QS-5000-C OPERATING MANUAL

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Val-Tex QS-5000-C

Air / Hydraulic Lubrication Gun

Delivery:  8 oz. / 30-60 seconds
Weight:   153 Lbs.
Lube Sealant Size:  V, P-4
PSI Rating:  10,000
Overall Dimensions:  46" H X 20" W X 26" L
Priming:  Self-Priming Air / Hydraulic
CFM Required:  20
Air Pressure Required:  75 - 100 PSI
Pressure Delivered through a 10 foot hose at 100 PSI:
  Lube Sealant - 8,000 PSI
  Valve Flush - 10,000 PSI
Gauge:  Included
Lube Pack Compatible:  Yes
Internal Relief Valve:  Yes

The Val-Tex QS-5000-C is a compact, easy to transport, fast, versatile, heavy duty lubrication unit that will pump large volumes of stick lube sealant, lube packs, and Valve Flush. The QS-5000-C is quickly separated into two parts by removing the cylinder for easy loading and unloading by one person. Assembly is as simple as inserting the two catch pins to secure the cylinder clamps to the frame.

The QS-5000-C has the largest stick lube sealant capacity in the valve lubrication industry. The Val-Tex five pound V-stick, four pound P-4 Lube Pack, and one gallon Valve Flush (VF-GAL) are designed to drastically reduce the frequency of loading.

The QS-5000-C’s four inch pneumatic tires allow the unit to be maneuvered easily by one person. The rugged sealant cap wrench has 16 ounce graduations to allow the operator to control the amount of material being loaded. The unit comes complete with a 10 foot, 3/8 inch I.D. high pressure hose, quarter turn shut-off / bleeder valve, 15,000 PSI gauge, Gauge Guard, dual swivels, giant buttonhead coupler, and metal hydraulic fluid reservoir. The hydraulic pump requires only periodic maintenance and has an internal safety relief valve set at approximately 10,000 PSI to prevent over-pressuring.

Options Available

• Sight glass modification to the metal hydraulic pump reservoir allows the operator to monitor the amount of material being pumped.
• Air regulator (8607) rated for 3,000 PSI input and gauge (2052L160) rated to 160 PSI. Be sure to refer to your company’s policies before using anything other than compressor air for your power source.
• Moisture separator (5604-2) and airline lubricator (5904-2) for protection of the pump.

Part No.  Item No.  Description  Qty.
5001A 1 Cylinder Assembly Complete 1
5001A-1 2 Sealant Cap Assembly Complete 1
5001A-1A 3 Sealant Cap 1
5001-1B 4 Air Return Fitting 1
328034 5 Air Quick Disconnect-Male 1
5001A-1C 6 Lube Pack Extension 1
5001-1D 7 Dowel Pin 6
5001A-1F 8A Sealant Cap O-rings 1
5001A-2 9 Cylinder Body 1
5001-3 10 Piston Assembly Complete 1
5001-3A 11 Piston Body 1
5001-3B 12 Snap Ring 2
5001-3C 13 Piston Seal Retainer 2
5001-3D 14 Upper & Lower Seal Sets 2
1408-A 15 Cap Screw Bleeder 5/16”-24NF 1
1408-B 16 Copper Washer 1
5001A-4 17 Hydraulic End Cap 1
BB-12 18 1/2” NPT Body Bleed Fitting 1
5002-1-C 19 Hydraulic Hose Assembly 1
HGD-14-N-M 20 Hyd. Quick Disc. Nipple 1/4” (M) 1
HGD-14-C 21 Hyd. Quick Disc. Coupler 1/4” (F) 1
39-6-M-2 22 Hydraulic Pump - Metal Reservoir 1
328030 23 Air Quick Disconnect (F) 1
328034 24 Air Quick Disconnect (M) 1
5016 25 Sealant Hose Assembly 1
Consists of:
  6 Giant Buttonhead Coupler 1
  12 MINI-QS-5000 Compact Cart 1
  331107 High Pressure 2 Swivel 1
  319701 Shut Off / Bleeder Valve 1
  1/4 IN CPLG 1/4”x1/4” Coupling 1
5020-1-C 26 Sealant Cap Wrench 1
5020-3 27 Pneumatic Tire 2
5020-4 28 Handle Grips - 1” 3
SC-14 29 1/4” G.B. Lube Fitting 1
OPTIONS
2052L160 30 0-160 PSI Gauge 1
5035 31 O Shaped Sight Glass 1
5040 32 Hydraulic Fluid - 1 Gallon 1
8607 33 Air Regulator 1

10600 FALLSTONE ROAD • HOUSTON, TEXAS 77099-4390 • ORDER 1-800-627-9771 • PHONE (281) 530-4848 • FAX (281) 530-5225 • WWW.VALTEX.COM

REV. 8/03
QS-5000-C Requirements

A minimum of 20 CFM is required to operate the unit. The unit should be run with 100 to 125 PSI input pressure. Exceeding 125 PSI input pressure is not recommended and could damage the hydraulic pump.

To obtain 10,000 PSI output requires 100 to 125 PSI of input air at 20 CFM.

Moisture separator, oiler, and air line filter (these items are not included) are recommended on the air supply line to prolong the life of the pump.

If using the Val-Tex #8607 Air Regulator

1. Install 160 psi air gauge (2052L160) in one of the LP ports on the regular.

2. Regulator Specifications:
   A. Regulator inlet capacity 3000 psi maximum
   B. Output Adjustable 1-160 psi
   C. Regulator preset at factory for 100 psi.
      One (1) air inlet port is marked HP (High Pressure)
      Two (2) air outlet ports are marked LP (Low Pressure)

Before Operating the Pump

1. Remove shipping plug from hydraulic pump and install vent filler cap (20937S) provided on the opposite end.

2. Remove shipping plug from sealant cap (5001A-1A) and install sealant hose assembly (5016).
Legal and Operating the QS-5000-C

1. Move pump control lever to "release" position. (as marked on pedal)

2. Disconnect air supply from pump.

3. Close relief valve (319700) on material hose. (|) open (-) close

4. Close body bleed fitting on sealant cap.

5. Attach air supply to quick disconnect (328034) on sealant cap (5001A-1A). Allow approximately 60 seconds for piston to return to the bottom.

6. Disconnect the air supply from sealant cap.

7. Open the body bleed fitting on the sealant cap. Place a rag under and in front of the bleeder hole on the body bleed fitting to catch bleeding material. **DO NOT** place your hand in front of or stand in front of the bleeder hole. After the material passes through the bleeder hole, the trapped air pressure will vent. This allows the sealant cap to be more easily removed.

8. Close the body bleed fitting after the pressure has vented.

9. Using the sealant cap wrench supplied (5020-1-C), remove sealant cap. **DO NOT** attempt to remove the allen screw on the side of the sealant cap at any time!!!

10. Determine piston (5001-3) is all the way down. If not, replace sealant cap and proceed from step 5 above.

11. When less than full capacity is required, use the 16 ounce markings on the sealant cap wrench (5020-1-C) and activate the Hydraulic Pump (PA6-M-2) until the piston assembly reaches the proper position. **WARNING!** Piston Assembly (5001-3) can be pumped out of the cylinder.

12. Load Val-Tex lube sealant or Valve Flush as required. Remember to remove cellophane wrapper on sticks or cut the top of the bag open for the P-4 lube packs.

13. Replace sealant cap. Snugly tighten with sealant cap wrench provided. The cap is securely tightened when you cannot see any threads on the sealant cylinder.

14. Close the relief valve (319700) on material hose. (|) open (-) close

15. Open the body bleed fitting on the sealant cap.

16. Reattach air supply to hydraulic pump (PA6-M-2).
17. Activate pump by moving the pump control lever to "pump" position (as marked on pedal). Place a rag under and in front of the bleeder hole on the body bleed fitting to catch bleeding material. * **DO NOT** place your hand in front of or stand in front of the bleeder hole. As material passes through the bleeder hole, any trapped air should vent. Stop the pump when the air is vented.

18. Close the body bleed fitting on the sealant cap.

19. Open the relief valve (319700) on material hose. (I) open (-) close

20. The QS-5000-C is now ready to service your valves.

21. Before removing the coupler from the valve or when the hydraulic pump is not in use, release the pressure on the hydraulic pump and close relief valve (319700) on material hose.

22. When the cylinder is empty the pump will begin to stall. Stop the pump. Please refer to step 1.

* Dispose of any expelled material properly.

**Detaching the Lubrication Cylinder**

One of the unique features of the QS-5000-C is that you can detach the lubrication cylinder so one person can load and unload the entire unit. **Note:** Only perform this procedure when there is no pressure on the cylinder.

1. Disconnect the female hydraulic quick disconnect from the bottom of the lubrication cylinder.
2. Pull the two push pins holding each of the two bracket pins in place.

3. Pull both of the bracket pins to disengage the cylinder from the frame.

4. Carefully remove the cylinder. This will now allow you to more easily load or unload the unit from your vehicle.
Periodic Maintenance For Pump and Cart

1. If automatic air line oiler is not installed, periodically lubricate air line using SAE No. 10 oil.

2. Lubricate wheel bearings using quality wheel bearing grease.

3. Refer to the OTC Form 105001 and 100424 included with your hydraulic pump (5012) for periodic maintenance requirements on the PA6-2-M.

4. Slowness or difficulty in returning piston assembly (5001-3) to the bottom of the cylinder indicates the need to change hydraulic fluid and clean filter assembly (29682) referred to in Form 100424 item 12.

Recommended Storage Procedures

Follow the steps below for proper storage when the QS-5000-C is out of service for an extended period of time.

