

Compatibility

- Avalon Newport PS and Newport Bay PI (Avanti PS & PI)
 - Avalon Astoria PS and Astoria Bay PI
 - Lopi Pioneer PS and Pioneer Bay PI (Heritage PS & PI)
 - Lopi Yankee PS and Yankee Bay PI
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Packing List

- Control Board (AVR Design)
 - Molex Jumper
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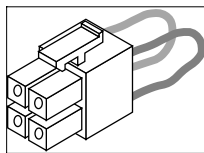
Overview

The new AVR control board is the next generation control board that is compatible with all pellet stoves and inserts, large and small manufactured from 1997 to today. Circuitry on the board allows it to be programmed for either the large or small pellet heaters (these heaters use different voltage settings). See "Configuring the Control Board" for details. It also includes a diagnostic feature that allows a service person to diagnose a fault without having to inspect the wiring or components. The indicator lights on the control board will display a fault code after a fault has been detected. This allows the service person to determine which component caused the fault. See "Diagnostic Codes" for details. NOTE: the new wiring harness (250-00017) is required to utilize this feature.

Configuring the Control Board

Configuring for Large or Small Heaters

The control board is initially configured for the large heaters (Astoria and Yankee models). To change the configuration the control board must be in the off position plugged into a cold stove, (no lights or running components) with the jumper molex removed (see the illustration below). In this condition press and hold the manual auger button down and press both fan up and fan down arrow keys at the same time. All heat output lights will flash. One flash denotes the large pellet heater configuration. Two flashes denote the small pellet heater configuration (Newport and Pioneer models). Repeat pressing the keys until the correct configuration is obtained.



250-00012

Using this Control Board with Older Wiring Harnesses

When the control board is installed on an older wire harness the 4 pin molex jumper plug on the back of the control board next to the stock wire harness must be installed. This jumper replaces the diagnostic wires (see "Wiring Diagram") that are present on the new wiring harness. The control board will work normally, but the diagnostic capabilities will not function.

Technical Notes for Operation

The new pellet control board is essentially the same as our old board. The biggest difference between them is that buttons were used in place of knobs on the heat and fan controls.

Make sure to give the home owner the “Pellet Heater Operating Instructions” if you are replacing an older board (the final 4 pages of this instruction sheet). It contains the new operating instructions for this control board.

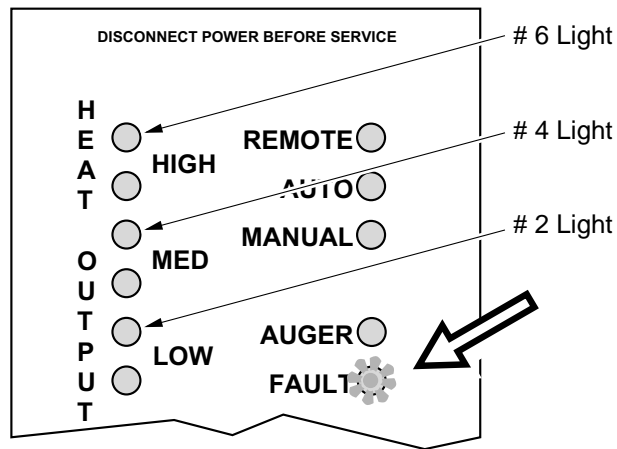
A few changes were made to accommodate the new control board. The start up cycle indicator on the old board illuminates all heat output indicator lights to show the unit is in a start-up cycle and adjusting the heat setting knob would not change them. On the new board to enable adjusting the run settings during start-up we made the start-up indicator the blinking #1 heat output light. If the #1 heat output light is blinking the board is in a start-up mode and the blower and auger outputs can not be adjusted. The run settings the unit will go to after start-up are displayed on the heat output indicator. These settings can be adjusted any time during start up by pushing the up or down heat buttons on the panel. When the fan setting is adjusted up or down the heat output indicators will turn off and the fan setting will display.

Another feature we added to the control board is a manual auger feed. This button can be used to prime and empty the auger or speed the initial delivery of pellets to the burn pot. All start-up timing remains the same and the stove will still self prime the auger tube – this option allows the operator an additional option. It is not needed for normal operation.

