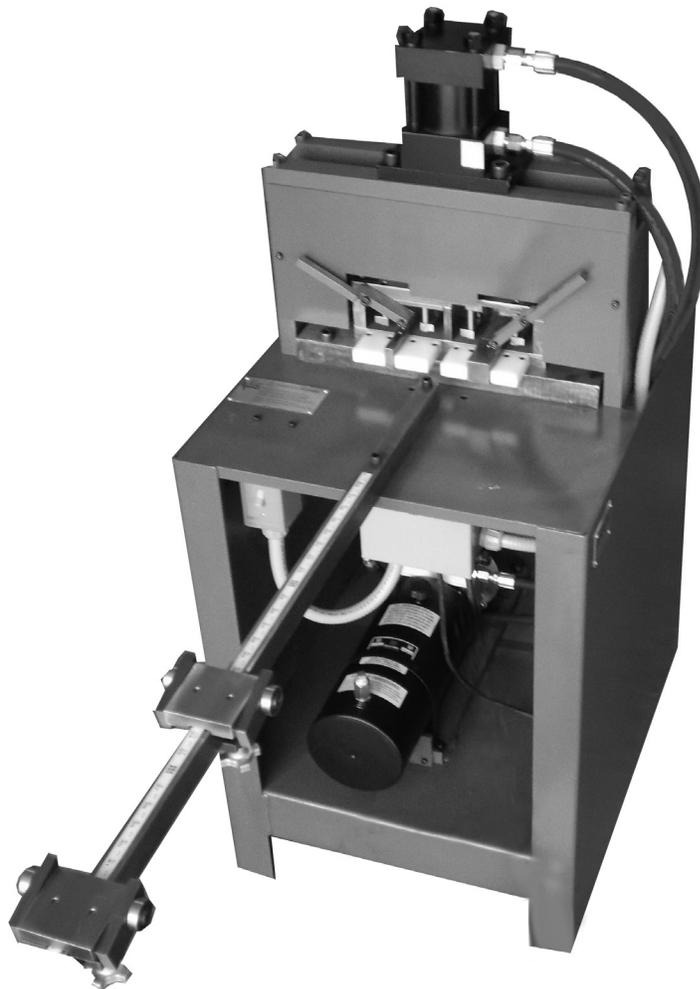


INSTALLATION INSTRUCTIONS

HYDRAPUNCH MACHINE

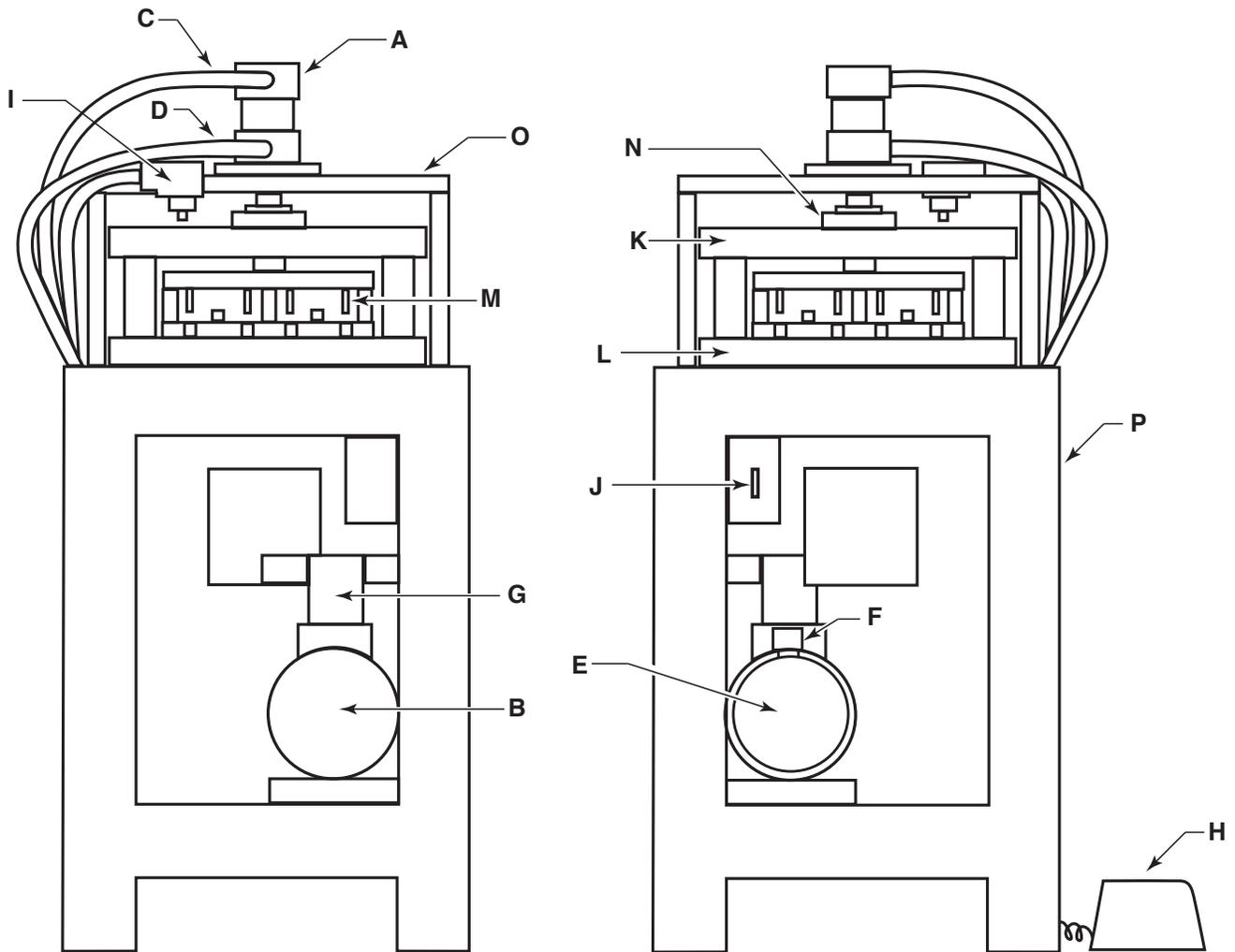
INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS



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PARTS IDENTIFICATION

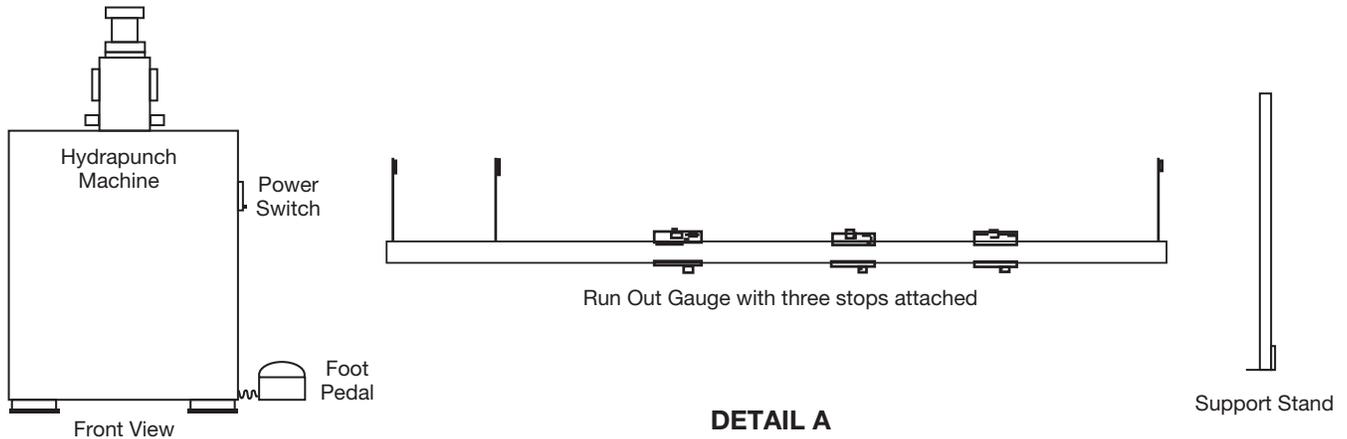
- A. Hydraulic Cylinder
- B. Hydraulic Pump Motor
- C. Hydraulic Pressure Line
- D. Hydraulic Return Line
- E. Hydraulic Reservoir
- F. Hydraulic Reservoir Fill Cap
- G. Hydraulic Valve Assembly
- H. Foot Switch
- I. Micro Switch
- J. Power Switch and Breaker
- K. Upper Die Shoe
- L. Lower Die Shoe
- M. Punches
- N. Cylinder Rod Flange
- O. Die Cage
- P. Frame



