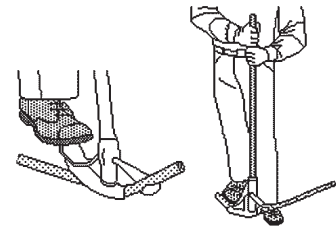




CAUTION !!! Be sure to line up all bends to be in the same plane.

Hand Benders for Metal Conduit

Patented Site-Rite® indicator to easily eyeball key bending angles. Nonslip pedal for added leverage. Strong stable square hook design. Cast-in markings for stub ups, saddle bends, back-to-back bends, and head up or down bending. Cast-in multiplier factor for offset bends. Handles sold separately.



Instructions

Bend conduit with skill and professionalism. Take the guess-work out of bending.

Steps to Remember

Step 1. Measure your job.

Step 2. Mark your conduit using the recommended tables.

Step 3. Use your bender's engineered marks.

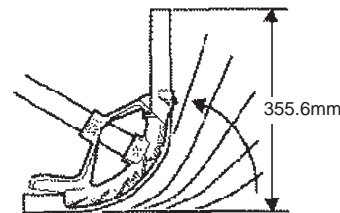
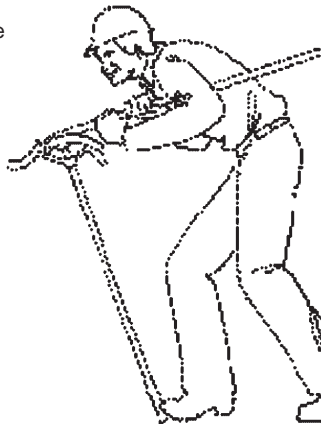
Note: Reference to the above Steps 1, 2, and 3 will be made throughout this bending guide.

Order Information

Catalog Number	Ref. Number	EMT Size	Rigid Size GRC-IMC	Centerline Radius	For use with	Weight each	VPE Packed	EDP No.
840	4A732	1/2"	---	106.4mm	# 845	590g	1	112987
841	4A733	3/4"	1/2"	130.2mm	# 845	908g	1	112988
842	4A734	1"	3/4"	165.1mm	# 846	1816g	1	112989
845	5C635	Long Handle Ø 19.1mm x Length 965.2mm				1589g	1	112990
846	5C636	Long Handle Ø 25.4mm x Length 1117.6mm				2769g	1	112991

Don't Forget

- When bending on the floor, pin the conduit to the floor. Use heavy foot pressure.
- When bending in the air, exert pressure as close to your body as possible.
- In case you overbend, use the back pusher or the expanded end of the bender handle to straighten your conduit to fit the job.



How to Make Back-To-Back Bends

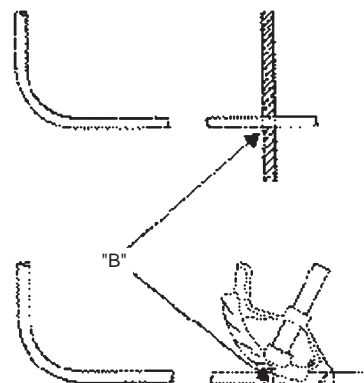
A back-to-back bend produces a "U" shape in a single length of conduit. Use the same technique for a conduit run across the floor or ceiling which turns up or down a wall.

Example:

Step 1. After the first 90° bend has been made, measure to the point where the back of the second bend is to be, "B".

Step 2. Measure and mark your conduit the same distance, mark "B".

Step 3. Align the mark on the conduit with the Star-Point on the bender and bend to 90°.



How to Bend a Stub

The stub is the most common bend. Note that your bender is marked with the "take-up" of the arc of the bender shoe.

Example:

Consider making a 355.6mm stub, using a 3/4" EMT conduit.

Step 1. The bender indicates stubs 6" (152.4mm) to ↑ Simply subtract the take-up, or 152.4mm, from the finished stub height. In this case 355.6mm minus 152.4mm = 203.2mm.

Step 2. Mark the conduit 203.2mm from the end.

Step 3. Line up the Arrow on the bender with the mark on the conduit and bend to 90°.

Remember: Heavy Foot pressure is critical to keep the EMT in the bender groove and to prevent kinked conduit.

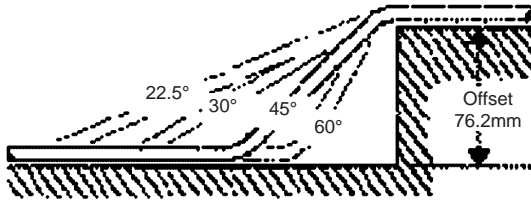
Star-Point on bender must be referenced for accurate bends.

