X 3-1/2 X 2-1/2	101.6	73.0	95	89	5.74	5.16
3-1/2 X 3-1/2 X 2	101.6	60.3	95	83	5.74	3.91
3-1/2 X 3-1/2 X 1-1/2	101.6	48.3	95	79	5.74	3.68
4 X 4 X 3-1/2	114.3	101.6	105	102	6.02	5.74
4 X 4 X 3	114.3	88.9	105	98	6.02	5.49
4 X 4 X 2-1/2	114.3	73.0	105	95	6.02	5.16
4 X 4 X 2	114.3	60.3	105	89	6.02	3.91
5 X 5 X 4	141.3	114.3	124	117	6.55	6.02

(Unit : mm)

Sch40		X-S		Sch80		Sch160		XX-S	
T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
2.87	2.77	3.91	3.73	3.91	3.73	5.56	4.78	7.82	7.47
3.38	2.87	4.55	3.91	4.55	3.91	6.35	5.56	9.09	7.82
3.38	2.77	4.55	3.73	4.55	3.73	6.35	4.78	9.09	7.47
3.56	3.38	4.85	4.55	4.85	4.55	6.35	6.35	9.70	9.09
3.56	2.87	4.85	3.91	4.85	3.91	6.35	5.56	9.70	7.82
3.68	3.56	5.08	4.85	5.08	4.85	7.14	6.35	10.15	9.70
3.68	3.38	5.08	4.55	5.08	4.55	7.14	6.35	10.15	9.09
3.68	2.87	5.08	3.91	5.08	3.91	7.14	5.56	10.15	7.82
3.91	3.68	5.54	5.08	5.54	5.08	8.74	7.14	11.07	10.15
3.91	3.56	5.54	4.85	5.54	4.85	8.74	6.35	11.07	9.70
3.91	3.38	5.54	4.55	5.54	4.55	8.74	6.35	11.07	9.09
5.16	3.91	7.01	5.54	7.01	5.54	9.53	8.74	14.02	11.07
5.16	3.68	7.01	5.08	7.01	5.08	9.53	7.14	14.02	10.15
5.16	3.56	7.01	4.85	7.01	4.85	9.53	6.35	14.02	9.70
5.49	5.16	7.62	7.01	7.62	7.01	11.13	9.53	15.24	14.02
5.49	3.91	7.62	5.54	7.62	5.54	11.13	8.74	15.24	11.07
5.49	3.68	7.62	5.08	7.62	5.08	11.13	7.14	15.24	10.15
5.74	5.49	8.08	7.62	8.08	7.62		11.13		15.24
5.74	5.16	8.08	7.01	8.08	7.01		9.53		14.02
5.74	3.91	8.08	5.54	8.08	5.54		8.74		11.07
5.74	3.68	8.08	5.08	8.08	5.08		7.14		10.15
6.02	5.74	8.56	8.08	8.56	8.08	13.49		17.12	
6.02	5.49	8.56	7.62	8.56	7.62	13.49	11.13	17.12	15.24
6.02	5.16	8.56	7.01	8.56	7.01	13.49	9.53	17.12	14.02
6.02	3.91	8.56	5.54	8.56	5.54	13.49	8.74	17.12	11.07
6.55	6.02	9.53	8.56	9.53	8.56	15.88	13.49	19.05	17.12

Tee (Reducing)

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



ASME (mm)

ASME B16.9

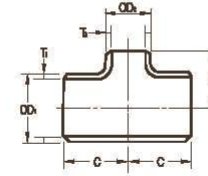
Nominal Pipe Size	Outside Diameter		Center to End		STD	
	OD1	OD2	Run C	Outlet M	T1	T2
5 X 5 X 3-1/2	141.3	101.6	124	114	6.55	5.74
5 X 5 X 3	141.3	88.9	124	111	6.55	5.49
5 X 5 X 2-1/2	141.3	73.0	124	108	6.55	5.16
6 X 6 X 5	168.3	141.3	143	137	7.11	6.55
6 X 6 X 4	168.3	114.3	143	130	7.11	6.02
6 X 6 X 3-1/2	168.3	101.6	143	127	7.11	5.74
6 X 6 X 3	168.3	88.9	143	124	7.11	5.49
8 X 8 X 6	219.1	168.3	178	168	8.18	7.11
8 X 8 X 5	219.1	141.3	178	162	8.18	6.55
8 X 8 X 4	219.1	114.3	178	156	8.18	6.02
10 X 10 X 8	273.0	219.1	216	203	9.27	8.18
10 X 10 X 6	273.0	168.3	216	194	9.27	7.11
10 X 10 X 5	273.0	141.3	216	191	9.27	6.55
12 X 12 X 10	323.8	273.0	254	241	9.53	9.27
12 X 12 X 8	323.8	219.1	254	229	9.53	8.18
12 X 12 X 6	323.8	168.3	254	219	9.53	7.11
14 X 14 X 12	355.6	323.8	279	270	9.53	9.53
14 X 14 X 10	355.6	273.0	279	257	9.53	9.27
14 X 14 X 8	355.6	219.1	279	248	9.53	8.18
16 X 16 X 14	406.4	355.6	305	305	9.53	9.53
16 X 16 X 12	406.4	323.8	305	295	9.53	9.53
16 X 16 X 10	406.4	273.0	305	283	9.53	9.27
18 X 18 X 16	457.0	406.4	343	330	9.53	9.53
18 X 18 X 14	457.0	355.6	343	330	9.53	9.53
18 X 18 X 12	457.0	323.8	343	321	9.53	9.53
20 X 20 X 18	508.0	457.0	381	368	9.53	9.53

(Unit : mm)

Sch40		X-S		Sch80		Sch160		XX-S	
T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
6.55	5.74	9.53	8.08	9.53	8.08	15.88		19.05	
6.55	5.49	9.53	7.62	9.53	7.62	15.88	11.13	19.05	15.24
6.55	5.16	9.53	7.01	9.53	7.01	15.88	9.53	19.05	14.02
7.11	6.55	10.97	9.53	10.97	9.53	18.26	15.88	21.95	19.05
7.11	6.02	10.97	8.56	10.97	8.56	18.26	13.49	21.95	17.12
7.11	5.74	10.97	8.08	10.97	8.08	18.26		21.95	
7.11	5.49	10.97	7.62	10.97	7.62	18.26	11.13	21.95	15.24
8.18	7.11	12.70	10.97	12.70	10.97	23.01	18.26	22.23	21.95
8.18	6.55	12.70	9.53	12.70	9.53	23.01	15.88	22.23	19.05
8.18	6.02	12.70	8.56	12.70	8.56	23.01	13.49	22.23	17.12
9.27	8.18	12.70	12.70	15.09	12.70	28.58	23.01	25.40	22.23
9.27	7.11	12.70	10.97	15.09	10.97	28.58	18.26	25.40	21.95
9.27	6.55	12.70	9.53	15.09	9.53	28.58	15.88	25.40	19.05
10.31	9.27	12.70	12.70	17.48	15.09	33.32	28.58	25.40	25.40
10.31	8.18	12.70	12.70	17.48	12.70	33.32	23.01	25.40	22.23
10.31	7.11	12.70	10.97	17.48	10.97	33.32	18.26	25.40	21.95
11.13	10.31	12.70	12.70	19.05	17.48	35.71	33.32		25.40
11.13	9.27	12.70	12.70	19.05	15.09	35.71	28.58		25.40
11.13	8.18	12.70	12.70	19.05	12.70	35.71	23.01		22.23
12.70	11.13	12.70	12.70	21.44	19.05	40.49	35.71		
12.70	10.31	12.70	12.70	21.44	17.48	40.49	33.32		25.40
12.70	9.27	12.70	12.70	21.44	15.09	40.49	28.58		25.40
14.27	12.70	12.70	12.70	23.83	21.44	45.24	40.49		
14.27	11.13	12.70	12.70	23.83	19.05	45.24	35.71		
14.27	10.31	12.70	12.70	23.83	17.48	45.24	33.32		25.40
15.09	14.27	12.70	12.70	26.19	23.83	50.01	45.24		

