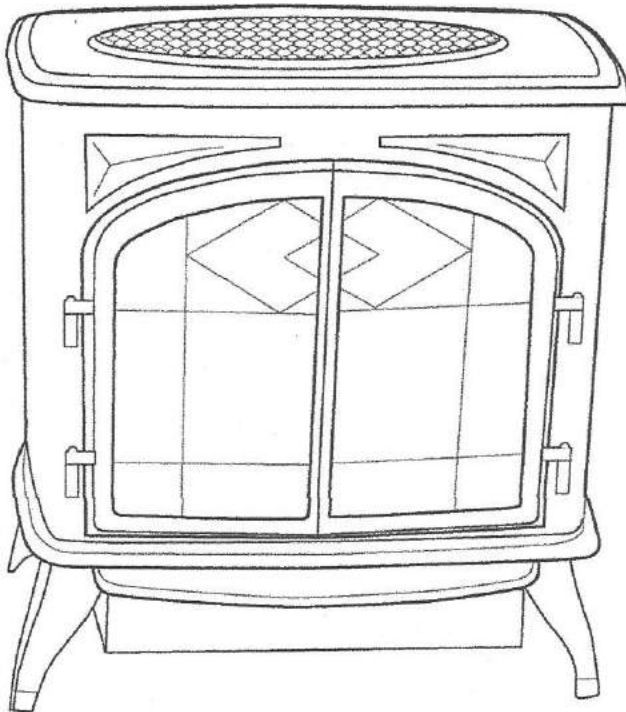
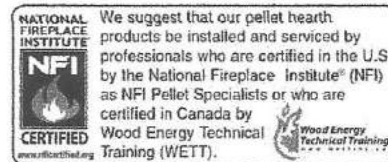

ECHO PELLET E.I. II

Pellet Heater Owner's Manual
Installation and Operating Instructions



Made in the USA by:



Please read this entire manual before installation and use of the pellet fuel-burning room heater. Failure to follow these instructions could result in property damage, bodily injury or even death.

SAFETY NOTICE

- HEATER MUST BE PROPERLY INSTALLED AND MAINTAINED OR A HOUSE FIRE MAY RESULT.
- FOR YOUR SAFETY, FOLLOW THE INSTALLATION INSTRUCTIONS.
- CONTACT LOCAL BUILDING OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION AND PERMIT REQUIREMENTS.
- FAILURE TO COMPLY WITH OWNER'S MANUAL INSTRUCTIONS WILL VOID WARRANTY AND COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

PLEASE LEAVE THIS MANUAL WITH THE OWNER!!

Warnock Hersey Test Labs, Middleton, WI

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LABORATORY LISTING LABEL

<p>DO NOT REMOVE THIS LABEL</p>  <p>W/N 14139</p>	<p>Model: Echo Pellet Fuel Room Heater, Also For Use In Mobile Homes</p> <p>Install and use only in accordance with manufacturer's installation and operating instructions. Contact local building officials about restrictions and installation inspection in your area.</p> <p>DATE OF MFG. SERIAL NO.</p> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="width: 40%; height: 20px; background-color: black;"></div> <div style="width: 40%; height: 20px; background-color: black;"></div> </div>	 <p>TheLin Company, Inc. 12400 Loma Rica Drive Grass Valley, CA 95945</p>																
<p>This pellet fired appliance has been tested and listed for use in manufactured homes in accordance with Oregon Administrative Rules 814-23-900 through 814-23-909, ASTM E1509-04, ULC S627-93 and UL 1482-00. Install per H.U.D. 24CFR Sec. 3280.</p>																		
<p>PREVENT HOUSE FIRES</p> <ul style="list-style-type: none"> • Install and use only in accordance with the owner's manual provided with this appliance. • Contact local building or fire officials about restrictions and installation inspections in your area. • For use with pelletized wood fuel only. Use of other fuels will cause a hazardous condition. • Do not connect this unit to a chimney flue serving another appliance. • Keep viewing and ash removal doors tightly closed during operation. • Input Rating – 3.1 lbs/hr <p>CAUTION: Special methods are required when passing chimney through a wall or ceiling. Refer to local building codes. Replace glass only with 5mm ceramic. Operate this unit only with the fuel hopper lid closed. Failure to do so may result in emission of products of combustion from the hopper under certain conditions. Maintain hopper seal in good condition. Do not overfill the hopper.</p> <p>WARNING: (Mobile Home) An outside air inlet must be provided for combustion and be unrestricted while unit is in use. The structural integrity of the mobile home floor, walls, ceiling, and roof must be maintained.</p> <p>DANGER: Risk of electrical shock. Disconnect power before servicing unit. Do not run power cord under appliance.</p>																		
<p>INSTALLATION REQUIREMENTS</p> <p>Refer to local codes and the chimney manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling. Place on non-combustible floor protection which extends 6-inches to the front, and 6-inches to each side, of the fuel opening. See owner's manual for additional clearance information.</p> <p>VENT TYPE: Use only type "PL" pellet vent and connectors (Size 3"/75mm or 4"/100mm).</p> <p>ELECTRICAL RATING: 120 Volts/2.0 Amps/60Hz/1 Phase – U.K. 240V</p>																		
 06 EN 14785:2007 Residential Space Heating appliance fired by wood pellets	<p>Emission of CO in combustion products: nominal heat output <0.04% Reduced heat output <0.06%</p> <p>Flue Gas Temperature: 169 Deg. C</p> <p>Thermal Output: 6.9 kW</p> <p>Energy Efficiency: nominal heat output 6.9kW 85% Reduced heat output 3.7kW 80%</p> <p>Fuel Types: Wood Pellets, 6mm diameter, 12mm to 25mm long</p>																	
<p>CLEARANCES TO COMBUSTIBLES – FREESTANDING HEATER</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  </div> <div style="width: 30%;">  </div> <div style="width: 30%;"> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">A. UNIT TO BACKWALL</td> <td style="width: 50%;">3" / 75mm</td> </tr> <tr> <td>B. UNIT TO SIDEWALLS</td> <td>5" / 125mm</td> </tr> <tr> <td>C. UNIT TO DIAGONAL WALL</td> <td>3.5" / 89mm</td> </tr> <tr> <td>D. FLOOR PROTECTOR</td> <td>6" / 150mm</td> </tr> <tr> <td colspan="2">MINIMUM ALCOVE WIDTH</td> </tr> <tr> <td colspan="2">38" / 965mm</td> </tr> <tr> <td colspan="2">MINIMUM ALCOVE HEIGHT</td> </tr> <tr> <td colspan="2">48" / 1220mm</td> </tr> </table> </div> </div> <div style="text-align: right; margin-top: 10px;">  </div>			A. UNIT TO BACKWALL	3" / 75mm	B. UNIT TO SIDEWALLS	5" / 125mm	C. UNIT TO DIAGONAL WALL	3.5" / 89mm	D. FLOOR PROTECTOR	6" / 150mm	MINIMUM ALCOVE WIDTH		38" / 965mm		MINIMUM ALCOVE HEIGHT		48" / 1220mm	
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 <p>CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.</p>																		

GENERAL INFORMATION

Installation and repair should be done by a qualified service person. The heater should be inspected before use and once a year by a qualified service person. More frequent cleaning may be required due to fuel quality, excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners, and circulating air passageways of the heater be kept clean.

The Echo Pellet E.I. Heater has been designed and approved for burning **wood pellet fuel only**. Burning solid fuel in other forms is not permitted and will void all warranties. Pellet fuel should be ¼" diameter and ½" to 1" long.

Store fuel in a covered, dry area. Pellet fuel bags can absorb moisture and must be kept dry. Never place fuel bags next to heater. Maintain minimum clearances to combustibles at all time.

This unit has been approved for use with a **3" and 4" Type L Pellet Vent System**. On runs in excess of 10' and installations per FIGURE 7, the 4" pipe must be used.

NEVER use gasoline, gasoline-type lantern fuels, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire. Keep all such liquids well away from the heater while it is in use.

Ashes should be placed in a metal container with tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally disbursed, they should be retained in the closed container until all cinders have been thoroughly cooled.

NOTE: During the first few burns the high-temperature paint and sealant used in manufacture will emit some odor and smoke. Open doors and windows to the outside for proper ventilation during the first burn cycle and curing of the paint.

This heater, when installed, must be electrically grounded according to local codes or, in the absence of local codes, with the **National Electrical Code, ANSI/NFPA 70-1987**.

Provide adequate clearances around air openings leading into the combustion chamber. Provide adequate accessibility clearance for servicing and proper operation. Never obstruct the front opening of the heater.

The heater may be installed as a free-standing unit mounted on a non-combustible protective floor pad or hearth. Or it may be mounted into an existing UL-approved wood stove chimney. Non-combustible floor protection is required and must be used when placing the heater on any combustible material.

THE ECHO REQUIRES OUTSIDE COMBUSTION AIR ON ALL INSTALLATIONS. NO EXCEPTIONS ALLOWED (see FIGURE 2).

CAUTION: Do not connect this unit to a chimney flue serving another appliance. Do not install flue damper in the exhaust venting system of the unit.

