

**IMPORTANT: RECEIVING INSTRUCTIONS:** Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once.

Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.

# SAFETY

# FIRST

Carefully plan your system by selecting components designed to perform the intended operation and which will adequately perform with existing equipment. Always check the product limitations regarding pressure ranges, load capacities and set-up requirements. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Read all **CAUTIONS, WARNINGS, and INSTRUCTIONS** included with, or attached to, each product. Follow all safety precautions to avoid personal injury or property damage during system operation.

**ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE PRODUCT USE, LACK OF MAINTENANCE OR INCORRECT PRODUCT AND SYSTEM APPLICATION.** Contact ENERPAC ENGINEERING when in doubt as to safety precautions, design criteria or product usage.

**IMPORTANT:** READ ALL INSTRUCTIONS packaged with or attached to each hydraulic product before attempting to assemble and/or operate any of the hydraulic equipment or systems. Failure to read and adhere to the instructions could result in malfunctions or damage which is not covered under warranty.

Make sure that the highest level of system pressure does not exceed the lowest pressure rating of a component within the system.

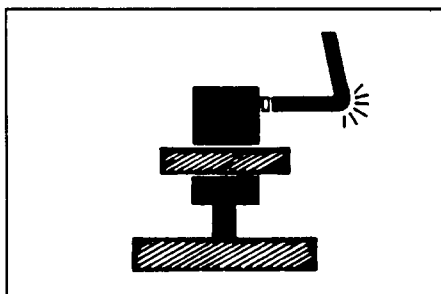
The following general instructions and guides will be helpful to determine if your system components are properly connected:

1. Be sure all hydraulic connections, hoses, fittings are rated for the highest pressure your system is capable of generating. Always use hoses and tubing recommended by the hydraulic component manufacturer.
2. Be sure all connections are fully tightened. Seal all pipe connections with a high-grade pipe thread sealer.

**WARNING:** Teflon tape is an excellent thread sealer, however, if the tape is not properly applied, pieces may enter the hydraulic system causing malfunctions and damage. Use 1½ wraps of tape on each thread. Cut off all loose tape ends.

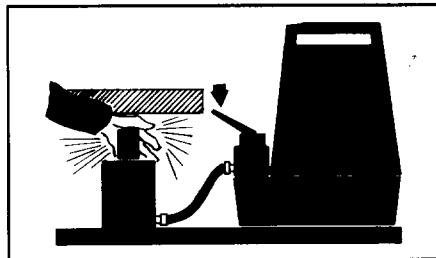
3. **DO NOT** over-tighten any connections. All connections should be snug and leak-free. Excessive tightening will cause strain on the threads and castings which could cause fitting failure at pressures below rated capacity.
4. Fully tighten hydraulic couplers (avoid excessive force). Loose couplers will act as a partial or complete line restriction causing little or no oil flow and resulting in equipment damage or failure.
5. Be sure all hydraulic hoses and fittings are connected to the correct **inlet** and **outlet** ports of the pump, cylinder, valves and other system components.
6. Make sure all electrical connections are correct and complete. Check the pump name plate to insure correct voltage usage and to avoid dangerous electrical overloading.

### AVOID SHARP BENDS AND KINKS IN HOSE



Avoid sharp bends and kinks in hose when routing hydraulic hoses. If pressure is applied to a bent or kinked hose, the oil flow will be restricted causing severe back-pressure. Also the sharp bends and kinks will internally damage the hose leading to pre-mature failure.

### START PUMPS IN OPEN OR NEUTRAL POSITION



Prior to starting hydraulic pumps, be sure the control valve is in open or neutral position to prevent uncontrolled movement of hydraulic components.

**DO NOT** install hydraulic pumps in systems which can return more oil to the pump than the reservoir is capable of handling.

To prevent premature pump failure **ALWAYS** check pump reservoir oil level prior to start-up. Refer to pump instruction sheets for level and fill opening locations.