All voltage outputs and feed rates remain the same as the old board. There is a difference in respect to the auger on/off times. The auger timing was changed to shorten the interval between pellet drops to the burn pot. For example, on low the auger used to turn for 3 seconds and remain off for 13 seconds, for this same condition this control board turns the auger for 2.5 seconds and remains off for 10.7 seconds. This produces the same amount of time the auger is turning and not turning but gives a steadier flame height and less incidental outages on low.

Diagnostic Codes (Qualified Service Personnel Only)

- Fault and #2 (LOW) Light Flash = Flow Switch Fault
- Fault and # 4 (MED) Light Flash = System Snap Disk Fault (pellets run out & stove goes cold)
- Fault and # 6 (HIGH) Light Flash = Safety or Hopper Snap Disk Fault



Flow Switch Fault

Fault light and #2 heat indicator blinking.

This fault code indicates pressure/flow switch opened or broke its electrical connection during operation.

Likely causes:

- Pinched, cracked or broken pressure tubing.
- Plugged tubing nipple on blower housing.
- Heavy ash build up in the exhaust fan housing,
- Faulty wiring, bad or broken connection of flow switch gray wires.
- Weak or bad combustion blower
- Faulty pressure switch.

Diagnostic Codes (Qualified Service Personnel Only) - Continued

System Snap Disk Fault

Fault light and #4 heat indicator blinking.

This fault code is caused by a heat sensitive switch that tells the control board if the appliance is hot or cold. During operation if the unit runs out of pellets or loses its fire this switch will communicate to the control board that the stove is getting cold. The control board will shut off the auger functions and initiate a twenty minute combustion fan safety cool down. Another condition that will trigger this fault code is a failed start. When the appliance is started the control board initiates a 30 minute timer, if the appliance is cold at the end of this 30 minute start up timer the control board will indicate a #4 fault and initiate a 20 minute combustion fan cool down.

Likely causes:

- Unit ran out of pellets.
- Fire went out during operation.
- Unit was cold at the end of a start cycle (fire did not light).
- Faulty snap disk.

Safety or Hopper Snap Disk Fault

Fault light and #6 heat indicator blinking.

This fault code is caused by the safety or hopper snap disk registering an over-heated appliance during operation. The control board then shuts down the auger and the convection and combustion blower will run at maximum output for a 40 minute safety cool down cycle. The only way to stop this cool down is to unplug the appliance to reset the control board.

