

# Service Manual



## **MOUNTAIN SERIES - CE**

Stone Hearth Oven

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*Gas-Fired, Gas/Wood Combination,  
European Models*

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**MT. CHUCKANUT** WS-MS-4-(RFG)-(IR)-(W)-CE

**MT. ADAMS** WS-MS-5-(RFG)-(IR)-(W)-CE

**MT. BAKER** WS-MS-6-(RFG)-(IR)-(W)-CE

**MT. RAINIER** WS-MS-7-(RFG)-(IR)-(W)-CE

**WoodStone**

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**Wood Stone CE Listed Gas Oven and Wood Oven Service Manual****THIS MANUAL IS FOR USE ONLY BY TRAINED AND QUALIFIED SERVICE PERSONNEL.**

**IMPORTANT:** Consult your local gas supplier for a statement outlining a procedure to be followed in the event you smell gas. Post the statement in a prominent location.

**FOR YOUR SAFETY:** Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Also, always keep the area under and around this appliance free and clear of any and all combustible materials.

WHEN THE OVEN IS NOT PROPERLY INSTALLED, A FIRE MAY RESULT.  
TO REDUCE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTION.

**A MAJOR CAUSE OF OVEN RELATED FIRES IS A FAILURE TO MAINTAIN REQUIRED CLEARANCES TO COMBUSTIBLE MATERIAL. IT IS OF UTMOST IMPORTANCE THAT THIS OVEN BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.**

**WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

**IMPORTANT:** It is recommended that this oven be installed, maintained and serviced by authorized professionals.



### WOOD STONE OVEN SERVICE MANUAL INTRODUCTION

Welcome to the Wood Stone Oven Service manual. This manual covers the entire line of wood and gas fired ovens. If the unit you are servicing does not appear in this book please call our Service Department for assistance. This manual is for use only by *Trained and Qualified Service Personnel*.

**WARNING!** Improper installation adjustment, alteration, service or maintenance can result in property damage, injury or death. Please read and understand all pertinent instructions before attempting to install or perform any kind of service on this equipment. BE SAFE.

### PRODUCT OVERVIEW

There are three types of oven configuration available:

1. Wood-fired: Wood is the heat source
2. RFG: Heat source is one or more Radiant flame (dome flame) Burners.
3. RFG-IR (formerly GG): This model includes an additional infrared underfloor Burner as a secondary heat source. Main heat source is one or more Radiant flame (dome flame) Burners.

### SERVICE DEPARTMENT AND WARRANTY INFORMATION

Please contact your local distributor, or you may reach Wood Stone in the U.S. at +1.360.650.1111 or at [www.woodstone-corp.com](http://www.woodstone-corp.com).

Parts are available through your local distributor. Additional Service Manuals and Installation and Operation Manuals are also available. Installation and Operation Manuals, and additional installation information, are also available on the Wood Stone web site at [www.woodstone-corp.com](http://www.woodstone-corp.com).



### TEMPERATURE READOUT

The only electrical components on the wood fired ovens are in the temperature readout display at the front of the oven. Be aware that these displays are often relocated to an area beside the oven etc.

**The assembly is made up of three components:**

1. A Thermocouple that is embedded into the floor of the oven.
2. A temperature readout—available in Fahrenheit or Centigrade.
3. A transformer—available as 120 VAC or 240 VAC. Outputs 12 VAC to power the temperature readout.



Thermocouple



Readout Assembly



Faceplate



Readout

### WOOD READOUT TROUBLESHOOTING

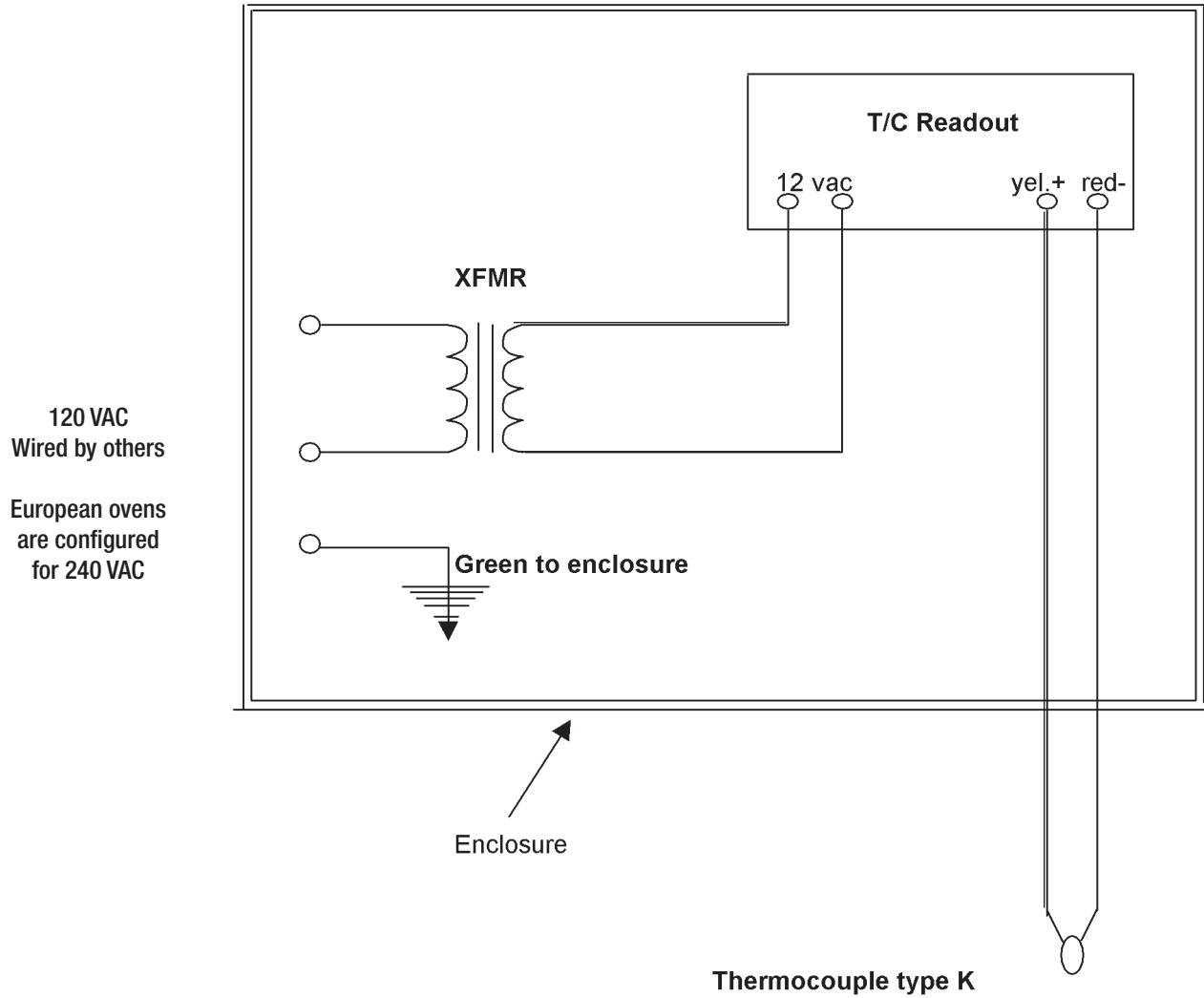
Symptom	Cause and/or Solution
Display does not light	<ol style="list-style-type: none"> <li>1. Breaker to oven tripped or turned off</li> <li>2. If the breaker is fine, verify proper incoming power at input side of transformer. If incoming power is present, verify 12 VAC at output of transformer. If 12 VAC present, replace temperature readout. If 12 VAC is not present, replace the transformer.</li> </ol>
Display lights but readout is erratic or displays "EEE"	<p>Check that the Thermocouple connections on the readout Module are correct: red to TC- (negative), yellow to TC+ (positive).</p> <p>If the connections are good, remove the Thermocouple wires from the display. Jumper between TC+ and TC- on the display; the display should show the ambient temperature. If it does not display the ambient temperature, replace the readout. If the readout displays the ambient temperature (when jumpered), replace the Thermocouple.</p> <p><b>Note:</b> Some models may include a plug connection between the readout box and the Thermocouple. If applicable, check this connection. If this connection is defective, remove and wire the Thermocouple directly.</p>

### CRACKING IN THE FLOOR OR DOME OF THE OVEN

Some cracking of the oven refractory, especially hairline cracking, is completely normal and in no way degrades the performance of the oven. Any abnormal or extreme cracking (larger than 3mm (1/8 inch)) should be brought to the attention of your local distributor. Do not attempt any type of repair to the oven refractory unless specifically instructed to do so by the factory, and then, only with materials supplied by Wood Stone.

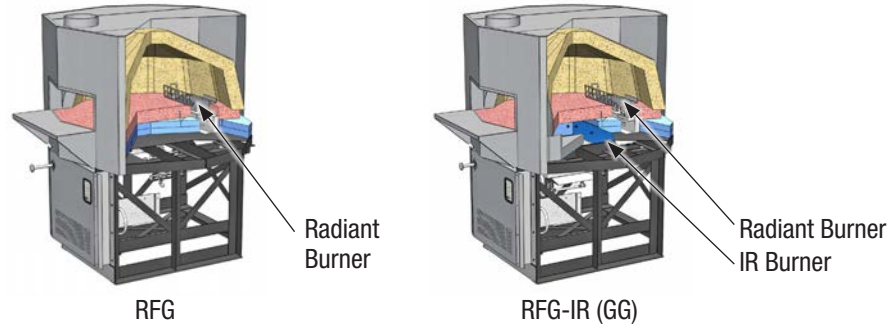


### WOOD OVEN ELECTRICAL DIAGRAM





### OPERATIONAL OVERVIEW



#### Wood Stone manufactures two different model types of CE gas fired ovens

- 1. Radiant Flame Gas (RFG):** This model uses a Radiant flame (dome flame) Burner that is designed to give the appearance of a wood fire. This Burner is the sole heat source in these models. Some variations of this model type may have multiple Radiant Flame Burners.
- 2. Infrared Burner (RFG-IR):** This model type incorporates both an IR (underfloor) Burner and at least one Radiant flame (Dome Flame) Burner. The Radiant Flame Burner is the main heat source in this oven. The thermostatically controlled, underfloor IR Burner is usually only activated during times of peak use and at the beginning of the day when the oven is first turned on.

