



**HYDRAULIC TECHNOLOGIES**

Hydraulic Technologies  
5885 11th Street  
Rockford, IL 61109-3699 USA

Tech. Services: (800) 477-8326  
Fax: (800) 765-8326  
Order Entry: (800) 541-1418  
Fax: (800) 288-7031

Internet Address:  
<http://www.powerteam.com>

Form No. 102614

Operating Instructions for:

PR50  
PR50-220

---

## 200 PSI UNLOADING, RECHARGEABLE POWER SOURCE & MANUAL RELEASE VALVE TWO-STAGE HYDRAULIC PUMP Max. Capacity: 10,000 PSI

Read and carefully follow the operating instructions before installation and use of this pump. Most problems with new equipment are caused by improper operation or installation.

### NOTE:

- ✦ Inspect the pump upon arrival. The carrier, not the manufacturer, is responsible for any damage resulting from shipment.

## SAFETY PRECAUTIONS



**WARNING:** To help prevent personal injury,  
**Hydraulic Hose**

- Before operating the pump, tighten all hose connections using the proper tools. Do not overtighten the connections. Connections need only be tightened securely and leak-free. Overtightening may cause premature thread failure or high pressure fittings to split at pressures lower than their rated capacities.
- Should a hydraulic hose ever burst, rupture, or need to be disconnected, immediately shut off the pump. Never attempt to grasp a leaking hose under pressure with your hands. The force of the escaping hydraulic fluid could cause serious injury.
- Do not subject the hose to potential hazard such as fire, extreme heat or cold, sharp surfaces, or heavy impact. Do not allow the hose to kink, twist, curl or bend so tightly that the oil flow within the hose is blocked or reduced. Periodically inspect the hose for wear because any of these conditions can damage the hose and may result in personal injury.
- Do not use the hose to move attached equipment. Stress may damage the hose and cause personal injury.
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as creosote-impregnated objects and some paints. Consult the manufacturer before painting a hose. Never paint the couplers. Hose deterioration due to corrosive materials may result in personal injury.

### Pump

- Do not exceed the hydraulic pressure rating of 10,000 PSI or tamper with the internal pressure relief valve. Creating pressure beyond rated capacity may result in personal injury.
- Before replenishing the oil level, retract the system to prevent overfilling the pump reservoir. An overflow may cause personal injury due to excess reservoir pressure created when cylinders are retracted.

## Cylinder

- Do not exceed rated capacities of the cylinders. Excess pressure may result in personal injury.
- Do not set poorly-balanced or off-center loads on a cylinder. The load may tip and cause personal injury.

## Battery and Battery Charger

- Avoid conditions which could create an electrical hazard (examples: wet or damp locations, in presence of flammable liquids or gases, or use of improper extension cord).
- Use only the recommended rechargeable batteries. Other types of batteries could explode when trying to recharge them causing serious personal injury.
- Never charge battery when temperature is below 50°F or above 95°F.
- Never attempt to connect two chargers together.
- The charger is designed to operate on standard 110/115 electrical power. Never attempt to use it on any other voltage.
- Never insert *anything* other than a recommended battery into the positive and negative ports of the battery charger.
- Do not charge by means of the engine generator or the DC power source.
- Never disassemble the battery.
- Never store batteries in a location where the temperature could reach or exceed 104°F.
- Never incinerate a damaged or exhausted battery. The battery can explode in a fire.
- Leakage of battery acid can occur under extreme usage or temperature conditions. If the acid comes in contact with skin, wash immediately with soap and water and then with lemon juice or vinegar. If acid should get in eyes, rinse with strong solution of boric acid and get medical attention immediately.
- Use of an attachment not recommended or sold by the battery charger manufacturer can result in possible fire, electric shock, or personal injury.
- Do not short circuit the battery.
- Do not use charger if it has a damaged plug or cord. Replace immediately.
- Do not use an extension cord unless absolutely necessary.
- Do not use charger if it has been dropped, received a sharp blow or been damaged in any other way. Seek repair by a qualified service technician.
- Do not disassemble charger. Take charger to a qualified service technician when any service or repair is required.

## OPERATING PROCEDURE

### Charging the Battery

**NOTE:** The battery can be affected by temperature. Do not charge them outside or in a location exposed to direct sunlight. This could result in a less than fully charged battery.

1. Plug battery charger into 110 v. outlet (for PR50) or 220 v. outlet (for PR50-220).
2. Plug the battery cartridge prongs into the corresponding positive and negative terminals indicated on the battery charger. See Figure 1.
3. The pilot light will come on if the battery is seated properly and indicates that the battery is charging. **NOTE: If the pilot light does not come on when inserting a recently operated battery, let the battery cool, then try again.**
4. The pilot light will go out when the battery is fully charged (about 1 hour) and can be removed from the charger.

