

Attwood S500 (4505-7)

Attwood Sahara S500 Automatic Bilge Pump (Model 4505-7) Instruction Manual

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Attwood Sahara S500 Automatic Bilge Pump, Model 4505-7. Designed for marine environments, this pump reliably removes bilge water from vessels, ensuring safety and performance. Please read these instructions thoroughly before installation and use.



Figure 1: Attwood Sahara S500 Automatic Bilge Pump

The Sahara S500 is a compact and durable unit that includes the pump, wire seals, strainer, and a mercury-free automatic switch. It is rated for 500 GPH (gallons per hour) performance at open flow (at 13.6 volts DC) and operates on a 12-volt system with a 1.5-amp draw.

2. SAFETY INFORMATION

Adhering to these safety guidelines is crucial for preventing injury and damage to your vessel.

- Always disconnect power to the pump before performing any installation, inspection, or maintenance.
- Ensure all electrical connections are properly sealed and insulated to prevent corrosion and short circuits in the marine environment.
- Verify that the power supply matches the pump's voltage requirements (12V DC).
- Do not operate the pump dry for extended periods, as this can cause overheating and damage.

- Install the pump in an accessible location for ease of inspection and servicing.
- Use the recommended fuse size (3 AMP) for circuit protection.

3. PRODUCT OVERVIEW

The Attwood Sahara S500 is an automatic bilge pump designed for reliable water removal. Its integrated float switch activates the pump when water levels rise, and deactivates it once the water is cleared. This model is suitable for boats of any size and meets automatic switch pump requirements for vessels 20 feet and over with sleeping accommodations.



Figure 2: Side view of the pump

Key components include:

- **Pump Body:** Houses the motor and impeller.
- **Integrated Float Switch:** Automatically activates and deactivates the pump based on water level.
- **Strainer Base:** Prevents large debris from entering the pump.
- **Discharge Port:** Connects to the bilge hose.
- **Wiring:** Pre-wired with 29-inch, 16-gauge caulked and tinned copper wire.
- **Test Knob:** Allows for manual testing of the automatic switch function.

4. SETUP AND INSTALLATION

Proper installation is critical for the pump's performance and longevity. The Sahara S500 is designed for quick and easy installation in tight spaces.

4.1 Mounting

- The pump **must be mounted horizontally only**. Ensure the mounting surface is flat and secure.
- Position the pump in the lowest part of the bilge where water collects.
- Secure the pump using appropriate marine-grade fasteners through the mounting holes in the base.

4.2 Hose Connection

- Connect a ¾-inch interior diameter bilge hose to the pump's discharge port.
- Secure the hose connection with a marine-grade hose clamp to prevent leaks.
- Route the hose upwards to a thru-hull fitting above the waterline, ensuring a continuous upward slope to prevent backflow.



Figure 3: Discharge port for hose connection

4.3 Electrical Wiring

The pump comes with pre-attached wiring. Follow these steps for electrical connection:

1. Connect the **brown wire** to a 12V DC positive (+) power source, preferably through a dedicated bilge pump switch panel that includes a fuse.
2. Connect the **black wire** to a 12V DC negative (-) ground.
3. Install a **3 AMP fuse** in the positive (+) line to protect the circuit.
4. Ensure all connections are waterproofed using marine-grade heat shrink connectors or similar methods.



Figure 4: Electrical wiring connections

For a visual guide on the product, please refer to the demonstration video below:

Your browser does not support the video tag.

Video 1: Product Demonstration Video. This video provides a general overview and demonstration of the Attwood Sahara Bilge Pump.

5. OPERATING INSTRUCTIONS

The Attwood Sahara S500 operates automatically via its integrated float switch. No manual intervention is typically required for standard operation.

5.1 Automatic Operation

Once properly installed and wired, the pump will automatically activate when the water level in the bilge rises sufficiently to lift the internal float switch. It will continue to pump water until the level drops, at which point the float switch will deactivate the pump.

5.2 Manual Test Function

To verify the functionality of the automatic switch, the pump is equipped with a 'Turn to Test' knob.

1. Ensure power is supplied to the pump.
2. Locate the 'Turn to Test' knob on the side of the pump.
3. Rotate the knob in the direction indicated (usually an arrow) to manually lift the float switch.
4. The pump should activate and run.
5. Release the knob; the pump should turn off after a short delay as the float switch returns to its resting position.



Figure 5: 'Turn to Test' knob

6. MAINTENANCE

Regular maintenance ensures the reliable operation and extends the lifespan of your bilge pump.

- **Inspect Strainer:** Periodically check the strainer base for debris such as leaves, hair, or other foreign objects that could clog the pump or impeller. Clean as necessary.

- **Check Electrical Connections:** Ensure all wiring connections remain tight, corrosion-free, and waterproof.
- **Test Operation:** Regularly use the 'Turn to Test' knob to confirm the automatic switch is functioning correctly.
- **Clean Bilge Area:** Keep the bilge area clean to minimize the amount of debris and sludge that can enter the pump.
- **Inspect Hose:** Check the discharge hose for kinks, cracks, or blockages.

7. TROUBLESHOOTING

If your Attwood Sahara S500 Bilge Pump is not operating as expected, consult the following troubleshooting guide:

Problem	Possible Cause	Solution
Pump does not run	No power to pump Blown fuse Faulty wiring connection Stuck float switch	Check battery and power supply Replace fuse (3 AMP) Inspect and secure all electrical connections Clear any obstruction around the float switch
Pump runs but does not pump water	Clogged strainer or impeller Airlock in pump or hose Kinked or blocked discharge hose Damaged impeller	Clean strainer and impeller Briefly lift and lower pump to release air; check hose routing Inspect and clear hose Inspect impeller for damage; replace pump if necessary
Pump runs continuously	Float switch stuck in 'on' position Wiring error	Inspect float switch for obstructions; clean if necessary Verify wiring connections are correct

8. SPECIFICATIONS

Detailed technical specifications for the Attwood Sahara S500 Automatic Bilge Pump (Model 4505-7).



Figure 6: Product Dimensions

Feature	Specification
Brand	Attwood
Model Number	4505-7
Style	S500
Voltage	12V DC (13.6 volts operating)
Amperage Draw	1.5 amps
Flow Rate (Open Flow)	500 GPH (8.33 gpm)
Product Dimensions (L x W x H)	7.37" x 7.75" x 8.12"

Feature	Specification
Item Weight	12.8 ounces
Material	Plastic
Wire Length	29 inches
Wire Gauge	16-gauge (caulked and tinned copper)
Hose Diameter (Interior)	¾ inch
Fuse Requirement	3 AMP (Ignition Protected)

9. WARRANTY AND SUPPORT

The Attwood Sahara S500 Automatic Bilge Pump typically comes with a 3-year warranty. For specific warranty details, claims, or technical support, please contact Attwood customer service directly. Keep your proof of purchase for warranty purposes.

For additional information or to explore other Attwood marine products, visit the official Attwood website or authorized dealers.

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