

L-2080 Rev. A 04/98

**IMPORTANT RECEIVING INSTRUCTIONS**

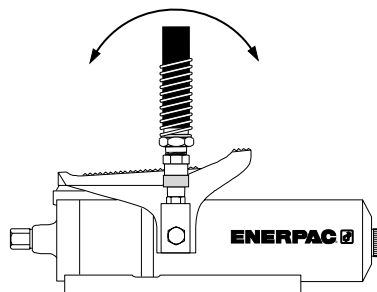
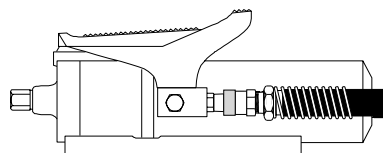
Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

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**DESCRIPTION**

These air-powered hydraulic pumps are designed for use with single-acting cylinders and tools. The pump treadle may be operated by hand or foot for greater versatility. Swivel connection simplifies hydraulic connection and pump operation.



**SAFETY INFORMATION**

To avoid personal injury or property damage during system operation, read and follow all CAUTIONS, WARNINGS, and INSTRUCTIONS, included with or attached to each product. ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION. Contact Enerpac when in doubt as to safety precautions or applications.

**WARNING**

**Always wear proper personal protective gear when operating hydraulic equipment (i.e. safety glasses, gloves, etc.).**

**WARNING**

**The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.**

**WARNING**

**Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges, and corrosive chemicals.**

**WARNING**

**Disconnect air supply when pump is not in use. NEVER remove swivel air connector while air line is pressurized.**

**WARNING**

**The pump is equipped with an overload valve, preset for maximum operating pressure. DO NOT attempt to adjust the overload valve. If adjustment is required, contact an Enerpac Service Center. Adjustment by other than qualified personnel may cause malfunction, damage to the system, and/or personal injury.**

## SPECIFICATIONS

Model No.	PA-133, 7001	PA-166	PA-1150
Air Pressure	60 - 100 psi [4,1 - 6,9 bar]		
Air Consumption	9 CFM [15 m <sup>3</sup> /h]		
Oil Flow at 100 psi air	40 cu. in./min. at 0 psi [656 cu. cm/min at 0 bar] 8 cu. in./min. at 10,000 psi [131 cu. cm/min at 700 bar]		
Usable Oil Capacity	36 cu. in. [590 cu. cm]	72 cu. in. [1180 cu. cm]	80 cu. in. [1311 cu. cm]
Weight	12 lb. [5,45 kg]	16 lb. [7,27 kg]	18 lb. [8,18 kg]
dBa	85 dBa		

## INSTALLATION

### Adding Oil to the Reservoir

1. Hold pump on end as shown in Figure 1 and remove fill plug. On PA-1150 models, the fill plug is located on the side of the pump as shown in Figure 2.

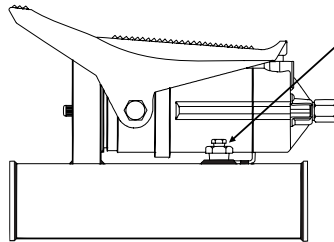


Figure 2

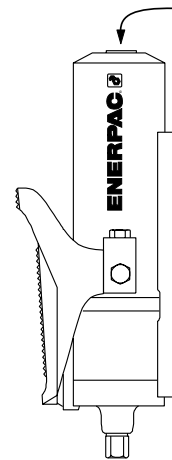


Figure 1

2. Fill to 1/2 " [1 cm] below the fill opening with Enerpac hydraulic oil. Use of fluids other than Enerpac hydraulic oil may cause damage and will void your warranty.

### WARNING

**Attempting to overfill the reservoir will cause the reservoir to become pressurized. If the reservoir is subjected to high pressure, the casing may rupture, causing personal injury and/or equipment damage.**

3. Replace the fill plug and finger tighten.

### CAUTION

**DO NOT use a wrench. Over-tightening will tear the reservoir bladder.**

4. Tip the pump and check for leakage. If leakage occurs, remove the plug and check the plug seal for cuts or nicks. Replace the seal if necessary.
5. Replace the fill plug making sure the seal is centered properly on the plug. If leakage still occurs, remove oil and take pump to your nearest Enerpac Service Center.

