

Use this table if you are not installing an adjustable length between the elbows.

LENGTH BETWEEN OFFSETS	15° Elbows		30° Elbows		45° Elbows	
	RISE	OFFSET	RISE	OFFSET	RISE	OFFSET
5 INCH Ø						
NO LENGTH	9 1/4	1 1/4	10 1/2	2 3/4	11 1/4	4 3/4
6" Length	13 1/4	2 1/4	14 1/4	5	14 1/4	7 3/4
12" Length	19	3 3/4	19 1/4	8	18 1/2	12
18" Length	25	5 1/2	24 1/2	11	22 3/4	16 1/4
24" Length	30 3/4	7	29 3/4	14	27	20 1/2
48" Length	53 3/4	13 1/4	50 1/2	26	44	37 1/2
24" + 12"	40 1/2	9 1/2	38 3/4	19	34 1/4	27 3/4
48" + 12"	63 3/4	15 3/4	59 1/2	31	51 1/4	44 3/4
48" + 18"	69 1/2	17 1/2	64 1/2	34	55 1/2	49
48" + 24"	75 1/4	19	69 3/4	37	59 3/4	53 1/4
48"+24"+12"	85 1/4	21 1/2	78 3/4	42 1/4	67	60 1/2
48" + 48"	98 1/2	25 1/4	90 1/2	49	76 3/4	70
6 INCH Ø						
NO LENGTH	9 1/2	1 1/4	11	3	12	5
6" Length	13 1/2	2 1/4	14 3/4	5	15	8
12" Length	19 1/4	4	19 3/4	8	19 1/4	12 1/4
18" Length	25 1/4	5 1/2	25	11	23 1/2	16 1/2
24" Length	31	7	30 1/4	14	27 3/4	20 3/4
48" Length	54	13 1/4	51	26	44 3/4	37 3/4
24" + 12"	40 3/4	9 3/4	39 1/4	19 1/4	35	28
48" + 12"	64	15 3/4	60	31 1/4	52	45
48" + 18"	69 3/4	17 1/2	65	34 1/4	56 1/4	49 1/4
48" + 24"	75 1/2	19	70 1/4	37 1/4	60 1/2	53 1/2
48"+24"+12"	85 1/2	21 3/4	79 1/4	42 1/4	67 3/4	60 3/4
48" + 48"	98 3/4	25 1/4	91	49 1/4	77 1/2	70 1/2
7 INCH Ø						
NO LENGTH	9 3/4	1 1/4	11 1/2	3	12 3/4	5 1/4
6" Length	13 3/4	2 1/2	15 1/4	5 1/4	15 3/4	8 1/4
12" Length	19 1/2	4	20 1/4	8 1/4	20	12 1/2
18" Length	25 1/2	5 1/2	25 1/2	11 1/4	24 1/4	16 3/4
24" Length	31 1/4	7	30 3/4	14 1/4	28 1/2	21
48" Length	54 1/2	13 1/4	51 1/2	26 1/4	45 1/2	38
24" + 12"	41	9 3/4	39 3/4	19 1/4	35 3/4	28 1/4
48" + 12"	64 1/4	16	60 1/2	31 1/4	52 3/4	45 1/4
48" + 18"	70	17 1/2	65 1/2	34 1/4	57	49 1/2
48" + 24"	75 3/4	19	70 3/4	37 1/4	61 1/4	53 3/4
48"+24"+12"	85 3/4	21 3/4	79 3/4	42 1/2	68 1/2	61
48" + 48"	99	25 1/4	91 1/2	49 1/4	78 1/4	70 3/4
8 INCH Ø						
NO LENGTH	10	1 1/4	12	3 1/4	13 1/2	5 1/2
6" Length	14	2 1/2	15 3/4	5 1/4	16 1/2	8 1/2
12" Length	19 3/4	4	20 3/4	8 1/4	20 3/4	12 3/4
18" Length	25 3/4	5 1/2	26	11 1/4	25	17
24" Length	31 1/2	7	31 1/4	14 1/4	29 1/4	21 1/4
48" Length	54 3/4	13 1/4	52	26 1/4	46 1/4	38 1/4
24" + 12"	41 1/4	9 3/4	40 1/4	19 1/2	36 1/2	28 1/2
48" + 12"	64 1/2	16	61	31 1/2	53 1/2	45 1/2
48" + 18"	70 1/4	17 1/2	66	34 1/2	57 3/4	49 3/4
48" + 24"	76 1/4	19	71 1/4	37 1/2	62	54
48"+24"+12"	86	21 3/4	80 1/4	42 1/2	69 1/4	61 1/4
48" + 48"	99 1/4	25 1/4	92	49 1/2	79	71

Use this table when an 18 inch adjustable length is required.

