

# RINNAI

## LOCKOUT CHECK LIST

### REU-2402-FFU Series Water Heaters

**1. Check inlet gas pressure:**

\_\_\_ The inlet gas pressure for the Rinnai REU-2402 residential unit should be 10” to 13.5” of water column on the propane gas models.

\_\_\_ The inlet gas pressure for the REU-2402 residential unit should be 6” to 10” of water column on the natural gas models.

**2. Check manifold gas pressure on forced low fire.**

\_\_\_ The forced low fire manifold gas pressure for the Rinnai REU-2402 residential unit should be 0.43” of water column on the propane gas models.

\_\_\_ The forced low fire gas pressure for the REU-2402 residential unit should be 0.31” of water column on the natural gas models.

**3. Check manifold gas pressure on forced high fire.**

\_\_\_ The forced high fire manifold gas pressure for the Rinnai REU-2402 residential unit should be 5.1” of water column on the propane gas models.

\_\_\_ The forced high fire gas pressure for the REU-2402 residential unit should be 3.9” of water column on the natural gas models.

**4. Check for the proper dip switch settings in the “SW1” row of dip switches:**

Proper dip switch settings for the REU-2402 residential water heater on propane gas are, switch#1 OFF, #2 OFF #3 OFF, #4 ON, #5 OFF, #6 OFF, #7 OFF, #8 OFF.

Proper dip switch settings for the REU-2402 residential water heater on natural gas are, switch#1 ON, #2 OFF #3 OFF, #4 ON, #5 OFF, #6 OFF, #7 OFF, #8 OFF.

**5. Check for the proper dip switch settings in the “SW2” row of dip switches:**

Proper dip switch settings for the REU-2402 residential water heaters for both natural and propane gases are, switch #1 OFF, #2 OFF, #3 OFF.

**6. Check for power supply and grounding:**

\_\_\_ Ensure you have 120 volts A.C. to the unit and ensure the unit is properly grounded. Do not assume you have a ground, check for ground with a voltage meter. The remote control operates off of a 12 volt D.C. signal supplied by the unit.

**7. Igniter:**

\_\_\_ Check igniter circuit when unit is in the process of ignition, you should have 90 ~100 VAC across the two grey wires connected to the igniter module.

**8. Gas, gas line, meter and/or regulator:**

\_\_\_ Ensure gas type matches type listed on rating plate, and ensure gas line, meter, and/or regulator were sized properly. When sizing you MUST size for 180,000 Btu’s per heater.

**9. Check for faulty regulator:**

\_\_\_ Check regulator to ensure it is not freezing up.

**10. Flame rod:**

\_\_\_ Check the flame rod circuit on low fire, the reading should be one micro amp or greater.

**11. Check voltage and resistance readings across transformer listed below.**

\_\_\_\_ Across the black and white wires at the surge protector, you should have 110 – 125 VAC or 21 – 26 ohms.

Remember anytime you are taking resistance readings disconnect power supply and isolate component being checked:

\_\_\_\_ Across the red and black wires at connector D on the PC board (pins 1 – 2), you should have 100 – 125 VAC or 19 – 24 ohms.

\_\_\_\_ Across the green and green wires at connector G on the PC board (pins 1 – 2), you should have 16 – 20 VAC or 3.5 – 5 ohms.

\_\_\_\_ Across the yellow and grey wires at connector C on the PC board (pins 3 – 5), you should have 180 – 240VAC or 237 – 260 ohms.

\_\_\_\_ Across the brown and grey wires at connector C on the PC board (pins 2 – 5), you should have 30 – 50 VAC or 3.2 – 3.9 ohms.

\_\_\_\_ Across the orange and orange wires at connector C on the PC board (pins 1 – 4), you should have 13 – 30 VAC or 0.7 – 1.4 ohms.

## **12. Check voltage and resistance readings across the gas valve solenoids:**

\_\_\_\_ Across the pink and black wires at connector E on the PCB (pins 2 – 8) you should have 80 – 100 VDC or 1.3K – 1.6K ohms. This is SV1 or the main solenoid valve. Error code 71.

\_\_\_\_ Across the yellow and black wires at connector E on the PCB (pins 2 – 4) you should have 80 – 100 VDC or 1.7K – 2.1K ohms. This is SV2 solenoid valve. Error code 71.

\_\_\_\_ Across the blue and black wires at connector E on the PCB (pins 2 – 12) you should have 80 – 100 VDC or 1.7K – 2.1K ohms. This is SV3 solenoid valve. Error code 71.

\_\_\_\_ Across the pink and pink wires at connector A on the PCB (pins 1 – 3) you should have 0.5 – 25VDC or 60 – 100 ohms. This is the POV solenoid valve. Error code 52.

## **13. Thermistor check:**

\_\_\_\_ Ensure the outgoing water temperature, heat exchanger, and the air temperature thermistors are functioning. All thermistors can be checked by inserting meter leadings into each end of the thermistor plug. Set your meter to the 20K scale and read the resistance. The resistance reading should decrease when heat is applied to the thermistor bulb, and should increase when ice is placed against the bulb. Outgoing thermistor is an error code 32, the one on the heat exchanger is an error code 33, and the one on the combustion blower motor housing is an error code 34.

## **14. Venting:**

\_\_\_\_ Was Rinnai vent piping used. If not, replace existing venting materials with the proper Rinnai vent piping. Ensure the exhaust and air intake is not blocked.

## **15. Did you exceed the vertical vent limits:**

\_\_\_\_ Ensure the vertical vent does not exceed twenty-one foot and three bends. Anytime the vertical vent heights exceed five foot, you must install a condensation collar at the unit.

## **16. Did you exceed the horizontal vent limits:**

\_\_\_\_ Ensure the maximum horizontal vent run does not exceed forty-one equivalent feet. A ninety degree elbow is considered six foot of vent pipe and a forty-five degree elbow counts as one and a half foot. Example; If you install two ninety degree elbows in a horizontal run you would subtract twelve feet from the forty-one equivalent feet allowed. This would leave you with twenty-nine foot of vent pipe that could be added to the system. Note, if you exceed five foot vertically in any horizontal run the entire vent system **MUST** be considered a vertical vent.

## **17. Circulator:**

\_\_\_\_ Isolate the circulator pump from the plumbing system and proceed with troubleshooting. Circulating systems have check valves that can fail and allow water to bypass the unit. If water is bypassing the unit, it will not fire.

## **18. Filter:**

\_\_\_\_ Ensure water inlet filter is not clogged.

## **19. Auto Drain Down Solenoids:**

\_\_\_\_ Isolate the auto drain down system from the system to ensure water is not bypassing the unit through a check valve. If water bypasses the unit through the auto drain down the unit will not fire.