REPORTED PROBLEM:

The pump does not run.

SYSTEM VOLTAGE:

- 240V

PROBABLE CAUSES:

- Faulty pump.
- The system pack's circuit board may have a blown fuse (F2).
- Faulty circuit board in the system pack.

TROUBLE SHOOTING STRATEGY:

- Verify voltage at the system pack's terminal block.
- Verify voltage at the GFCI (Ground Fault Circuit Interrupter).
- Verify the fuse (F2) is good on the system pack's circuit board.
- Verify the pump is connected properly to the system pack's circuit board at J23.
- Put the system in Priming Mode, and verify voltage at the pump connector (J23) on the system pack's circuit board. The system is in Priming Mode when the topside panel displays "Pr."

IMPORTANT TROUBLESHOOTING CONCEPTS:

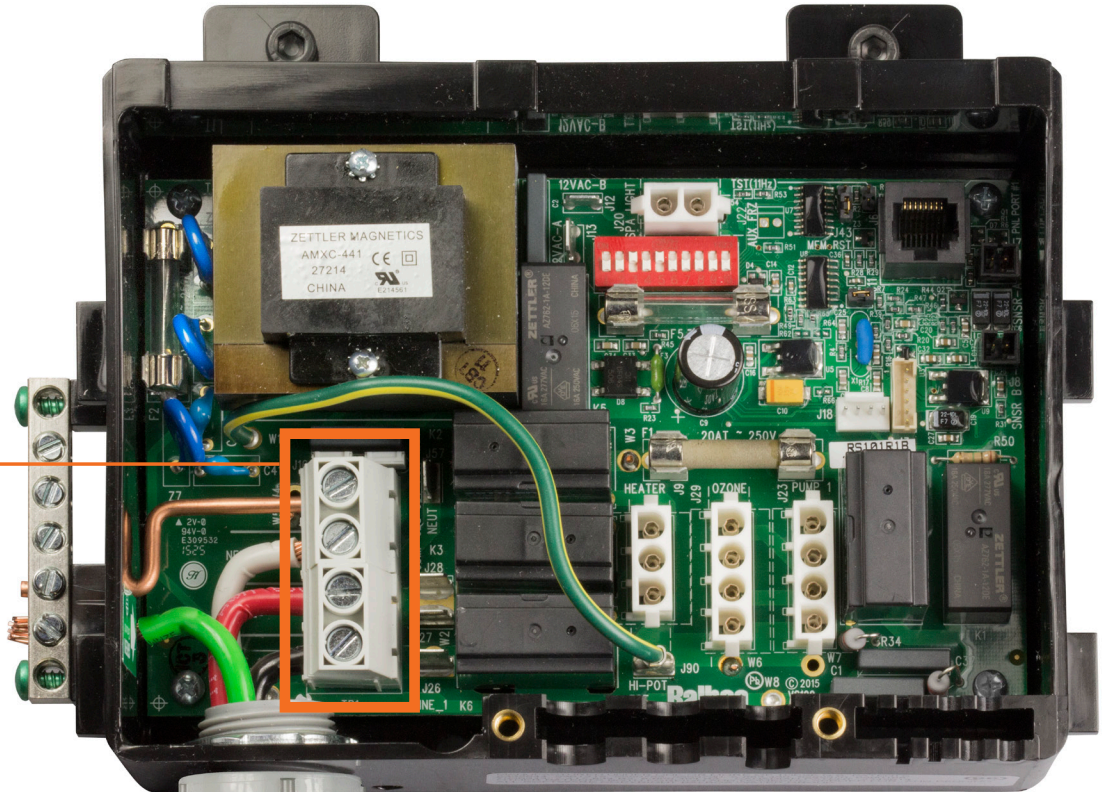
- Troubleshoot the pump while the system is in Priming Mode. Priming Mode lasts approximately 4-6 minutes. Why does the system need to be in Priming Mode? The spa technician knows how the system behaves while in Priming Mode, making troubleshooting easier.
- Set the volt meter to AC voltage before measuring voltage. "AC" stands for alternating current.
- Voltage measurements that vary plus or minus 10% are accurate. For example, if a 240V component is measured between 216V - 264V, the reading is accurate.

