

Customer Diagnostics For Gas Stoves

Oxygen Test for Gas Stoves

The following symptoms can be due to a lack of oxygen and justifies the oxygen or glass test to diagnose a possible venting problem: Tall stringy flames, dark orange coloration or black tipped flames, black carbon build up on the glass, logs, or firebox.

To perform the oxygen test make sure the stove is cool enough to touch and then remove the front wall of the stove and release the window assembly. Place a metal screwdriver or other non-combustible device (Drill bit, Bolt. Etc.) with about a ¼” diameter between the window gasket and the firebox at the top center of the glass. Now use one of the window retainers to hold the glass in that position, with about a ¼” gap open along the entire top edge of the glass.

Now light the stove and let it burn for up to 15 minutes to determine if the flames have improved or have remained the same. If there is a positive improvement with the extra oxygen coming through the gap then it is indicative of an oxygen depletion problem, or gas to oxygen unbalance. If so it would be important to examine the pipe for blockage, disconnected junctions, or pipe configuration problems. Once in a blue moon it is due to too much gas pressure, but it is very, very rare.

Fireside



Cottage

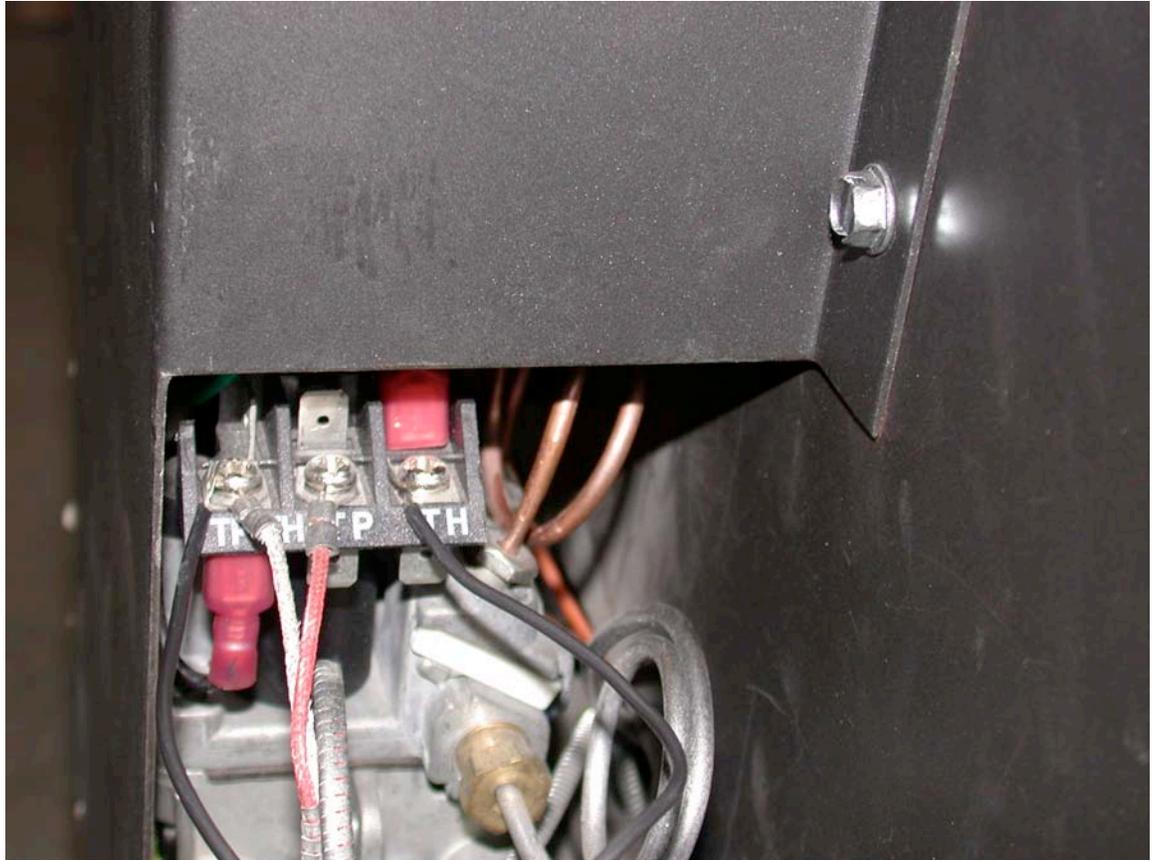


Fireside Burner will not light, but pilot is on.

