Pellet Stove Test Manual

Stricter Emission Standards

Adopt stricter emission standards than the EPA.

1. Washington: 4.5 grams per hour for non-catalytic and pellet stoves; 2.5 grams per hour for catalytic and pellet stoves.
2. Montana: The tax code, Subchapter 1, 42.4.104 (2) (d) says a tax credit applies to biomass stoves and furnaces which emit less than six grams per hour.
3. Ten states require that only outdoor hydronic wood boilers qualified by an EPA voluntary program be installed: New England states, New York, Pennsylvania, Maryland and Indiana. In two states - Washington and Oregon they are banned altogether.

Forbid Sale of Exempt Stoves

1. California: Forbids sale or installation of residential indoor wood stoves that are exempt from EPA regulation.
2. Washington: Same as California, above.
3. Oregon requires all stoves sold must meet EPA standards.
4. Colorado requires all new wood stoves sold must meet EPA standards, Pellet stoves must be below 4.1, and masonry stoves must not emit more than 6 grams PM per 6 kilograms of fuel. Wood boilers and furnaces are exempt which does allow outdoor wood boilers to be installed.
5. Utah: Solid Fuel Burning Devices must be EPA certified to be installed in the following Utah counties: Box Elder, Cache, Davis, Salt Lake, Tooele, Utah, and Weber Counties.

Forbids Sale and/or Installation of Uncertified Stove

1. Washington: Since 1992, has forbidden sale and installation of wood stoves or inserts that are not certified to the stricter Washington state emission standards.
2. Oregon: Forbids sale and installation of wood stoves or inserts that are not certified. Oregon began certifying stoves in 1986 and the EPA in 1988.
3. Denver-Metro area, Colorado: Prohibits sale and installation of new or used uncertified wood burning appliances
4. Summit County, Colorado: Forbids the installation of a non-certified wood stove in a new home or as a replacement unit for an existing non-certified stove.
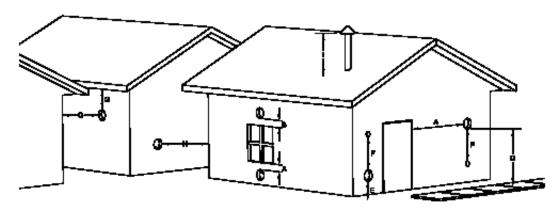5. Idaho: Several counties ban selling second-hand non-certified stoves.

Forbids Installation of Fireplaces

Denver Metro area: Banned unless they are equipped with an EPA Phase II wood or pellet burning insert, or electric or gas log.

VENT TERMINATION CLEARANCES:

A ——— Minimum 4-foot clearance below or beside any door or window that opens.

B ——— Minimum 1-foot clearance above any door or window that opens.

C ——— Minimum 3-foot clearance from any adjacent building.

D ——— Minimum 7-foot clearance from any grade when adjacent to public walkways.

E ——— Minimum 2-foot clearance above any grass, plants, or other combustible materials.

F ——— Minimum 3-foot clearance from a forced air intake of any appliance.

G ——— Minimum 2-foot clearance below eaves or overhang.

H ——— Minimum 1-foot clearance horizontally from combustible wall.

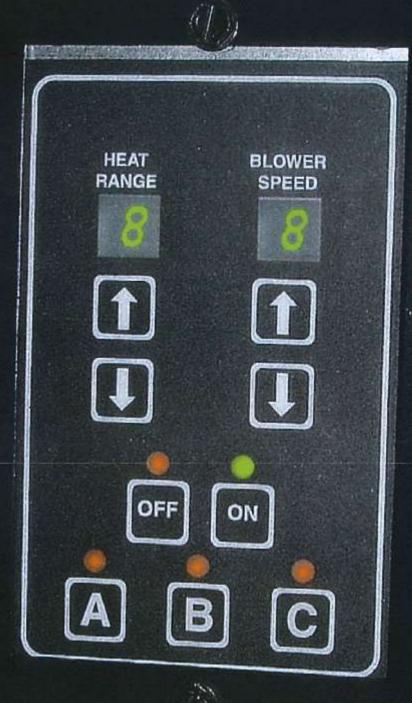I ——— Must be a minimum of 36-inches above the roof and 24-inches above the highest point of the roof within 10-feet.