### CHECK MOTOR DATA PLATES

ENERPAC		SPECIFICATIONS AND INSTRUCTIONS	
<small>WARNING: READ ALL PERTINENT INSTRUCTIONS BEFORE OPERATING HIGH-VOLTAGE AND HIGH-PRESSURE EQUIPMENT. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN FATAL INJURY OR DEATH. ALWAYS WEAR PROTECTIVE CLOTHING AND SAFETY EQUIPMENT. ALWAYS USE PROPER LIFTING TECHNIQUES. ALWAYS USE PROPER TIE-OFF TECHNIQUES. ALWAYS USE PROPER TIE-OFF TECHNIQUES. ALWAYS USE PROPER TIE-OFF TECHNIQUES.</small>		MODEL NO. <input type="text"/>	SERIAL NO. <input type="text"/>
<b>MOTOR SPECIFICATIONS</b>		<b>PUMP SPECIFICATIONS</b>	
<input type="checkbox"/> 1 HP	<input type="checkbox"/> 1.3 SERVICE FACTOR	RATED DELIVERY	
<input type="checkbox"/> 115/230 VOLTS SINGLE PHASE	<input type="checkbox"/> 60 HZ	CU IN. MIN   330   240   42	
<input type="checkbox"/> 19/9.5 AMPS		PSI   0   500   10000	
		USABLE OIL CAP. - 190 CU IN.	
		<b>VALVE:</b>	
		<input type="checkbox"/> 2-WAY	
		<input type="checkbox"/> 3-WAY	
		<input type="checkbox"/> 4-WAY	
<small>ENERPAC, BUTLER, WISCONSIN U.S.A. DIVISION OF APPLIED POWER INC. CA418.009</small>			

Prior to operating any electric or air motor (pumps) always check the data plates for electrical specifications.

Keep electrical extension cords to the shortest length possible. Be sure all cords meet the power and code requirements. Use grounded receptacles.

**DO NOT** use standard electrical equipment in an explosive atmosphere. Check specific requirements in unusual situations or hazardous conditions.

## DESCRIPTION

The SP-5010 and SP-50100, 50 ton hydraulic punch is an arbor style punch using a 50 ton (10,000 PSI) hydraulic cylinder to perform punching. To operate the cylinder a hydraulic pump, with a 4-way valve, is required. Vertical or horizontal punch operating positions are accomplished by attaching a suitable crane to the hanger bracket or using the optional bench mounting bracket (figure 1). The punch assembly weighs 200 lb. without a pump or optional attachments.

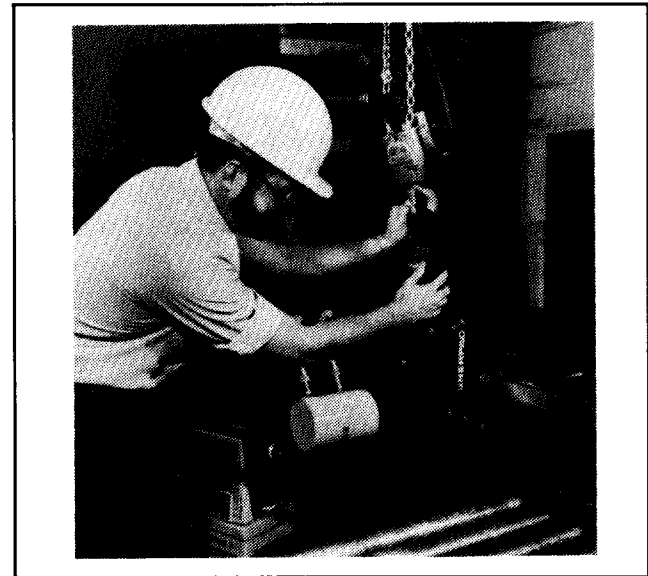
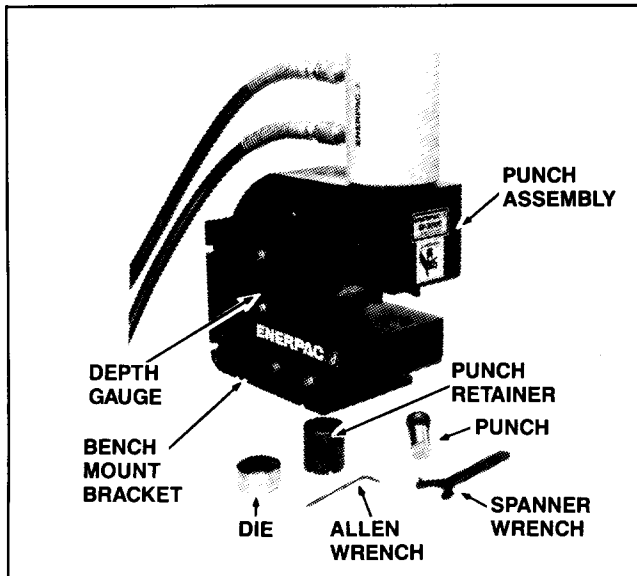