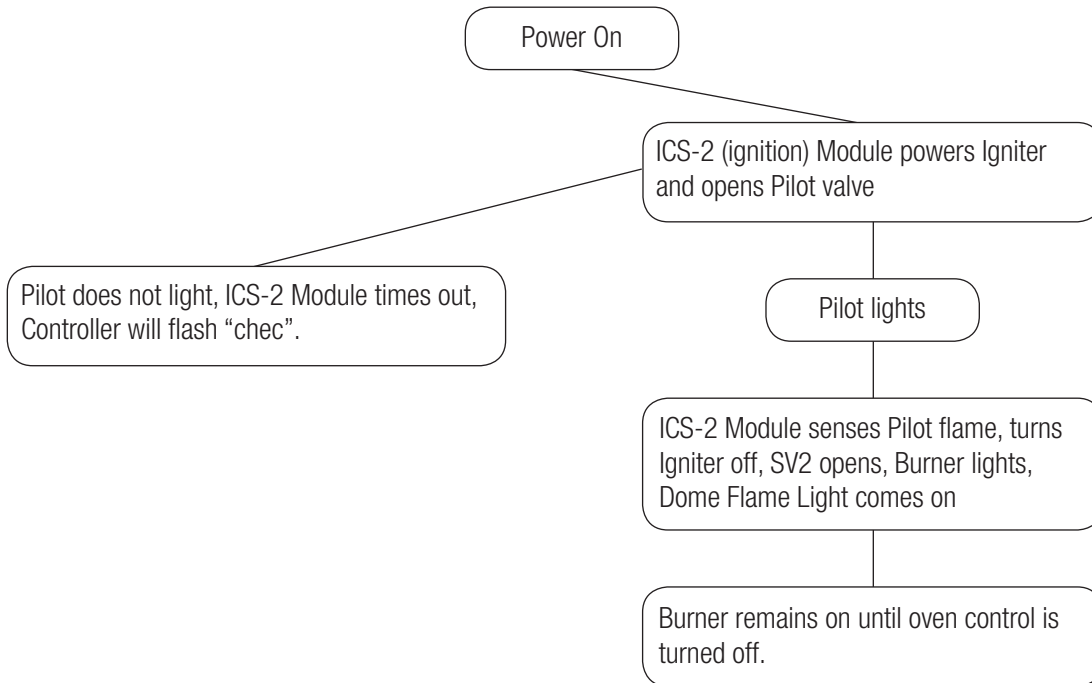
#### BURNER FUNCTION

**Radiant Flame Burner:** The Radiant Burner, located at the back of the oven, is the main heat source for the oven, and it runs continuously when the oven is turned on. The control for this Burner is the Flame Height Control Knob, located on the front of the oven, left side. There is no thermostatic control for the Radiant Burner—the operator manually adjusts the flame height with the Flame Height Control Knob to control the temperature of the oven.

**Infrared Burner (IR):** The IR is installed beneath the floor of the oven. The IR is controlled independently of the Radiant Burner by a temperature control located in the oven control box. This box is usually located on the front of the oven on the right side, but sometimes this might be moved to a different spot to accommodate the type of installation. The control incorporates a programmable Hearth Set Point and a floor temperature display. Remember the IR is not the primary heat source for the oven.



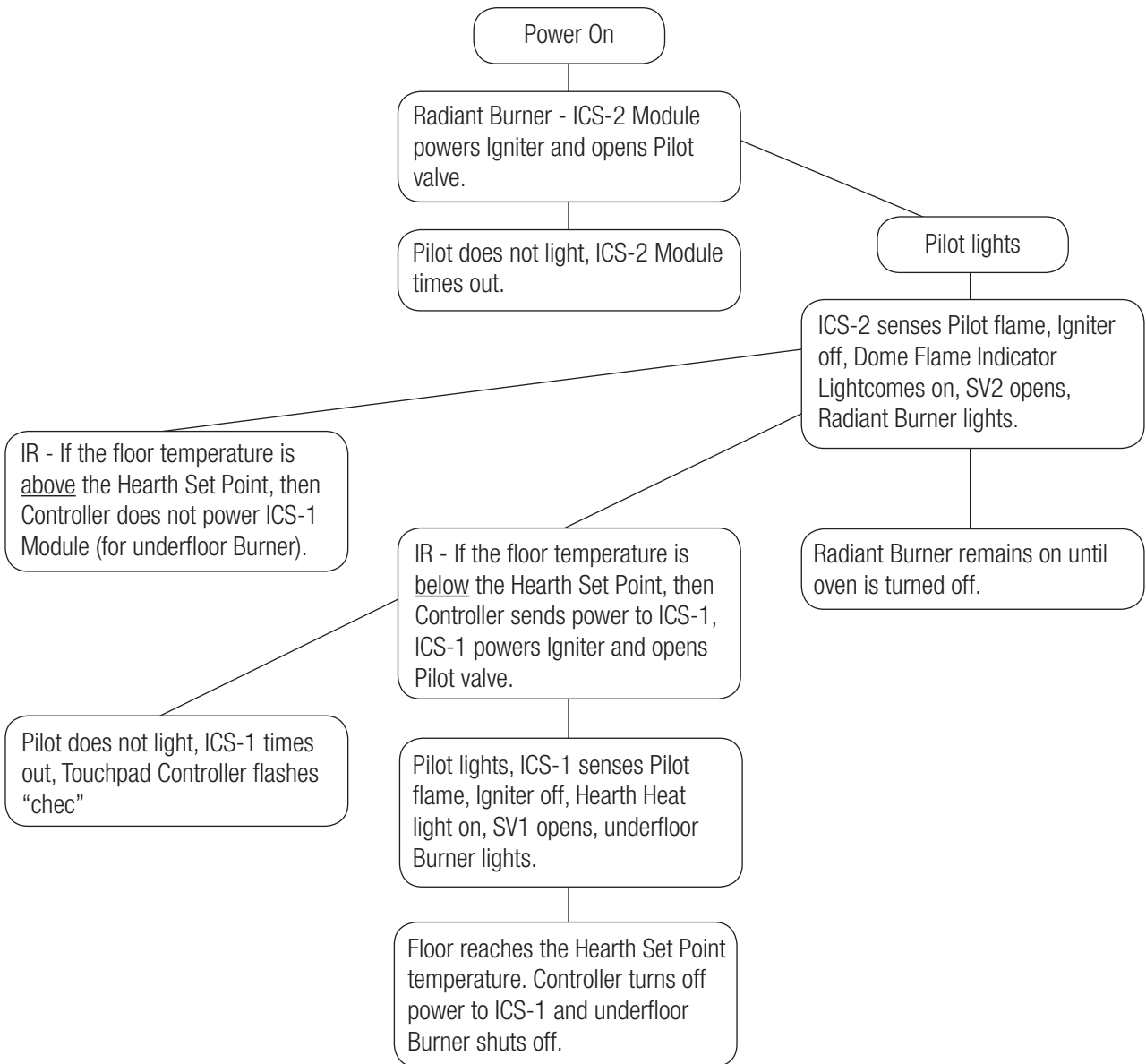
### BURNER OPERATION SEQUENCE RFG CE OVEN







### BURNER OPERATION SEQUENCE RFG-IR (GG) CE OVEN - TOUCHPAD CONTROLLER





### GAS OVEN COMPONENTS

The following is a list of the key electrical and gas components found in Wood Stone gas ovens, accompanied by information about the individual parts:

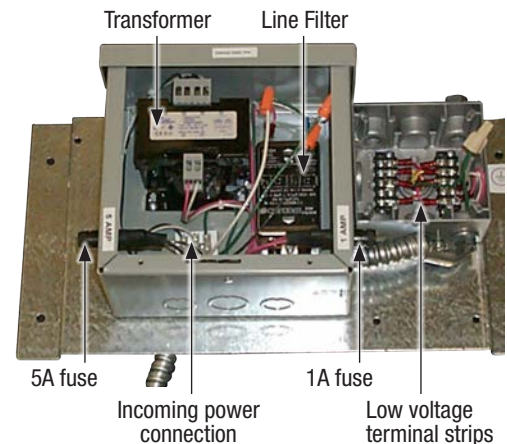
#### 24 VAC TRANSFORMER

This is the power supply for all of the electrical components on the oven. It converts the incoming 230 VAC power to 24 VAC.

#### TRANSFORMER PLATE ASSEMBLY (PRIOR TO MAY 2015)

The Transformer Plate is located beneath the oven in the front, on the right hand side. Mounted to the Transformer Plate are two Junction Boxes. The larger Junction Box contains the 24 VAC transformer, a Line Filter, 1 A fuse for the incoming power, 5 A fuse for the 24 VAC transformer output, and a terminal strip for the incoming power connection.

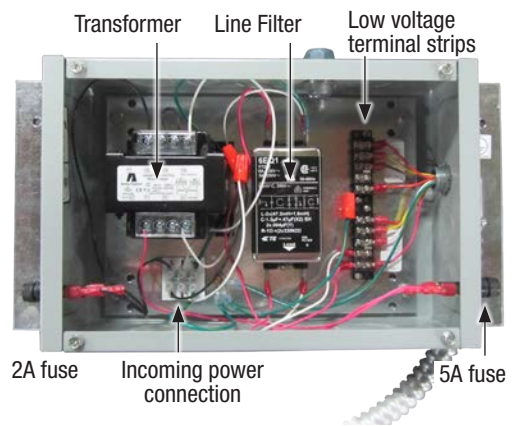
Low voltage wiring for the oven is routed through the terminal strips in the smaller Junction Box located towards the front of the Transformer Plate. It allows easy voltage testing of various oven components for troubleshooting. Do not alter any wiring within this box. Under no circumstances should 230 VAC wiring be connected or routed through this box! No external equipment should be connected to the low voltage wiring of the oven. This may effect the operation of the oven and may void the oven warranty.



#### TRANSFORMER PLATE ASSEMBLY (AFTER MAY 2015)

The Transformer Plate is located beneath the oven on the back stand. It consists of one of the two types of transformers within an 203x305 mm (8x12") Junction Box. It allows easy voltage testing to various oven components for troubleshooting. All wiring harnesses and the Thermocouple are routed through terminal strips within this box.

Do not alter any wiring within this box or on the oven. No external equipment should be connected to the low voltage wiring of the oven. This may affect the operation of the oven and will void the oven warranty.



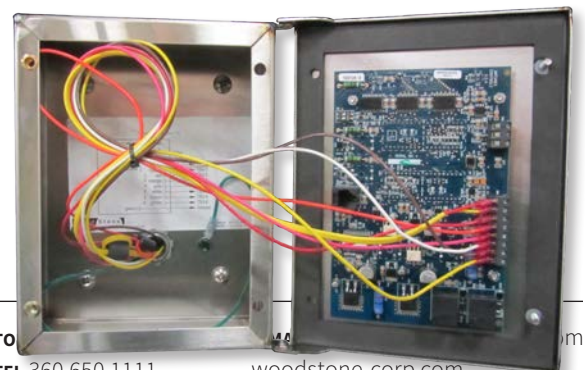
#### TOUCHPAD CONTROLLER

The Type 2 Controller (shown below) is used on RFG-IR gas ovens. It is also used on RFG ovens produced before August 2005. On the front of the Controller is a Lexan Touchpad with a Hearth Temperature display, and depending on the oven model, Hearth Set Point controls and display, Dome Flame and Hearth Heat indicator lights, and ON/OFF and F/C functions. On RFG models shipped after August 2005, a smaller Type 4 Control Board is used. The Type 4 Controller has ON/OFF, F/C functions and a Temperature display.

#### DIP SWITCH SETTINGS

The larger Type 2 Controller has DIP switches on the back of the board that should be set for the appropriate oven model as shown below:

- RFG-IR: Both ON
- W-IR: #1 OFF, #2 ON
- RFG: Both OFF



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An ongoing program of product improvement may require us to change specifications without notice.

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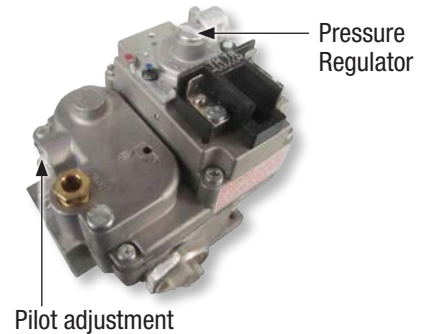
woodstone-corp.com



### GAS SYSTEM COMPONENTS

#### GAS VALVES

All Wood Stone CE model ovens use the same type of combination Gas Valve, regardless of the Burner. An adjustable Pressure Regulator is incorporated into the valve. Maximum incoming line pressure to the oven must not exceed 34.8 mbar (14" W.C.). If the line pressure is too high, a Regulator must be installed in the incoming line. There is also an adjustment for the Pilot flame height on this valve as well. The valve is powered and controlled by a separate Ignition Module (ICS). On all wiring diagrams and in this manual, the valve for the rear Radiant Burner will be referred to as SV-2. The valve for the Underfloor Infrared (IR) Burner is referred to as SV-1.



