



370-FH TRIPLE HEAD 180° TUBE BENDER

- Bends 3/16", 1/4", 3/8" and 1/2" tubing • For bending soft copper, aluminum, brass, thin wall steel, thin wall stainless steel and other tubing • Makes smooth, tight-radius 180° bends • Calibrated markings - for making accurate left-hand, right-hand and offset bends • Adjustable hook for optimum bending radius • Patented

Instructions For Use

The tube bender comes with the tube clamp hook positioned for the smallest diameter tube. When bending any other diameter, the tube clamp hook must be repositioned.

To reposition tube clamp hook, loosen tube clamp screw far enough to move clamp hook and insert into appropriate clamp stop and retighten clamp screw. The diameter of tube is indicated at the bottom of clamp on form wheel as shown in Fig. 1.

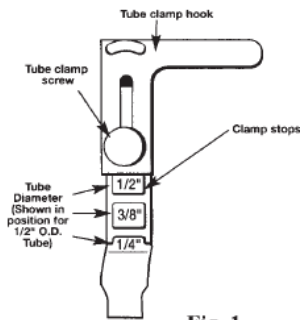


Fig. 1

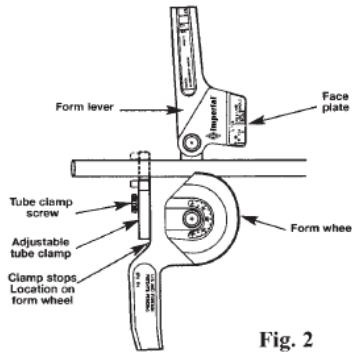


Fig. 2

Raise form lever. Position tubing in groove as shown. It is important that the tube is engaged with the tube clamp hook to prevent slippage (Fig. 2).

Lower the form lever until the "0" on the form lever and form wheel are aligned (Fig. 3). Pull the form lever down until the desired bend angle is obtained. Degree of bend is indicated when the "0" mark on the form lever aligns with the desired degree graduation on the form wheel (Fig. 5A).

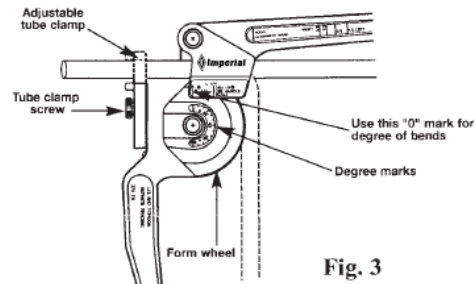


Fig. 3

Making Accurate 90° Centerline Bends

90° BENDS FOR 1/4" TUBING

Determine the desired centerline dimension (Dimension "L" in Fig. 4).

Measure from end of the tube at "L" distance and place a mark on the tube (Mark "L").

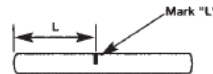


Fig. 4

Position tube in bender as shown in Fig. 5. If the end measured is left of the tube-clamping hook the measured mark "L" should be directly under the "L" graduation on the form lever faceplate as shown in Fig. 5. With a steady motion, pull form lever handle around until the "0" mark on the form lever is directly opposite the 90° graduation on the form wheel (Fig. 5A).

If the end that is to be measured is to the right of the tube clamping hook, mark the tube at "R" distance and position directly below the graduation "R" located on the form lever as shown in Fig. 6, then proceed with bend in the same manner as above.

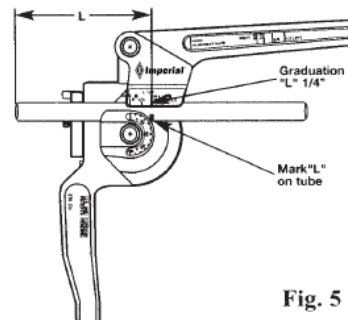


Fig. 5

90° Bends for 3/8" & 1/2" Tubing

Place mark "L" on the tube in the same manner as required for the 1/4" size. For a bend to the left of the tube-clamping hook refer to Table 1.

Subtract from the original mark "L" the appropriate length, and place a second mark "B" on the tube. This second mark "B" should be placed on the right edge of the tube-clamping hook as shown in Fig. 7.

