ELECTROSEA®
EXPERTS IN MARINE GROWTH PREVENTION SYSTEMS®

SeaStrong Troubleshooting

Use this guide to diagnose and resolve issues with SeaStrong® seawater pumps.

Before performing any troubleshooting, read and follow all safety precautions in the SeaStrong product manuals. Manuals for all models are available on the ElectroSea website: www.electrosea.com/support

WARNING: Failure to close all seacock valves can result in sinking the vessel and severe injury.

WARNING: Always disconnect all electrical connections to the pump before beginning any work on it.

WARNING: Never start or run the pump dry. Always prime the pump before starting.

Step 1: Identify the Issue

Potential issues include unusual noise, breaker tripping, and water leaks.

*Note: All pump issues will be related to the **pump head (wet end), the motor, or the vessel**.*

Step 2: Troubleshoot

A. Noise Complaint

Determine if the sound is coming from the pump head (wet end) or the motor.

Noise from the pump head

1. If unusual noise is coming from the pump head (wet end), remove the impeller cover and inspect the wet end.
2. If any damage is found to the impeller cover or barrier, replace the wet end. Motor damage is also likely.

Inspect the impeller assembly for melted plastic, worn bushings, impeller damage, etc.

3. If there is no visible damage to the housing, inspect the impeller assembly for melted plastic, worn bushings, impeller damage, etc. If the impeller assembly is damaged, replace it using an impeller kit. If only the bushings are worn and the rest of the impeller assembly is in good condition, a wear kit can be used.
4. Ensure the impeller assembly sits on the ceramic pin tightly, with no play or movement. If movement/rocking is found, replace the bushing using a wear kit.

Noise from the motor

The presence of rust indicates a wet-end breach.

1. If unusual noise is coming from the motor, check that the fan shroud is not rubbing against the motor fan. If the shroud is rubbing against the fan, correct the issue or replace the fan shroud.
2. Check for vibration caused by the pump mounting by gently pressing on the motor to see if the noise changes. If the sound seems to be caused by the mounting, look for isolation mounts to add dampening between the motor and the mounting surface.
3. Check for leaks between the pump head and the motor. A leak indicates a wet-end breach. Replace the wet end; however, motor damage is likely, and full pump replacement may be required.

B. Breaker Tripping/Motor INOP

A tripped breaker may be caused by the pump head (wet end) or the motor.

1. Confirm that nothing is blocking the motor fan. Use a small tool that will fit between the fan grates to make sure the fan is free.
2. Remove the fan cover (if possible) and spin the motor fan by hand.
    a. If the fan spins freely, the wet end is clear, and the motor is not seized. The issue may be with the vessel's power supply, or it could be an internal motor failure.
        i. Confirm the breaker used to power the motor is sized correctly: Disconnect the AC power wires at the motor and check that proper voltage is being supplied and that the breaker does not trip when the wires are disconnected. If issues are found with power supply from vessel, correct.
        ii. Verify that the power supplied correlates with the motors' internal wiring.
        iii. If the power supply is verified and the fan spins freely, a new motor may be needed.
    b. If the fan does not spin, remove the impeller cover.
        i. Check for debris inside the impeller housing.
        ii. Confirm the impeller spins freely by hand with only slight magnetic resistance. If the impeller does not spin correctly, refer to Section A of this document to troubleshoot the pump head.
        iii. If the impellor spins freely and motor fan does not, the motor needs to be replaced.
3. Remove the capacitor cover and inspect for any visible signs of melting or damage.
    a. If damage is found, the capacitor needs to be replaced.

b. The capacitor may also be tested with a multimeter to confirm proper capacitance. Consult a qualified marine electrician before testing or replacement.

C. Water Leak

1. Although rare, water leaks can occur in the pump head (wet end).
2. Inspect the inlet and outlet fittings to ensure they are fitted properly and the leak is not coming from the fitting.
3. Check the pump head for cracks.
4. If the leak is between the pump head and motor, it is likely a wet-end breach. Replace the pump head. The motor may also need to be replaced.
    a. Remove the pump column from the motor and inspect for water damage. If water damage has occurred to the coupler magnet or the motor face, replace the motor.

Step 3: Order Parts

1. Verify warranty status. Refer to ElectroSea's Warranty Policy or contact ElectroSea with the pump's serial number.
2. Contact ElectroSea to order the correct replacement part:
    a. Wear Kit
    b. Impeller Kit
    c. Wet End Kit
    d. Motor Kit
    e. Full Pump Replacement
3. Only order replacement parts confirmed by troubleshooting. Extra/unnecessary parts are subject to invoicing.
4. For replacements covered by warranty, confirm whether defective part return is required.

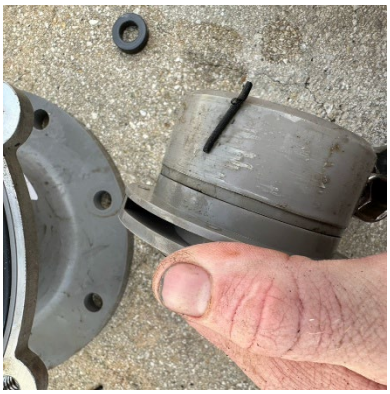
Note: For the part list and spare parts guide, refer to pages 30–31 of the SeaStrong Silver Bullet RDP Installation and Operation Manual.

Note: Refer to the SeaStrong Silver Bullet RDP manual for replacement instructions by component — wear kit (pages 21–23), impeller (page 24), wet end (pages 25–26), and motor (page 27).

Step 4: Return Defective Parts

If a warranty return is required, a return label will be included in the replacement packaging. Failure to return required items will result in invoicing.

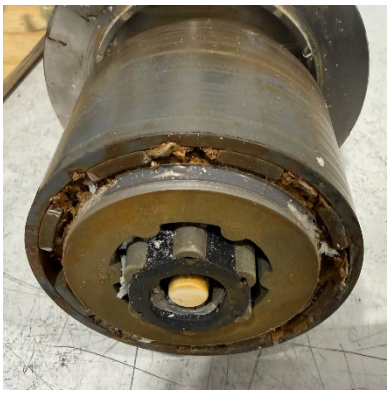
Example Images



Impeller magnet damage due to bushing failure

Impeller magnet damage due to bushing failure

Barrier damaged and melting



Motor damage due to running dry

Wet end water intrusion

Pump face damage due to running dry

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ElectroSea's products are designed, assembled and quality-control tested at our headquarters in Minneapolis, Minnesota, USA.

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