#### IGNITION CONTROL SYSTEM (ICS)

There is one ICS Module for each Burner on the oven. Each Module receives 24 VAC from the oven Control Board. When the Module is powered, it sends spark to the Igniter and powers the Pilot Solenoid on the Gas Valve. When the Module senses flame rectification at the Pilot, it stops sending spark to the Igniter and powers the Main Valve firing the Burner.



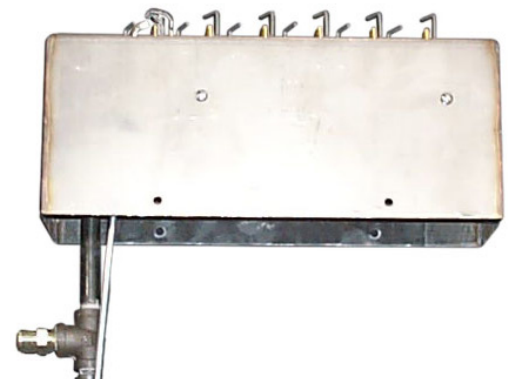
#### PILOT IGNITER ASSEMBLY

The Pilot/Igniter is used in conjunction with the ICS Module to ignite the Burner and provide flame sensing (flame rectification) for the Gas Valve. Ignition is of the spark to Pilot type. Flame rectification is achieved from the spark rod to ground. A single wire connects the Pilot Igniter to the ICS Module. This wire carries both spark and rectification current. A Pilot Orifice is installed in line between the Compression fitting and the body of the Pilot Igniter Assembly. Use the correct Orifice for the gas being used.



#### RADIANT BURNER ASSEMBLY

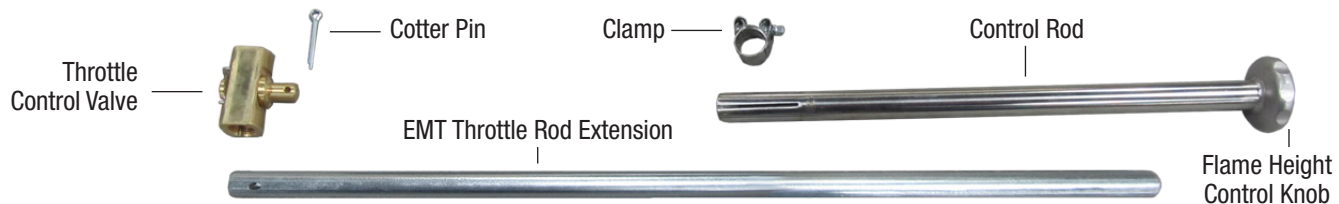
This is the Burner located at the rear of the oven and produces the flames visible inside the dome. It consists of a stainless steel Burner housing, a cast iron Burner Manifold, the Burner Jets and the Flame Retention Spring that are attached to each jet. There is an opening in the Burner housing through which the Pilot Igniter Assembly is mounted.





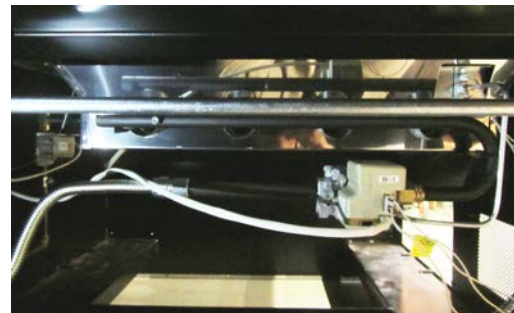
### THROTTLE ASSEMBLY

The Flame Height Control Knob for this Valve is located on the front of the oven. This is what the operator uses to control the flame height of the Radiant Burner only. Ovens equipped with two Radiant Burners will have a separate control for each burner. It is not a shutoff Valve. Do not remove, or replace this Valve with anything but a Valve supplied by Wood Stone. **The use of any Valve not provided by Wood Stone will negate the CE Listing on the oven and could effect its safe operation.**



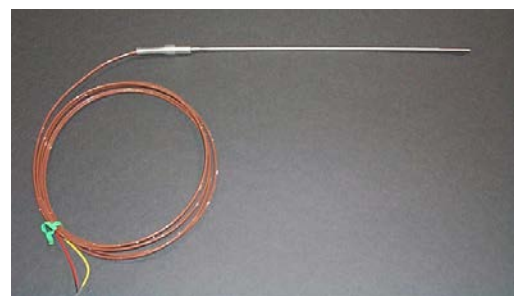
### INFRARED BURNER ASSEMBLY

This is the Burner located beneath the floor of the oven. The tubes on the outside of the Burner are used to supply air to the Burner. You will not see flame in these tubes. **DO NOT ATTEMPT TO LIGHT THIS BURNER MANUALLY!** To visually verify that the Burner is running, look through the gap next to the Pilot assembly and you should see a reddish glow over the ceramic Burner elements. This Burner operates only when the hearth temperature is lower than the Controller's Hearth Set Point.



### THERMOCOUPLE

A Type K Thermocouple is used to sense the temperature of the oven floor (hearth) about 1 inch beneath the hearth surface. It is located slightly to the rear of the center of the oven (behind the IR Burner on an IR equipped oven). It is embedded in the floor of the oven, but is easily replaceable. On all CE ovens, the Thermocouple leads are covered with braided steel sheathing for EM and RF shielding.



### SV-1 AND SV-2 WIRE HARNESSES

These harnesses supply the voltage needed to activate and power their respective ICS Modules and Gas Valves. They also send flame verification voltage from the Module back to the Controller.



SV-1 Wire Harness



SV-2 Wire Harness

### CONTROLLER WIRE HARNESS

This harness carries low voltage to and from the oven Controller. It also contains the Thermocouple wires.







### CONTROLLER FUNCTIONS

#### TYPE 4 CONTROLLER RFG AND WOOD-ONLY MODELS

**Hearth Temperature Display**  
The floor (hearth) temperature will be displayed when the oven is turned on. Sensor is embedded 25mm (1") below the hearth surface. Display will read "LO" when the temperature is below 38 °C (100 °F).



**Temperature units**  
Press and hold to switch between Fahrenheit and Celsius.

**ON/OFF button**  
Press to turn oven ON and OFF.

#### TYPE 2 CONTROLLER RFG-IR MODELS

**Power Indicator Light**  
Indicates the oven is turned ON.

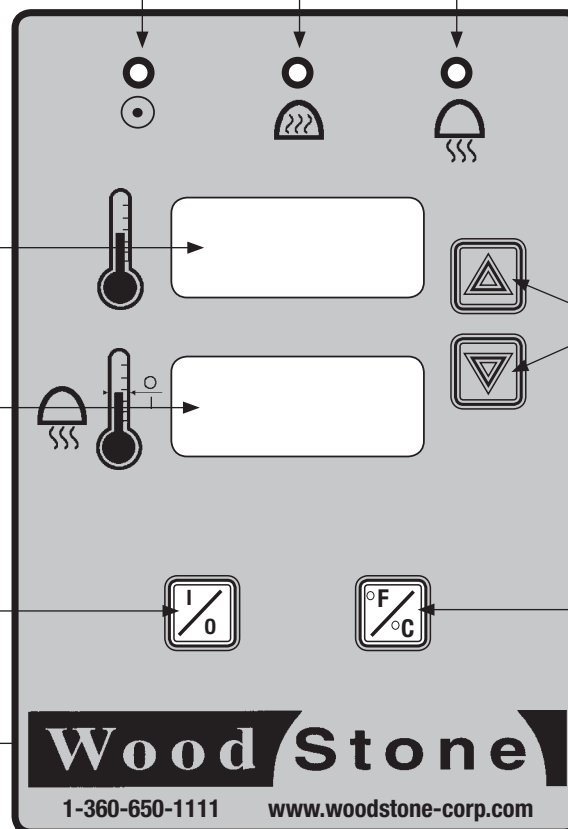
**Dome Flame Indicator Light**  
Indicates the pilot for the radiant flame has lit.

**Hearth Heat Indicator Light**  
Indicates that the pilot for the Underfloor IR burner is lit. This light will go off whenever the hearth temperature is above the Hearth Set Point.

**Hearth Temperature Display**  
The floor (hearth) temperature will be displayed when the oven is turned on. Sensor is embedded 25mm (1") below the hearth surface. Display will read "LO" when the temperature is below 38 °C (100 °F).

**Hearth Set Point Display**  
Indicates set point temperature of the Underfloor IR burner.

**On/Off button**  
Press to turn oven ON/OFF



**Arrow buttons**  
Pressing appropriate directional arrow to adjusts Hearth Set Point temperature up or down.

**Temperature unit selector**  
Toggles between Fahrenheit and Celsius temperature scales in display screens.



### GAS OVEN TROUBLESHOOTING PART 1-CONTROLLERS

#### TOUCHPAD CONTROLLERS

All versions of this Controller use a Lexan Touchpad (overlay) on the face of the control to operate the unit. It has Power and Flame Indicator lights and a Hearth Temperature display. IR equipped ovens will also have a Hearth Set Point display and adjustment arrows. Additional information can be found in the Oven Components-Oven Controllers section of this manual.

Symptom	Cause and/or Solution
Oven does not turn on, control is blank	<p>Is the breaker and/or wall switch supplying power to the oven on?</p> <p>Has one of the fuses blown?</p> <p>The two fuses are located on the transformer box on the Transformer Plate located beneath the oven. Turn off the power supplying the oven before removing the fuses. If a fuse is blown, find and correct the short and replace the fuse with one of the same rating. <b>In addition to a bad Gas Valve, wiring etc., a Thermocouple that is grounding out can also cause the breaker to trip.</b></p> <p><b>Note: A power surge or brown out condition may also cause a fuse to fail.</b></p> <p>Check for 24 VAC between the pink and the white wires at the terminal block on the oven Control Board inside the control box. If 24 VAC is present, make sure that the four nuts attaching the circuit board to the face of the box are tight. <b>DO NOT OVERTIGHTEN</b>; they should be snug enough that pressure on the touch pad activates the switches on the circuit board.</p> <p>If the Controller is still not coming on, carefully remove all wires except the pink and white from the circuit board terminal block. If the Controller comes on, it is OK but there is a defective component or damaged and/or incorrect wiring elsewhere. If with just the pink and white wires connected (and 24 VAC present), the Controller still does not come on, replace the Controller circuit board.</p> <p>Disconnect incoming power before removing wires to prevent damage to the Control Board.</p>
Temperature display reads "open"	<p>Indicates an open Thermocouple. Check for continuity between the 2 Thermocouple leads. Verify that there is no continuity to ground. Check for loose Thermocouple connections at the Control Board and at the J-box on the Transformer Plate below the oven before replacing. If there is heat damage to the Thermocouple it is usually caused by excessive airflow beneath the oven that blows the heat from the IR back onto the Thermocouple wire. This needs to be corrected—call your local distributor.</p>