VENT TERMINATION CLEARANCES

6039 ABC Board

Error Codes and Display Indicators

Error codes	Error description	Possible Causes
Err1	**High Limit Sensor has Tripped**	• Inadequate Ventilation • Room Fan Failure • Exhaust Blockage • Electrical Open in Wiring
Err2	**Stove Ran Out of Fuel During Normal Operation or Vacuum Issue**	• Hopper Empty • Auger Output Failure or Jam • Flame or Fuel Quality Caused Fire to burn to slowly or go out • Electrical Open in Wiring • Vacuum pressure issue
Err3	**The stove was unable to reach temperature to turn on the room fan**	• Flame or Fuel Quality caused fire to burn to slowly or go out • Auger output failed or jam • Hopper Empty • Thermistor not connected to control board or bad
Err4	**The Power failed while the stove was hot, and when power was restored the fire went out**	• Electrical Open in Wiring • Power Loss
Err5	**The Auger Output Fuse Has Blown**	• Auger Motor Jammed or Bad
Err6	**The Igniter Output Fuse has blown**	• Igniter Shorted out or bad
Err7	**The Draft Fan(Exhaust Fan)Output fuse has blown**	• Draft fan motor jammed or bad
Err8	**The Room Fan Output Fuse has Blown**	• Room Fan Motor Jammed or Bad
Err9	**Bad Control Board**	• Bad board try to reset it
Err 11	**Vacuum Issue**	• Check to see if stove is clean and exhaust fan is clean • Bypass the pressure switch

Display Indicators

Several situations or events are indicated in normal operation by blinking display indicators or segments in the display:

Flashing On Light: This means that the stove is in the "Start Up" state waiting for either a 3 minute time-out to begin burning or for the stove to reach the warm temperature whichever comes first.

Flashing Off Light: This indicates that the stove is in the shutdown state waiting for the OFF button, or for a 15 minute period after the stove was turned off, or for the stove to cool down, or for the door to be closed.

The "A", "B", and "C" buttons on the control panel are reserved for diagnostic use only. These controls are disabled by default when the unit is shipped from our factory.

Activate the "A" and "B" Buttons: Press the Heat Range Down and the Blower Range UP at the same time for 5 seconds to activate.

Factory Defaults: To return the control to is original factory default settings, Press and hold the "B" and "C" until P1 Appears use the heat range arrow to increase to P9 and Press the ON Button. The unit will Turn Off and the board will be reset.

Possible Causes for a vacuum issue:

Gasket around door or glass not sealing properly.

Clean-out slides on front of unit open.

Clean-out slides inside firebox not closed properly.

Unit has not been cleaned: firebox, underneath firepot, behind clean-outs on inside of unit, brass port inside firebox clogged, vacuum hose clogged-brittle-cracked, exhaust pipe clogged, exhaust pipes not sealed, improper venting—excessive horizontal length—too many elbows—vented INTO chimney, and the last thing to rule out is a faulty pressure switch itself.

90 to 95% of the time a faulty pressure switch is **NOT** the problem.

Just because the unit will run with the pressure switch "jumped" does not mean the pressure switch is faulty. It simply means we have told the unit to "ignore" the vacuum problem.

Cleaning firebox: clean thoroughly, remove firepot-clean underneath, clean brass port in firebox, remove ceramic brick(6039-6041)—tap on the back wall of the firebox several times to loosen any accumulated soot or ash-lift clean-out slides-remove any and all soot and ash—may need to use a flexible brush or some customers use a straightened wire clothes hanger and push any build-up in between the two clean-outs to one side or another and then remove.

Check gasket around door and glass and make sure it seals all the way around-that it is not frayed or burned allowing any gaps.(some 5500-5510 have gaps at bottom of glass gasket)

Make sure the door seals—doing paper test.

UNPLUG UNIT.

Remove side panel—left side facing stove—locate pressure switch-remove hose from pressure switch-blow through to make sure it is not clogged or cracked. Make sure it is connected well to the brass port going into the back of the firebox,--AGAIN—make sure it is not brittle cracked or damaged—reconnect hose to pressure switch making sure the clamp is tight.

Make sure the exhaust piping has been cleaned—all of it, not just the clean-out tee removed and emptied.

