SEAFLO SFDP1-011-080-21

SEAFLO 21-Series DC Diaphragm Water Pressure Pump User Manual

Model: SFDP1-011-080-21

1. Introduction

The SEAFLO 21-Series DC Diaphragm Water Pressure Pump is a compact and versatile pump designed for a wide range of liquid transfer, spraying, circulation, filtration, and dispensing applications. This pump is self-priming and engineered to run dry without sustaining damage, ensuring reliable operation. It features a built-in pressure switch that automatically starts and stops the pump based on water demand, making it ideal for marine, RV, agricultural, and recreational uses.

2. Safety Information

- Always disconnect power before installing, servicing, or performing any maintenance on the pump.
- Ensure the power supply matches the pump's voltage requirements (12V DC). Incorrect voltage can damage the pump and pose a safety risk.
- Do not pump flammable liquids. This pump is designed for water and non-flammable liquids only.
- Install the pump in a well-ventilated area to prevent overheating.
- Protect the pump from freezing temperatures, which can cause damage.
- Ensure all electrical connections are secure and properly insulated to prevent short circuits.
- Avoid exceeding the maximum pressure rating of the pump or connected plumbing.

3. Product Features

- **Versatile Applications:** Suitable for marine, RV, agriculture, and recreational uses.
- **Efficient Power Consumption:** Current draw of 1.5 Amp, with a maximum of 2.6 Amp.

- **Standard Hose Connection:** Fixed 10mm (3/8") diameter hose tails for easy installation.
- **High Flow Capacity:** Delivers 1.1 Gallons per minute (4.0 Litres per minute).
- **12V DC Power Supply:** Operates on 12V DC voltage.
- **Vibration Dampening:** Soft rubber mounts reduce noise and vibration during operation.
- **Self-Priming Design:** Can run dry without damage and automatically primes for reliable operation.
- **Automatic Pressure Control:** Built-in pressure switch automatically starts and stops the pump when a faucet is opened and closed.

4. Setup and Installation

4.1 Mounting

Mount the pump in a dry, accessible location. Utilize the integrated soft rubber mounts to minimize vibration and noise. Ensure the pump is securely fastened to a stable surface. The pump can be mounted horizontally or vertically, but ensure the motor is positioned above the pump head if mounted vertically to prevent water from entering the motor in case of a leak.

Image: SEAFLO 21-Series pump with visible mounting feet for secure installation.

4.2 Plumbing Connections

The pump is equipped with fixed 10mm (3/8") hose tails for inlet and outlet connections. Ensure all plumbing connections are tight and leak-free. Use appropriate clamps for hose connections. It is recommended to install a strainer or filter on the inlet side to prevent debris from entering and damaging the pump.

Image: Side view of the SEAFLO 21-Series pump, highlighting the inlet and outlet hose connections.

4.3 Electrical Wiring

Connect the pump to a 12V DC power source. Observe correct polarity: the red wire is positive (+), and the black wire is negative (-). It is highly recommended to install an appropriately sized fuse (e.g., 5A) in the positive (+) power line close to the battery or power source to protect the pump and wiring from overcurrent.

Image: Overall view of the SEAFLO 21-Series pump, showing the electrical wiring connections.

5. Operating Instructions

5.1 Initial Startup

1. Ensure all plumbing connections are secure and the inlet line is submerged in water or connected to a water source.
2. Open a faucet or outlet downstream from the pump to allow air to escape the system.
3. Apply 12V DC power to the pump. The pump will begin to run and self-prime, expelling air from the system.
4. Once a steady stream of water flows from the open faucet, close the faucet. The pump will continue to run briefly to build pressure, then the built-in pressure switch will automatically shut off the pump.

5.2 Automatic Operation

The SEAFLO 21-Series pump operates on demand. When a faucet or outlet is opened, the system pressure drops, and the pressure switch activates the pump. When the faucet is closed, the pressure builds up, and the switch automatically turns off the pump. This automatic operation conserves power and extends pump life.

5.3 Running Dry

This pump is designed to run dry without damage. However, prolonged dry running is not recommended as it can lead to unnecessary wear. Ensure a water source is available for continuous operation.

6. Maintenance

- **Regular Inspection:** Periodically check all plumbing and electrical connections for leaks, corrosion, or damage. Tighten any loose connections.
- **Cleanliness:** Keep the exterior of the pump clean and free from dirt or debris. Do not use harsh chemicals that could damage the pump's housing.
- **Inlet Strainer:** If an inlet strainer is installed, inspect and clean it regularly to prevent blockages that could reduce pump performance.
- **Winterization (for cold climates):** In environments where freezing temperatures are expected, drain all water from the pump and plumbing system to prevent damage from ice expansion. Running RV antifreeze through the system is also an option.

7. Troubleshooting

7.1 Pump Not Running

- **No Power:** Check power supply, fuse, and electrical connections. Ensure correct 12V DC voltage.
- **Wiring:** Verify correct polarity (red to +, black to -).
- **Pressure Switch:** Ensure a faucet is open to drop system pressure and activate the switch.

7.2 Low Flow or Pressure

- **Clogged Inlet:** Check and clean the inlet strainer or filter.
- **Air Leaks:** Inspect all inlet plumbing connections for air leaks. Even small leaks can significantly reduce performance.
- **Low Voltage:** Ensure the power supply is providing adequate 12V DC. Voltage drop over long or thin wires can affect performance.
- **Kinked Hoses:** Check for any kinks or obstructions in the inlet or outlet hoses.

7.3 Pump Cycles Frequently (Short Cycling)

- **Water Leak:** Check for leaks in the plumbing system, including faucets, connections, and pipes. Even a small drip can cause the pump to cycle.
- **Air in System:** Bleed air from the system by opening a faucet until a steady stream of water flows.
- **Accumulator Tank (if installed):** If an accumulator tank is part of the system, check its air charge.

7.4 Noisy Operation

- **Loose Mounting:** Ensure the pump is securely mounted using its rubber feet.
- **Air in System:** Air in the water lines can cause cavitation and noise. Bleed the system.
- **Vibration:** Ensure hoses are not touching hard surfaces that could transmit vibration.

8. Specifications

Specification	Value
Model Number	SFDP1-011-080-21
Voltage	12V DC
Flow Rate	1.1 GPM (4.0 LPM)
Max Pressure	80 PSI
Current Draw	1.5A (Max 2.6A)
Hose Connections	Fixed 10mm (3/8") Hose Tails
Product Dimensions (L x W x H)	6.65" x 3.86" x 2.44"
Material	Stainless Steel (internal components), Durable Plastic (housing)
Self-Priming	Yes
Run Dry Capability	Yes
Included Components	Pump

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the seller directly. Keep your proof of purchase for any warranty claims.
For further assistance, you may visit the official SEAFLO website or contact their customer service department.