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› [SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V User Manual](#)

## SPX FLOW Cartridge Bilge Pump 500 GPH 12V

# SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V User Manual

Model: Cartridge Bilge Pump 500 GPH 12V | Brand: SPX FLOW

## 1. INTRODUCTION

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This manual provides essential information for the safe and efficient installation, operation, and maintenance of your SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V. Please read these instructions carefully before using the product and retain them for future reference.

The SPX FLOW Johnson 12V cartridge pump incorporates advanced technology, drawing from extensive experience in marine applications. Its design focuses on durability, ease of maintenance, and efficient performance in both fresh and saltwater environments.

The cartridge bilge pumps can be removed for cleaning or replacement without the use of a single tool. Lift the tab on the top, give the cartridge a twist and pull it out; that's all there is to it. The cartridge contains an all-in-one motor/impeller unit with no loose parts.



Figure 1: SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V with fittings.

## Key Features:

- **Original Johnson Pump Quality:** Ensures correct cooling flow, extended lifespan, and excellent self-priming.
- **Durable Design:** Engineered for maximum durability, even with infrequent use, providing consistent pressure and minimal fatigue.
- **Easy Maintenance:** Cartridge design allows for tool-free removal of the motor/impeller unit for cleaning or replacement.
- **Efficient Performance:** Low power consumption for its pumping capacity, suitable for lightly contaminated water with solids up to 1mm.
- **Versatile Connections:** Includes both straight and 90° Dura-Port elbow discharge connections to prevent stress cracking.

## 2. SAFETY INFORMATION

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Always observe the following safety precautions to prevent injury or damage to the pump:

- **Electrical Safety:** Ensure all electrical connections are secure and waterproof. Use the specified fuse (5A) to protect the circuit. Disconnect power before installation or maintenance.
- **Application:** This pump is designed for marine bilge applications. It is **not suitable** for pumping water with high concentrations of oil or diesel. For such applications, a pump with a nitrile impeller is recommended.
- **Temperature Limits:** The operating temperature range is a minimum of +5 °C (41 °F) and a maximum of +60 °C (140 °F). Do not operate outside this range.
- **Water Type:** Suitable for fresh and saltwater.
- **Solids:** The pump can handle small solids up to 1mm in diameter. Larger debris may cause blockages or damage.

## 3. SETUP AND INSTALLATION

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### 3.1 Mounting the Pump

Position the pump in the lowest part of the bilge where water collects. Ensure the pump is securely mounted to a stable surface using appropriate fasteners (not included). The pump is submersible, but proper placement helps maximize efficiency.

### 3.2 Electrical Connection

Connect the pump to a 12V DC power source. Follow the wiring diagram carefully. It is crucial to install an inline fuse (5A) on the positive wire to protect the pump and electrical system.



Figure 2: Fused Direct Installation Wiring Diagram.

- **Positive (+) Connection:** Connect the brown wire (BRN) to the positive terminal of your 12V DC battery, via a 5A fuse.
- **Negative (-) Connection:** Connect the black wire (BLK) to the negative terminal of your 12V DC battery.
- Ensure all connections are watertight and corrosion-resistant.
- An optional automatic or manual switch (not included) can be integrated into the positive line for control.

### 3.3 Hose Connection

The pump is supplied with both a straight Dura-Port and a 90° Dura-Port elbow fitting. Choose the fitting that best suits your installation requirements. The connection size is  $\frac{3}{4}$ " (19mm).

- Attach the appropriate Dura-Port fitting to the pump's discharge outlet.
- Connect a marine-grade hose of the correct diameter (3/4" / 19mm) to the Dura-Port fitting.
- Secure the hose with a marine-grade hose clamp. Avoid overtightening to prevent stress cracking on the Dura-Port.
- Route the discharge hose upwards to a through-hull fitting, ensuring a continuous slope to prevent water from flowing back into the bilge.

## 4. OPERATING INSTRUCTIONS

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The SPX FLOW Johnson Cartridge Bilge Pump is designed for straightforward operation. Once properly installed and connected to a 12V DC power source, the pump will activate when power is supplied.