Make sure the piping is sealed—especially the first piece attached to the exhaust pipe.

THESE UNITS CANNOT BE VENTED **INTO** A CHIMNEY. THE PIPE-(3" or 4" PELL VENT)- **MUST** RUN ALL THE WAY TO THE TOP.

6039 A B C Board

A-AUGER
B-BLOWER
C-AUGER DELAY DURING START UP
C-AUX WILL TURN AGITATOR

Version 13 b also applies to version 12 b & 11 b

THE A AND B BUTTONS WERE NOT ACTIVE. PRESS THE HEAT RANGE DOWN AND BLOWER RANGE UP AT THE SAME TIME FOR 5 SECONDS TO ACTIVATE

PRESS THE A BUTTON AND THE HEATRANGE NUMBER SHOULD DISAPPEAR. THE BLOWER SIDE WILL READ THE AUGER SETTING. FACTORY SETTING IS 4. THIS CONTROLS THE AUGER SPEED

PRESS THE B BUTTON AND THE HEAT RANGE NUMBER SHOULD DISAPPEAR. THE BLOWER SIDE WILL READ THE COMBUSTION AIR SETTING. FACTORY SETTING IS 3. THIS CONTROLS THE COMBUSTION AIR.

RESET TO FACTORY-HOLD IN B & C UNTIL P1 APPEARS. USE THE HEAT RANGE ARROW INCREASE TO P9 AND PRESS THE ON BUTTON- THE UNIT WILL TURN OFF THE BOARD WILL BE RESET.

VERSION 32B
A-AUGER
B-BLOWER
C-AUGER DELAY DURING START UP
C-AUX WILL TURN AGITATOR

THIS VERSION WAS FAMOUS FOR BLOWING FUSES IT CAN ALSO CAUSE THE EXHAUST
AND ROOM BLOWER TO TURN ON AND OFF.

 PLEASE TELL THE CUSTOMER WE NEED TO UPDATER THE CONTROL BOARD AND SEND
OUT THE LATEST VERSION TO THEM

VERSION 33 B

A-AUGER

B-BLOWER

C-AUGER DELAY DURING START UP

C-AUX WILL TURN AGITATOR

THE A AND B BUTTONS SHOULD BE ACTIVE IF NOT PRESS THE HEAT RANGE DOWN AND BLOWER UP.

THE HEAT RANGE DOWN AND BLOWER SIDE WILL READ THE

AUGER SETTING FACTORY SETTING IS 4 THIS CONTROLS THE AUGER SPEED

PRESS THE A BUTTON AND THE HEAT RANGE NUMBER SHOULD DISAPPEAR. THE BLOWER SIDE WILL READ THE AUGER SETTING FACTORY SETTING IS 4. THIS CONTROLS THE AUGER SPEED.

PRESS THE B BUTTON AND THE HEAT RANGE NUMBER SHOULD DISAPPEAR. THE BLOWER SIDE WILL READ THE COMBUSTION AIR SETTING. FACTORY SETTING IS 3. THIS CONTROLS THE COMBUSTION AIR

RESET TO FACTORY- HOLD IN B & C UNTIL P1 APPEARS. USE THE HEAT RANGE ARROW INCREASE TO P9 AND PRESS THE ON BUTTON- THE UNIT WILL TURN OFF. THE BOARD WILL BE RESET

VERSION 34 B
A-AUGER
B-BLOWER
C-AUGER DELAY DURING START UP
C-AUX WILL TURN AGITATOR

THE A AND B BUTTONS WERE NOT ACTIVE. PRESS THE HEAT RANGE DOWN AND BLOWER RANGE UP AT THE SAME TIME FOR 5 SECONDS TO ACTIVATE. THE A AND B BUTTONS WILL NOT LIGHT UP WHEN PRESSED

FEED-PRESS THE A BUTTON THE HEAT RANGE NUMER AND BLOWER SPEED NUMBER SHOULD CHANGE THIS IS THE POUNDS PER HOUR THE AUGER WILL FEED. THE FACTORY SETTING IS 1.5 THIS IS THE LOW FUEL RATE FOR SETTING NUMBER ONE. DO NOT TELL THE CUSTOMER THIS IS REFERING TO POUNDS PLEASE REFER TO THIS NUMBER AS FIFTEEN

