

SEAFLO SFDPA2-015-160-31

SEAFLO 31-Series DC Diaphragm Pump User Manual

Model: SFDPA2-015-160-31

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your SEAFLO 31-Series DC Diaphragm Pump. This high-pressure pump is designed for various applications including RV water systems, marine use, agricultural spraying, and general cleaning tasks. Please read this manual thoroughly before installation and operation to ensure proper function and longevity of the product.

2. SAFETY INSTRUCTIONS

- **Electrical Safety:** Ensure the power source matches the pump's voltage (220V DC). Disconnect power before performing any installation or maintenance. All electrical connections should be made by a qualified professional and comply with local codes.
- **Water Pressure:** This pump operates at high pressure (up to 160 PSI). Ensure all plumbing connections are secure and rated for the operating pressure to prevent leaks or bursts.
- **Operating Environment:** Do not operate the pump in explosive atmospheres or where flammable liquids are present. Protect the pump from freezing temperatures.
- **Personal Protective Equipment:** Wear appropriate safety gear, such as eye protection, during installation and maintenance.
- **Children and Pets:** Keep children and pets away from the pump during operation.

3. PACKAGE CONTENTS

Verify that all components are present before proceeding with installation:

- 1 x SEAFLO 31-Series DC Diaphragm Pump
- Instruction Manual (this document)
- Multiple fittings for threaded connections (may vary by package)

4. SPECIFICATIONS

Feature	Detail
Model Number	SFDPA2-015-160-31
Voltage	220V DC
Flow Rate	1.5 GPM (Gallons Per Minute)
Max Pressure	160 PSI (Pounds per Square Inch)
Self-Priming Height	Up to 6 feet
Diaphragm Material	Santoprene
Valve Material	EPDM
Run-Dry Safe	Yes
Built-in Features	Automatic Pressure Switch
Weight	8 pounds
Dimensions	8 x 4.5 x 4 inches (Package Dimensions)

5. SETUP AND INSTALLATION

5.1 Mounting the Pump

The pump features an industry-standard mounting pattern for easy installation. Choose a dry, well-ventilated location that is protected from direct sunlight and freezing temperatures. Ensure the mounting surface is stable and can support the pump's weight.

1. Position the pump in the desired location, ensuring adequate space for plumbing and electrical connections.
2. Mark the mounting holes on the surface.
3. Secure the pump using appropriate fasteners (not included) through the mounting feet. Avoid overtightening.

5.2 Plumbing Connections

Ensure all plumbing connections are watertight and rated for high pressure. Use thread sealant tape on all threaded connections.



Figure 1: Front view of the pump showing inlet and outlet connections. The inlet is typically marked with an arrow pointing towards the pump, and the outlet with an arrow pointing away.

1. **Inlet Connection:** Connect the water supply line to the pump's inlet port. The pump is self-priming up to 6 feet, but for optimal performance, position the pump as close to the water source as possible.
2. **Outlet Connection:** Connect the discharge line from the pump's outlet port to your system (e.g., faucet, spray nozzle).
3. **Hose Clamps:** Use hose clamps on all flexible hose connections to prevent leaks.
4. **Filters:** It is recommended to install a strainer/filter on the inlet side to prevent debris from entering the pump.

5.3 Electrical Connections

This pump operates on 220V DC. Ensure your power supply is compatible. Incorrect wiring can damage the pump and pose a safety hazard.



Figure 2: Side view of the pump, illustrating the motor housing and electrical connection points. The red wire is typically positive (+), and the black wire is negative (-).

1. **Power Disconnection:** Ensure the power source is disconnected before making any electrical connections.
2. **Wire Gauge:** Use appropriate wire gauge for the pump's current draw and cable length to prevent voltage drop.
3. **Polarity:** Connect the positive (+) wire from the power source to the pump's positive terminal (usually red). Connect the negative (-) wire from the power source to the pump's negative terminal (usually black). Reverse polarity will damage the pump.
4. **Fuse/Circuit Breaker:** Install an appropriately sized fuse or circuit breaker in the positive (+) line close to the power source to protect the pump and wiring.
5. **Water Protection:** Ensure all electrical connections are protected from water ingress.

6. OPERATING INSTRUCTIONS

6.1 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 any valves in the discharge line to allow air to escape.
3. Connect the pump to the power source. The pump will begin to run and self-prime.
4. Allow the pump to run until a steady stream of water flows from the discharge. Close any open valves in the discharge line.
5. The built-in pressure switch will automatically shut off the pump once the system pressure reaches 160 PSI.

6.2 Automatic Operation

The SEAFLO 31-Series pump features an integrated pressure switch for automatic on/off operation. When a faucet or valve is opened, the system pressure drops, and the pump will automatically turn on to maintain flow. When the faucet or valve is closed, the pressure builds up, and the pump will shut off.

- **Quiet Operation:** The pump is designed for minimal noise and vibration during operation.
- **Run-Dry Safe:** The pump can safely run without water for short periods without sustaining damage. However, continuous dry running is not recommended and should be avoided.

7. MAINTENANCE

Regular maintenance ensures optimal performance and extends the life of your pump.

- **Inspect Connections:** Periodically check all plumbing and electrical connections for leaks, corrosion, or loose fittings. Tighten as necessary.
- **Clean Inlet Filter:** If an inlet strainer/filter is installed, clean it regularly to prevent clogging and maintain flow.
- **Winterization:** In freezing climates, drain all water from the pump and plumbing system to prevent damage from ice expansion. Disconnect inlet and outlet lines and allow the pump to run briefly to expel any remaining water.
- **General Cleaning:** Keep the exterior of the pump clean and free from dirt and debris.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Pump does not run	No power; Blown fuse/tripped breaker; Incorrect wiring; Motor failure	Check power supply; Replace fuse/reset breaker; Verify wiring polarity; Contact support
Pump runs but no water flows	No water in inlet; Air leak in inlet line; Clogged inlet filter; Pump not primed	Ensure water supply; Check inlet connections; Clean filter; Allow pump to self-prime
Low flow or pressure	Clogged inlet filter; Partially closed valve; Kinked hose; Worn pump head	Clean filter; Open all valves; Straighten hoses; Inspect pump head for wear
Pump cycles on/off rapidly (pulsing)	Small leak in system; Restricted flow on discharge side; Accumulator tank needed (if not present)	Check for leaks; Ensure discharge is open; Consider installing an accumulator tank
Excessive noise or vibration	Loose mounting; Air in system; Debris in pump; Worn bearings	Tighten mounting screws; Bleed air from system; Inspect for debris; Contact support

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official SEAFLO website or contact your authorized dealer. Keep your purchase receipt as proof of purchase for any warranty claims.

