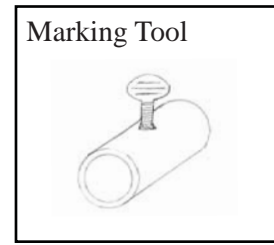
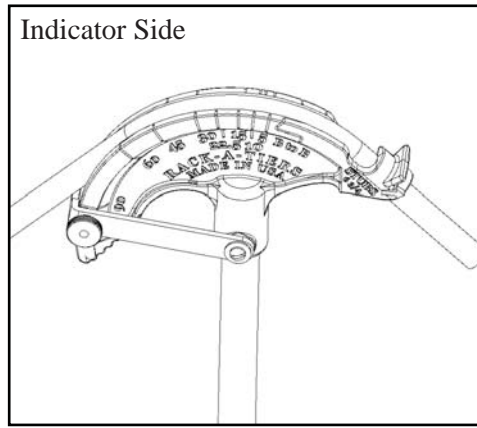
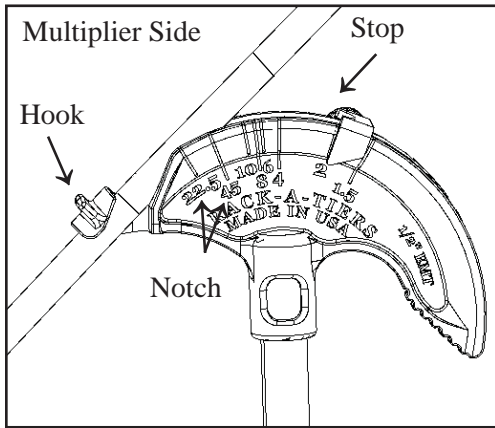


1/2 Inch Hoppy Precision Bending System

Bending Instructions - As Easy As 1, 2, 3



EMT Hand Bender with Patented Adjustable Mechanical Stop
 Patent number US 6,834,527 B2 December 28, 2004



Marking Your Conduit Using The Marking Tool

1. Use a fine point marker or sharp pencil to mark the conduit.
2. Measure very carefully and mark accurately using the conduit marking aid furnished.
3. Conduit marks may be placed on the front of the bender shoe or at any point chosen but must be placed at exactly the same point each time to create accurate bends.
4. The conduit marking aid furnished can be used to accurately transfer marks from one side of the conduit to the other. Accurate measuring, careful marking, careful placement of the marks and a little practice will create very accurate bends every time.

TABLE 1

Desired offset	Mark conduit	Set stop on
3/8	3 3/4	10
1/2	4	8
3/4	6	6
3/4	4 1/2	
1	6	
1 1/4	7 1/2	
1 1/2	9	4
1 1/2	6	
1 3/4	7	
2	8	
2 1/4	9	2
2 1/2	10	
2 3/4	11	
3	12	
3	6	1.5
3 1/4	6 1/2	
3 1/2	7	
3 3/4	7 1/2	
4	8	
4 1/4	8 1/2	
4 1/2	9	
4 3/4	9 1/2	
5	10	
5 1/4	10 1/2	
5 1/2	11	
5 3/4	11 1/2	
6	12	
6	9	
6 1/4	9 3/8	
6 1/2	9 3/4	
6 3/4	10 1/8	
7	10 1/2	
7 1/4	10 7/8	
7 1/2	11 1/4	
7 3/4	11 5/8	
8	12	
8 1/4	12 3/8	
8 1/2	12 3/4	
8 3/4	13 1/8	
9	13 1/2	
9 1/4	13 7/8	
9 1/2	14 1/4	
9 3/4	14 5/8	
10	15	

Example: 3" offset →

1. Mark conduit 6" apart
2. Set stop on 2
3. Bend conduit

Offset Bends

STEP 1: Read Table 1 & Mark Conduit

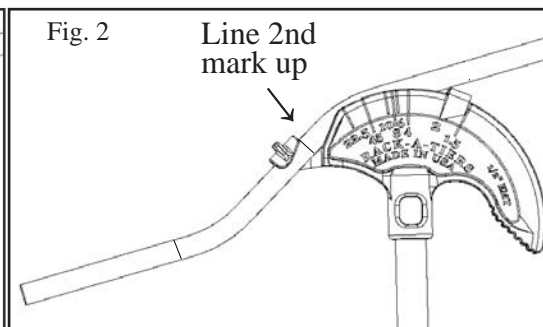
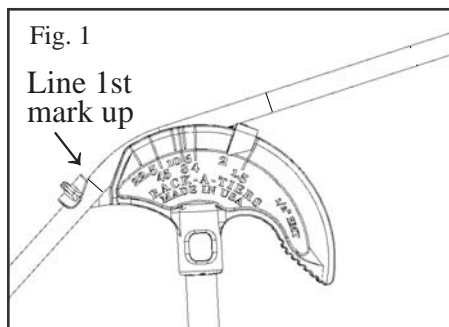
- Mark Line 1 on the conduit for your initial bend
- Locate the height of the bend under **Desired Offset**
- Locate the corresponding measurement under **Mark Conduit**
- Mark Line 2 the distance away from Line 1 indicated under **Mark Conduit**