FEED-IF YOU PRESS THE A BUTTON TWICE YOU WILL SEE THE HIGH END AUGER SPEED THE FACTORY SETTING IS 5.0 THIS IS THE AUGER SPEED FOR THE NUMBER 9 SETTING TO INCREASE OR DECREASE THESE SETTINGS USE THE ROOM BLOWER ARROW UP AND DOWN

AIR-PRESS THE B BUTTON AND YOU WILL SEE A NUMBER ON THE HEAT RANGE SIDE AND BLOWER SIDE. THIS IS THE LOW END COMBUSTION BLOWER SPEED (SETTING #1) THE FACTORY SETTING IS 90

AIR-PRESS THE B BUTTON TWICE AND YOU WILL SEE A NUMBER ON THE HEAT RANGE SIDE AND BLOWER SIDE. THIS IS THE HIGH END COMBUSTION BLOWER SPEED (SETTING #9). THE FACTORY SETTING IS 08 WITH C BUTTON LIGHT ON

RESET TO FACTORY- HOLD THE BLOWER ARROW UP AND THE BLOWER ARROW DOWN AT THE SAME TIME UNTIL THE UNIT TURNS OFF

6039 ABC Board Test

To run this test the <mark>**UNIT MUST BE COOLED OFF**</mark>. Power up the unit by plugging in the power supply cord to the back of the unit. Press the on button

Step 1: Press and Hold down the A and B buttons at the bottom of the board until the display shows an "0" and a "1". <mark>**This steps checks the Exhaust Blower and Vacuum Switch.**</mark> Check to see if the Blower is running and if the Red LED is on above the A button. Open the door and see if the LED goes off; shut the door and make sure it comes back on. If the A is not on in this step check the gaskets on the door and clean the units exhaust blower and ash cleanouts <mark>Vacuum Issue</mark>. If so, Press the ON button to go to the next step.

Step 2: Display will show an "0" and "2". <mark>**This step checks the Room Blower.**</mark> Check to see if the room fan is running. If so, Press the ON button.

Step 3: Display will show an "0" and "3". <mark>**This step checks the Agitator**</mark>. They should see it turning clockwise in the burnpot. If so, Press the ON button

Step 4: Display will show an "0" and "4". <mark>**This step checks the Auger Motor.**</mark> With the hopper lid closed, the auger motor should be running. If so, lift the lid to check the micro switch mounted on the right side of the hopper; the motor should stop. Close the lid to make sure that the motor comes back on. If so Press the ON button.

Step 5: Display will show an "I" and "1". <mark>**This step checks the low temperature switch**</mark>. It will turn on the LED over the "A" if the low temperature switch is open which means it is at room temp. If so have them Press the ON button. The "A" light will be off if the switch is closed and this tells you it is hot.

Step 6: Display will show an "I" and "2". <mark>**This step checks the Thermostat Plug.**</mark> Make sure that the LED (Red light) over the A button is on. If so, Press the ON button to go to the next step.

Step 7: Display will show a numerical value. <mark>**This is the room temperature measured at the thermistor attached to the exhaust housing.**</mark> The displayed temperature should be close to the room (ambient) temperature. <mark>**NO temp reading (00) thermistor disconnected from the board or bad board**</mark>. Press the On button to go to the next step.

Step 8: Display will show the Frequency of the A/C input voltage. <mark>**Display should show a 59, 60, or 61.**</mark> If so, Press the ON button to go to the next step.

6039 P-CODES

Press On-shows setting

To enter P codes Press B & C

Heat range up and down will change settings

Store the variable NOTE if p9 is selected the control will store the default variables exit the variable modify utility and go into the off mode

P1- The auger period in tenths of seconds. The default is 175 (17.5 seconds for program B 16.0 seconds for all other programs) see auger on worksheets below

P2-Cold Stove temperature. When the off button is depressed the will continue to run the draft fan, room fan and lower auger until this temperature is reached. When reached all outputs wil be turned off. The default setting is 95 degrees for models with a heat sensor. Others will use a 110F-20F disk causing the control board to read an open circuit at 90F.

