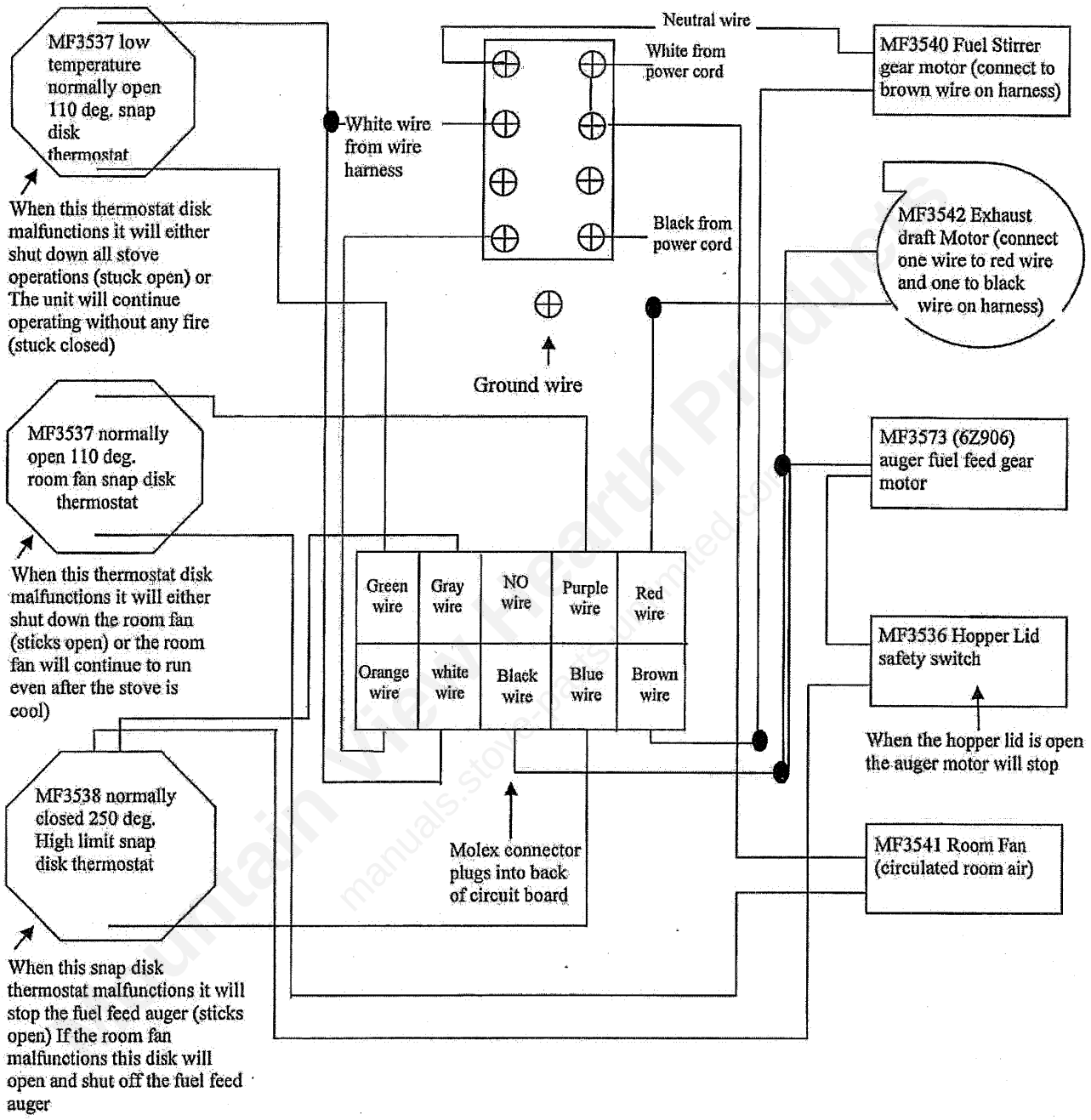
Countryside Wiring Diagram (Ortech Circuit Board)



RETROFITTING THE NEW ORTECH CIRCUIT BOARD TO COUNTRYSIDE UNITS

If you have a model J3500 Countryside Multifuel Corn/Wood Pellet Stove or if you have the Jamestown Mutifuel Corn/Wood Pellet Stove you can retrofit the existing circuit board number Y1802-4 to the new Ortech circuit board. (Contact your local dealer to arrange the retrofit and get pricing.)

