TB12 Tube Bender, Lever Style Operating Instructions

REED
PIPE TOOLS & VISES
SINCE 1896

This bender can be used for bending steel, stainless steel, copper, aluminum and other metal tubing of bending temper. Extremely thin walled and/or hard temper tubing should be avoided.

- OPEN-SIDE TYPE SLIPS OVER TUBE AT ANY POINT • MAKES SMOOTH, TIGHT RADIUS BENDS UP TO 180° WITH MINIMUM EFFORT
- NO SCORING OR FLATTENING OF TUBING • CALIBRATED TO SHOW ANGLE OF BEND • WIDE HOOK GRIPS TUBE SECURELY
- FOR BENDING SOFT OR ANNEALED TUBING ONLY. COPPER TYPE K OR L, ALUMINUM, BRASS, STEEL AND UP TO .032" WALL STAINLESS STEEL.
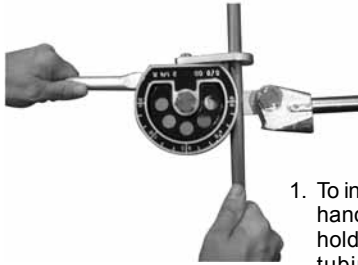
1. To insert tubing into bender, place handles at 180° and raise tube holding hook out of way. Place tubing in form wheel groove.

2. Place tube holding hook over tubing and bring form shoe handle into approximate right angle position, engaging form shoe over tubing. Note: "0" mark on form wheel will be even with front edge of form shoe.

3. Proceed to bend desired angle as indicated by calibrations on forming wheel. Bends up to 180° can be made in one smooth, continuous motion.

4. To remove tubing, pivot form shoe handle to right angle with tubing, disengaging forming shoe. Release tube holding hook and remove tubing.

⚠ **WARNING - Always wear approved eye protection.**

NOTE: Place oil occasionally on handle pins and handle form shoe for easier bending. The form wheel groove should be kept dry and clean to prevent tube slippage while bending. For hard to bend tubing, hold form wheel handle in vise. Lock vise jaws as near to form wheel as practical to make bend.
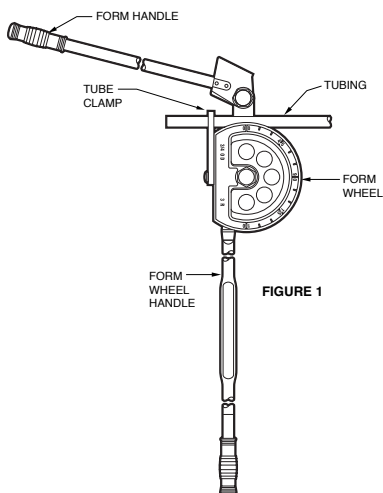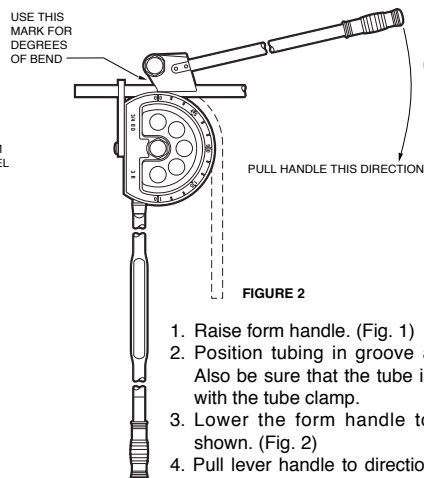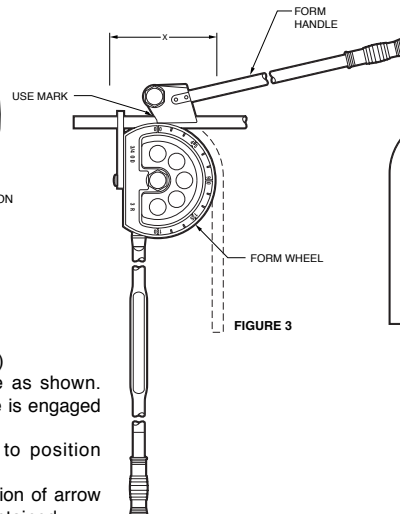
FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FORM HANDLE
TUBE CLAMP
TUBING
USE THIS MARK FOR DEGREES OF BEND
FORM WHEEL
FORM WHEEL HANDLE
PULL HANDLE THIS DIRECTION
USE MARK
USE THIS MARK
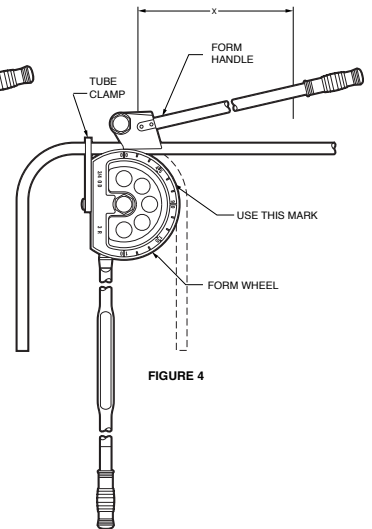
1. Raise form handle. (Fig. 1)
2. Position tubing in groove as shown. Also be sure that the tube is engaged with the tube clamp.
3. Lower the form handle to position shown. (Fig. 2)
4. Pull lever handle to direction of arrow until the desired bend is obtained.
5. Degree of bend is indicated by mark on form handle and shown in Fig. 2. Bends up to 180° can be made in one sweep of the handle.