STEP 2: Set Stop

- Set the stop as indicated in the **Set Stop On** column

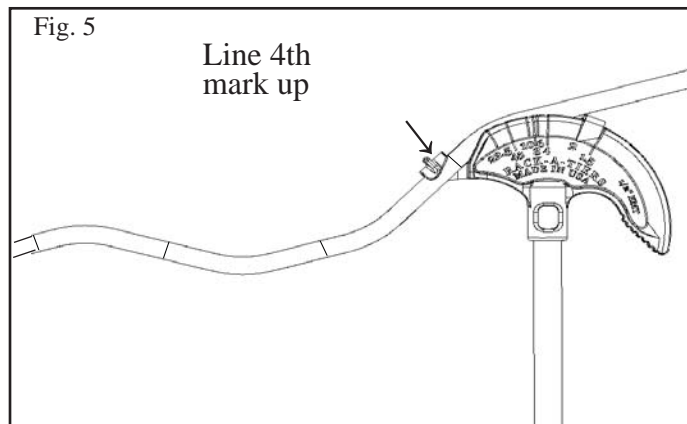
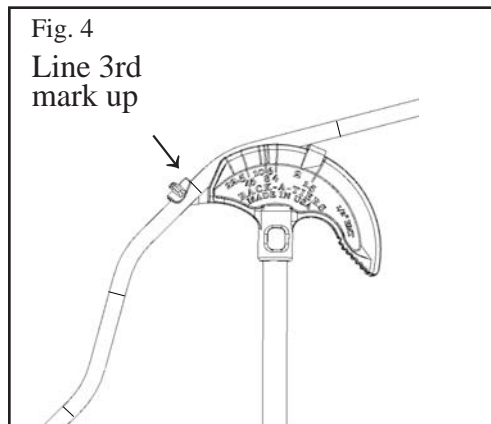
STEP 3: Bend Conduit

- Place the toe of the bender on Line 1 (Fig. 1)
- Apply pressure until conduit lightly touches the stop (Fig. 1)
- Rotate conduit 180° and place toe of bender on Line 2 (Fig. 2)
- Apply pressure until conduit lightly touches the stop (Fig. 2)



Four Point Saddle (Back to Back Offset)

- Because a Four Point Saddle is really just two offset bends, you can follow the same instructions as above.
- After bending your first offset, simply keep the conduit in the bender and slide it to your next mark. Then execute the second offset.
- See Fig. 4 and Fig. 5 below.



90° Bend

NOTE: Stub-up point is front of bender hook

STEP 1: Mark Conduit

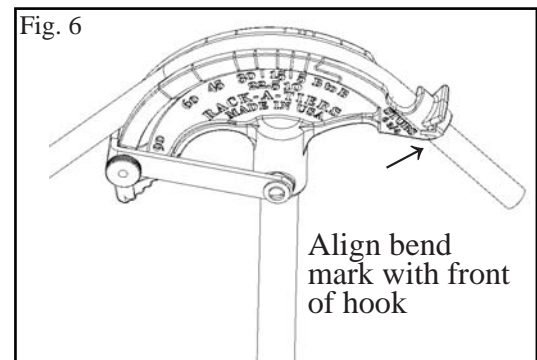
- Measure the length of the stub
- Subtract 6 3/4" from desired stub-up length
- Mark conduit at bend point

STEP 2: Set Stop

- Set the swing stop at the 90° INDICATOR
- Align bend mark with front of bender hook (Fig. 6)

STEP 3: Bend Conduit

- Apply pressure until conduit lightly touches the stop (Fig. 6)



Back-to-Back Bend

When the length of your conduit requires that the 90° bend be taken up by the bending tool in reverse, use these Back-to-Back instructions.

STEP 1: Mark Conduit

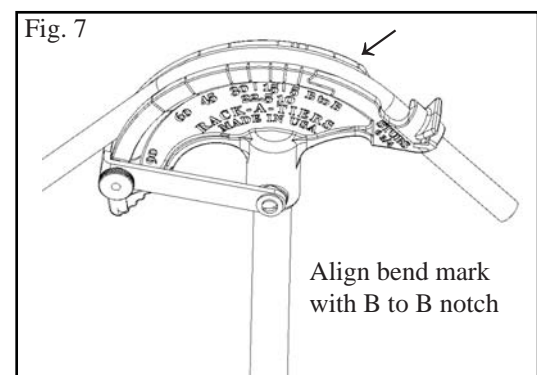
- Mark conduit exactly the distance required
- Do not subtract to stub up

STEP 2: Set Stop

- Set the swing stop at the 90° INDICATOR
- With the measured distance towards the swing stop, align the bend mark with the **BtoB** notch on the indicator side of bender (Fig. 7)

STEP 3: Bend Conduit

- Apply pressure until conduit lightly touches the stop



Segment Bending and Concentric Bends

After calculating segment bend specifications, simply mark your pipe at desired intervals and set the stop on the desired degree INDICATOR.