Tools needed:
1/4" and 5/16" wrench or socket- flat screwdriver - wire strippers - wire crimpers - electrical tape - electrical circuit tester capable of testing continuity- pliers - narrow flat screwdriver - Allen wrench set

Retrofit kit consists of: (1) Ortech circuit board - (1) Ortech adaptor cable - (1) Thermostat bypass wire installed on circuit board - Wire self stripping connector for hookup to limit control wire.

PROCEDURE:
1. Unplug the electrical cord from the wall and make sure that there is enough room around both sides of unit to open the side panels. Open both top lids and take out the front hex bolts on both the left and right side panels so that they will swing open. Take off the black knob on the left side of the unit that is on the combustion air slide control. Loosen the Allen screw on the locking collar and remove.

2. Unplug the existing circuit board from the wiring harness and remove the 1/4" hex bolt that holds the board in place and remove board. Place the new Ortech circuit board in the panel and install the 1/4" hex bolt to fasten board in place. Plug in the adaptor cable for the Ortech board to the new board and then plug in the wiring harness that is on the stove to the Ortech adaptor cable. **There will be three wires left that are not plugged in to anything from the adaptor cable. They will be hooked up separately.**

3. Unplug the two wires that are connected to the fan speed control (located on the top right side of the circuit board housing. The black knob.) and the two wires that are connected to the agitator on/off switch (located on the top left side of the circuit board housing).
You can either leave the two switches where they are or remove them from the housing and discard them. They will not be used for any function on the new system. It is recommended that you take the two switches off so that they are not in the way of the new wiring harness.

4. Plug the purple wire from the adaptor cable into the purple wire that you unplugged from the fan speed control. This wire should go to the circulation blower censor located on the side of the unit. (The middle temp. censor) If you are not sure or if the color of the wire is not purple do a continuity check to make sure that the wire is the right one. (see wiring diagram for Ortech controller)

5. Plug the brown wire from the adaptor cable into the blue wire that you unplugged from the agitator on/off switch. Be careful to plug into the correct blue wire as there are two blue wires that come off of the switch. The one that you want is the one that hooks into the agitator motor lead and not the one that goes to the terminal block. The blue wire that goes to the terminal block needs to be disconnected and taped off on both ends. The best way to determine which wire you are using is to do a continuity check.
NOTE: If you have the agitator controller model that is hooked up between the agitator motor and the wire coming from the on/off switch you will have to disconnect the agitator controller and take it off the unit. Then hook up the blue wire to the black wire on the agitator motor.

Retrofitting the new Ortech Circuit Board to Countryside units continued

6. Plug the blue wire from the adaptor cable into the white wire that you unplugged from the fan speed control. The white wire runs from the fan speed control to the lower left side of the terminal block located on the right side of the unit. (This wire on certain models may not be white.) Disconnect the white wire from the terminal block and do a continuity check to make sure that you have the right one. Take the wire self stripping connector out of the retrofit kit and attach the white wire to the wire that goes from the limit censor to the hopper lid safety switch. (This wire is normally brown in color) The limit censor is the lowest censor on the right side of the unit. **Clip the end off of the white wire so that there is no chance of the wire grounding out on the unit.**

Make sure that all wire connections are done so that there are no bare wires. It is recommended to tape all connections to assure safety. Check to make sure that no wires are loose and against motors or the side of the air chamber. Tape the wires together to make a neat wiring harness.

Before closing the side panels make sure that the wire harness that is connected to the circuit board is routed properly so that it does not put pressure against the board when the side panel is closed. Make sure that no wires will contact any hot surfaces.

7. When all connections are checked to make sure that everything was hooked up properly, reverse procedure number one to close the unit up. Do not plug in the electrical cord until the cabinet is closed. Run the new circuit board through its operations to make sure that everything works. It will take a few days to get used to the operation of the new board but you will notice an immediate difference in the ease of operation.