- **Manual Operation:** If connected to a manual switch, activate the switch to turn the pump on and off as needed.
- **Automatic Operation:** If an automatic float switch (not included) is installed, the pump will automatically turn on when water levels rise and turn off when the water is cleared.
- The pump is self-priming and will begin pumping water immediately upon activation, provided it is submerged.
- Monitor the discharge to ensure water is being expelled effectively and that there are no blockages.

## 5. MAINTENANCE

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Regular maintenance ensures the longevity and reliable performance of your bilge pump. The cartridge design simplifies cleaning and replacement.

### 5.1 Cleaning and Cartridge Replacement

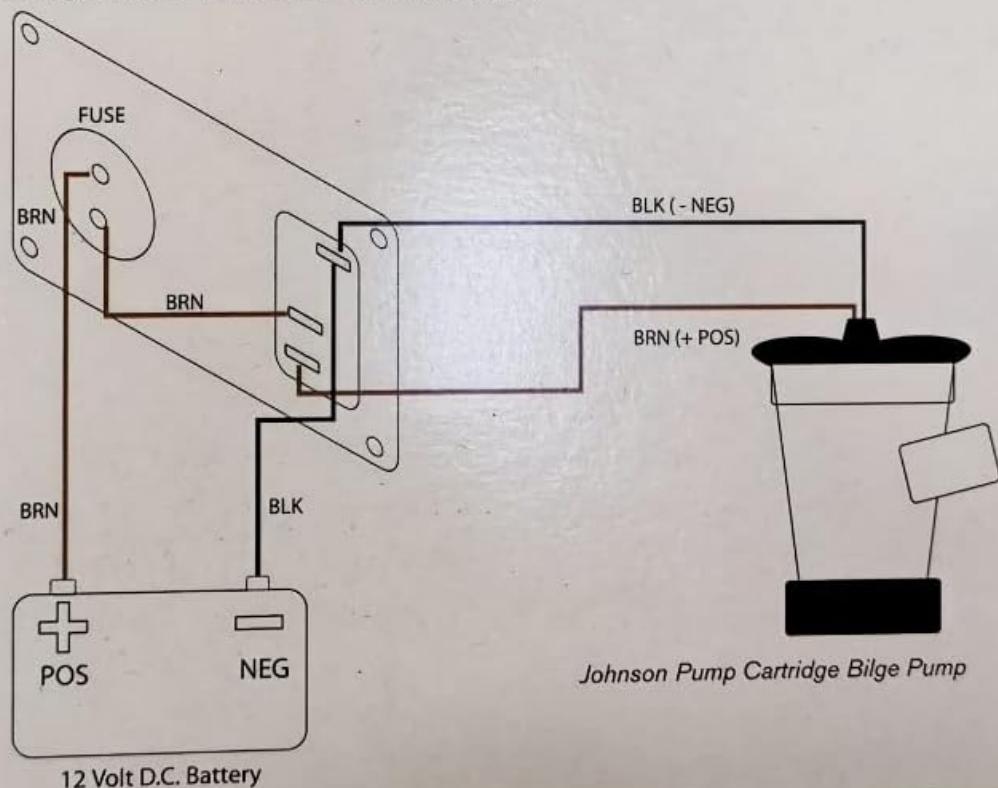
The motor/impeller cartridge can be removed without tools for cleaning or replacement. This allows you to service the pump without disconnecting the housing from the boat's plumbing.

## Cartridge Bilge Pump

Multi-language detailed installation manual included in this box.

### Wiring Diagram

*Configuration: Fused Direct Installation*



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Figure 3: Cartridge removal for cleaning or replacement.

1. **Disconnect Power:** Always disconnect the pump from its power source before performing any maintenance.
2. **Remove Cartridge:** Lift the tab on the top of the pump head, give the cartridge a slight twist, and pull it upwards to remove the all-in-one motor/impeller unit.
3. **Clean:** Inspect the impeller and pump housing for any debris, marine growth, or blockages. Clean thoroughly with fresh water.
4. **Replace:** If the motor or impeller is damaged, replace the entire cartridge unit.
5. **Reassemble:** Insert the cleaned or new cartridge back into the pump housing, align the tab, and twist to secure it in place.
6. **Reconnect Power:** Reconnect the pump to its power source and test its operation.

Regularly check the discharge hose for kinks or blockages and ensure hose clamps are secure.