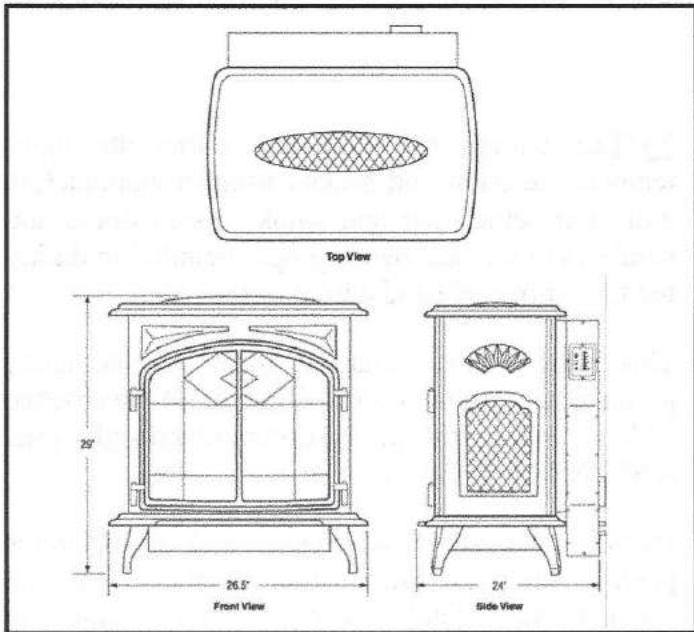


FIGURE 1 - OVERALL DIMENSIONS

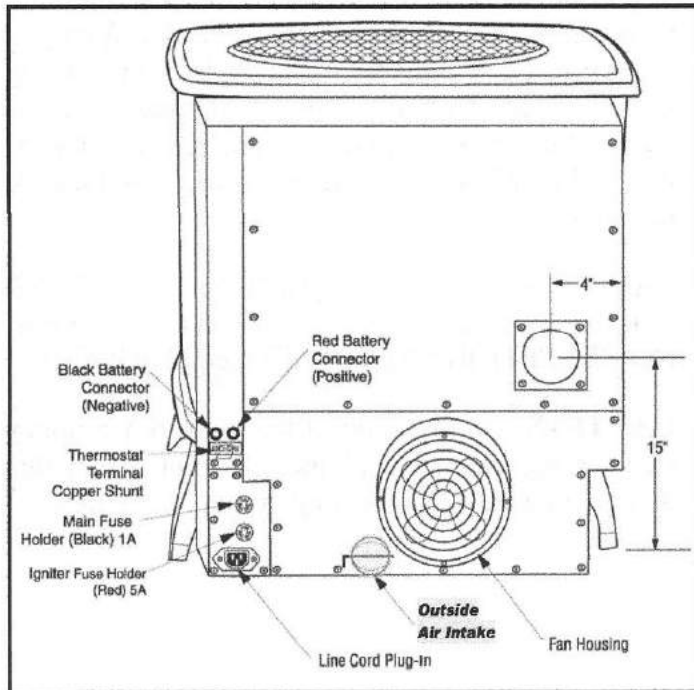


FIGURE 2

CAUTION: HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.

CLEARANCES

CHECK WITH LOCAL BUILDING OFFICIALS FOR SPECIFIC CODE REQUIREMENTS. A LISTED, TYPE "L" PELLET VENT PIPE IS MANDATORY ON ALL INSTALLATIONS.

Clearance to Combustibles

- Unit to Sidewall..... 5" (125 mm)
- Unit to Backwall..... 3" (75 mm)
- Unit to Diagonal Wall3.5" (87.5 mm)

MOBILE OR MODULAR HOME

Mobile home installation should be in accordance with the Manufactured Home and Safety Standard (HUD), CFR 3280, Part 24.

WARNING: Outside combustion air is mandatory in mobile or modular installations. An outside air inlet **MUST** be provided for combustion and ventilation air. The air inlet must remain unrestricted while unit is in use. Outside air connection is made at the air intake located on the rear of the stove (see Figure 2). The Outside Air Kit is mandatory for mobile and modular home installations. The kit contains 2" flex tubing (part #43000-270). Outside air kit includes flex tube, hose clamp, and rodent screen/cap. **Do not hook up unit without this kit.** Secure stove to the floor utilizing the holes provided on the bottom of the legs. Unit must be electrically grounded to steel frame of mobile home.

WARNING: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALLS, AND CEILING/ROOF MUST BE MAINTAINED. DO NOT INSTALL IN SLEEPING ROOM.

Use only listed Type "L" pellet vent components for installation. Failure to use listed pellet vent pipe will void your warranty. See pipe manufacturer instructions for installation instructions.

INSTALLATION

1. When deciding on the location of your heater and vent pipe, minimize the alteration and reframing of structural components of the building. Vent pipe must be installed so that access is provided for inspection and cleaning.
2. Avoid installing heater in high-traffic areas. Keep children well away from heater when in operation.
3. **A 3-inch clearance to combustibles must be maintained for horizontal and vertical venting.** When passing through ceilings or walls, a listed wall thimble must be used, making sure all combustible materials and insulation products are a minimum of 3 inches away from the pellet vent pipe. If using the Pellet Pro, a 1" clearance is required.
4. A non-combustible hearth pad must be used if installed on a carpet, wood floor, or other combustible material (see FIGURE 3). Maintain 6" (152mm) beyond the front and beyond each side of the fuel loading and ash removal opening.
5. Keep front door of appliance thirty-six (36) inches from combustibles (drapery, furniture).
6. When installing the exhaust vent into an existing chimney, a clean out tee must be installed behind the heater before going up into the chimney. This is necessary in order to remove the fly ash accumulation.
7. Install vent at clearances specified by the vent manufacturer.
8. Exit termination (distance to openings):
 - a. 3 feet minimum above any forced air inlet located within 10 feet.
 - b. 4 feet minimum below and horizontal to any door or 1 foot minimum above any door, window, or gravity air inlet into any building.
 - c. 2 feet minimum to an adjacent building and 7 feet minimum above grade when located adjacent to public walkways.

