

## Typical Coupling Installation

- 1.) Cut the end of the pipe squarely and deburr the ID and OD to smooth the edges and remove any fraying that may have occurred. A chop saw with a fine blade or a hack saw are suitable for cutting and PVC cutters can be used for tubing 1.5" or less.



- 2.) Slip the ferrule onto the end of the pipe.



- 3.) Insert the pipe into the ferrule, pushing the end of the pipe to the tapered edge of the ferrule. Leave a small space ( $\approx 1/8''$ ) between the end of the pipe and the edge of the ferrule to allow for plastic to flow.



- 4.) Using a pen, mark the location of the back edge of the ferrule on the pipe.



- 5.) Pull the ferrule off the pipe.



- 6.) Screw the ferrule onto the stem to assemble the coupling.



- 7.) If ambient temperature is below 60°F:
- Place end of pipe into 160°F – 200°F water (preferably inside a thermos).
  - At least 6'' of pipe should be immersed in the hot water.
  - The end of the pipe should be immersed for at least 2 minutes.
  - After immersion, proceed quickly through steps 8 to 19.

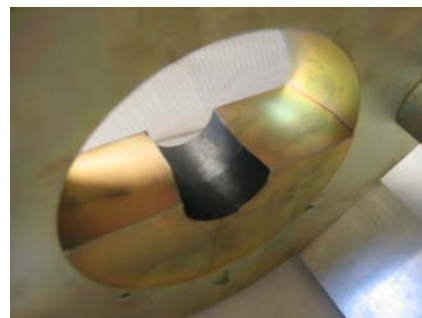
- 8.) Using your hands, place the assembled coupling onto the end of the pipe. If the pipe is slightly out-of-round, a small amount of petroleum jelly may be used on the inside of the pipe (*do not use Molybdenum Disulfide*).



- 9.) Make sure the back edge of the ferrule aligns with the pen-mark on the pipe. If not, use a deadblow hammer or rubber mallet to tap the coupling into place. If a sledgehammer is the only option, threads should be shielded from direct blows; use a piece of wood or adapter fitting to protect the threads.
- 10.) Install lower half of the swedging die into the hydraulic swedging machine



- 11.) Place a small dab of Molybdenum Disulfide on the tip of your finger and rub it around the inside top half of the die. One lubrication should suffice for several coupling installations.



- 12.) Secure the lower half of the swedging die with an Allen key.

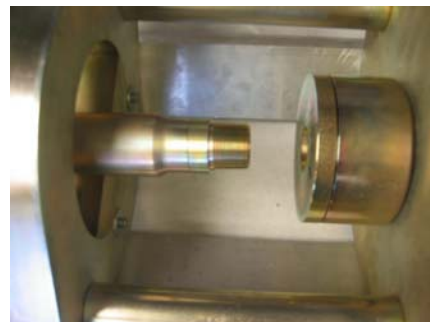


- 13.) Install thread protection on the coupling, if necessary.

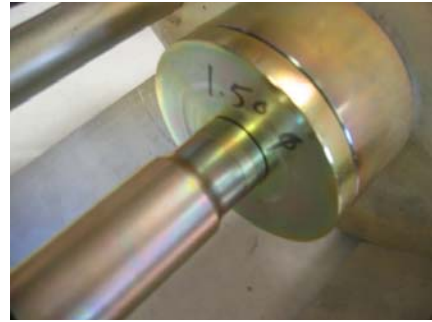
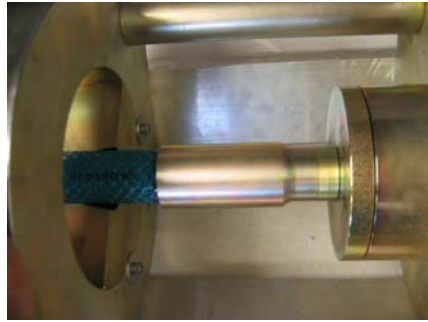
- 14.) Install the hydraulic ram adapter plate.