OFFSET BENDS

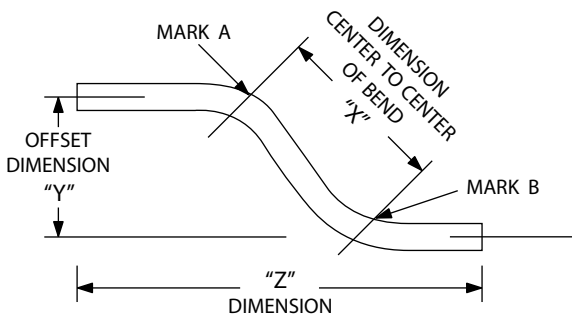## DIMENSIONAL BENDS

Place tubing bender as shown. Line up "X" dimension mark with edge of form wheel.
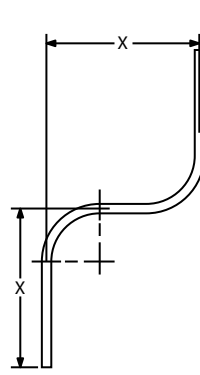
FIGURE 5

STEP 1 - Determine the total amount of offset required (dimension "Y" in diagram) and angle of offset. Wherever possible use 45° offset bends. This will enable you to figure the total amount of tubing required for a given application as explained in section on How to Figure Length of Tubing Required for 45° Offset Applications.
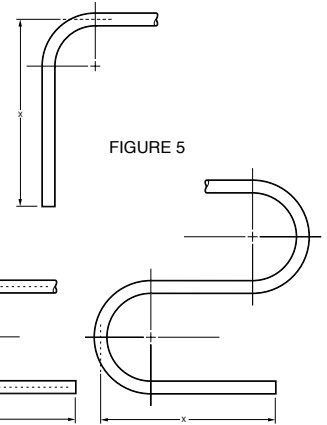
STEP 2 - Figure the length of tube which is needed to meet your offset requirements ("X" in dimension diagram) from table below. For example: Say the amount of offset you require ("Y" dimension, Step 1) is 2-1/2" and the offset angle is 45°. Check the 45° column and find 2-1/2". The figure next to this is the amount of tubing required for the offset bend you want ("X" dimension). In this case it's 3-17/32".

STEP 3 - Determine where you want the center of the offset bend on the tube and make a reference mark (A).

Now measure off the "X" dimension (determined in Step 2, example 3-17/32") starting from the reference mark and make a second mark (B). You are now ready to make the bends.

STEP 4 - Align mark (A) with reference mark "R" on bender and proceed with first bend. Then align (B) with "R" mark and make second bend in proper direction.