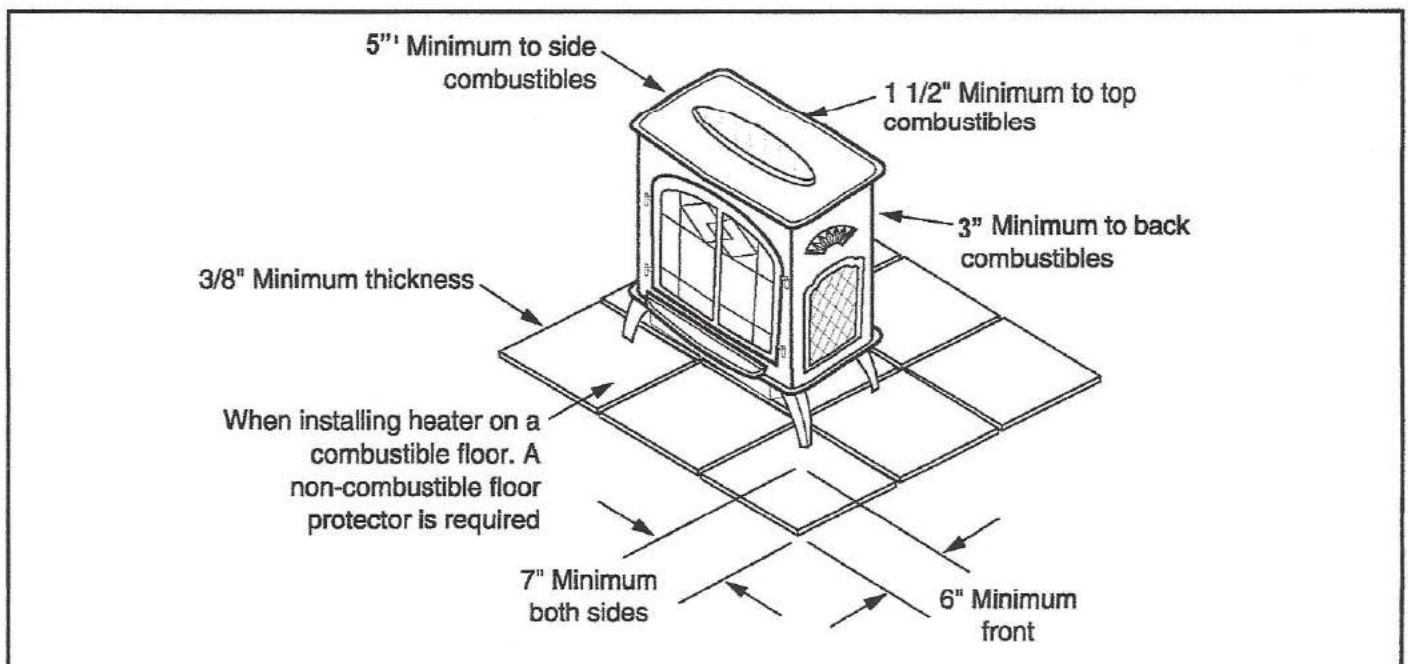


FIGURE 3

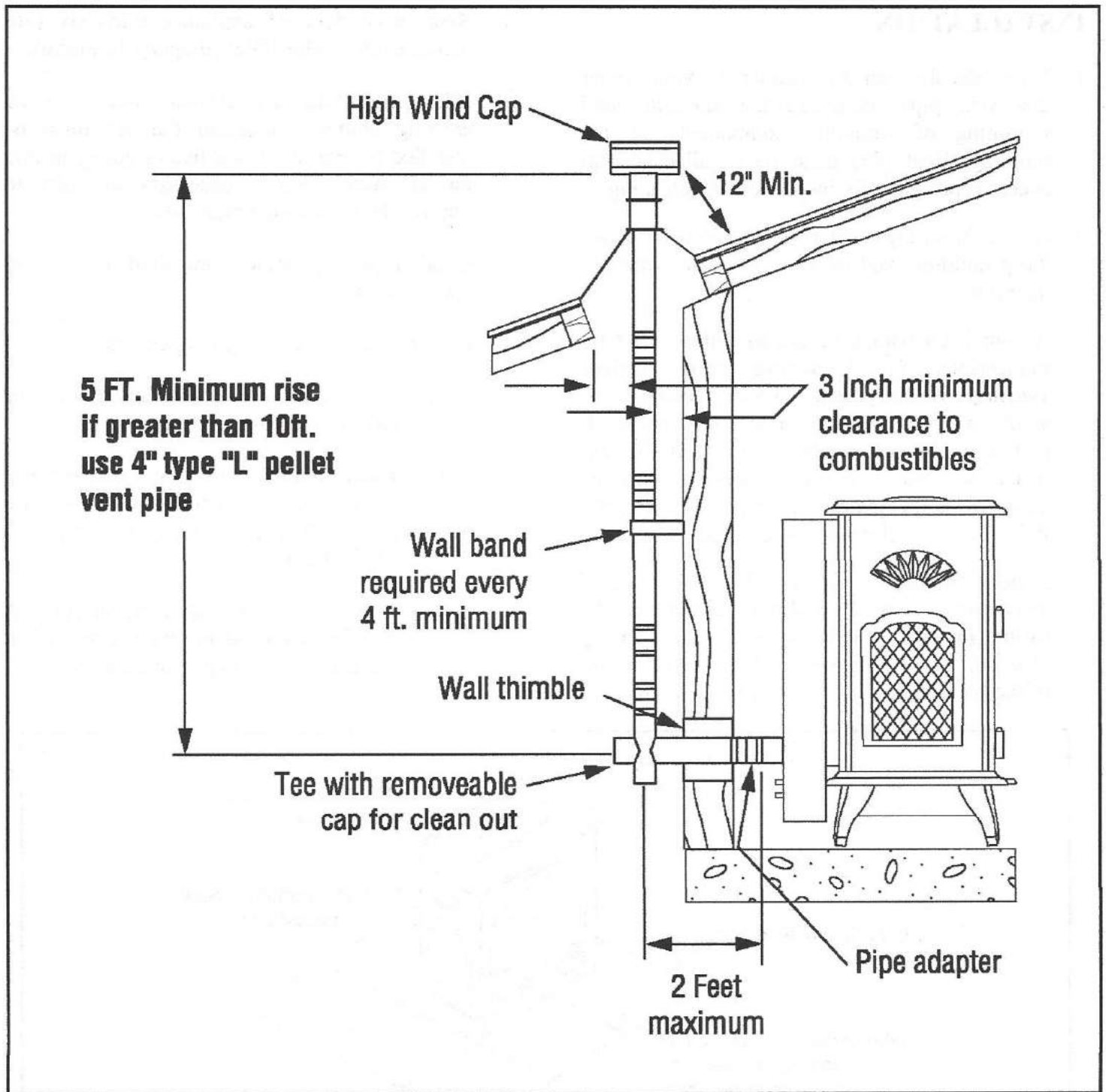


FIGURE 4

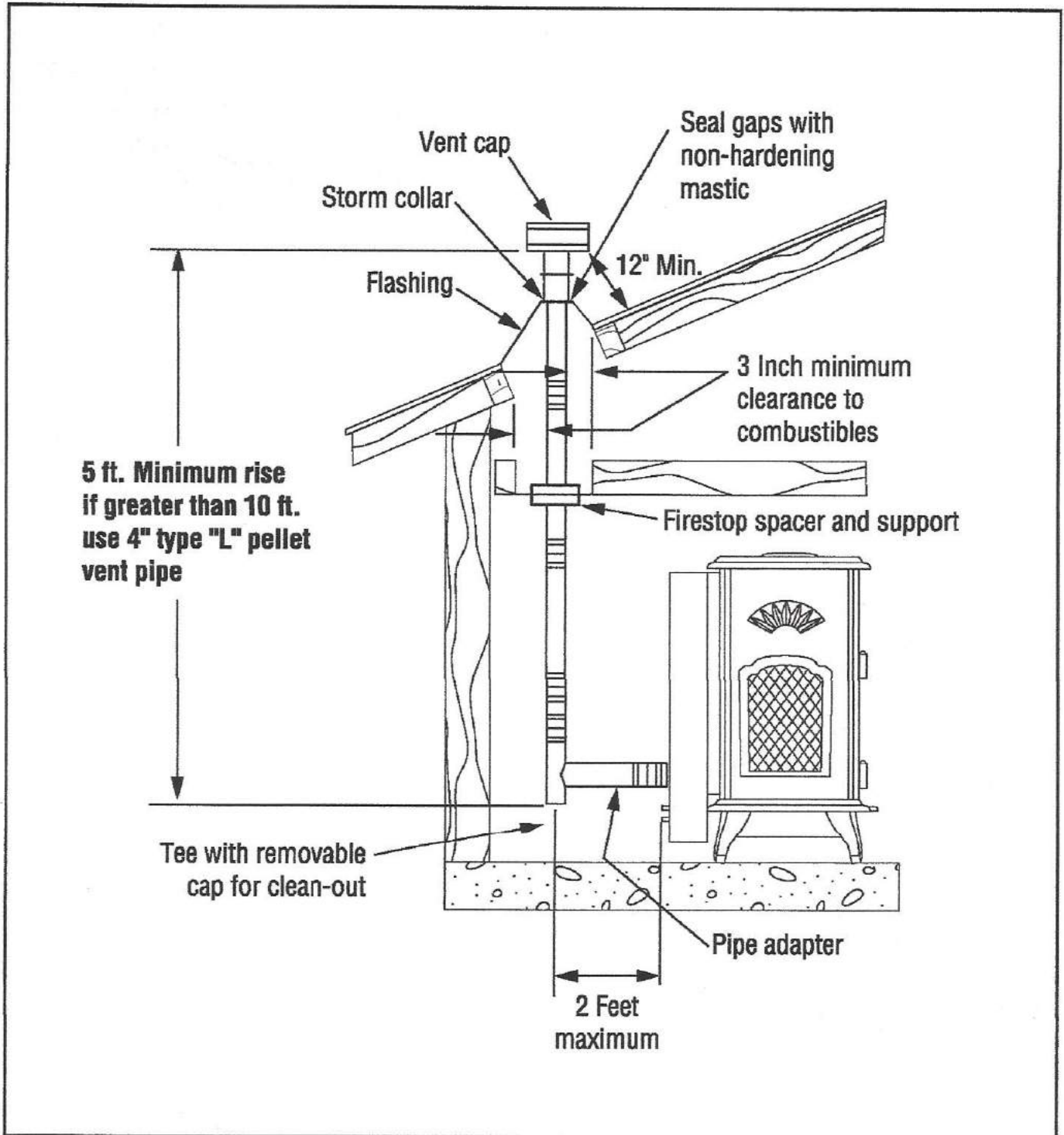


FIGURE 5

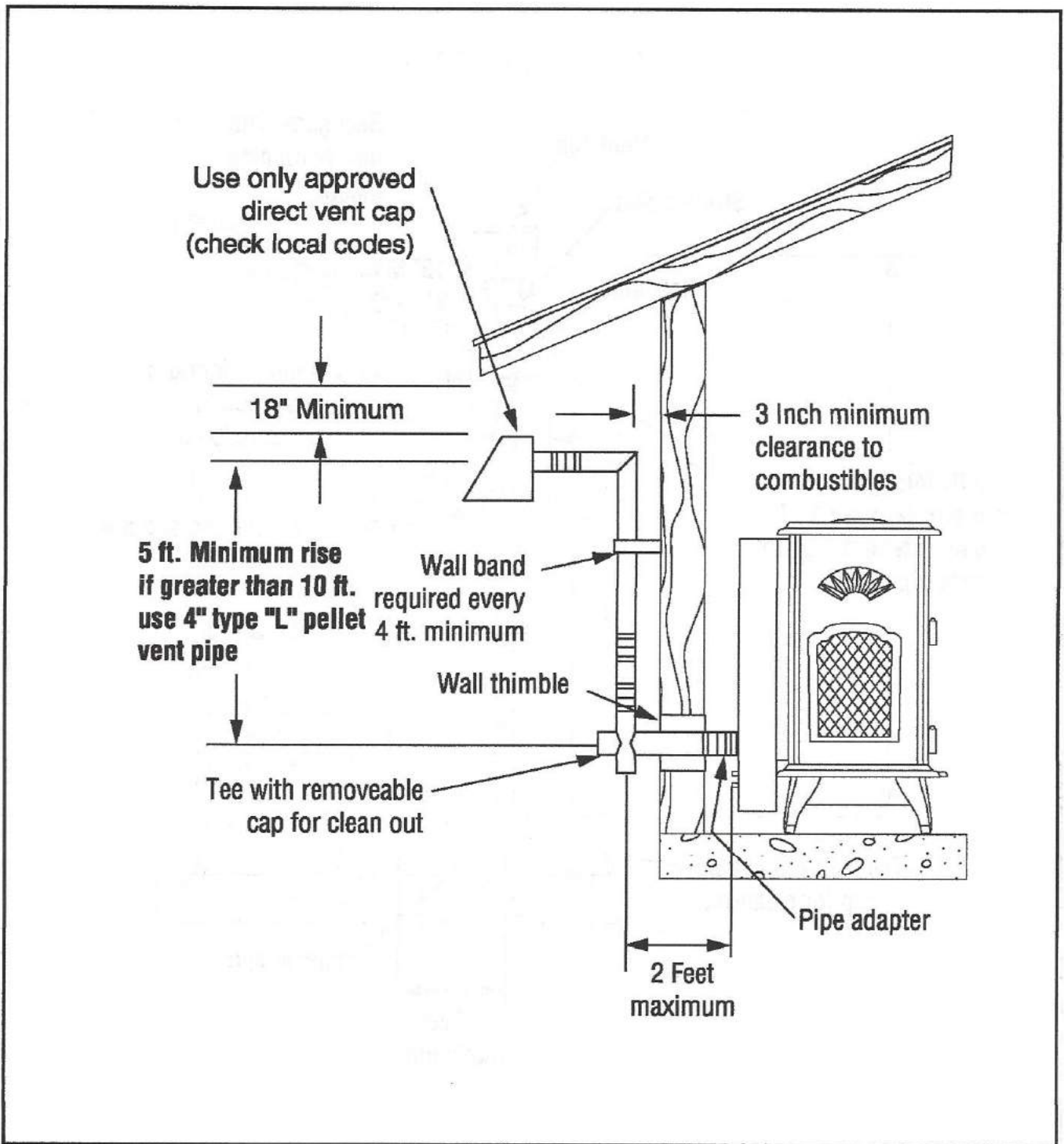


FIGURE 6

9. The pellet heater must be operated with a power source and will not operate using natural draft. If there is a power failure the heater will shut down. If the 12-volt back-up system is installed, the heater will automatically switch to the 12-volt power.

Route the power supply cord so it does not touch any of the exterior components of the heater.

- a. When exiting through the wall with Type "L" pellet vent pipe, exit straight out through a wall thimble. Connect a pellet vent tee and extend the vent pipe at least 5 feet vertically outside to provide good draft and allow the gases to exit. The tee must have a clean out cap for inspection and regular cleaning (see FIGURE 4). Whenever the pipe run in any installation is 10 feet or more, the use of 4-inch Type "L" vent pipe is required.

Horizontal runs must be limited to 2 feet. On vertical runs on an exterior wall, a wall band is required every 4 feet.

- b. All pellet vent pipe connections including exit at the rear of the heater should be secured with three screws and sealed with high temperature silicone (450 degrees) or metallic duct tape. This prevents smoke and soot leakage into the living area. If this is not done, there is a possibility that the room fan will pick up any leakage and blow it into the room. This requirement is waived if the new Dura Vent Pellet Pro pipe is used.

- c. Installation per Figure 7 requires 4" pellet pipe.

10. Outside Air Hook-up: Thelin Hearth Products recommends using a Dura Vent Wall Thimble with a built-in outside air hook-up and flex tubing.

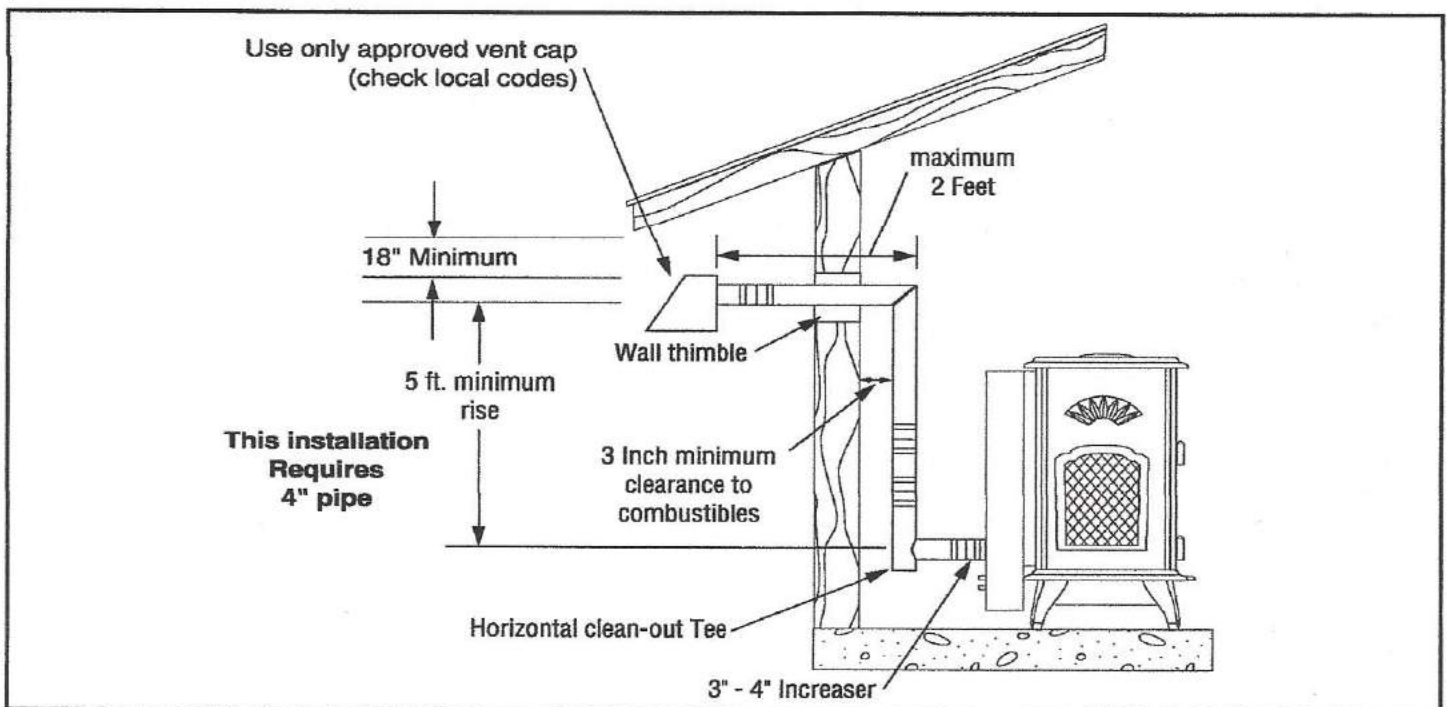


FIGURE 7

WALL & REMOTE THERMOSTAT INSTALLATION FOR ECHO E.I.