## 6. TROUBLESHOOTING

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If your SPX FLOW Johnson Bilge Pump is not operating correctly, refer to the following common issues and solutions:

Problem	Possible Cause	Solution
Pump does not run	<ul style="list-style-type: none"><li>• No power supply</li><li>• Blown fuse</li><li>• Loose electrical connections</li><li>• Motor failure</li></ul>	<ul style="list-style-type: none"><li>• Check battery voltage</li><li>• Inspect and replace fuse (5A)</li><li>• Secure all wiring connections</li><li>• Replace cartridge unit</li></ul>
Pump runs but no water is discharged	<ul style="list-style-type: none"><li>• Blocked intake or discharge hose</li><li>• Air lock</li><li>• Damaged impeller</li><li>• Pump not fully submerged</li></ul>	<ul style="list-style-type: none"><li>• Disconnect power, remove cartridge, clear blockages</li><li>• Ensure pump is fully submerged</li><li>• Replace cartridge unit</li><li>• Verify pump placement in bilge</li></ul>
Pump runs continuously (with automatic switch)	<ul style="list-style-type: none"><li>• Float switch stuck in 'on' position</li><li>• Leak in bilge</li></ul>	<ul style="list-style-type: none"><li>• Inspect and clean float switch</li><li>• Identify and repair bilge leak</li></ul>

If the problem persists after attempting these solutions, contact customer support.

## 7. SPECIFICATIONS

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Detailed technical specifications for the SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V:

Cartrige Bilge Pumps							
TECHNICAL SPECIFICATIONS							
US PART NO.	EU/AUS PART NO.	DESCRIPTION	CAPACITY 3 FT (0.9 M) HEAD (13.6V/27.2V)	CAPACITY STRAIGHT (13.6V/27.2V)	AMP	FUSE SIZE	HOSE CONN.
32503	32-1450-01	Cartridge Bilge Pump 500 GPH 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32703	32-1550-01	Cartridge Bilge Pump 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32903	32-1650-01	Cartridge Bilge Pump 1000 GPH 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
42123*	32-1750-01	Cartridge Bilge Pump 1250 GPH 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1 1/8"
33703	32-33703LB-01	Low Boy Bilge Pump 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"

\* Does not include Dura-port connection

PUMP SIZE	HEIGHT	LENGTH	WIDTH	WEIGHT
500 – 1000 GPH	4.41" (112 mm)	3.46" (88 mm)	3.15" (80 mm)	9.6 oz (0.27 kg)
1250 GPH	4.41" (112 mm)	3.46" (88 mm)	3.15" (80 mm)	10.4 oz (0.32 kg)
750 GPH Low Boy	2.82" (72 mm)	5.75" (146 mm)	3.20" (81 mm)	9.6 oz (0.27 kg)



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Figure 4: Technical Specifications from Product Packaging.

Attribute	Value
Manufacturer	SPX Flow Technology Sweden AB
Part Number	32-1450-01
Model Number	Cartridge Bilge Pump 500 GPH 12V
Dimensions (L x W x H)	11.2 x 8.8 x 8 cm (4.41 x 3.46 x 3.15 inches)
Weight	0.27 kg (9.6 oz)
Power Source	12 Volt DC (VDC)
Current Draw	2.5 A
Fuse Size	5A

Attribute	Value
Flow Rate (Straight)	40 Liters Per Minute (630 GPH)
Flow Rate (0.9m Head)	33 Liters Per Minute (525 GPH)
Max Lift Height	3 Meters
Hose Connection Size	¾" (19mm)
Material (Housing)	Thermoplast
Material (Motor Shaft)	Stainless Steel
Operating Temperature	+5 °C (41 °F) to +60 °C (140 °F)
Included Components	Straight Dura-Port, 90° Dura-Port elbow

## 8. WARRANTY INFORMATION

The SPX FLOW Johnson Cartridge Bilge Pump 500 GPH 12V comes with a **3-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

The warranty does not cover damage caused by improper installation, misuse, neglect, unauthorized modifications, or operation outside the specified conditions (e.g., pumping oil/diesel, exceeding temperature limits).

## 9. CUSTOMER SUPPORT

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact your authorized SPX FLOW dealer or visit the official SPX FLOW website for support resources.

When contacting support, please have your product model number (Cartridge Bilge Pump 500 GPH 12V) and part number (32-1450-01) available.