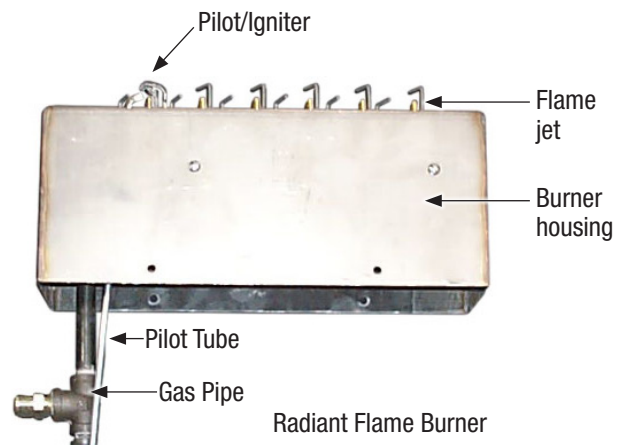


Symptom	Cause and/or Solution
<p>Temperature display scrambles and/or is erratic, oven intermittently blows fuses OR Display appears fine, but the fuse blows instantly and/or intermittently.</p>	<p>Thermocouple is shorting to ground. There should be no continuity between the Thermocouple leads and ground. Check Thermocouple connections at Control Board and J-box below the oven. Remove Thermocouple leads at J-box and retest to confirm damaged Thermocouple and not bad wire in the Control Harness.</p>
<p>Product is overcooking and the Controller is displaying a hearth temperature that is considerably lower than the Hearth Set Point and the IR Burner is running.</p>	<ol style="list-style-type: none"> <li>1. Thermocouple may be shorted causing it to read the temperature at the point of the short. Look for damage to the Thermocouple wire. If there is heat damage, it is usually caused by excessive airflow under the oven blowing heat from the IR back onto the wiring. This needs to be corrected. Disable IR until problem corrected.</li> <li>2. Operational problem. Contact your local distributor.</li> </ol>
<p>Product is overcooking and the floor temperature is higher than the Hearth Set Point. The IR Burner should not be running.</p>	<p>Operational problem. The operator is leaving the Radiant Burner at too high a setting for too long and, as a result, is driving up the oven temperature. It is very easy for a Radiant flame to heat the oven's Hearth Temperature well above the Hearth Set Point if it is not managed correctly (especially if the oven is not under much use at the time). Contact your local distributor.</p>
<p><b>RFG-IR Oven:</b> Control is on, but Radiant flame does not come on, IR Burner does not come on. <b>RFG Oven:</b> Control is on, but Radiant flame is not coming on.</p>	<p>Control is fine. See Radiant and Infrared Burner Troubleshooting section of this manual. <b>Note:</b> On RFG-IR ovens with this Control, the Control will not signal the Infrared Burner to light until after the dome flame has lit.</p>
<p><b>RFG-IR Oven:</b> Radiant flame comes on, a short time later the display flashes "check" and the Hearth Heat indicator light flashes.</p>	<p>Control is fine. It is indicating that the Control called for the IR to light, but the IR Burner did not fire within the time allowed by the control. See Radiant and Infrared Burner Troubleshooting section of this manual.</p>



### OPERATIONAL OVERVIEW

Wood Stone CE gas ovens utilize a spark to Pilot ignition system. Flame rectification is sensed through the flame rod on the Pilot/Igniter to ground via the Pilot Tube. Each Burner has its own ignition (ICS) Module and Gas Valve. When the ICS Module receives 24 VAC power, it sends spark to the Igniter and opens the Pilot solenoid on the Gas Valve. When the Module senses flame rectification at the Pilot it will then power the main solenoid in the Gas Valve causing the Burner to fire. If the Pilot goes out, the ICS will automatically attempt to relight the Pilot. If the green light on the ICS is lit, the Module is receiving power. A flashing green light means the Module has timed out while trying to light the Pilot. Turn the oven OFF, then back on, to reset the Module.



### RADIANT FLAME BURNER TROUBLESHOOTING

The Radiant Flame Burner is the Burner located at the rear of the oven. On some models, this Burner is located on the side of the oven chamber. It is the main heat source for all ovens equipped with this Burner. The flame height is adjustable by means of the Throttle Control Valve located on the front of the oven on the left side.

Symptom	Cause and/or Solution
<p>Burner does not light, oven Controller is on, no spark at the Burner.</p> <p><b>Note:</b> On any call where the complaint is that the Radiant Burner will not light, stay lit or is going out intermittently, Wood Stone strongly recommends that the Radiant Burner be removed for inspection and cleaning. The majority of Radiant Burner problems can be traced to debris in the Burner. See the "Common Repair Procedures" section of this manual.</p>	<p>When the oven is on the green light on the ICS-2 Module should be lit. This Module is located beneath the oven and mounted at the rear.</p> <p><b>If the green light is on</b> (light may start blinking after few minutes): Turn the oven OFF. Remove the rear Burner and remove any debris on the Burner. (See the "Common Repairs" section of this manual.) Check the Igniter wire for continuity between the terminal on the end and the spark electrode on the Igniter. Check the Igniter for damage (cracked insulator, bent or broken electrode, etc.). Make sure electrode is not shorted to ground. Replace Igniter if damaged. Clean the spark electrode if needed.</p> <p><b>If Igniter is fine:</b> With the oven OFF remove the Igniter wire from the ICS Module. Turn the oven back on. Keep away from the Igniter terminal on the Module. You should hear a repetitive clicking sound coming from the Module. If no sound is heard replace the Module. If the ICS Module is bad check both Solenoid Coils on the Gas Valve for continuity. Make sure there are no shorts to ground on the valve.</p> <p style="text-align: right;">Continued on next page &gt;</p>





### RADIANT FLAME BURNER TROUBLESHOOTING (CONTINUED)

Symptom	Cause and/or Solution
<p>&lt; Continued from previous page</p> <p>Burner does not light, oven Controller is on, no spark at the Burner.</p> <p><b>Note:</b> On any call where the complaint is that the Radiant Burner will not light, stay lit or is going out intermittently, Wood Stone strongly recommends that the Radiant Burner be removed for inspection and cleaning. The majority of Radiant Burner problems can be traced to debris in the Burner. See the "Common Repair Procedures" section of this manual.</p>	<p><b>If the green light is OFF:</b> With the oven ON Check for 24 VAC between TH and TR terminals on the ICS-2 Module at the rear of the oven. If there is 24 VAC then the ICS-2 Module is bad.</p> <p><b>If there is not 24 VAC present:</b> Check that Module is wired according to the schematic on the oven. Check wiring connections in the front Junction Box on the Transformer Plate and at the terminal strip on the Touchpad Control Board. With the oven on check for 24 VAC between the brown and white wires at the terminal strip on the back of the Control Board. If there is no voltage and the Controller is on, turn OFF the power supplying the oven. Disconnect all wires from the Control Board terminal strip EXCEPT pink, white and brown. Repower the oven, turn the control back on. If 24 VAC now present, check remaining wiring. Especially make sure that Thermocouple wiring is not shorted to ground. If 24 VAC is still not present-replace the Control Board.</p> <p>Light on ICS Module is flashing - Module has timed out. Turn the oven OFF, then back on to reset. If there is no spark at the Burner follow the steps on the previous page to troubleshoot the problem. If there is spark proceed to the next step below. Replace the Module if it does not reset.</p>
<p>Burner does not light, there is spark at the Burner. Dome Flame Indicator Lighton Controller is not lit.</p>	<ol style="list-style-type: none"> <li>1. Gas supply to the oven has been turned OFF. Check manual shutoffs, fire suppression system resets, etc.</li> <li>2. There may be air in the gas line. On a new oven start-up there may be air in the gas line. Turn the oven ON for about 30 seconds. Turn it back OFF and then back ON for 30 seconds. Repeat this up to five times. If oven does not light and you are not smelling gas continue with this step, it will be necessary to remove the inlet plug on the Gas Valve which will enable the air to be bled more quickly from the line. This can be done on the IR Gas Valve if equipped. Remove the plug on the inlet side of the Gas Valve using a hex key wrench. Allow the air to bleed out until you smell gas. Re-install the plug. Allow the gas to dissipate and then turn the oven ON. If the oven does not light after 30 seconds, turn it OFF and back ON again. It may be necessary to do this a few times. <b>EXTINGUISH ALL OPEN FLAMES BEFORE BLEEDING THE GAS LINE. DO NOT LEAVE THE OVEN UNATTENDED WHILE THE INLET PLUG IS REMOVED FROM THE Gas Valve!</b></li> <li>3. Check for loose wire connections at the ICS Module and the Gas Valve.</li> </ol> <p style="text-align: right;">Continued on next page &gt;</p>



### RADIANT FLAME BURNER TROUBLESHOOTING (CONTINUED)

Symptom	Cause and/or Solution
<p>&lt; Continued from previous page</p> <p>Burner does not light, there is spark at the Burner. Dome Flame Indicator Light on Controller is not lit.</p>	<p><i>If Burner still does not light, proceed with the following:</i></p> <p><b>4.</b> Try to determine if the Pilot is actually lighting. Use an inspection mirror to see if the Pilot is actually lighting, <b>DO NOT CLIMB INSIDE THE OVEN</b>. Make sure flame rod is clean and that no debris is interfering with the flame.</p> <p><b>If Pilot is lighting:</b> Pilot flame should envelop 3/8" to 1/2" of the flame rod for the ICS Module to sense flame rectification. If the flame is not making good contact, the Pilot can be adjusted at the Gas Valve. Also, make sure that all Pilot Tube connections are tight. Remove the cap screw next to the Pilot Tube to access the adjustment. If Burner still does not light (no rectification), check the Igniter for damage: cracked insulator, etc. Replace the Igniter if necessary.</p> <p><b>If Pilot is not lighting:</b> Make sure the Pilot orifice is not plugged. (See the Common Repair Procedures section of this manual.)</p> <p><b>If no gas is going to the Pilot:</b> Check for 24 VAC at the Pilot solenoid terminals on the Gas Valve. If no voltage is present, check wiring, replace ICS Module if necessary. If voltage is present but no gas is flowing to Pilot, replace the Gas Valve.</p>
<p>Burner is not lighting, Dome Flame Light is on.</p>	<p><b>1.</b> Verify that gas is going to the Burner using a manometer at the port below the Burner. If no gas is present, check for sufficient incoming gas pressure at the oven. If incoming pressure is good, check for 24 VAC at TH and TR terminals of the Gas Valve with the oven turned on. If voltage is present but no gas to the Burner, replace the valve. If no voltage present check wiring from the ICS Module. If wiring is good, replace ICS Module.</p> <p><b>2.</b> If proper gas pressure is found at the Burner, drop the Burner and clean. Make sure all jets are clean and that Pilot/Igniter has not been knocked out of position. The base of the Pilot/Igniter assembly should be horizontal, even with the top of the Burner. Lighting problems can also occur if the Pilot is adjusted too low, or if the oven is overvented. (See the Common Repair Procedures section of this manual.)</p>
<p>Flame height is low. The flame should be approximately 12-15 inches tall at full-throttle.</p>	<p><b>1.</b> The Burner gas pressure is low; adjust the Regulator on the Gas Valve to obtain the specified pressure. If the specified pressure cannot be obtained, verify that incoming gas pressure is sufficient; check this with the oven running. If the incoming pressure is good, there may be a blockage in the Throttle Control Valve. Remove the Throttle Control Valve and clean the orifices.</p> <p><b>2.</b> Debris in the Burner. Remove and clean. (See Common Repair Procedures section of this manual.)</p> <p style="text-align: right;">Continued on next page &gt;</p>