The wall thermostat is designed to automatically regulate the room temperature by shutting the stove on and off or changing the output from High to Low. Remember to leave the control knob on the High or Medium position when utilizing the wall thermostat feature.

A wall or remote thermostat can be hooked to run the Echo 3000 E.I. automatically. The following is a step-by-step procedure for installing the optional thermostat. Note connection terminals on the bottom right side of the unit (see FIGURE 8). Use 18/2 thermostat wire for installation.

1. UNPLUG HEATER FROM WALL OUTLET
2. Hook up the thermostat wires to terminals (see FIGURE 8). Remove copper shunt. Replace shunt if thermostat hook-up is disconnected. If a remote thermostat is used, mount the "receiver" to the bottom of the stove with Velcro and then hook up receiver wires to the terminal (see FIGURE 8). Follow thermostat manufacturer's instructions.
3. Locate thermostat approximately 10 to 12 feet from heater or in an area that requires steady temperature. Run thermostat wires from heater to thermostat along wall or under carpet, etc., and hook wires to thermostat terminals. Designate a central location that will maintain room temperature and leave remote in that area.
4. Make sure all wiring is complete before plugging the Echo back into the wall outlet.
5. The thermostat can run the stove either ON/OFF or HI/Low. Factory setting is ON/OFF. Changing the Type setting jumper on the circuit board will switch to the Hi/Low mode (see FIGURE 15). This should be done in extremely cold climates so the house will maintain an even

temperature and not be cycling on/off constantly.

6. Be aware that the life of the igniter is affected by the ash build up in the fire pot and the number of times the stove is cycling on/off. If more than four or five times a day then you should switch to the Hi/Low mode. Check fire pot frequently for ash build up.