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ORTECH CIRCUIT BOARD - FEATURES

10 second fuel feeding when unit is plugged in or turned on to allow fuel to be augured into the firepot for startup. This feature also purges the auger tube.

After the auger tube is purged there is a 3 minute startup delay in the fuel feed to allow the fire to get going before the auger starts. The Fuel Stirrer will work during this delay if needed. When the 3 minute time delay has lapsed the fuel will feed into the firepot.

If the fire does not come up to temperature or if the fire goes out within the first 15 minutes of startup the circuit board will shut the fuel feed off and cycle the unit through a shut down mode. If the low limit safety censor closes within the first 15 minutes the unit will begin normal operation and the fuel will continue to feed. If the circuit board goes through the shut down mode or if anything goes wrong with the safety censors the green light will blink rapidly indicating an error in operation. This can only be cleared if the Heat Setting is shut off and then turned back on and if the problem has been fixed.

5 position Heat Setting control knob automatically adjusts the draft blower and the room fan for the different fuel feed settings to make sure that proper heat exchanger temperatures are met. Fine tune adjustment on the 1 and 2 positions settings allow precise control over the low fire settings. Both the draft blower and the fuel auger feed rates are adjustable. Whenever the draft settings are changed or if the unit is started on a low setting there is a 5 second kick to high voltage to allow the exhaust draft motor to stabilize and maintain a constant voltage setting.

5 position Fuel Stirrer control knob allows precise control over a wide range of fuels to minimize ash and to maximize fuel burning efficiency. The Fuel Stirrer can be used even if the auger is not feeding fuel, can be shut off if necessary and will automatically shut off after the unit has cooled down in the shut down mode.

The circuit board can either be used with a wall thermostat to control the change from the high heat setting to the low burn mode or can be changed manually on the Heat Setting control knob.

There has been a 15 second delay built into the circuit board that will store energy to the board if the power fails. This will allow a battery backup system to engage without the stove shutting down. This also allows the stove to operate if there is a temporary power outage.

The new circuit board is easily adaptable to the old style board simply by plugging in the special adaptor , disconnecting some of the old switches and hooking up the new ones.

Reliability is the key to making sure that one product is consistent with the next. This circuit board with the features built into it will allow precise control of all of the functions of the Country Side Multifuel Stove.

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ORTECH CIRCUIT BOARD - FUNCTIONS

Startup: When the circuit board is energized there is a 10 second purging of the auger tube to allow fuel to enter the firepot. To initiate the Startup turn the Heat Setting knob to one of the five (5) positions. It is recommended to always start the unit on either 3 or 4. If the unit is started on the one (1) or two (2) settings the firebox temperature may not rise fast enough for the low limit censor to engage. When the Heat Setting knob is turned on, the draft blower starts and after the 10 second purging of the auger tube the fuel auger stops and then will wait 3 minutes until feeding fuel. The Fuel Stirrer can be turned on at this time and will operate. It is recommended that the Fuel Stirrer be set on the number 1 or 2 setting for normal operation. Corn may require a higher setting if the starch content is high and Wood Pellets should never have to be over the number 1 setting. When the Countryside Multifuel unit is first lit it is best to wait until the fire is burning for approximately 1 to 2 minutes and then turn on the Fuel Stirrer.

NOTE: Make sure that the wall thermostat is turned up so that the unit will start on the high setting if you are using the thermostat option.

If the fire is not hot enough to engage the low limit censor, in 15 minutes, the circuit board will cycle through the shut down mode and will shut the unit off. The green system indicator light will blink rapidly to show that the unit is not operating properly. To restart the system simply shut the Heat Setting knob off and turn back on.