### RADIANT FLAME BURNER TROUBLESHOOTING (CONTINUED)

Symptom	Cause and/or Solution
<p>Burner goes out intermittently.</p> <p><b>Note:</b> Do not run oven with Heat Retention Doors in place!</p>	<ol style="list-style-type: none"> <li>1. Debris in the Burner causing the Pilot to lose rectification. Remove the Burner and clean (see the Common Repair Procedures section of this manual). Make sure the Igniter is not damaged and that the flame rod is clean.</li> <li>2. Incorrect Pilot adjustment. Adjust Pilot height at the Gas Valve. Turn adjustment screw in until Pilot goes out. Then back the screw out just beyond the point where the Pilot relights.</li> <li>3. Loose wire at ICS Module, Gas Valve or Control Board.</li> <li>4. Gas supply to oven is being interrupted or is inadequate, or Burner gas pressure is set incorrectly. Verify the Burner gas pressure with all Burners running. There should not be a significant pressure drop at the Burner when the other Burner(s) turn on. If a drop is noted, the gas supply to the oven is inadequate and needs to be increased.</li> <li>5. Excessive airflow from beneath the oven causing the Pilot flame to lift away from the flame rod. Correct the airflow problem and make sure the Igniter Gasket is in place. Ideally there should be no discernible draft below the oven.</li> <li>6. Defective Pilot/Igniter—replace.</li> </ol> <p><b>If the Burner is still going out, replace the Gas Control Valve.</b></p>
<p>Soot is forming near the Burner.</p> <p><b>Note:</b> Do not run oven with night doors in place!</p>	<ol style="list-style-type: none"> <li>1. Check for debris in the Burner; remove Burner and clean. (See the Common Repair Procedures section.) If a log set is installed, verify that it is positioned correctly.</li> <li>2. If Burner is clean, check that the oven is properly configured for the gas being supplied. Call your local distributor.</li> </ol>
<p>Burner doesn't light or goes out, and the Igniter wire is burned.</p>	<ol style="list-style-type: none"> <li>1. Loosen Pilot Tube. Tighten and replace Igniter.</li> <li>2. Inadequate venting or negative air (see Installation Manual).</li> </ol>
<p>Radiant flame height is much higher on the Igniter side of the Burner (usually the left side). The flame on this side does not decrease when the operator turns down the flame height.</p>	<p>Pilot orifice is damaged or missing. Remove Pilot/Igniter. Orifice fits between the brass Compression fitting attaching the Pilot Tube and the Igniter body. Replace with new Pilot orifice.</p>
<p>Throttle Valve difficult to adjust.</p>	<p>Verify that Throttle Knob is not binding. If Throttle Valve itself is stiff, replace the Throttle Valve.</p>



### INFRARED BURNER TROUBLESHOOTING

Many Wood Stone ovens are equipped with an underfloor infrared (IR) Burner. The IR Burner is designed to assist the Radiant Burner during start-up and during times of heavy usage. This is not the primary heat source for the oven. It is thermostatically controlled. The IR Burner's Gas Valve and Pilot/Igniter are identical to those used on the Radiant Burner.

Symptom	Cause and/or Solution
<p><b>RFG-IR ovens:</b> IR Burner is not lighting. The display may be flashing "check".</p> <p><b>NOTE:</b> You will not see flame at the black tubes on the front of the Burner.</p> <p><b>CAUTION:</b> Never attempt to light this Burner manually. To visually confirm that the Burner is lit, look through the gap next to the Pilot/Igniter.</p> <p><b>Remember:</b> The control will not allow the IR to light until after the rear (Radiant) Burner has lit. IR will then light only if the Hearth Temperature is below the Hearth Set Point.</p>	<p>Is the Radiant Burner running? If not, proceed first with Radiant Burner troubleshooting. (See previous pages of this manual.)</p> <p><b>NOTE:</b> On RFG-IR ovens, the IR Burner will not light until the Controller has verification that the Radiant Burner has lit.</p> <p>If the Radiant Burner is running, and the Controller is calling for IR heat, it will allow the IR Burner 90 seconds to light. If the Burner has not lit after this time, the Controller will flash "check". Turn the oven OFF and then back on to reset.</p> <ol style="list-style-type: none"> <li>1. If the Radiant Burner is running, is the Controller calling for heat? (Hearth Temperature lower than Hearth Set Point).</li> <li>2. Check for loose wire connections at the ICS Module and the Gas Valve. If the Controller is calling for the underfloor Burner to light the green light on the ICS Module should be lit.</li> </ol> <p><b>If Burner still does not light, proceed with the following:</b></p> <ol style="list-style-type: none"> <li>3. If there is spark determine if the Pilot is actually lighting. Look through the gap next to the Igniter to see if the Pilot is actually lighting, make sure flame rod is clean and that no debris is interfering with the flame.</li> </ol> <p><b>If Pilot is lighting:</b> Pilot flame should envelop 3/8 to 1/2" of the flame rod for the ICS Module to sense flame rectification. If the flame is not making good contact, the Pilot can be adjusted at the Gas Valve. Also, make sure that all Pilot Tube connections are tight, and that the flame rod is clean. Remove the cap screw next to the Pilot Tube to access the adjustment. If Burner still does not light (no rectification), check the Igniter for damage such as a cracked insulator. Replace Igniter if necessary.</p> <p><b>If no gas is going to the Pilot:</b> Make sure the Pilot orifice is not clogged. With the oven on and the Controller calling for underfloor heat check for 24 VAC at the Pilot Solenoid Terminals on the Gas Valve. If no voltage: Check wiring, replace ICS Module if necessary. If voltage is present but no gas is flowing to Pilot, replace the Gas Valve.</p> <p style="text-align: right;">Continued on next page &gt;</p>



### INFRARED BURNER TROUBLESHOOTING (CONTINUED)

Symptom	Cause and/or Solution
<p>&lt; Continued from previous page</p> <p>RFG-IR ovens: IR Burner is not lighting. The display may be flashing “check”.</p> <p><b>NOTE:</b> You will not see flame at the black tubes on the front of the Burner.</p> <p><b>CAUTION:</b> Never attempt to light this Burner manually. To visually confirm that the Burner is lit, look through the gap next to the Pilot/Igniter.</p> <p><b>Remember:</b> The Control will not allow the IR to light until after the rear (Radiant) Burner has lit. IR will then light only if the Hearth Temperature is below the Hearth Set Point.</p>	<p><b>4.</b> If there is no spark and the Controller is calling for heat.</p> <p><b>If the green light on the ICS-1 Module is on,</b> (light may start blinking after few minutes): Turn the oven OFF. Check the Igniter wire for continuity between the terminal on the end and the spark electrode on the Igniter. Check the Igniter for damage (cracked insulator, bent or broken electrode etc) Make sure electrode is not shorted to ground. Replace Igniter if damaged. Clean the spark electrode if needed. If Igniter is fine: With the oven OFF, remove the Igniter wire from the ICS Module. Turn the oven back on. Keep away from the Igniter terminal on the Module. When the green light turns back on you should hear a repetitive clicking sound coming from the Module. If no sound is heard replace the Module. If ICS Module is bad check both Solenoid Coils on the Gas Valve for continuity. Make sure there are no shorts to ground on the valve.</p> <p><b>If the green light is OFF:</b> With the oven ON Check for 24 VAC between TH and TR terminals on the ICS-1 Module at the right front of the oven. If there is 24 VAC, then the ICS-2 Module is bad.</p> <p><b>If there is not 24 VAC present:</b> Check that Module is wired according to the schematic on the oven. Check wiring connections in the Junction Box on the Transformer Plate and at the terminal strip on the Touchpad Control Board. With the oven on check for 24 VAC at the terminal strip on the back of the Control Board between the yellow and white wires. If there is no voltage and Controller is on, turn OFF power supplying the oven. Disconnect the Thermocouple wires from the Control Board Terminal Strip. Repower the oven, turn the Controller back on. Wait for the Radiant Burner to light. If 24 VAC now present, check remaining wiring.</p> <p><b>Light on ICS Module is flashing:</b> Module has timed out. Turn the oven OFF, then back on to reset. If there is no spark at the Burner follow the steps on the previous page to troubleshoot the problem. Replace Module if it does not reset. Especially make sure that Thermocouple wiring is not shorted to ground. If 24 VAC still not present: Replace Control Board.</p>
<p>IR Burner goes out intermittently when Controller is calling for IR heat.</p>	<ol style="list-style-type: none"> <li>1. Check wire connections at the Gas Valve and ICS-1 Module. Also check for loose connections at the Controller.</li> <li>2. Inspect the Igniter. Clean it if necessary; replace it if damaged.</li> <li>3. Check the Burner gas pressure, adjust the valve to achieve the specified pressure on the Equipment Nameplate. Check the incoming gas pressure with the Burner running. If the incoming pressure is OK, but Burner the pressure is low and will not adjust as high as the pressure specified on the Equipment Nameplate OR if the Burner pressure is erratic, replace the gas control valve.</li> </ol> <p style="text-align: right;">Continued on next page &gt;</p>



### INFRARED BURNER TROUBLESHOOTING (CONTINUED)

Symptom	Cause and/or Solution
Burner will not light or shuts OFF sometimes, Igniter wire burned.	<ol style="list-style-type: none"><li>1. Loose Pilot Tube—tighten and replace Igniter.</li><li>2. Inadequate oven venting or negative air pressure (see the Venting section of the Installation and Operation Manual).</li></ol>



NOTE: Remove the front panel on the oven to access all non-Controller components.

### CHECKING BURNER GAS PRESSURES.

Proper gas pressure settings and an adequate incoming gas supply are critically important for any gas-fired Wood Stone oven to operate correctly. All Burner gas pressure measurements should be taken at the port on the respective Burner Manifold. When taking a measurement of Radiant Burner Manifold pressure, make sure that the Throttle Valve is fully open (maximum flame height). Pressure readings should be taken with both Burners running; this will reveal if the incoming gas supply is adequate.

Where it is suspected that the incoming pressure is inadequate, test the incoming pressure with the oven OFF and then with the oven on and all Burners running. If the incoming pressure drops significantly with the oven running, and the proper pressures cannot be obtained at the Burner(s), the gas supply is inadequate. Look for Regulators external to the oven that may be adjusted too low, partially closed valves or undersized piping. The Supply Piping to the oven needs to be 19mm (3/4") I.D. minimum, and depending on the length of the run, it may need to be larger. Consult a qualified gas piping installer to deal with any Supply Piping issues. **Use of Flex Piping to supply gas to the oven is discouraged.** The specified pressure for each Burner may be found on the equipment nameplate, located beneath the oven.

### REMOVAL AND CLEANING OF RADIANT BURNER

This procedure may be performed while the oven is hot. We strongly recommend that the technician wear heat protective gloves and safety glasses/goggles when removing the Burner.

1. For Burner removal, first turn the oven OFF. Turn OFF the gas supply to the oven.
2. Disconnect the Igniter wire from the ICS Module.
3. Disconnect the Pilot Tube at the Gas Valve.
4. Disconnect the flexible gas line where it attaches below the Burner.
5. Carefully remove the four bolts holding the Burner can in place and lower the Burner out of the well. **Caution: Watch out for falling debris while removing the Burner.**
6. Clean OFF any debris on the Burner.
7. Check that Burner Jets are not blocked, and that Pilot/Igniter assembly is not dirty or damaged.  
If removing Igniter, be aware of the Pilot orifice, which slips into the Igniter where the Pilot Tube is attached, can fall out if you are not careful. Any Burner Jets that are clogged should be removed from the Burner Manifold to prevent debris entering the manifold while cleaning. To remove the jet, first remove the Flame Retention Sprint attached to it by gripping the spring with a pair of pliers and pulling away from the Burner while turning the spring clockwise. **Make sure to reinstall the Flame Retention Sprint.**
8. To reinstall Burner follow the removal steps in reverse.
9. Check for gas leaks using soap solution with the Burner running. **Avoid getting soap solution on the valve, ICS Module or Igniter wires.**

### PILOT/IGNITER REPLACEMENT – INFRARED BURNER

To replace the Pilot/Igniter assembly on an IR Burner, first turn the oven OFF. Then remove the Pilot Tube from the Igniter—be careful not to lose the Pilot orifice. Next remove the screw holding the Igniter in place. Slide the Igniter out of the Burner. Install the new Igniter. New Igniters are shipped with the Pilot orifice already installed between the Igniter and the brass Compression fitting attached to the Igniter.