Tee (Reducing)

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



ASME B16.9

Nominal Pipe Size	Outside Diameter		Center to End		STD	
	OD1	OD2	Run C	Outlet M	T1	T2
20 X 20 X 16	508.0	406.4	381	356	9.53	9.53
20 X 20 X 14	508.0	355.6	381	356	9.53	9.53
22 X 22 X 20	559.0	508.0	419	406	9.53	9.53
22 X 22 X 18	559.0	457.0	419	394	9.53	9.53
22 X 22 X 16	559.0	406.4	419	381	9.53	9.53
24 X 24 X 22	610.0	559.0	432	432	9.53	9.53
24 X 24 X 20	610.0	508.0	432	432	9.53	9.53
24 X 24 X 18	610.0	457.0	432	419	9.53	9.53
26 X 26 X 22	660.0	559.0	495	470	9.53	9.53
26 X 26 X 18	660.0	457.0	495	444	9.53	9.53
26 X 26 X 16	660.0	406.4	495	432	9.53	9.53
28 X 28 X 24	711.0	610.0	521	508	9.53	9.53
28 X 28 X 20	711.0	508.0	521	483	9.53	9.53
28 X 28 X 18	711.0	457.0	521	470	9.53	9.53
30 X 30 X 26	762.0	660.0	559	546	9.53	9.53
30 X 30 X 22	762.0	559.0	559	521	9.53	9.53
30 X 30 X 20	762.0	508.0	559	508	9.53	9.53
32 X 32 X 28	813.0	711.0	597	559	9.53	9.53
32 X 32 X 24	813.0	610.0	597	546	9.53	9.53
32 X 32 X 22	813.0	559.0	597	559	9.53	9.53
34 X 34 X 30	864.0	762.0	635	610	9.53	9.53
34 X 34 X 26	864.0	660.0	635	597	9.53	9.53
34 X 34 X 22	864.0	559.0	635	572	9.53	9.53
36 X 36 X 32	914.0	813.0	673	648	9.53	9.53
36 X 36 X 28	914.0	711.0	673	622	9.53	9.53
36 X 36 X 24	914.0	610.0	673	610	9.53	9.53

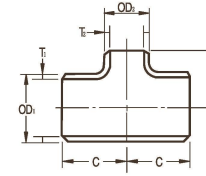
(Unit : mm)

Sch40		X-S		Sch80		Sch160		XX-S	
T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
15.09	12.70	12.70	12.70	26.19	21.44	50.01	40.49		
15.09	11.13	12.70	12.70	26.19	19.05	50.01	35.71		
	15.09	12.70	12.70	28.58	26.19	53.98	50.01		
	14.27	12.70	12.70	28.58	23.83	53.98	45.24		
	12.70	12.70	12.70	28.58	21.44	53.98	40.49		
17.48		12.70	12.70	30.96	28.58	59.54	53.98		
17.48	15.09	12.70	12.70	30.96	26.19	59.54	50.01		
17.48	14.27	12.70	12.70	30.96	23.83	59.54	45.24		
		12.70	12.70		28.58		53.98		
	14.27	12.70	12.70		23.83		45.24		
	12.70	12.70	12.70		21.44		40.49		
	17.48	12.70	12.70		30.96		59.54		
	15.09	12.70	12.70		26.19		50.01		
	14.27	12.70	12.70		23.83		45.24		
		12.70	12.70						
		12.70	12.70		28.58		53.98		
	15.09	12.70	12.70		26.19		50.01		
17.48	17.48	12.70	12.70						
17.48	17.48	12.70	12.70		30.96		59.54		
17.48	17.48	12.70	12.70		28.58		53.98		
17.48		12.70	12.70						
17.48		12.70	12.70						
17.48		12.70	12.70		28.58		53.98		
19.05	17.48	12.70	12.70						
19.05		12.70	12.70						
19.05	17.48	12.70	12.70		30.96		59.54		

ASME (mm)

Tee (Reducing)

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



ASME (mm)

ASME B16.9

Nominal Pipe Size	Outside Diameter		Center to End		STD	
	OD1	OD2	Run C	Outlet M	T1	T2
38 X 38 X 34	965.0	864.0	711	698	9.53	9.53
38 X 38 X 30	965.0	762.0	711	673	9.53	9.53
38 X 38 X 26	965.0	660.0	711	648	9.53	9.53
40 X 40 X 36	1016.0	914.0	749	737	9.53	9.53
40 X 40 X 32	1016.0	813.0	749	711	9.53	9.53
40 X 40 X 28	1016.0	711.0	749	673	9.53	9.53
42 X 42 X 38	1067.0	965.0	762	711	9.53	9.53
42 X 42 X 34	1067.0	864.0	762	711	9.53	9.53
42 X 42 X 30	1067.0	762.0	762	711	9.53	9.53
44 X 44 X 40	1118.0	1016.0	813	749	9.53	9.53
44 X 44 X 36	1118.0	914.0	813	724	9.53	9.53
44 X 44 X 32	1118.0	813.0	813	711	9.53	9.53
46 X 46 X 42	1168.0	1067.0	851	787	9.53	9.53
46 X 46 X 38	1168.0	965.0	851	762	9.53	9.53
46 X 46 X 34	1168.0	864.0	851	749	9.53	9.53
48 X 48 X 44	1219.0	1118.0	889	838	9.53	9.53
48 X 48 X 40	1219.0	1016.0	889	813	9.53	9.53
48 X 48 X 36	1219.0	914.0	889	787	9.53	9.53

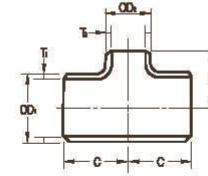
(Unit : mm)

Sch40		X-S		Sch80		Sch160		XX-S	
T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
	17.48	12.70	12.70						
		12.70	12.70						
		12.70	12.70						
	19.05	12.70	12.70						
	17.48	12.70	12.70						
		12.70	12.70						
		12.70	12.70						
	17.48	12.70	12.70						
		12.70	12.70						
		12.70	12.70						
	19.05	12.70	12.70						
	17.48	12.70	12.70						
		12.70	12.70						
		12.70	12.70						
	17.48	12.70	12.70						
		12.70	12.70						
		12.70	12.70						
	19.05	12.70	12.70						

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

Tee (Reducing)

Sch20, Sch60, Sch100, Sch120, Sch140



ASME (mm)