1. It is recommended to remove any product from the sealant cylinder.
2. Blow the piston down to the bottom of the sealant cylinder.
3. Coat the inside of the cylinder with a light oil. This should allow the piston to run smoothly when you take it out of storage. When you are ready to use the unit, make sure the hydraulic fluid is clean before you operate it. If it is not, change the hydraulic fluid.
### RECOMMENDED REPLACEMENT FLUIDS FOR QS-5000

<table>
<thead>
<tr>
<th>Plant Eng. Designation</th>
<th>ISO Viscosity Grade</th>
<th>Lubricant Type</th>
<th>Viscosity SUS at 100°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRADE-215-HP</td>
<td>46</td>
<td>High-pressure (anti-wear) hydraulic oil</td>
<td>194-236</td>
</tr>
</tbody>
</table>

#### Company Name

- **Allube (Far Best Corp.)**
  - Product Number: Moly-Shield HM 215
- **Amalie Refining Co. (Div. of Witch Chemical)**
  - Product Number: AMA Oil 200
- **Anderson Oil & Chemical Co.**
  - Product Number: Windsor Hyd. Oil 45AW
- **Ashland Oil Inc. Valvoline Oil Div.**
  - Product Number: AW Oil #20
- **American Lubricants, Inc. (AmLube)**
  - Product Number: 200 AW Hyd. Oil
- **Amoco Oil Co. (Standard Oil of Indiana)**
  - Product Number: Rykon Rykon Oil #46 or Amoco AW 46
- **Bel-Ray Co., Inc.**
  - Product Number: Raylene AW Hyd. Fluid #1
- **Benz Oil, Inc.**
  - Product Number: Petroallic 46-LC
- **Brooks Technology Co.**
  - Product Number: Versalene 610
- **Cato Oil & Grease**
  - Product Number: AW/AL Hyd. Oil 10
- **Davis-Howland Oil Corp.**
  - Product Number: DSL 46
- **Delta Resins & Refractories, Inc.**
  - Product Number: Deltalene Med. Hyd. Oil #931
- **Conoco, Inc.**
  - Product Number: Super Hyd. Oil 46
- **Darmex Industrial Corp.**
  - Product Number: Darmex Hyd. 100/200
- **Exxon Co. USA**
  - Product Number: Nuto 46
- **G & M Lubricants, Ltd.**
  - Product Number: 330 Hydralube-Med.
- **Gard Oil Products, Inc.**
  - Product Number: HydraGard AW 46
- **Union Oil Company of California Western Region**
  - Product Number: Unax AW 46
- **Union Oil Company of California Eastern Region**
  - Product Number: Unax AW 46
- **United Refining Company**
  - Product Number: Emblem AW-200
- **World-Wide Lubricants, Ltd.**
  - Product Number: Moly Hyd. AW 225
- **White & Bagley of Michigan**
  - Product Number: Penn-Mar EP Hyd. Oil 225
- **Arthur C. Withrow Company**
  - Product Number: H Med. AW Hyd. Oil
- **Georgia-Carolina Oil Co.**
  - Product Number: G-C Hy-Press 15
- **International Refining & Manufacturing Co.**
  - Product Number: Imco HL-21
- **The Inter-State Oil Co.**
  - Product Number: Inter-State Resistal EP H-215
- **E.F. Houghton & Co.**
  - Product Number: Hydro-Drive HP-200
- **Imperial Oil & Grease**
  - Product Number: Molub-Alloy 602
- **Lubrication Analysis, Inc.**
  - Product Number: Hyd. Oil AW 250
- **Lubriplate Div. Fiske Brothers Refining Co.**
  - Product Number: HO-1
- **A. Margolis & Sons Corp.**
  - Product Number: Silogram TIP 100-20-7
- **Metal Lubricants Co.**
  - Product Number: Meltran AW-410
- **Mobil**
  - Product Number: DTE 25
- **Phillips Petroleum Co.**
  - Product Number: Magnus A Oil 46
- **Phoenix Petroleum Co., Ltd.**
  - Product Number: KS 302
- **Parr, Inc.**
  - Product Number: Hydrooil AW 46
- **Pennzoil Co.**
  - Product Number: AW Hyd. Oil 46
- **Shell Oil Co.**
  - Product Number: Telius 46
- **Siegel Oil Co.**
  - Product Number: Titan AW Hyd. Oil #21
- **Southwestern Petroleum Co.**
  - Product Number: Swapco AW Hyd. Oil 704-10
- **Standard Oil Co. (Ohio) (Boron Oil Company)**
  - Product Number: Industron 48
- **Texaco, Inc.**
  - Product Number: Rando Oil HD 46
- **Tosco Corp. Western Region**
  - Product Number: Azalea AW 46
- **Tech Lube Corp.**
  - Product Number: TH10
- **Ultrachem, Inc.**
  - Product Number: Chemlube 217
MODELS C, D, E, F, & G
AIR HYDRAULIC PUMP
Max. Pressure: See Pump Data Plate
Workstation Sound Pressure Level: 83 dB(A) at Rated Capacity

Definition: An air hydraulic pump delivers hydraulic fluid under pressure through the use of compressed air as a power source.

SAFETY EXPLANATIONS
Two safety symbols are used to identify any action or lack of action that can cause personal injury. Your reading and understanding of these safety symbols is very important.

⚠️ DANGER - Danger is used only when your action or lack of action will cause serious human injury or death.

⚠️ WARNING - Warning is used to describe any action or lack of action where a serious injury can occur.

IMPORTANT - Important is used when action or lack of action can cause equipment failure, either immediate or over a long period of time.

⚠️ WARNING: It is the operator's responsibility to read and understand the following safety statements,

- Only qualified operators should install, operate, adjust, maintain, clean, repair, or transport this machinery.
- These components are designed for general use in normal environments. These components are not specifically designed for lifting and moving people, agri-food machinery, certain types of mobile machinery or special work environments such as: explosive, flammable or corrosive. Only the user can decide the suitability of this machinery in these conditions or extreme environments. Power Team will supply information necessary to help make these decisions.

These instructions are intended for end-user application needs. Most problems with new equipment are caused by improper operation or installation. Detailed service repair instructions or parts lists can be obtained from your nearest Power Team facility (see listing).
SAFETY PRECAUTIONS

⚠️ WARNING

General Operation
- All WARNING statements must be carefully observed to help prevent personal injury.
- Before operating the pump, all hose connections must be tightened with the proper tools. Do not overtighten. Connections should only be tightened securely and leak-free. Overtightening can cause premature thread failure or high pressure fittings to split at pressures lower than their rated capacities.
- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump and release all pressure. Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid could cause serious injury.
- Do not subject the hose to potential hazard such as fire, sharp surfaces, extreme heat or cold, or heavy impact. Do not allow the hose to be altered or kink, twist, curl, crush, cut, or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear, because any of these conditions can damage the hose and possibly result in personal injury.
- Do not use the hose to move attached equipment. Stress can damage hose and possibly 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. Hose deterioration due to corrosive materials can result in personal injury. Never paint the couplers.
- Inspect machine for wear, damage, and correct function before each use. Do not use machinery that is not in proper working order, but repair or replace it as necessary.
- Replace worn or damaged safety decals.
- Modification of a product requires written Power Team authorization.
- Use only components with the same pressure rating when assembling a system or machine.

Pump
- Do not exceed the hydraulic pressure rating noted on the pump data plate or tamper with the internal high pressure relief valve. Creating pressure beyond the rated pressure can result in personal injury.
- Before replenishing the fluid level, retract the system to prevent overfilling the pump reservoir. An overfill can cause personal injury due to excess reservoir pressure created when cylinders are retracted.

Air Supply
- Shut off and disconnect the air supply when the pump is not in use or before breaking any connections in the system.

PREPARATION & SET-UP

Air Supply Hook-Up
Remove the thread protector from the air inlet of the pump. Select and install the threaded fittings which are compatible with your air supply fittings. The air supply should be 20 CFM (.57 M³/min.) and 100 PSI (7 BAR) at the pump to obtain the rated hydraulic pressure. Air pressure should be regulated to a maximum of 140 PSI (9 BAR). Secure your pump fitting to the air supply. See illustrations on following pages.

⚠️ WARNING: If improperly used, pressurized equipment can be potentially hazardous. Therefore:
- Hydraulic connections must be securely fastened before building pressure in the system.
- Release all system pressure before loosening any hydraulic connection in the system.

Venting The Reservoir
To improve hydraulic fluid delivery and increase useable hydraulic fluid capacity, remove shipping plug and install filler/vent cap before using the pump.
Hydraulic Connections

Clean all the areas around the fluid ports of the pump and cylinder. Inspect all threads and fittings for signs of wear or damage and replace as needed. Clean all hose ends, couplers and union ends. Remove the thread protectors from the hydraulic fluid outlets. Connect the hose assembly to the hydraulic fluid outlet and couple the hose to the cylinder. See illustrations below.

IMPORTANT: Seal all external pipe connections with a high-grade, nonhardening thread sealant. Teflon tape may also be used to seal hydraulic connections, provided only one layer of tape is used. Apply the tape carefully, two threads back, to prevent it from being pinched by the coupler and broken off inside the system. Any loose pieces of tape could travel through the system and obstruct the flow of fluid or cause jamming of precision-fit parts.

For Hand/Foot Operated Pumps:

For Manual Valve Operated Pumps:

This pump is equipped with a two position, 3-way/4-way control valve for operating single- or double-acting hydraulic cylinders and requires attaching the hoses in the following manner:

When using a single-acting cylinder, attach one end of a hose to port "A" of valve and the end of the hose to the advance port "C" of the cylinder. Then install a pipe plug in valve port "B." If the hoses are frequently connected and disconnected, quick couplers should be used to prevent wear and tear on the fittings.

When using a double-acting cylinder, attach one hose to port "A" of valve and the other end of the hose to the advance port "C" of cylinder. Attach the second hose to valve port "B" and the other end of the hose to return port "D" of cylinder.
For Remote Controlled Pumps:

1. Connect the pump to a remote 3-way/4-way valve.
2. Connect the fluid line from the fluid pressure port on the manifold to the pump pressure port on the valve.
3. Connect the fluid line from the fluid return port on the manifold to the pump return port on the valve.
4. Connect the cylinder(s) to the valve.