### PILOT/IGNITER REPLACEMENT – RADIANT BURNER

If replacing an Igniter on a Radiant Burner, we recommend removing the Burner. (See Removal and Cleaning of Radiant Burner section.) While the Igniter can be replaced without Burner removal, most often the cause for the Igniter failure is debris in the Burner. Be aware of the Pilot orifice located between the brass Compression fitting and the Igniter. The Igniter is attached to the Burner can with a right angle bracket. Remove the screw holding the bracket to the Burner box, and remove the Igniter. Remove the bracket from the old Igniter. Attach the bracket to the new Igniter and reinstall. **Whenever you are removing or replacing the Radiant Burner Igniter, you should also replace the Igniter Gasket.**

### GAS VALVE REPLACEMENT

To remove the SV-2 valve on “trombone” style manifolds: Loosen and separate the union located forward of the valve. Rotate the valve in towards the center of the oven. It may be necessary to loosen some of the unistrut clamps, then remove the piping connected to the valve, then the valve itself.

**Newer manifolds:** Loosen the unistrut pipe clamps to access the valve for removal. To replace the SV-1 valve, a 1/2" Allen wrench is necessary for removing the union from the valve. After installing the new valve, always check the Burner gas pressure and make the proper adjustments as necessary. The specified manifold pressures for the SV-1 (IR) and SV-2 (Radiant) can be found on the equipment nameplate beneath the oven.

### THERMOCOUPLE REPLACEMENT

1. Disconnect the Thermocouple wires at the Junction Box located on the Transformer Plate below the oven. These will be the red and yellow wires that have the brown sleeve. **Note:** Wood-fired only: The tc wires are connected directly to the temperature readout at the front of the oven.
2. Cut the wire OFF at the base of the bad Thermocouple.
3. Mark the Thermocouple where it enters the fitting—use this mark as a reference for the depth of the new Thermocouple.
4. Loosen the retaining nut that secures the Thermocouple to the bottom of the oven.
5. Slide the Thermocouple out and remove the old fitting from the oven floor.
6. Using the Compression fitting supplied with the new Thermocouple, slide the new unit in as far as it will go, then check your reference mark. Hold the Thermocouple in so it is bottomed out in the hole while tightening the Compression fitting.
7. Retighten the nut to compress the fitting on to the Thermocouple. **Make certain the Thermocouple is properly located before tightening the nut, as it will be impossible to relocate once the nut is tightened.**  
**NOTE:** On RFG-IR models, the end of the Thermocouple will need to be bent slightly at the tip toward the Infrared Burner to fit into the floor casting.
8. Attach the wire end of the new Thermocouple to the cut wire of the old Thermocouple and pull the new wiring into the conduit as the old wire is pulled out at the J-box (or readout box) end.

### ICS MODULE REPLACEMENT

1. To remove either ICS Module, first turn OFF power to the oven.
2. Remove the defective Module from its mounting plate.
3. Install the new Module onto the mounting plate.
4. One by one remove the wires from the old Module and connect them to the corresponding terminals on the new Module.
5. Check wire connections.
6. Restart the oven and verify proper operation.
7. New style Fenwall Modules are provided with a new wiring harness. Connect these wires to the existing wiring as indicated in the instructions provided with the new Module.

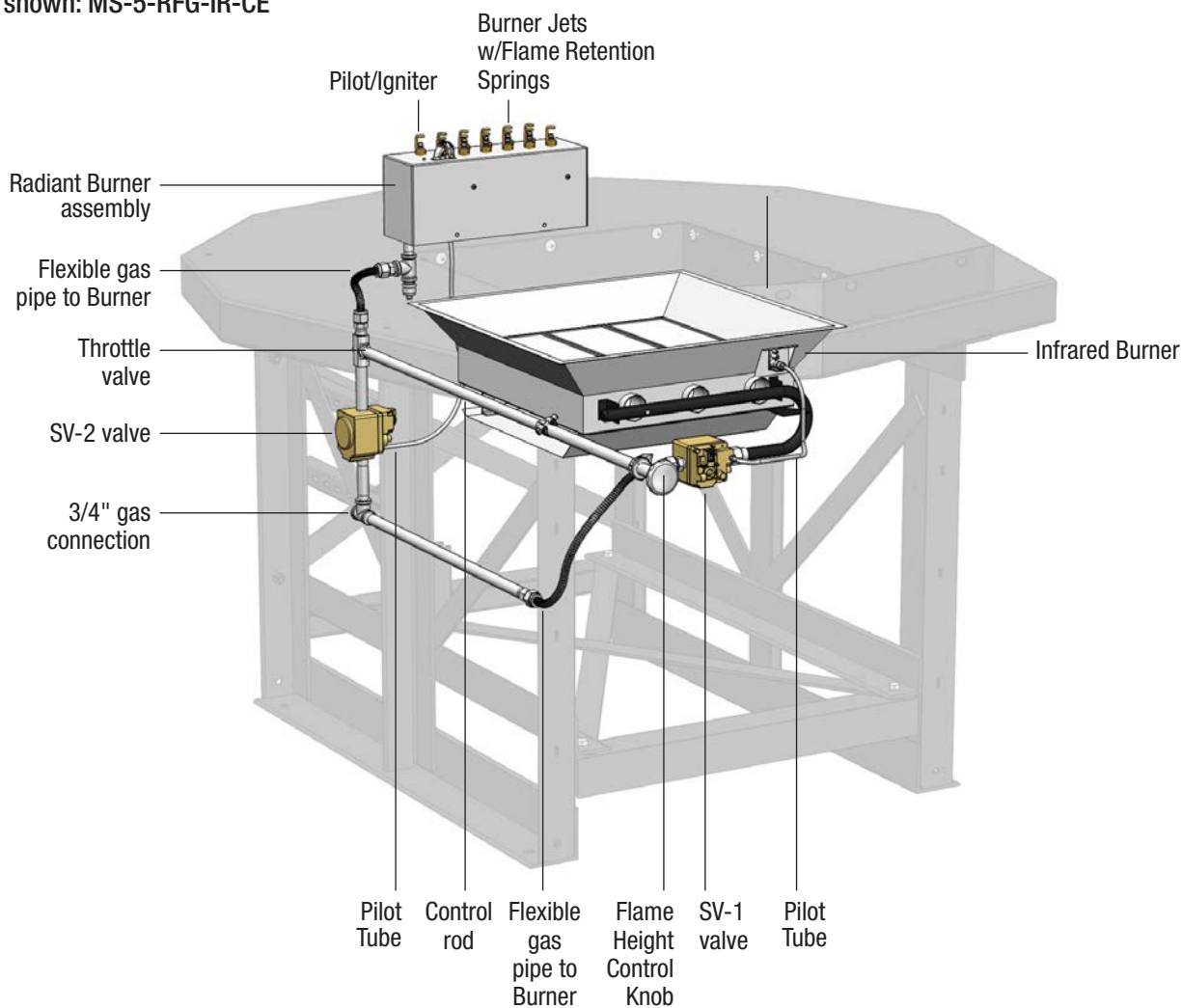




### RFG-IR MODELS PIPING LAYOUT

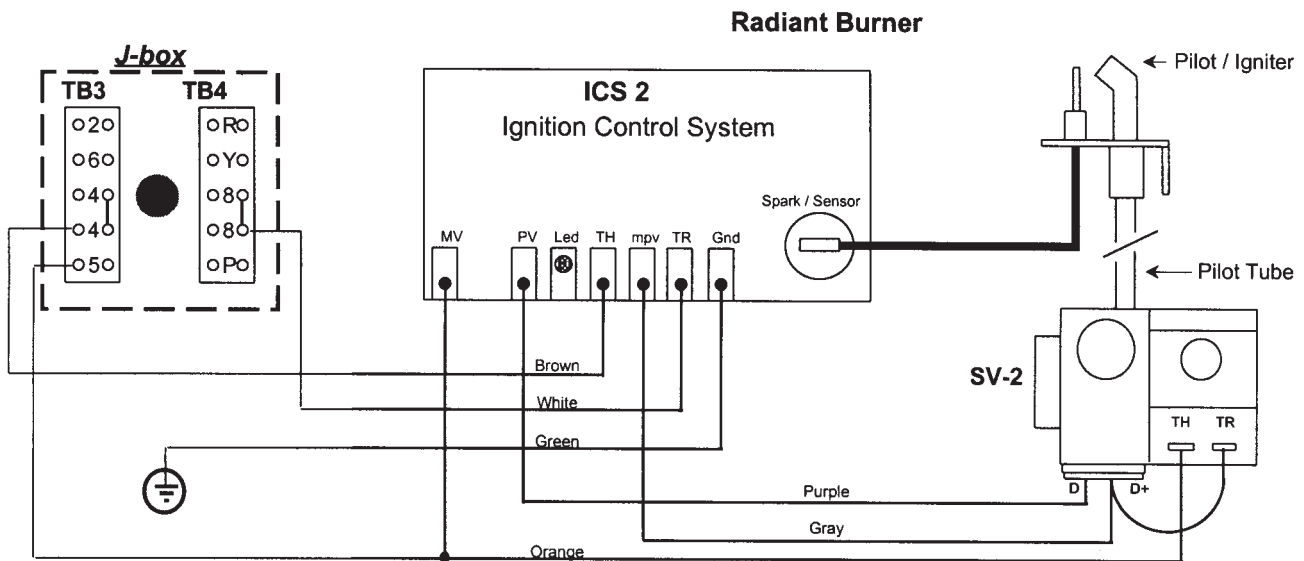
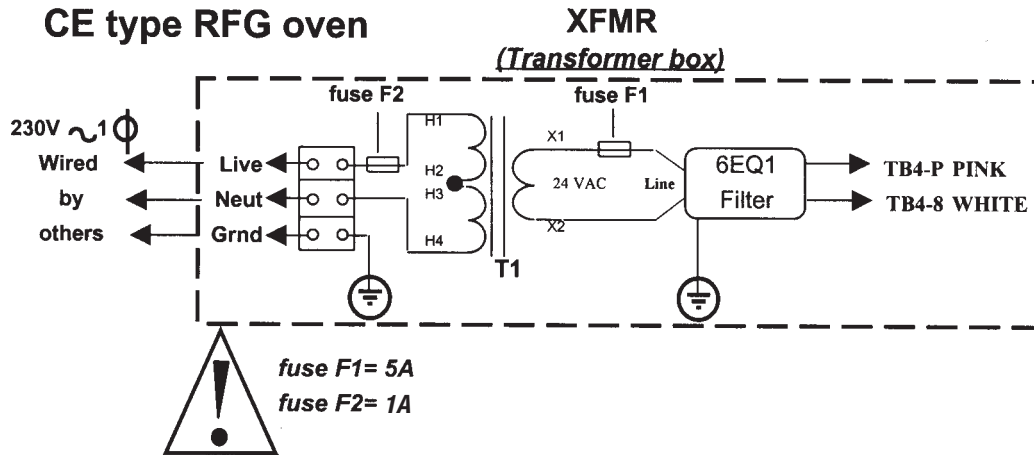
Note: Actual layouts may vary depending on the model and specific configuration of the unit.