P3-High temperature shutdown. When the stove reaches this temperature the control will stop the starting auger or reduce the auger cycle. The default value is 350 degrees. For models using a hi limit disk this temperature will be 250Fv

P4- High temperature hysteresis. If the stove reaches the high temperature shutdown value, this variable determines how many degrees the stove must cool below the shutdown value to resume normal auger operation. The default value is 1 degree

P5-AirOn Temperature base. If the Air on temperature setting is 1 this value determines the temperature the stove must attain to be considered "On Temperature". This is the temperature that the stove must attain during 15 minute startup period to avoid being shut down. It is also the temperature that must be reached to operate the room fan. If the AOT setting is increased the On Temperature is increased by 3 degrees for every increment. The default value is 115 degrees.

P6-Auger Bump Timer. If program B is selected (Corn stove operation), this variable is the number of minutes that the control will bump the auger when shutting down to help prevent burn back. The ON time for the auger in this mode is 5 seconds during the period. The default value is 8 minutes.

P7- No igniter P7 not needed with this stove

P8- Maximum Start Time. This variable determines how many minutes will be allowed for the stove to attain On Temperature when started. If an electric started is used this time begins when the electric starter is turned off. The default value is 15 minutes. Change heat range with up and down arrows and press On to save

P9-If this variable is selected, the unit will set all variables to default values

PA- Almost Hot Temperature(5500XL, 5700) If the stove if reaches this temperature the room fan will be turned on high no matter what the room fan setting is. The duty cycle of the auger will be cut back from a maximum rate to a lower rate. The default value is 290 degrees.

PB- Auger Operation During Electric Start. 5500XL, 5700 Only) If this variable is set to 1 the upper and lower auger will be turned off while the electric starter is on. If this variable is set to zero the auger will operate at its normal duty cycle while the starter is on. The default value is 0

PC-Max Auger Operation (5500XL, 5700 Only) If this variable is set to one, the auger will be operated at a maximum rate of 4 lbs. of fuel per hour (if the stove temperature is less than the Almost Hot Temperature). If this variable is set to 0, the maximum auger operation will be 3 lbs of fuel per hour. The default value is 1

PD- Agitator Period. This variable is the period of the agitator. The on times for the agitator for the 9 heat rangers (1-9) are 16, 21, 26, 31, 36, 41, 46, 54 and 62 seconds. The off time for a heat range setting is the period minus the off time so if the period is set less than 16, the auger will run constantly. Setting the period of 255 seconds means the agitator will never turn on. The default setting is 61 seconds.

PE- Ignore Vacuum Sensor Setting. The combustion air fan can be operated at a slow enough speed during normal operation that the vacuum sensor input can open. Setting this value to 2 for example, will cause the control to ignore the vacuum sensor input for heat range settings 2 of 1. Setting this variable to 9 will cause the control to ignore the vacuum sensor totally. The default setting for this variable is 1. (Set to 0 if programs A, C or D are selected.

6039 4 digit board

Error Codes and Display Indicators

Error codes	Error description	Possible Causes
Err1	**High Limit Sensor has Tripped**	• Inadequate Ventilation • Room Fan Failure • Exhaust Blockage • Electrical Open in Wiring
Err2	**Stove Ran Out of Fuel During Normal Operation or Vacuum Issue**	• Hopper Empty • Auger Output Failure or Jam • Flame or Fuel Quality Caused Fire to burn to slowly or go out • Electrical Open in Wiring • Vacuum pressure issue
Err3	**The stove was unable to reach temperature to turn on the room fan**	• Flame or Fuel Quality caused fire to burn to slowly or go out • Auger output failed or jam • Hopper Empty • Thermistor not connected to control board or bad
Err4	**The Power failed while the stove was hot, and when power was restored the fire went out**	• Electrical Open in Wiring • Power Loss
Err5	**The Auger Output Fuse Has Blown**	• Auger Motor Jammed or Bad
Err6	**The Igniter Output Fuse has blown**	• Igniter Shorted out or bad
Err7	**The Draft Fan(Exhaust Fan)Output fuse has blown**	• Draft fan motor jammed or bad
Err8	**The Room Fan Output Fuse has Blown**	• Room Fan Motor Jammed or Bad
Err9	**Bad Control Board**	• Bad board try to reset it
Err 11	**Vacuum Issue**	• Check to see if stove is clean and exhaust fan is clean • Bypass the pressure switch

Display Indicators

Several situations or events are indicated in normal operation by blinking display indicators or segments in the display:

Flashing On Light: This means that the stove is in the "Start Up" state waiting for either a 3 minute time-out to begin burning or for the stove to reach the warm temperature whichever comes first.