Figure 1

## SET-UP

1. Select a punch and die, make sure they are a matched set. Using the spanner wrench, remove the punch retainer from the frame (figure 2).
2. Loosen the die retaining lock screws on each side of the throat base. Insert the correct die (figure 3). Tighten the lock screws.

**NOTE:** When changing punches and dies, remove the punch first then the die. If the punch is in position, the die will not fit between the punch and base.

3. Insert the punch into the retaining ring with the point extending through the notched end.
4. Thread the punch retainer into the punch frame, tighten with the spanner wrench.
5. Attach the hydraulic hoses to the punch cylinder couplings and the hydraulic pump ports.

**CAUTION:** DO NOT USE TOOLS TO TIGHTEN THE COUPLERS. FORCE WILL STRAIN THE COUPLERS AND COULD CAUSE FAILURE AT LOWER THAN RATED CAPACITY.

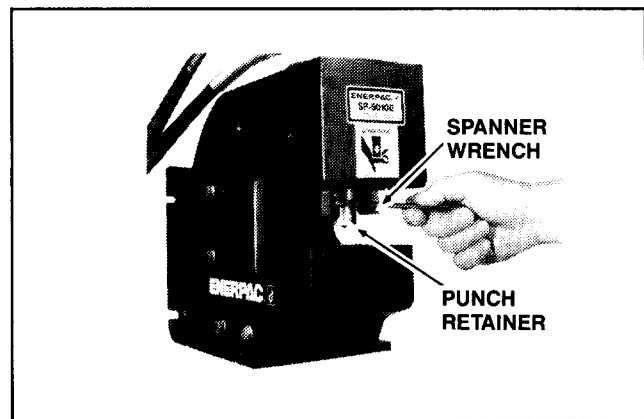


Figure 2

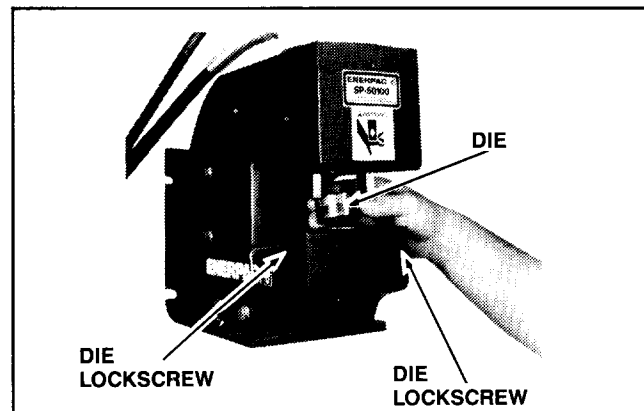


Figure 3

## 6. BENCH MOUNTING

- a. Bench installation requires the optional SP-12 or SP-120 kit.
- b. Use a crane to lift the punch assembly by attaching to the hanger bracket.
- c. Position the bench bracket under the punch base. Install four capscrews and lockwashers (two on each side) in the bracket holes, tighten to 20 ft. lb. (figure 4)

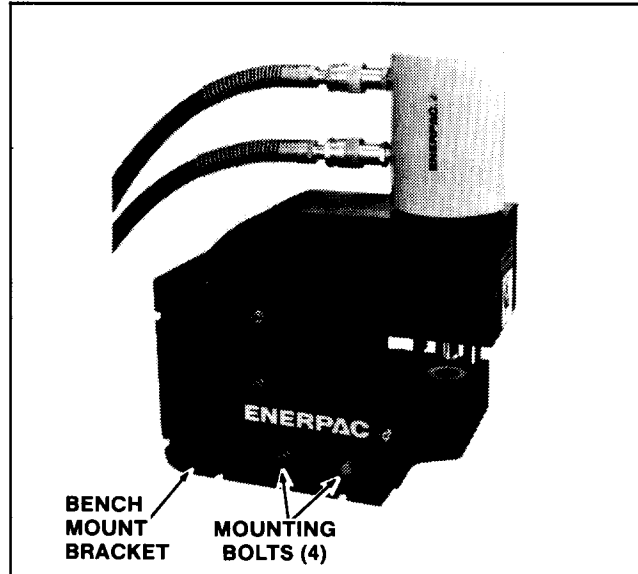


Figure 4

- d. Use a crane to position the entire assembly. Secure punch assembly to a firm foundation using capscrews through the bracket slots (4).