### Connect Hydraulic Hose

1. See Figure 3. Remove pipe plug from the female  $\frac{3}{8}$ " NPTF hydraulic swivel connector (A), and install the male end of a  $\frac{3}{8}$ " NPTF hydraulic fitting. The fitting can be a high flow coupler, hose, or gauge adaptor.

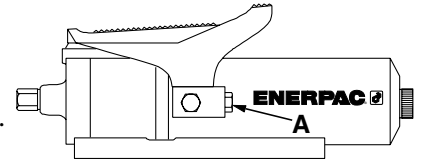


Figure 3

**NOTE:** Enerpac recommends installing a gauge in line to monitor hydraulic system pressure.

2. Seal connection with a high-grade pipe thread sealer, such as teflon tape.

**NOTE:** Use 1½ wraps of teflon tape, leaving the first thread bare to prevent tape from shedding into the hydraulic system and causing damage. See Figure 4.

3. Tighten pipe connections securely, but DO NOT over-tighten.

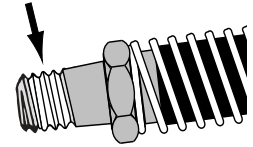


Figure 4

### Connect the Air Supply

Recommended air inlet pressure is 60-100 psi [4,1 - 6,9 bar].

1. See Figure 5. Connect a 9 CFM [15 m<sup>3</sup>/h] (minimum) air supply source to the  $\frac{1}{4}$ " [0,5 cm] NPTF pump air inlet swivel connector (B). Use only  $\frac{1}{4}$ " [0,5 cm] hose or quick disconnect fittings. Larger, heavier fittings are not recommended. Use a high-grade pipe thread sealer to seal the connection.

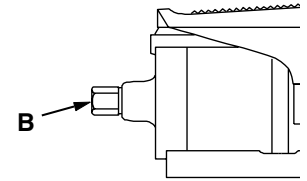


Figure 5

2. Tighten pipe connections securely, but DO NOT OVER-TIGHTEN.

**NOTE:** To promote long, trouble free pump operation, install an Enerpac air filter regulator in the air line.

### Adjust Hydraulic Pressure

The hydraulic pressure output of your air pump is controlled by the air pressure into the pump. Increasing the air inlet pressure will increase hydraulic output pressure, and decreasing air inlet pressure will decrease the hydraulic output pressure.

#### **WARNING**

**NEVER remove swivel air connector while air line is pressurized. Removing a pressurized air line may lead to personal injury or equipment damage.**

### Automatic Pressure Make-up

1. Adjust the air inlet pressure to the pump so that the hydraulic pressure output at stall corresponds to the desired circuit pressure.
2. Secure the treadle in the advance position. (A treadle clip is supplied with the PA-136 and PA-1150.)
3. With the air supply pressure continuously applied to the air motor, the pump will automatically cycle whenever circuit hydraulic pressure drops below the pump stall pressure.

**NOTE:** These pumps are not recommended for extended stall cycles.

#### **CAUTION**

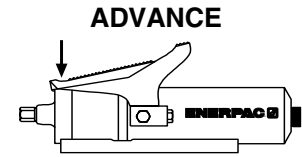
**The treadle should only be tied down when continuous oil flow is required to maintain constant pressure. DO NOT tie treadle for normal pump start/stop operations.**

## OPERATION

1. Check the oil level in the pump, and add oil if necessary.
2. Check to make sure all air and hydraulic connections are secure before operating pump.

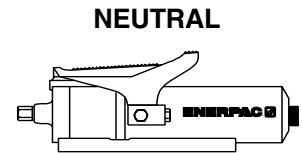
### To Activate the Pump

Depress the ADVANCE end of the treadle as shown in Figure 6, and the air motor will be activated to pump hydraulic oil to the system.



### To Hold Load Pressure

The air motor will stop and hold load pressure when the treadle is in the free NEUTRAL position. See Figure 6.



### To Release Load Pressure

To release load pressure or retract a cylinder, depress the RELEASE end of the treadle as shown in Figure 6.

