

Concentric Bend Calculator

Space parallel conduit bends from the inside radius, conduit spacing, bend angle, and number of segments, with arc-length and chord references for layout.

Generated October 10, 2026

<https://www.elecatrix.com/conduit-bending/concentric-bend-calculator/>

Inputs		
Input	Value	Unit
Inside centerline radius	10	in
Spacing between conduit centerlines	2	in
Conduit number from inside	2	
Total bend angle	90	deg
Segment count	6	
Results		
Result	Value	Unit
Target centerline radius	12	in
Radius offset from inside conduit	2	in
Developed arc length	18.8496	in
Angle per segment	15	deg
Mark spacing along conduit	3.1416	in
Straight chord between marks	3.1326	in
Calculation details		
Detail	Value	Unit
Calculation basis	Concentric bend geometry adds the entered spacing for each conduit away from the inside conduit, then divides the arc by the entered segment count.	
Selection boundary	Field-layout estimate only; verify bender setup, conduit size, bend sequence, springback, and available straight length before bending.	

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Formulas

Radius offset = (conduit number from inside - 1) x conduit spacing

Target centerline radius = inside centerline radius + radius offset

Developed arc length = $R \times \text{theta_rad}$

Angle per segment = (total bend angle/segment count)

Mark spacing = (developed arc length/segment count)

Chord spacing = $2R \sin((\text{angle per segment}/2))$

Warnings and limitations

This is a concentric bend layout estimate. It does not verify conduit fill, code compliance, bender shoe geometry, springback, or job-site clearance.