LENGTH BETWEEN OFFSETS	15° Elbows		30° Elbows		45° Elbows	
	RISE	OFFSET	RISE	OFFSET	RISE	OFFSET
5 INCH Ø						
6" Length	23 - 28 3/4	5 - 6 1/2	22 3/4 - 28	10 - 13	21 1/2 - 25 3/4	14 3/4 - 19
12" Length	28 3/4 - 34 1/2	6 1/2 - 8	28 - 33 1/4	13 - 16	25 3/4 - 30	19 - 23 1/4
18" Length	34 1/2 - 40 1/4	8 - 9 1/2	33 1/4 - 38 1/2	16 - 19	30 - 34 1/4	23 1/4 - 27 1/2
24" Length	40 1/4 - 46 1/4	9 1/2 - 11	38 1/2 - 43 1/2	19 - 22	34 1/4 - 38 1/2	27 1/2 - 31 3/4
48" Length	63 1/2 - 69 1/4	15 3/4 - 17 1/4	59 1/4 - 64 1/2	31 - 34	51 1/4 - 55 1/4	44 1/2 - 48 3/4
24" + 12"	50 1/4 - 56	12 1/4 - 13 3/4	47 1/4 - 52 1/2	24 - 27	41 1/2 - 45 3/4	34 1/4 - 39
48" + 12"	73 1/2 - 79 1/4	18 1/2 - 20	68 - 73 1/4	36 - 39	58 1/4 - 62 1/2	51 3/4 - 56
48" + 18"	79 1/4 - 85	20 - 21 1/2	73 1/4 - 78 1/2	39 - 42	62 1/2 - 66 3/4	56 - 60 1/4
48" + 24"	85 - 90 3/4	21 1/2 - 23	78 1/2 - 83 3/4	42 - 45	66 3/4 - 71	60 1/4 - 64 1/2
48"+24"+12"	95 - 100 3/4	24 1/4 - 25 3/4	87 1/4 - 92 1/2	47 1/4 - 50 1/4	74 - 78 1/4	67 1/2 - 71 3/4
48" + 48"	108 1/4 - 114	27 3/4 - 29 1/4	99 1/4 - 104 1/2	54 - 57	83 3/4 - 88	77 1/4 - 81 1/2
6 INCH Ø						
6" Length	23 1/4 - 29	5 - 6 1/2	23 1/4 - 28 1/2	10 - 13	22 1/4 - 26 1/2	15 - 19 1/4
12" Length	29 - 34 3/4	6 1/2 - 8	28 1/2 - 33 3/4	13 - 16	26 1/2 - 30 1/2	19 1/4 - 23 1/2
18" Length	34 3/4 - 40 1/2	8 - 9 1/2	33 3/4 - 39	16 - 19	30 1/2 - 34 3/4	23 1/2 - 27 3/4
24" Length	40 1/2 - 46 1/2	9 1/2 - 11 1/4	39 - 44	19 - 22	34 3/4 - 39	27 3/4 - 32
48" Length	63 3/4 - 69 1/2	15 3/4 - 17 1/4	59 3/4 - 65	31 - 34	51 3/4 - 56	44 3/4 - 49
24" + 12"	50 1/2 - 56 1/4	12 1/4 - 13 3/4	47 3/4 - 53	24 1/4 - 27 1/4	42 - 46 1/4	35 - 39 1/4
48" + 12"	73 3/4 - 79 1/2	18 1/2 - 20	68 1/2 - 73 3/4	36 1/4 - 39 1/4	59 - 63 1/4	52 - 56 1/4
48" + 18"	79 1/2 - 85 1/4	20 - 21 1/2	73 3/4 - 79	39 1/4 - 42 1/4	63 1/4 - 67 1/2	56 1/4 - 60 1/2
48" + 24"	85 1/4 - 91	21 1/2 - 23	79 - 84 1/4	42 1/4 - 45 1/4	67 1/2 - 71 3/4	60 1/2 - 64 3/4
48"+24"+12"	95 1/4 - 101	24 1/4 - 25 3/4	87 3/4 - 93	47 1/4 - 50 1/4	74 3/4 - 79	67 3/4 - 72
48" + 48"	108 1/2 - 114 1/4	27 3/4 - 29 1/4	99 3/4 - 105	54 1/4 - 57 1/4	84 1/2 - 88 3/4	77 1/2 - 81 3/4
7 INCH Ø						