## 7. DEPTH GAUGES

- a. Depth gauges may be mounted with or without the hanger bracket in place
- b. With hanger bracket mounted, remove the lower hanger bracket mounting screws. Position the depth gauge with the upper slot aligned with the hanger bracket lower hole. Install the capscrew.
- c. Place a spacer between the depth gauge and the punch, at the lower gauge mounting slot.
- d. Install the capscrew through the gauge and spacer. Tighten both capscrews firmly.

**NOTE:** If punch hanger bracket is not in place, the spacers are not required.

## OPERATION

1. Check the hydraulic pump fluid level. Check all connections for leaks.
2. Place pump valve in neutral.
3. Position material being punched into the punch throat and determine hole location.
4. Turn mechanical stripper (figure 5) until it touches the material, then turn 1/2 turn counterclockwise.
5. Be sure hands are away from the punch throat. Activate pump. Move pump valve handle to "ADVANCE".

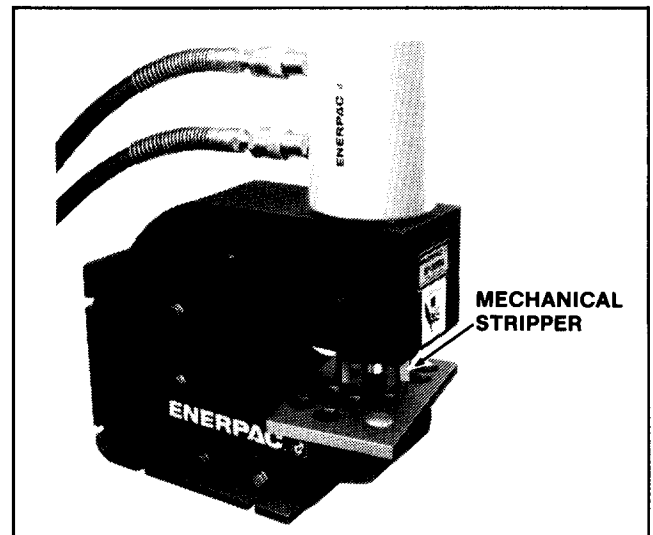


Figure 5

6. The cylinder will extend until the punch has passed through the material. Move pump valve to "RETRACT". The plunger will retract. Check to ensure that the metal slug is out of the die opening.
7. Move the pump valve handle to neutral. If punch operations are complete, turn the pump off.
8. Use only the punches and dies listed in ENERPAC catalogs. For other type dies, contact an ENERPAC Authorized Service Center.

## MAINTENANCE

1. Keep punch throat area clean.
2. Clean punches and dies after use and apply a light coat of oil prior to storing in the tool box.
3. When the punch and pump are not being used, disconnect the electric power cord. If hydraulic hoses are disconnected, install dust caps on the cylinder and hose couplers.
4. The only repairable item on the punch is the hydraulic cylinder. The cylinder can be removed as follows:
  - a. Disconnect the hydraulic hoses.
  - b. Remove the cylinder lock screw from front of punch frame (figure 6).