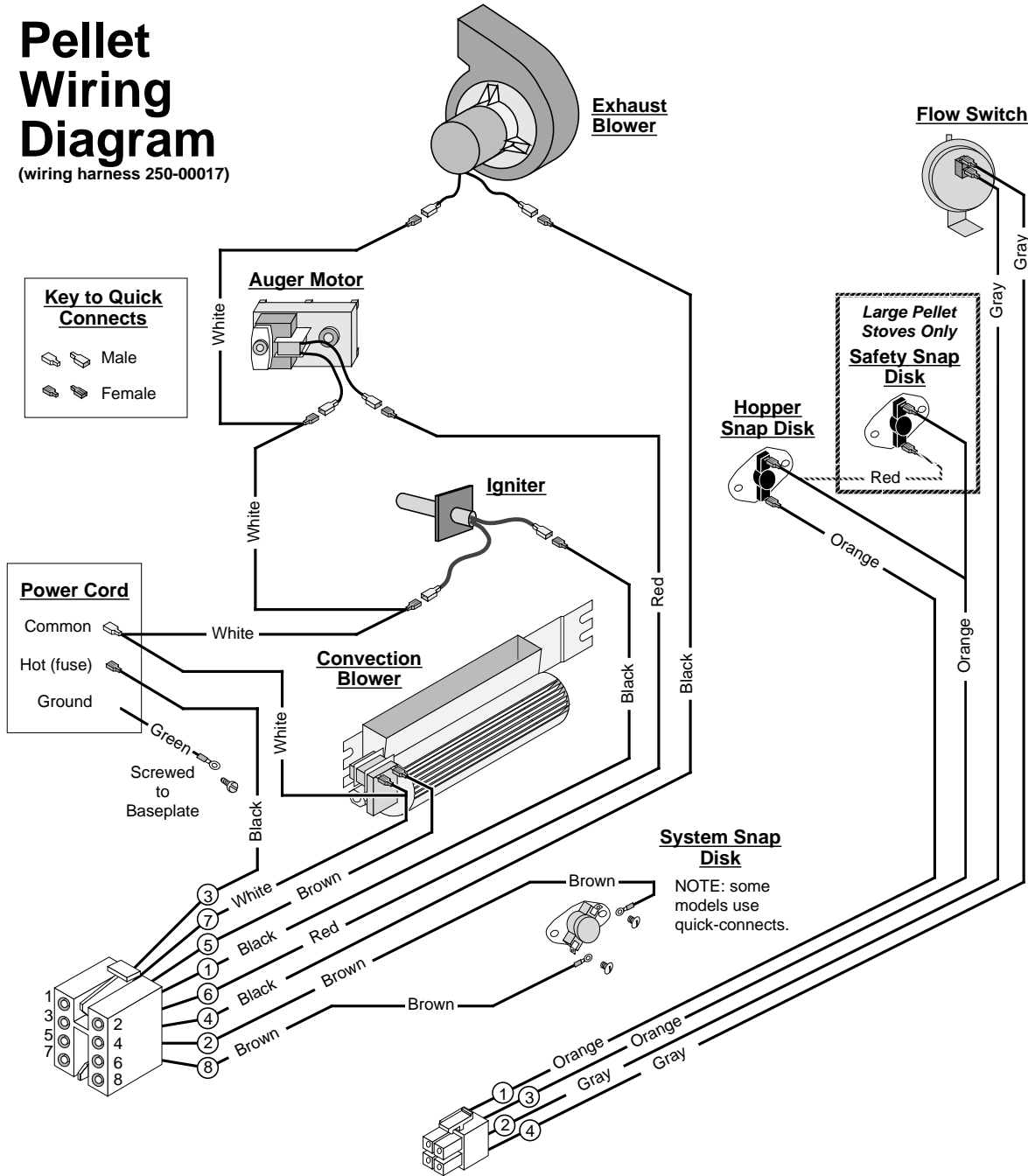
Likely causes:

- Faulty snap disk
- Corroded, loose or broken Snap Disk wiring.
- Failed, plugged or blocked convection blower.
- Reduced air flow into the motor compartment such as blocked air vents on panels or doors.
- Missing refractory.
- Improper fuel type.
- Unauthorized parts used in the pellet feed system.

Wiring Diagram (new, 2005 version – 250-00017)

Pellet Wiring Diagram

(wiring harness 250-00017)