Once the unit is operating at the proper temperature select the heat setting that you want , adjust the manual draft adjustment slide to the left of the circuit board door and the unit will be operational. The number 3 Heat Setting is best for Corn and the number 4 Heat Setting is best for Wood Pellets for a high fire burn. The maximum Heat Setting should only be used if the home is over 2500 square feet or the weather is extremely cold outside. The maximum heat setting is intended for use with Wood Pellets and the maximum Heat Setting for corn would be the number 4 setting. The unit is designed to cycle between the high and low settings to maintain proper efficiency and heat transfer. It is recommended that the unit not run on the maximum settings for an extended period of time but be cycled to a lower setting periodically. It is also recommended that the unit not be run on low for an extended period of time as the draft motor will not cleanse the system adequately. Cycle the unit to a high setting once a day or so and it will act as a cleaning cycle for the fly ash. If you open the manual draft adjustment slide full open once every day or two it will keep the system operating cleaner and more efficiently.

Shut Down: If you are wanting to shut the system down simply turn the Heat Setting knob to off and the system will enter a shut down mode. The Fuel Stirrer will continue to operate until the low limit safety censor tells it that the fire is out and the firepot is clean. Then the Fuel Stirrer will shut off. The Room Fan and Exhaust Draft Blowers will continue to run until the low limit safety censor opens and then the whole system will shut off. When this happens the fuel auger will purge the auger tube of any fuel that is on the end of the auger for 10 seconds and then will shut off.

Before starting up the Countryside Multifuel unit again it is recommended that the Fuel Stirrer switch be turned off so that the fire can be started properly. It will also ensure that the Fuel Stirrer will not start with someone having their hand in the firepot.

SETTING THE CIRCUIT BOARD

If the low fire Heat Setting is too low for the fuel that you are burning and the fire goes out the number 1 or 2 Heat setting can be adjusted through the access hole located next to the system indicator light. (2)

If the Draft setting is too low on the number 1 or 2 Heat Setting it can be adjusted through the access hole located next to the Fuel Stirrer knob. (1)

To adjust the settings place a small screwdriver through the hole to the adjustment screw. Turning the screw clockwise increases the draft and counterclockwise decreases the draft. (1) Turning the screw clockwise increases the fuel feed rate and counterclockwise decreases the fuel feed rate. (2)

The systems indicator light will blink the setting number that you are on. There are 10 settings that are available with # 10 being the lowest and # 9 being the highest. When you turn the adjustment screw to the next setting the light will blink the number that you are on and then the light will stay on. (Example. If the setting is on # 10 and you turn the screw clockwise one turn to # 1 the light will blink once. If you turn the screw counterclockwise one turn from # 10 to # 9 the light will blink 9 times and then stay on.)
NOTE: Number 10 on both adjustment settings is the lowest setting. As you turn the adjustment screw clockwise 1 -2 -3 etc the draft (1) and the fuel feed rate (2) will increase.

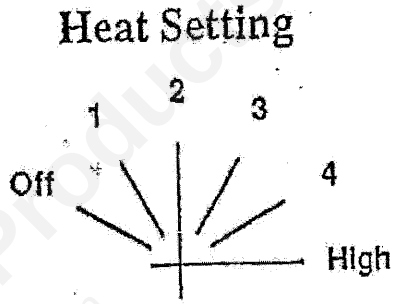
THESE SETTINGS NEED TO BE MADE BY A QUALIFIED SERVICE TECHNICIAN

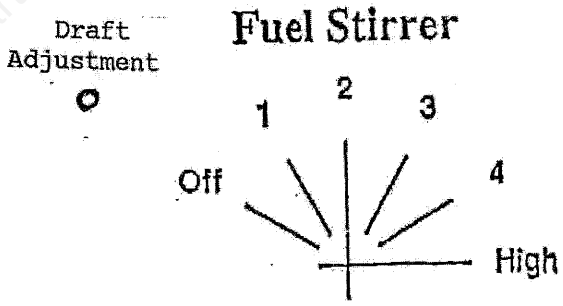
The circuit board fuse is located on the back of the board. If the board does not work check the fuse to make sure that it is good.

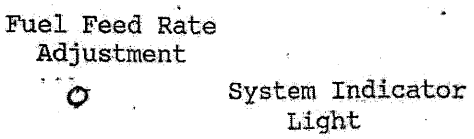
The thermostat hookup is located on the back of the circuit board. See thermostat installation.