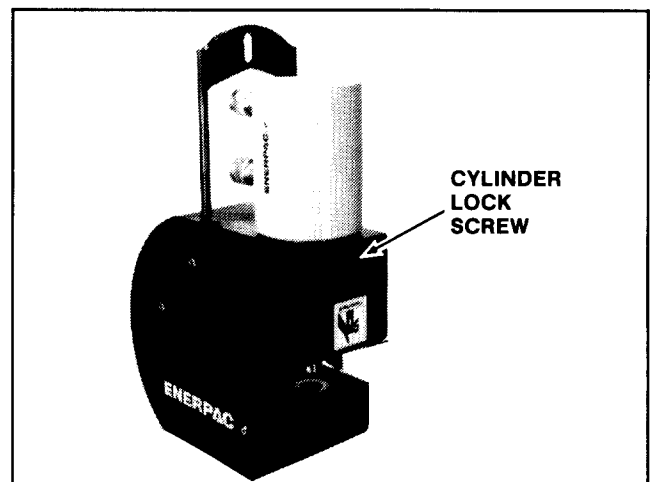


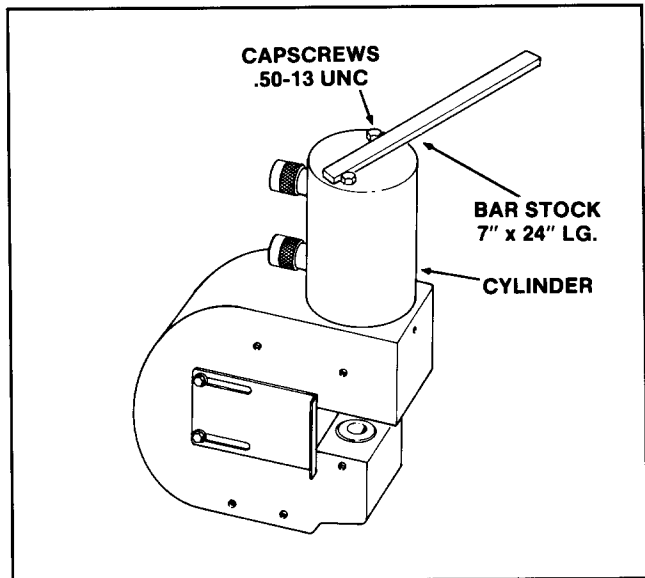
Figure 6

c. Removing the cylinder from the punch frame requires a strap wrench or similar device to loosen the cylinder. Turn cylinder counterclockwise to remove it. If a wrench is not available, install 2 — .500-13UNC x 1½" lg. cap-screws into the holes on top of the cylinder. Position a bar (approx. 2 ft. long) between the capscrews and turn to loosen (figure 7).

d. When the cylinder is completely unthreaded, lift straight up and out to disengage the key on the plunger from the bearing. For repair or replacement, contact an ENERPAC authorized Service Center.

**e. Reassembly**

- (1) Extend the cylinder plunger. The key on the plunger must mate with the frame bearing keyway.
- (2) Look into the frame, determine keyway location. Align plunger key and install cylinder into the frame.
- (3) Thread cylinder completely into the frame. Cylinder couplers must face to the rear of the frame.
- (4) Install and tighten cylinder lock screw in upper portion of frame front.



**Figure 7**

**REPAIR AND SERVICE INSTRUCTIONS:** For repair service and parts contact your nearest ENERPAC Authorized Technical Service Center. The ENERPAC Technical Service Center will provide complete and prompt service on all ENERPAC products. For the location of an ENERPAC Service Center, call Toll Free 1-800-433-2766. (In Wisconsin CALL 1-800-242-6636 — In Canada CALL 1-800-268-6975)

*NOTE: This phone number is not for product repair information.*

**For service related information contact ENERPAC Service Department 1-414-781-6600**

<p><b>PARTS AND SERVICE:</b> For quality workmanship and genuine ENERPAC parts, select an Authorized ENERPAC Technical Service Center for your repair needs. Only repairs performed by an Authorized Service Center displaying the official ENERPAC sign are backed with full factory warranty. The Classified Section in Your Phone Book lists your nearest Service Center.</p>	<p>All ENERPAC tools are guaranteed from date of delivery to user against defects in workmanship and materials. Free repair or replacement will be made on all items not standing up to this guarantee. Following manufacturers trade customs, however, chains cannot be guaranteed. Warranty does not cover ordinary wear and tear, abuse or misuse, overloading, altered products or use of improper fluids. For prompt handling, send items requiring repairs prepaid, to your nearest ENERPAC authorized service center.</p>	<p><b>WARRANTY RETURN PROCEDURE:</b> When question of warranty claim arises, the user should send his unit to the nearest ENERPAC Authorized Technical Service Center for inspection, transportation to be prepaid and evidence of purchase date furnished. If the claim comes under the terms of our warranty, the Authorized Technical Service Center will REPAIR OR REPLACE PARTS AFFECTED and return prepaid.</p>
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