**IMPORTANT:** Always allow fifteen minutes between battery chargings to avoid overheating the charger.

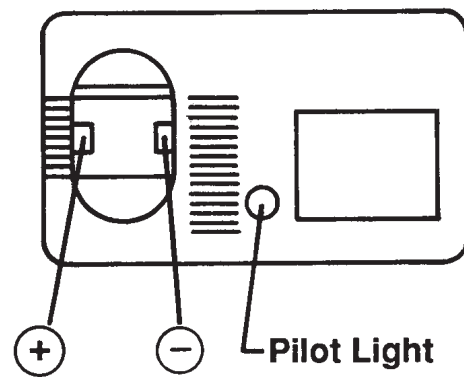


Figure 1

## Hydraulic Connections

1. Clean all the areas around the oil ports of the pump and cylinder.
2. Inspect all threads and fittings for signs of wear or damage, and replace as needed.
3. Clean all hose ends, couplers, or union ends.
4. Remove the thread protectors from the hydraulic oil outlets.
5. Connect the hose assembly to the hydraulic oil outlet, and couple the hose to the cylinder. **NOTE: Seal all hydraulic connections with Power Team HTS6 thread sealant.** Teflon tape can also be used to seal hydraulic connections. Carefully apply only one layer of tape, two threads back. Any loose pieces of tape could be pinched and broken off inside the pipe end, causing the tape to travel through the system and possibly obstruct the flow of oil.

## Filling the Reservoir

**NOTE: This pump has been shipped with oil in the reservoir. The following steps would be required after draining and flushing the reservoir after approximately 300 hours of use. Use only Power Team oil in this pump.**

1. Clean the area around the filler cap to remove all dust and grit. Any foreign material in the oil can damage the polished surfaces and precision-fit components of this pump.
2. Retract cylinder completely.
3. Remove the filler cap and insert a clean funnel with a filter. Fill the reservoir with Power Team hydraulic oil to 1" from the cover plate. Replace the filler/breather cap.
4. Cycle the pump (with the cylinder attached) several times. Retract the cylinder and check the oil level in the pump reservoir.

## Installation and Removal of Battery

1. To remove the battery cartridge:
  - (a) Steady the pump by holding the pump handle with one hand.
  - (b) With the other hand, grasp and squeeze the grip pads on each side of the battery.
  - (c) Remove the battery from the handle with a smooth, straight pull.
2. To install the battery cartridge:
  - (a) Insert battery into the end of the pump handle, and gently push battery in straight until it snaps into position.  
**IMPORTANT: Never force the battery into position!**

## Switch Operation

To prevent the motor from being started accidentally, the trigger can only be operated if the lock-off button is depressed first. The lock-off button can be pressed by the thumb, allowing the index finger to squeeze the trigger.

**NOTE: It is not necessary to maintain pressure on the lock-off button once the trigger has started the motor.**

## Valve Operation

1. To build pressure, turn the valve control knob counterclockwise (CCW).
2. Activate the pump unit by pressing the lock-off button with your thumb, then squeeze the trigger with your index finger. **NOTE: Oil will advance the cylinder when the unit is activated.**
3. Release the trigger when the cylinder has reached the appropriate height.
4. To retract the cylinder, turn the valve control knob clockwise (CW).

## When operating the pump for the first time:

1. Check all hose fittings to insure proper tightness, check the oil level in the reservoir, and charge and install the battery.
2. Activate the pump, and advance and retract the cylinder.

## PREVENTIVE MAINTENANCE



**WARNING: To help avoid personal injury:**

- Repairs and maintenance are to be performed in a dust-free environment by a qualified technician only.
- Always disconnect the battery from the motor before attempting any maintenance or repair procedures.

### Bleeding Air from the System

After use, air can accumulate in the hydraulic system if the reservoir oil is too low. Air causes the cylinder to respond slowly or in an unstable manner. To remove the air:

1. Remove any load from cylinder.
2. Position cylinder on its side with the coupler located upward and at a lower level than the pump.
3. Cycle the hydraulic system through several cycles of fully extending and retracting the cylinder.

### Hydraulic Fluid Level

1. Check the oil level in the reservoir after each 10 hours of use. The oil should be 1" from the pump cover plate when the cylinder is retracted.
2. Drain, flush, and refill the reservoir after approximately every 300 hours. Use only Power Team hydraulic oil. The frequency of oil changes depends upon the general working conditions, severity of use, and the overall cleanliness and care given the pump.

