SEAFLO SFDP2-018-120-31

SEAFLO 24V 1.8 GPM 120 PSI 31-Series DC Diaphragm Pump User Manual

Model: SFDP2-018-120-31

1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your SEAFLO 31-Series 24V DC Diaphragm Pump. This pump is designed for high-pressure applications, delivering a consistent flow rate suitable for RV water systems, marine use, agricultural spraying, and various cleaning tasks. Please read these instructions thoroughly before installation and use.

Figure 1: SEAFLO 31-Series DC Diaphragm Pump with included fittings.

2. Safety Information

- **Electrical Safety:** Ensure the power supply matches the pump's voltage (24V DC). Disconnect power before performing any installation or maintenance. All wiring should be performed by a qualified individual and comply with local electrical codes.
- **Water Pressure:** This pump operates at high pressure (120 PSI). Ensure all connections and plumbing are rated for this pressure to prevent leaks or bursts.
- **Temperature Limits:** Do not exceed the maximum fluid temperature of 140°F (60°C).
- **Flammable Liquids:** Do not pump flammable liquids. This pump is designed for water and non-corrosive, non-flammable fluids only.
- **Ventilation:** Ensure adequate ventilation around the pump to prevent overheating.
- **Eye Protection:** Always wear appropriate eye protection when working with plumbing systems and power tools.

3. Product Features

- **High-Pressure Performance:** Delivers 1.8 GPM flow rate with a 120 PSI shut-off pressure.
- **Self-Priming:** Capable of self-priming up to 6 feet (1.8m) suction lift.
- **Run-Dry Safe:** Designed to prevent damage if the water supply runs low.
- **Automatic Pressure Switch:** Built-in switch automatically starts and stops the pump based on demand.
- **Quiet Operation:** Engineered for low noise and vibration.
- **Durable Construction:** Features EPDM valves and a Santoprene diaphragm for extended lifespan in harsh environments.
- **Versatile Applications:** Suitable for RVs, boats, agriculture, and cleaning systems.

4. Specifications

Specification	Value
Model	SFDP2-018-120-31
Voltage	24V DC
Flow Rate	1.8 GPM (7.0 LPM)
Shut-Off Pressure	120 PSI (8.3 BAR)
Max Draw	6.0A
Priming Capabilities	6 feet (1.8m) suction lift
Max Temperature	140°F (60°C)
Ports	3/8"-18 FNPT
Product Dimensions	8.3"L x 3.3"W x 4.5"H
Item Weight	4.2 Pounds

Figure 2: Pump label showing model and electrical specifications.

5. Setup and Installation

1. **Mounting:** Select a dry, well-ventilated location for mounting the pump. The pump can be mounted horizontally or vertically. Secure the pump using the integrated mounting feet. Ensure the mounting surface is stable and can support the pump's weight and vibration during operation.
2. **Plumbing Connections:**
    - Connect the inlet side of the pump to your water source. The pump is self-priming up to 6 feet, but placing it as close to the water source as possible is recommended.
    - Connect the outlet side of the pump to your distribution system. Use appropriate 3/8"-18 FNPT fittings and ensure all connections are tight to prevent leaks, especially given the high operating pressure.
    - Consider installing a filter on the inlet side to protect the pump from debris.
    - A flexible hose connection is recommended to reduce vibration and noise.
3. **Electrical Wiring:**
    - Ensure the power supply is 24V DC.
    - Connect the positive (+) wire from the power source to the positive (+) terminal on the pump.
    - Connect the negative (-) wire from the power source to the negative (-) terminal on the pump.
    - Install an appropriate fuse (not included) in the positive line, close to the power source, to protect the pump and wiring. Refer to the specifications for maximum current draw (6.0A).
    - Ensure all electrical connections are secure and protected from moisture.

Figure 3: Bottom view of the pump, illustrating mounting points and port locations.

6. Operating Instructions

1. **Initial Start-Up:**
    - Ensure all plumbing connections are secure and the inlet line is submerged in water.
    - Open a faucet or outlet downstream from the pump to allow air to escape the system.
    - Apply power to the pump. The pump will begin to prime and push water through the system.
    - Once a steady stream of water flows from the open outlet and all air is purged, close the outlet. The pump's automatic pressure switch will detect the pressure build-up and shut off.
2. **Normal Operation:** The pump is designed for on-demand operation. It will automatically turn on when a faucet or outlet is opened (pressure drops) and turn off when all outlets are closed (pressure builds up to

120 PSI).

3. **Run-Dry Protection:** The pump is designed to run dry without damage. However, continuous dry running is not recommended and can lead to premature wear. Ensure a consistent water supply.

7. Maintenance

- **Regular Inspection:** Periodically check all plumbing and electrical connections for tightness and signs of wear or corrosion.
- **Inlet Filter:** If an inlet filter is installed, clean it regularly to prevent clogging and maintain optimal flow.
- **Winterization (for cold climates):** If the pump is installed in an environment where freezing temperatures may occur, it must be drained or winterized with non-toxic antifreeze to prevent damage. Disconnect inlet and outlet lines and allow water to drain completely, or flush with RV/marine antifreeze.
- **Pump Cleaning:** Clean the exterior of the pump with a damp cloth. Do not use harsh chemicals or immerse the pump in water.

8. Troubleshooting

Problem	Possible Cause	Solution
Pump does not turn on.	No power, blown fuse, loose wiring, faulty switch.	Check power supply, replace fuse, tighten connections, test switch.
Pump runs but no water flows.	No water in supply, air leak on inlet side, clogged inlet filter, pump not primed.	Check water source, inspect inlet connections, clean filter, re-prime pump.
Low flow or low pressure.	Clogged inlet filter, restricted plumbing, low voltage, worn pump head.	Clean filter, check for kinks/blockages, verify voltage, inspect pump head.
Pump cycles on and off rapidly.	Small leak in system, faulty pressure switch, insufficient accumulator tank (if installed).	Check for leaks, test/replace pressure switch, consider accumulator tank.
Excessive noise or vibration.	Loose mounting, air in system, debris in pump, worn bearings.	Secure mounting, purge air, check for debris, contact support if internal issue.

9. Warranty and Support

The SEAFLO 31-Series DC Diaphragm Pump is backed by a**4-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service.

For warranty claims, technical assistance, or replacement parts, please contact SEAFLO customer support. Keep your purchase receipt as proof of purchase.

Contact Information: Please refer to the SEAFLO official website or your product packaging for the most current customer support contact details.