Country Side

Multifuel Pellet Stove







American Energy Systems, Inc.
50 Academy Lane
Hutchinson, MN 55350
Service Dept. 1-612-587-6565

LIGHTING INSTRUCTIONS

1. Make sure that fuel stirrer is turned to the off position.

2. Turn the heat setting knob to the number 3 or 4 setting.

Note: If using the wall thermostat option make sure that the thermostat is turned up. The unit will operate on low fire if thermostat is turned down.

3. Place 3-4 cubic inches of fire starter in firepot and light.

4. Allow all of the fire starter to get lit (app. 1 min.) and then turn on the fuel stirrer to the number 1 setting.

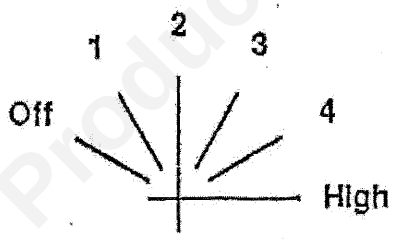
5. In 3 minutes the fuel feed auger will activate feeding fuel to the fire.
   Note: If firepot begins to fill up with unburned fuel, turn the heat setting knob to off and repeat the cycle. (Leave the fuel stirrer on) If the fire burns low before the feed auger comes on, place a hand full of wood pellets in the firepot.

Damper Control Function:
The "push pull" rod is located on the lower left-hand side of the unit. The damper control is pre-set from the factory but will have to be fine tuned for your home. This control will not have to be adjusted every time you light the stove. The proper settings will vary from home to home and altitude to altitude. The fall and spring settings may vary from the winter settings. If the flame is smokey red/orange with soot at the top of the flame, you need more combustion air. (The rod should be moved in small increments 1/16" to 1/8") If the flame is short and torch like or the fuel is burning up rapidly causing the fire to go out, push the damper control rod in slightly. When the fire is burning properly, push the set collar up against the stove and tighten the set screw.
Contact your authorized Country Side representative for further instruction.

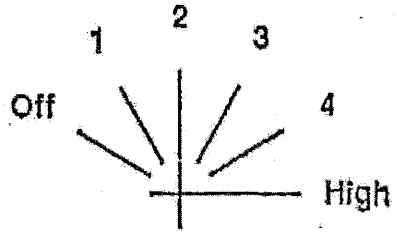
Country Side

Multifuel Pellet Stove

(2) **Heat Setting**



(1) **Fuel Stirrer**



System Indicator Light

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50 Academy Lane
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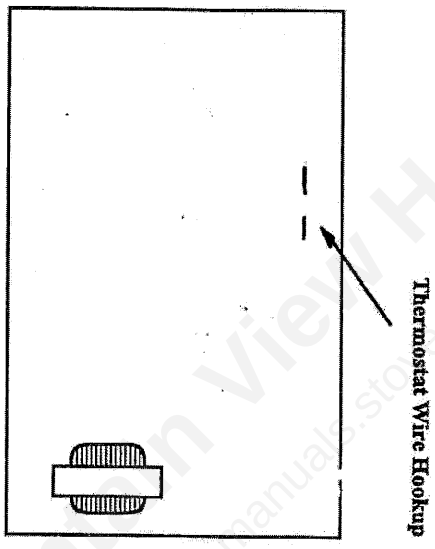
Service Dept. 1-612-587-6565