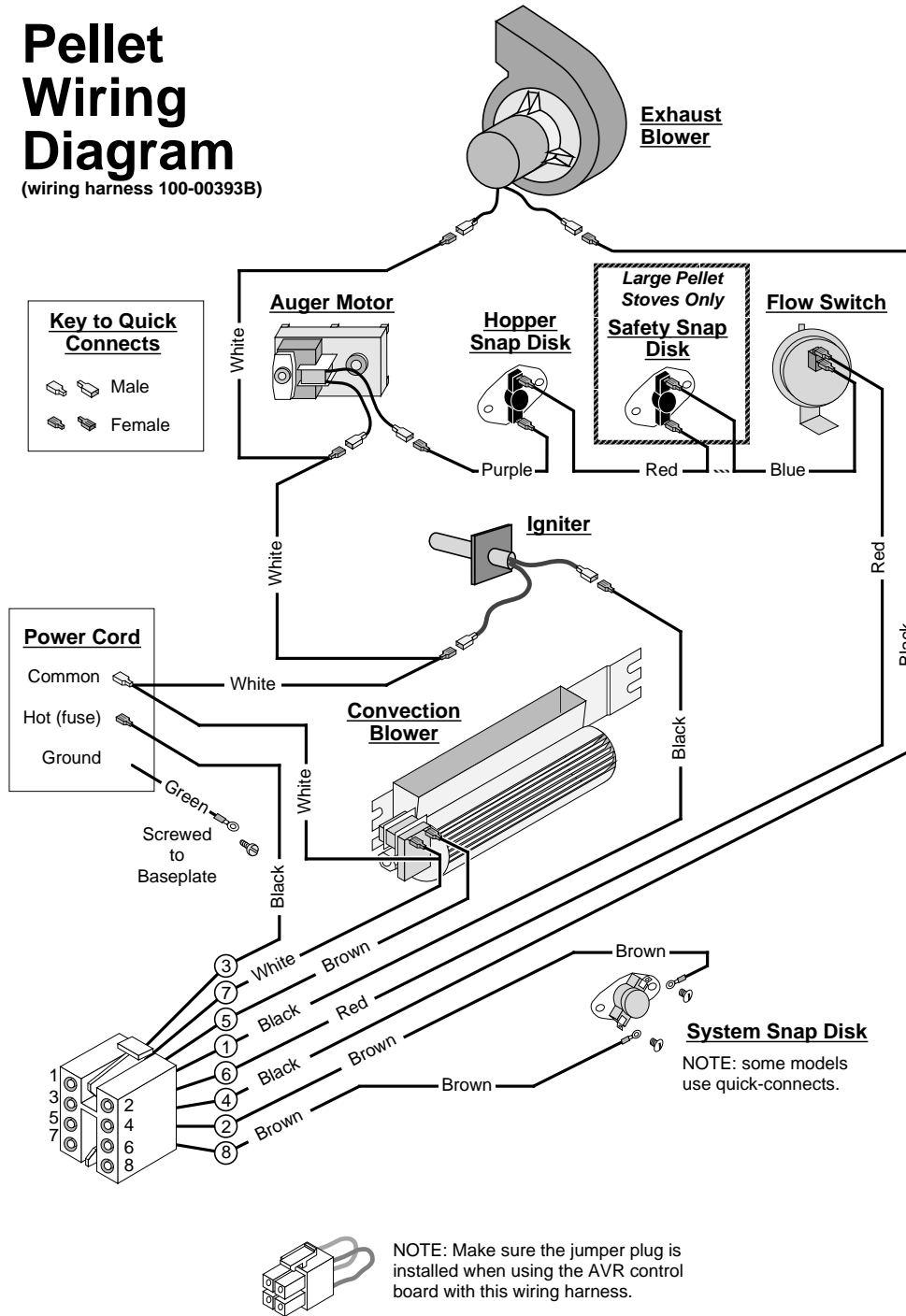


Wiring Diagram (older version – 100-00393B)

NOTE: Wire coloring may not be identical to this diagram.

Pellet Wiring Diagram

(wiring harness 100-00393B)



Pellet Heater Operating Instructions

Using the AVR Control Board

The Two Modes of Operation:

Manual

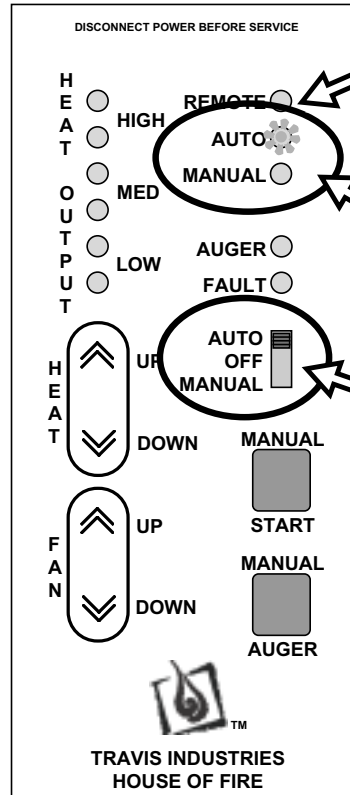
Manual mode requires the user to turn the heater on and off manually.

Auto (requires a thermostat)

Auto mode allows you to use a thermostat to control room temperature. The stove automatically turns on when the temperature drops below the thermostat setting. Once the stove reaches operating temperature, the stove then runs at the heat output setting selected.