6" Length	23 1/2 - 29 1/4	5 - 6 1/2	23 3/4 - 29	10 1/4 - 13 1/4	22 3/4 - 27	15 1/4 - 19 1/2
12" Length	29 1/4 - 35	6 1/2 - 8	29 - 34 1/4	13 1/4 - 16 1/4	27 - 31 1/4	19 1/2 - 23 3/4
18" Length	35 - 40 3/4	8 - 9 1/2	34 1/4 - 39 1/2	16 1/4 - 19 1/4	31 1/4 - 35 1/2	23 3/4 - 28
24" Length	40 3/4 - 46 3/4	9 1/2 - 11 1/4	39 1/2 - 44 1/2	19 1/4 - 22 1/4	35 1/2 - 39 3/4	28 - 32 1/4
48" Length	64 - 69 3/4	15 3/4 - 17 1/2	60 1/4 - 65 1/2	31 1/4 - 34 1/4	52 1/2 - 56 3/4	45 - 49 1/4
24" + 12"	50 3/4 - 56 1/2	12 1/4 - 13 3/4	48 1/4 - 53 1/2	24 1/4 - 27 1/4	42 3/4 - 47	35 1/4 - 39 1/2
48" + 12"	74 - 79 3/4	18 1/2 - 20	69 - 74 1/4	36 1/4 - 39 1/4	59 3/4 - 64	52 1/4 - 56 1/2
48" + 18"	79 3/4 - 85 1/2	20 - 21 1/2	74 1/4 - 79 1/2	39 1/4 - 42 1/4	64 - 68 1/4	56 1/2 - 60 3/4
48" + 24"	85 1/2 - 91 1/4	21 1/2 - 23 1/4	79 1/2 - 84 3/4	42 1/4 - 45 1/4	68 1/4 - 72 1/2	60 3/4 - 65
48"+24"+12"	95 1/2 - 101 1/4	24 1/4 - 25 3/4	88 1/4 - 93 1/2	47 1/2 - 50 1/2	75 1/2 - 79 3/4	68 - 72 1/4
48" + 48"	108 3/4 - 114 1/2	27 3/4 - 29 1/4	100 1/4 - 105 1/2	54 1/4 - 57 1/4	85 1/4 - 89 1/2	77 3/4 - 82
8 INCH Ø						
6" Length	23 3/4 - 29 1/2	5 - 6 1/2	24 1/4 - 29 1/2	10 1/4 - 13 1/4	23 1/2 - 27 3/4	15 3/4 - 20
12" Length	29 1/2 - 35 1/4	6 1/2 - 8	29 1/2 - 34 3/4	13 1/4 - 16 1/4	27 3/4 - 32	20 - 24 1/4
18" Length	35 1/4 - 41	8 - 9 3/4	34 3/4 - 40	16 1/4 - 19 1/4	32 - 36 1/4	24 1/4 - 28 1/2
24" Length	41 - 47	9 3/4 - 11 1/4	40 - 45	19 1/4 - 22 1/4	36 1/4 - 40 1/2	28 1/2 - 32 3/4
48" Length	64 1/4 - 70	15 3/4 - 17 1/2	60 3/4 - 66	31 1/4 - 34 1/4	53 1/4 - 57 1/2	45 1/4 - 49 1/2
24" + 12"	51 - 56 3/4	12 1/4 - 13 3/4	48 3/4 - 54	24 1/2 - 27 1/2	43 1/2 - 47 3/4	35 3/4 - 40
48" + 12"	74 1/4 - 80	18 1/2 - 20	69 1/2 - 74 3/4	36 1/2 - 39 1/2	60 1/2 - 64 3/4	52 1/2 - 56 3/4
48" + 18"	80 - 85 3/4	20 - 21 3/4	74 3/4 - 80	39 1/2 - 42 1/2	64 3/4 - 69	56 3/4 - 61
48" + 24"	85 3/4 - 91 1/2	21 3/4 - 23 1/4	80 - 85 1/4	42 1/2 - 45 1/2	69 - 73 1/4	61 - 65 1/4
48"+24"+12"	95 3/4 - 101 1/2	24 1/4 - 25 3/4	88 3/4 - 94	47 1/2 - 50 1/2	76 1/4 - 80 1/2	68 1/4 - 72 1/2
48" + 48"	109 - 114 3/4	27 3/4 - 29 1/2	100 3/4 - 106	54 1/2 - 57 1/2	86 - 90 1/4	78 - 82 1/4