STEP 1

Use a voltmeter to verify voltage at the terminal block.

Set the volt meter to AC voltage. “AC” stands for alternating current.

Terminal Block



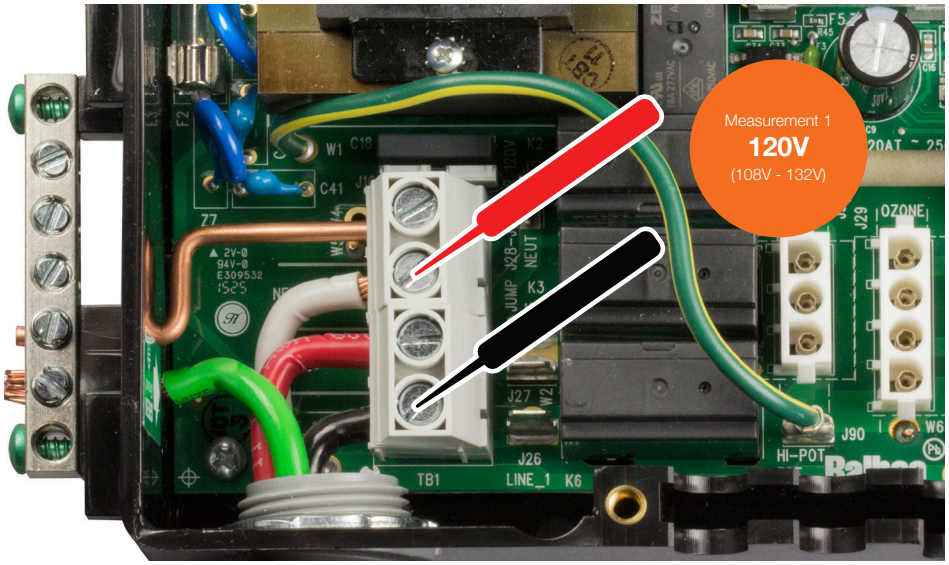
STEP 1

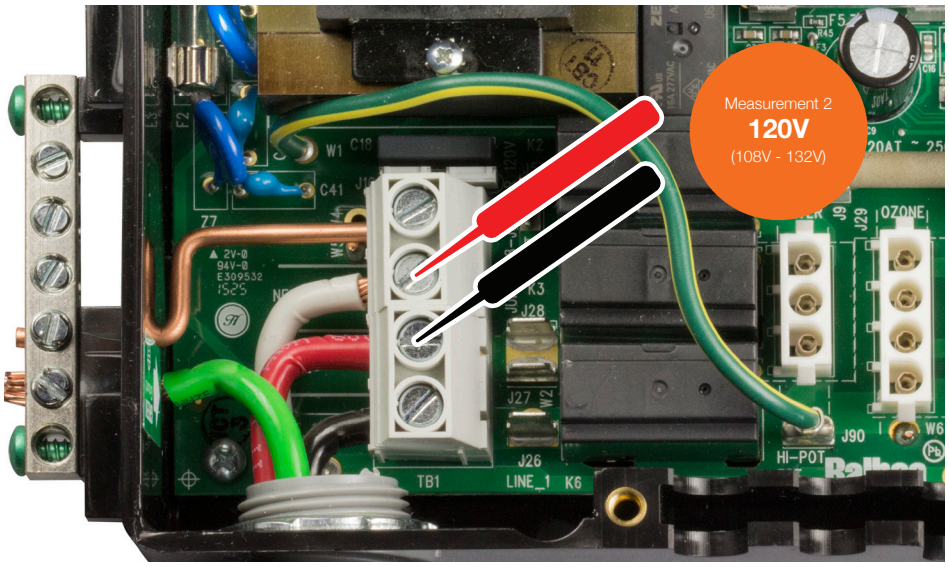
Voltage measurements that vary plus or minus 10% are accurate. For example, if a 240V component is measured between 216V - 264V, the reading is accurate.