**IMPORTANT:** On all single pressure line applications, plug one port on the valve.

For Tandem Pumps:

**With Remote Valve -**

1. Connect the pump to a remote 3-way/4-way valve.
2. Connect the fluid line from the fluid pressure port on the manifold to the pump pressure port on the valve.
3. Connect the fluid line from the fluid return port on the manifold to the pump return port on the valve.
4. Connect the cylinder(s) to the valve.

**With Pump Mounted Valve -**

1. Connect the ports of the pump valve to cylinder(s). When port "A" is pressurized, port "B" becomes the return. When port "B" is pressurized, port "A" becomes the return.
2. Place the valve into the "A" or "B" position in order to pressurize the cylinder(s) or start the pump.
OPERATION

PICTOGRAM DEFINITIONS

Activating the pump with the pedal end marked with this pictogram, the flow of fluid is directed out of the reservoir.

Activating the pump with the pedal end marked with this pictogram, the flow of fluid is directed back to the reservoir.

Priming The Pump Unit
Under certain circumstances it may be necessary to prime the pump unit. To accomplish this, perform the following procedure:

For Hand/Foot Operated Pumps:
1. Press the release end of the pedal while holding down the air intake valve with a flathead screwdriver. The air intake valve is located directly under the pedal in the area marked \( \text{Air Intake Valve} \). The valve is depressed simultaneously with the \( \text{Filler/Vent Cap} \) area of the pedal during priming.
2. Allow the pump to cycle approximately 15 seconds.
3. Remove the screwdriver, and press the \( \text{Filler/Vent Cap} \) end of the pedal once more.
4. If the cylinder extends or pressure builds, the pump has been successfully primed. If the pump does not respond, repeat the procedure, jogging the air intake valve while holding the pedal in the \( \text{Release End} \) position.

For Manual Valve Operated Pumps:
Disconnect the hose end at the advance port of the cylinder. Direct the hose end into a suitable container or back into the pump reservoir. Shift the valve to the ADVANCE position and depress the end of the foot pedal inscribed with \( \text{ADVANCE} \). Allow the pump to cycle until fluid begins to flow freely into the container or reservoir. Reconnect the hose end to the cylinder advance port. Shift the valve to the ADVANCE position and reactivate the pump. If the cylinder extends or builds pressure, the pump has been successfully primed. If not, refer to the Trouble-shooting Guide of these instructions.

For Remote Controlled Pumps:
Depress the \( \text{Release End} \) AND \( \text{Air Intake Valve} \) buttons on the remote hand control simultaneously and allow the pump to cycle for approximately fifteen seconds. Release both buttons and then depress the \( \text{Air Intake Valve} \) button once more. If the cylinder extends or pressure builds, the pump has been successfully primed. If the pump does not respond repeat the procedure. If pump still does not respond, tip pump upside down and repeat procedure.

For Tandem Pumps:
1. Connect the fluid line to the pressure port and keep the return port plugged. Place the other end of the fluid line in the pump filler hole.
   NOTE: If the fluid lines are connected to a remote valve, shift the valve into the center position and plug both cylinder ports on the valve. This lets fluid circulate through the valve and back to the pump reservoir; thereby allowing the pump to prime.
2. Attach air line with shut-off valve to the pump.
3. Open the air valve. Pump will begin to reciprocate, and fluid will advance through the hose or fluid line and return to the pump reservoir. Allow the pump to cycle approximately 15 seconds.
4. Plug the manifold pressure port, or shift the valve to pressurize the circuit. If the pump builds pressure, it has been successfully primed.
Pump Operation

For Hand/Foot Operated Pumps:
1. To extend the cylinder, depress the pedal on the end marked ◆.
2. To hold the cylinder in position, release the end of foot pedal marked with ▼ to deactivate the pump.
3. To retract the cylinder, depress the pedal on the end marked ◆.

For Remote Controlled Pumps:
1. To extend the cylinder, depress the button on the remote hand control marked ◆.
2. To hold the cylinder in position, release the ◆ button.
3. To retract the cylinder, depress the button on the remote hand control marked ◆.

For Manual Valve Operated Pumps:
1. To extend the cylinder, shift the valve handle to the advance position and depress the end of the foot pedal inscribed with ◆ to activate the pump.
2. To hold the cylinder in position, release the end of foot pedal inscribed with ◆ to deactivate the pump.
3. To retract the cylinder, shift the valve handle to the retract position and depress the end of the foot pedal inscribed with ◆ to activate the pump.

For Pumps With Air Regulators:
1. Open the air shut-off valve (if so equipped) or connect the air quick coupler (if so equipped).  
   **NOTE:** under certain circumstances the pump may need to be primed before operation. Refer to the method described in the section entitled "Priming the Pump Unit."
2. Slowly turn the air regulator control on unit clockwise to increase pressure, counterclockwise to decrease pressure. As air is admitted to the pump unit, it will begin to deliver fluid to the system. Continue to slowly turn the air regulator control clockwise until gauge reads the maximum hydraulic pressure rating as stated on the pumps data plate. A maximum hydraulic pressure reading should be obtained if air pressure is approximately 100 PSI (7 BAR).
3. Cycle the system several times by manually shifting the 3-way/4-way valve (if so equipped) or the remote valve (if so equipped). Set the air regulator to obtain the desired hydraulic pressure. When decreasing pressure, shift the valve after each adjustment before measuring actual hydraulic pressure.
4. Shut off and disconnect air supply to the pump and shift pump valve (if so equipped) or remote valve (if so equipped) two times to release all system pressure. Check fluid level with hydraulic system retracted. The pump is now ready for operation.
   **NOTE:**
   - The hydraulic pressure is increased or decreased by adjusting the air inlet pressure at the regulator.
   - On two stage pumps, the air pressure regulator that is mounted on the pump controls only the output from the high pressure stage. The output of the low pressure stage of the pump is determined by the air line pressure coming from the remote regulator. A remote regulator is required to control the air pressure from the air line. The independent functioning of the low and high pressure stages of this pump can best be described as follows. At the minimum air line pressure of 40 PSI (3 BAR), the low pressure stage of the pump will deliver 480 PSI (33 BAR) hydraulic pressure (with the pump regulator turned counterclockwise to prevent air pressure from activating the high pressure stage of the pump.) At the minimum air line pressure of 40 PSI (3 BAR) the high pressure stage of the pump will deliver 4,000 PSI (275 BAR) hydraulic pressure (with the pump regulator turned clockwise to allow air pressure to reach the high pressure stage.) Always remember that the pump regulator must be turned fully counterclockwise when the pump is used to produce 1,200 PSI (83 BAR) or less.
PREVENTIVE MAINTENANCE

IMPORTANT: • Any repair or servicing that requires dismantling the pump must be performed in a dirt-free environment by a qualified technician.
• Dispose of machine and fluids properly.

Lubrication

For Hand/Foot, Manual Valve, and Remote Control Operated Pumps:
If the pump is operated on a continuous duty cycle for extended periods, the manufacturer recommends installing an automatic air line oiler in the air inlet line as close to the pumping unit as possible. Set the unit to feed approximately one drop of oil per minute into the system. Use SAE grade oil, 5W to 30W.

For Tandem Pumps:
These models have an integral air pressure regulator, air filter and lubricator. Set the lubricator to feed one drop of oil per minute to the system. Use SAE grade oil, 5W to 30W. For servicing the air regulator, lubricator and filter system, see the operating and service instructions provided.

Bleeding Air From The System
During the first moments of operation or after prolonged use, a significant amount of air may accumulate within the hydraulic system. This entrapped air may cause the cylinder to respond slowly or behave in an unstable manner. To remove the air, run the system through several cycles (extending and retracting the cylinder) free of any load. The cylinder must be at lower level than the pump to allow air to be released through the pump reservoir.

Inspecting The Hydraulic Fluid Level
Check the fluid level in the reservoir after every 10 hours of use. Drain and replenish the reservoir with Power Team hydraulic fluid after every 300 hours of use approximately.

For pumps with a 105 cubic inch (1.7 l) reservoir capacity:
The fluid level should be 1/2 inch (12.7 mm) from the filler/vent cap with all cylinders retracted.

For pumps with a 2 gallon (7.6 l) reservoir capacity:
The fluid level should be 1-3/4 inch (44.5 mm) from the filler/vent cap with all cylinders retracted.

Draining And Flushing The Reservoir
IMPORTANT: Wipe the pump exterior completely clean before attempting this procedure!
1. Remove the screws that fasten the pump assembly to the reservoir. Remove the pump assembly from the reservoir. Do not damage the gasket, filter or safety valve.
2. Drain the reservoir of all fluid and refill half full with clean hydraulic fluid. Rinse the filter clean.
3. Place the pump assembly back onto the reservoir, and secure with two of the machine screws assembled in opposite corners of the housing.
4. Run the unit for several minutes. Use the same method described in the section titled “Priming the Pump Unit.”
5. Drain and clean the reservoir once more.
6. Refill the reservoir with Power Team hydraulic fluid and replace the pump assembly (with gasket) on the reservoir and install the screws. Torque the screws as follows: For 105 cubic inch (1.7 l) reservoirs, torque to 25 to 30 inch pounds (2.8 to 3.4 N•m); for 2 gallon (7.6 l) reservoirs, torque to 35 to 45 inch pounds (4.0 to 5.0 N•m)
IMPORTANT: Drain and clean the other hydraulic system components (hoses, cylinders, etc.) before reconnecting them to the pump. This will prevent contaminated fluid from entering the pump again.
Refilling The Reservoir
If additional fluid must be added to the reservoir, use only Power Team hydraulic fluid (215 SSU @ 100° F [38° C]). Clean the entire area around the filler plug before adding fluid to the reservoir. Remove the filler plug, and insert a clean funnel with filter. The cylinder must be fully retracted and the air supply disconnected when adding the fluid to the reservoir.

