



# Round Tubing Bender

## OPERATION MANUAL

### SPECIFICATIONS:

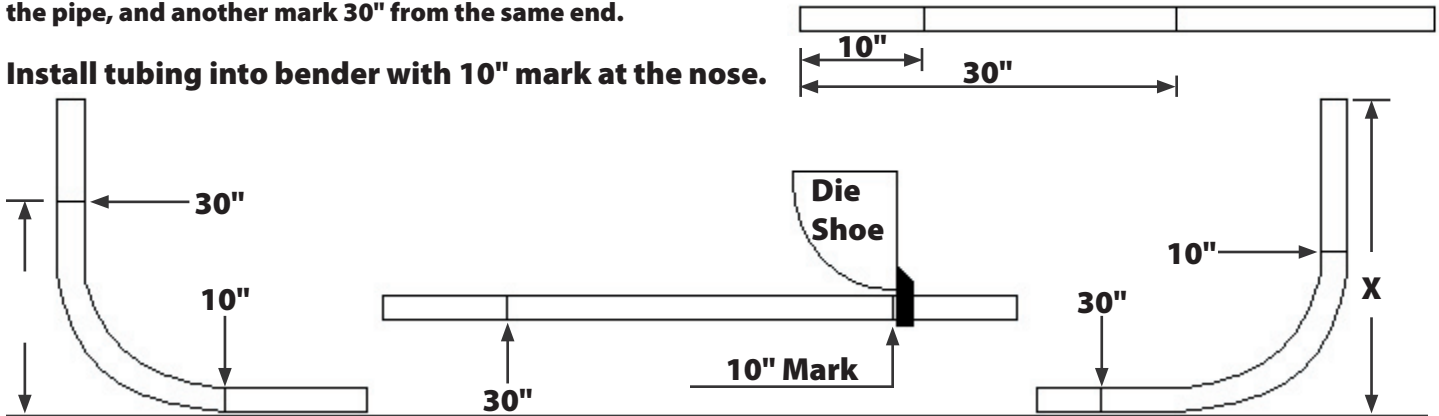
**Maximum Tubing Thickness**  
**Hydraulic Jack**

**Bend Up To .134" Wall Thickness**  
**8-Ton**

### BENDING TUBING:

When tubing is bent one side gets longer, the other gets shorter. To determine this, make a mark 10" from the end of the pipe, and another mark 30" from the same end.

Install tubing into bender with 10" mark at the nose.



- Make a 90-degree bend then lay the bent pipe on a flat surface to measure the distance (X) to the top. This number minus 10" will be the nose length.

- Lay the pipe with the other end up and measure the distance to the 30" mark. Twenty inches minus this distance will be the tail length.

- If using a 1-3/4" die shoe, the nose should be about 12" and the tail should be about 5-3/4". Note: Every pipe diameter will yield different results.

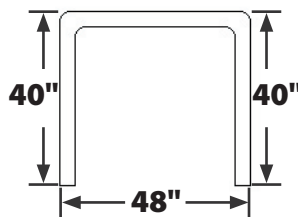
- To find the length of tubing needed to make a hoop, use the following formula:

2 times height + width + 2 times tail - 2 times nose.

**Example** - A 40" high by 48" wide hoop as follows:

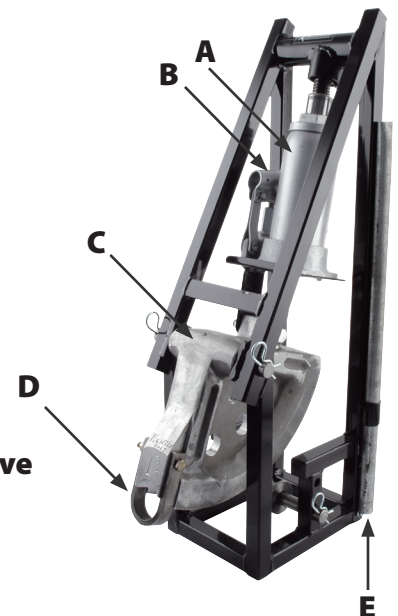
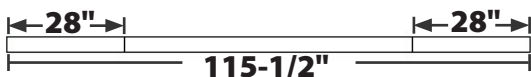
A.)  $2 \times 40" + 48" + 2 \times 5\text{-}3/4" - 2 \times 12" = 115\text{-}1/2"$

B.)  $80 + 48" + 11\text{-}1/2" - 24" = 115\text{-}1/2"$



- Mark the first bend at 40" - 12" (nose) = 28". This mark should line up on the front of the bender, same as 10" previous mark previously.

- Bend 90-degree - Turn pipe around to other mark. Bend other end up.



