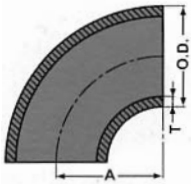
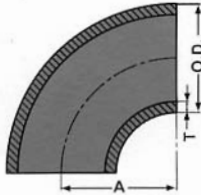


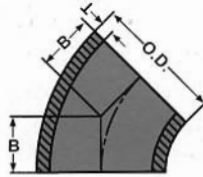
90° ELBOW
LONG RADIUS



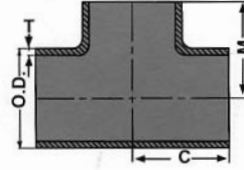
90° ELBOW
SHORT RADIUS



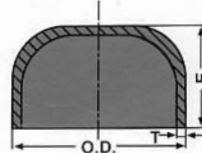
45° ELBOW
LONG RADIUS



TEE



CAP

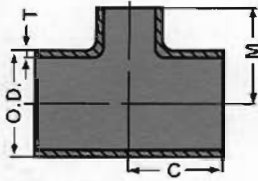


DIMENSION ANSI B16.9 (S/R ANSI B16.28)

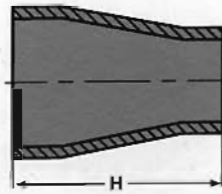
UNIT: INCH/mm

NOMINAL PIPE SIZE	OUTSIDE DIAMETER	WALL THICKNESS SCHEDULE				ELBOW			TEE	CAP	NOMINAL PIPE SIZE	
						90°		45°				
		T	L/R	S/R	L/R	C, M	E	INCH				
	INCH	O.D.	5S	10S	40S	80S	A	A	B	C, M	E	INCH
1/2	0.840	0.065	0.083	0.109	0.147	1.50	—	0.62	1.00	1.00	1/2	
	21.30	1.65	2.11	2.77	3.73	38.1	—	16	25.4	25.4		
3/4	1.050	0.065	0.083	0.113	0.154	1.12	—	0.44	1.125	1.00	3/4	
	26.70	1.65	2.11	2.87	3.91	28.5	—	11	28.6	25.4		
1	1.315	0.065	0.109	0.133	0.179	1.50	1.00	0.88	1.50	1.50	1	
	33.40	1.65	2.77	3.38	4.55	38.1	25.4	22	38.1	38.0		
1 1/4	1.660	0.065	0.109	0.140	0.191	1.88	1.25	1.00	1.88	1.50	1 1/4	
	42.2	1.65	2.77	3.56	4.85	47.5	32	25	47.6	38		
1 1/2	1.90	0.065	0.109	0.145	0.200	2.25	1.50	1.12	2.25	1.50	1 1/2	
	48.3	1.65	2.77	3.68	5.08	57.0	38	29	57.2	38		
2	2.375	0.065	0.109	0.154	0.218	3.00	2.00	1.38	2.50	1.50	2	
	60.3	1.65	2.77	3.91	5.54	76.0	51	35	63.5	38		
2 1/2	2.875	0.083	0.120	0.203	0.276	3.75	2.50	1.75	3.00	1.50	2 1/2	
	73.0	2.11	3.05	5.16	7.01	95.0	63.5	45	76.2	38		
3	3.50	0.083	0.120	0.216	0.300	4.50	3.00	2.00	3.38	2.00	3	
	88.9	2.11	3.05	5.49	7.62	114.5	76	51	85.7	51		
3 1/2	4.00	0.083	0.120	0.226	0.318	5.25	3.50	2.25	3.75	2.50	3 1/2	
	101.6	2.11	3.05	5.74	8.08	133.5	89	57	95.3	64		
4	4.50	0.083	0.120	0.237	0.337	6.00	4.00	2.50	4.12	2.50	4	
	114.3	2.11	3.05	6.02	8.56	152.5	101.5	64	104.8	64		
5	5.563	0.109	0.134	0.258	0.375	7.50	5.00	3.12	4.88	3.00	5	
	141.3	2.77	3.40	6.55	9.52	190.5	127	79	123.8	76		
6	6.625	0.109	0.134	0.280	0.432	9.00	6.00	3.75	5.62	3.50	6	
	168.3	2.77	3.40	7.11	10.97	228.5	152.5	95	142.9	89		
8	8.625	0.109	0.148	0.322	0.50	12.00	8.00	5.00	7.00	4.00	8	
	219.1	2.77	3.76	8.18	12.70	305	203	127	177.8	102		
10	10.75	0.134	0.165	0.365	0.500	15.00	10.00	6.25	8.50	5.00	10	
	273	3.40	4.19	9.27	12.70	381	254	159	215.9	127		
12	12.75	0.156	0.180	0.375	0.500	18.00	12.00	7.50	10.00	6.00	12	
	323.9	3.96	4.57	9.52	12.70	457	305	191	254	152		