### Draining and Flushing the Reservoir

1. Clean the pump exterior before the pump interior is removed from the reservoir.
2. Remove the screws that hold the the motor and pump assembly to the reservoir. **IMPORTANT: Do not damage the gasket or bump the filter or hydraulic pressure regulating valves when lifting the pump assembly off the reservoir.**
3. After disposing of the used hydraulic fluid, clean the inside of the reservoir with a suitable flushing oil. Rinse the filter clean.
4. Place the pump and motor assembly back onto the reservoir, and secure it with four of the machine screws assembled on opposite corners of the housing.  
**IMPORTANT: Connect a hose to the valve fitting and place the other end of the hose into the oil filler plug hole.**
5. Run the pump for several minutes. Disconnect the motor and pump assembly, and drain and clean the inside of the reservoir.
6. Fill the reservoir with Power Team hydraulic oil. Replace the pump and motor assembly (with gasket) on the reservoir, and tighten the machine screws. Tighten screws securely and evenly.

### Adding Oil to the Reservoir

1. The cylinder must be fully retracted, and the battery removed when adding oil to the reservoir.
2. Clean the entire area around the filler plug. Remove the filler plug and insert a clean funnel with a filter.
3. Use only Power Team hydraulic fluids. The oil level should be 1" from the pump cover plate with the cylinder retracted.

### Disposing of an Exhausted Battery

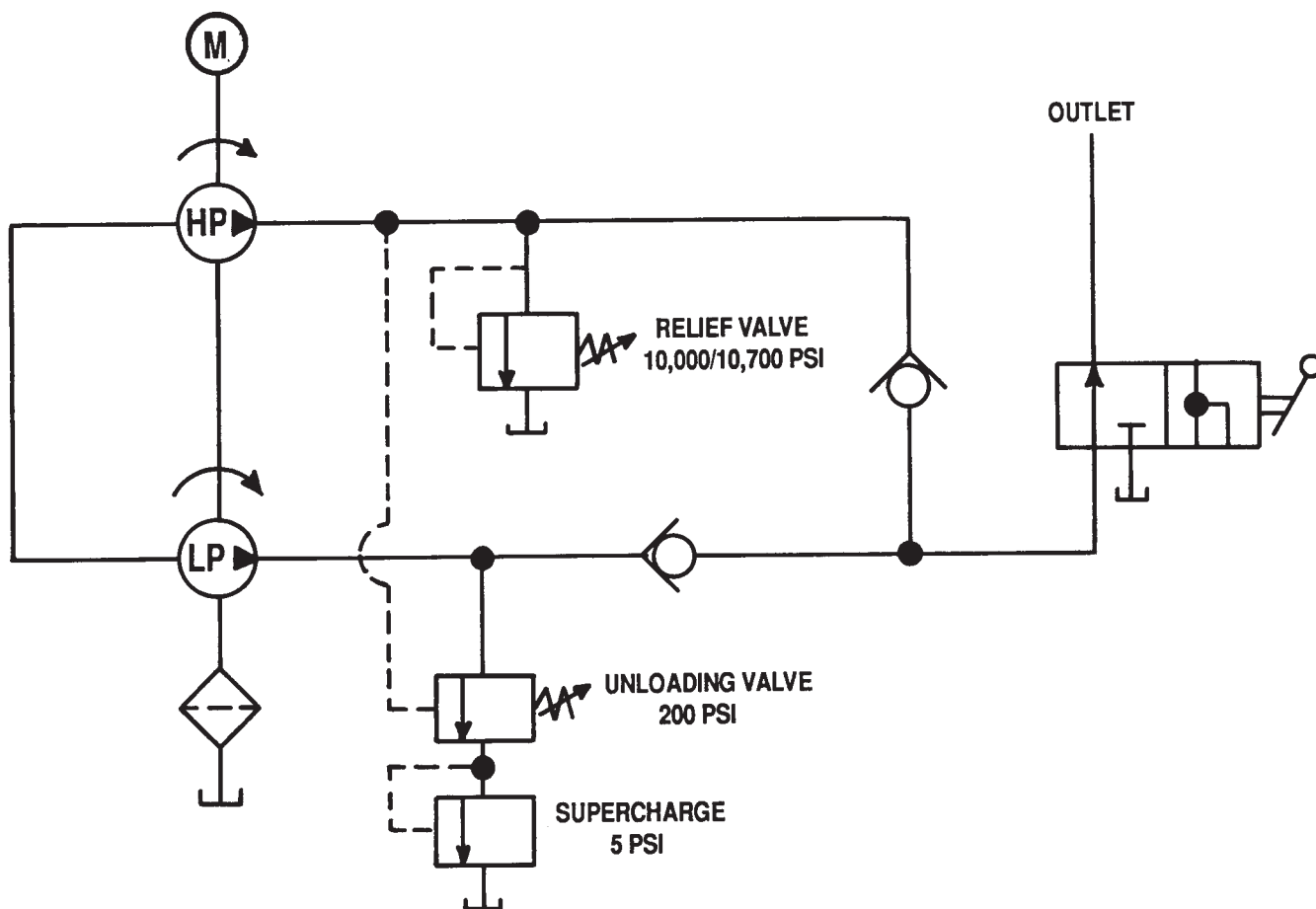
Return all exhausted batteries (those with a post-charging life too short for practical use) to the distributor you bought this pump from. **Do not dispose of batteries in any other manner!**

