Appendix A (For error code 111) - Check the following points during ignition stage.

1. Refer to check point "B" on the wiring diagram above.

2. Check the voltage between purple wires. (Normal: 110 V to 132 VAC)

3. Check the current through the yellow flame rod wire (Part #706).

4. Check if the current is normal when there is a flame. (Normal: 10 A to 15 A)

5. Check if the current is normal when the water heater is under normal condition. Next, refer to Appendix B (For error code 611) and Appendix C (For error code 741 and 751). If there is still no response, replace the PCB (Part #701).

Appendix B (For error code 611) - Check the voltage between black wire and red wire. (Normal: 7 to 16 VDC)

Check the voltage between black wire and red wire.

Appendix C (For error code 741 and 751)

1. Refer to check point "A" on the wiring diagram above.

2. Check if the water heater is not starting up.

3. The dark squares indicate the default setting. The Safe Lockout setting is the factory setting.

4. Refer to check point "D" on the wiring diagram above.

5. Refer to check point "E" on the diagram above.

6. Refer to check point "F" on the diagram above.

7. Refer to check point "G" on the diagram above.

8. Replace the fan motor (Part #103) if this error code appears.

9. Replace the exhaust thermistor (Part #705) if this error code appears.

10. Replace the PCB (Part #701) if this error code appears.

Appendix D (For error code 311, 321, 331, and 341)

1. Outlet thermistor (Find the marking of No.113 on the connector).

2. Inlet thermistor (Find the marking of No.42 on the connector).

3. Check the current through the yellow flame rod wire (Part #706).

4. Check the resistance between black wire and white wire. (Normal: 15 to 20 kΩ)

5. Exhaust thermistor Check point "E1".

Appendix E (For error code 741 and 751)

1. Refer to check point "D" on the wiring diagram above.

2. Check the water supply is turned off.

3. Check the water heater has no flow.

4. The dark squares indicate the default setting. The Safe Lockout setting is the factory setting.

5. The tech should power the heater off and then check the water heater.

6. Refer to check point "E" on the diagram above.

7. Check the voltage between yellow wire and blue wire. (Normal: 13 to 17 VAC)

8. Check the voltage between red and blue wire. (Normal: 20 to 30 VAC)

9. Are all of the voltages within normal range?

10. No >> Replace the PCB (Part #701).

11. Yes >> Refer to the "Appendix D" in the diagram above.

D. DIP switch settings on the computer board of the water heater

- Location of the bank of DIP switches at the bottom left of the computer board of the water heater.
- Change the DIP switch settings when further supply is turned off.
- The dark squares indicate the default setting. The Safe Lockout setting is the factory setting.

Set DIP switches shown in the table above depending on the vent length.

<table>
<thead>
<tr>
<th>DIP switch setting</th>
<th>Lower bank of DIP switches</th>
<th>Upper bank of DIP switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 to 70°C (915 to 1580 °F)</td>
<td>41 to 70 VDC (212.3 to 251.9 VAC)</td>
<td>5 to 12 VDC (2.1 to 5.0 VAC)</td>
</tr>
<tr>
<td>46 to 70 VDC (13.8 to 12.2 VAC)</td>
<td>4.5 to 5.0 VDC (1.8 to 2.0 VAC)</td>
<td>4.5 to 5.0 VDC (1.8 to 2.0 VAC)</td>
</tr>
<tr>
<td>15.3 to 30.5 VDC</td>
<td>4 to 6 VDC (1.6 to 2.4 VAC)</td>
<td>4 to 6 VDC (1.6 to 2.4 VAC)</td>
</tr>
</tbody>
</table>

"L" Setting: Indoor model

"O" Setting: Outdoor model

"Y" Setting: Upper bank

"N" Setting: Lower bank

"E" Setting: Externally Expandable System

"P" Setting: Parent Unit

"C" Setting: Child Unit

"U" Setting: Single unit is the same as the child unit.

E. Gas supply and gas pipe sizing

- Check the gas type of the house (or the building).
- Check if the gas is size properly, and the gas supply pressure is within specified limits.
- Check if the gas supply pressure in hot water temperature.
- Check if the water heater is not too hot.
- Check the set temperature.
- Check the gas is not properly.
- Check the water heater is not hot enough.

F. Venting instructions

- Check the total vent length. Refer to the "Venting instructions" in the Installation manual.
- Check if the gas is size properly, and the gas supply pressure is within specified limits.
- Check if the water heater is not too hot.
- Check the set temperature.
- Check the gas is not properly.
- Check the water heater is not hot enough.