



INSTRUCTION MANUAL FOR:
**UNIVERSAL HYDRAULIC
TUBE FLARING SET
FF-3**

Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THIS PRODUCT CORRECTLY AND WITH CARE, FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

WARNING! Ensure general workshop practice requirements are adhered to when using this equipment. Familiarize yourself with the application and limitations, as well as the potential hazards of the kit.

This kit is suitable for flaring copper, brass, steel or thin walled aluminum tube.
Maintain the kit in good condition.

Replace or repair damaged parts. Use genuine parts only. Unauthorized parts may be dangerous and will invalidate the warranty.

Locate the flaring tool in a suitable work area, keep the area clean and tidy and ensure there is adequate lighting.

WARNING! Always wear approved eye or face protection when using the flaring tools.

Keep children and unauthorized persons away from the working area.

DO NOT use the kit for any purpose other than for which it is designed.

DO NOT use the kit if any parts are damaged or missing as this may cause failure and/or personal injury.

DO NOT allow untrained persons to use the kit.

DO NOT attempt to flare when you are tired.

When not in use clean kit components, replace in case and store in a safe, dry, childproof area.

WARNING! The warnings, cautions and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.

2. PREPERATION

- Square-cut the tube end.
- Chamfer the outside and ream the inside of tubing to remove all burrs and rough edges. Be sure to clear metal chips from inside tubing and clean outside.
- Lightly lubricate the end of the prepared tubing with a small amount of clean brake fluid.
- Place the appropriate brake line fittings over ends of tubing, with the flared and threaded end facing outward.



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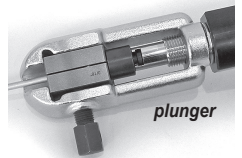
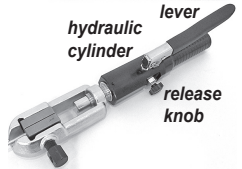
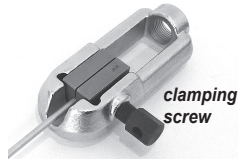
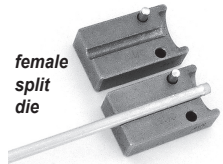


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3. OPERATION

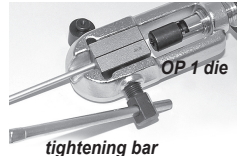
FORMING 45° DOUBLE INVERTED FLARES

- Thread the yoke handle into the bottom of the yoke.
- Place halves of the correctly sized split-die set around the tubing making sure the alignment pins are seated in the holes.
- Place the split-die set with tubing into the yoke and finger-tighten the clamping screw to hold them in place. The end of the tubing must extend a small amount beyond the face of the split die.
- Turn the release knob counter-clockwise to the "open" position.
- Thread the hydraulic cylinder portion of the tool partially into the yoke.
- Select the "OP 0", flat-faced male die and insert it into the retaining slot on the end of the plunger. Make sure the spring loaded detent ball is seated in the recess on the back of the die.
- Thread the hydraulic cylinder the remainder of the way into the yoke.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will slide the tubing into the correct 'flush with the face of the female die' location with the "OP 0" acting as a stop.
NOTE: The tube end **MUST BE FLUSH** with the end of the die set to create a complete flare.
- Turn the release knob counter-clockwise to the "open" position. This will allow the plunger to retract. The hydraulic cylinder may need to be partially unthreaded from the yoke.
- Remove the "OP 0" die from the plunger and replace it with the desired size "OP 1" male die.
- Insert the tightening bar into the hole in the clamping screw of the yoke and use it to securely tighten the clamping screw and locking the female die set in place. NOTE: This is critical as tubing slippage at this point will result in a faulty flare.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will form the bubble in the end of the tubing.
- Turn the release knob counter-clockwise to the "open" position and allow the plunger to retract.
- Remove the "OP 1" die from the plunger and replace it with the conical "OP 2", 45° male die. The hydraulic cylinder may need to be partially unthreaded from the Yoke to remove die.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will complete the 45° double flare in the end of the tubing.
- The release knob may be opened, the "OP 2" male die removed, the clamping screw loosened and the female die halves with the flared tubing removed.
- Remove the finished flared tube from the dies.
A slight tap may be required to release the tube from the dies.
- You have now completed a 45° double inverted flare.