Periodic Cleaning
IMPORTANT: The greatest single cause of failure in hydraulic pumps is dirt. Keep the pump and attached equipment clean to prevent foreign matter from entering the system.
A routine should be established to keep the pump as free from dirt as possible. All unused couplers must be sealed with thread protectors. All hose connections must be free of grit and grime. Any equipment hooked up to the pump should also be kept clean. Use only Power Team hydraulic fluid in this unit and change as recommended (every 300 hours).

ACCESSORIES
Gauges and accessories may not be included with the pump. However, a hydraulic gauge is strongly recommended whenever the pump is used!

⚠️ WARNING: • The gauge must be of the proper rating for the pressure used!
• Use only Power Team approved accessories, hydraulic fluid, and repair parts!

Installing An In-line Air Pressure Gauge
1. Remove the male fitting from the air filter and install a tee adapter, with gauge, between the hose and air filter.
2. Install male fitting into the tee adapter and securely clamp the hose to the male fitting.

Installing An In-line Hydraulic Pressure Gauge
1. Remove the thread protector from the hydraulic outlet port and inspect the threads and fittings for signs of wear.
2. Install a tee adapter, with gauge, between the hose coupling and the pump hydraulic outlet port.
3. Tighten all connections securely! DO NOT OVERTIGHTEN HOSE CONNECTIONS.

Fire-Resistant Hydraulic Fluid
Flame Out 220™ fire-resistant hydraulic fluid is compatible with all Power Team hydraulic equipment. The use of this fluid does not require the changing of seals in any Power Team pump or cylinder and is available through your local Power Team distributor.
### OPERATOR TROUBLESHOOTING GUIDE

If this guide does not resolve your pump problem, contact an authorized hydraulic service center or a company headquarters listed on back sheet 5 of 5.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump reciprocates but no fluid delivery (cylinder will not extend)</td>
<td>1. Low fluid level.</td>
<td>1. Add fluid as instructed in Preventive Maintenance section.</td>
</tr>
<tr>
<td></td>
<td>2. Pump not primed.</td>
<td>2. Prime pump as instructed in Operation section.</td>
</tr>
<tr>
<td></td>
<td>3. Fluid intake filter contaminated.</td>
<td>3. Remove reservoir and clean intake filter and reinstall.</td>
</tr>
<tr>
<td>Low fluid delivery (cylinder extends slowly)</td>
<td>1. Inadequate air supply</td>
<td>1. a. Should be 20 CFM (.57 M³/min.) minimum.</td>
</tr>
<tr>
<td></td>
<td>a. Check air input supply.</td>
<td>b. Clean and reassemble.</td>
</tr>
<tr>
<td></td>
<td>b. Contamination, check air side of pump (plugged air inlet screen).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Check the fluid inlet filter for contamination.</td>
<td>b. Bleed the system as described in the Preventive Maintenance section.</td>
</tr>
<tr>
<td></td>
<td>b. Air in hydraulic system.</td>
<td></td>
</tr>
<tr>
<td>Pump will not build to maximum pressure (no visible leakage)</td>
<td>1. Check the air supply.</td>
<td>1. 100 PSI (7 BAR) is required to obtain maximum pressure.</td>
</tr>
<tr>
<td></td>
<td>2. Pressure regulator improperly adjusted (if so equipped).</td>
<td>2. Adjust according to instructions in Operation section.</td>
</tr>
<tr>
<td>Pump builds pressure but will not hold system pressure</td>
<td>1. Check the hydraulic connections and other system components for leakage, including 3 way/4 way valve (if so equipped).</td>
<td>1. Refit or repair as needed.</td>
</tr>
<tr>
<td>Pump will continue to run slowly even after desired pressure is reached.</td>
<td>1. Output pressure equal to or higher than relief valve setting.</td>
<td>1. Normal operation.</td>
</tr>
<tr>
<td></td>
<td>2. Defective 3-way/4-way valve or other components leaking.</td>
<td>2. Repair or replace.</td>
</tr>
<tr>
<td>Excess oil spray from muffler.</td>
<td>1. Air lubricator is set too rich (if so equipped).</td>
<td>1. Set at one drop per minute.</td>
</tr>
</tbody>
</table>

Sheet No. 5 of 5

Rev. 3 Date: 30 April 2003
POWER TEAM FACILITIES

AUSTRALIA
28 Clayton Road
Clayton North
Victoria
Australia
Tel: 61 (3) 95628800
FAX: 61 (3) 95628080
E-mail: sales@powerteam.com.au

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FAX: 31 (45) 5678878
E-mail: spx@powerteam.nl

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Singapore
Tel: (65) 265-3343
FAX: (65) 265-6646
E-mail: powerteam@pacific.net.sg

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So-Anyang P.O. Box 50
Kyounggi-Do
Korea 430-600
Tel: 82-31-391-0209
FAX: 82-31-396-5373
E-mail: ptkor@hitel.net

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SPX Corporation-Fluid Power
5885 11th Street
Rockford, IL 61109-3699
USA
Telephone: 1-815-874-5556
FAX: 1-815-874-7853

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2-5-53 Minowacho
Kohoku-Ku, Yokohama,
Kanagawa 223-0051
Japan
Tel: 81 (45) 562-7700
FAX: 81 (45) 562-7800

MEXICO
Gustavo Baz 15
Col. Echeagaray C.P. 53310
Naucalpan, Edo. de Mexico
Mexico
Tel: 52-(55) 53603645
FAX: 52-(55) 53658711
E-mail: tecnoherramienta@aol.com

For more information, Internet address: http://www.powerteam.com (or) http://www.hytec.com
EC Declaration of Incorporation
as defined by
European Communities Directive 89/392/EEC, Annex II(B)

MANUFACTURER’S NAME: SPX POWER TEAM®

MANUFACTURER’S ADDRESS: 5885 11th Street
Rockford, Illinois 61109 USA

TYPE OF EQUIPMENT: RECIPROCATING AIR PISTON HYDRAULIC PUMP.

ORDER NUMBER OR PART NUMBER: PA4 Series, PA6 Series, PA50 Series, PA60, PA64, 52431, 58356, 203641-OTC, 203641-PF.

APPLICATION OF EC COUNCIL DIRECTIVE(S): 89/392/EEC as amended by 91/368/EEC, 93/44/EEC, and 93/68/EEC.

STANDARD(S) TO WHICH CONFORMITY IS DECLARED: EN292-1, and EN292-2.

I, the undersigned, hereby declare that the equipment specified above conforms to the above European Communities Directive(s) and Standard(s). This product is not to be put into service until the machine has been declared in conformity with the provisions of the European Communities Directive(s).

PLACE: Owatonna, Minnesota USA

DATE: 1 JAN 1995

Signature: Michael S. O’Brien
Director Quality / Technical Services
## MODEL F AIR HYDRAULIC PUMP

This section covers these following pumps:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMT200</td>
<td>PA6-CMS</td>
</tr>
<tr>
<td>PA6</td>
<td>PA6-HUNT</td>
</tr>
<tr>
<td>PA6-AMH</td>
<td>PA6-HUTH</td>
</tr>
<tr>
<td>PA6-AW</td>
<td>PA6-HYDRA</td>
</tr>
<tr>
<td>PA6-AERO</td>
<td>PA6-KJ</td>
</tr>
<tr>
<td>PA6-AUTO</td>
<td>PA6-LUAM</td>
</tr>
<tr>
<td>PA6-BEST</td>
<td>PA6-LUKAS</td>
</tr>
<tr>
<td>PA6-CB</td>
<td>PA6-NT</td>
</tr>
</tbody>
</table>