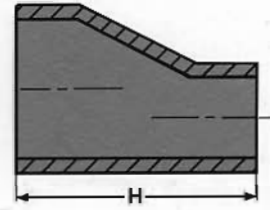
REDUCING TEE



CONCENTRIC REDUCER



ECCENTRIC REDUCER



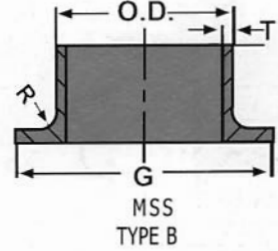
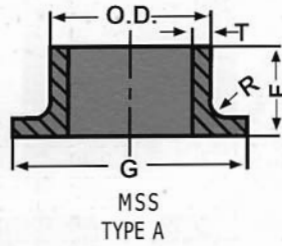
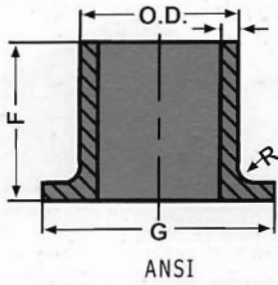
DIMENSION ANSI B16.9

UNIT: INCH/mm

NOMINAL PIPE SIZE INCH	REDUCING TEE		REDUCERS CONCENTRIC ECCENTRIC
	C	M	H
3/4 x 1/2	1.125 28.6	1.125 28.6	1.500 38.1
1 x 3/4	1.500 38.1	1.500 38.1	2.000 50.80
		1.500 38.1	
1 1/4 x 3/4	1.875 47.6	1.875 47.6	2.000 50.8
		1.875 47.6	
1 1/2 x 1	2.250 57.2	2.250 57.2	2.500 63.5
		2.250 57.2	
2 x 1	2.500 63.5	2.375 60.3	3.000 76.2
		2.250 57.2	
2 1/2 x 1 1/4	3.000 76.2	2.000 50.8	3.500 88.9
		1.752 44.5	
3 x 1 1/2	3.375 85.7	2.750 69.9	3.500 88.9
		2.625 66.7	
3 1/2 x 2 1/2	3.752 95.3	2.500 63.5	4.000 101.6
		2.250 57.2	
4 x 2 1/2	4.126 104.8	3.250 82.6	4.000 101.6
		3.000 76.2	
5 x 3	4.874 123.8	2.875 73.0	5.000 127.0
		2.752 69.9	
6 x 3	5.626 142.9	2.626 66.7	5.500 139.7
		2.626 66.7	
8 x 4	7.000 178	3.000 76.2	6.000 152
		2.875 73.0	
10 x 6	8.500 216	3.250 82.6	7.000 178
		3.000 76.2	
12 x 8	10.000 254	3.375 85.7	8.000 203
		3.250 82.6	

NOMINAL PIPE SIZE INCH	REDUCING TEE		REDUCERS CONCENTRIC ECCENTRIC
	C	M	H
4 x 3 1/2	4.126 104.8	4.00 101.6	4.000 101.6
		3.750 95.3	
5 x 3 1/2	4.874 123.8	4.626 117.5	5.000 127.0
		4.50 114.3	
6 x 3 1/2	5.626 142.9	5.00 127.0	5.500 139.7
		4.874 123.8	
8 x 4	7.000 178	6.625 168	6.000 152
		6.125 155	
10 x 6	8.500 216	8.000 203	7.000 178
		7.625 194	
12 x 8	10.000 254	9.500 241	8.000 203
		9.000 229	

STUB ENDS



DIMENSION B16.9, MSS SP-43

UNIT: INCH/mm

NOMINAL PIPE SIZE	OUTSIDE DIAMETER	STUB END						NOMINAL PIPE SIZE
		G	ANSI		MSS		INCH	
			F	R	F	TYPE A R		
INCH	O.D.							
1/2	0.840	1.38	3.00	0.125	2.00	0.125	0.031	1/2
	21.30	35	76	3	51	3	0.8	
3/4	1.050	1.69	3.00	0.125	2.00	0.125	0.031	3/4
	26.70	43	76	3	51	3	0.8	
1	1.315	2.00	4.00	0.125	2.00	0.125	0.031	1
	33.40	51	102	3	51	3	0.8	
1 1/4	1.660	2.50	4.00	0.188	2.00	0.187	0.031	1 1/4
	42.2	64	102	5	51	5	0.8	
1 1/2	1.90	2.88	4.00	0.250	2.00	0.250	0.031	1 1/2
	48.3	73	102	6	51	6	0.8	
2	2.375	3.62	6.00	0.313	2.50	0.313	0.031	2
	60.3	92	152	8	64	8	0.8	
2 1/2	2.875	4.12	6.00	0.313	2.50	0.313	0.031	2 1/2
	73.0	105	152	8	64	8	0.8	
3	3.50	5.00	6.00	0.375	2.50	0.375	0.031	3
	88.9	127	152	10	64	10	0.8	
3 1/2	4.00	5.50	6.00	0.375	3.00	0.375	0.031	3 1/2
	101.6	140	152	10	76	10	0.8	
4	4.50	6.19	6.00	0.438	3.00	0.438	0.063	4
	114.3	157	152	11	76	11	1.6	
5	5.563	7.31	8.00	0.438	3.00	0.438	0.063	5
	141.3	186	203	11	76	11	1.6	
6	6.625	8.50	8.00	0.5	3.50	0.500	0.063	6
	168.3	216	203	13	89	13	1.6	
8	8.625	10.625	8.00	0.5	4.0	0.500	0.063	8
	219.1	270	203	13	102	13	1.6	
10	10.75	12.75	10.00	0.5	5.0	0.500	0.063	10
	273	324	254	13	127	13	1.6	
12	12.75	15.00	10.00	0.5	6.0	0.500	0.063	12
	323.9	381	254	13	152	13	1.6	