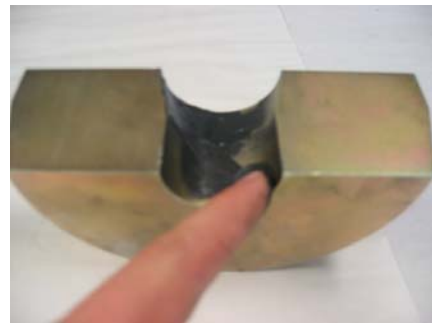
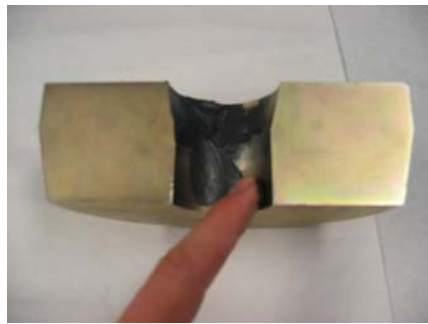
- 15.) Feed the pipe and coupling through the yoke of the hydraulic swedging machine.



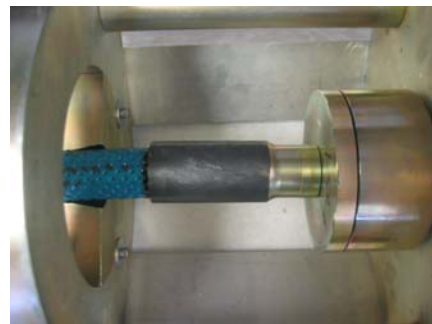
- 16.) Coupling should be seated firmly in the hydraulic ram adapter plate.



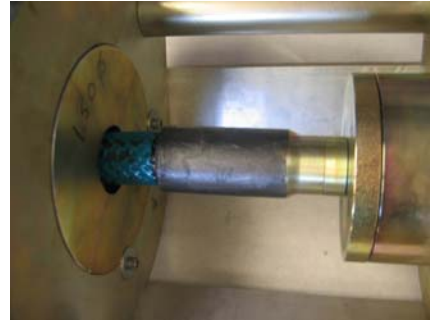
- 17.) Repeat step 11 for top half of the swedging die.



- 18.) Cover the exposed ferrule with Molybdenum Disulfide.



- 19.) Slip the top half of swedging die into place. Make sure it is flush with the bottom half.



- 20.) Screw the end of the hand pump's hose into the receiver on the swedging machine.



- 21.) Tighten the knob on the side of the hand pump to apply pressure to the hose.

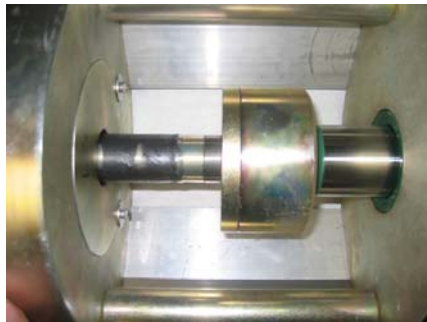


- 22.) With the hand pump, run the ram until the ferrule reaches the die.



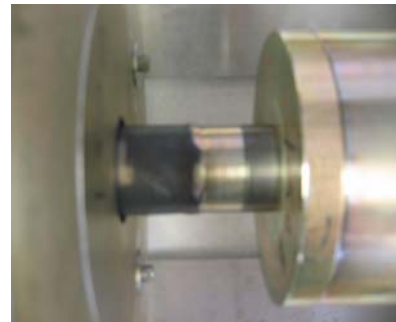
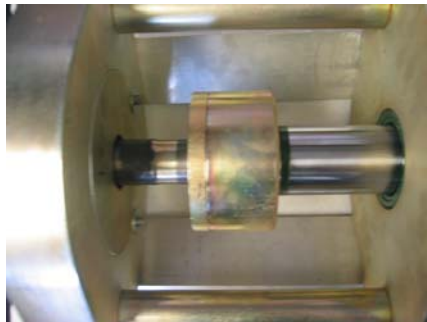
23.) Loosen the knob on the side of the hand pump and jiggle the pipe to relieve pressure on the coupling. This will ensure the coupling is centered in the ram.

24.) Tighten the knob again and run  $\frac{1}{3}$  of the length of the ferrule (as shown in the notches in the Molybdenum Disulfide) through the die, and then stop.



25.) Repeat step 23.

26.) Tighten the knob again and run another  $\frac{1}{3}$  of the length of the ferrule through the die.



27.) Repeat step 23.

28.) Tighten the knob on the hand pump and run the coupling all the way through the die.



29.) Loosen the knob on the hand pump to reverse the ram all the way back so that it comes to rest at the other end.

30.) Remove the coupled pipe and inspect the coupling for any abnormalities. Ideally there should be 3 rings in the ferrule and no bulges.

