

Conduit Back-to-Back Bend Calculator

Calculate a back-to-back layout when two bend events have separate rises or angles and the mark separation must remain visible.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
First bend rise	4	in
Second bend rise	4	in
First bend angle	30	deg
Second bend angle	30	deg
First mark from conduit end	24	in

Results

Result	Value	Unit
First bend mark	24	in
Second bend mark	40	in
First bend travel	8	in
Second bend travel	8	in
Bend separation	16	in
Combined rise	8	in
Total geometry shrink	2.1436	in

Calculation details

Detail	Value	Unit
Calculation basis	The two bend travels are calculated independently from their entered rises and angles, then added to establish the mark separation.	

Conduit Back-to-Back Bend Calculator

Calculate a back-to-back layout when two bend events have separate rises or angles and the mark separation must remain visible.

Generated October 10, 2026

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

Layout boundary

Back-to-back layout screen only;
verify conduit rotation, bend
direction, straight-length
requirements, springback, and actual
bender geometry separately.

Formulas

$$T_1 = (R_1/\sin(\theta_1))$$

$$T_2 = (R_2/\sin(\theta_2))$$

$$S_{\text{mark}} = T_1 + T_2$$

$$M_2 = M_1 + S_{\text{mark}}$$

$$S_{\text{shrink}} = R_1 \tan((\theta_1/2)) + R_2 \tan((\theta_2/2))$$

Warnings and limitations

This is a two-event back-to-back layout worksheet. It does not verify conduit rotation, bend direction, springback, bender markings, or minimum straight lengths.