SET-UP AND INSTALLATION

Tools Required: Level, 5/16" Allen wrench, and utility knife or scissors.

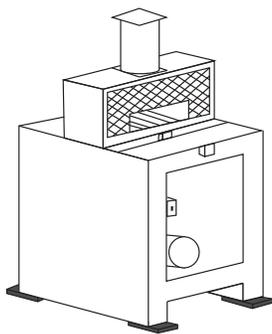
1. Place machine in desired location. Remove crating and packing materials. The contents consists of the following items as **shown in DETAIL A**.



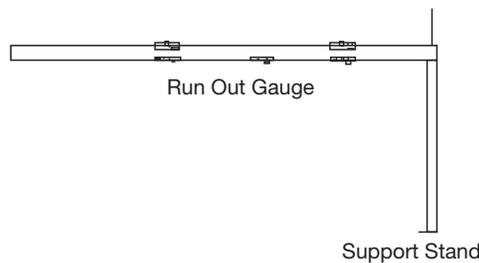
DETAIL A

2. Unlevel floor conditions may require placing shims between the Hydrapunch legs and the floor as **shown in DETAIL B**.
3. Attach support stand to Run Out Gauge using 3/8" Allen Head Cap Screws (supplied) and securely tighten as **shown in DETAIL C**.
4. Align the two holes in the Run Out Gauge with the two holes located on the front end of the Hydrapunch Machine and tighten with two 3/8" Allen Head Cap Screws (supplied) as **shown in DETAIL D**.
5. Remove the foot switch from inside the cabinet and place on the floor.
6. Remove 110V AC cord from inside the cabinet. Snip the tie clip, uncoil cord and plug into a 110V AC 3-prong grounded receptacle.

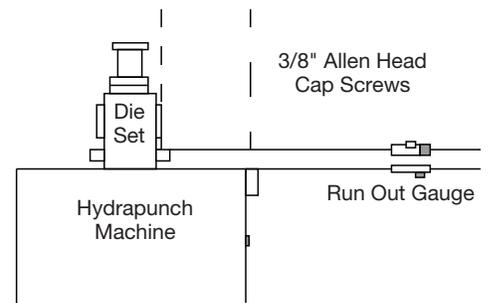
Do not alter the plug or cord in any way! The Hydrapunch Machine is now ready for operation. Please read operating instructions carefully before attempting to use.



