ASSEMBLY — TBM-250 / TBM-250R

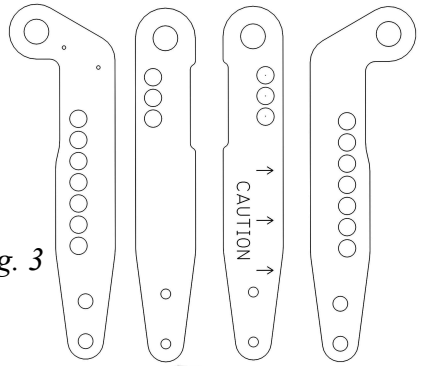


Fig. 3

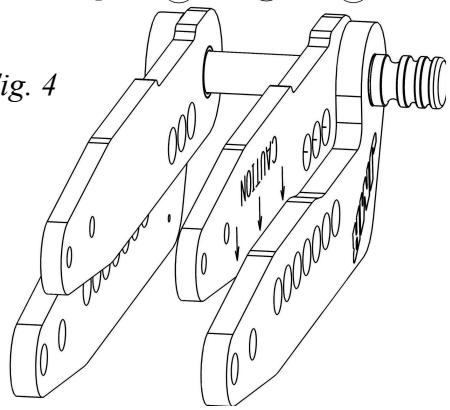


Fig. 4

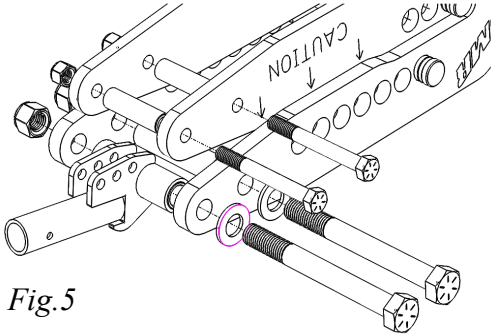


Fig.5

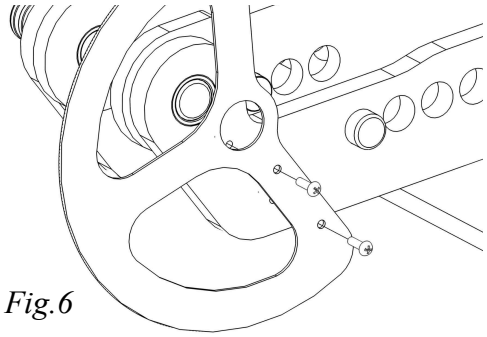


Fig.6

You will need: soft-face mallet • phillips screwdriver • ¾″ & 1-⅛″ wrench/socket • all-purpose grease

Assembly takes about 15–20 minutes on a clean, flat, dirt-free workbench.

1. Lay the four arms flat as shown (*Fig. 3*): match their orientation exactly to the example.

2. Grease both bushings; seat the long end of the bushing into each dogleg arm with a mallet.

3. FLIP each straight arm onto each dogleg arm, aligning the main pivot hole; tap until fully seated. Engravings should be facing the same direction.

4. Stand the arm pairs on end and slide the main pivot pin through the bushings (*Fig. 4*), until it is flush with the bottom arm.

5. From the top, seat the longer pin into the dogleg arms, then the shorter drive pin into the straight arms.

6. Fit the ¾″ bolts with washers (large spacer nearest the pins, clevis per *Fig. 5*) — do not fully tighten at this time.

7. Fit the ½″ bolts and spacers; fully tighten nuts.

8. Hang the pivot end off the bench and mount the degree wheel, holes aligned, indicators up (*Fig. 6*).

9. Mount to your stand; then fully tighten the ¾″ bolts from Step 6, confirming the pivot pin turns freely.

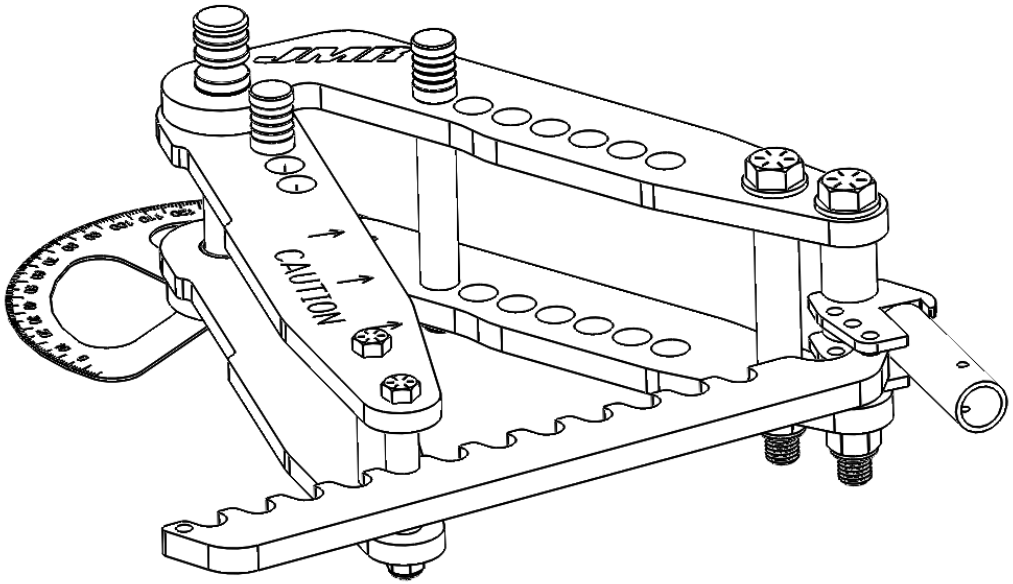
10. Install the drive rack, you're ready to bend.