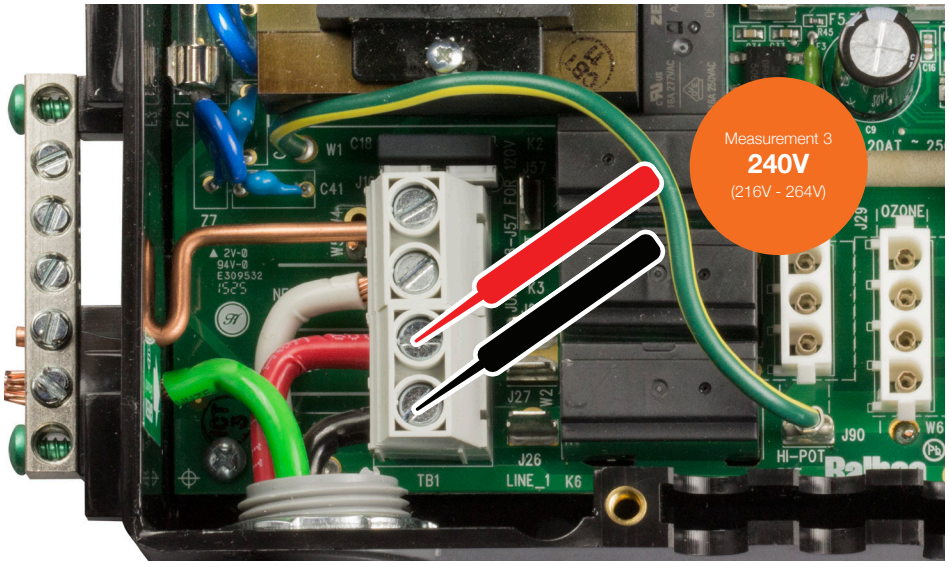
Measurements 1 and 2 should be 120V, and measurement 3 should be 240V.

If measurements 1-3 are accurate, go to step 2.

If measurements 1-3 are inaccurate, there may be problems with the GFCI or electrical service. Go to step 3.

