

Saddle Bend Calculator

Use obstruction height, outside bend angle, and the center mark location to estimate 3-point saddle bend layout marks.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Obstruction height	4	in
Outside bend angle	22.5 deg	deg
Center mark from conduit end	48	in

Results

Result	Value	Unit
Near outside mark	37.5475	in
Far outside mark	58.4525	in
Center-to-outside mark spacing	10.4525	in
Spacing multiplier	2.6131	x
Center bend angle	45	deg
Estimated shrink	0.7956	in

Formulas

$\text{spacing multiplier} = 1 / \sin(\text{outside bend angle})$

$\text{mark spacing} = \text{rise} / \sin(\text{outside bend angle})$

$\text{near outside mark} = \text{center mark} - \text{mark spacing}$

$\text{far outside mark} = \text{center mark} + \text{mark spacing}$

$\text{center bend angle} = 2 \times \text{outside bend angle}$

$\text{estimated shrink} = \text{rise} \times \tan(\text{outside bend angle} / 2)$

Warnings and limitations

This is a field-layout estimate, not a code compliance claim. Verify bender shoe marks, conduit size and material, springback, obstruction width and clearance, available straight length, total bend degrees, and job conditions before bending.