

THERMOCOUPLE AND PILOT TEST

MODELS: 125B, 38B, 125BO



WARNING

LP & NG ARE EXTREMELY FLAMMABLE SO
TAKE EXTRA PRECAUTIONS WHEN
PERFORMING ANY WORK TO THE HEATER

Before replacing the thermocouple, please test the thermocouple safety circuit and the pilot as follows.

A. Pilot does not stay lit when the button is released.

1. When lighting pilot ensure the gas valve button is fully depressed and held down for at least 15sec after pilot is lit.
2. Pilot flame should be a sharp blue flame that fully engulfs the thermocouple tip. If pilot does not look this way, please see bulletin 'TWH-G1-15 Cleaning pilot assembly' for instructions on how to clean pilot assembly and orifice.
3. If heater is equipped with an AQ1 power vent kit, press reset button on powervent spill switch to check if it is tripped (running the heater without electrical power to power vent fan will trip the spill switch). Also check the AQ1 safety circuit connections for corrosion or loose connections.
4. Check the electromagnet connections. Electromagnet is located on the right side of the gas valve behind the piezo push-button assembly. The Electromagnet connection is a large aluminum 17mm hex head nut. The thermocouple end is a 5 mm brass nut which screws into the 17 mm nut. Tighten both nuts snugly but do not over tighten.
5. Check if connections at the ECO are loose or corroded. Clean any corrosion with very fine sand paper or an eraser and reconnect leads.
6. If cleaning the terminals attached to the ECO did not fix the problem, connect a jumper wire between the two wires attached to the ECO and try to relight the pilot. If the pilot flame now remains on, the ECO may be defective.
7. Have a licensed gas technician verify the proper operation of the thermocouple by measuring the millivoltage from the thermocouple lead to ground. The expected reading is 24mVDC or greater. Good voltage reading may indicate a defective electromagnet or a bad wire connection. Bad voltage reading may indicate a defective thermocouple or a bad wire connection.

B. Pilot circuit drop test

1. Light the pilot and allow it to warm the thermocouple tip for 2 minutes.
2. Blow out the pilot flame and listen for the electromagnet to close. This closure will make a distinct clunk noise as it shuts. The time between blowing out the flame and the electromagnet closing should be between 20 and 30 seconds. Units equipped with an AQ1 power vent kit have drop times between 10 and 15 seconds.
3. Repeat drop test several times to confirm it is consistent

C. Pilot goes out during use and drop test is within specifications.

1. 125B and 38B only: Check the vent size and length. Vent should be 5 inches in diameter (4 inches for 38B), at least 6 feet vertical in length and terminate through the roof. Any reduction in vent size or the presence of an elbow on the top of the unit may cause the flue gas sensor to trip the pilot safety circuit. Please see the venting section in the manual for more detailed information regarding the required venting for this heater.
2. Measure the outgoing temperature of the hot water exiting the unit. Temperature in excess of 160F may trip the pilot safety circuit. The heater must not be supplied with water in excess of 90F. Preheated water may cause the heater to overheat the outgoing water and shut down as a safety precaution.