1. Make sure all control knobs and switches are ON. Make sure the round control knob at the top of the stove is pulled up as it can get stuck.

2. Jumper wire test: (Test for an electrical problem, including thermostats and the ON/OFF toggle switch)

Make sure the pilot is lit and the control knob is in the “ON” position and pulled up completely. Place a conductive element like a piece of wire, paper clip, etc. on the terminal labeled “TPTH” (far left, away from the stove) on the control valve wiring block and then touch the other end of the conductive element to the terminal labeled “TH” (far right, closest to the stove). See the following photo. If the burner does not light then go to the next test. If the jumper wire eliminates the problem and the burner turns on then there is an electrical problem.



Once an electrical problem has been indicated by a successful jumper wire test then it could be any of the following problems: a bad ON/OFF switch or switch wire, a faulty thermostat, or improper wiring. Start by disconnecting all thermostats and testing the ON/OFF switch only. If the stove will not turn on with the switch, but will work with the jumper then it needs a new switch. If the switch works, but the thermostat will not then the thermostat may be wired incorrectly, have dead batteries, or be malfunctioning.

Note: It is perfectly safe to keep the jumper wire attached to the controller in the case of a bad ON/OFF switch until a new switch is installed.

3. Thermopile test: (Tests that the thermopile is functioning properly)

Option 1. Make sure the pilot is lit and the control knob is in the “Pilot” position and the ON/OFF toggle switch “ON”. Place a mV tester on the wiring block terminals labeled “TPTH” (far left, farthest from the stove) and “TP” (middle). With the pilot lit you should get a minimum voltage of 325 mV. If it is lower then you must replace the thermopile. See the replacement instructions.

Option 2. Make sure the pilot is lit and the control knob is in the “ON” position and the ON/OFF toggle switch “ON”.

Place a wire to the positive terminal of any fresh battery (AA, C, D, or 9V) to the terminal labeled “TPTH” (far left, farthest from the stove) and another wire from the negative battery terminal to the “TP” (middle) terminal on the control valve wiring block. See the following photos. This should satisfy the valve safety mechanism allowing gas into the burner, and it should light. If the stove lights then the thermopile needs to be replaced.



4. Gas Blockage

If the previous tests do not very well help identify the problem then it could be a blockage in the manifold tube, orifice, or burner pan. In the beginning of each heating season we get a handful of customers who find spiders in their manifold tube causing the burner pan to shut off during use or not allow it to light at all. Instructions are available for a qualified plumber or gas technician for the manifold tube and the Cottage Franklin orifice. The following would be used for checking the burner pan for all models and the burner orifice of the Mini Franklin or Fireside Franklin.

- Remove the cast front of the stove
- CAREFULLY remove the logset.
- Locate the transport screw on the front face of the firebox behind the center of the bottom window rail.
- Loosen the transport screw and remove the burner pan by lifting up the front edge and then pulling the pan upward and forward.
- Check the burner for debris and clean it out using a vacuum or a compressed air nozzle.
- For Mini or Fireside Franklin models use a ½” deep socket to remove the brass burner orifice found at the center of the bottom of the rear of the firebox.
- Clean out the orifice using a “Q-tip” or compressed air.

5. Technician Tests

If the previous tests do not uncover the problem then it is probably time to have a gas technician perform gas pressure tests and help diagnose the problem in person.