Model shown: MS-5-RFG-IR-CE





### RFG-CE MODEL



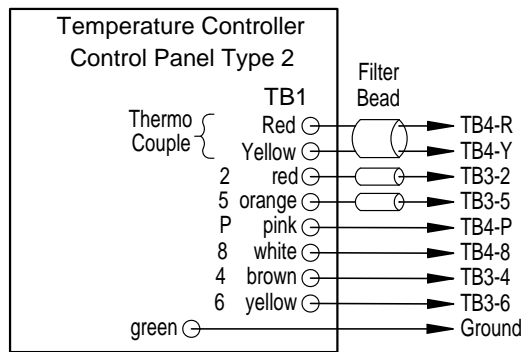


### RFG CONTROLLER

3 different types of Control Board have been used on the RFG (Radiant dome flame only) ovens.

#### TYPE 2

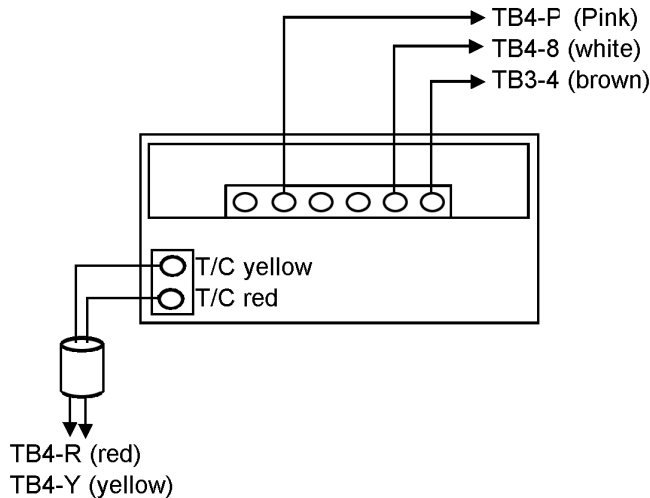
Type 2 Controller CE



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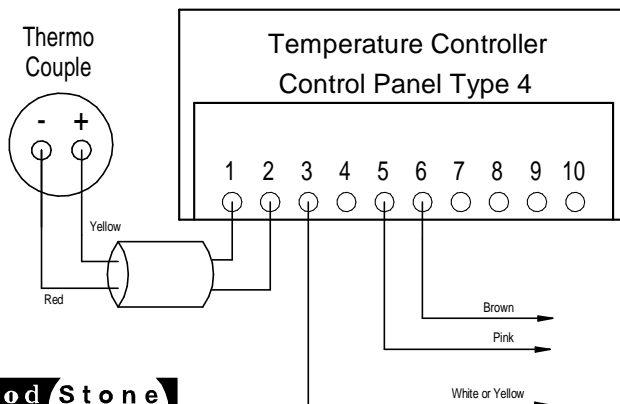
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DATE: 1/21/2014

#### TYPE 3



#### TYPE 4

Type 4 Controller CE



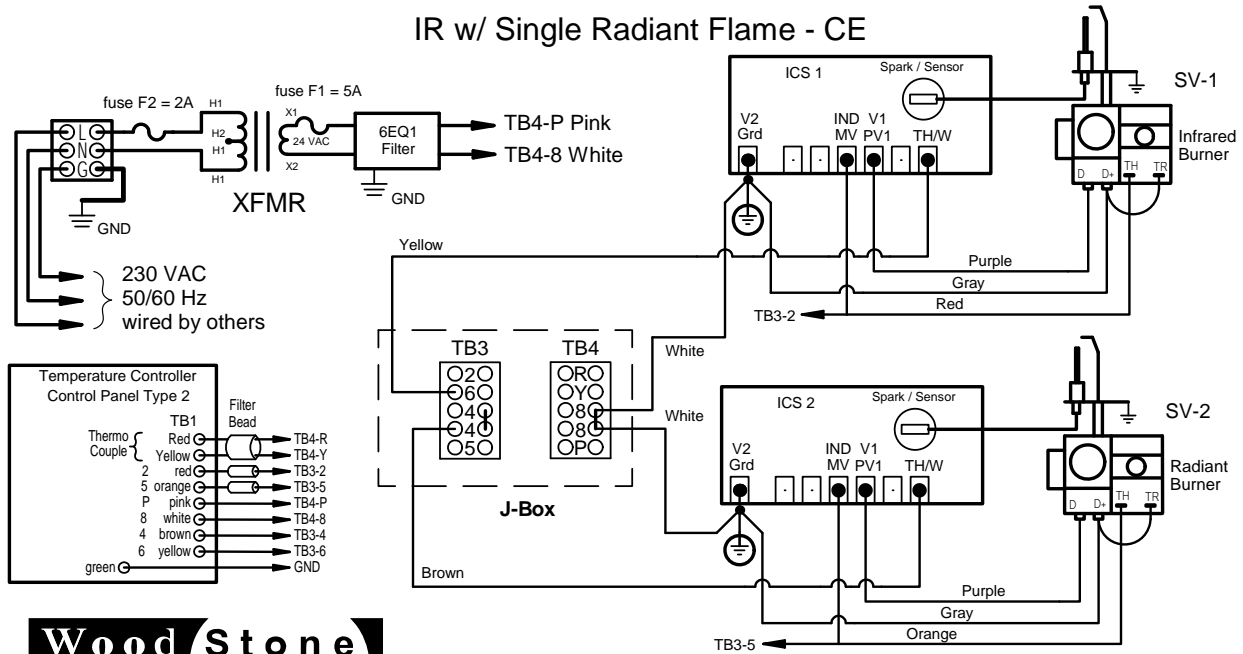
Bellingham, WA +1(360)650-1111 www.woodstone-corp.com

DIAG #: WD154 Rev. 0  
DATE: 7/24/2014



### RFG-IR-CE MODELS WIRING DIAGRAM

#### IR w/ Single Radiant Flame - CE



# WoodStone

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**DIAG #:** WD066 Rev. 1  
**DATE:** 4/7/2014



### CE WOOD-FUELED OVEN MODELS REPLACEMENT PARTS

Description	Part Number
Digital readout – Celsius	7000-0774
Transformer – 240 VAC/12 VAC	7000-0775
Thermocouple	<a href="#">7000-0727</a>

### CE GAS-FIRED OVEN MODELS REPLACEMENT PARTS

Description	Part Number
Control Circuit Board – Type 2	<a href="#">7000-0099</a>
Control Circuit Board – Type 3, Type 4	<a href="#">7000-0101</a>
Keypad Overlay – GG, RFG-IR (114 x 165mm)	<a href="#">7000-0903</a>
Keypad Overlay – RFG w/Type 2 (114 x 165mm)	7000-0904
Keypad Overlay – Type 3, Type 4 (114 x 75mm)	<a href="#">7000-0928</a>
Gas Control Valve — Invensys/Robertshaw	<a href="#">70CE-0010</a>
Ignition (ICS) Module – Fenwall	<a href="#">70CE-0022</a>
Igniter – Spark to Pilot – Natural Gas	<a href="#">70CE-0020</a>
Igniter – Spark to Pilot – Propane	70CE-0020LP
Ignition Module Backplate	50CE-0022
Igniter Gasket	<a href="#">7000-0777</a>
Adapter-3/4" NPT to FBSPT	70CE-0012
Pressure Test Tap	70CE-0011
Ferrite Filter – Hinged	70CE-0028
Ferrite Filter – Bead	70CE-0029
Tinner Copper Sheathing	70CE-0025
Lines Filter–Corcom	70CE-0005
Transformer–230 VAC	70CE-0026
Burner Jet Radiant – Natural Gas	Contact Wood Stone
Burner Jet Radiant – Propane	Contact Wood Stone
Burner Jet Infrared – Natural Gas	Contact Wood Stone
Burner Jet Infrared – Propane	Contact Wood Stone
LP Valve Regulator Kit	70CE-0040
LP Pilot Orifice Spud	70CE-0050
Thermocouple	<a href="#">7000-0727</a>
Throttle Control Valve – Natural Gas	<a href="#">7000-0182</a>
Throttle Control Valve – Propane	<a href="#">7000-0183</a>
SV-2 Wire Harness	<a href="#">002-701-CE</a>
SV-1 Wire Harness	<a href="#">002-702-CE</a>
Fuse Holder	<a href="#">70CE-0065</a>
1A Fuse	70CE-0060
5A Fuse	<a href="#">70CE-0061</a>



### GAS OVENS—UTILITY SPECIFICATIONS

#### NATURAL GAS (NG) SPECIFICATIONS

The Wood Stone Gas ovens are equipped with a 19mm (3/4") BSPP female threaded gas connection. Have a licensed gas installer provide the hook-up and test all fittings and pipe connections for leaks. Use approved gas leak detectors (soap solutions or equivalent) over and around the fittings and pipe connections. **DO NOT USE FLAME TO TEST FOR LEAKS!**

All gas piping up to the oven must have a minimum inside diameter of 19mm (3/4"), including all fittings and shut off valves, which should be of the full flow type.

SV-1 and SV-2 are the gas control valves that operate the under floor Infrared Burner and the interior Radiant Burner, respectively. SV-1 is located directly behind the Service/Intake Panel and in front of the under floor Infrared Burner. SV-2 is located under the oven to the rear left. The Manifold Pressure Test Port for the Infrared Burner is located near the left end of the Burner Manifold. The Manifold Pressure Test Port for the Radiant Burner is located at the base of the T-junction directly below the Radiant Burner.

The Burner Manifold pressures have been adjusted at the factory. A variety of factors can influence these pressures, so be sure to test the individual Burner Manifold pressures and adjust the valves as necessary to achieve the required pressures.

#### Factory specified Burner Manifold pressures for models equipped to burn Natural Gas (NG).

**NOTE:** RFG ovens are only equipped with the SV-2 valve; RFG-IR ovens are equipped with both SV-1 and SV-2.

Model	SV-1	SV-2
WS-MS-4-NG	8.7 mbar (3.5")	12.45 mbar (5")
WS-MS-5-NG	8.7 mbar (3.5")	11.8 mbar (4.75")
WS-MS-6-NG	8.7 mbar (3.5")	11.8 mbar (4.75")
WS-MS-7-NG	8.7 mbar (3.5")	11.4 mbar (4.6")

Wood Stone Recommends that the appliance's individual shutoff valve (supplied by others) be left easily accessible.

All shut OFF valves and connections at the oven must be a minimum of 19mm (3/4") I.D.