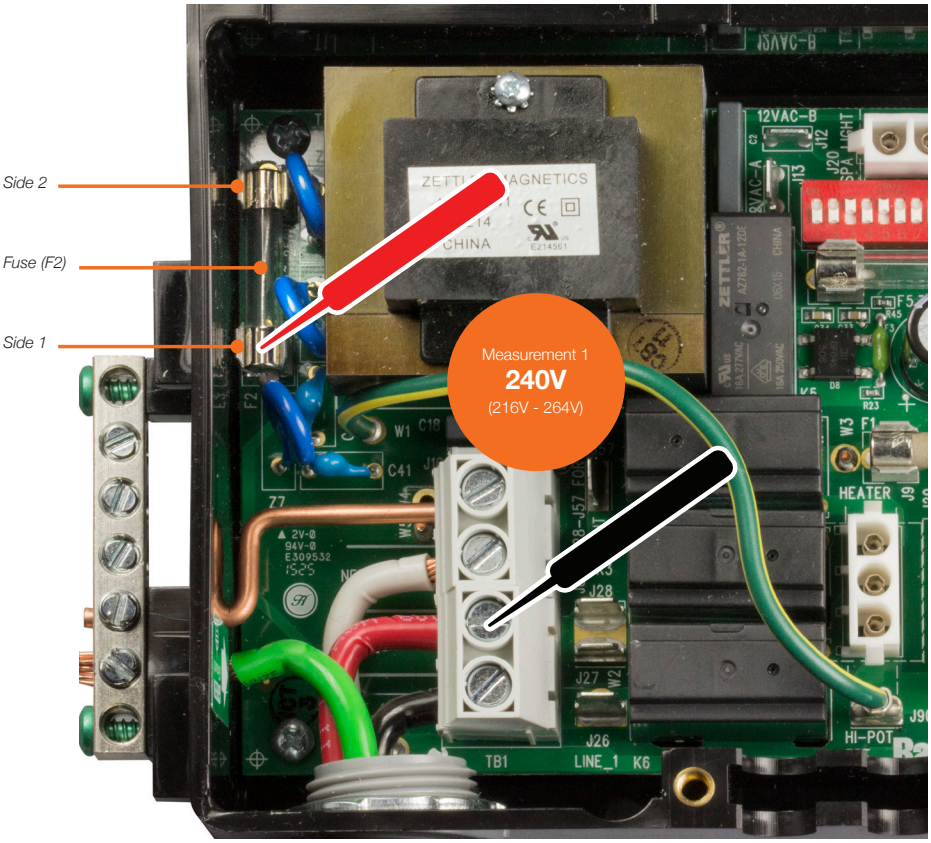




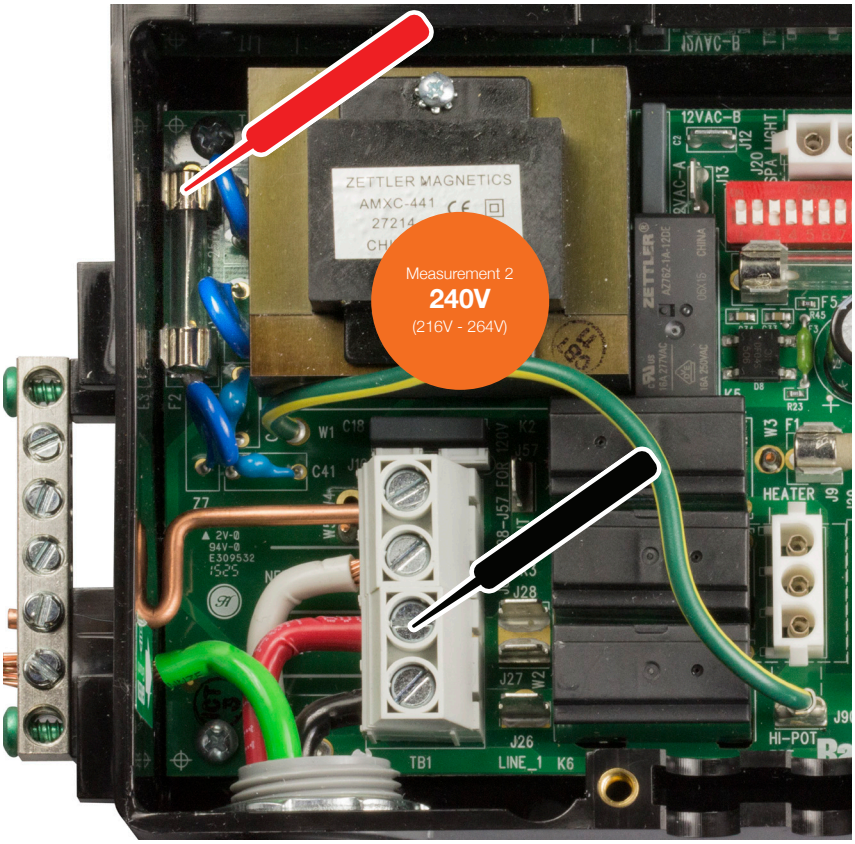


STEP 2

Verify fuse F2 is good by measuring voltage between the terminal block and the fuse. Set the volt meter to AC voltage. Measure voltage on both sides of the fuse. Fuse F2 protects the pump and ozone generator.



Measurement 1
This determines if voltage is flowing from the terminal block to the fuse.



Measurement 2
This determines if the fuse is good.

If measurement 2 is approximately zero volts, the fuse is bad. Replace it.

If measurement 2 is 240V, replace the system pack.