ASME B16.9

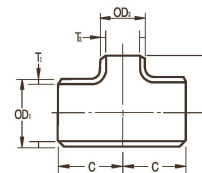
Nominal Pipe Size	Outside Diameter		Center to End		Sch20	
	OD1	OD2	Run C	Outlet M	T1	T2
5 x 5 x 4	141.3	114.3	124	117		
6 x 6 x 5	168.3	141.3	143	137		
6 x 6 x 4	168.3	114.3	143	130		
8 x 8 x 6	219.1	168.3	178	168	6.35	
8 x 8 x 5	219.1	141.3	178	162	6.35	
8 x 8 x 4	219.1	114.3	178	156	6.35	
10 x 10 x 8	273.0	219.1	216	203	6.35	6.35
10 x 10 x 6	273.0	168.3	216	194	6.35	
10 x 10 x 5	273.0	141.3	216	191	6.35	
12 x 12 x 10	323.8	273.0	254	241	6.35	6.35
12 x 12 x 8	323.8	219.1	254	229	6.35	6.35
12 x 12 x 6	323.8	168.3	254	219	6.35	
14 x 14 x 12	355.6	323.8	279	270	7.92	6.35
14 x 14 x 10	355.6	273.0	279	257	7.92	6.35
14 x 14 x 8	355.6	219.1	279	248	7.92	6.35
16 x 16 x 14	406.4	355.6	305	305	7.92	7.92
16 x 16 x 12	406.4	323.8	305	295	7.92	6.35
16 x 16 x 10	406.4	273.0	305	283	7.92	6.35
18 x 18 x 16	457.0	406.4	343	330	7.92	7.92
18 x 18 x 14	457.0	355.6	343	330	7.92	7.92
18 x 18 x 12	457.0	323.8	343	321	7.92	6.35
20 x 20 x 18	508.0	457.0	381	368	9.53	7.92
20 x 20 x 16	508.0	406.4	381	356	9.53	7.92
20 x 20 x 14	508.0	355.6	381	356	9.53	7.92
22 x 22 x 20	559.0	508.0	419	406	9.53	9.53
22 x 22 x 18	559.0	457.0	419	394	9.53	7.92

(Unit : mm)

Sch60		Sch100		Sch120		Sch140	
T1	T2	T1	T2	T1	T2	T1	T2
				12.70	11.13		
				14.27	12.70		
				14.27	11.13		
10.31		15.09		18.26	14.27	20.62	
10.31		15.09		18.26	12.70	20.62	
10.31		15.09		18.26	11.13	20.62	
12.70	10.31	18.26	15.09	21.44	18.26	25.40	20.62
12.70		18.26		21.44	14.27	25.40	
12.70		18.26		21.44	12.70	25.40	
14.27	12.70	21.44	18.26	25.40	21.44	28.58	25.40
14.27	10.31	21.44	15.09	25.40	18.26	28.58	20.62
14.27		21.44		25.40	14.27	28.58	
15.09	14.27	23.83	21.44	27.79	25.40	31.75	28.58
15.09	12.70	23.83	18.26	27.79	21.44	31.75	25.40
15.09	10.31	23.83	15.09	27.79	18.26	31.75	20.62
16.66	15.09	26.19	23.83	30.96	27.79	36.53	31.75
16.66	14.27	26.19	21.44	30.96	25.40	36.53	28.58
16.66	12.70	26.19	18.26	30.96	21.44	36.53	25.40
19.05	16.66	29.36	26.19	34.93	30.96	39.67	36.53
19.05	15.09	29.36	23.83	34.93	27.79	39.67	31.75
19.05	14.27	29.36	21.44	34.93	25.40	39.67	28.58
20.62	19.05	32.54	29.36	38.10	34.93	44.45	39.67
20.62	16.66	32.54	26.19	38.10	30.96	44.45	36.53
20.62	15.09	32.54	23.83	38.10	27.79	44.45	31.75
22.23	20.62	34.93	32.54	41.28	38.10	47.63	44.45
22.23	19.05	34.93	29.36	41.28	34.93	47.63	39.67

# Tee (Reducing)

Sch20, Sch60, Sch100, Sch120, Sch140



ASME (mm)

ASME B16.9

Nominal Pipe Size	Outside Diameter		Center to End		Sch20	
	OD1	OD2	Run C	Outlet M	T1	T2
22 x 22 x 16	559.0	406.4	419	381	9.53	7.92
24 x 24 x 22	610.0	559.0	432	432	9.53	9.53
24 x 24 x 20	610.0	508.0	432	432	9.53	9.53
24 x 24 x 18	610.0	457.0	432	419	9.53	7.92

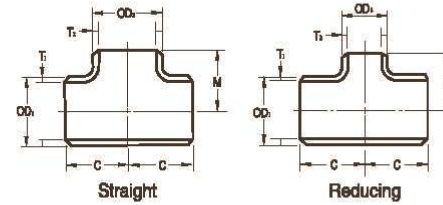
(Unit : mm)

Sch60		Sch100		Sch120		Sch140	
T1	T2	T1	T2	T1	T2	T1	T2
22.23	16.66	34.93	26.19	41.28	30.96	47.63	36.53
24.61	22.23	38.89	34.93	46.02	41.28	52.37	47.63
24.61	20.62	38.89	32.54	46.02	38.10	52.37	44.45
24.61	19.05	38.89	29.36	46.02	34.93	52.37	39.67

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

Tee

Special Fittings



(Unit : mm)

Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
50x50x50	1270.0	1270.0	927.1	876.3
50x50x48	1270.0	1219.2	927.1	838.2
50x50x46	1270.0	1168.4	927.1	812.8
50x50x44	1270.0	1117.6	927.1	787.4
50x50x42	1270.0	1066.8	927.1	762.0
50x50x40	1270.0	1016.0	927.1	736.6
50x50x38	1270.0	965.2	927.1	736.6
52x52x52	1320.8	1320.8	965.2	914.4
52x52x50	1320.8	1270.0	965.2	889.0
52x52x48	1320.8	1219.2	965.2	863.6
52x52x46	1320.8	1168.4	965.2	838.2
52x52x44	1320.8	1117.6	965.2	812.8
52x52x42	1320.8	1066.8	965.2	787.4
52x52x40	1320.8	1016.0	965.2	762.0
52x52x38	1320.8	965.2	965.2	762.0
54x54x54	1371.6	1371.6	1003.3	952.5
54x54x52	1371.6	1320.8	1003.3	914.4
54x54x50	1371.6	1270.0	1003.3	889.0
54x54x48	1371.6	1219.2	1003.3	863.6
54x54x46	1371.6	1168.4	1003.3	838.2
54x54x44	1371.6	1117.6	1003.3	812.8
54x54x40	1371.6	1016.0	1003.3	787.4
54x54x28	1371.6	711.2	1003.3	787.4
54x54x20	1371.6	508.0	1003.3	787.4
56x56x56	1422.4	1422.4	1041.4	965.2
56x56x54	1422.4	1371.6	1041.4	939.8

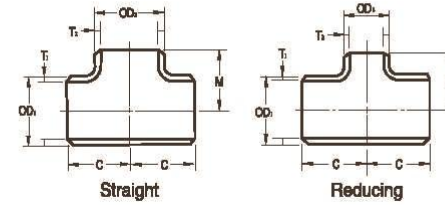
(Unit : mm)

Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
56x56x52	1422.4	1320.8	1041.4	914.4
56x56x50	1422.4	1270.0	1041.4	889.0
56x56x48	1422.4	1219.2	1041.4	863.6
56x56x46	1422.4	1168.4	1041.4	838.2
56x56x44	1422.4	1117.6	1041.4	812.8
56x56x40	1422.4	1016.0	1041.4	812.8
56x56x28	1422.4	711.2	1041.4	812.8
56x56x20	1422.4	508.0	1041.4	812.8
58x58x58	1473.2	1473.2	1079.5	990.6
58x58x56	1473.2	1422.4	1079.5	965.2
58x58x54	1473.2	1371.6	1079.5	939.8
58x58x52	1473.2	1320.8	1079.5	914.4
58x58x50	1473.2	1270.0	1079.5	889.0
58x58x48	1473.2	1219.2	1079.5	863.6
58x58x46	1473.2	1168.4	1079.5	838.2
58x58x44	1473.2	1117.6	1079.5	838.2
60x60x60	1524.0	1524.0	1117.6	1016.0
60x60x58	1524.0	1473.2	1117.6	990.6
60x60x56	1524.0	1422.4	1117.6	965.2
60x60x54	1524.0	1371.6	1117.6	939.8
60x60x52	1524.0	1320.8	1117.6	914.4
60x60x50	1524.0	1270.0	1117.6	889.0
60x60x48	1524.0	1219.2	1117.6	863.6
60x60x46	1524.0	1168.4	1117.6	863.6
60x60x40	1524.0	1016.0	1117.6	863.6
60x60x28	1524.0	711.2	1117.6	863.6

ASME (mm)

Tee

Special Fittings



(Unit : mm)

Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
60x60x20	1524.0	508.0	1117.6	863.6
62x62x62	1574.8	1574.8	1143.0	1028.7
62x62x60	1574.8	1524.0	1143.0	990.6
62x62x58	1574.8	1473.2	1143.0	965.2
62x62x56	1574.8	1422.4	1143.0	939.8
62x62x54	1574.8	1371.6	1143.0	914.4
62x62x52	1574.8	1320.8	1143.0	889.0
62x62x50	1574.8	1270.0	1143.0	889.0
64x64x64	1625.6	1625.6	1168.4	1041.4
64x64x62	1625.6	1574.8	1168.4	1016.0
64x64x60	1625.6	1524.0	1168.4	990.6
64x64x58	1625.6	1473.2	1168.4	965.2
64x64x56	1625.6	1422.4	1168.4	939.8
64x64x54	1625.6	1371.6	1168.4	914.4
64x64x52	1625.6	1320.8	1168.4	914.4
66x66x66	1676.4	1676.4	1219.2	1066.8
66x66x64	1676.4	1625.6	1219.2	1041.4
66x66x62	1676.4	1574.8	1219.2	1016.0
66x66x60	1676.4	1524.0	1219.2	990.6
66x66x58	1676.4	1473.2	1219.2	965.2
66x66x56	1676.4	1422.4	1219.2	939.8
66x66x54	1676.4	1371.6	1219.2	939.8
68x68x68	1727.2	1727.2	1244.6	1092.2
68x68x66	1727.2	1676.4	1244.6	1066.8
68x68x64	1727.2	1625.6	1244.6	1041.4
68x68x62	1727.2	1574.8	1244.6	1016.0

(Unit : mm)

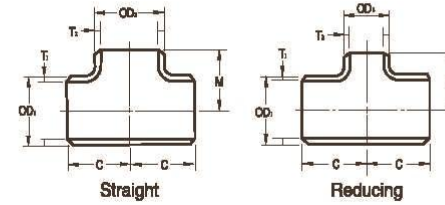
Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
68x68x60	1727.2	1524.0	1244.6	990.6
68x68x58	1727.2	1473.2	1244.6	965.2
68x68x56	1727.2	1422.4	1244.6	965.2
70x70x70	1778.0	1778.0	1270.0	1117.6
70x70x68	1778.0	1727.2	1270.0	1092.2
70x70x66	1778.0	1676.4	1270.0	1066.8
70x70x64	1778.0	1625.6	1270.0	1041.4
70x70x62	1778.0	1574.8	1270.0	1016.0
70x70x60	1778.0	1524.0	1270.0	990.6
70x70x58	1778.0	1473.2	1270.0	990.6
72x72x72	1828.8	1828.8	1320.8	1143.0
72x72x70	1828.8	1778.0	1320.8	1117.6
72x72x68	1828.8	1727.2	1320.8	1092.2
72x72x66	1828.8	1676.4	1320.8	1066.8
72x72x64	1828.8	1625.6	1320.8	1041.4
72x72x62	1828.8	1574.8	1320.8	1016.0
72x72x60	1828.8	1524.0	1320.8	1016.0
74x74x74	1879.6	1879.6	1346.2	1168.4
74x74x72	1879.6	1828.8	1346.2	1143.0
74x74x70	1879.6	1778.0	1346.2	1117.6
74x74x68	1879.6	1727.2	1346.2	1092.2
74x74x66	1879.6	1676.4	1346.2	1066.8
74x74x64	1879.6	1625.6	1346.2	1041.4
74x74x62	1879.6	1574.8	1346.2	1041.4
76x76x76	1930.4	1930.4	1371.6	1193.8
76x76x74	1930.4	1879.6	1371.6	1168.4

ASME (mm)



Tee

Special Fittings



(Unit : mm)

Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
76x76x72	1930.4	1828.8	1371.6	1143.0
76x76x70	1930.4	1778.0	1371.6	1117.6
76x76x68	1930.4	1727.2	1371.6	1092.2
76x76x66	1930.4	1676.4	1371.6	1066.8
76x76x64	1930.4	1625.6	1371.6	1066.8
78x78x78	1981.2	1981.2	1397.0	1219.2
78x78x76	1981.2	1930.4	1397.0	1193.8
78x78x74	1981.2	1879.6	1397.0	1168.4
78x78x72	1981.2	1828.8	1397.0	1143.0
78x78x70	1981.2	1778.0	1397.0	1117.6
78x78x68	1981.2	1727.2	1397.0	1092.2
78x78x66	1981.2	1676.4	1397.0	1092.2
80x80x80	2032.0	2032.0	1422.4	1244.6
80x80x78	2032.0	1981.2	1422.4	1219.2

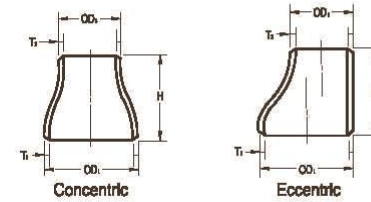
(Unit : mm)

Nominal Pipe Size	Outside Diameter		Denter to End	
	OD1	OD2	Run C	Outlet M
80x80x76	2032.0	1930.4	1422.4	1193.8
80x80x74	2032.0	1879.6	1422.4	1168.4
80x80x72	2032.0	1828.8	1422.4	1143.0
80x80x70	2032.0	1778.0	1422.4	1117.6
80x80x68	2032.0	1727.2	1422.4	1117.6
82x82x82	2082.8	2082.8	1447.8	1270.0
82x82x80	2082.8	2032.0	1447.8	1244.6
82x82x78	2082.8	1981.2	1447.8	1219.2
82x82x76	2082.8	1930.4	1447.8	1193.8
82x82x74	2082.8	1879.6	1447.8	1168.4
82x82x72	2082.8	1828.8	1447.8	1143.0
82x82x70	2082.8	1778.0	1447.8	1143.0
84x84x84	2133.6	2133.6	1473.2	1295.4

ASME (mm)

