Offset bend multipliers

Measure the perpendicular rise between the two parallel conduit centerlines.
Use the angle of one bend. Both bends have the same angle in opposite directions.

Finished offset



Marks before bending



Find spacing and shrink

Multiply the rise by each factor in one method. Keep the same unit throughout.

	Klein hand-bender chart		Ideal geometry	
Angle	Spacing	Shrink	Spacing	Shrink
10°	6	1/16	5.759	0.087
22.5°	2.6	3/16	2.613	0.199
30°	2	1/4	2.000	0.268
45°	1.4	3/8	1.414	0.414
60°	1.2	1/2	1.155	0.577

Geometry uses 1 / sin(angle) for spacing and tan(angle / 2) for shrink. Factors shown to 3 decimals.

Example

6 in rise / 30° per bend

Klein chart 6 × 2 = 12 in between marks. Shrink is 6 × 1/4 = 1 1/2 in.

Ideal geometry 12 in between marks. Shrink is about 1 5/8 in to the nearest 1/16 in.

Check the shoe’s minimum spacing before you mark. Ideal geometry omits bend radius and springback.
Shrink is the forward reach lost when the conduit is bent.

Manufacturer source

Klein Tools, Conduit Bender Guide, Offset Formula Table, p. 6.