SUBMERSIBLE PUMP TROUBLESHOOTING
Inspection and Quick Testing Guide

Multiquip submersible pumps are known for their reliability and performance. This guide addresses common issues that, in many instances, can be corrected without requiring a service center visit or returning equipment to the dealer.

This document applies to submersible pumps equipped with 115V, single-phase motors, including models.

- PX400
- ST1 / ST1F
- SS233
- ST2037 / ST2037F
- ST2038P
- ST2010TCUL
- ST2040T / ST2040TF
- ST2047
- YELLSUB

Pictured is ST1F

Is your pump motor shutting down unexpectedly?
MQ Submersibles are equipped with internal thermal overload devices that monitor operating temperature and shut down the pump when internal heat exceeds motor specifications.

Static Pump Inspection

Follow this procedure to inspect the pump with the **motor *disconnected* from electrical power**.

- **Inspect pump housing for visible signs of damage.**
  Are there cracks or dents in the housing? Severe impacts can damage the housing and prevent the impeller from rotating.

- **Conduct a smell test** – do you detect any signs of burnt wiring or overheating?

- **Inspect the pump power cord for:**
  - Damage to the molded plug, damaged or missing prongs
  - Nicks or cuts in the insulation, exposed wiring
  - Stretching in the cable, indicating possible breakage of internal wiring

- **Inspect your extension cords -** Inspect extensions cords (if applicable) as noted previously. Also, make sure you are using the correct gauge extension cord for the application.

Operational Pump Inspection

Follow this procedure to conduct a pump inspection with the **motor *connected* to electrical power**. A model ST1F is shown in the example, your pump model may differ in appearance.

IMPORTANT! Ensure pump is connected to a 115V GFCI protected electrical circuit before conducting this inspection.

- **Does the pump motor turn normally or make any sounds?**
  If the motor is not turning normally, wiggle or move the power cord around. If the motor comes on at any time it could be there is a break inside the power cord and it needs to be replaced.

- **Does the pump motor make a "hum" noise and not turn the motor shaft (impeller)?**
  If so, there could be debris wedged between the impeller and the volute.
  You can inspect the pump opening with a flashlight or by shaking the pump and listening for debris.

CAUTION! Before clearing any debris you must unplug the pump from the power source. Do not disassemble the pump or place your fingers inside the pump while connected to power. Severe injury may result!

Clear the jam by removing the suction cover of the pump to access the impeller. This procedure may take up to 5 minutes and requires the use of a small Philips head screwdriver or 10mm wrench.

Pictured is ST1F

Strainer/wear plate Removal

Exposed Impeller for inspection

- **Does the pump pass the smell test?**
  If the motor smells hot it could indicate damaged wiring and the motor may have internal damage.

- **Does the pump use a float system for starting and stopping the pump?**
  If so, raise and lower the float. The motor should turn on when raised and turn off when lowered. Note: Accessory float switches sold by Multiquip are designed exclusively for "Pump-Down" applications. Some aftermarket switches are designed for "Pump-Up" applications. Check with your float switch supplier to ensure you have the right device for your application.