- More models are listed in Parts List 101950.-

Note: These views may not be exact representations of your pump due to the variation of pumps listed, but all parts have been accounted for and are in this parts list.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req’d</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41322</td>
<td>1</td>
<td>Foot Pedal (For all except PA6AUTO ROBOT, PA6-TAL, PA6M-WCI, PA6-HUNT &amp; PA6FACOM)</td>
</tr>
<tr>
<td>2</td>
<td>58605</td>
<td>1</td>
<td>Foot Pedal (For PA6FACOM)</td>
</tr>
<tr>
<td>3</td>
<td>58768BK9</td>
<td>1</td>
<td>Foot Pedal (For PA6AUTO ROBOT)</td>
</tr>
<tr>
<td>4</td>
<td>47696BK2</td>
<td>1</td>
<td>Hand Pedal (For PA6-TAL)</td>
</tr>
<tr>
<td>5</td>
<td>11032</td>
<td>2</td>
<td>Retaining Ring (For all except PA6M-WCI &amp; PA6-HUNT; For 3/8 shaft)</td>
</tr>
<tr>
<td>6</td>
<td>28386</td>
<td>1</td>
<td>Pin (For all except PA6-TAL, PA6-HUNT &amp; PA6M-WCI)</td>
</tr>
<tr>
<td>7</td>
<td>215709</td>
<td>1</td>
<td>Pin (For PA6-TAL)</td>
</tr>
<tr>
<td>8</td>
<td>211060</td>
<td>6</td>
<td>Screw (#9-15 X 1&quot; Lg.; Torque to 25/35 in. lbs.; For PA6, PA6-AERO, PA6-AMH, PA6-AUTO, PA6-BEST, PA6-CB, PA6-HUTH, PA6A, PA6AUTO ROBOT, PA6-N, PA6-PRO, PA6-LUKAS, PA6-PFAFF, PA6AUTO ROBOT, PA6-SS &amp; PA6-AW)</td>
</tr>
<tr>
<td>9</td>
<td>40063OR9</td>
<td>1</td>
<td>Reservoir (2 gal. metal; For PA6M-2)</td>
</tr>
<tr>
<td>10</td>
<td>350643</td>
<td>2</td>
<td>Trade Name Decal (For PA6-PRO)</td>
</tr>
<tr>
<td>11</td>
<td>302466</td>
<td>1</td>
<td>Spring Clip (For all except PA6AUTO ROBOT, PA6M-CHIEF, PA6M-PF, PA6-HUNT &amp; PA6M-WCI)</td>
</tr>
<tr>
<td>12</td>
<td>251547</td>
<td>1</td>
<td>Instruction Decal (For HYR.23)</td>
</tr>
<tr>
<td>13</td>
<td>305494F</td>
<td>1</td>
<td>Decal (For PA6-AERO, PA6-AMH, PA6-CB, PA6-LUAM, PA6-2, PA6-2E, PA6-2N, PA6-2V, PA6AUTO ROBOT, PA6M-PF, PA6-HUTH, PA6M-WCI, 203641-PF, 58430, PA6M-ROM, PA6M-CAR, 910301, 910303, PA6M-DE-STA-CO, PA6M-DES-50, PA6M-PFAFF, PA6M-DK &amp; PA6M-CMS)</td>
</tr>
<tr>
<td>14</td>
<td>305496</td>
<td>1</td>
<td>Trade Name Decal (For PA6-AMH, PA6-AUTO, PA6-BEST, PA6-HUTH, PA6M-CHIEF, PA6M-DE-STA-CO, PA6M-DES-50, PA6M-PL &amp; PA6-SS)</td>
</tr>
<tr>
<td>15</td>
<td>305496CE</td>
<td>1</td>
<td>Trade Name Decal (For PA6A, PA6AM, PA6M, PA6M-CAR &amp; PA6-SEAL)</td>
</tr>
<tr>
<td>16</td>
<td>212833</td>
<td>1</td>
<td>Trade Name Decal (For PA6AUTO ROBOT)</td>
</tr>
<tr>
<td>17</td>
<td>13758</td>
<td>1</td>
<td>Trade Name Decal (For PA6M-1, PA6M-1-CAR &amp; PA6M-1-STEL)</td>
</tr>
<tr>
<td>18</td>
<td>350657</td>
<td>2</td>
<td>Trade Name Decal (For PA6-CB)</td>
</tr>
<tr>
<td>19</td>
<td>309219</td>
<td>2</td>
<td>Trade Name Decal (For PA6-2-CM, PA6M-1-CAR &amp; PA6M-1-STEL)</td>
</tr>
<tr>
<td>20</td>
<td>309219CE</td>
<td>2</td>
<td>Trade Name Decal (For PA6M-1, PA6M-2 &amp; PA6M-2)</td>
</tr>
<tr>
<td>21</td>
<td>350643</td>
<td>2</td>
<td>Trade Name Decal (For 58430)</td>
</tr>
<tr>
<td>22</td>
<td>212833</td>
<td>1</td>
<td>Trade Name Decal (For 910301)</td>
</tr>
<tr>
<td>23</td>
<td>212834</td>
<td>1</td>
<td>Trade Name Decal (For 910301)</td>
</tr>
<tr>
<td>24</td>
<td>252952</td>
<td>10</td>
<td>Trade Name Decal (For PA6M-1, PA6M-1-CAR &amp; PA6M-1-STEL)</td>
</tr>
<tr>
<td>25</td>
<td>252186</td>
<td>2</td>
<td>Trade Name Decal (For PA6M-PFAFF &amp; PA6M-PFAFF)</td>
</tr>
<tr>
<td>26</td>
<td>350687</td>
<td>1</td>
<td>Trade Name Decal (For PA6-CMS)</td>
</tr>
</tbody>
</table>

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.
### Parts List

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req'd</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>251762</td>
<td>1</td>
<td>Warning Decal (For PA6, PA6-2, PA6A, PA6M-KSHIM, PA6AM, PA6E, PA6M, PA6M-1, PA6M-2, PA6N, PA6M-CAR, PA6M-ROM, PA6-2-FS-LR, PA6V, PA6-2-CM, PA6-SS, PA6-AW, PA6M-1-STEL &amp; PA6-CMS)</td>
</tr>
<tr>
<td>251762-CE</td>
<td>1</td>
<td>Warning Decal (For PA6-PFAFF, PA6-PRO, PA6M-DE-STA-CO, PA6M-DES-50 &amp; PA6M-PFAFF)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>350568</td>
<td>1</td>
<td>Decal (For PA6AUTO ROBOT; Locate on opposite side as shown.)</td>
</tr>
<tr>
<td>250614</td>
<td>1</td>
<td>Decal (For 910303; Locate on opposite side as shown.)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>251731</td>
<td>1</td>
<td>Decal (For 910303; Locate on opposite side as shown.)</td>
</tr>
</tbody>
</table>

**PARTS INCLUDED BUT NOT SHOWN**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req'd</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>211060</td>
<td>4</td>
<td>Screw (#9-15 X 1&quot; Lg.; Torque to 25/35 in. lbs.; For pump mounting purposes only; For PA6-HUTH, PA6-KJ, PA6N, PA6A, PA6, PA6-AW, PA6-AERO, PA6-AUTO, PA6-BEST, PA6-CB, PA6-TAL, PA6-LUKAS, PA6-PFAFF, PA6-PRO, PA6-SS)</td>
<td></td>
</tr>
<tr>
<td>215951</td>
<td>4</td>
<td>Screw (10-24 X 5/8; For pump mounting purposes only; For PA6-HYDRA)</td>
<td></td>
</tr>
<tr>
<td>252168</td>
<td>4</td>
<td>Screw (1/4-10 X 1 Lg.; For pump mtg. purposes only; For PA6-2 &amp; PA6-2-FS-LR)</td>
<td></td>
</tr>
</tbody>
</table>

Warning

To Drawing

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.

### This view covers the PA6-2-CM Only.

![Diagram of PA6-2-CM]

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req'd</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>253185</td>
<td>1</td>
<td>Straight Fitting (3/8 NPTF)</td>
</tr>
<tr>
<td>2</td>
<td>12753</td>
<td>1</td>
<td>Straight Fitting</td>
</tr>
<tr>
<td>4</td>
<td>15417</td>
<td>1</td>
<td>Suction Strainer</td>
</tr>
</tbody>
</table>

### This view covers the PA6-SS Only.

![Diagram of PA6-SS]

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req'd</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9040</td>
<td>1</td>
<td>Guage (10,000 PSI, 2 1/2&quot; Dia.)</td>
</tr>
<tr>
<td>2</td>
<td>10645</td>
<td>1</td>
<td>Fitting, Elbow (45 deg., 1/4 NPTF)</td>
</tr>
<tr>
<td>3</td>
<td>9670</td>
<td>1</td>
<td>Fitting, Tee (1/4 x 3/8 x 3/8)</td>
</tr>
<tr>
<td>4</td>
<td>350167</td>
<td>1</td>
<td>Hose (6' Rubber)</td>
</tr>
<tr>
<td>5</td>
<td>25599</td>
<td>1</td>
<td>Coupler, Hose Half</td>
</tr>
</tbody>
</table>

### Sheet No. 2 of 6

Rev. 35 Date: 29 Mar. 2001
TOP & END VIEWS

Note: These views may not be exact representations of your pump due to the variation of pumps listed, but all parts have been accounted for and are in this parts list.