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MANUAL BENDER
RACELINE MANUAL BENDER

TBM-250 / TBM-250R — Owner's Manual

Safety • Operation • Assembly • Warranty



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Thank you for choosing JMR.

SAFETY INSTRUCTIONS

Read every instruction before operating the bender.

1. Give the bender your full attention. Turn off your cell phone, pager, or any other distraction before you begin.

2. This machine must only be operated by someone with a thorough working knowledge of tube bending and machinery in general.

3. The bender is designed for a single operator. Never have one person run the bender while a second person holds the tube.

4. Always wear eye protection while operating the tube bender.

5. Keep hands and all other body parts out of the bender apparatus at all times.

6. Never wear loose clothing while operating the bender, and tie back long hair.

7. Work only in a clean, safe, well-lit, level work area.

8. Never use a die that is the wrong size or type for the material you are bending.

9. Never operate the bender if any part is broken, worn, or damaged.

10. Do not attempt to repair a damaged bender or bender part and return it to service.

11. The user assumes all risks associated with using this product.

12. This is a hand-operated machine only. Do not use a bender handle longer than 36″. A longer handle over-stresses the unit.

13. JMR Manufacturing offers upgrade kits to convert this bender to hydraulic operation. Using hydraulics from another manufacturer will void all warranties and may cause damage or injury.

WARRANTY

1. One-year limited warranty on the tube bender. Using aftermarket parts not made by JMR Manufacturing — including non-JMR dies, hydraulic cylinders, and adapters — voids this warranty.

2. To make a warranty claim, please read our full warranty policy at:

https://www.jmrmfg.com/policies/refund-policy

3. JMR Manufacturing is not responsible for personal injury or property damage resulting from failure of any part it manufactures or sells. The user assumes all risks of use.

OPERATION OF THE BENDER

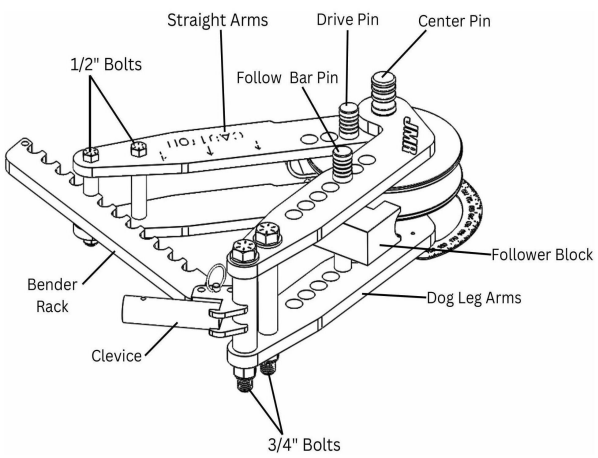


Fig. 1 Bender overview

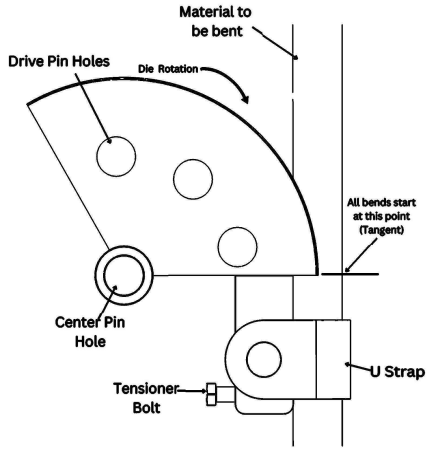


Fig. 2 Bend start point

1. *Fig. 1* shows the overall bender head — use it to identify the parts named below.

2. Make sure the tubing you plan to bend is clean and free of defects.

3. Lubricate the follower die block before every bend. JMR BendLube is preferred; grease may also be used. Never use WD-40 or any other aerosol spray oil. Do not lube the radius die.

4. Confirm that all drive pins are fully seated, or damage could occur.

5. Feed the tube into the die and position it for the start of the bend. Every bend starts at the edge of the radius die, as shown in *Fig. 2*

6. Grease the pivot bushings every 250–500 cycles under normal use; more often under heavy use.

7. Install the U-strap and snug the retainer bolt if needed. Make sure the pin is fully seated, or the U-strap will be damaged.

8. WARNING: Never put your hands or other body parts into the bender apparatus. While gently pulling the handle, confirm the rack teeth FULLY engage the drive sleeve at the end of the pivot arm before pulling the lever through its full range.

9. SLOWLY and under full control, release the tension on the bender lever, then repeat the engage-and-pull motion to advance to the next set of rack teeth.

10. Each full stroke of the drive rack produces a bend of about 41°. To bend further, index the radius die to the next drive hole: release tension, remove the drive pin, rotate the pivot arm to the next hole, reinstall the pin, and repeat.

11. When the bend is complete, slowly release tension, rotate the pivot arm to free the tube (loosening the U-strap if needed), and remove the tube.