FORMING DIN/ISO BUBBLE FLARES

- Thread the yoke handle into the bottom of the yoke.
 - Place halves of the corresponding DIN/ISO sized female split-die set around the tubing making sure the alignment pins are seated in the holes.
 - Place the female split-die set with tubing into the yoke and finger-tighten the clamping screw to hold them in place. The end of the tubing must extend a small amount beyond the face of the split die.
 - Turn the release knob counter-clockwise to the "open" position.
 - Thread the hydraulic cylinder portion of the tool partially into the yoke.
 - Select the "OP 0", flat-faced male die and insert it into the retaining slot on the end of the plunger. Make sure the spring loaded detent ball is seated in the recess on the back of the die.
 - Thread the hydraulic cylinder the remainder of the way into the yoke.
 - Turn the release knob clockwise to the "closed" position.
 - Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will slide the tubing into the correct "flush with the face of the female die" location with the "OP 0" acting as a stop-gauge.
- NOTE: The tube end **MUST BE FLUSH** with the end of the die set to create a complete flare.
- Turn the release knob counter-clockwise to the "open" position. This will allow the plunger to retract. The hydraulic cylinder may need to be partially unthreaded from the yoke.
 - Remove the "OP 0" die from the plunger and replace it with the desired DIN/ISO size "ISO" male die.
 - Insert the tightening bar into the hole in the clamping screw of the yoke and use it to securely tighten the clamping screw and locking the female die set in place. This is critical as tubing slippage at this point will result in a faulty flare.
 - Turn the release knob clockwise to the "closed" position.
 - Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will form the bubble in the end of the tubing.
 - Turn the release knob counter-clockwise to the "open" position and allow the plunger to retract.
 - Remove the finished flared tube from the dies. A slight tap may be required to release the tube from the dies.
 - You have now completed a DIN/ISO Bubble Flare.



FORMING A SINGLE 45° FLARE

- Thread the yoke handle into the bottom of the yoke.
 - Place halves of the correctly sized split-die set around the tubing making sure the alignment pins are seated in the holes.
 - Place the split-die set with tubing into the yoke and finger-tighten the clamping screw to hold them in place. The end of the tubing must extend a small amount beyond the face of the split die.
 - Turn the release knob counter-clockwise to the "open" position.
 - Thread the hydraulic cylinder portion of the tool partially into the yoke.
 - Select the "OP 0", flat-faced male die and insert it into the retaining slot on the end of the plunger. Make sure the spring loaded detent ball is seated in the recess on the back of the die.
 - Thread the hydraulic cylinder the remainder of the way into the yoke.
 - Turn the release knob clockwise to the "closed" position.
 - Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will slide the tubing into the correct "flush with the face of the female die" location with the "OP 0" acting as a stop.
- NOTE: The tube end **MUST BE FLUSH** with the end of the die set to create a complete flare.

- Turn the release knob counter-clockwise to the "open" position. This will allow the plunger to retract. The hydraulic cylinder may need to be partially unthreaded from the yoke.
- Remove the "OP 0" die from the plunger and replace it directly with the conical "OP 2", 45° Male Die. The hydraulic cylinder may need to be partially unthreaded from the yoke to remove die.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will complete the 45° double flare in the end of the tubing.
- The release knob may be opened, the "OP 2" male die removed, the clamping screw loosened and the female split-Die halves with the flared tubing removed.
- Remove the finished flared tube from the dies. A slight tap may be required to release the tube from the dies.
- You have now completed a single 45 degree flare.

FORMING PUSH-CONNECT AND GM FUEL LINE FLARES

- Thread the yoke handle into the bottom of the yoke.
- Place halves of the corresponding push-connect or GM Fuel Line sized female split-die set around the tubing making sure the alignment pins are seated in the holes.
- Place the female split-die set with tubing into the yoke and finger-tighten the clamping screw to hold them in place .
- Turn the release knob counter-clockwise to the "open" position.
- Thread the hydraulic cylinder portion of the tool partially into the yoke.
- Select the "OP 0", flat-faced male die and insert it into the retaining slot on the end of the plunger. Make sure the spring loaded detent ball is seated in the recess on the back of the die.
- Thread the hydraulic cylinder the remainder of the way into the yoke.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will slide the tubing into the correct "flush with the face of the female die" location with the "OP 0" acting as a stop-gauge.
NOTE: The tube end MUST BE FLUSH with the end of the die set to create a complete flare.
- Turn the release knob counter-clockwise to the "open" position. This will allow the plunger to retract. The hydraulic cylinder may need to be partially unthreaded from the yoke.
- Remove the "OP 0" die from the plunger and replace it with the desired push-connect or GM fuel male die.
- Insert the tightening bar into the hole in the clamping screw of the yoke and use it to securely tighten the clamping screw and locking the female die set in place. This is critical as tubing slippage at this point will result in a faulty flare.
- Turn the release knob clockwise to the "closed" position.
- Compress the lever on the hydraulic cylinder repeatedly to advance the plunger and male die toward the face of the female die. Continue until the male die contacts the face of the split die. This will form the bubble in the end of the tubing.
- Once again, Turn the release knob counter-clockwise to the "open" position and allow the plunger to retract.
- Remove the male die from the plunger. The hydraulic cylinder may need to be partially unthreaded from the yoke to remove die.
- Remove the finished flared tube from the dies. A slight tap may be required to release the tube from the dies.
- You have now completed a Push-Connect or GM Fuel Flare.

4. TROUBLESHOOTING

- **Poor Flares** - Make sure tubing has quality square cut, ream inside of tube and remove burrs and rough edges, clear metal from inside tubing, thoroughly chamfer outside of tubing.
- **Tubing Stuck/Binding Against Male Die** - Add small amount of brake fluid to surface of die.
- **Collapsing Flare** - Follow instructions carefully for setting location of tubing inside female split dies.