# Reducer

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



ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End H	STD		Sch40	
	OD1	OD2		T1	T2	T1	T2
3/4 X 1/2	26.7	21.3	38	2.87	2.77	2.87	2.77
1 X 3/4	33.4	26.7	51	3.38	2.87	3.38	2.87
1 X 1/2	33.4	21.3	51	3.38	2.77	3.38	2.77
1-1/4 X 1	42.2	33.4	51	3.56	3.38	3.56	3.38
1-1/4 X 3/4	42.2	26.7	51	3.56	2.87	3.56	2.87
1-1/4 X 1/2	42.2	21.3	51	3.56	2.77	3.56	2.77
1-1/2 X 1-1/4	48.3	42.2	64	3.68	3.56	3.68	3.56
1-1/2 X 1	48.3	33.4	64	3.68	3.38	3.68	3.38
1-1/2 X 3/4	48.3	26.7	64	3.68	2.87	3.68	2.87
2 X 1-1/2	60.3	48.3	76	3.91	3.68	3.91	3.68
2 X 1-1/4	60.3	42.2	76	3.91	3.56	3.91	3.56
2 X 1	60.3	33.4	76	3.91	3.38	3.91	3.38
2 X 3/4	60.3	26.7	76	3.91	2.87	3.91	2.87
2-1/2 X 2	73.0	60.3	89	5.16	3.91	5.16	3.91
2-1/2 X 1-1/2	73.0	48.3	89	5.16	3.68	5.16	3.68
2-1/2 X 1-1/4	73.0	42.2	89	5.16	3.56	5.16	3.56
2-1/2 X 1	73.0	33.4	89	5.16	3.38	5.16	3.38
3 X 2-1/2	88.9	73.0	89	5.49	5.16	5.49	5.16
3 X 2	88.9	60.3	89	5.49	3.91	5.49	3.91
3 X 1-1/2	88.9	48.3	89	5.49	3.68	5.49	3.68
3 X 1-1/4	88.9	42.2	89	5.49	3.56	5.49	3.56
3-1/2 X 3	101.6	88.9	102	5.74	5.49	5.74	5.49
3-1/2 X 2-1/2	101.6	73.0	102	5.74	5.16	5.74	5.16
3-1/2 X 2	101.6	60.3	102	5.74	3.91	5.74	3.91
3-1/2 X 1-1/2	101.6	48.3	102	5.74	3.68	5.74	3.68
4 X 3-1/2	114.3	101.6	102	6.02	5.74	6.02	5.74

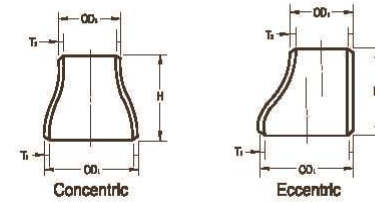
(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T1	T2	T1	T2	T1	T2	T1	T2	
3.91	3.73	3.91	3.73	5.56	4.78	7.82	7.47	3/4 X 1/2
4.55	3.91	4.55	3.91	6.35	5.56	9.09	7.82	1 X 3/4
4.55	3.73	4.55	3.73	6.35	4.78	9.09	7.47	1 X 1/2
4.85	4.55	4.85	4.55	6.35	6.35	9.70	9.09	1-1/4 X 1
4.85	3.91	4.85	3.91	6.35	5.56	9.70	7.82	1-1/4 X 3/4
4.85	3.73	4.85	3.73	6.35	4.78	9.70	7.47	1-1/4 X 1/2
5.08	4.85	5.08	4.85	7.14	6.35	10.15	9.70	1-1/2 X 1-1/4
5.08	4.55	5.08	4.55	7.14	6.35	10.15	9.09	1-1/2 X 1
5.08	3.91	5.08	3.91	7.14	5.56	10.15	7.82	1-1/2 X 3/4
5.54	5.08	5.54	5.08	8.74	7.14	11.07	10.15	2 X 1-1/2
5.54	4.85	5.54	4.85	8.74	6.35	11.07	9.70	2 X 1-1/4
5.54	4.55	5.54	4.55	8.74	6.35	11.07	9.09	2 X 1
5.54	3.91	5.54	3.91	8.74	5.56	11.07	7.82	2 X 3/4
7.01	5.54	7.01	5.54	9.53	8.74	14.02	11.07	2-1/2 X 2
7.01	5.08	7.01	5.08	9.53	7.14	14.02	10.15	2-1/2 X 1-1/2
7.01	4.85	7.01	4.85	9.53	6.35	14.02	9.70	2-1/2 X 1-1/4
7.01	4.55	7.01	4.55	9.53	6.35	14.02	9.09	2-1/2 X 1
7.62	7.01	7.62	7.01	11.13	9.53	15.24	14.02	3 X 2-1/2
7.62	5.54	7.62	5.54	11.13	8.74	15.24	11.07	3 X 2
7.62	5.08	7.62	5.08	11.13	7.14	15.24	10.15	3 X 1-1/2
7.62	4.85	7.62	4.85	11.13	6.35	15.24	9.70	3 X 1-1/4
8.08	7.62	8.08	7.62		11.13		15.24	3-1/2 X 3
8.08	7.01	8.08	7.01		9.53		14.02	3-1/2 X 2-1/2
8.08	5.54	8.08	5.54		8.74		11.07	3-1/2 X 2
8.08	5.08	8.08	5.08		7.14		10.15	3-1/2 X 1-1/2
8.56	8.08	8.56	8.08	13.49		17.12		4 X 3-1/2

ASME (mm)

# Reducer

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



ASME (mm)

ASME B16.9

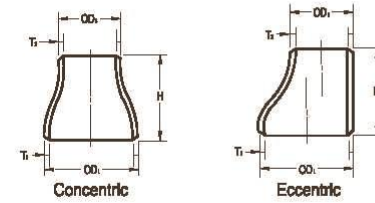
Nominal Pipe Size	Outside Diameter		End to End H	STD		Sch40	
	OD1	OD2		T1	T2	T1	T2
4 X 3	114.3	88.9	102	6.02	5.49	6.02	5.49
4 X 2-1/2	114.3	73.0	102	6.02	5.16	6.02	5.16
4 X 2	114.3	60.3	102	6.02	3.91	6.02	3.91
5 X 4	141.3	114.3	127	6.55	6.02	6.55	6.02
5 X 3-1/2	141.3	101.6	127	6.55	5.74	6.55	5.74
5 X 3	141.3	88.9	127	6.55	5.49	6.55	5.49
5 X 2-1/2	141.3	73.0	127	6.55	5.16	6.55	5.16
6 X 5	168.3	141.3	140	7.11	6.55	7.11	6.55
6 X 4	168.3	114.3	140	7.11	6.02	7.11	6.02
6 X 3-1/2	168.3	101.6	140	7.11	5.74	7.11	5.74
6 X 3	168.3	88.9	140	7.11	5.49	7.11	5.49
6 X 2-1/2	168.3	73.0	140	7.11	5.16	7.11	5.16
8 X 6	219.1	168.3	152	8.18	7.11	8.18	7.11
8 X 5	219.1	141.3	152	8.18	6.55	8.18	6.55
8 X 4	219.1	114.3	152	8.18	6.02	8.18	6.02
8 X 3-1/2	219.1	101.6	152	8.18	5.74	8.18	5.74
10 X 8	273.0	219.1	178	9.27	8.18	9.27	8.18
10 X 6	273.0	168.3	178	9.27	7.11	9.27	7.11
10 X 5	273.0	141.3	178	9.27	6.55	9.27	6.55
10 X 4	273.0	114.3	178	9.27	6.02	9.27	6.02
12 X 10	323.8	273.0	203	9.53	9.27	10.31	9.27
12 X 8	323.8	219.1	203	9.53	8.18	10.31	8.18
12 X 6	323.8	168.3	203	9.53	7.11	10.31	7.11
12 X 5	323.8	141.3	203	9.53	6.55	10.31	6.55
14 X 12	355.6	323.8	330	9.53	9.53	11.13	10.31
14 X 10	355.6	273.0	330	9.53	9.27	11.13	9.27