ALTERNATE END VIEWS

For PA6AM & PA6A Only

For PA6-HYDRA Only
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req’d</th>
<th>Description</th>
<th>Item No.</th>
<th>Part No.</th>
<th>Req’d</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11151</td>
<td>4</td>
<td>Cap Screw (10-24 UNC X 1-1/4 Lg.; Torque to 50/60 in. lbs.; For all except PA6-HUNT)</td>
<td>8</td>
<td>11127</td>
<td>1</td>
<td>Pressure Plug (3/8 NPTF; For all except PA6-KJ, PA6-HUNT &amp; PA6-SS)</td>
</tr>
<tr>
<td></td>
<td>11151</td>
<td>2</td>
<td>Cap Screw (10-24 UNC X 1-1/4 Lg.; Torque to 50/60 in. lbs.; For PA6-HUNT)</td>
<td>11048</td>
<td>1</td>
<td></td>
<td>Plug Fitting (1/8 NPTF; For PA6-HUNT)</td>
</tr>
<tr>
<td>2</td>
<td>37199</td>
<td>1</td>
<td>Intake Air Valve Body (For all except PA6-TAL, IMT200 &amp; PA6-HUNT)</td>
<td>12203</td>
<td>1</td>
<td></td>
<td>Straight Fitting (3/8 NPTF; For PA6-HUNT)</td>
</tr>
<tr>
<td></td>
<td>309246</td>
<td>1</td>
<td>Intake Air Valve Body (For PA6-HUNT)</td>
<td>252343</td>
<td>1</td>
<td></td>
<td>Plug Fitting (1/4 BSP; For PA6M-ROM)</td>
</tr>
<tr>
<td>3</td>
<td>11435</td>
<td>2</td>
<td>Soc. Hd. Cap Screw (10-24 UNC X 1-3/4 Lg.; Torque to 50/60 in. lbs.; For all except PA6-HUNT)</td>
<td>9</td>
<td>251689</td>
<td>1</td>
<td>Breather/Filler Cap</td>
</tr>
<tr>
<td></td>
<td>111089</td>
<td>2</td>
<td>Washer (#10 bolt)</td>
<td>10</td>
<td>*10273</td>
<td></td>
<td>O-ring (13/16 X 5/8 X 3/32; Nitrile; For all except PA6-2E, PA6-2V, PA6E &amp; PA6V)</td>
</tr>
<tr>
<td>4</td>
<td>420965BK2</td>
<td>1</td>
<td>Cover Plate (For all except PA6-2, PA6-2E, PA6-2N, PA6-2V, PA6A, PA6AM, PA6M-1, PA6M-2, IMT200, PA6-HUNT, PA6-LUKAS)</td>
<td>13</td>
<td>18999</td>
<td>1</td>
<td>O-ring (13/16 X 5/8 X 3/32; Viton; For PA6-2V &amp; PA6V)</td>
</tr>
<tr>
<td></td>
<td>421156BK2</td>
<td>1</td>
<td>Cover Plate (For PA6A &amp; PA6AM)</td>
<td>14</td>
<td>250157</td>
<td>1</td>
<td>O-ring (13/16 X 5/8 X 3/32; EPR; For PA6-2E &amp; PA6E)</td>
</tr>
<tr>
<td></td>
<td>58688BK2</td>
<td>1</td>
<td>Cover Plate (For PA6M-1, IMT200, PA6M-1-CAR &amp; PA6M-1-STEL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>58706BK2</td>
<td>1</td>
<td>Cover Plate (For PA6-2, PA-2E, PA6-2N, PA6-2V, PA6M-2 &amp; PA6-2-FS-LR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>421173BK2</td>
<td>1</td>
<td>Cover Plate (For PA6-LUKAS)</td>
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<tr>
<td></td>
<td>421164BK2</td>
<td>1</td>
<td>Cover Plate (For PA6-HUNT)</td>
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<td>Cover Plate (For PA6-2-CM)</td>
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<td>5</td>
<td>58563</td>
<td>1</td>
<td>Release Valve Body (For all except PA6M-CHIEF, PA6-TAL, PA6-HUNT &amp; PA6M-PL)</td>
<td>15</td>
<td>253366</td>
<td>1</td>
<td>Tubing Assembly (For PA6A &amp; PA6AM)</td>
</tr>
<tr>
<td>6</td>
<td>11151</td>
<td>2</td>
<td>Cap Screw (10-24 UNC X 1-1/4 Lg.; Torque to 50/60 in. lbs.; For PA6-HUNT)</td>
<td>16</td>
<td>16177</td>
<td>1</td>
<td>90° Elbow Fitting (For PA6A &amp; PA6AM)</td>
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<td>111089</td>
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<td>Washer (#10 bolt)</td>
<td>19</td>
<td>21046</td>
<td>1</td>
<td>Valve Body (For PA6A &amp; PA6AM)</td>
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<tr>
<td></td>
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<td>2</td>
<td>Soc. Hd. Cap Screw (10-24 UNC X 1-3/4 Lg.; Torque to 50/60 in. lbs.; For all except PA6-HUNT)</td>
<td>20</td>
<td>*10495</td>
<td>1</td>
<td>Spring (1/2 O.D. X 1-5/8 Lg.; For PA6A &amp; PA6AM)</td>
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<tr>
<td>7</td>
<td>58579</td>
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<td>Release Valve Body (For PA6M-CHIEF, PA6-TAL &amp; PA6M-PL)</td>
<td>21</td>
<td>22361</td>
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<td>Valve Body (For PA6A &amp; PA6AM)</td>
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<tr>
<td></td>
<td>58817</td>
<td>1</td>
<td>Release Valve Body (For PA6-M-CHIEF)</td>
<td>22</td>
<td>21306</td>
<td>1</td>
<td>Spring Guide (For PA6A &amp; PA6AM)</td>
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<tr>
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<td>58858</td>
<td>1</td>
<td>Release Valve Body (For PA6M-ROM)</td>
<td>23</td>
<td>10263</td>
<td>2</td>
<td>Special Washer (1” X .765 X 1/32; For PA6A &amp; PA6AM; Note: Apply Permatex #80019 sealant or equiv. to both sides of bottom washer only.)</td>
</tr>
</tbody>
</table>

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.

**NOTE:**

Standard relief valves are set at 10,100/10,700 PSI. Relief valves pre-set at special settings are available. Refer to your pump model number or contact Power Team Technical Services.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req’d</th>
<th>Description</th>
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<tbody>
<tr>
<td>26</td>
<td>10386</td>
<td>1</td>
<td>Hex Jam Nut (3/8-24 UNF; For PA6A &amp; PA6AM)</td>
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<tr>
<td>27</td>
<td>22362</td>
<td>1</td>
<td>Valve Body (For PA6A &amp; PA6AM)</td>
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<tr>
<td>28</td>
<td>29682</td>
<td>1</td>
<td>Filter (For PA6A-HYDRA)</td>
</tr>
<tr>
<td>29</td>
<td>350553</td>
<td>1</td>
<td>Tee Fitting (Torque to 40/50 ft. lbs. oiled; Apply permatex to external threads of the filter adapter; For PA6A-HYDRA)</td>
</tr>
<tr>
<td>30</td>
<td>11434</td>
<td>2</td>
<td>Screw (10-24 X 1/2 ; For PA6-HUNT)</td>
</tr>
</tbody>
</table>

**PARTS INCLUDED BUT NOT SHOWN**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req’d</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>205724</td>
<td></td>
<td>1</td>
<td>Attention Decal (For PA6-2V &amp; PA6V)</td>
</tr>
<tr>
<td>215709</td>
<td></td>
<td>1</td>
<td>Pin (For PA6-TAL)</td>
</tr>
</tbody>
</table>

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.

Refer to any operating instructions included with this product for detailed information about operation, testing, disassembly, reassembly, and preventive maintenance.

Items found in this parts list have been carefully tested and selected. **Therefore: Use only genuine Power Team replacement parts!**

Additional questions can be directed to our Technical Services Department.
BASIC PUMP ASSEMBLY

Note: These views may not be exact representations of your pump due to the variation of pumps listed, but all parts have been accounted for and are in this parts list.
## Parts List, Form No. 101652, Back sheet 4 of 6

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>No. Req’d</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>‘28182</td>
<td>1</td>
<td>Air Valve Poppet (For all except PA6-TAL &amp; PA6-HUNT)</td>
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<tr>
<td>2</td>
<td>‘251717</td>
<td>1</td>
<td>O-ring (1” x 5/8 x 3/16; For all except PA6E, PA6V, PA6-2E, PA6-HUNT &amp; PA6-2V)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>251718</strong></td>
</tr>
<tr>
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<td><strong>251719</strong></td>
</tr>
<tr>
<td>3</td>
<td>28387</td>
<td>1</td>
<td>Muffler (For all except PA6-HUNT)</td>
</tr>
<tr>
<td>4</td>
<td>‘28239</td>
<td>1</td>
<td>Gasket</td>
</tr>
<tr>
<td>5</td>
<td>52390</td>
<td>1</td>
<td>Piston Body</td>
</tr>
<tr>
<td>6</td>
<td>‘14265</td>
<td>2</td>
<td>Piston Ring (For all except PA6-HYDRA &amp; PA6-SEAL)</td>
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<tr>
<td></td>
<td><strong>252347</strong></td>
<td></td>
<td>Piston Ring (For PA6-HYDRA &amp; PA6-SEAL)</td>
</tr>
<tr>
<td>7</td>
<td>‘251835</td>
<td>2</td>
<td>O-ring (2-5/16 x 2-1/8 x 3/32; For all except PA6E, PA6V, PA6-2E, PA6-2V, PA6-HYDRA &amp; PA6-SEAL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>251865</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>251866</strong></td>
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<td></td>
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<td><strong>252348</strong></td>
</tr>
<tr>
<td>8</td>
<td>‘10276</td>
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<td>O-ring (1” X 3/4 X 1/8; For all except PA6E, PA6V, PA6-2E &amp; PA6-2V)</td>
</tr>
<tr>
<td></td>
<td><strong>19026</strong></td>
<td></td>
<td>O-ring (1” X 3/4 X 1/8; For PA6 &amp; PA6-2V)</td>
</tr>
<tr>
<td></td>
<td><strong>250188</strong></td>
<td></td>
<td>O-ring (1” X 3/4 X 1/8; For PA6-E &amp; PA6-2E)</td>
</tr>
<tr>
<td>9</td>
<td>‘10272</td>
<td>2</td>
<td>O-ring (3/4 X 9/16 X 3/32; For all except PA6M, PA6M-DE-STA-CO, PA6-2E, PA6-2V, PA6V, PA6M-CAR, PA6E &amp; PA6M-DK)</td>
</tr>
<tr>
<td></td>
<td><strong>10272</strong></td>
<td></td>
<td>O-ring (3/4 X 9/16 X 3/32; For PA6M, PA6M-CAR, PA6M-ROM, PA6M-DE-STA-CO &amp; PA6M-DK)</td>
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<tr>
<td></td>
<td><strong>18998</strong></td>
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<td>O-ring (3/4 X 9/16 X 3/32; For PA6-2V &amp; PA6V)</td>
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<tr>
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<td><strong>250194</strong></td>
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<td>O-ring (3/4 X 9/16 X 3/32; For PA6-2E &amp; PA6E)</td>
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<tr>
<td>10</td>
<td>34378</td>
<td>1</td>
<td>Check Valve Body</td>
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<tr>
<td>11</td>
<td>‘250638</td>
<td>1</td>
<td>Filter Disc (For all except PA6-HYDRA, PA6-HUNT, PA6-BEST &amp; PA6-SEAL)</td>
</tr>
<tr>
<td>12</td>
<td>‘11088</td>
<td>2</td>
<td>Retaining Ring (9/16 hole; For all except PA6-HYDRA, PA6-HUNT, PA6-BEST &amp; PA6-SEAL)</td>
</tr>
<tr>
<td>13</td>
<td>‘12522</td>
<td>2</td>
<td>O-ring (3/8 X 1/4 X 1/16; Urethane; For all except PA6E, PA6V, PA6-2E, &amp; PA6-2V)</td>
</tr>
<tr>
<td></td>
<td><strong>11438</strong></td>
<td></td>
<td>O-ring (3/8 X 1/4 X 1/16; For PA6V &amp; PA6-2V)</td>
</tr>
<tr>
<td></td>
<td><strong>17715</strong></td>
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<td>O-ring (3/8 X 1/4 X 1/16; For PA6 &amp; PA6-2E)</td>
</tr>
<tr>
<td></td>
<td><strong>211053</strong></td>
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<td>O-ring (.37 x .25; For PA6M-1-STEL)</td>
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<td>14</td>
<td>‘11841</td>
<td>1</td>
<td>O-ring (1-5/8 x 1-3/8 x 1/8; For all except PA6E, PA6V, PA6-2E &amp; PA6-2V)</td>
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<tr>
<td></td>
<td><strong>19035</strong></td>
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<td>O-ring (1-5/8 x 1-3/8 x 1/8; For PA6E &amp; PA6-2V)</td>
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<td><strong>251695</strong></td>
<td></td>
<td>O-ring (1-5/8 x 1-3/8 x 1/8; For PA6E &amp; PA6-2E)</td>
</tr>
</tbody>
</table>

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.