#### Hourly Natural Gas (NG) input rates.

Model	RFG-IR-NG BTU/hr Input Rate	RFG-NG BTU/hr Input Rate
WS-MS-4-NG	115,000 BTU/hr, 33.7 kW	68,000 BTU/hr, 20 kW
WS-MS-5-NG	188,000 BTU/hr, 55.1 kW	105,000 BTU/hr, 30.8 kW
WS-MS-6-NG	188,000 BTU/hr, 55.1 kW	105,000 BTU/hr, 30.8 kW
WS-MS-7-NG	220,000 BTU/hr, 64.5 kW	123,000 BTU/hr, 36 kW

The maximum Natural Gas orifice size (at sea level) for the Radiant/interior Burner is #55 (0.0520) 1.32mm

The maximum Natural Gas orifice size (at sea level) for the infrared underfloor Burner is #42 (0.0935) 2.37mm

**If you are converting a Wood Stone oven from LP to Natural Gas, or Natural Gas to LP, contact your local distributor to obtain the necessary parts to carry out this procedure!**

**This procedure entails changing the Burner Jets, Pilot orifices and Gas Valve Regulator springs, and adjusting the Burner Manifold pressures as specified for the new gas type.**



### PROPANE (LP) GAS SPECIFICATIONS

**Factory specified Burner Manifold pressures for models equipped to burn Propane (LP).**

**NOTE:** RFG ovens are only equipped with the SV-2 valve; RFG-IR ovens are equipped with both SV-1 and SV-2.

Model	SV-1	SV-2
WS-MS-4-LP	22.4 mbar (9")	17.3 mbar (7")
WS-MS-5-LP	22.4 mbar (9")	19.9 mbar (8")
WS-MS-6-LP	22.4 mbar (9")	19.9 mbar (8")
WS-MS-7-LP	22.9 mbar (9.2")	23.6 mbar (9.5")

Wood Stone Recommends that the appliance's individual shutoff valve (supplied by others) be left easily accessible.

All shut OFF valves and connections at the oven must be a minimum of 19mm (3/4") I.D.

### Hourly Propane (LP) input rates.

Model	RFG-IR-LP BTU/hr Input Rate	RFG-LP BTU/hr Input Rate
WS-MS-4-LP	102,000 BTU/hr, 29.9 kW	60,000 BTU/hr, 17.6 kW
WS-MS-5-LP	159,000 BTU/hr, 46.6 kW	94,000 BTU/hr, 27.5 kW
WS-MS-6-LP	159,000 BTU/hr, 46.6 kW	94,000 BTU/hr, 27.5 kW
WS-MS-7-LP	227,000 BTU/hr, 66.6 kW	123,000 BTU/hr, 36 kW

The maximum Propane (LP) orifice size (at sea level) for the Radiant/interior Burner is #65 (0.0350) .889mm

The maximum Propane (LP) orifice size (at sea level) for the infrared/underfloor Burner is #53 (0.0595) 1.51mm

### GAS CODE LIMITATIONS

The installation must conform with local codes, or in the absence of local codes with the National Fuel Gas Code, ANSI 223.1 or Natural Gas Installation Code, CAN/CGA-B149.1, as applicable.

The appliance and its individual shutoff valve (supplied by others) must be disconnected from the gas Supply Piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.45kPa).

The appliance must be isolated from the gas Supply Piping system by closing its individual manual shutoff valve(supplied by others) during any pressure testing of the gas Supply Piping system at test pressure, equal to or less than 1/2 psi (3.45kPa).

### ELECTRICAL

The incoming 230 VAC, 5 A electrical connection is made at the terminal strip inside the transformer box. Electrical diagrams are located directly to the right, behind the removable service/intake panel, as well as inside the control box.

**Electrical Grounding:**This appliance must be electrically grounded.

### INTERLOCKING

If it is necessary to interlock the oven with an exhaust fan, Wood Stone recommends the following: Wire the installation in such a way that incoming 230 VAC power to the oven is supplied only when the exhaust fan is turned on. The easiest way to do this is for the same switch that turns on the exhaust fan to also turn on the power supplying the oven. A qualified electrician should do this. Do not attempt to wire into the oven control box or low voltage Junction Box. **ADDING TO OR ALTERING ANY OF THE WIRING IN THE OVEN CONTROL BOX OR LOW VOLTAGE Junction Box WILL VOID THE WARRANTY.** Please call Wood Stone if you have any questions.



**OVEN MODEL & SERIAL NUMBER** (As printed on data plate) \_\_\_\_\_

**JOB** (Restaurant name) \_\_\_\_\_

**PHYSICAL ADDRESS** \_\_\_\_\_

**CITY/COUNTRY** \_\_\_\_\_

**TECHNICIAN NAME** \_\_\_\_\_ **DATE** \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**FAX A COPY OF THE COMPLETED FORM TO WOOD STONE, ATTN: SERVICE DEPARTMENT +1.360.650.1166**

CHECKLIST ITEMS (Page 1 of 2)	
<input type="checkbox"/> Yes <input type="checkbox"/> No	1. Is the gas supplied the same as that noted on the oven data plate?
<input type="checkbox"/> Yes <input type="checkbox"/> No	2. Is the incoming gas piping properly sized (minimum ID 3/4" or 19mm)?
<input type="checkbox"/> Yes <input type="checkbox"/> No	3. Do all gas shut OFF valves and connections maintain this minimum ID?
	4. Static (no load) incoming gas pressure is <input type="text"/> <input type="checkbox"/> inches water or <input type="checkbox"/> mbar.
	5. With all other appliances fired and all oven Burners running full on, what is the incoming gas pressure? <input type="text"/> <input type="checkbox"/> inches water or <input type="checkbox"/> mbar. <b>Note:</b> This pressure should not drop substantially and should remain at least 1 inch water column (2.49 mbar) above the pressure for SV2 as noted on the data plate. A large drop in pressure indicates an inadequate supply volume to the oven (undersized piping, shut OFF valves or fittings, too long of a pipe run, or a partially closed shut OFF).
	6. Check the pressure at the Radiant Burner Manifold test port with all Burners running and the Throttle Valve full on. <b>NOTE:</b> This pressure should match that shown on the oven data plate! Pressure is <input type="text"/> <input type="checkbox"/> inches water or <input type="checkbox"/> mbar.
<input type="checkbox"/> Yes <input type="checkbox"/> No	7. Were all other gas appliances fired during this test?
	8. List any appliances not fired at time of tests, such as broilers, fryers, etc.
<input type="checkbox"/> Yes <input type="checkbox"/> No	9. Does the Throttle Valve operate smoothly?
<input type="checkbox"/> Done	10. Disconnect the incoming power at the circuit breaker supplying the oven and check all wires at the Control Board for tightness.
<input type="checkbox"/> Yes <input type="checkbox"/> No	11. Are the dip switches set properly (both on for RFG-IR (GG), both OFF for RFG, 1 OFF and 2 ON for WG)?





CHECKLIST ITEMS (Page 2 of 2)	
<input type="checkbox"/> Yes <input type="checkbox"/> No	12. Has the oven Control Harness been lengthened by the installer in order to relocate the control?
<input type="checkbox"/> Yes <input type="checkbox"/> No	12A. If so, has the correct size and type of wire been used for the added sections?
<input type="checkbox"/> Done	13. Check all electrical connections for tightness.
<input type="checkbox"/> Yes <input type="checkbox"/> No	14. Has any electrical connection other than incoming power been made to the oven electrical system?
<input type="checkbox"/> Done	14A. If yes, call Wood Stone.
<input type="checkbox"/> Done	15. Reconnect the power and check all control keypads for ease of operation.
<input type="checkbox"/> Yes <input type="checkbox"/> No	16. Do both Burners light reliably and stay lit?
<input type="checkbox"/> Yes <input type="checkbox"/> No	16A. If no, adjust the Pilot pressure as needed. Was adjustment necessary?
<input type="checkbox"/> Yes <input type="checkbox"/> No	17. Are all stand bolts installed and tight, particularly on the 4 corner legs?
<input type="checkbox"/> Done	17A. If no, replace these bolts (if missing) and tighten.
<input type="checkbox"/> Done	18. Leak check all gas pipes and fittings on the oven.
<input type="checkbox"/> Yes <input type="checkbox"/> No	19. If a fire log set is provided, is it properly installed?
<input type="checkbox"/> Yes <input type="checkbox"/> No	20. Is the spare parts kit (if provided) attached to the oven stand?
<input type="checkbox"/> Yes <input type="checkbox"/> No	21. Has the customer been trained in the operation of the oven, including programming the control removal of doors while oven is running, and use of the throttle control?

**FAX A COPY OF THE COMPLETED FORM TO WOOD STONE, ATTN: SERVICE DEPARTMENT +1.360.650.1166**

Please contact Wood Stone at +1.360.650.1111 should service be necessary, or if you have any questions about your oven. Our service hours are 8am to 5pm Pacific Standard Time. Follow the recorded instructions for Emergency Service if you require assistance during non-business hours. A Wood Stone technician will promptly respond to your call.

e-mail: [jmikem@woodstone.net](mailto:jmikem@woodstone.net)



**WOOD STONE WARRANTS ITS EQUIPMENT TO THE ORIGINAL PURCHASER AGAINST DEFECTS IN MATERIAL OR MANUFACTURE FOR A PERIOD OF ONE YEAR FROM THE ORIGINAL DATE OF PURCHASE, SUBJECT TO THE FOLLOWING EXCLUSIONS AND LIMITATIONS.**

**CONTACT YOUR LOCAL DISTRIBUTOR FOR WARRANTY SERVICE**

**EXCLUSIONS**

The warranties provided by Wood Stone do not apply in the following instances:

1. In the event that the equipment is improperly installed. Proper installation is the responsibility of the installer; proper installation procedures are prescribed by the Wood Stone Installation and Operation Manual.
2. In the event the equipment is improperly or inadequately maintained. Proper maintenance is the responsibility of the user; proper maintenance procedures are prescribed in the Wood Stone Installation and Operation Manual. Burner problems resulting from debris or ash in the Burner well will not be covered by the warranty. Call with questions regarding maintenance frequency.
3. In the event that the failure or malfunction of the appliance or any part thereof is caused by abnormal or improper use or is otherwise not attributable to defect in material or manufacture.
4. In the event that the appliance, by whatever cause, has been materially altered from the condition in which it left the factory.
5. In the event that the rating plate has been removed, altered or obliterated.
6. On parts that would be normally worn or replaced under normal conditions.
7. Normal cracking due to expansion and contraction stress relief in the ceramic firebox.
8. In wood-fired equipment configurations, in the event that pressed log products of any type have been burned in the equipment.
9. In coal-fired oven configurations, in the event any type of coal other than anthracite coal fuel has been used.
10. Damage resulting from the use of chemical cleaning products in the oven, as well as any damage from liquids or chemicals, including water, being poured or sprayed into the oven.

If any oral statements have been made regarding this appliance, such statements do not constitute warranties and are not part of the contract of sale. This Limited Warranty constitutes the complete, final and exclusive statement with regard to warranties.

**THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OR WARRANTY AGAINST LATENT DEFECTS.**

**LIMITATIONS OF LIABILITY**

In the event of warranty claim or otherwise, the sole obligation of Wood Stone shall be the repair and/or replacement, at the option of Wood Stone, of the appliance or component or part thereof. Such repair or replacement shall be at the expense of Wood Stone with the exception of travel over 100 miles or two hours, overtime, and holiday charges which shall be at the expense of the purchaser. Any repair or replacement under this warranty does not constitute an extension of the original warranty for any period of the appliance or for any component or part thereof. Parts to be replaced under this warranty will be repaired or replaced at the option of Wood Stone with new or functionally operative parts. The liability of Wood Stone on any claim of any kind, including claims based on warranty, expressed or implied, contract, negligence, strict liability or any other theories shall be solely and exclusively the repair or replacement of the product as stated herein, and such liability shall not include, and purchaser specifically renounces any rights to recover, special, incidental, consequential or other damages of any kind whatsoever, including, but not limited to, injuries to persons or damage to property, loss of profits or anticipated profits, or loss of use of the product.

**TO SECURE WARRANTY SERVICE**

If you claim a defect covered by this Limited Warranty, contact your local distributor.

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