THERMOSTAT INSTALLATION

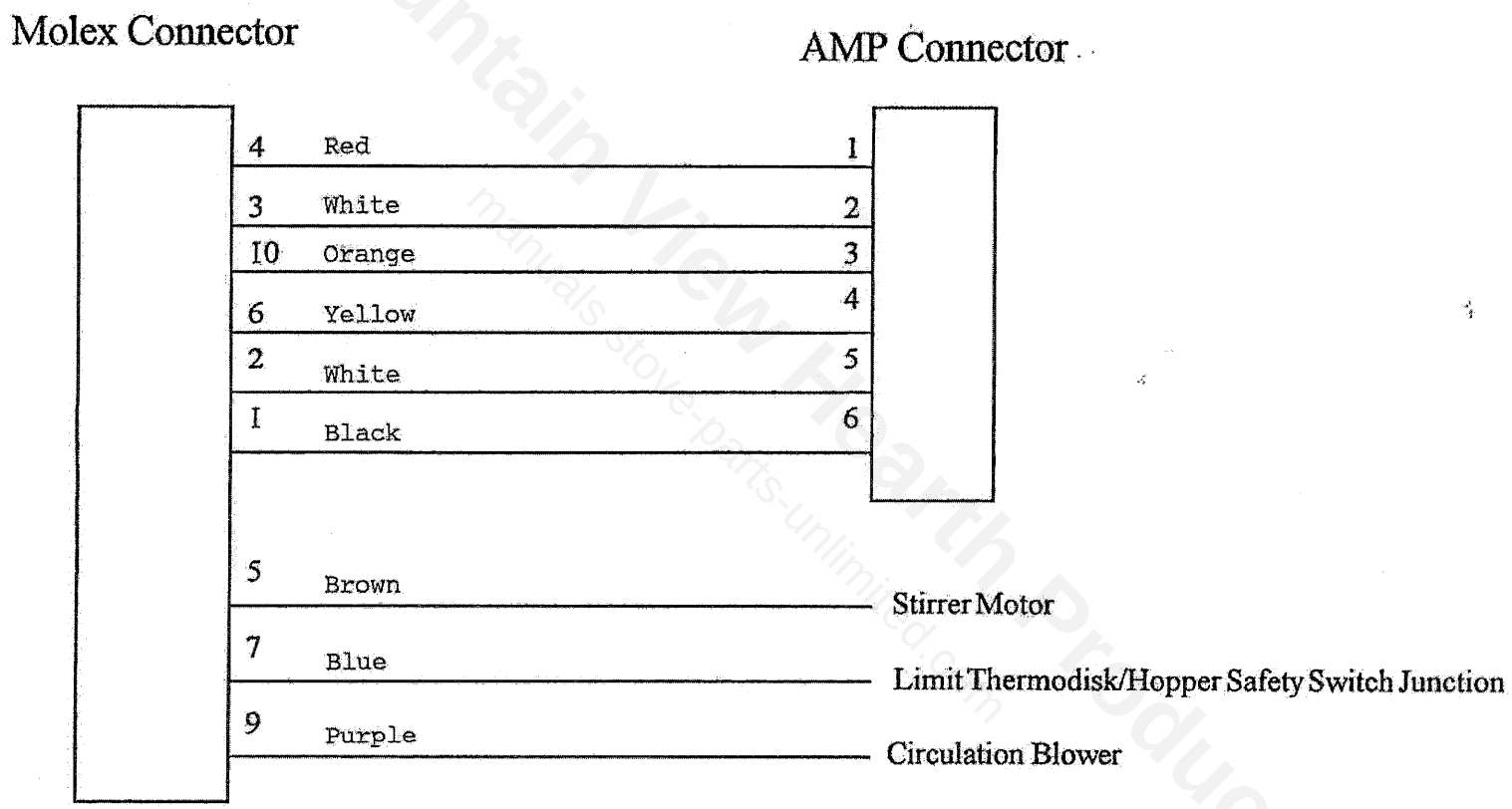
General guidelines for installing a wall thermostat

1. The Country Side J3500 can be installed with and operated by a wall mounted thermostat However, a wall thermostat is not supplied with the stove. A wall thermostat can be purchased from your dealer or at most home improvement centers or hardware stores. The The wall thermostat should be a low voltage (24 volt AC) or millivolt system. Most thermostats will have instructions with them as to where to place them in your room. Please follow the thermostat manufacturer's instructions carefully.
2. There are two (2) male spade terminals on the back of the control panel near the center. connect the two wires from the wall thermostat, one to each of these spade terminals. Needed 2 female 1/4" insulated terminals.
3. Make sure that the wires are routed properly to protect from hot surfaces. Do not cross wires with circuitry on board.



The circuit board is located on the left side of the stove. Remove the 1/4" Hex Head Screw and pull circuit board towards you. Lift circuit board out of housing. Do not crimp or stretch wires leading from circuit board pigtail. Reinstall in reverse procedure.

American Energy Adapter Cable for Ortech Controller



Stove Wiring Diagram
Ortech Controller