IMPORTANT: Any electrical work performed on the Echo should be done by qualified personnel. **Always plug AC cord in before DC battery.**

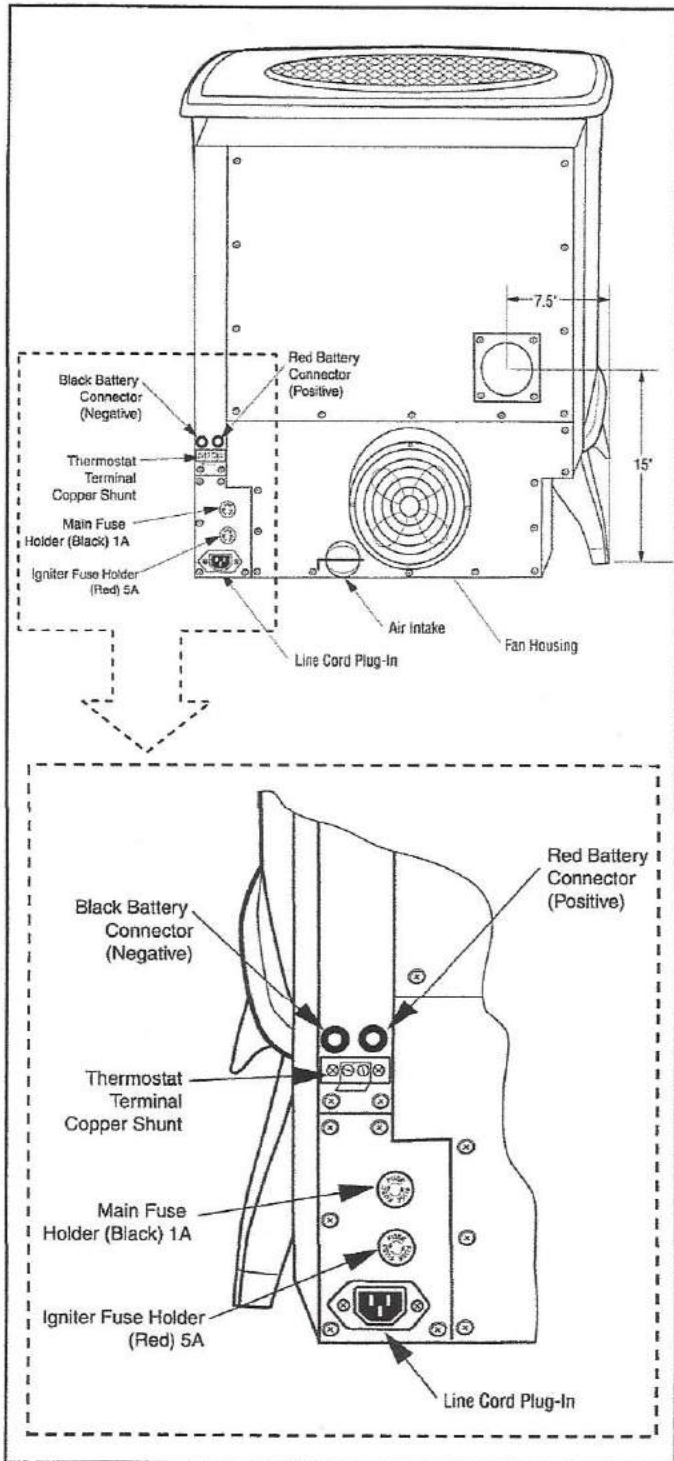


FIGURE 8

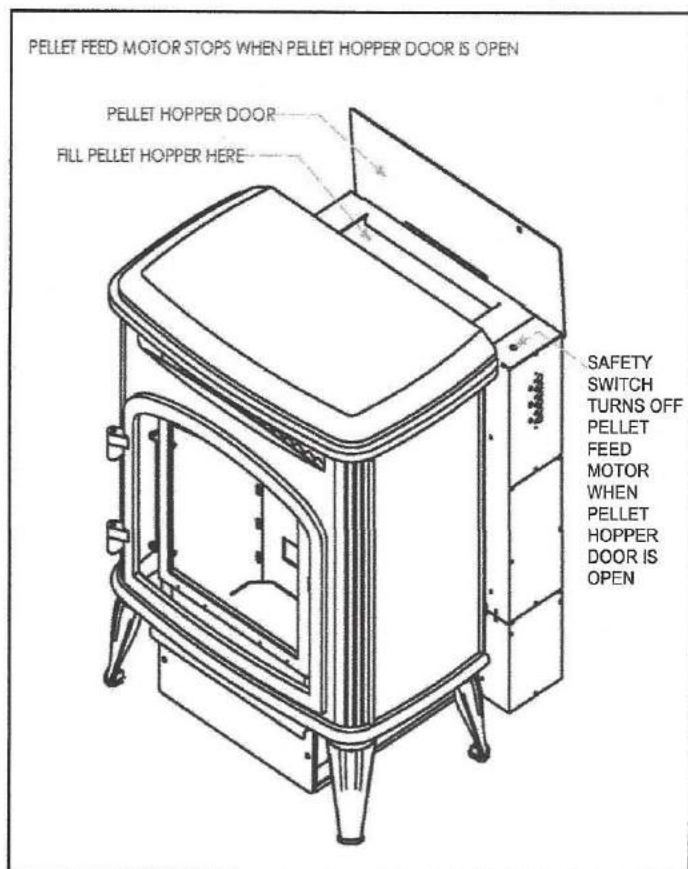


FIGURE 9

START-UP AND OPERATION

A. Filling the Hopper and Start-Up

CAUTION: Fuel hopper lid must be closed before operating the unit. The Echo will hold approximately 50 pounds of pellets.

DO NOT OVERFILL THE HOPPER

The Echo will hold approximately 50 pounds of pellets.

Open the top cover and fill the hopper with pellets (see FIGURE 9).

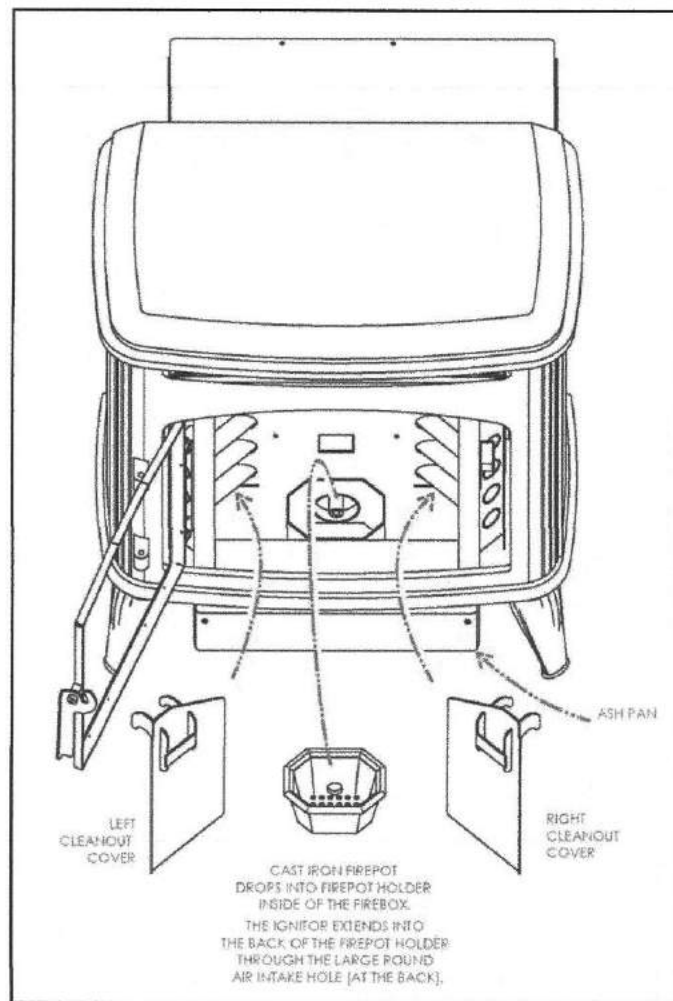


FIGURE 10

Use good-quality pellets that give a vibrant, yellow flame with little or no soot. Poor quality pellets will burn rich with black sooty smoke and ash will accumulate quickly.

IMPORTANT: The quality of pellet varies from brand to brand. This will affect the efficiency of your heater. Try several brands to find one that provides a clean, efficient burn.

IMPORTANT: The fire pot must be seated flush and must sit even in the fire pot tray. Air leakage around the fire pot will create a poor burn (see FIGURE 10).

B. Lighting Instructions

The Echo E.I. has automatic ignition. Simply plug in the stove, fill with pellets and push the low, medium or high button on the control panel. When the button is pushed to low, medium or high the igniter will come on and in one minute the feed motor will activate and begin feeding pellets. In three or four minutes flames should be visible. In six minutes the igniter will shut off. The LED next to the button will blink during the six-minute start-up period. During the start-up period the heater will only run on "Low." If the fire does not reach operating temperature during the start up period the stove will shut down, repeating this process will be necessary.

NOTE: Pellets will not feed when the "Fan" only button is selected on the Control Panel .

Follow the thermostat manufacturer's instructions carefully when using a wall or remote thermostat. Ensure the built in thermostat terminals on the bottom of the stove are used (See FIGURE 8). It is recommended the heater is run on "High" for approximately 30 minutes to get the heat exchanger hot before turning it to "Low." Burn the heater for a few hours before deciding which setting is optimal.

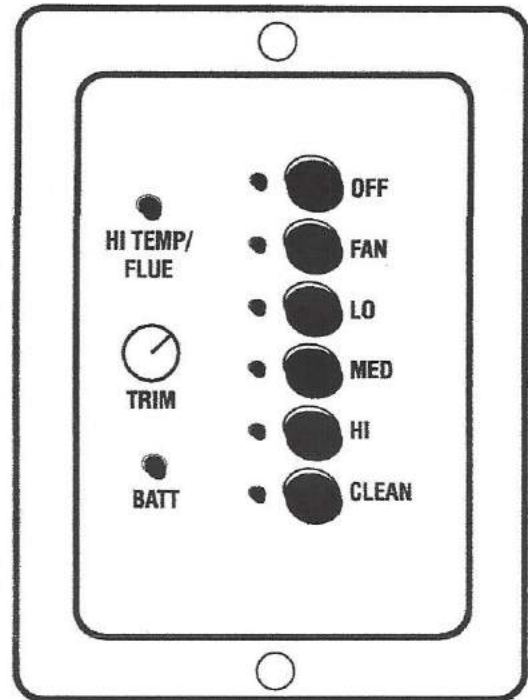


FIGURE 11

C. Control Functions

The control functions on the Echo are as follows: OFF, FAN, LOW, MED, HIGH, and CLEAN (see FIGURE 11).

