AURELAQUA®

12V Diaphragm Water Pump - PRP-125

User Manual

[Revision 2.0 April 2017]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

Safety

Risk of electric shock. • Do NOT pump petrol, fuels or flammable liquids or use where flammable vapors are present.

- When wiring electrically-driven pumps, follow all electrical and safety codes.
- Make certain the power source conforms to the pump voltage requirements. Ensure that all power sources are disconnected before installing the pump.
- Improper duty cycle and/or rapid start/stop conditions caused by undersized outlets may cause the internal thermal overload protection (if equipped) to trip or can cause premature motor failure due to excessive heat.

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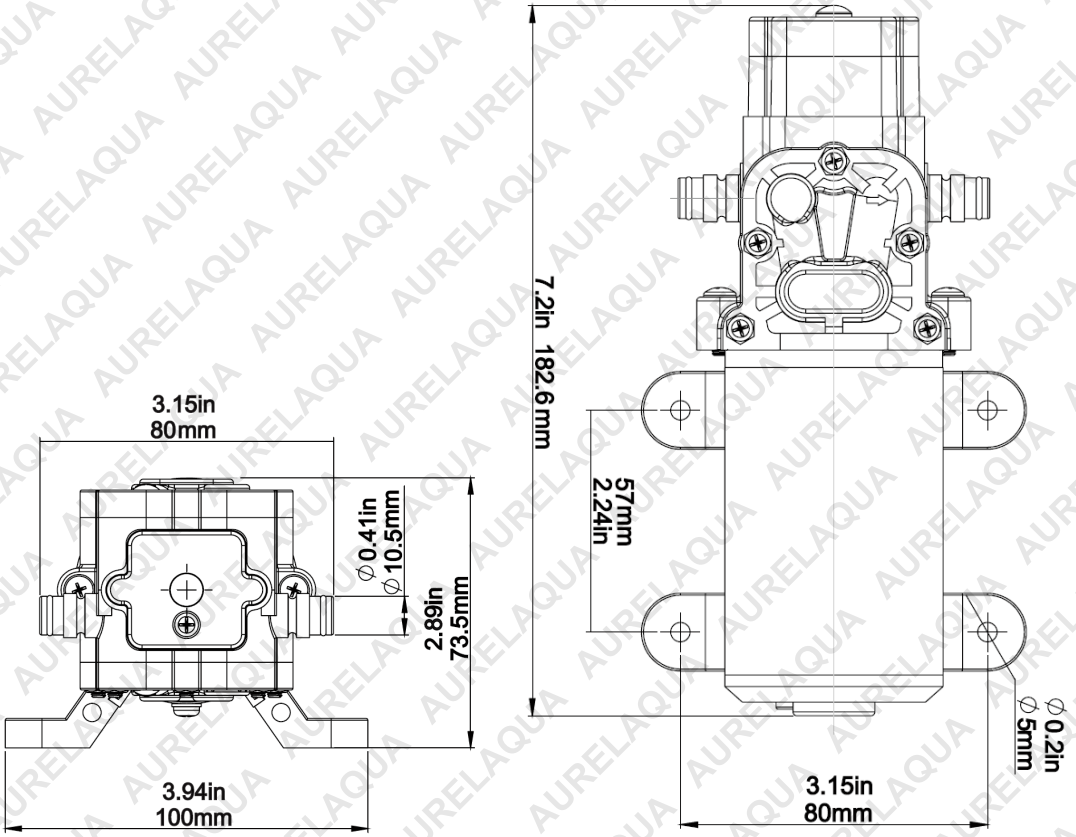
Installation

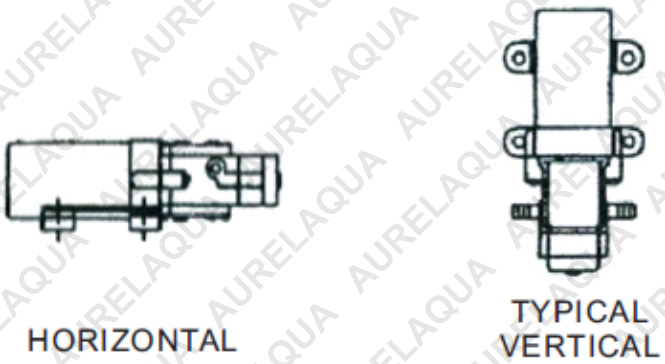
The PRP-125 water pump is designed for a wide range of applications. It is constructed from materials suitable for handling water and a broad range of chemicals. The pump is self-priming and can be run dry without serious effects. It is intended for intermittent duty cycles, but can also be run continuously for short periods of time. The higher the duty cycle, the shorter the expected life of the pump.