### TROUBLE-SHOOTING GUIDE

**NOTE:**

- To help prevent injuries, any repair work or trouble-shooting must be done by qualified personnel familiar with this equipment.
- Use the proper gauges and equipment when trouble-shooting.
- It is best to check for leaks by using a hand pump and applying pressure to the suspect area without the motor running. Watch for leaking oil and follow it back to its source.
- Plug the outlet port of the pump when checking for leaks to determine if the leak is in the pump or if it is in the cylinder or tool.
- Refer to Parts List #100815 and the hydraulic schematic below when using this trouble-shooting guide.

### HYDRAULIC SCHEMATIC



## Operating Instructions, Form No. 102614, Back sheet 3 of 3

---

PROBLEM	CAUSE	SOLUTION
<b>Motor does not run</b>	<ol style="list-style-type: none"><li>1. Battery is not charged.</li><li>2. Battery is not installed properly.</li><li>3. Broken lead wire.</li><li>4. Defective motor.</li></ol>	<ol style="list-style-type: none"><li>1. Charge battery.</li><li>2. Remove battery and install again.</li><li>3. Replace defective parts.</li><li>4. Replace or repair motor.</li></ol>
<b>Pump is not delivering oil or delivers only enough oil to advance cylinder partially or erratically</b>	<ol style="list-style-type: none"><li>1. Oil level too low.</li><li>2. Air in system.</li><li>3. Dirt is in pump or filter is plugged.</li><li>4. Cold oil or oil is too heavy.</li><li>5. Relief valve or low pressure unloading valve out of adjustment.</li><li>6. Valve open.</li></ol>	<ol style="list-style-type: none"><li>1. Fill reservoir to 1" from the top (maximum).</li><li>2. Bleed the system.</li><li>3. Pump filter should be cleaned and, if necessary, pump should be disassembled and all parts inspected and cleaned.</li><li>4. Change to lighter oil.</li><li>5. Readjust as necessary.</li><li>6. Close valve.</li></ol>
<b>Cylinder will not retract</b>	<ol style="list-style-type: none"><li>1. Check the system pressure; if the pressure is zero, the control valve is releasing pressure and the problem may be in the cylinder, mechanical linkage connected to the cylinder, or the quick-disconnect coupler.</li></ol>	<ol style="list-style-type: none"><li>1. Check the cylinders for broken return springs and check couplers to insure that they are completely coupled. Occasionally couplers have to be replaced because one check does not stay open in the coupled position.</li></ol>
<b>Pump will not build full pressure</b>	<ol style="list-style-type: none"><li>1. Faulty pressure gauge.</li><li>2. Check for external oil leaks.</li><li>3. Inspect the pump for internal oil leaks.</li></ol>	<ol style="list-style-type: none"><li>1. Calibrate gauge.</li><li>2. Seal any faulty pipe fitting with Power Team HTS6 thread sealant.</li><li>3. Same procedure as above but look for leaks around the entire inner mechanism. If there is no visible leaks the lo-to-hi pressure ball check may be leaking. Remove all parts. Inspect the check body for any damage to the seat areas. Clean if necessary. Inspect the ball for damage and replace if necessary, then reassemble.</li></ol>
<b>Pump delivers excess oil pressure</b>	<ol style="list-style-type: none"><li>1. Check pressure gauge.</li><li>2. Relief valve not properly set.</li></ol>	<ol style="list-style-type: none"><li>1. Calibrate gauge.</li><li>2. Reset the relief valve.</li></ol>
<b>Battery will not charge</b>	<ol style="list-style-type: none"><li>1. Battery is too hot due to rapid discharge.</li></ol>	<ol style="list-style-type: none"><li>1. Let battery cool.</li></ol>