EL130 – Three Point Saddle Bend

Program: Electrical Technician

Course: EL130 Flexible Cables/Conduit Bending and Raceways

Objectives: Under the supervision of your instructor, you should be able to do the following:

- Make a 3-point saddle in a length of conduit to cross over a 3" pipe.

Lab Equipment: N/A

Required Tools:

- 1 – ½" pipe bender
- 1 – Tape measure

Materials:

- 1 – Pencil
- 1 – 4" X 4" block
- 2 – 4/s metal boxes without brackets
- 2 – ½" EMT set screw connectors
- 5' – ½" EMT pipe

Safety (PPE):

- Safety glasses/goggles
- Hard Hat

Resources:

- Ugly' s Electrical References Book

Required Time: 1 hr.

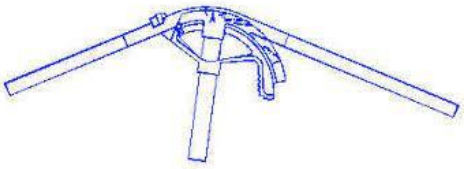
Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility

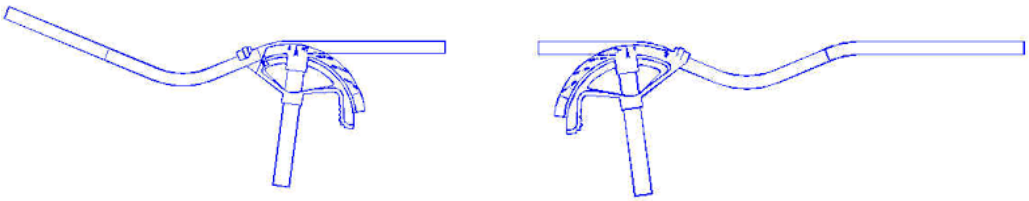
Procedures: *(Eye protection must always be worn)*

Steps to bending a 3- point bend going over an object that is 3" tall

1. For beginner purposes we are going to use 45^0 bends with two 22.5^0 bends, reference Table 4 in Hand Bending Chapter in your book, the ½" EMT bending chart will give you the degrees you bend based off the height you need to clear.
2. Locate the center, (where the center of the pipe obstruction will be on the conduit you are bending) mark "A" on the conduit. Calculate the shrink rate of the obstruction and add it to the measurement of the center mark on the conduit.
3. Locate marks "B" and "C" on the conduit by measuring the appropriate amount per 1" that is found on the chart. Refer to Table 4 again.
4. Make a 45^0 bend at point "A" using the Rim notch on the pipe bender. Bend this in the air (have the handle on the ground and the shoe up.



5. Make your two 22 $½^0$ bends using the arrow and keeping the hook facing towards the obstacle (center of bend).



6. Be careful when you turn the conduit as you make your bends to keep the bends aligned to avoid making doglegs. Dogleg definition – when the electrical conduit is not aligned correctly, a crooked or dogleg pipe occurs.