Typical pump usages include liquid transfer, spraying, circulation, filtration and dispensing.

Mounting

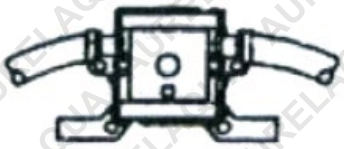


Use the pump motor rubber mounting feet to secure it. The pump should be mounted in a dry and adequately ventilated area. If mounted in an enclosure, provision to cool the motor may be necessary.



Plumbing

- Use flexible hose of a pressure rating that is compatible with the fluid to be pumped. The pump is not designed to be connected directly to rigid pipes/tubes.
- Tubing should be a minimum of 9.5mm (3/8") internal diameter (ID) and at least 500mm (20”) in length to avoid excess stress on the pump parts.
- Do not crimp or kink the tubing.
- The use of check valves in the plumbing system could interfere with the priming ability of the pump. If a check valve is installed, it must have a cracking pressure of no more than 2 PSI (0.14bar).
- Use a minimum 40-mesh strainer or filter in the pump inlet line to prevent foreign debris from entering the pump. Failures due to foreign debris entering the pump will not be covered under warranty.



FLEXIBLE HOSE

RIGID PIPE

The pump comes with 90° tube connectors that can be used for easier plumbing. To attach, firmly push the large diameter end of the 90° connector to the required connector, then push the “U” clip through the holes in the connector to secure.

Connector tubes to connectors and secure with appropriate clamps/clips. The direction of flow is shown below:

Electrical Connection

The pump should be wired to an individual (dedicated) circuit, controlled with a certified double-pole switch rated at or above the fuse ampere indicated on the pump motor label.

The red lead connects to the power source positive **+** terminal. The black lead is ground and connects to the power source negative **-** terminal. Use minimum AWG T6 wire. Use a 5A fuse to protect the system wiring and components.

Operation

Before using the pump, note the following:

- The pump is not recommended for continuous duty service. Operation at lower pressures and temperatures, however, will extend the overall service life of the pump.
- If you are using the pump for non-water liquids/chemicals, the pump should be flushed with clean, water (if applicable) after each use.
- To safeguard the pump in extreme cold conditions, any liquids to be pumped should be prepared using appropriate anti-freeze chemicals. If the pump is not in use, the interior of the pump must be dry.
- If the pump is being mounted in an outdoor environment, it should be protected from water or other liquids, dust and direct sunlight.
- Do not assume the pump is compatible with any chemical. If the chemical is not compatible with the pump materials (diaphragm rubber etc), the pump may fail to prime, have low pressure or the pressure switch may not shut off.
- The pump is self-priming, however, priming may be required depending on the fluid viscosity, suction tube size, foot valve and pump configuration.

Start-Up

To start and prime the pump, the outlet line must be open, allowing any air in the pump to escape. This is to avoid the possibility of airlock. The pump shuts off automatically when the outlet pipe is closed and the internal pressure rises sufficiently. The pump restarts automatically when the outlet pipe is opened and the internal pressure drops sufficiently.

On-Demand Operation (Intermittent Duty)

The “on-demand operation” is considered as “intermittent duty”. The maximum intermittent duty cycle is what causes the motor to reach its maximum thermal limits. Once the maximum thermal limit has been reached, the motor must be allowed to cool to a lower temperature (ambient temperature being ideal) before resuming operation. Running the pump at or near the maximum thermal limit for extended periods of time will shorten the life of the pump and may result in pump failure.

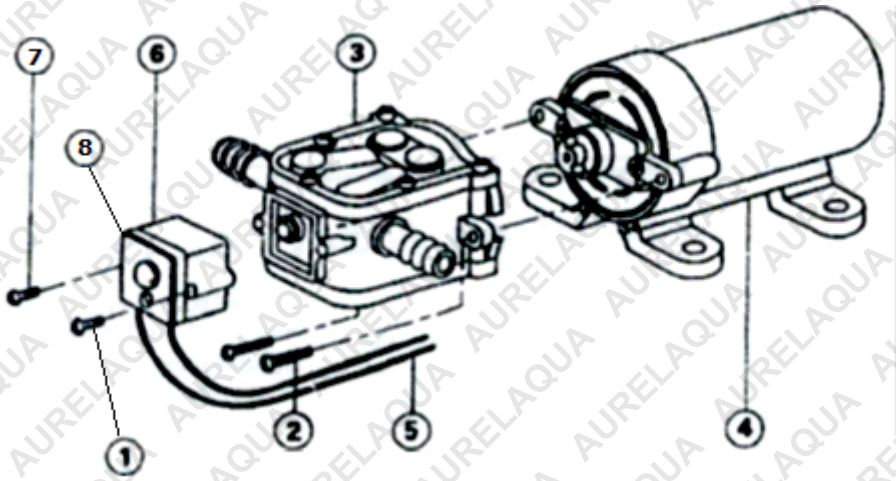
Bypass Operation (If Equipped)

Models equipped with an external bypass system are designed to pump at high pressures while operating at low or high flow rates. Models equipped with a bypass system only will continue to run until the power is manually turned off.