Switching Modes While in Operation

Whenever the stove is switched from one mode to another while in operation, the stove will enter the "start-up" sequence for a minimum of 20 minutes.



NOTE: if using a modulating remote, this light will come on to indicate the remote is controlling the heater.

These indicator lights are used to determine which mode you are in.

Use the mode switch to determine the mode.

Pellet Heater Operating Instructions

Using the AVR Control Board

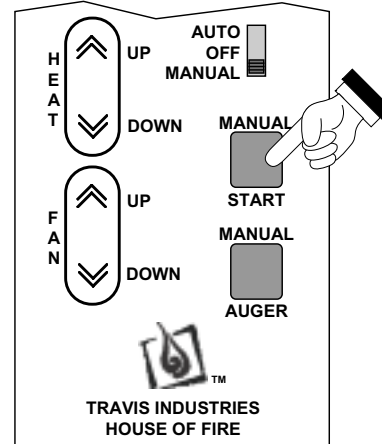
Manual Mode

Manual mode requires the user to turn the heater on and off manually.

To Start

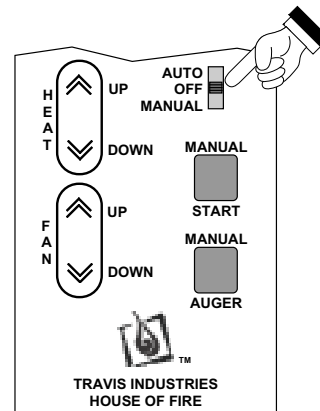
Press the "Manual Start" button. That's it. The stove automatically goes to a medium burn rate and high fan while the igniter starts the fire burning within 10 minutes. During this period the lowest "HEAT OUTPUT" light will flash. If the stove does not start in 30 minutes, the stove turns off.

Once up to temperature, the stove will then run at the heat output setting selected on the control panel (see "To Adjust the Heat" below).



To Shut Down

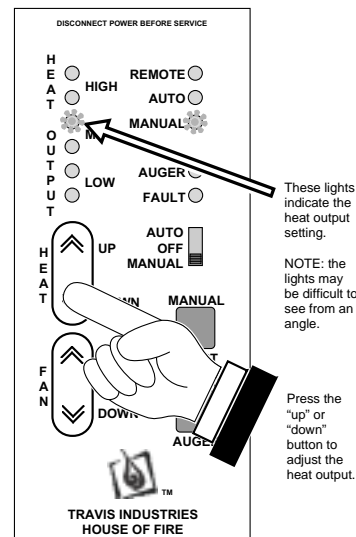
Move the mode switch to "OFF". The exhaust blower will still run until the heater cools down.



To Adjust the Heat

Press the "Heat" buttons to adjust the heat output.

NOTE: During start-up you may adjust the heat setting. This heat setting will take affect once the start-up sequence is complete.



Pellet Heater Operating Instructions

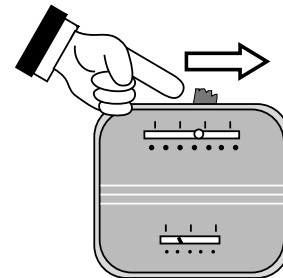
Using the AVR Control Board

Auto Mode

Auto mode allows you to use a thermostat to control room temperature. The stove automatically turns on when the temperature drops below the thermostat setting. Once the stove reaches operating temperature, the stove then runs at the heat output setting selected.

To Adjust Room Temperature (or Start the Stove)

Move the thermostat to the heat setting desired. If the room is cooler than the setting, the stove will go through the start-up sequence for approximately 10 minutes. During this period the lowest "HEAT OUTPUT" light will flash. Once up to temperature, the stove will then run at the heat output setting selected on the control panel. If the room is too hot, move the thermostat to a lesser setting.



