

Installation & Maintenance Manual

Installation Preparation

The goal of installation is to provide a quite, easy-to-maintain installation with good flow and low backpressure. This can be accomplished with the following guidelines:

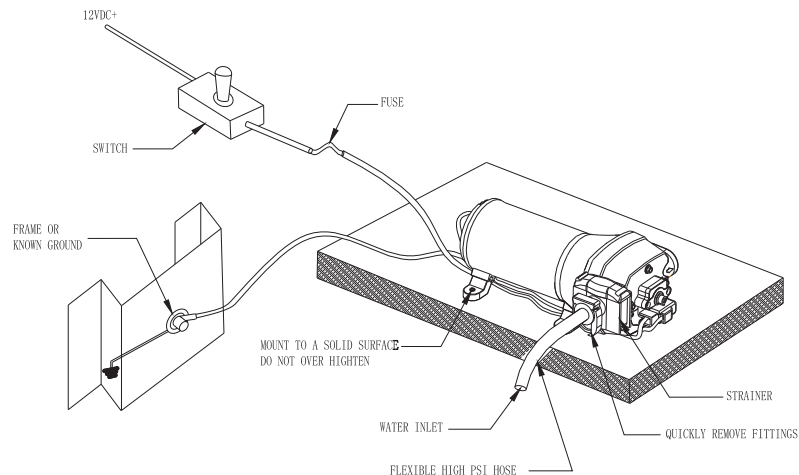
Follow all marine/RV/agriculture safety guidelines if installing in a watercraft, including waterproof connections.

- Mount on a solid surface in an accessible location for strainer cleaning and pump maintenance.
- Use flexible high-pressure hose on the pump inlet and outlet. The pump's ports and strainer should not be connected to plastic or rigid pipe, or the pump's normal motion will transmit through rigid plumbing causing noise, and possibly loosening or cracking components.
- Pump must use an adequate 40-mesh strainer.
- Use a minimum of 0.49" [12.5mm] Inner Diameter plumbing. Smaller ID plumbing can cause high backpressure, cycling, low flow and noise.
- Pump is designed for intermittent duty only:

Do not use these pumps for running a Reverse-Osmosis [RO] Filtration System. High pressure-continuous duty usage will shorten the life of the pump and it not covered under warranty.

- Wire Size is 16 GA MINIMUM
- Minimum power requirement is a 20 Amp circuit.
- Reduce restrictions on inlet and outlet. This includes small inner diameter shut-off valves, winterizing valves and elbows.

Typical Pump Installation



MOUNTING

- Mount the pump within 5 feet of the tank for best performance and pump life. The farther it pulls the more work it does, increasing vibration and noise, and reducing the output and pump life. The lift may decrease as the pump is used.
- Mount pump in a space of at least 1 cubic foot for adequate ventilation to prevent overheating.
- Pump may be mounted in any position.
- Mount pump for easy access for cleaning strainer, maintenance and service.
- Mount pump on a solid surface to prevent vibration and noise.

ELECTRICAL

- The pump works best on an individual filtered circuit, protected by the fuse or breaker specified on the label.
- A switch is recommended and should be on the positive lead.
- Wire Size: Proper wire size is required for good pump operation. If the wire is too small, low voltage will affect the pump performance and can create a fire hazard.
- **SHUT OFF POWER TO THE PUMP WHEN RV OR BOAT OR YOUR EQUIPMENT IS UNATTENDED.**

PLUMBING

Installation of a strainer is required to prevent debris from entering the pump. For noise and vibration reduction we recommend at least 5 inch [130mm] of flexible high-pressure hose to both ports. The pump ports and strainer should not be connected to plastic or rigid pipe. This hose should be anchored where it meets the hard plumbing to reduce plumbing vibration.

OPERATION

This pump is designed for intermittent duty only.

The pump operates normally up to factory set shut-off pressure. As a faucet is opened back up, the pressure will drop, the switch will close and full flow is again obtained. Pump cycling [On-Off-On] may occur if the faucet is not open enough to allow flow.

Lower voltage=lower flow, higher voltage=higher flow.

Remember your electrical safety: it is always best to shut power to the pump OFF when leaving the RV or boat or your equipment unattended.

MAINTENANCE

Normal pump maintenance is all that is needed: Checking and cleaning of the strainer, normal sanitizing and winterizing and occasionally checking all plumbing hardware and fittings for tightness. Lack of sanitizing is the number one reason for premature pump failure and poor performance over time. Lack of sanitizing will cause scale build-up on the diaphragm and valves.

SANITIZING

Potable water systems require periodic maintenance to keep components working properly and deliver a consistent flow of fresh water.

Sanitizing is recommended: prior to storing, after a period of storage, or any time the system is opened or contaminated.

NOTE: Check your RV or Watercraft or other equipment Owner's Manual for specific instructions.

WINTERIZING

Refer to the RV or watercraft or other equipment owner's manual for specific winterizing instructions.

If water is allowed to freeze in the system, serious damage to the plumbing and the pump may occur. Failure of this type will void the warranty. The best guarantee against damage is to completely drain the pump. **When used per manufactures recommendations non-toxic antifreeze for potable is safe for use with this pump.**

To drain the pump perform the following:

1. Drain the water tank. If the tank doesn't have a drain valve, open all faucets allowing the pump to operate until the tank is empty.
2. Open all the faucets (including the lowest valve or drain the plumbing), allow the pump to purge the water from the plumbing, and then turn the pump OFF.