DETAIL B



DETAIL C



Front View

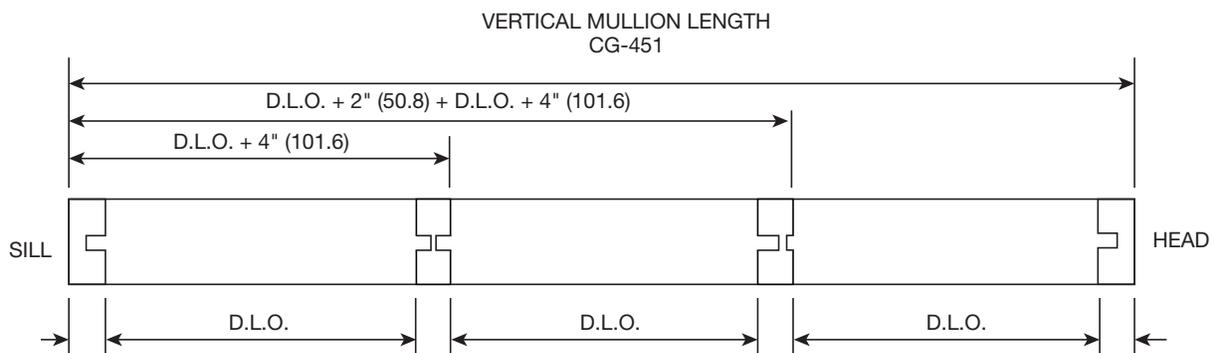
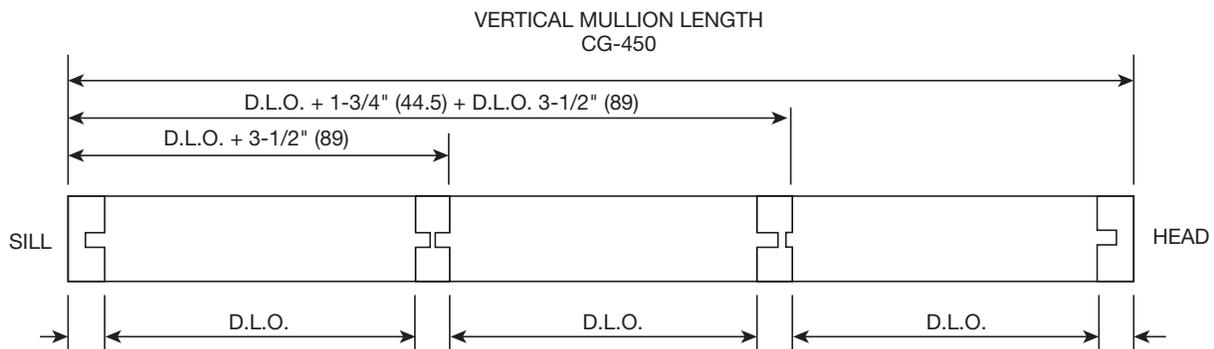
DETAIL D

OPERATING INSTRUCTIONS

CAUTION: The Hydrapunch Machine has been guarded to comply with OSHA Standards. The machine should never be operated with the guards removed.

1. Sill and head locations are determined using Flip Stops located at the front and rear of the Punch Die. Front of Punch Die is the side facing Run Out Gauge. This operation is explained further in Step 3.
2. Determine daylight opening for the first intermediate horizontal location. For exterior glazing applications, gauging is dimensioned from the bottom of the vertical mullion to the top of first intermediate horizontal. Use the following formulae to determine proper Flip Stop Gauge locations:
 $1\text{-}3/4" (44.5) \times 4\text{-}1/2" (114.3)$ Center Glaze daylight opening plus $3\text{-}1/2" (89)$ to obtain dimension from bottom of vertical mullion to top of first horizontal.
 $2" (50.8) \times 4\text{-}1/2" (114.3)$ Center Glaze daylight opening plus $4" (101.6)$ to obtain dimension from bottom of vertical mullion to top of first horizontal.

Add daylight opening and sight line dimension of horizontal using above formulae to obtain location of second intermediate horizontal. Continue this process based on number of intermediate horizontals as shown in **DETAIL E**.

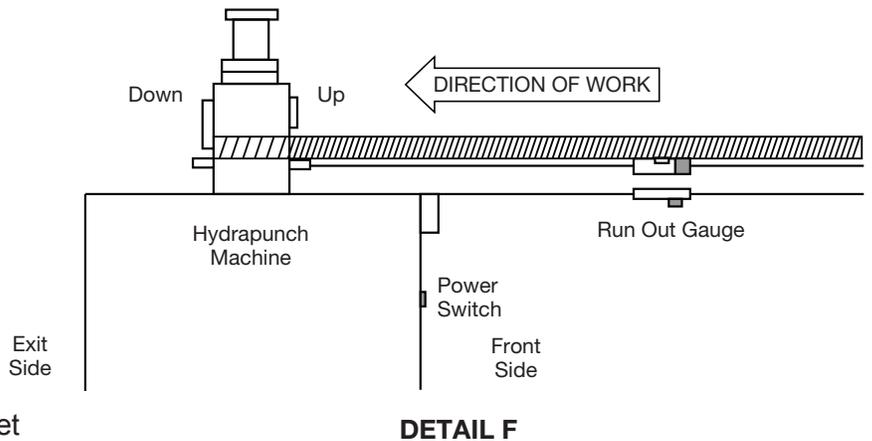


DETAIL E

OPERATING INSTRUCTIONS (CONTINUED)