How to make an Offset Bend

The offset bend is used when an obstruction requires a change in the conduit's plane.

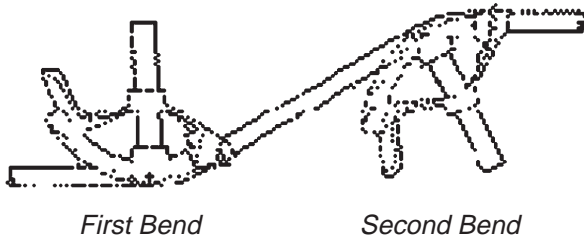
Before making an offset bend, you must choose the most appropriate angles for the offset. Keep in mind that shallow bends make for easier wire pulling, steeper bends conserve space.

You must also consider that the conduit shrinks due to the detour. Remember to ignore the shrink when working away from the obstruction, but be sure to consider it when working into it.



Example:

- Step 1.** Measure the distance from the last coupling to the obstruction.
- Step 2.** Add the "shrink amount" from the table on this page to the measured distance and make your first mark. Your second mark will be placed at the "distance between bends". (Refer to the table on this page.)
- Step 3.** Align the Arrow with the first mark and using the Degree Scale bend to the chosen angle. Slide down the conduit, align the Arrow and bend as illustrated.



Example:

30° Bend with a 76.2mm Offset Depth

Distance Between Bends = 152.4mm Shrink Amount = 19.1mm

Degree of Bend

Offset Depth	22.5°		30°		45°		60°	
50.8	133.4	9.5						
76.2	196.9	14.3	152.4	19.1				
101.6	266.7	19.1	203.2	25.4				
127.0	330.2	23.8	254.0	31.8	177.8	47.6		
152.4	393.7	28.6	304.8	38.1	215.9	57.2	184.2	76.2
177.8	463.6	33.3	355.6	44.5	247.7	66.7	212.7	88.9
203.2	527.1	38.1	406.4	50.8	285.8	76.2	244.5	101.6
228.6	596.9	44.5	457.2	57.2	317.5	85.7	276.2	114.3
254.0	660.4	47.6	508.0	63.5	355.6	95.3	304.8	127.0



Bend offsets in the air. Remember to keep your body pressure close to the bender.

How to Make Saddle Bends

The saddle bend is similar to an offset bend, but in this case the same plane is resumed. It is used most often when another pipe is encountered.

Most common is a 45° center bend and two 22.5° outer bends, but you can use a 60° center bend and two 30° bends.

Important: Use the same calculation for either set of angles.



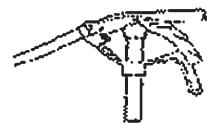
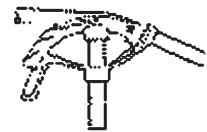
Example:

- Step 1.** You encounter a 3" O.D. pipe 4 feet from the last coupling. The formula shown in the chart below indicates that for each inch of outside diameter of the obstruction, you must move your center mark ahead 3/16" per inch (4.8mm) of obstruction height and make your outer marks 2-1/2" per inch (63.5mm) of obstruction height from the center mark.
- Step 2.** The following table gives the actual mark spacings. In this example, the center mark is moved ahead 9/16" (14.3mm) to 48-9/16" (1233.5mm). The outer marks are 7-1/2" (190.5mm) from the center mark, or 41-1/16" (1043.0mm) and 56-1/16" (1424.0mm). Mark your conduit at these points.

If Obstruction Is	Move Your Center Mark Ahead	Make Outside Marks From Center Mark
25.4mm	4.8mm	63.5mm
50.8mm	9.5mm	127.0mm
76.2mm	14.3mm	190.5mm
101.6mm	19.1mm	254.0mm
127.0mm	23.8mm	317.5mm
152.4mm	28.6mm	381.0mm

Step 3.

- (A) Align the center mark with the Rim Notch and bend to 45°.
- (B) Do not remove the conduit from the bender. Slide the bender down to the next mark and line up with the Arrow. Bend to 22.5° as indicated.
- (C) Remove and reverse the conduit and locate the other remaining mark at the Arrow. Bend to 22.5° as indicated.



Hickeys

Hickeys require a different approach to bending. It is not a fixed radius device but rather one that requires several movements per bend. The hickey can give you the advantage of producing bends with a very tight radius.

Hickeys are available upon request.

Further Iron Benders, Aluminum Benders and Handles available upon request.