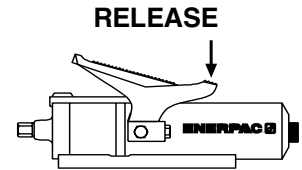


Figure 6

## PRIMING THE PUMP

If pump does not operate properly, it may have lost its prime. Follow the procedure below to prime your pump, if necessary.

1. Fill pump with Enerpac hydraulic oil, if necessary. See filling instructions on page 2.
2. Place pump on horizontal surface.
3. Set air supply pressure to 30-40 psi [2,1 - 2,7 bar].
4. Move pump treadle to RELEASE position.
5. Depress the button under the treadle to activate pump. Operate pump in RELEASE position momentarily several times to allow oil to flow back into pump and fill passage ways.
6. To verify that pump is primed, operate as normal with cylinder attached. If cylinder does not advance, repeat step 5.

If pump still does not deliver oil, contact your Authorized Enerpac Service Center.

## AIR FILTER REPLACEMENT

If the air motor does not perform as normal, check for a clogged air filter.

1. Shut off air pressure to the pump and release pressure in the line to the pump.

### **WARNING**

**NEVER remove swivel air connector while air line is pressurized.**

2. Note the position of the retaining clip. It can only be secured by the smallest tang of the metal retainer. Grasp air line with one hand and pull the retaining clip with pliers.
3. Pull the swivel air connector out.
4. Carefully remove air filter.
5. Clean air filter with an air hose or replace with a new air filter.
6. Re-insert the air filter.
7. Put a thin film of grease on the o-ring of the swivel air connector.
8. Reassemble the swivel air connector and retaining clip. Be sure that clip is secured on the smallest tang of the metal retainer.
9. Check to make sure the swivel air connector is securely attached before turning the air pressure back on.

## MAINTENANCE

1. Periodically check all hydraulic and air connections to be sure they are tight. Loose or leaking connections may cause erratic and/or total loss of operation. Replace or repair all defective parts promptly.
2. Periodically check the hydraulic oil level in your system. See filling instructions on page 2.
3. Change hydraulic oil after every 100 hours of operation. In dusty or dirty areas, it may be necessary to change the oil more frequently. To change the oil, drain used oil through the fill opening and fill reservoir to  $\frac{1}{2}$ " [1 cm] below the fill opening with clean Enerpac hydraulic oil. Dispose of used oil in accordance with local regulations.

### **WARNING**

**The pump is equipped with an overload valve, preset for maximum operating pressure. DO NOT attempt to adjust the overload valve. If adjustment is required, contact an Enerpac Service Center. Adjustment by other than qualified personnel may cause malfunction, damage to the system, and/or personal injury.**

### **Storage**

When the unit will be stored for 30 days or more:

1. Wipe the entire unit clean.
2. Disconnect all air pressure and hydraulic lines to prevent accidental operation.
3. Cover the unit.
4. Store in a clean, dry environment. DO NOT expose equipment to extreme temperatures.

## TROUBLESHOOTING

The following information is intended as an aid in determining if a problem exists. DO NOT disassemble the pump. For repair service, contact the Authorized Enerpac Service Center in your area.

Problem	Possible Cause	Solution
Pump fails to deliver oil.	Low fluid level.	Check the oil level and add oil according to instructions on page 2.
	Lack of air pressure.	Check air filter and replace if necessary (see page 5). Check air line and filter-regulator for obstructions or leaks. Check for damage to air motor.
	Pump has lost its prime.	Prime the pump according to the instructions on page 4.
Pump noise.	Low fluid level.	Check the oil level and add oil according to instructions on page 2.
	Lack of air pressure.	Check air filter and replace if necessary (see page 5). Check air line and filter-regulator for obstructions or leaks. Check for damage to air motor.
	Air motor section requires lubrication.	Place a few drops of oil in the air inlet port and cycle the motor several times to distribute the oil.
Oil leakage.	Worn or damaged parts.	Contact your local Authorized Enerpac Service Center for repairs.
	Loose connections.	Check that all connections are tight.
	Reservoir bladder torn.	Have reservoir bladder replaced by a qualified hydraulic technician.



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