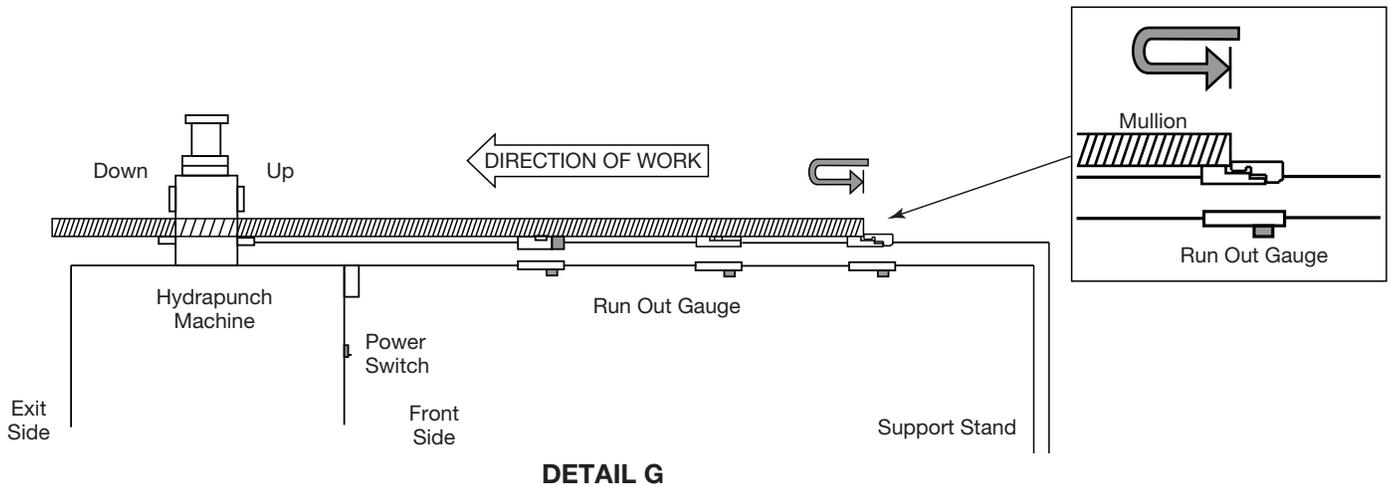
For interior glazing applications, gauging is dimensioned from top of vertical to bottom of intermediate horizontal.

- Position all gauging to desired locations as outlined in Step 2. Rotate Flip Stop on front side of Punch Die to "up" position. Rotate Flip Stop on exit side of Punch Die to "down" position. **See DETAIL F.**



- Turn Power Switch to the "On" position.
- Lay vertical mullion on top of Run Out Gauge and Flip Stops with glazing pocket side down. Slide mullion into front of Punch Die until firmly against Flip Stop at exit side of Punch Die. Actuate Punch Die by depressing foot pedal.

- Rotate Flip Stop on exit side of Punch Die to "up" position and slide vertical mullion through Punch Die until next desired Flip Stop location is reached. Hold vertical mullion firmly against Flip Stop and depress foot pedal. **See DETAIL G.** Repeat Step 6 as required.



- Slide the vertical mullion through until it clears Flip Stop at front side of Punch Die. Rotate front Flip Stop in "down" position. Firmly hold vertical mullion against Flip Stop and depress foot pedal to punch holes for head.
- Slide completed vertical mullion clear of machine and double check fabrication with a tape measure to verify all dimensions are correct before continuing.
- Repeat Steps 5 through 7 for each vertical mullion with same dimensions.

MAINTENANCE INSTRUCTIONS

The Hydrapunch Machine has been carefully designed to give you hours of trouble free operation. A small amount of maintenance is required, such as housekeeping, checking the hydraulic fluid, and removing Punch Die Set to have punches sharpened. Carefully read the maintenance instructions.

