

The 456 TR-Bender is used to bend  $\frac{1}{4}$ ",  $\frac{5}{16}$ " and  $\frac{3}{8}$ " soft tubing.

**⚠ WARNING** Always wear safety glasses to reduce the risk of eye injury.

### General Use

1. Rotate the shoe handle out of the way and position the tube in the appropriate groove in the form handle. Be sure that the tube engages the tube latch (Figure 1).
2. Rotate the shoe handle into contact with the tube, and rotate the shoe handle around the form handle so that the "0" line on the shoe handle aligns with the desired degree of bend on the form handle (Figure 2).

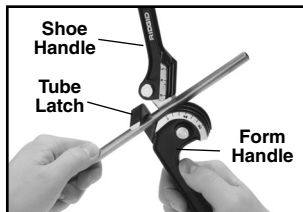


Figure 1



Figure 2

### Measured Bends Relative to Other Features (Tube ends, Bends, etc.)

#### For 90° Bends:

- Mark the tube at the desired distance (X) from the feature (end of tube, bend, etc.). The center of the leg of the bend will be this distance from the feature.
- Place the tube in the bender as described in *Step 1* above.
- If the feature is to the **LEFT** of the mark (see Figure 3 – Before), align the mark on the tube with the "L" line on the shoe handle.
- If the feature is to the **RIGHT** of the mark (see Figure 4 – Before), align the mark on the tube with the "R" line on the shoe handle.

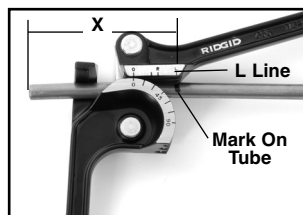


Figure 3 – Before

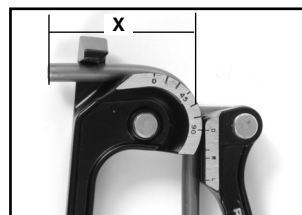


Figure 3 – After

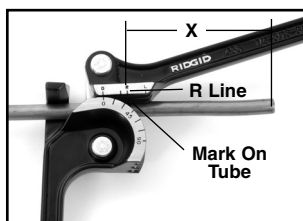


Figure 4 – Before

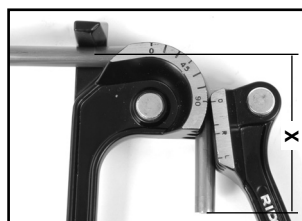


Figure 4 – After

- With the mark on the tube appropriately aligned, move the shoe handle so that the "0" line aligns with the 90 degree line on the form handle. (See Figures 3 and 4 – After).

#### For 45° Bends:

- Mark the tube at the desired distance (X) from the feature (end of tube, bend, etc.). The center of the arc segment will be this distance from the feature.
- Place the tube in the bender as described in *Step 1* above.

- Align the mark on the tube with the unlabeled line on the shoe handle (see Figure 5).

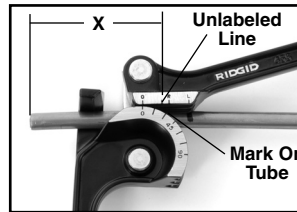


Figure 5 – Before

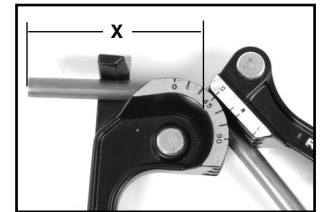


Figure 5 – After

- With the mark on the tube appropriately aligned, move the shoe handle so that the "0" line aligns with the 45 degree line on the form handle.