3. Using a pan to catch the remaining water, remove the plumbing at the pump's inlet/outlet ports. Turn the pump ON, allowing it to operate until the water is expelled. Turn OFF power to the pump once the plumbing is emptied. Do not reconnect the pump plumbing. Make a note at tank filter as a reminder: "plumbing is disconnected".
4. All faucets must be left open to guard against any damage.
5. Potable anti-freeze maybe poured down drains and toilets to protect p-traps and toilet seals. Sanitize the plumbing system before putting the plumbing system back in service.

TROUBLESHOOTING

Vibration induced by driving and boating can loosen plumbing, strainers and pump hardware. Check for system components that are loose.

• PUMP WILL NOT START/BLOWS CIRCUIT:

Electrical connections, fuse or breaker, main switch, and ground connection
 Is voltage present at the switch? Bypass the pressure switch. Does the pump operate?
 Charging Systems for correct voltage ($\pm 10\%$)..
 For an open circuit, or motor; or improperly sized wire.
 For seized or locked diaphragm assembly (water frozen?).

• WILL NOT PRIME/SPUTTERS: (No discharge/Motor runs)

Is the strainer clogged with debris?
 Is there water in the tank?
 Is the inlet tubing/plumbing severely restricted or kinked? Restrictive valves?
 Proper voltage with the pump operating ($\pm 10\%$).
 For debris in pump inlet /outlet valves or swollen/dry valves.
 Pump housing for cracks or loose drive assembly screws.

• RAPID CYCLING:

For restrictive plumbing and flow restrictions in faucets/shower heads.
 Water filter/purifier should be on separate feed line.

• PUMP WILL NOT SHUT-OFF/RUNS WHEN FAUCET IS CLOSED:

Output side (pressure) plumbing for leaks, and inspect for leaky valves or toilet.
 For air trapped in outlet side or pump head.
 For incorrect voltage to pump ($\pm 10\%$).
 For loose drive assembly or pump head screws.
 Are the valves held by debris or is the rubber swollen?
 Pressure switch operation.

• NOISE OR ROUGH OPERATION:

For plumbing which may have vibrated loose.
 For a restricted inlet (clogged strainer, kinked hose, restrictive valves).
 Is the pump plumbed with rigid pipe causing noise to transmit?
 Does the mounting surface amplify noise (flexible)? Does it bang like a drum?
 For mounting feet that are loose or are compressed too tight.
 For air in the system. Check all fixtures for air and bleed system.
 The motor with pump head removed. Is noise from motor or pump head?

• LEAKS FROM PUMP HEAD OR SWITCH:

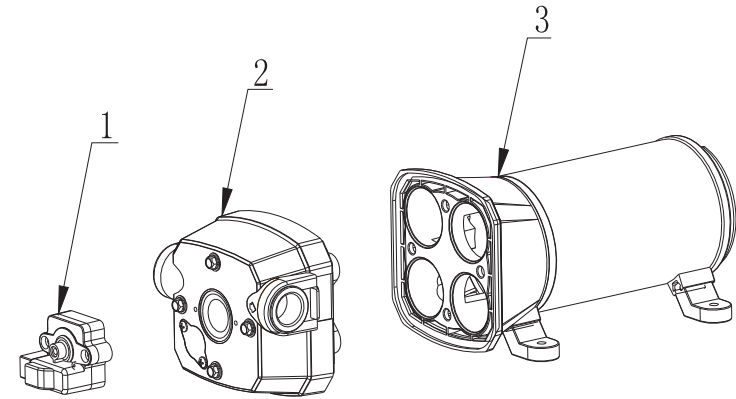
For loose screws at switch, by-pass or pump head.

Switch diaphragm ruptured or pinched.

For punctured diaphragm if water is present in the drive assembly.

EXPLODED VIEW-NO REPAIR KITS AVAILABLE

Item	Description	Quantity
1	Pressure switch assembly	1
2	Pump head assembly	1
3	Motor	1



LIMITED WARRANTY

We warrant our RV/Marine/Agriculture Water Pumps to be free from material and workmanship defects under normal use and service for a period of one (1) year from the date of purchase. In the absence of proof of purchase the warranty is one (1) year from the date of manufacture indicated on the motor nameplate. Not to exceed (1) one year in any event. The limited warranty will not apply to pumps that were improperly installed, misapplied, or are incompatible with components not manufactured by us. Pump failure due to foreign debris is not covered under the terms of this limited warranty. We will not warrant any pump that is physically damaged, or altered outside our factory. Warranty claims may be resolved by an authorized dealer service center, or by one of our service center. Returns are to be shipped with charges pre-paid. Package all returns carefully. We will not be responsible for freight damage incurred during shipping to a service center. Our obligation under this warranty policy is limited to the repair or replacement of the pump. Pumps found not defective (under the terms of this limited warranty) are subject to charges to be paid by the returnee for the testing and packaging of "tested good" units. Warranty returns will be shipped on a freight allowed basis. We reserve the right to choose the method of transportation. We are not responsible nor will it reimburse for labor necessary to remove and reinstall a pump, if found defective.