



**Troubleshooting Table PowerVent Hot Surface Ignition**

Troubleshooting the hot surface ignitor PowerVent heaters may be divided into four main categories:

<b>NATURE OF TROUBLE</b>	<b>POSSIBLE CAUSES</b>	<b>SERVICE</b>
<p>Hot surface ignitor does not glow red</p> <p>Note:                      If the heater is overdrawn and condensation occurs within the flue chamber, rust and scale chips, over time, fall down onto the ignitor and cause it to prematurely fail. A telltale sign of such an occurrence would be observing rust and scale particle chips under the burner area.</p>	<p>No power</p> <p>Ignitor damaged or</p> <p>Control module damaged or</p> <p>Unit is in lockout</p>	<p>Turn on / off switch to on. Confirm 120 VAC power supply</p> <p>Turn thermostat to demand heat. Check for 24V at the control module between terminals TH and GND. If 24V not present, check transformer, ECO, thermostat, and vacuum switch.</p> <p>If 24V is present, check for 120V between IGN and IGN terminals. If voltage is present, replace the ignitor. If voltage is not present, replace the control module.</p> <p>Turn heater off; wait ten seconds; turn heater back on.</p>
<p>Ignitor glows red, but main burner will not ignite</p>	<p>No gas supply to heater</p> <p>Polarity reversed</p> <p>Ignitor not positioned properly</p> <p>Gas valve or control module is damaged</p>	<p>Check and open supply gas valves to heater.</p> <p>Check polarity at L1/L2 line.</p> <p>Correct position for the ignitor is with the flame covering 5/8" to 3/4" of the ignitor tip</p> <p>Check for 24V between terminals TH and TR on the gas valve. If there is not voltage, replace the control module. If there is voltage, replace the gas valve.</p>
<p>Main burner shuts off before the thermostat is satisfied</p>	<p>Polarity reversed</p> <p>Ignitor not positioned properly</p> <p>Low gas pressure</p> <p>Improper ignition control ground</p> <p>No flame rectification</p>	<p>Check polarity at L1/L2 line. (See above)</p> <p>Check gas pressure and adjust.</p> <p>Check grounding of ignition control module.</p> <p>Either hot surface ignitor or control is damaged. Call 1-800-432-8373 for assistance.</p>
<p>Main burner does not shut off when thermostat is satisfied</p>	<p>Thermostat out of calibration</p> <p>Gas valve or control module is damaged</p>	<p>Check and replace</p> <p>Check for 24V between terminals TH and TR on the gas valve. If there is voltage, replace the control module. If there is no voltage, replace the gas valve.</p>



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### PowerVent with Power Glow Troubleshooting

1. This test is only valid if gas pressure has been checked, including lock-up pressure.
2. If ground has been verified.
3. If the polarity of power source (outlet) has been verified.
4. Water heater has to be in failed mode, i.e. Blower is running, although there is no flame in combustion chamber.
5. Please allow the blower to operate for at least five minutes before conducting this test. This would ensure that any unburned gases have been purged from system.

Check for 24 volts AC on yellow wire at the ignition control.

If no voltage is present, then the problem is in either the vacuum switch, blower motor, venting, or anything associated with these parts. Special tools will be required to properly test this area and the following procedures will not apply.

If 24 volts AC is present, then turn heater off and disconnect igniter wires from ignition control. Using an Ohm Meter, measure the resistance of the igniter. At room temperature, it should read 70 – 100 ohms. While meter is still hooked up, apply heat to the igniter using a small torch (Heat should only be applied from middle to end. If heat is applied to the base, the igniter will be damaged.). The resistance should start dropping to 30 ohms or less. If it does not react this way then the igniter is bad and should be replaced.

If igniter passes test then reattach it to the ignition control. Disconnect the red wire from the ignition control. You will notice the red wire goes to the gas valve. Leave it attached to the gas valve. In addition, look behind the vacuum switch, there are two yellow wires attached (we are using this point because of ease of access). Now, turn the unit on, when the igniter glows red, touch the disconnected end of the red wire to one of the yellow wires on back of the vacuum switch (this forces 24 volts to the gas valve). If the burner does not fire then the gas valve is bad and needs to be replaced. If the burner does fire then gas valve is good and the ignition control is bad and needs to be replaced.

**Please keep in mind that the requirements at top of this page must be met before this test is valid. Also note, in the event you have to change ignition control, there is a metal band on the ignition control, which needs to be grounded. It is located where the wires attach to the control and there is a hole in which the mounting screw goes through. This unit will not fire without it.**



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