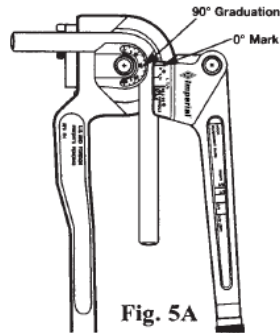


Fig. 5A

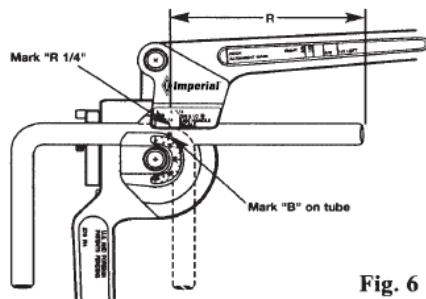


Fig. 6

For bends to the right of the tube clamping hook, place mark "R" on the tube in the same manner as required for the 1/4" size.

Add to your mark the distance shown in Table 2, placing a second mark "B" on the tube. This second mark "B" should be placed on the right edge of the tube-clamping hook as shown in Fig. 7.

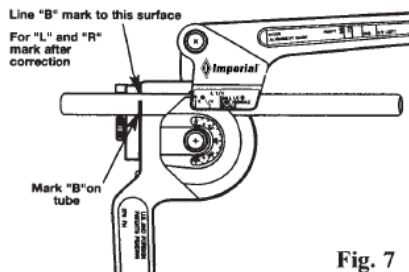


Fig. 7

Lower the form lever until the "0" mark on the form lever and form wheel are aligned, then pull the form lever down until the desired bend angle is obtained. Degree of bend is indicated when the "0" mark on the form lever aligns with the desired degree graduation on the form wheel (Fig. 5A).

As an alternative to the calculation table for making right or left bends, a scale on the form lever handle is provided. After mark "L" or "R" is determined, place the mark even with appropriate graduation "L" (left) or "R" (right) for the appropriate tube diameter. Place the second mark "B" on the tube at the "HOOK ALIGNMENT MARK", as shown in Fig. 8.

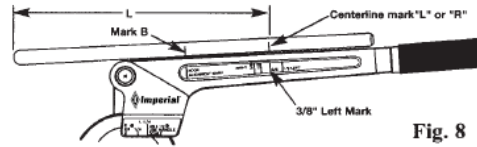


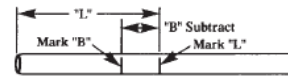
Fig. 8

Example — See Fig. 8 for a bend left of the tube clamping hook, using 3/8" tubing. Measure the required distance from the end of the tube and place mark "L". Hold the handle to the tube with mark "L" adjacent to the 3/8" Left mark. Make a second mark "B" on the tube adjacent to the "HOOK ALIGNMENT MARK". Place tube in bender with the second mark "B" aligned with the right edge of the tube clamp hook (Fig. 7).

Making bends left of tube clamp hook

Table 1. This is for "L" Dimension and must be **subtracted** from the centerline requirement.

Tube Diameter	Mark "B" Fractions (Decimal)
3/8"	2-35/64" (2.5467)
1/2"	2-29/32" (2.9067)

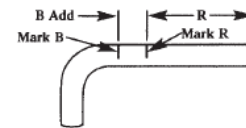


Example: The "L" Dim. (Centerline) is 9-1/2" (9.5") and the tube is 1/2" O.D. Refer to Table 1 under Mark "B" and subtract 2-29/32" (2.9067). 9-1/2" (9.5") - 2-29/32" (2.9067) = 6-19/32" (6.594")

Making bends right of tube clamp hook

Table 2. This is for "R" Dimension and must be **added** to the centerline requirement.

Tube Diameter	Mark "B" Fractions (Decimal)
3/8"	2-1/16" (2.0625)
1/2"	2-17/64" (2.2657)



Length Correction Factor for 90° Bends

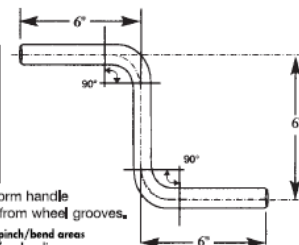
To arrive at the exact tube length to fabricate a circuit, the following method may be used.

Add all center-to-center dimensions of tube circuit. For each 90° bend, subtract the amount shown in chart "A". Circuits are dimensions to square corners.

Therefore the tube is always **less**.

Chart A

Tube Size	Bend Radius	Correction Factor
1/4"	11/16"	.295
3/8"	1-1/8"	.480
1/2"	1-1/2"	.643



Note: Keep bender bearings and form handle grooves lubricated. Keep oil away from wheel grooves.
WARNING - Keep body parts away from pinch/bend areas while using. Ensure tubing is secure in tool before bending. Always wear approved eye protection. Broken materials may fly.



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INSTRUCTIONS
TRIPLE HEAD TUBE BENDER