



## INSTRUCTION SHEET

### Model PA6 Family

### Air/Hydraulic Pump 10,000 PSI Capacity

### Safety/Warning - Set-up - Operating - Maintenance Instructions

#### IMPORTANT - READ CAREFULLY

This manual contains important information about the correct installation, operation and maintenance of this equipment. All persons involved in the installation, operation and maintenance of this equipment must be thoroughly familiar with the contents of this manual. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual. Keep this manual for reference.

#### WARRANTY STATEMENT

PowerX products are warranted to be free of defects in materials and workmanship under normal use, please go to [www.powerxinternational.com](http://www.powerxinternational.com) to review our complete warranty policy. This warranty does not cover: normal wear & tear, cosmetic items, abuse, overloading, alterations, improper lubrication, or use in a manner for which they are not intended. If the customer believes a product is defective, the product must be delivered, or shipped freight prepaid, to the nearest PowerX Authorized Service Center for evaluation and repair.

#### RECEIVING INSTRUCTIONS

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

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## 1.0 RECEIVING INSTRUCTIONS

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

## 2.0 SAFETY

Make sure to read the instructions, warnings and precautions carefully. Follow all recommended safety precautions to avoid personal injury or damage to the unit. PowerX cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. In the event any questions or concerns arise, contact PowerX or a local PowerX Distributor for clarification.

The pump's maximum working pressure is 10,000 PSI (700 bar). Make sure that all hydraulic equipment such as rams, hoses, etc. used with this pump are rated at 10,000 PSI (700 bar) operating pressure.

If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center. Failure to comply with the following cautions and warnings could cause equipment damage, property damage, or personal injury.

**DANGER**: is only used when your action or lack of action may cause serious injury or even death.

**WARNING**: indicates a potential danger that requires correct procedures or practices to avoid personal injury.

**CAUTION**: is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment, or other property.



**WARNING**: Wear proper personal protective gear when operating hydraulic equipment.



**WARNING**: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. Gauges help the user see what is happening with the hydraulic pressure in the system.



**WARNING**: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose, leading to premature hose failure. Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



**IMPORTANT**: Do not lift hydraulic equipment by the hose or swivel couplers. Use the carrying handle or other means of safe transport.



**CAUTION**: Keep hydraulic equipment away from flames and heat. Excessive heat will soften seals, resulting in fluid leaks. Heat also weakens hose materials. For optimum performance do



not expose equipment to temperatures of 65° C (170° F) or higher. Protect hoses and cylinders from weld spatter.



**WARNING:** Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately. Untreated oil injection could be fatal, but normally just causes severe injury.



**WARNING:** Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



**WARNING:** USE ONLY RIGID PIECES TO HOLD LOADS. Carefully select steel or wood blocks that are capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any lifting or pressing application.

### 3.0 TECHNICAL SPECIFICATIONS

Model	Cylinder Type	Operator	Useable Oil Volume (in3)	No Load Flow (cu.in/min)	Flow at 10,000 psi (cu.in/min)	Air Pressure (psi)	Wt. (lbs.)
PA6-98C	S/A	Foot Pedal	98	82	13	60-150	16
PA6-122	S/A	Foot Pedal	122	82	13	60-150	20
PA6-98R	S/A	Pendant	98	82	13	60-150	23
PA6-231	S/A	Foot Pedal	231	82	13	60-150	32
PA6-122D	D/A	Valve	122	82	13	60-150	22
PA6-231D	D/A	Valve	231	82	13	60-150	32
PA6-460D	D/A	Valve	460	82	13	60-150	44

### 4.0 BASIC OPERATION AND FUNCTION

1. Locate and remove the shipping plug and discard. Ensure the oil level is just below the oil filler plug hole, see the chart in section 5-B. Install the vent / oil fill / dip stick plug.
2. Remove air inlet shipping plug and discard. Pour a teaspoon of good quality, air tool #10 wt. non-detergent oil into the air inlet port. Install the appropriate air supply coupler and a 3/8" NPT hydraulic connection which is rated for 10,000 psi. The air quick disconnect configuration of your choice can be installed in the threaded hole underneath the foot pedal labeled "PUMP". An in-line filter/ regulator/lubricator should be installed close to pump. Add a few drops of SAE 10 oil to the air intake weekly if no lubricator is used or when pump will be idle for a long time.
3. Remove the pressure port shipping plug and discard. Use at least 1-1/2 wraps of Teflon tape (or suitable sealant) on the hose fitting threads. Make sure the first complete thread is free from tape or sealant so they do not enter and contaminate the hydraulic system. Thread the hose fitting or coupler into the pump manifold's outlet port and turn until snug - make sure the fitting threads are not cross-threaded.



#### 4.1 OPERATION

1. Make sure the pump is on a level surface.
2. Connect Foot Pump to an external air source that is capable of supplying 90 PSI @ 10 CFM. Next connect a 3/8" NPT quick disconnect coupler or hose to the oil outlet side that is rated for 10,000 psi. (PowerX recommends that a gauge adaptor and 10,000 PSI gauge be used during operation). Connect the pump to tooling (I.e. cylinder, bender, or cutter)
3. Check for leaks in system and repair as needed. Before repairs are made, disconnect air source and application, then release the pressure from the hydraulic system. Do so simply by pressing the pedal or pendant button for three seconds (see figure 1).
4. To build pressure, depress the pedal or pendant button where "PUMP" is located. Operate pump until desired position is reached and/or pressure is obtained (see figure 1).
5. To retract a cylinder, simply press down on the RELEASE valve or pendant button portion of the pump. Fully depressing pedal will LOCK the DETENT feature to "on" (see figure 1).
6. For double acting pumps model "D", to build pressure depress where indicated (see figure 1). When the handle is in the center position, the load will not move even if the pump is running. To actuate the load, start the pump, rotate the handle in either direction to extend or retract the load. Move the handle back to the center position and release the treadle to stop the pump. Always move the valve handle to the center position before stopping the pump.