Maintenance and Troubleshooting

Take precautions to prevent injury due to contact with chemicals. • If the pump has been used to pump chemicals, flush it with clean water or neutralizing agent before servicing.

Disassembly/Assembly (Pump Head)



No.	Qty.	Description
1	2	Switch cover screw
2	2	Pump head screw
3	1	Pump head
4	1	Motor

No.	Qty.	Description
5	2	Electrical connection lead
6	1	Pressure switch
7	2	Pressure switch screw
8	1	Pressure switch cover

1. Disconnect power to the pump motor.
2. Remove the pressure switch cover screw (**1**) and then remove the cover (**8**).
3. Disconnect the red wires (**5**) from the pressure switch.
4. Remove the screws (**2**) from the front of the pump head (**3**).
5. Slide the pump off the motor (**4**) assembly.

Reassembly (Pump Head to Motor)

1. Align the pump head (**3**) screws tabs to the motor (**4**) and secure it with the pump head screws (**2**). Tighten the screws, being careful not to over-tighten as the material is ABS plastic.
2. Reconnect the red wires (**5**) to the pressure switch (**6**). Wires can be connected to either terminal.
3. Install the pressure switch cover (**8**) with the pressure switch cover screw (**1**). Tighten the screw, being careful not to over-tighten as the material is ABS plastic.
4. Reconnect the pump plumbing.
5. Follow the start-up procedure.

Troubleshooting

The following information may assist in identifying a problem and rectifying it.

NOTE: Some procedures listed here may need to be performed by a qualified service technician.

Motor is operating, but pump is not discharging.

Possible Fault	Action
Restricted intake or discharge line	Open up all line valves and clear clogged lines.
Air leak in intake line	Check inlet tubes and connections and ensure they are air-tight.
Debris in the check valve	Clean obstructed or jammed check valves.
Ruptured pump diaphragm	Replace pump diaphragm.
Defective pump check valve	.Replace check valve.
Crack in pump housing	Replace pump head

Motor fails to turn ON.

Possible Fault	Action
Pump or equipment not plugged in	Connect the pump to the power source and ensure power is ON.
Loose wiring connection	Check electrical connections are clean and secure.
Pressure switch failure	Replace pressure switch.
Defective motor or rectifier	Replace pump motor..
Frozen cam/bearing	De-freeze the cam/bearing.

Pump fails to turn ON after the discharge valves have been closed.

Possible Fault	Action
Liquid supply has been depleted	Ensure liquid is available for pumping.
Discharge line has a leak	Check outlet tubes and connections and ensure they are air-tight.
Debris in the check valves	Clean obstructed or jammed check valves.
Insufficient voltage to pump	Ensure input voltage is within specifications.
Ruptured pump diaphragm	Replace the pump diaphragm.
Defective pressure switch	Replace pressure switch.

Low Flow Rate and Pressure

Possible Fault	Action
Air leak at the pump intake	Check inlet tubes and connections and ensure they are air-tight.
Accumulation of debris inside the pump	Clean pump.
Insufficient voltage to the pump	Ensure input voltage is within specifications.
Punctured pump diaphragm	Replace the pump diaphragm.
Pump bearing is worn-out (excessive noise)	Replace bearing.
Defective rectifier or motor	Replace the rectifier or motor.

Intermittent Flow Rate

Possible Fault	Action
Restricted pump delivery	Check discharge lines, fittings, valves and spray nozzles for obstructions or under sizing.

Technical Specifications

Inlet	10 mm or 1/4" hose fitting
Outlet	10 mm or 1/4" hose fitting
Flow	1.6 GPM (6L/min)
Volts	12V (9 to 14.4V)
Amp Draw	2.1A Max: 6A
Pressure	80 PSI

Motor duty cycle will vary with load and ambient temperature

Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally, the information available at www.datastreamserver.com/safety

- Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.
- Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use. Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).
- Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.
- Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.
- If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.

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