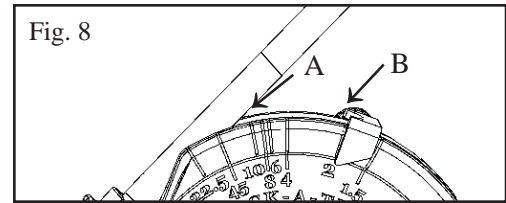
STEP 1: Place the conduit in bender and line up your first mark on line 1 (Fig. 1)

STEP 2: Measure the distance between the underside of the conduit and the stop, or between A and B as shown in Fig. 8

STEP 3: Apply pressure until conduit lightly touches the stop

STEP 4: Slide conduit forward and align next mark on line 1 as per Fig. 1. Readjust and lock the swing-arm to maintain the same distance between the underside of the conduit in the stop calculated in Step 2. Apply pressure until conduit lightly touches the stop

STEP 5: Repeat Step 4 approximately sixteen times or until you no longer need to readjust and lock the swing arm to maintain the same distance calculated in Step 2.



Three Point Saddle

This bend is most commonly used when you encounter another conduit and need to go over it.

STEP 1: Read Table 2 & Mark Conduit

- Locate the dimension of obstacle under **Depth of Saddle**
- Mark center of saddle and adjust based on **Shrink** column
- Mark the two outside bends from the center mark based on the figures under column C

Follow the order below, completing steps 2 and 3 for each bend before moving on, to complete the next bend:

First Bend (Fig. 9)

STEP 2: Set Stop

- Lock the the swing-arm at the 22.5° INDICATOR
- Place the conduit in the bender with your First Bend mark at the 22.5° NOTCH (on the multiplier side of the head)

STEP 3: Bend Conduit

- Apply pressure until conduit lightly touches the stop

Center Bend (Fig. 10)

STEP 2: Set Stop

- Lock the the swing-arm at the 45° INDICATOR
- Leave conduit in bender and rotate 180°
- Slide conduit and align Center Bend mark with 45° NOTCH (on the multiplier side of the head)

STEP 3: Bend Conduit

- Apply pressure until conduit lightly touches the stop

Third Bend (Fig. 11)

STEP 2: Set Stop

- Leave conduit in bender and rotate 180°
- Repeat Step 2 of First Bend

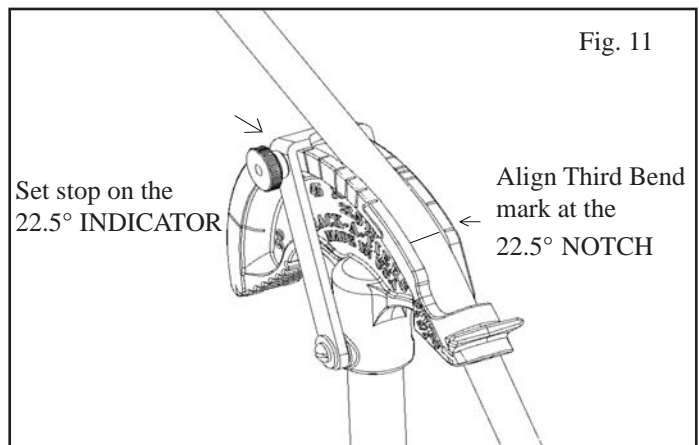
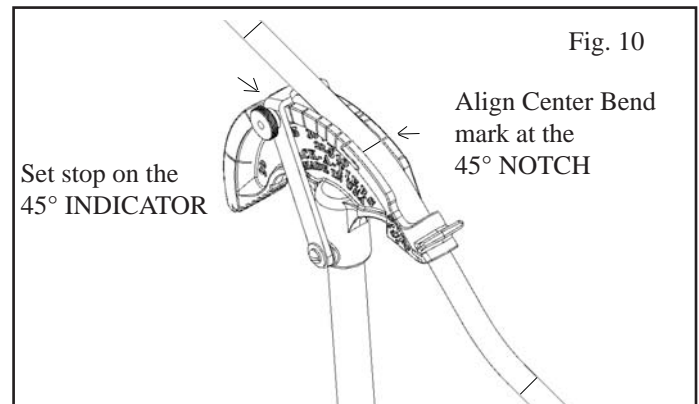
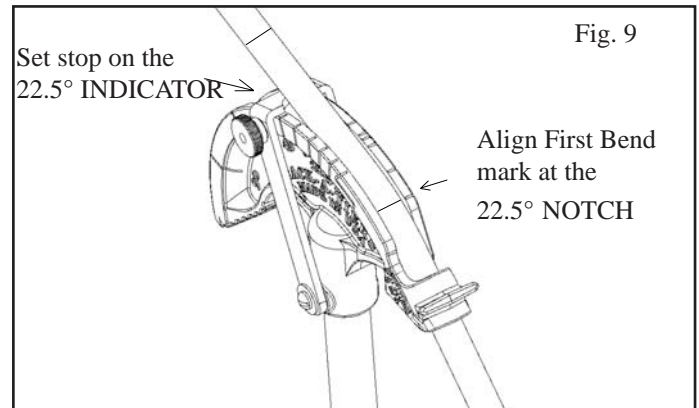
STEP 3: Bend Conduit