**NOTE:**

Standard relief valves are set at 10,100/10,700 PSI.
Relief valves pre-set at special settings are available.
Refer to your pump model number or contact Power Team Technical Services.

---

**Note:** Shaded areas reflect last revision(s) made to this form.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>No. Req’d</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>*12692</td>
<td>1</td>
<td>Compression Spring (3/16 O.D. X 1-11/16 Lg.; For all except PA6E, PA6V, PA6-2E &amp; PA6-2V)</td>
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<tr>
<td>37</td>
<td>*211052</td>
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<td>O-ring (.900 X .706 X .097; For all except PA6E, PA6V, PA6-2E &amp; PA6-2V)</td>
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<tr>
<td>250192</td>
<td></td>
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<td>Exhaust Valve Stem</td>
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<td>3</td>
<td>Lockwasher (For #10 bolt)</td>
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<td>40</td>
<td>211054</td>
<td>3</td>
<td>Screw (#10-24 X 1/2 Lg.; Torque to 50/55 in. lbs.)</td>
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<td>41</td>
<td>33822</td>
<td>1</td>
<td>Piston End Plate</td>
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<tr>
<td>42</td>
<td>*28183</td>
<td>1</td>
<td>Piston Poppet</td>
</tr>
<tr>
<td>43</td>
<td>*205679</td>
<td>1</td>
<td>Compression Spring (.485 O.D. X .915 Lg.)</td>
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<tr>
<td>44</td>
<td>*205674</td>
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<td>Screw (8-32 UNC X 3/8 Lg.; Torque to 12/18 in. lbs.)</td>
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<td>45</td>
<td>51480</td>
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<td>Rear Head (For all except PA6-HUNT)</td>
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<td>46</td>
<td>12691</td>
<td>1</td>
<td>Compression Spring (3/8 O.D. X 1-1/2 Lg.; For all except PA6-TAL &amp; PA6-HUNT)</td>
</tr>
<tr>
<td>47</td>
<td>13936</td>
<td>1</td>
<td>Soc. Hd. Cap Screw (8-32 UNC X 1/4 Lg.; For all except PA6-TAL &amp; PA6-HUNT)</td>
</tr>
</tbody>
</table>

**PARTS INCLUDED BUT NOT SHOWN**

14972 1 Plug Fitting (1/4 PTF; Replaces air pressure valve parts; For PA6-TAL)

---

**DETAIL "A-1"**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>No. Req’d</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>*206504</td>
<td>1</td>
<td>Foam Tube</td>
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<tr>
<td>2</td>
<td>28227</td>
<td>1</td>
<td>Release Valve Button</td>
</tr>
<tr>
<td>3</td>
<td>*10267</td>
<td>1</td>
<td>O-ring (7/16 X 5/16 X 1/16; For all except PA6V, PA6E, PA6-2E, PA6-TAL, PA6-HUNT &amp; PA6-2V)</td>
</tr>
<tr>
<td>11438</td>
<td></td>
<td>1</td>
<td>O-ring (7/16 X 5/16 X 1/16; For PA6V &amp; PA6E)</td>
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<tr>
<td>17715</td>
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<td>O-ring (7/16 X 5/16 X 1/16; For PA6-2V &amp; PA6E)</td>
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<tr>
<td>4</td>
<td>*13944</td>
<td>1</td>
<td>Compression Spring (3/8 O.D. X 1/2 Lg.; For all except PA6M-CHIEF, PA6-TAL &amp; PA6M-PL)</td>
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<tr>
<td>251297</td>
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<td>Compression Spring (For PA6-TAL, PA6M-CHIEF &amp; PA6M-PL)</td>
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<td>5</td>
<td>34377</td>
<td>1</td>
<td>Poppet Retainer</td>
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<tr>
<td>6</td>
<td>*15279</td>
<td>1</td>
<td>O-ring (1/2 X 3/8 X 1/16; For all except PA6-2E, PA6-2V, PA6E &amp; PA6V)</td>
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<td>17716</td>
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<td>1</td>
<td>O-ring (1/2 X 3/8 X 1/16; For PA6-2E &amp; PA6E)</td>
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<td>7</td>
<td>13937</td>
<td>1</td>
<td>Dowel Pin (Note: Place tapered end toward ball.; For all except PA6-HUNT)</td>
</tr>
<tr>
<td>8</td>
<td>29037</td>
<td>1</td>
<td>Release Valve Poppet</td>
</tr>
<tr>
<td>9</td>
<td>*14443</td>
<td>1</td>
<td>Steel Ball (3/32 Dia.)</td>
</tr>
<tr>
<td>10</td>
<td>209736</td>
<td>1</td>
<td>Ball Retainer</td>
</tr>
<tr>
<td>11</td>
<td>*13959</td>
<td>1</td>
<td>Compression Spring (1/8 O.D. X 1/2 Lg.)</td>
</tr>
</tbody>
</table>

**PARTS INCLUDED BUT NOT SHOWN**

*15620 1 Oil Shaft Seal (For PA6-TAL, PA6M-CHIEF & PA6M-PL)

12184 2 Backup Washer (For PA6-HUNT)
## FILTER ADAPTER ASSEMBLY BEFORE 6/1/98
For 2 Gallon Reservoirs Only

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Req'd</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>*10423</td>
<td>1</td>
<td>Ball (9/32 Dia.)</td>
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<tr>
<td>2</td>
<td>*10261</td>
<td>1</td>
<td>Special Washer (3/4 x 19/32 x 1/32)</td>
</tr>
<tr>
<td>3</td>
<td>48007</td>
<td>1</td>
<td>Filter Adapter (Torque to 40/50 ft. lbs. oiled.; For PA6-2E, PA6-2N, PA6-2V, PA6-2, PA6-HUNT, PA6-2-FS-LR, PA6M-2 &amp; PA6-2-CM)</td>
</tr>
<tr>
<td>4</td>
<td>214578</td>
<td>1</td>
<td>Filter</td>
</tr>
<tr>
<td>5</td>
<td>214586</td>
<td>1</td>
<td>Retaining Ring (.63 x .015)</td>
</tr>
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</table>

Part numbers marked with an asterisk (*) are contained in a Repair Kit see sheet 6 of 6 for individual repair kit information.

## FILTER ADAPTER ASSEMBLY AFTER 6/1/98
For 2 Gallon Reservoirs Only
(Reference Part Number 48007)

<table>
<thead>
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<th>Item No.</th>
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<td>1</td>
<td>422016</td>
<td>1</td>
<td>Filter Adapter</td>
</tr>
<tr>
<td>2</td>
<td>29682</td>
<td>1</td>
<td>Filter</td>
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REPAIR KITS

No. 300805
PA6
PA6M
PA6M-DE-STA-CO
PA6M-DES-50
PA6N
58430
PA6M-CAR
PA6M-PFAFF
PA6M-ROM
PA6-SS
PA6-AW
PA6M-DK
PA6M-1-CAR
PA6-CMS

No. 300837
PA6-AERO
PA6-AMH
PA6-AUTO
PA6-BEST
PA6-CB
PA6-HUTH
PA6-KJ
PA6-LUAM
PA6-NT
PA6AUTO ROBOT
PA6FACOM
PA6M-PF
203641-PF
1U-7545
910301
910303
PA6-PRO
PA6-PFAFF

No. 300840
PA6A
PA6AM

No. 300848
PA6-2
PA6-2N
PA6M-2
PA6-2-FS-LR
PA6-2-CM

No. 300849
PA6-LUKAS

No. 300831
PA6M-1
PA6M-1- STEL

No. 300817
PA6M-CHIEF
PA6M-PL

No. 300843
PA6-HUNT

No. 300842
IMT200

No. 300964
PA6-HYDRA
PA6-SEAL
INSTRUCTIONS FOR RETAINER REPLACEMENT

Your pump's retainer is locked into place by one of the two following methods. Determine which method was used on your pump's retainer, then follow the appropriate steps to remove the old and install and stake the new.

Method 1 - Retainer shows no sign of stake marks

1. This retainer has been locked in place with a Loctite product. To replace it, a moderate amount of heat needs to be applied to the cylinder nut (in the area of the retainer) to soften the existing Loctite allowing it to be removed.

2. Install the new retainer into the cylinder nut and torque to 80/100 in. lbs. **Note: Do not use a Loctite product this time but stake the new retainer in place according to instructions in Step 3.**

3. To lock retainer into place, use a center punch positioned in the seam between the retainer and the cylinder nut and stake the new retainer in two places approximately 180° apart.

Method 2 - Retainer has two stake marks in the seam between the retainer and the cylinder nut

1. For replacement of this retainer, the stake marks must be removed. Using a 1/8” or larger diameter drill bit, remove the existing stakes by drilling a short distance into the stake marks. Remove the retainer.

2. Install the new retainer into the cylinder nut and torque to 80/100 in. lbs.

3. To lock retainer into place, use a center punch positioned in the seam between the retainer and the cylinder nut and stake the new retainer in two places approximately 180° apart.