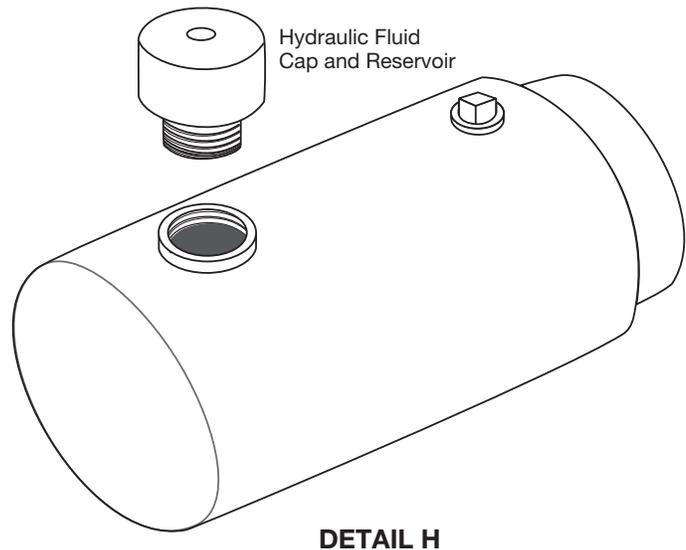
Caution: Before conducting any maintenance to the Hydrapunch Machine, turn the machine to the "off" position. As an added safety precaution, disconnect the 110V AC cord from the electrical power source.

1. Keep all parts of the machine clean and free of debris by periodically blowing the Punch Die surface and cabinet of machine with compressed air. Follow all safety standards when using compressed air and be sure to wear safety glasses. Do not attempt to wash the machine with water or solvents.

2. Every 20 to 30 cycles, spray a light coat of penetrating lubricant on the punches. Do not use heavy oils or grease.

3. Every six months, check the fluid level in the hydraulic fluid reservoir. Remove hydraulic fluid cap. **DETAIL H.** Insert a screwdriver into fluid cap opening approximately 1" deep.

If unit is full, fluid will register on tip of screwdriver. When fluid needs to be added, use a general purpose 10 weight hydraulic fluid which can be purchased at most hardware stores.



Periodically, the Punch Die Set may need to be removed to have the punches sharpened. Before removing the Punch Die from the Hydrapunch Machine, the lockout procedures following Step 4 (below) should be followed. This will make the Hydrapunch Machine inoperable while performing maintenance work.

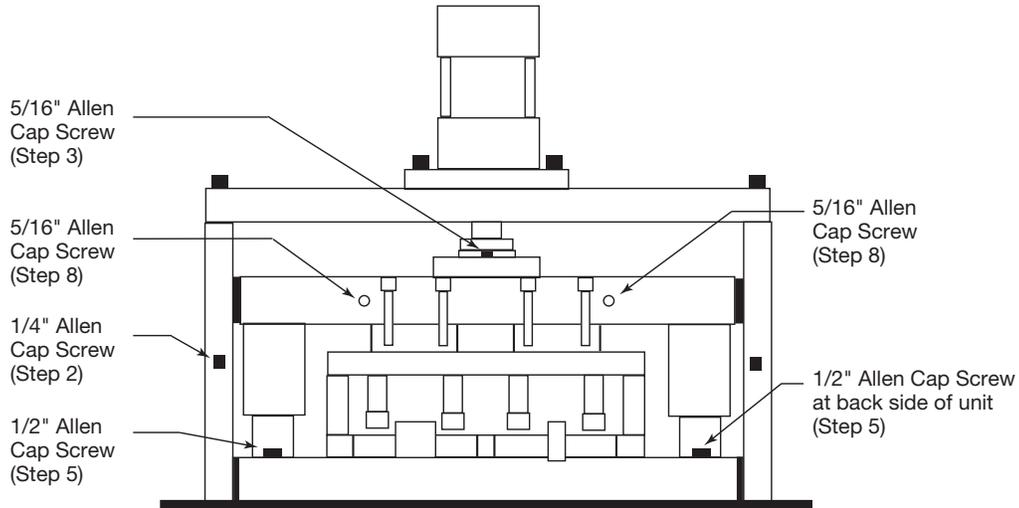
1. Turn Power Switch to "on". Depress foot pedal and cycle Punch Die to its down stroke. Turn Power Switch to "off". This will provide optimum clearance to detach Cylinder from Punch Die.

