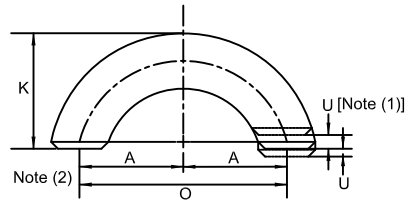
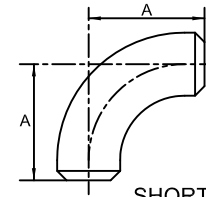




ELBOWS



LONG RADIUS RETURNS



SHORT RADIUS ELBOWS

Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-Center, O	Back-to-Face, K	Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-End, A
1/2	0.84	3.00	1.88	1	1.32	1.00
3/4	1.05	3.00	2.00	1 1/4	1.66	1.25
1	1.32	3.00	2.19	1 1/2	1.90	1.50
1 1/4	1.66	3.75	2.75	2	2.38	2.00
1 1/2	1.90	4.50	3.25	2 1/2	2.88	2.50
2	2.38	6.00	4.19	3	3.50	3.00
2 1/2	2.88	7.50	5.19	3 1/2	4.00	3.50
3	3.50	9.00	6.25	4	4.50	4.00
3 1/2	4.00	10.50	7.25	5	5.56	5.00
4	4.50	12.00	8.25	6	6.62	6.00
5	5.56	15.00	10.31	8	8.62	8.00
6	6.62	18.00	12.31	10	10.75	10.00
8	8.62	24.00	16.31	12	12.75	12.00
10	10.75	30.00	20.38	14	14.00	14.00
12	12.75	36.00	24.38	16	16.00	16.00
14	14.00	42.00	28.00	18	18.00	18.00
16	16.00	48.00	32.00	20	20.00	20.00
18	18.00	54.00	36.00	22	22.00	22.00
20	20.00	60.00	40.00	24	24.00	24.00
22	22.00	66.00	44.00			
24	24.00	72.00	48.00			

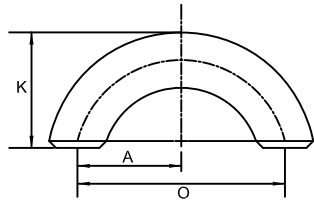
GENERAL NOTE: All dimensions are in inches.

NOTES:

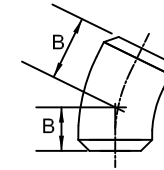
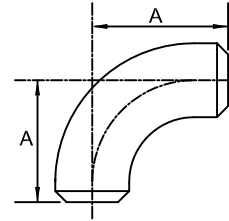
(1) See Table I-12 for tolerance for alignment of ends U.

(2) Dimension A is equal to one-half of dimension O.

GENERAL NOTE: All dimensions are in inches.



SHORT RADIUS 180-DEG RETURNS



3D ELBOWS

Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center- to- Center, O	Back- to- Face, K	Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-End	
						90-deg Elbows, A	45-deg Elbows, B
1	1.32	2.00	1.62	3/4	1.05	2.25	0.94
1 1/4	1.66	2.50	2.06	1	1.32	3.00	1.25
1 1/2	1.90	3.00	2.44	1 1/4	1.66	3.75	1.56
2	2.38	4.00	3.19	1 1/2	1.90	4.50	1.88
2 1/2	2.88	5.00	3.94	2	2.38	6.00	2.50
3	3.50	6.00	4.75	2 1/2	2.88	7.50	3.12
3 1/2	4.00	7.00	5.50	3	3.50	9.00	3.75
4	4.50	8.00	6.25	3 1/2	4.00	10.50	4.38
5	5.56	10.00	7.75	4	4.50	12.00	5.00
6	6.62	12.00	9.31	5	5.56	15.00	6.19
8	8.62	16.00	12.31	6	6.62	18.00	7.44
10	10.75	20.00	15.38	8	8.62	24.00	9.94
12	12.75	24.00	18.38	10	10.75	30.00	12.44
14	14.00	28.00	21.00	12	12.75	36.00	14.88
16	16.00	32.00	24.00	14	14.00	42.00	17.38
18	18.00	36.00	27.00	16	16.00	48.00	19.88
20	20.00	40.00	30.00	18	18.00	54.00	22.38
22	22.00	44.00	33.00	20	20.00	60.00	24.88
24	24.00	48.00	36.00	22	22.00	66.00	27.31
				24	24.00	72.00	29.81
				26	26.00	78.00	32.31
				28	28.00	84.00	34.75
				30	30.00	90.00	37.25
				32	32.00	96.00	39.75
				34	34.00	102.00	42.25
				36	36.00	108.00	44.69
				38	38.00	114.00	47.25
				40	40.00	120.00	49.75
				42	42.00	126.00	52.19
				44	44.00	132.00	54.69
				46	46.00	138.00	57.19
				48	48.00	144.00	59.69

GENERAL NOTES: All dimensions are in inches.

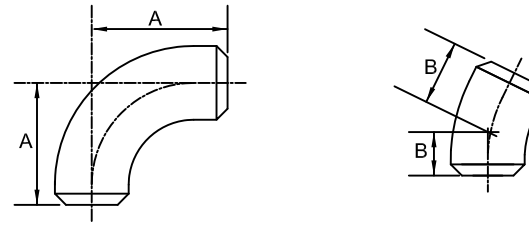
(a) All dimensions are in inches.

(2) Dimension A is equal to one-half of dimension O.

GENERAL NOTES: All dimensions are in inches.



ELBOWS



LONG RADIUS ELBOWS

Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-End	
		90-deg Elbows, A	45-deg Elbows, B
1/2	0.84	1.50	0.62
3/4	1.05	1.50	0.75
1	1.32	1.50	0.88
1 1/4	1.66	1.88	1.00
1 1/2	1.90	2.25	1.12
2	2.38	3.00	1.38
2 1/2	2.88	3.75	1.75
3	3.50	4.50	2.00
3 1/2	4.00	5.25	2.25
4	4.50	6.00	2.50
5	5.56	7.50	3.12
6	6.62	9.00	3.75
8	8.62	12.00	5.00
10	10.75	15.00	6.25
12	12.75	18.00	7.50
14	14.00	21.00	8.75
16	16.00	24.00	10.00
18	18.00	27.00	11.25
20	20.00	30.00	12.50
22	22.00	33.00	13.50
24	24.00	36.00	15.00
26	26.00	39.00	16.00
28	28.00	42.00	17.25
30	30.00	45.00	18.50
32	32.00	48.00	19.75
34	34.00	51.00	21.00
36	36.00	54.00	22.25
38	38.00	57.00	23.62
40	40.00	60.00	24.88
42	42.00	63.00	26.00
44	44.00	66.00	27.38
46	46.00	69.00	28.62
48	48.00	72.00	29.88

GENERAL NOTE: All dimensions are in inches.