**NOTE: Do not stake in the old stake marks.**
UNITED STATES

ALABAMA
Birmingham 35203
Alabama Jack Co., Inc.
1140 5th Ave. N.
1-205-261-8156
1-800-749-5225
Mobile 36601
Litt Parts Service Co., Inc.
409 North Broad St.
P.O. Box 176
1-334-432-7749
Pelham 35124
Tool Specialty Inc.
141 Commerce CT
1-205-733-9252

ALASKA
Anchorage 99518
Construction Machinery, Inc.
5400 Homer Drive
1-907-583-3802

ARIZONA
 Tucson 85714
Mechanics Tool Service
1301 E. Apache Park Pl.
1-520-889-8484

ARKANSAS
Little Rock 72206
Clark Hydraulic Service, Inc.
2901 Confederate Boulevard
1-501-375-1252

CALIFORNIA
Anaheim 92801
Jack X-Change
1609 North Orangorhope Way
1-714-871-4966
Bencia 94510
S & S Tool and Supply, Inc.
4680 E. 2nd St. Unit E
1-707-747-0166
Escondido 92029
Breezer Equipment and Supply
1560 Santee Street
1-760-739-0888
Fremont 94538
S & S Tool and Supply
1547 Enterprise St.
1-510-228-8665
Fresno 93721
Kimmerle Brothers, Inc.
537 M St.
P.O. Box 151
1-559-233-1278
La Palma 90623
IDG California
6842 Walker Ave.
1-714-594-6960
San Francisco 94103-3793
Kimmerle Brothers, Inc.
226 Eleventh St.
1-415-431-1163

COLORADO
Denver 80229
Fluid Power Tech
8510 N. Franklin
1-303-650-1500
Denver 80216
Hydraulic Energy Products
8600 Stapleton Dr. S.
1-303-533-7482
Fruita 81521
H & H Hydraulics, Inc.
912 19-1/2 Rd., Rt. 2
1-970-856-7442

CONNECTICUT
Bethel 06801
MBH Inc.
15 Taylor Avenue.
P.O. Box 411
1-203-743-7622
Bridgeport 06605
Richard Dudgeon
1565 Railroad Ave.
1-203-336-4459
New Haven 06519
New Haven 06519
A & E Eastern Hydraulics, Inc.
535 Columbus Ave.
1-203-777-2199
Terriville 06786
C & C Hydraulics, Inc.
116 Wolcott Road
1-860-562-0308

DELAWARE
Wilmington 19804-1108
Applied Power Equipment
7 Meco Circle
1-302-994-0486

FLORIDA
Fort Lauderdale 33312
Broward Hydraulic Jack Service
3907 SW 12th Court
1-954-583-2504
Hialeah 33010
Miami Jack Service, Inc.
1011 E. Hialeah Dr.
1-305-883-6739

GEORGIA
Atlanta 30308
Air & Hydraulic Service
842 Ilanawi St.
1-404-536-5291

HAWAII
Honolulu 96813
Air & Hydraulic Service
842 Ilanawi St.
1-808-536-5291

IDAHO
Boise 83714
Twin Tools
105 E. 35th St.
1-208-344-4534

ILLINOIS
East Hazelcrest 60429-0228
ASC Industries LTD
1416 W. 175th Street
1-708-799-5915
 Loves Park 61111-3984
Moline Service Center
7308 Forest Hills Rd.
1-815-877-1777

INDIANA
Evansville 47708
Brake Supply Company, Inc.
1300 West Lloyd Expressway
1-812-467-1000
Evansville 47710
Hydraulic Jack Service Co., Inc.
601 North Fulton Ave.
1-812-423-4891
Fort Wayne 46805
ASC Specialty Company
1075 Kenwood Ave.
1-219-483-8913
Indianapolis 46202
A & B Hydraulics, Inc.
220 N. Delaware
1-317-636-2417
Indianapolis 46203
Anderson Brothers Tool Repair
3531 Southeastern Ave.
P.O. Box 36368
1-317-356-6381
Plymouth 46563
Scotty's Hydraulic Service
1200 Mar lyn Drive
1-219-935-5175
South Bend 46601-3398
River Bend Hose Specialty Inc.
1111 S. Main St.
1-219-233-1133

IOWA
Burlington 52601
Brook's Hydraulic Service
1400 Mount Pleasant
1-319-752-4017
Davenport 52802
Five Cities Tool Service, Inc.
921 South Reiff St.
1-319-322-7058
Des Moines 50314-3107
Des Moines 50314
Des Moines 50316
Des Moines 50313
Globe A&B Electric Motor Serv.
1727 Hull Ave.
1-515-265-8552

KANSAS
Kansas City 66105
Acme Hydraulic Repair, Inc.
615 Kansas Ave.
1-913-321-6385

KENTUCKY
Ashland 41101
Air Equipment Sales & Service
91 Armco Blvd.
1-502-329-8500
Louisville 40213
Smiley's Air Tool, Inc.
4552 Poplar Level Road
1-502-966-3433

LOUISIANA
Batton Rouge 70816
Fix-It Tool Repair
10715 Cherry Hill Ave.
1-225-296-0400
New Orleans 70125
Beemar Precision, Inc.
4206 Howard Ave.
1-504-496-3931
West Lake 70669-0218
Rental Service Corp.
3301 Cities Service Hwy.
P.O. Box 214
1-318-882-6011

MAINE
Bangor 04402
N.H. Bragg & Sons
92 Perry Road
1-207-947-8611
Kittery 03904
Northeast Hydraulics, Inc.
63 Rt. 1 By-pass
1-207-439-0652
Portland 04102
Motion Industries, Inc.
190 Rand Rd.
1-207-828-4727

MARYLAND
Baltimore 21218
Baltimore Hydraulics, Inc.
708 E. 25th St.
1-410-467-8088

Phone: (815) 874-5556
Fax: (815) 874-7853
Internet Address: http://www.powerteam.com
MATERIAL SAFETY DATA SHEET

Hydraulic Fluid

Part No.'s 9036, 9037, 9636, 9636-12, 9637, 9637-4, 9638, 9638-2 and 9616

For emergency information call (612) 347-0591

Material

Formula: Proprietary
Chemical Name or Synonyms: Hydrocarbon Mixture

Important Components

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>TVL (Oil Mist)</th>
<th>PEL</th>
<th>Approx. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solv ref petr-base oil</td>
<td>64741-88-4</td>
<td>5 mg/m³</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Olefin Copolymer (oil)</td>
<td>64742-65-0</td>
<td>5 mg/m³</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VI Improver (Polymer)</td>
<td>68171-50-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc Anti-Wear (LZ5178F) comp</td>
<td></td>
<td></td>
<td></td>
<td>(Contact Lubrizol Corp. 216-943-4200)</td>
</tr>
</tbody>
</table>

Physical Data

Appearance: Oily liquid; blue or amber in color
Odor: Mild
pH.: Neutral
Viscosity:
Melting or Freezing Point:
Boiling Point: Above 600° F
Vapor Pressure (mm Hg): Not Available
Vapor Density (air=1): Heavier than Air
Solubility in Water: Neg.
Percent Volatile (by weight): Neg.
Specific Gravity (water=1): 0.9
Evaporation Rate (Butyl Acetate=1): Slower than Ether

Fire and Explosion Hazard Data

Flash Point: Above 350°
Auto Ignition Temp.:
Lower Explosion Limit (%):
Upper Explosion Limit (%):
Extinguishing Media: Foam, CO₂, Dry Chemical
Special Fire Fighting Procedure: Wear MSHA/NIOSH-approved, pressure-demand, self-contained breathing apparatus. Use water spray to cool fire-exposed containers.
Unusual Fire and Explosion Hazards: NFPA Hazard Identification: Health=2, Flammability=1, Reactivity=0

Health Hazard Data

Threshold Limit Value: 5 mg/m³ on oil mist
Effects of Overexposure: SARA Title III - Zinc content 0.04% wt.
Prolonged or repeated skin contact may cause irritation.
Emergency First Aid Procedures

Inhalation: Move subject to fresh air.
Eye and Skin Contact: Flush eyes with large amounts of water for at least 15 minutes. Consult a physician if irritation persists. Wash affected skin areas with soap and water.
Ingestion: DO NOT give anything by mouth or induce vomiting unless directed by physician. If unconscious, prevent aspiration of vomitus by placing face down in prone position with head turned to one side. Obtain immediate medical advice and/or attention.

Reactivity Data

Stability: Stable
Conditions to Avoid: Keep away from heat and flame.
Hazardous Decomposition Products: Oxides, of carbon, zinc, phosphorous.
Hazardous Polymerization: Will not occur
Conditions to Avoid: Incompatibility (materials to avoid): Strong oxiders

Spill or Leak Procedure

Steps to be taken in case material is released or spilled: Remove contaminated clothing and wash affected skin areas with soap and water. Wash clothing before reuse. Dike and contain spill with inert material (sand, earth, fuller's earth, etc.) and transfer liquid and solid diking material to separate containers for recovery or disposal. Floor may be slippery - use care to avoid fall. Keep spill out of all sewers and open bodies of water.
Waste Disposal Methods: Incinerate liquid in approved equipment. Landfill contaminated diking material according to current local, state and federal regulations.

Special Protection Information

Ventilation Type: Normal room ventilation
Respiratory Protection: None required under normal conditions of use.
Protective Gloves: Chemical Resistant
Eye Protection: Use goggles or face shield if eye contact may occur.
Other Protective Equipment: None

Storage and Labeling

Keep in cool, dry place away from ignition source.
Keep in containers and storage vessels closed when not in use.

This product's safety information is provided to assist our customers in assessing compliance with health/safety/environmental regulations. The information contained herein is based on data available to us and is believed to be accurate, although no guarantee or warranty is provided by SPX Power Team or SPX OTC, in this respect. Since the use of this product is within the exclusive control of the user, it is the user's obligation to determine the conditions of safe use of the product. Such conditions should comply with all Federal regulations concerning the product.

SPX Power Team
2121 W. Bridge Street
Owatonna, MN 55060
(507) 455-7100

SPX OTC
655 Eisenhower Drive
Owatonna, MN 55060-0995
(507) 455-7000