NOTE: When the amount of offset exceeds what is listed on the table, choose an offset from the table which is a multiple of the offset you need. Look this up on the table and multiply the "X" dimension by the multiple you used. Example: For an offset of 20" for a 45° bend, look up 5" offset on the table in the 45° column and multiply "X" dimension (7-1/16") by 4. The resulting "X" dimension you would use is 28-1/4".

OFFSET BEND CALCULATOR

ANGLE OF OFFSET 15°		ANGLE OF OFFSET 30°		ANGLE OF OFFSET 45°		ANGLE OF OFFSET 60°		ANGLE OF OFFSET 75°	
AMOUNT OF OFFSET		AMOUNT OF OFFSET		AMOUNT OF OFFSET		AMOUNT OF OFFSET		AMOUNT OF OFFSET	
(Y Dimension)	(X Dimension)	(Y Dimension)	(X Dimension)	(Y Dimension)	(X Dimension)	(Y Dimension)	(X Dimension)	(Y Dimension)	(X Dimension)
(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)
1	3- 7/8	1	2	1	1- 13/32	1	1- 5/32	1	1- 1/32
1- 1/8	4- 11/32	1- 1/8	2- 1/4	1- 1/8	1- 19/32	1- 1/8	1- 5/16	1- 1/8	1- 5/32
1- 1/4	4- 27/32	1- 1/4	2- 1/2	1- 1/4	1- 25/32	1- 1/4	1- 7/16	1- 1/4	1- 5/16
1- 3/8	5- 5/16	1- 3/8	2- 3/4	1- 3/8	1- 15/16	1- 3/8	1- 19/32	1- 3/8	1- 7/16
1- 1/2	5- 25/32	1- 1/2	3	1- 1/2	2- 1/8	1- 1/2	1- 23/32	1- 1/2	1- 9/16
1- 5/8	6- 9/32	1- 5/8	3- 1/4	1- 5/8	2- 5/16	1- 5/8	1- 7/8	1- 5/8	1- 11/16
1- 3/4	6- 3/4	1- 3/4	3- 1/2	1- 3/4	2- 15/32	1- 3/4	2- 1/32	1- 3/4	1- 13/16
1- 7/8	7- 1/4	1- 7/8	3- 3/4	1- 7/8	2- 21/32	1- 7/8	2- 5/32	1- 7/8	1- 15/16
2	7- 23/32	2	4	2	2- 13/16	2	2- 5/16	2	2- 1/16
2- 1/8	8- 7/32	2- 1/8	4- 1/4	2- 1/8	3	2- 1/8	2- 15/32	2- 1/8	2- 3/16
2- 1/4	8- 11/16	2- 1/4	4- 1/2	2- 1/4	3- 3/16	2- 1/4	2- 19/32	2- 1/4	2- 5/16
2- 3/8	9- 3/16	2- 3/8	4- 3/4	2- 3/8	3- 11/32	2- 3/8	2- 3/4	2- 3/8	2- 15/32
2- 1/2	9- 21/32	2- 1/2	5	2- 1/2	3- 17/32	2- 1/2	2- 7/8	2- 1/2	2- 19/32
2- 5/8	10- 5/32	2- 5/8	5- 1/4	2- 5/8	3- 23/32	2- 5/8	3- 1/32	2- 5/8	2- 23/32
2- 3/4	10- 5/8	2- 3/4	5- 1/2	2- 3/4	3- 7/8	2- 3/4	3- 3/16	2- 3/4	2- 27/32
2- 7/8	11- 3/32	2- 7/8	5- 3/4	2- 7/8	4- 1/16	2- 7/8	3- 5/16	2- 7/8	2- 31/32
3	11- 19/32	3	6	3	4- 1/4	3	3- 15/32	3	3- 3/32
3- 1/8	12- 1/16	3- 1/8	6- 1/4	3- 1/8	4- 13/32	3- 1/8	3- 19/32	3- 1/8	3- 7/32