Flashing Off Light: This indicates that the stove is in the shutdown state waiting for the OFF button, or for a 15 minute period after the stove was turned off, or for the stove to cool down, or for the door to be closed.

Flashing Dash in Heat Range Display: This indicates that the stove is in normal run mode and is ramping from the current heat range setting to the target heat range setting. Once the ramp is complete the dash will stop flashing. For Ramping from heat range 1 to 5, the default time is 12 minutes (with a 90 second ramp time).

Flashing Automatic Mode Indicator: This indicates that the stove is in normal operation and is running in the automatic mode. However either the draft fan or auxiliary setting is manually configured.

Flashing draft fan: This indicates that the stove is in normal operation and that the vacuum sensor detects a loss of pressure either because the door is open or because there is a negative pressure in the room with respect to the exhaust.

Flashing Aux Indicator: This Indicates that the igniter is on during the lighting stage.

Quickly Flashing Heat Range Setting Indicator (changes twice per second): This indicates that the stove is in normal operation and that an over-temperature condition exists causing the fuel to stop.

Slowly Flashing Heat Range Setting Indicator (changes once per second): This indicates that the stove is in a cut back condition in an attempt to prevent an over-temperature shutdown

Factory Defaults: To return the control to its original factory default settings, Press and hold the AUX UP and AUX DOWN buttons together for three seconds.

Possible Causes for a vacuum issue:

Gasket around door or glass not sealing properly.

Clean-out slides on front of unit open.

Clean-out slides inside firebox not closed properly.

Unit has not been cleaned: firebox, underneath firepot, behind clean-outs on inside of unit, brass port inside firebox clogged, vacuum hose clogged-brittle-cracked, exhaust pipe clogged, exhaust pipes not sealed, improper venting—excessive horizontal length—too many elbows—vented INTO chimney, and the last thing to rule out is a faulty pressure switch itself.

90 to 95% of the time a faulty pressure switch is **NOT** the problem.

Just because the unit will run with the pressure switch "jumped" does not mean the pressure switch is faulty. It simply means we have told the unit to "ignore" the vacuum problem.

Cleaning firebox: clean thoroughly, remove firepot-clean underneath, clean brass port in firebox, remove ceramic brick (6039-6041)—tap on the back wall of the firebox several times to loosen any accumulated soot or ash-lift clean-out slides-remove any and all soot and ash—may need to use a flexible brush or some customers use a straightened wire clothes hanger and push any build-up in between the two clean-outs to one side or another and then remove.

Check gasket around door and glass and make sure it seals all the way around-that it is not frayed or burned allowing any gaps.(some 5500-5510 have gaps at bottom of glass gasket)

Make sure the door seals—doing paper test.

UNPLUG UNIT.

Remove side panel—left side facing stove—locate pressure switch-remove hose from pressure switch-blow through to make sure it is not clogged or cracked. Make sure it is connected well to the brass port going into the back of the firebox,--AGAIN—make sure it is not brittle cracked or damaged—reconnect hose to pressure switch making sure the clamp is tight.

Make sure the exhaust piping has been cleaned—all of it, not just the clean-out tee removed and emptied.

Make sure the piping is sealed—especially the first piece attached to the exhaust pipe.

THESE UNITS CANNOT BE VENTED **INTO** A CHIMNEY. THE PIPE-(3" or 4" PELL VENT)- **MUST** RUN ALL THE WAY TO THE TOP.

6039 4 Digit Control Board Test

To run this test the UNIT MUST BE COOLED OFF. Power up the unit by plugging in the power supply cord to the back of the unit. Press the on button and the circuit board then press and hold the Off and Auger Delay buttons simultaneously for 3 seconds. To advance through the test press the on key. If the Heat Range lLight is on during every test check Hopper Switch Wires.

1. Exhaust Fan Output Test- The display will show "**OUT1**". The exhaust fan is turned on full then reduced to a level just above the typical minimum pressure switch setting. The **ON LED** indicates whether the pressure sensor is detected. Press the ON button to move to the next step.