- Apply pressure until conduit lightly touches the stop

WARNING: Calibration results may vary due to variance in manufacturer's conduit and individual bending styles. Handle and store with care. Rough treatment and improper storage can affect the calibration of your Hoppy Bender.

TABLE 2

1/2" THREE POINT SADDLE CHART			
DEPTH OF SADDLE	C		SHRINK
1 1/2	5"	5"	3/16"
2"	6"	6"	1/4"
2 1/2"	7"	7"	5/16"
2 3/4"	8"	8"	3/8"
3"	9"	9"	7/16"
3 1/2"	10"	10"	1/2"



Bending Tips

1. When setting the mechanical stop on the selected stop or degree mark, place the front of the stop (indicated by the alignment arrow) on the center of the mark.

2. If bending with the handle grip on the floor is preferred to create an offset, three point or four point saddle, maintain a consistent grip on the conduit close enough to the head to prevent the conduit from bending except within the shoe and apply pressure until the conduit gently contacts the stop.

Note: The bender head may be placed on the floor if desired, to make any bend, if the stop is set snugly and bending force is stopped immediately when the conduit contacts the stop. A little practice will help you determine the required “feel”.

3. Individual bending styles vary. The stop is easily adjusted slightly on either side of the mark as required if your bending style does not generate a perfect bend the first time.

4. Note: Calibration marks will work with EMT conduit only.

Introducing the “Hoppy” Precision EMT Bending System

by Rack-A-Tiers Mfg. Inc.

Patent number US 6,834,527 B2 December 28, 2004

This new development in hand benders is more than just another “stop” idea attached to your favorite bender. It is a “precision bending system” built into the ½”, ¾” and 1” hand bender that is extremely easy to use.

About the inventor:

This tool was invented by, Greg “Hoppy” Hopwood of Windsor, PA. Greg has been a construction electrician for 35 years and has continuously searched for easier and more accurate ways to bend conduit. His most recent effort has been the development of the “Hoppy” hand bender, a tool that allows an electrician at any skill level to quickly and easily make very installable offsets, four-point saddles and three-point saddles with less effort and greater speed than any hand bending tool on the market today. Amazingly, all this has been accomplished without removing any of the existing features found on commonly used benders.

The “Hoppy” Precision Bending System offers these unique features:

- A “Stop” attached to the Bender head used to create exact, repeatable bends every time
- Simplified “Multipliers” engraved into the bender for placing the “stop” prior to making offsets and four-point saddles
- Special 22.5 and 45 degree marks engraved into the bender for placement of conduit bend marks as well as standard degree marks for stop placement, used together for bending three-point saddles without reversing the conduit in the shoe
- Handy reference charts attached to the handle for locating bend marks
- Marking tool for accurate markings

These features result in the ability to accurately produce any bend in less time than with existing benders and, these bends are easily duplicated if conduits are being installed in parallel! Time studies have shown offset can be made, four-point saddle and three point saddle can be made in 1/3 of the time. These times include marking the conduit, setting the “stop” and making the bends and best of all, you never get on the floor with your conduit, foot rule and straight edge! Difficult “three point saddles” are very quick, easy and accurate and finish on the same plane every time. Also, the radius of the bender head has been extended to allow for a 90 degree of bend mark which adds the ability to bend perfect 90’s every time.

The “Hoppy” bender has been widely field tested and is ready to make your life easier and more profitable. After using the bender for the first time, fellow electrician, Jeremy King stated, “Darn, Greg; you’ve taken all the skill out of bending pipe!!” Another user, Bill Gring commented, “I no longer check my bends. I just make it and install it”.

Once you give “Hoppy’s” system a try we are convinced you will feel the same way. Everyone that has used it has loved it! We look forward to adding you to our list of satisfied customers..

Happy “Hoppy” bending!

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