(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T1	T2	T1	T2	T1	T2	T1	T2	
8.56	7.62	8.56	7.62	13.49	11.13	17.12	15.24	4 X 3
8.56	7.01	8.56	7.01	13.49	9.53	17.12	14.02	4 X 2-1/2
8.56	5.54	8.56	5.54	13.49	8.74	17.12	11.07	4 X 2
9.53	8.56	9.53	8.56	15.88	13.49	19.05	17.12	5 X 4
9.53	8.08	9.53	8.08	15.88		19.05		5 X 3-1/2
9.53	7.62	9.53	7.62	15.88	11.13	19.05	15.24	5 X 3
9.53	7.01	9.53	7.01	15.88	9.53	19.05	14.02	5 X 2-1/2
10.97	9.53	10.97	9.53	18.26	15.88	21.95	19.05	6 X 5
10.97	8.56	10.97	8.56	18.26	13.49	21.95	17.12	6 X 4
10.97	8.08	10.97	8.08	18.26		21.95		6 X 3-1/2
10.97	7.62	10.97	7.62	18.26	11.13	21.95	15.24	6 X 3
10.97	7.01	10.97	7.01	18.26	9.53	21.95	14.02	6 X 2-1/2
12.70	10.97	12.70	10.97	23.01	18.26	22.23	21.95	8 X 6
12.70	9.53	12.70	9.53	23.01	15.88	22.23	19.05	8 X 5
12.70	8.56	12.70	8.56	23.01	13.49	22.23	17.12	8 X 4
12.70	8.08	12.70	8.08	23.01		22.23		8 X 3-1/2
12.70	12.70	15.09	12.70	28.58	23.01	25.40	22.23	10 X 8
12.70	10.97	15.09	10.97	28.58	18.26	25.40	21.95	10 X 6
12.70	9.53	15.09	9.53	28.58	15.88	25.40	19.05	10 X 5
12.70	8.56	15.09	8.56	28.58	13.49	25.40	17.12	10 X 4
12.70	12.70	17.48	15.09	33.32	28.58	25.40	25.40	12 X 10
12.70	12.70	17.48	12.70	33.32	23.01	25.40	22.23	12 X 8
12.70	10.97	17.48	10.97	33.32	18.26	25.40	21.95	12 X 6
12.70	9.53	17.48	9.53	33.32	15.88	25.40	19.05	12 X 5
12.70	12.70	19.05	17.48	35.71	33.32		25.40	14 X 12
12.70	12.70	19.05	15.09	35.71	28.58		25.40	14 X 10

# Reducer

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



ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End H	STD		Sch40	
	OD1	OD2		T1	T2	T1	T2
14 X 8	355.6	219.1	330	9.53	8.18	11.13	8.18
16 X 14	406.4	355.6	356	9.53	9.53	12.70	11.13
16 X 12	406.4	323.8	356	9.53	9.53	12.70	10.31
16 X 10	406.4	273.0	356	9.53	9.27	12.70	9.27
18 X 16	457.0	406.4	381	9.53	9.53	14.27	12.70
18 X 14	457.0	355.6	381	9.53	9.53	14.27	11.13
18 X 12	457.0	323.8	381	9.53	9.53	14.27	10.31
20 X 18	508.0	457.0	508	9.53	9.53	15.09	14.27
20 X 16	508.0	406.4	508	9.53	9.53	15.09	12.70
20 X 14	508.0	355.6	508	9.53	9.53	15.09	11.13
22 X 20	559.0	508.0	508	9.53	9.53		15.09
22 X 18	559.0	457.0	508	9.53	9.53		14.27
22 X 16	559.0	406.4	508	9.53	9.53		12.70
24 X 22	610.0	559.0	508	9.53	9.53	17.48	
24 X 20	610.0	508.0	508	9.53	9.53	17.48	15.09
24 X 18	610.0	457.0	508	9.53	9.53	17.48	14.27
26 X 22	660.0	559.0	610	9.53	9.53		
26 X 18	660.0	457.0	610	9.53	9.53		14.27
26 X 16	660.0	406.4		9.53	9.53		12.70
28 X 24	711.0	610.0	610	9.53	9.53		17.48
28 X 20	711.0	508.0	610	9.53	9.53		15.09
28 X 18	711.0	457.0	610	9.53	9.53		14.27
30 X 26	762.0	660.0	610	9.53	9.53		
30 X 22	762.0	559.0		9.53	9.53		
30 X 20	762.0	508.0	610	9.53	9.53		15.09
32 X 28	813.0	711.0	610	9.53	9.53	17.48	

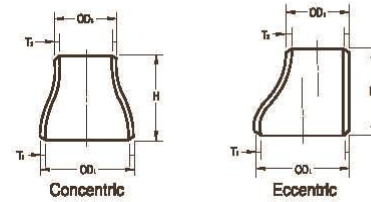
(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T1	T2	T1	T2	T1	T2	T1	T2	
12.70	12.70	19.05	12.70	35.71	23.01		22.23	14 X 8
12.70	12.70	21.44	19.05	40.49	35.71			16 X 14
12.70	12.70	21.44	17.48	40.49	33.32		25.40	16 X 12
12.70	12.70	21.44	15.09	40.49	28.58		25.40	16 X 10
12.70	12.70	23.83	21.44	45.24	40.49			18 X 16
12.70	12.70	23.83	19.05	45.24	35.71			18 X 14
12.70	12.70	23.83	17.48	45.24	33.32		25.40	18 X 12
12.70	12.70	26.19	23.83	50.01	45.24			20 X 18
12.70	12.70	26.19	21.44	50.01	40.49			20 X 16
12.70	12.70	26.19	19.05	50.01	35.71			20 X 14
12.70	12.70	28.58	26.19	53.98	50.01			22 X 20
12.70	12.70	28.58	23.83	53.98	45.24			22 X 18
12.70	12.70	28.58	21.44	53.98	40.49			22 X 16
12.70	12.70	30.96	28.58	59.54	53.98			24 X 22
12.70	12.70	30.96	26.19	59.54	50.01			24 X 20
12.70	12.70	30.96	23.83	59.54	45.24			24 X 18
12.70	12.70		28.58		53.98			26 X 22
12.70	12.70		23.83		45.24			26 X 18
12.70	12.70		21.44		40.49			26 X 16
12.70	12.70		30.96		59.54			28 X 24
12.70	12.70		26.19		50.01			28 X 20
12.70	12.70		23.83		45.24			28 X 18
12.70	12.70							30 X 26
12.70	12.70		28.58		53.98			30 X 22
12.70	12.70		26.19		50.01			30 X 20
12.70	12.70							32 X 28

ASME (mm)