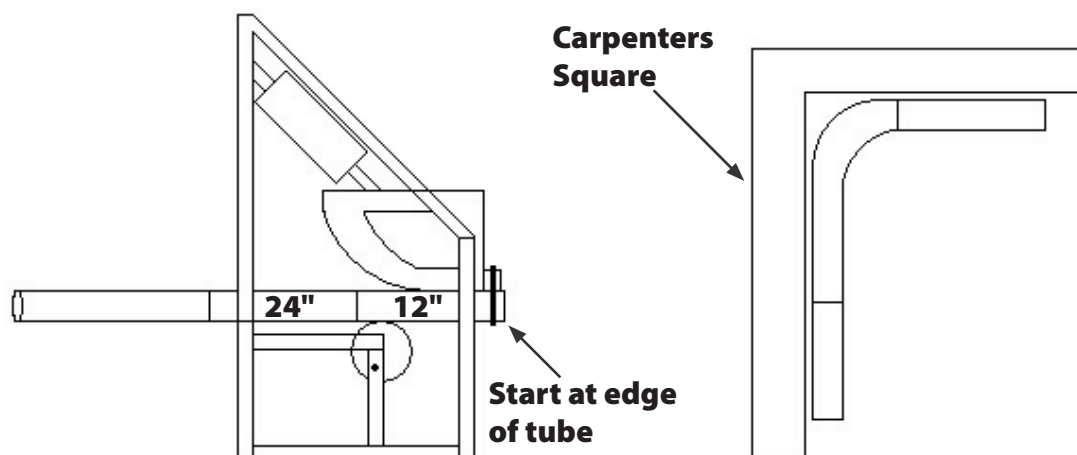
**A. Hydraulic Jack**  
**B. Jack Handle Sleeve**  
**C. Die Shoe**  
**D. Nose Strap**  
**E. Jack Handle**

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### HELPFUL TIPS:

When tubing is bent one side gets longer, the other gets shorter. To determine this, make marks at 12" and 24" on the tube. Create a 90-degree bend starting with the 12" end at the nose strap. Put bent tube in a carpenters square and record information for complicated bends like door bars.



1. Wiping oil on the tube or die shoe helps the bender to perform easier.
2. When working in hard to access areas, try bending a coat hanger to fit in place first. Then bend the tube to match. Over bend to compensate for any spring back.
3. Measure across die shoe to determine the size of shoe. All die shoes and rear spools are marked clearly. No other tube size should be used. Do not try to bend tube heavier than .134" wall thick, mild steel, or .095 chrome moly.
4. Holding strap on the nose of the die shoe has a 3/8" bolt and it must be tightened before each bend to avoid damage.
5. Tubing diameter is the outside dimension, commonly referred to as O.D. This is determined by measuring across the outside of the tube.
6. Wall thickness can be determined by subtracting the I.D. from the O.D. Then divide that figure in half.
7. Pipe and tubing are not the same. Pipe is not made for auto use and is not accepted by most sanctioned auto races.

REPLACEMENT PART NO.	DESCRIPTION
ALL10305	1-3/4" x 7" Radius Die Shoe And Roller
ALL10315	1-5/8" x 7" Radius Die Shoe And Roller
ALL10325	1-1/2" x 7" Radius Die Shoe And Roller
ALL10335	1-1/4" x 5" Radius Die Shoe And Roller
ALL10345	1" x 5" Radius Die Shoe And Roller
ALL10390	Hydraulic Jack
ALL10391	Jack Handle
ALL10392	Lower Roller Shaft

**All die shoes listed in chart are interchangeable with the same hydraulic jack and frame.**

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## HYDRAULIC CYLINDER:

### Before Use:

1. Using the provided handle, open the release valve by turning counter clockwise 1/2-1 full turn from the fully closed position.
2. With piston fully seated, locate and remove the oil filler plug. Insert handle into the handle sleeve and pump 6 to 8 full strokes. This should release any pressurized air which may be trapped within the reservoir from shipping. Oil level should be even with the bottom of the oil filler plug hole. Reinstall the oil filler plug. Repeat if needed.
3. Check to ensure the pump operates smoothly before putting into service. Lubricate as instructed in Hydraulic Cylinder Maintenance section.

### Pressure Application:

1. Close release valve by turning handle clockwise until firm resistance is felt to further thread engagement.
2. Insert handle into receiving sleeve and pump to apply pressure.

### Pressure Release:

1. Slowly turn the handle counterclockwise.
2. After removing load, push cylinder piston all the way down to reduce exposure to rust and contamination.

## HYDRAULIC CYLINDER MAINTENANCE:

Use only high grade hydraulic jack oil. Avoid mixing different types of fluid and NEVER use brake fluid, turbine oil, transmission fluid, motor oil, or glycerine. Improper fluid can cause failure of the cylinder. For best performance and longest life, replace the complete fluid supply at least once per year.

### ADDING OIL:

1. With cylinder piston fully depressed, place cylinder in its upright, level position. Remove oil filler plug.
2. Fill until oil is level with the filler plug hole, reinstall oil filler plug.

### CHANGING OIL:

- 1 With cylinder piston fully depressed, remove the oil filler plug.
2. Lay the jack on its side and drain the fluid into a suitable container. Dispose of used hydraulic fluid in accordance with local regulations.
3. Place the cylinder in its upright, level position. Fill until oil is level with the filler plug hole, reinstall oil filler plug.

A periodic coating of light lubricating oil to pivot points, axles and hinges will help to prevent rust and assure that cylinder assemblies move freely. Periodically check the cylinder piston for signs of rust or corrosion. Clean as needed and wipe with an oily cloth.

## TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Cylinder will not pressurize	Release valve not closed tightly	Ensure release valve is fully closed
Cylinder loses pressure	Release valve not closed tightly	Ensure release valve is fully closed
Cylinder will not release pressure	Reservoir overfilled Linkages binding	Drain fluid to proper level Clean and lubricate moving parts
Poor pressure	Low fluid level Air trapped in system	Ensure proper fluid level With piston fully lowered, remove oil filler plug to let pressurized air escape.

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