3- 1/4	12- 9/16	3- 1/4	6- 1/2	3- 1/4	4- 19/32	3- 1/4	3- 3/4	3- 1/4	3- 3/8
3- 3/8	13- 1/32	3- 3/8	6- 3/4	3- 3/8	4- 25/32	3- 3/8	3- 29/32	3- 3/8	3- 1/2
3- 1/2	13- 17/32	3- 1/2	7	3- 1/2	4- 15/16	3- 1/2	4- 1/32	3- 1/2	3- 5/8
3- 5/8	14	3- 5/8	7- 1/4	3- 5/8	5- 1/8	3- 5/8	4- 3/16	3- 5/8	3- 3/4
3- 3/4	14- 1/2	3- 3/4	7- 1/2	3- 3/4	5- 5/16	3- 3/4	4- 11/32	3- 3/4	3- 7/8
3- 7/8	14- 31/32	3- 7/8	7- 3/4	3- 7/8	5- 15/32	3- 7/8	4- 15/32	3- 7/8	4
4	15- 15/32	4	8	4	5- 21/32	4	4- 5/8	4	4- 1/8
4- 1/8	15- 15/16	4- 1/8	8- 1/4	4- 1/8	5- 27/32	4- 1/8	4- 3/4	4- 1/8	4- 9/32
4- 1/4	16- 13/32	4- 1/4	8- 1/2	4- 1/4	6	4- 1/4	4- 29/32	4- 1/4	4- 13/32
4- 3/8	16- 29/32	4- 3/8	8- 3/4	4- 3/8	6- 3/16	4- 3/8	5- 1/16	4- 3/8	4- 17/32
4- 1/2	17- 3/8	4- 1/2	9	4- 1/2	6- 3/8	4- 1/2	5- 3/16	4- 1/2	4- 21/32
4- 5/8	17- 7/8	4- 5/8	9- 1/4	4- 5/8	6- 17/32	4- 5/8	5- 11/32	4- 5/8	4- 25/32
4- 3/4	18- 11/32	4- 3/4	9- 1/2	4- 3/4	6- 23/32	4- 3/4	5- 15/32	4- 3/4	4- 29/32
4- 7/8	18- 27/32	4- 7/8	9- 3/4	4- 7/8	6- 29/32	4- 7/8	5- 5/8	4- 7/8	5- 1/32
5	19- 5/16	5	10	5	7- 1/16	5	5- 25/32	5	5- 3/16
5- 1/8	19- 13/16	5- 1/8	10- 1/4	5- 1/8	7- 1/4	5- 1/8	5- 29/32	5- 1/8	5- 5/16
5- 1/4	20- 9/32	5- 1/4	10- 1/2	5- 1/4	7- 7/16	5- 1/4	6- 1/16	5- 1/4	5- 7/16
5- 3/8	20- 25/32	5- 3/8	10- 3/4	5- 3/8	7- 19/32	5- 3/8	6- 7/32	5- 3/8	5- 9/16
5- 1/2	21- 1/4	5- 1/2	11	5- 1/2	7- 25/32	5- 1/2	6- 11/32	5- 1/2	5- 11/16
5- 5/8	21- 23/32	5- 5/8	11- 1/4	5- 5/8	7- 31/32	5- 5/8	6- 1/2	5- 5/8	5- 27/32
5- 3/4	22- 7/32	5- 3/4	11- 1/2	5- 3/4	8- 1/8	5- 3/4	6- 5/8	5- 3/4	5- 31/32
5- 7/8	22- 11/16	5- 7/8	11- 3/4	5- 7/8	8- 5/16	5- 7/8	6- 25/32	5- 7/8	6- 3/32
6	23- 3/16	6	12	6	8- 15/32	6	6- 15/16	6	6- 7/32

How to Figure Total Length of Tubing Required for 45° Offset Applications

Determine the "X" dimension required for a particular application and subtract the amount of offset from this. From the example above: (Step 3) 2-1/2 inches offset was required and the "X" dimension as determined from the table was 3-17/32 inches. The difference between these two figures is 1-1/32 inch. Simply add this to the vertical distance from the starting point to the finishing point ("Z" dimension in illustration above).