1. Fan Position: In the "Fan" only position the stove will not feed pellets. Use the fan when starting the stove manually during power failure and/or if using the 12V battery back-up. The "Fan" position can also be used if pellets pile up and need to be burned down before feeding more pellets. In the "Fan" only position, the stove will go through the start-up cycle again when "Low," "Med" or "Hi" is selected.
2. In the "Low" position, the Echo will feed approximately 1 to 1.5 pounds of pellets per hour. The flame will fluctuate between 1 inch and 6 inches in height.
3. In the "Med" position, the Echo will feed approximately 3 pounds of pellets per hour. The flame will fluctuate from 3 to 8 inches in height.

4. In the "High" position, the Echo will feed approximately 5 pounds of pellets per hour. The flame will fluctuate between 3 inches and a full flame. The fan speed will increase accordingly as the heater automatically adjusts itself based on the temperature inside the heater.
5. The "Clean" position is to be used only when the heater is not burning in order to clean out the combustion housing and fan blades. See the "Hopper Clean Out" section under "Maintenance Procedures."
6. To turn off the heater while it is running, simply push the "Off" button on the Control Panel. A remote or wall thermostat will turn off the stove automatically when the desired room temperature is reached. **The heater will continue to run until it cools down. It will then automatically shut down at 58 degrees Fahrenheit or in 25 minutes, whichever comes first.**
7. **CAUTION:** Each feed position will fluctuate because the microprocessor automatically adjusts the feed and air based on temperature. This means the pellet feed rate and flame height will change accordingly based on quality of pellet and heat loss of dwelling.

DO NOT OVERFIRE. If pellets pile up excessively and stove is not burning properly it should be shut down and thoroughly cleaned. Use the "Trim" button to adjust feed rate.

HIGH TEMP/FLUE AND TRIM INDICATORS

High Temp/Flue: There is a small window to the left of the fan button that will blink red if the flue pipe becomes obstructed or there is a high wind condition, creating a back draft. If there is problem with the fan guard becoming blocked due to dust and lint build up then this light will come on and stay steady red. The feed will shut off and the stove will shut down when these two conditions are

present. Maintenance is required and thorough cleaning and pipe check must be performed if these conditions persist.

Battery Light: When the green light is blinking the battery is charging. When the green light is steady the battery is fully charged. If this light is red, then the battery terminals are plugged in backward.

Trim Button: On the left side of the control panel there is a small, round button that will turn clockwise and counter-clockwise. This button controls the feed rate in each setting—Low, Med, and High. Turning the button clockwise will increase the feed rate in each setting. Turning the button counter-clockwise will decrease the feed rate.

CAUTION: Move this button carefully. It is designed to fine-tune the heater in each position in the event different brands of pellets are used and/or the stove is operated at a higher elevation.

BATTERY OPERATION

Always plug AC cord in before DC battery.

1. The battery must be one foot from the stove to ensure that the terminal does not touch any part of stove.
2. The Echo Pellet 12V back-up can be purchased as an option and includes the following components:
 - a. Deep cycle seated 12-volt gel cell battery.
 - b. Battery connector cables for hook-up to the heater (available from your dealer or Thelin Hearth Products).
3. To hook up the battery and engage the 12-volt back-up system, do the following:
 - a. Connect the red battery cable to the (+) positive terminal on the battery. Then plug the red banana plug into the red receptacle

on the stove. **The red must be plugged in first before the black (see FIGURE 8).**

- b. Connect the black battery cable to the (-) negative terminal on the battery. Then plug the black banana plug into the black receptacle on the stove. When the cables are hooked up correctly, the LED light on the control panel will illuminate and glow green. If hooked up improperly, this LED will glow.

WARNING: Make sure the red cable goes to the red terminal (positive connector) and the black cable goes to the black terminal (negative connector).

4. A sealed gel cell battery is recommended when using a 12-volt back-up system. **Failure to install the proper battery could cause physical harm to you and/or your property and will also void the heater warranty.**
5. When the battery is properly connected and the heater plugged in, the following will happen automatically:
 - a. The heater will automatically switch to 12-volt power if there is a power failure and switch back when power is restored.
 - b. The battery will be trickle charged as long as the heater is plugged into 110 AC wall outlet. **Do not use extension cords.** The trickle charge will not recharge a low or dead battery, but will keep a charged battery at maximum performance. **Do not unplug stove for the summer and keep battery attached. Battery will drain down and fail to recharge.**
6. The automatic ignition feature will not work on DC power only. The automatic ignition feature will not work on DC power only. Contact your Dealer for manual start instructions.

MAINTENANCE PROCEDURES

CAUTION: Moving parts may cause injury. DO NOT operate with rear cover removed.

WARNING: Risk of electrical shock. Disconnect all power before servicing.

Always turn heater off and let it cool before cleaning.

Your Echo Pellet Heater requires routine maintenance for maximum performance, and it is mandatory for the warranty to remain in effect.

The following procedures should be studied carefully and performed regularly as indicated.

Soot and Fly Ash: Formation and Need for Removal: The products of combustion will contain small particles of fly ash. The fly ash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such that occurs during start-up, shutdown, or incorrect operation of the room heater, will lead to some soot formation which will collect in the exhaust venting system. The exhaust venting system should be inspected at least once every year to determine if cleaning is necessary.

Disposal of Ashes: Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or ground, well away from all combustible materials pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

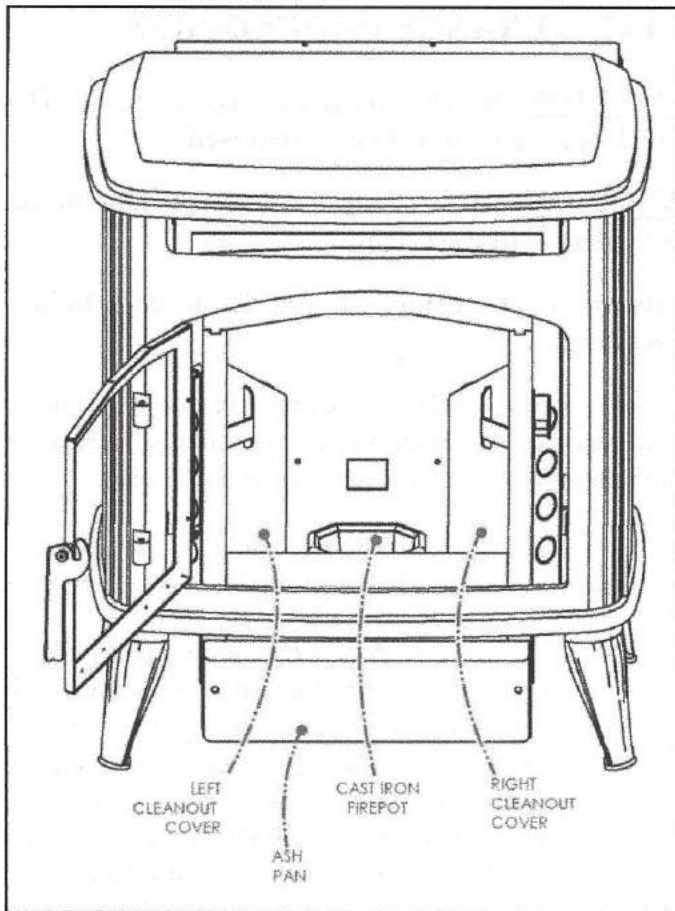


FIGURE 12

Here are some other maintenance procedures that should be performed on a regular basis.

- a. Open door and remove clean out cover screws. To remove, simply unscrew and lift out from each side (see FIGURE 12). Clean one side at a time. With covers removed, leave the door open and push the "Clean" button. Let heater run 30 seconds, push to "Off," and replace cover. Remove the remaining clean out cover and repeat procedure for other side.
- b. Vacuum inside stove ash pockets on both sides of fire pot and heat exchange tubes.
- c. Remove fire pot by lifting up and out. It may be brushed out or vacuumed. Fire pot should be cleaned regularly. Make sure slots in pot are not plugged. The area

around and below the pot should be checked every five or six days depending on how many hours a day the heater is used and the quality of the pellets being burned. Remove the fire pot holder for thorough cleaning (see FIGURE 12).

- d. Scrape pellet feed chute with putty knife to remove hardened material on which sawdust can accumulate.
- e. The tee connector on the vent pipe must have a clean out cap and this must be checked every four to six weeks or whenever the "Clean" mode on the Control Panel is utilized.
 - a. Fly ash can also accumulate in the vent pipe. Inspect the exhaust system frequently to maintain free flow of exhaust fumes. This depends entirely on the quality of the pellets. Initial monitoring of the build-up in the vent pipe is necessary. Those installations going into an existing flue must be installed with a tee connector to allow access to clean the ash from the pellet vent pipe.

1. **Hopper Clean Out:** Vacuum the accumulated saw dust in the hopper weekly. Keep free of debris and foreign material. An accumulation of saw dust can cause irregular pellet feed. For best results this should be done on a regular basis depending on how often the heater is used. This should be done every eight to ten days.
2. **Cleaning the Exhaust Fan Blade & Heat Exchanger:** The exhaust blower should be checked for excessive fly ash buildup. Regular and routine maintenance utilizing the clean out feature will keep the exhaust blower housing and fan blades clean. This cleaning can only be done when the heater is not burning. For best results, run the fan in the "Clean" position with the door open for approximately 45 seconds or until ash is no longer being picked up by the fan. Always check the clean out cap on the tee after utilizing the clean feature (see FIGURE

- 12). (See FIGURE 16 for routine stove clean-out and maintenance.)
3. **Cleaning the Fan Guard:** The plastic fan guard on the rear of the stove must be kept free of lint and dust. Check weekly for lint build-up and vacuum as necessary (See FIGURE 2).
 4. **Keeping the Glass Clean:** If soot deposits accumulate on the glass, clean with window glass cleaner and a paper towel when glass is cold.