# Reducer

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



ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End H	STD		Sch40	
	OD1	OD2		T1	T2	T1	T2
32 X 24	813.0	610.0	610	9.53	9.53	17.48	17.48
32 X 22	813.0	559.0		9.53	9.53	17.48	
34 X 30	864.0	762.0	610	9.53	9.53	17.48	
34 X 26	864.0	660.0	610	9.53	9.53	17.48	
34 X 22	864.0	559.0		9.53	9.53	17.48	
36 X 32	914.0	813.0	610	9.53	9.53	19.05	17.48
36 X 28	914.0	711.0		9.53	9.53	19.05	
36 X 24	914.0	610.0	610	9.53	9.53	19.05	17.48
38 X 34	965.0	864.0	610	9.53	9.53		17.48
38 X 30	965.0	762.0	610	9.53	9.53		
38 X 26	965.0	660.0	610	9.53	9.53		
40 X 36	1016.0	914.0	610	9.53	9.53		19.05
40 X 32	1016.0	813.0	610	9.53	9.53		17.48
40 X 28	1016.0	711.0		9.53	9.53		
42 X 38	1067.0	965.0	610	9.53	9.53		
42 X 34	1067.0	864.0	610	9.53	9.53		17.48
42 X 30	1067.0	762.0	610	9.53	9.53		
44 X 40	1118.0	1016.0	610	9.53	9.53		
44 X 36	1118.0	914.0	610	9.53	9.53		19.05
44 X 32	1118.0	813.0		9.53	9.53		17.48
46 X 42	1168.0	1067.0	711	9.53	9.53		
46 X 38	1168.0	965.0	711	9.53	9.53		
46 X 34	1168.0	864.0		9.53	9.53		17.48
48 X 44	1219.0	1118.0	711	9.53	9.53		
48 X 40	1219.0	1016.0	711	9.53	9.53		
48 X 36	1219.0	914.0		9.53	9.53		19.05

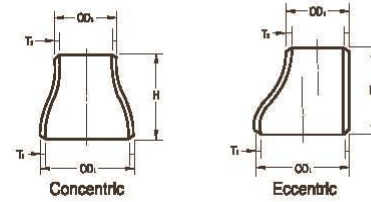
(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T1	T2	T1	T2	T1	T2	T1	T2	
12.70	12.70		30.96		59.54			32 X 24
12.70	12.70		28.58		53.98			32 X 22
12.70	12.70							34 X 30
12.70	12.70							34 X 26
12.70	12.70		28.58		53.98			34 X 22
12.70	12.70							36 X 32
12.70	12.70							36 X 28
12.70	12.70		30.96		59.54			36 X 24
12.70	12.70							38 X 34
12.70	12.70							38 X 30
12.70	12.70							38 X 26
12.70	12.70							40 X 36
12.70	12.70							40 X 32
12.70	12.70							40 X 28
12.70	12.70							42 X 38
12.70	12.70							42 X 34
12.70	12.70							42 X 30
12.70	12.70							44 X 40
12.70	12.70							44 X 36
12.70	12.70							44 X 32
12.70	12.70							46 X 42
12.70	12.70							46 X 38
12.70	12.70							46 X 34
12.70	12.70							48 X 44
12.70	12.70							48 X 40
12.70	12.70							48 X 36

ASME (mm)

# Reducer

Sch20, Sch60, Sch100, Sch120, Sch140



ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	Sch20	
	OD1	OD2	H	T1	T2
5 X 4	141.3	114.3	127		
6 X 5	168.3	141.3	140		
6 X 4	168.3	114.3	140		
8 X 6	219.1	168.3	152	6.35	
8 X 5	219.1	141.3	152	6.35	
8 X 4	219.1	114.3	152	6.35	
10 X 8	273.0	219.1	178	6.35	6.35
10 X 6	273.0	168.3	178	6.35	
10 X 5	273.0	141.3	178	6.35	
10 X 4	273.0	114.3	178	6.35	
12 X 10	323.8	273.0	203	6.35	6.35
12 X 8	323.8	219.1	203	6.35	6.35
12 X 6	323.8	168.3	203	6.35	
14 X 12	355.6	323.8	330	7.92	6.35
14 X 10	355.6	273.0	330	7.92	6.35
14 X 8	355.6	219.1	330	7.92	6.35
16 X 14	406.4	355.6	356	7.92	7.92
16 X 12	406.4	323.8	356	7.92	6.35
16 X 10	406.4	273.0	356	7.92	6.35
18 X 16	457.0	406.4	381	7.92	7.92
18 X 14	457.0	355.6	381	7.92	7.92
18 X 12	457.0	323.8	381	7.92	6.35
20 X 18	508.0	457.0	508	9.53	7.92
20 X 16	508.0	406.4	508	9.53	7.92
20 X 14	508.0	355.6	508	9.53	7.92
22 X 20	559.0	508.0	508	9.53	9.53

(Unit : mm)

Sch60		Sch100		Sch120		Sch140	
T1	T2	T1	T2	T1	T2	T1	T2
				12.70	11.13		
				14.27	12.70		
				14.27	11.13		
10.31		15.09		18.26	14.27	20.62	
10.31		15.09		18.26	12.70	20.62	
10.31		15.09		18.26	11.13	20.62	
12.70	10.31	18.26	15.09	21.44	18.26	25.40	20.62
12.70		18.26		21.44	14.27	25.40	
12.70		18.26		21.44	12.70	25.40	
12.70		18.26		21.44	11.13	25.40	
14.27	12.70	21.44	18.26	25.40	21.44	28.58	25.40
14.27	10.31	21.44	15.09	25.40	18.26	28.58	20.62
14.27		21.44		25.40	14.27	28.58	
15.09	14.27	23.83	21.44	27.79	25.40	31.75	28.58
15.09	12.70	23.83	18.26	27.79	21.44	31.75	25.40
15.09	10.31	23.83	15.09	27.79	18.26	31.75	20.62
16.66	15.09	26.19	23.83	30.96	27.79	36.53	31.75
16.66	14.27	26.19	21.44	30.96	25.40	36.53	28.58
16.66	12.70	26.19	18.26	30.96	21.44	36.53	25.40
19.05	16.66	29.36	26.19	34.93	30.96	39.67	36.53
19.05	15.09	29.36	23.83	34.93	27.79	39.67	31.75
19.05	14.27	29.36	21.44	34.93	25.40	39.67	28.58
20.62	19.05	32.54	29.36	38.10	34.93	44.45	39.67
20.62	16.66	32.54	26.19	38.10	30.96	44.45	36.53
20.62	15.09	32.54	23.83	38.10	27.79	44.45	31.75
22.23	20.62	34.93	32.54	41.28	38.10	47.63	44.45

ASME (mm)

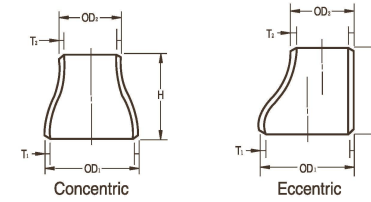
# Reducer

Sch20, Sch60, Sch100, Sch120, Sch140

ASME B16.9

Nominal Pipe Size	Outside Diameter		End to End	Sch20	
	OD1	OD2	H	T1	T2
22 X 18	559.0	457.0	508	9.53	7.92
22 X 16	559.0	406.4	508	9.53	7.92
24 X 22	610.0	559.0	508	9.53	9.53
24 X 20	610.0	508.0	508	9.53	9.53
24 X 18	610.0	457.0	508	9.53	7.92

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications



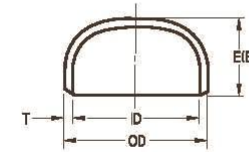
(Unit : mm)