**WARNING:** If the pump is stopped and the valve is not in the center position it is possible for the load to drift or lower. See section 2.0, Safety.

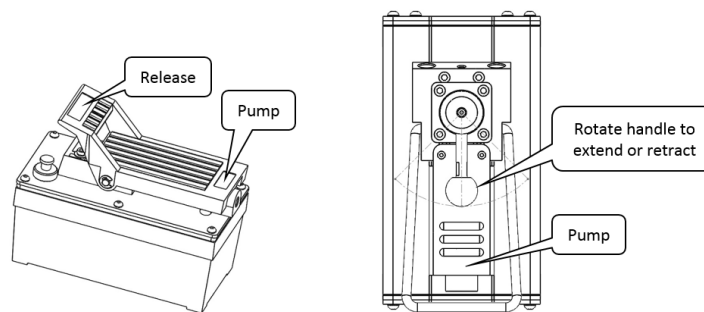


Figure 1

#### 4.2 AFTER COMPLETING THE JOB

Before disconnecting hoses, fittings, etc., be sure the ram is unloaded and retracted, then disconnect air source and hydraulic connections. Store the pump in a clean, dry area.

#### 5.0 PERIODIC MAINTENANCE

##### A) MAINTENANCE



1. Inspect hose and connections daily. Replace damaged components immediately with PowerX Authorized replacement parts only.
2. Tighten connections as needed. Use pipe thread Teflon when servicing connections. NOTE: DO NOT OVER TIGHTEN CONNECTIONS.
3. When not in use or during storage:
  - Disconnect pump from air source, depressurize and disconnect hydraulic hoses from application.
  - Wipe clean, throughout.
  - Shelter the pump with protective cover.
  - Store in clean, dry environment.
  - Avoid temperature extremes.

#### B) HOW TO FILL THE RESERVOIR

1. Disconnect hydraulic hose from application, remove air source from pump.
2. With reservoir horizontal, remove the vent / oil filler plug.
3. Use a small funnel to fill reservoir so the oil level remains the distance stated below in the table, distances are measures from the top of the fill hole.

Model	Recommended Oil Level from the Top of Fill Hole	
	Minimum Fill Level	Maximum Fill Level
PA6-98C, PA6-122, PA6-98R, PA6-122D	1.25"	.5"
PA6-231, PA6-231D, PA6-460D	2.25"	1.5"

4. Use PowerX oil only (Model PL-1, 1 gallon). Using oil other than PowerX Brand may void the pump warranty.
5. Wipe up any spilled fluid and install oil filler screw.
6. Return pump to original position (parallel to a flat level surface), reconnect application and air source. Operate for a few seconds, and then check for leaks.

#### C) CHANGING THE OIL

1. For best results, change fluid once a year.
2. Repeat steps (B) "How to Fill Reservoir", and then pour used fluid into a sealable container.
3. Fill with PowerX oil. Reinstall oil filler plug.

#### D) LUBRICATION (When no in-line oiler is used)

1. When used daily, pour a teaspoon of good quality air tool oil #10 non-detergent oil into the air source inlet of pump. Connect hydraulic hose to application, connect air source to pump and operate pump a few seconds to evenly distribute fluid.



2. Use light machine oil to lubricate pivot points, hinges etc.



**WARNING:** Never operate the pump while it is disconnected from the application. If operated in this condition, the hoses and connections become pressurized. This increases the burst hazard and damage may occur to the pump, hoses, connections or other components.

### 5.1 MAINTAIN OIL LEVEL

Check hydraulic oil level every 30 hours of operation (sight gauge should be completely covered in oil when all tools are retracted. Add PowerX oil (Model PL-1 – 1 gallon) when necessary. Oil level should be no more than 1/2" from top of reservoir plate (see chart in 5-B) – with cylinders retracted and motor off.

### 6.0 TROUBLESHOOTING

<b>UNIT OPERATES, BUT TOOLING DOES NOT MOVE: NO HYDRAULIC FLOW / LOW FLOW</b>	
Reservoir not vented, causing a vacuum.	Unclog vent plug.
No oil, reservoir empty or low.	Check oil level once the tooling is fully retracted, should be 1/2" from top (see 5-B above) of oil tank cover or check that your tooling requirement does not exceed the foot pump oil capacity.
Defective coupler, not allowing flow.	Coupler is not fully seated or ball seats are defective, replace coupler.
Oil entrance valve clogged.	Oil inlet is clogged with foreign matter or seat is defective.

<b>UNIT DOES NOT OPERATE AND AIR BY PASSES: AIR CYLINDER DRY OR DAMAGED AIR VALVE</b>	
Insufficient air supply.	Ensure you have 90 PSI @ 10 CFM supplied.
Air supply does not have ample lubrication.	Use a recommend premium air tool lubrication. Apply 1 drop per minute into foot pump.
Air entrance plunger has defective seals or is damaged.	O-rings are damaged; replace seal or damaged components.
Air piston is frozen, worn seals or air valve is defective.	Replace O-ring and/or air piston assembly or lubricate.
Muffler are completely clogged, not allowing air to pass.	Remove and clean or replace mufflers. Check for water and or rust in air supply.



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