TROUBLESHOOTING

The following scenarios are provided in order to help locate a difficulty if the heater performs in a manner which would seem to indicate a malfunction:

1. **Problem:** Stove has pellets but pellets do not ignite.
Solution: Check power cord to see that it is plugged in tightly to the bottom of the stove. Is the LED light blinking when you push the Low, Medium, or High button? If not, check the fuse for the igniter located on the bottom of the stove in the red fuse holder. The timer on start-up runs approximately six minutes. If, during this time, the pellets have not lit, the start-up sequence may have to be repeated. The stove only runs on one speed until a temperature is reached which activates the run mode. This usually takes 15 to 20 minutes, and in extremely cold climates, the start-up procedure may have to be repeated for the stove to reach this temperature.
2. **Problem:** Pellets stopped feeding.
Solution: Check pellet supply in hopper. If empty, fill and follow start-up procedure. Occasionally, a foreign object, debris, or an excessive amount of sawdust can enter the feed mechanism and jam the feed chute. If this occurs, TURN THE POWER OFF, empty the hopper and check the feed chute to see what is causing the jam. ENSURE THE POWER IS OFF. Remove any foreign material or object and restart the heater. CAUTION: Keep fingers and hands clear of the feed mechanism when heater is on.
3. **Problem:** Pellet overfeed.
Solution: When the pellets are overfeeding, it usually means that the air flow has been reduced. Check the fire pot air intake holes to be sure they are clear. Check to see if fire pot was properly seated in the pot tray. If low-grade grade pellets are used and clinkers (fused ash and dirt) form in the bottom of the fire pot and chock the air intake, consider changing the brand of pellets to one that burns cleaner. Ensure the fire is out before removing and cleaning the fire pot. Never vacuum out the heater when the heater is in operation. The hot ashes can lodge in your vacuum cleaner and cause a fire Clean the heat exchanger manifold (see FIGURE 12) regularly to ensure a good air to fuel ration, thus allowing the heater to "breathe" properly. Check the tee and vent pipe to ensure they are not clogged and full of ash.
4. **Problem:** Soot is forming on the door glass.
Solution: Black soot forming on the door glass means that the combustion is not right and the heater needs to be cleaned. Some brands of pellets burn much richer than others, try different brands of pellets and/or have the air/fuel settings readjusted by your dealer. It is normal to have the glass cloud up after several hours of burning, but it should wipe off with a good window cleaner. If the glass turns black quickly, clean the heater thoroughly.
5. **Problem:** Heater emitted smoke for about five minutes after power failure.
Solution: If the heater emits smoke during a power failure and frequent power failures are

expected, purchasing a battery back-up system is recommended. If the vent pipe is installed according to these instructions, the smoke will siphon out of the pipe in most instances.

6. **Problem:** The heater suddenly stopped and the red light under the control panel came on.

Solution: The High Temp/Flue indicator light indicates that fly ash has built up in the exhaust system and/or there is a restriction in the exhaust/flue system or a high-wind condition. Check the pipe system for excessive ash and clogging, particularly the vent cap. Remove the clean out cap on the tee and make sure that ash has not blocked the exhaust air flow. This automatic shut down in the event of flue clogging is a safety feature. If the shut down occurs, clean your pipe and heater thoroughly. . If the problem persists, contact your Dealer or service technician. If the fly ash build-up is excessive, try another pellet brand. In most climates the pellets and fly ash can absorb moisture from the air and create creosote and a severe clogging problem. The heater warranty does not cover the quality of the fuels used or the way they may be handled, either before or after the pellets are purchased. High-wind condition may require a high-wind cap. See Appendix A.

7. **Problem:** Heater continues to run after power is turned off.

Solution: This is normal. The exhaust blower will keep running until it cools down and then it will automatically turn off. This can vary by the temperature the exhaust has reached and the temperature of the cooling air.

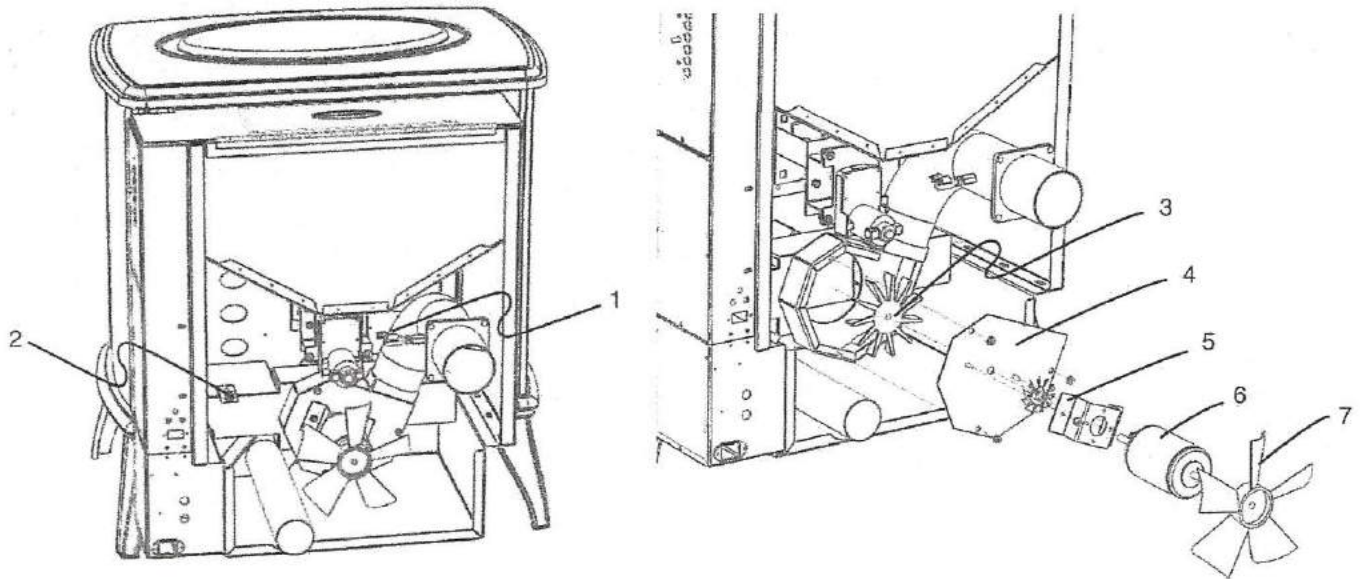
8. **Problem:** Fan motor speed varies, sometimes running low and sometimes surging. Will run on "High" or "Clean" but not on "Low."

Solution: Fan motor brushes are wearing out. Brushes in fan motor need to be replaced. Contact your Dealer for replacement brushes..

9. **Problem:** Stove shuts off when running on low.

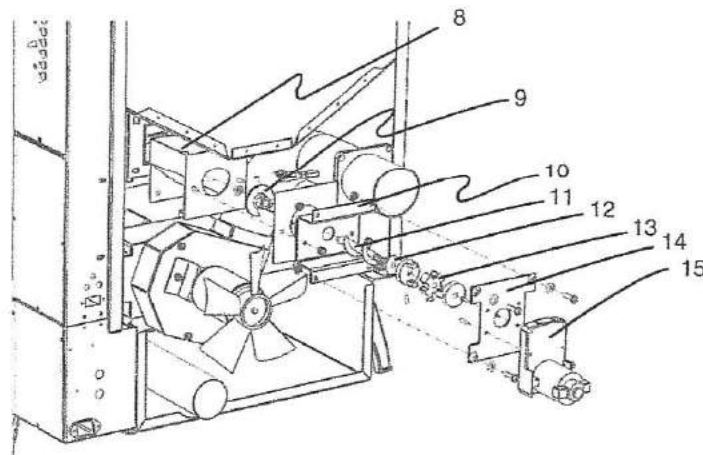
Solution: Feed is too low. Adjust feed trim button (turn clockwise) until feed can maintain fire.