Sch60		Sch100		Sch120		Sch140	
T1	T2	T1	T2	T1	T2	T1	T2
22.23	19.05	34.93	29.36	41.28	34.93	47.63	39.67
22.23	16.66	34.93	26.19	41.28	30.96	47.63	36.53
24.61	22.23	38.89	34.93	46.02	41.28	52.37	47.63
24.61	20.62	38.89	32.54	46.02	38.10	52.37	44.45
24.61	19.05	38.89	29.36	46.02	34.93	52.37	39.67

ASME (mm)

Cap

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



ASME (mm)

ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Length E	Limiting Wall Thickness for Length E	Length E1	STD		Sch40	
					T	I.D	T	I.D
1/2	21.3	25	4.57	25	2.77	15.8	2.77	15.8
3/4	26.7	25	3.81	25	2.87	21.0	2.87	21.0
1	33.4	38	4.57	38	3.38	26.6	3.38	26.6
1-1/4	42.2	38	4.83	38	3.56	35.1	3.56	35.1
1-1/2	48.3	38	5.08	38	3.68	40.9	3.68	40.9
2	60.3	38	5.59	44	3.91	52.5	3.91	52.5
2-1/2	73.0	38	7.11	51	5.16	62.7	5.16	62.7
3	88.9	51	7.62	64	5.49	77.9	5.49	77.9
3-1/2	101.6	64	8.13	76	5.74	90.1	5.74	90.1
4	114.3	64	8.64	76	6.02	102.3	6.02	102.3
5	141.3	76	9.65	89	6.55	128.2	6.55	128.2
6	168.3	89	10.92	102	7.11	154.1	7.11	154.1
8	219.1	102	12.70	127	8.18	202.7	8.18	202.7
10	273.0	127	12.70	152	9.27	254.5	9.27	254.5
12	323.8	152	12.70	178	9.53	304.7	10.31	303.2
14	355.6	165	12.70	191	9.53	336.5	11.13	333.3
16	406.4	178	12.70	203	9.53	387.3	12.70	381.0
18	457.0	203	12.70	229	9.53	437.9	14.27	428.5
20	508.0	229	12.70	254	9.53	488.9	15.09	477.8
22	559.0	254	12.70	254	9.53	539.9		
24	610.0	267	12.70	305	9.53	590.9	17.48	575.0
26	660.0	267			9.53	640.9		
28	711.0	267			9.53	691.9		
30	762.0	267			9.53	742.9		
32	813.0	267			9.53	793.9	17.48	778.0
34	864.0	267			9.53	844.9	17.48	829.0

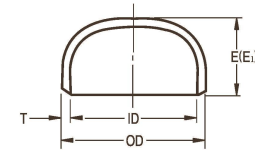
(Unit : mm)

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
12.70	838.6							34



# Cap

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



ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Length E	Limiting Wall Thickness for Length E	Length E1	STD		Sch40	
					T	I.D	T	I.D
36	914.0	267			9.53	894.9	19.05	875.9
38	965.0	305			9.53	945.9		
40	1016.0	305			9.53	996.9		
42	1067.0	305			9.53	1047.9		
44	1118.0	343			9.53	1098.9		
46	1168.0	343			9.53	1148.9		
48	1219.0	343			9.53	1199.9		

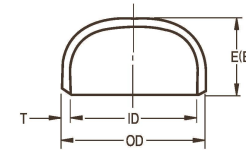
(Unit : mm)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
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

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

Cap

Sch20, Sch60, Sch100, Sch120, Sch140



ASME (mm)

ASME B16.9

Nominal Pipe Size	Outside Diameter O.D	Length E	Limiting Wall Thickness for Length E	Length E1	Sch20	
					T	I.D
4	114.3	64	8.64	76		
5	141.3	76	9.65	89		
6	168.3	89	10.92	102		
8	219.1	102	12.70	127	6.35	206.4
10	273.0	127	12.70	152	6.35	260.3
12	323.8	152	12.70	178	6.35	311.1
14	355.6	165	12.70	191	7.92	339.8
16	406.4	178	12.70	203	7.92	390.6
18	457.0	203	12.70	229	7.92	441.2
20	508.0	229	12.70	254	9.53	488.9
22	559.0	254	12.70	254	9.53	539.9
24	610.0	267	12.70	305	9.53	590.9

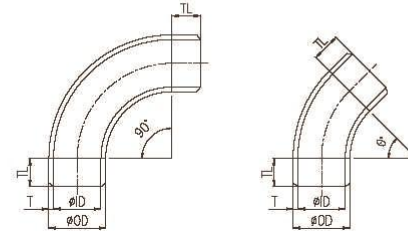
(Unit : mm)

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

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

# Pipe Bend

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



ASME B16.9 / PFI STD ES-24

Nominal Pipe Size	Outside Diameter OD	STD		Sch40	
		T	ID	T	ID
1/2	21.3	2.77	15.8	2.77	15.8
3/4	26.7	2.87	21.0	2.87	21.0
1	33.4	3.38	26.6	3.38	26.6
1 1/4	42.2	3.56	35.1	3.56	35.1
1 1/2	48.3	3.68	40.9	3.68	40.9
2	60.3	3.91	52.5	3.91	52.5
2 1/2	73.0	5.16	62.7	5.16	62.7
3	88.9	5.49	77.9	5.49	77.9
3 1/2	101.6	5.74	90.1	5.74	90.1
4	114.3	6.02	102.3	6.02	102.3
5	141.3	6.55	128.2	6.55	128.2
6	168.3	7.11	154.1	7.11	154.1
8	219.1	8.18	202.7	8.18	202.7
10	273.0	9.27	254.5	9.27	254.5
12	323.8	9.53	304.7	10.31	303.2
14	355.6	9.53	336.5	11.13	333.3
16	406.4	9.53	387.3	12.70	381.0
18	457.0	9.53	437.9	14.27	428.5
20	508.0	9.53	488.9	15.09	477.8
22	559.0	9.53	539.9		
24	610.0	9.53	590.9	17.48	575.0
26	660.0	9.53	640.9		
28	711.0	9.53	691.9		

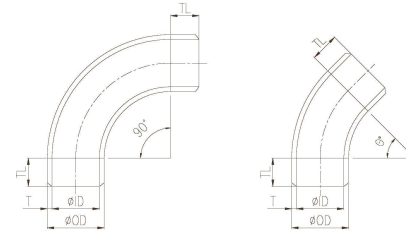
(Unit : mm)

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

ASME (mm)

# Pipe Bend

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



ASME (mm)

ASME B16.9 / PFI STD ES-24

Nominal Pipe Size	Outside Diameter OD	STD		Sch40	
		T	ID	T	ID
30	762.0	9.53	742.9		
32	813.0	9.53	793.9	17.48	778.0
34	864.0	9.53	844.9	17.48	829.0
36	914.0	9.53	894.9	19.05	875.9
38	965.0	9.53	945.9		
40	1016.0	9.53	996.9		
42	1067.0	9.53	1047.9		
44	1118.0	9.53	1098.9		
46	1168.0	9.53	1148.9		
48	1219.0	9.53	1199.9		

(Unit : mm)

X-S		Sch80		Sch160		XX-S	
T	ID	T	ID	T	ID	T	ID
12.70	736.6						
12.70	787.6						
12.70	838.6						
12.70	888.6						
12.70	939.6						
12.70	990.6						
12.70	1041.6						
12.70	1092.6						
12.70	1142.6						
12.70	1193.6						

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- TL, R, Ø : Specified in Purchaser order
- For General Bending Range See Page 168