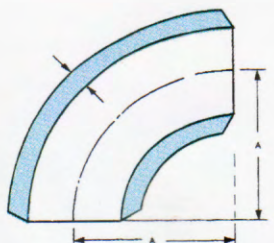
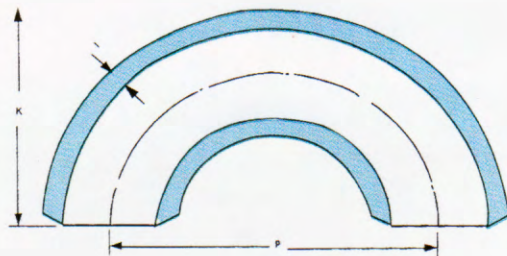


45



90



180

DIMENSIONS OF ELBOWS & RETURNS ASME/ ANSI B16.9 , B16.28

Nominal Pipe size DN	Outside Dia. At bevel D	Center to end			Center to end		Back to faces	
		45 Elbow	90 Elbow		180 Elbow			
		B	A		P		K	
		Long radius	Short radius		Long radius short radius		Long radius short radius	
1/2"	21.3	15.7	38.1	-	76.2	-	47.8	-
3/4"	26.7	19.1	38.1	-	76.2	-	50.8	-
1"	33.4	22.4	38.1	25.4	76.2	50.80	55.6	41.1
1 1/4"	42.2	25.4	47.8	31.8	95.3	63.60	69.9	52.3
1 1/2"	48.3	28.4	57.2	38.1	114.3	76.20	82.6	62
2"	60.3	35.1	76.2	50.8	153.4	101.60	106.4	81
2 1/2"	73	44.5	95.3	63.5	190.5	127.00	131.8	100.1
3"	88.9	50.8	114.3	76.2	228.6	152.40	158.8	120.7
3 1/2"	101.6	57.2	133.4	88.9	266.7	177.80	184.2	139.7
4"	114.3	63.5	152.4	101.6	304.8	203.20	209.6	158.8
5"	141.3	79.2	190.5	127	381	254.00	261.9	196.9
6"	168.3	95.3	228.6	154.2	457.2	304.80	312.7	236.5
8"	219.1	127	304.8	203.2	609.6	406.40	414.3	312.7
10"	273.1	158.8	381	254	762	508.00	517.7	390.7
12"	323.9	190.5	457.2	304.8	914.4	609.60	619.3	466.9
14"	355.6	22.3	533.4	355.6	1066.8	711.20	711.2	533.4
16"	406.4	254	609.6	406.4	1219.2	812.80	812.8	609.6
18"	457.2	285.8	685.8	457.2	1371.6	914.00	914.4	685.8
20"	508	317.5	762	508	1524	1016.00	1016	762
22"	558.8	342.9	838.2	558.8	1676.4	1117.60	1117.6	838.2
24"	609.6	381	914.4	609.6	1828.8	1219.2	1219.2	914.4
26"	660.4	406	990.6	-	-	-	-	-
28"	711.2	438.2	1066.8	-	-	-	-	-
30"	762	469.9	1143	-	-	-	-	-
32"	812.8	501.7	1219.2	-	-	-	-	-
34"	863.6	533.4	1295.4	-	-	-	-	-
36"	914.4	565.2	1371.6	-	-	-	-	-
38"	965.2	599.9	1447.8	-	-	-	-	-
40"	1016	632	1524	-	-	-	-	-
42"	1066.8	660.4	1600.2	-	-	-	-	-
44"	1117.6	695.5	1676.4	-	-	-	-	-
46"	1168.4	726.9	1752.6	-	-	-	-	-
48"	1219.2	758.9	1828.8	-	-	-	-	-