STEP 3

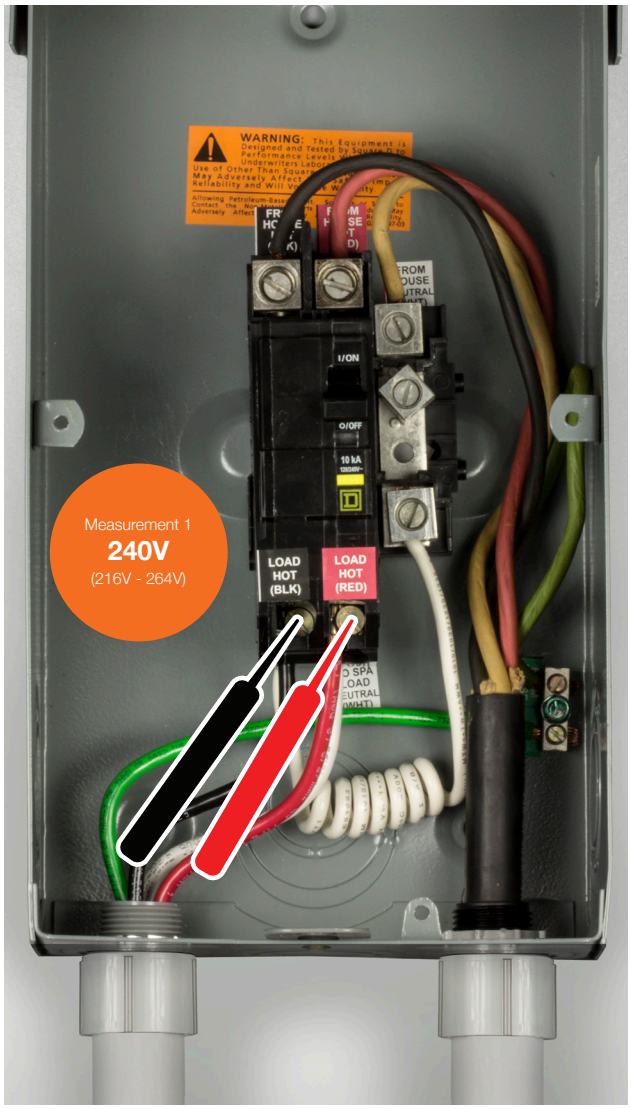
Verify voltage at the GFCI.

Measurement 1 is 240V.
LOAD HOT (BLK) to LOAD HOT (RED).

Measurement 2 is 120V.
LOAD HOT (RED) to LOAD NEUTRAL (WHT).

A - Remove faceplate from GFCI enclosure.

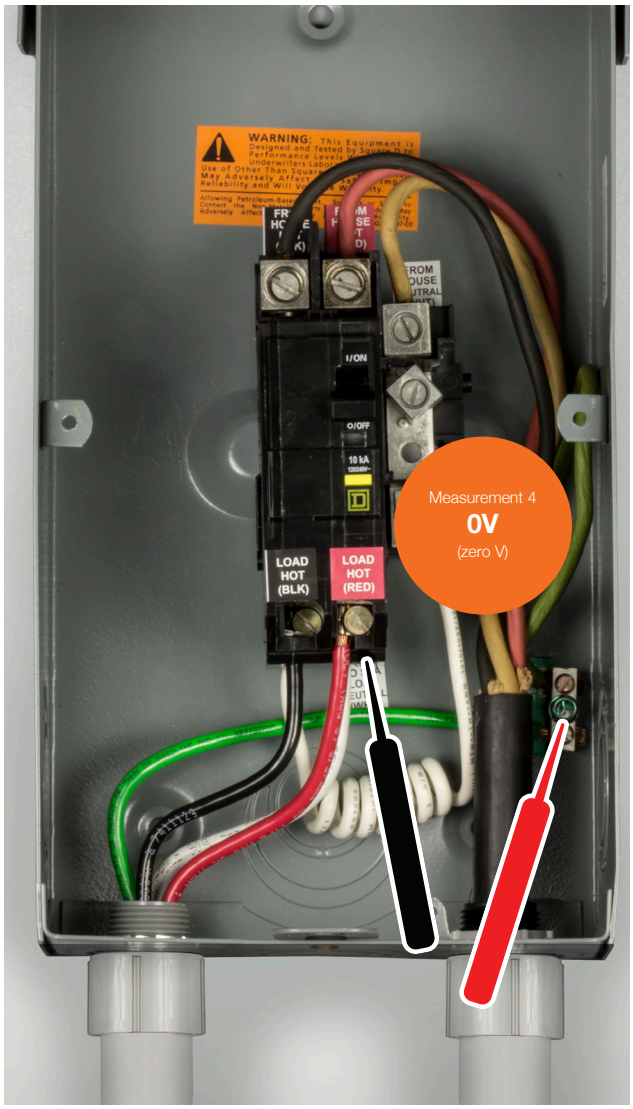
Faceplate removed.



STEP 3

Measurement 3 is 120V.
LOAD HOT (BLK) to LOAD NEUTRAL (WHT).

