

2. Screw the short threaded end of the $\frac{3}{4}$ " draw bolt into the threaded hole of the ram. The bolt should be screwed in fully, but only hand-tight.

NOTE! Be sure ram is fully retracted before assembling punch and die set on ram.

3. When using $\frac{3}{4}$ " or 1" die, place the shortest spacer over the draw bolt and then add the desired die. When using $1\frac{1}{4}$ " through 4" die, no spacer should be used since the die is designed to rest directly on the ram body.
4. Pass the end of the draw bolt and the end of the bolt through the previously drilled pilot hole and thread the punch onto the end of the bolt so that the punch points just touch the material (*Figure 4*). Operate the pump as described below.

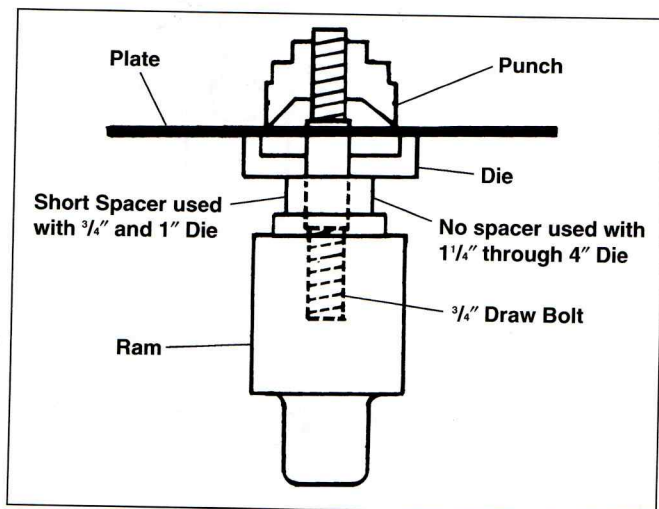


Figure 4 – Punching $\frac{3}{4}$ " Through 4" Holes

A. Using Model H-18 Hand Pump

1. Close the release valve of the pump by turning fully clockwise.
2. Operate the pump handle until the punch has cut completely through the material

CAUTION Sudden application of hydraulic pressure may cause punch/die misalignment and damage the points. Operate the pump at a moderate speed.

WARNING As the hole is punched, the ram will punch and die may fall out of the hole. To prevent injury, support the ram as the hole is completed.

3. Open the release valve of the pump to allow punch to be returned from die. Be sure ram retracts completely.

4. Unscrew the punch from the draw bolt and remove the slug from the die.

B. Using Model HF-18 Foot Pump

1. Operate the foot pedal until the punch has cut completely through the material.

CAUTION Sudden application of hydraulic pressure may cause punch/die misalignment and damage the points. Operate the pump at a moderate speed.

WARNING As the hole is punched, the ram will punch and die may fall out of the hole. To prevent injury, support the ram as the hole is completed.

2. Depress the release pedal to allow punch to be returned from die. Be sure ram retracts completely.
3. Unscrew the punch from the draw bolt and remove the slug from the die.

NOTE! When the points of the punch become worn, it should be replaced immediately. Otherwise, cuts will not be uniform and damage to the draw bolt may result. Stop pumping as soon as the hole has been complete to avoid damaging the punch set. Never force points of punch into contact with the die.

Maintenance Instructions

WARNING

Any repairs or service which requires dismantling the pump or ram must be performed in a dirt-free environment. All maintenance should be performed by a qualified technician.

Lubrication

Apply lubrication periodically to all pivot and rubbing points. Use a good grade of No. 10 motor oil. Do not use dry lubricants.

Periodic Cleaning

A preventative maintenance program should be established to keep the hydraulic components as free from dirt as possible. Make certain that the hydraulic oil outlet and all unused couplers are sealed with thread protectors whenever the hydraulic system is dismantled. Be sure all hose connections are free of contamination. Use only an approved, clean hydraulic oil and change as recommended, every 300 hours.