2. Room Fan Output Test – The display will show "**OUT2**". The room fan is turned on full. Press the ON button to move to the next step.

3. Agitator Output Test – The display will show "**OUT3**". The Agitator motor is turned on full. Press the ON button to move to the next step.

4. Auger Output Test – The display will show "**OUT4**". The auger motor is turned on full. The ON LED will be lit when the over temperature is in cool state. Press the ON button to move to the next step.

5. Low Limit Switch Test – The display will show "**IN 1**". If the stove is warm (above 110°F), the ON LED will turn OFF. If the stove is cool the ON LED will be on. Press the ON button to move to the next step.

6. Thermostat Test – The display will show "**IN 2**". If the thermostat input is closed, the ON LED light will be on, otherwise it will be off. Press the ON button to move to the next step.

7. Temperature Test – If equipped with an RTD sensor it measured the temperature and will display in 0° F. Press the ON button to move to the next step.

8. AC Frequency Test - Displays the measured AC frequency in hertz followed by the letter "H".
   This should read 59, 60, or 61H. Press the ON button to move to the next step.

6039 4 Digit Board C Codes

To adjust the operation constants, press the hold the MODE and AUGER DELAY buttons simultaneously for 3 seconds. The display will show "C-1". Use the HEAT RANGE UP or HEAT RANGE DOWN buttons to change the constant number (see the list of vales below). When the desired constant is displayed, press the ON button to toggle between viewing and editing the value. While editing a parameter, use the AUX again to return to the constant number list. Press the OFF button to exit the operational constants mode.

- **C-1**- Reset to defaults (hold mode and auger delay buttons for 3 seconds to reset all to defaults)
- **C-2**- Fuel Lbs. Per hour HR 1 (0-6.5) - this is the fuel rate in pounds per hour for a heat range setting of 1. **The Default is 2.0lbs per hour.**
- **C-3**- Fuel Lbs. Per Hour HR 9 (0- 6.5) - This is the fuel rate in pounds per hour for a heat range setting of 9. **The Default is 5.0lbs per hour**. The fuel rates used between settings of 1 and 9 are linearly interpolated between the two settings.
- **C-4**-Agitator On Percentage HR1 (0-50) – this is the percent on time for the agitator for setting of 1. **The Default is 25%.**
- **C 5**-Agitator On Percentage HR9 (0-50) – This is the percent on time for the agitator for a setting of 9. **The Default is 50%**. The percent on time for the agitator used between settings 1 and 9 are linearly interpolated between the two settings.
- **C-6**-Room Fan Level HR 1 (0-500) – This is the output level applied to the room fan for a setting of 1. **The Default value is 250/500.**
- **C-7**-Room Fan Level HR 9 (0-500) – This is the output level applied to the room fan for a setting of 9. **The Default value is 370/500.** The Room fan output levels used between settings 1 and 9 is linearly interpolated between these two settings.
- **C-8**-Draft Fan Level HR 1 (0-500) – This is the draft fan output lever for a draft fan setting of 1. **The Default is 230/500.**
- **C-9**-Draft Fan Level HR 9 (0-500) – This is the draft fan output lever for a draft fan setting of 9. **The Default is 270/500.**
- **C-10**-Draft Fan Full On at Setting 9 (0-1) – If this parameter is **set to 1 (default**), the setting for C9 is used for a fan speed of 8, and a value of 500 is used for a fan speed of 9. If the parameter is set to 0, the setting for C9 is used for a fan speed of 9, and all remaining fan speeds are set based on the interpolation between C9 and C8.
- **C-11**- Ramp Seconds for Increasing Level (0-300) – When the heat range setting is adjusted, the control will ramp from the current setting to the target setting to avoid abrupt changes in the outputs that could cause problems with the flame quality. The Ramp Seconds value sets the amount of time to spend on each heat range setting as the current setting is ramping toward the target. If the current setting is ramping down toward a lower target, the ramp value is half the number. **The default value is 90 seconds.**
- **C-12**-Startup Minutes for Detection Warm Stove- (10-60) This is the amount of time the control will wait for the stove to reach the warm temperature (110°F) after the stove has

been started before shutting down and reporting an Error Condition Err3. **The default is 30 minutes.**