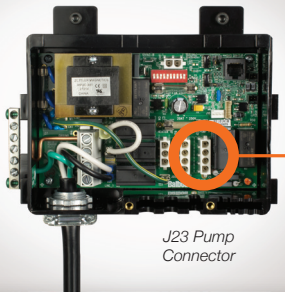
Measurement 4 is 0V.
LOAD NEUTRAL (WHT) to GROUND (GREEN).



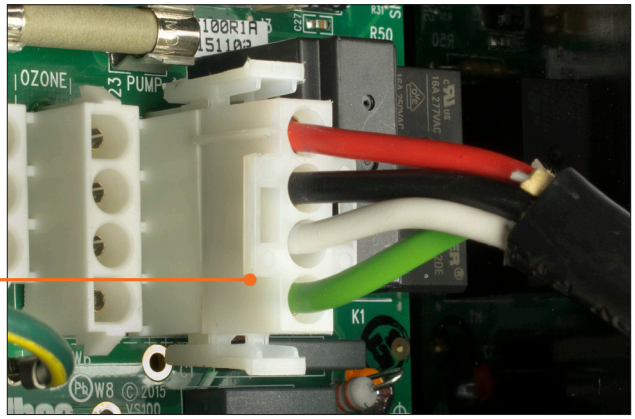
If measurements 1 - 4 are inaccurate, the service voltage is faulty. Call an electrician. If the measurements are accurate, go to step 4.

STEP 4

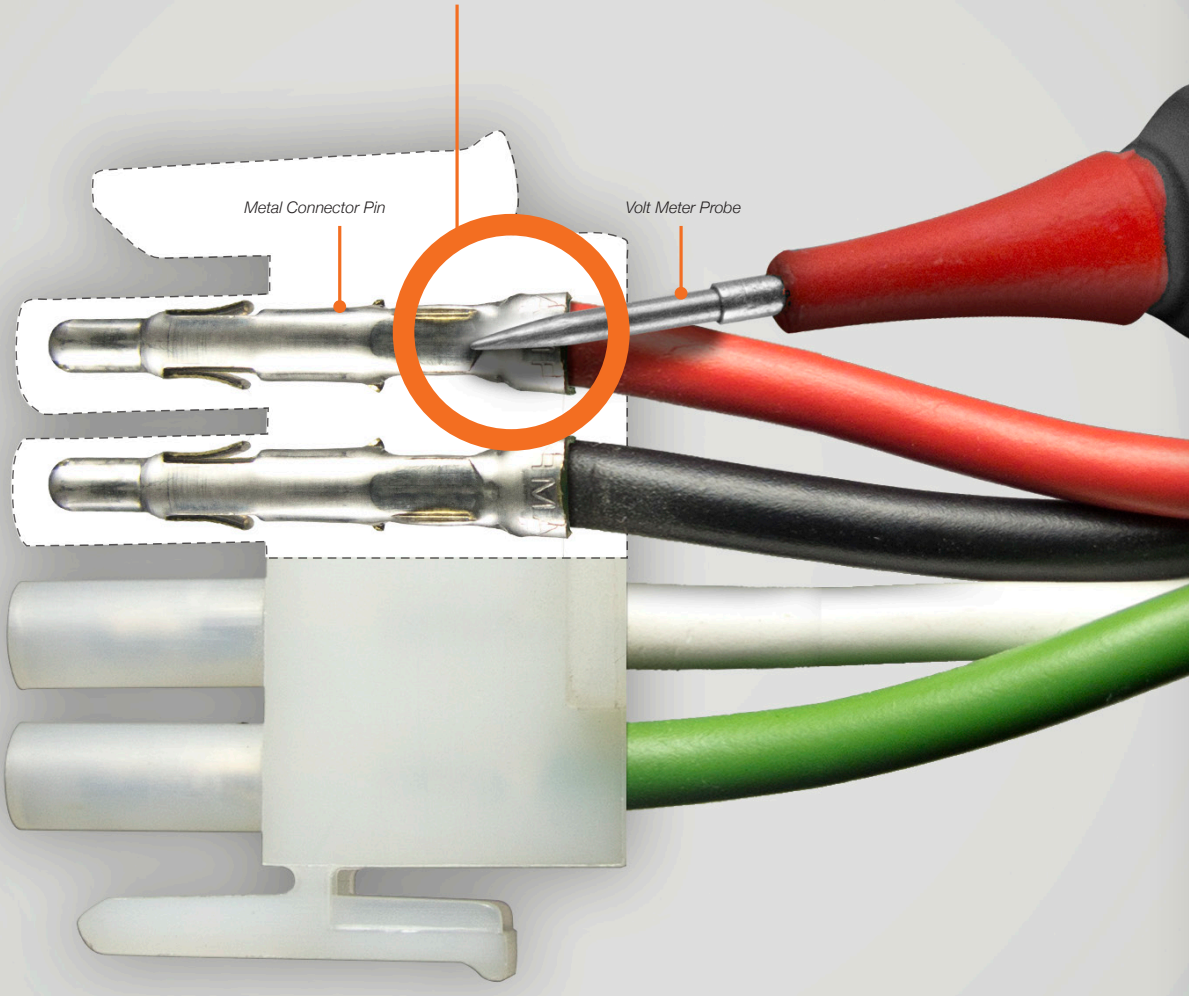
Verify voltage at the J23 pump connector on the system pack's circuit board.