2. Remove two 1/4" Allen Cap Screws securing the guards in place on both sides of the Punch Die. Set guards aside.

3. Remove two 5/16" Allen Cap Screws securing the head of the Hydraulic Cylinder to the Die Set.

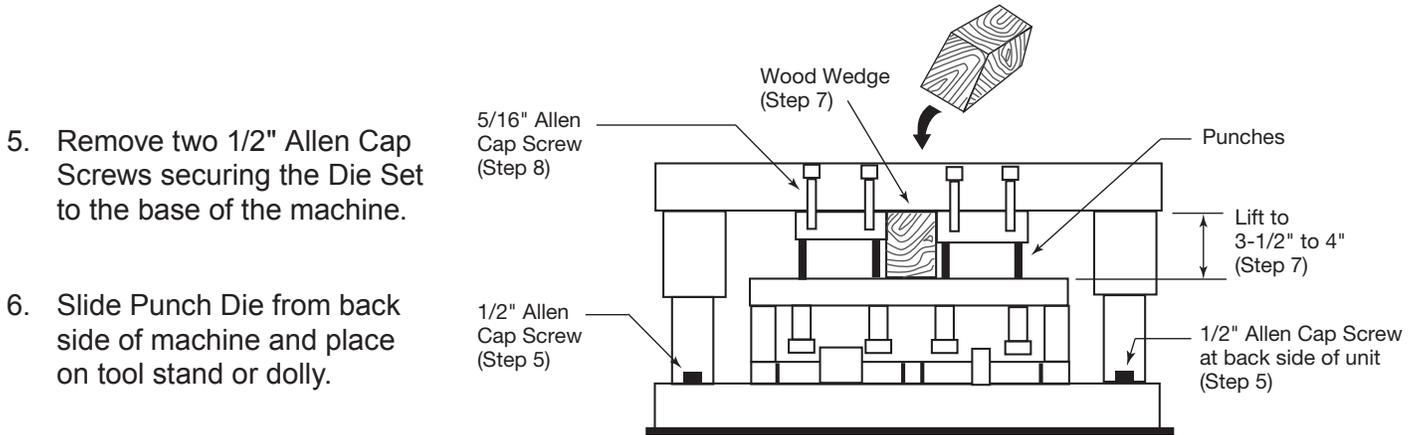
4. Turn Power Switch to "on" to raise Cylinder from head of Punch Die.

LOCK-OUT PROCEDURES



Always disconnect the electric cord from the power source outlet. If your machine has a lock-out bracket around the Power Switch, turn the machine to the "off" position and place a padlock through the lock-out bracket. Tie a red tag around the padlock with this notation: "Do not use. Machine is being repaired."

If your machine is not equipped with a lock-out bracket, secure male end of cord to prevent someone from accidentally plugging it into a power source. Secure power cord to the Hydrapunch Machine with a padlock in such a manner that the cord will be too short to reach to power source. Tie a red tag on the end of the cord with this notation: "Do not use. Machine is being repaired." As an extra precaution, apply a generous amount of electrical tape over the male prongs of the cord to prevent someone from using an extension cord.



5. Remove two 1/2" Allen Cap Screws securing the Die Set to the base of the machine.

6. Slide Punch Die from back side of machine and place on tool stand or dolly.

7. Using a wood wedge and hammer, drive wedge between head and bridge of Punch Die. Raise head of Punch Die until end of punch clears the bridge. Block head of Punch Die in place.

8. Remove four 5/16" Allen Cap Screws in head of Punch Die. Remove steel blocks with punches from dowel pins located on underside of Punch Die head.

9. Reverse Steps 1 through 8 to reinstall Punch Die.