To Adjust the Heat

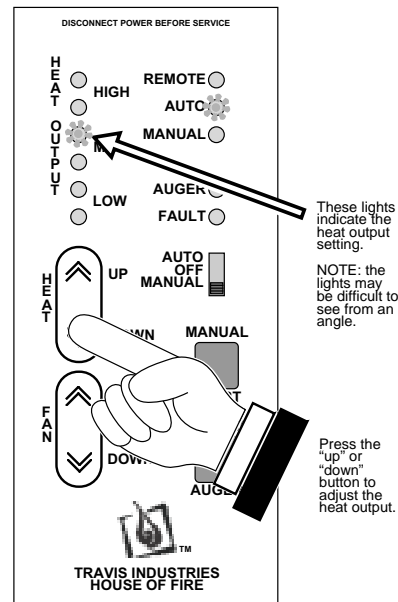
Press the "Heat" buttons to adjust the heat output.

HINT:

If you find that the stove turns on and off repeatedly, you may wish to turn the heat output to a lesser setting. The lower setting will provide a more consistent heat output over time, eliminating the need for the thermostat to repeatedly turn the stove off.

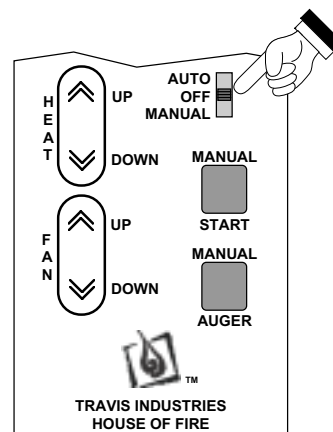
NOTE:

If the thermostat calls for heat while the stove is still cooling down, the stove will go through the start-up sequence (for a minimum of 20 minutes).



To Shut Down

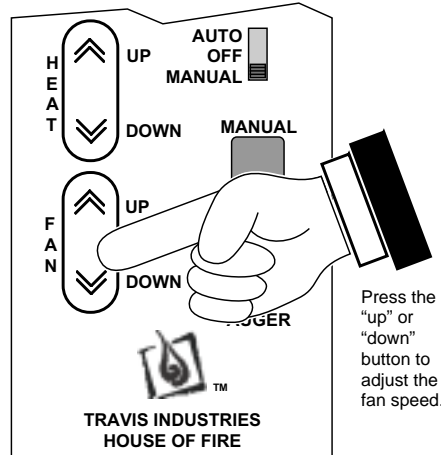
Move the mode switch to "OFF". The exhaust blower will still run until the heater cools down.



Pellet Heater Operating Instructions

Using the AVR Control Board

Adjusting the Fan Speed



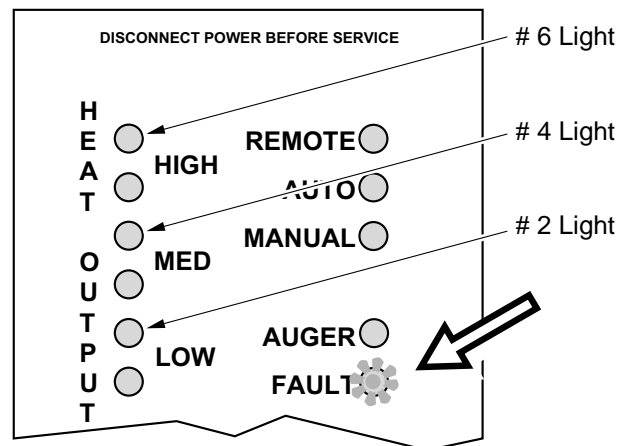
NOTE: When you press the Fan speed buttons the "Heat Output" lights will indicate fan speed (not "Heat Output"). After a few seconds the "Heat Output" lights will go back to displaying the heat output setting.

"FAULT" Light

This light comes on when an error occurs:

- The stove runs out of pellets
- During initial start-up (for a split second) or for improper electrical frequency
- A start-up sequence that does not result in the heater coming up to temperature

To reset the fault light, turn the mode switch to off and re-start the stove.



Fault Codes (for qualified service personnel only)

- Fault and #2 (LOW) Light Flash = Flow Switch Fault
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- Fault and #6 (HIGH) Light Flash = Safety or Hopper Snap Disk Fault