J23 Pump Connector



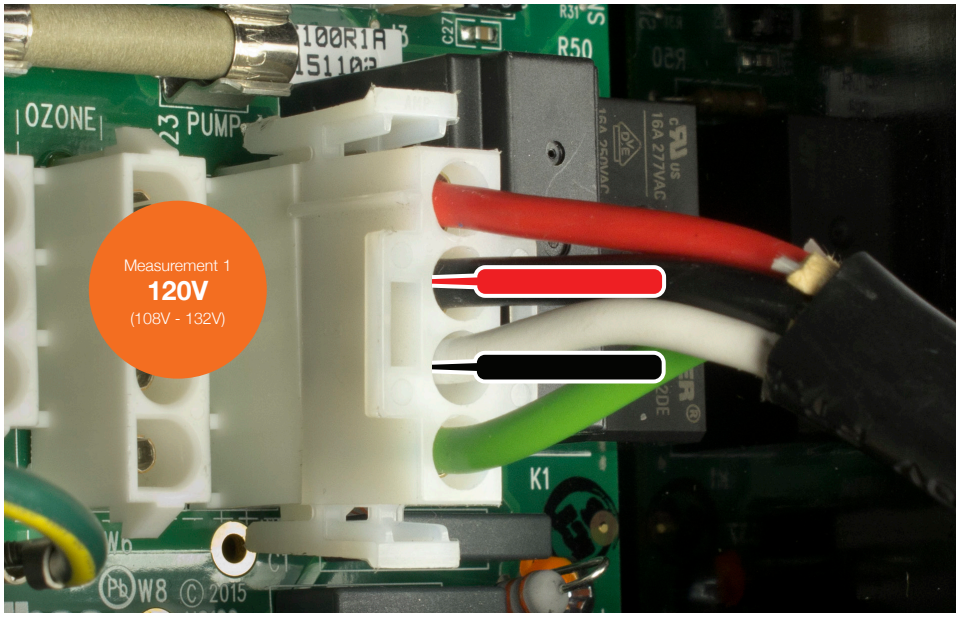
Make sure the volt meter probe contacts the metal connector pin when measuring voltage.



STEP 4

A - Put the system into Priming Mode. This is done by powering OFF the system and then powering ON the system again at the GFCI. Priming Mode lasts approximately 4-6 minutes. “Pr” appears on the topside display when the system is in Priming Mode.

B - While the system is in Priming Mode, turn on the low speed pump by pressing the pump button on the topside panel. When the low speed pump is ON, measure voltage between the black and white wires on the J23 pump connector. If the voltage measurement is 120V, the pump is bad. Replace the pump.



C - While the system is in Priming Mode, turn on the high speed pump by pressing the pump button on the topside panel. When the high speed pump is ON, measure the voltage between the red and white wires on the J23 pump connector. If the voltage measurement is 120V, the pump is bad. Replace the pump.