FIGURE 13 – REPLACEMENT PARTS LIST



- 1. T-1 Sensor
- 2. T-2 Sensor

- 3. Combustion fan blade
- 4. Fan mounting plate
- 5. Fan motor bracket
- 6. Fan motor
- 7. Convection fan blade



- 8. Feed chute
- 9. Feed disk
- 10. Feed motor bracket #1
- 11. Auger
- 12. Bushing
- 13. Coupling
- 14. Feed motor bracket #2
- 15. Feed motor

FIGURE 14 - CIRCUIT BOARD DIAGRAM

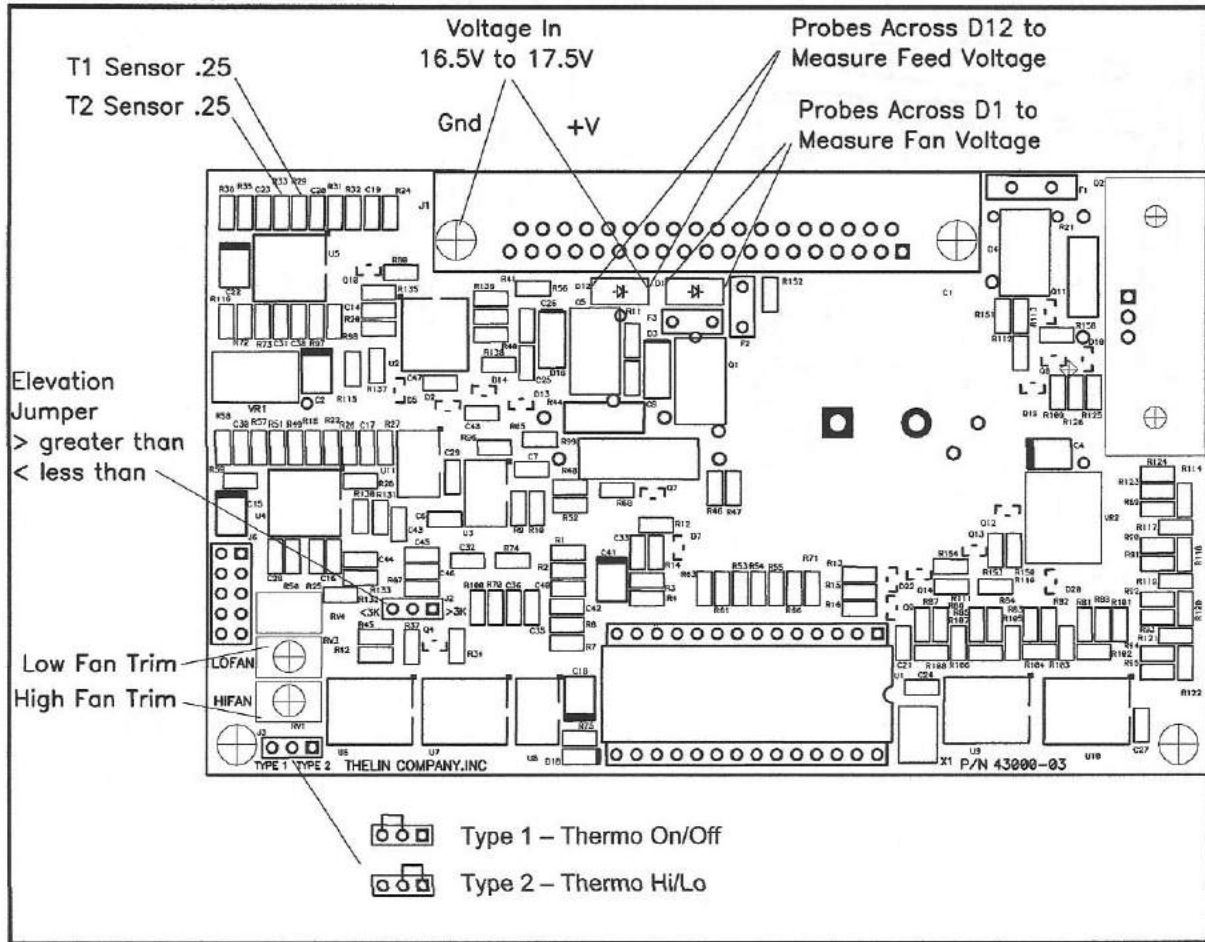


FIGURE 15 - ELECTRICAL SCHEMATIC/WIRING DIAGRAM

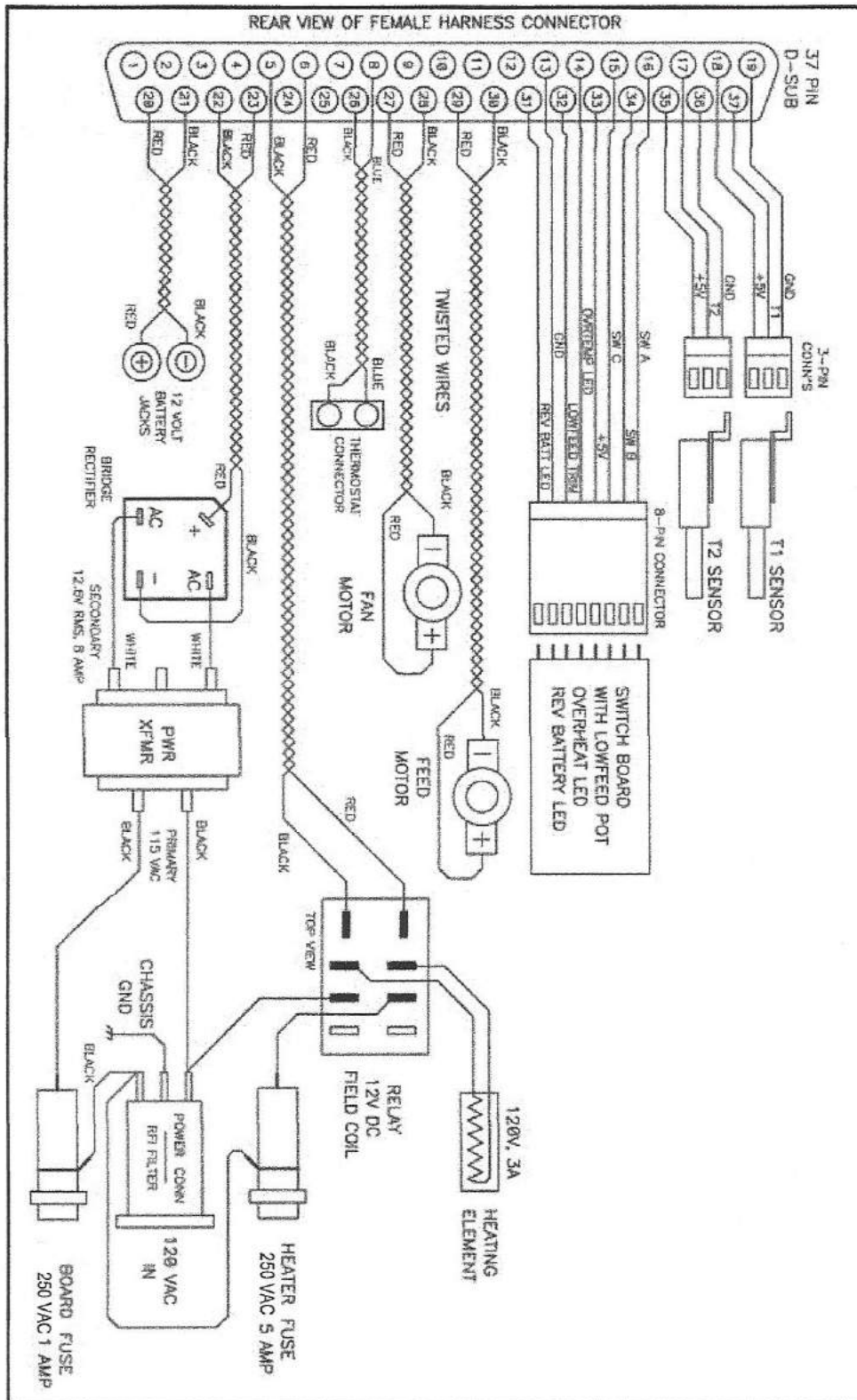
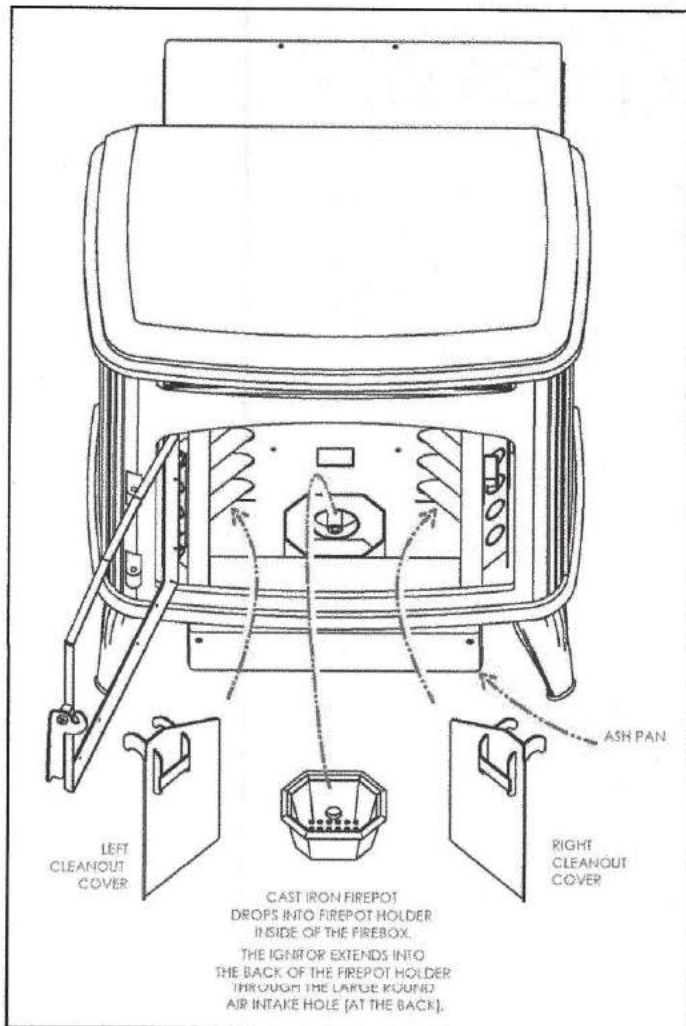


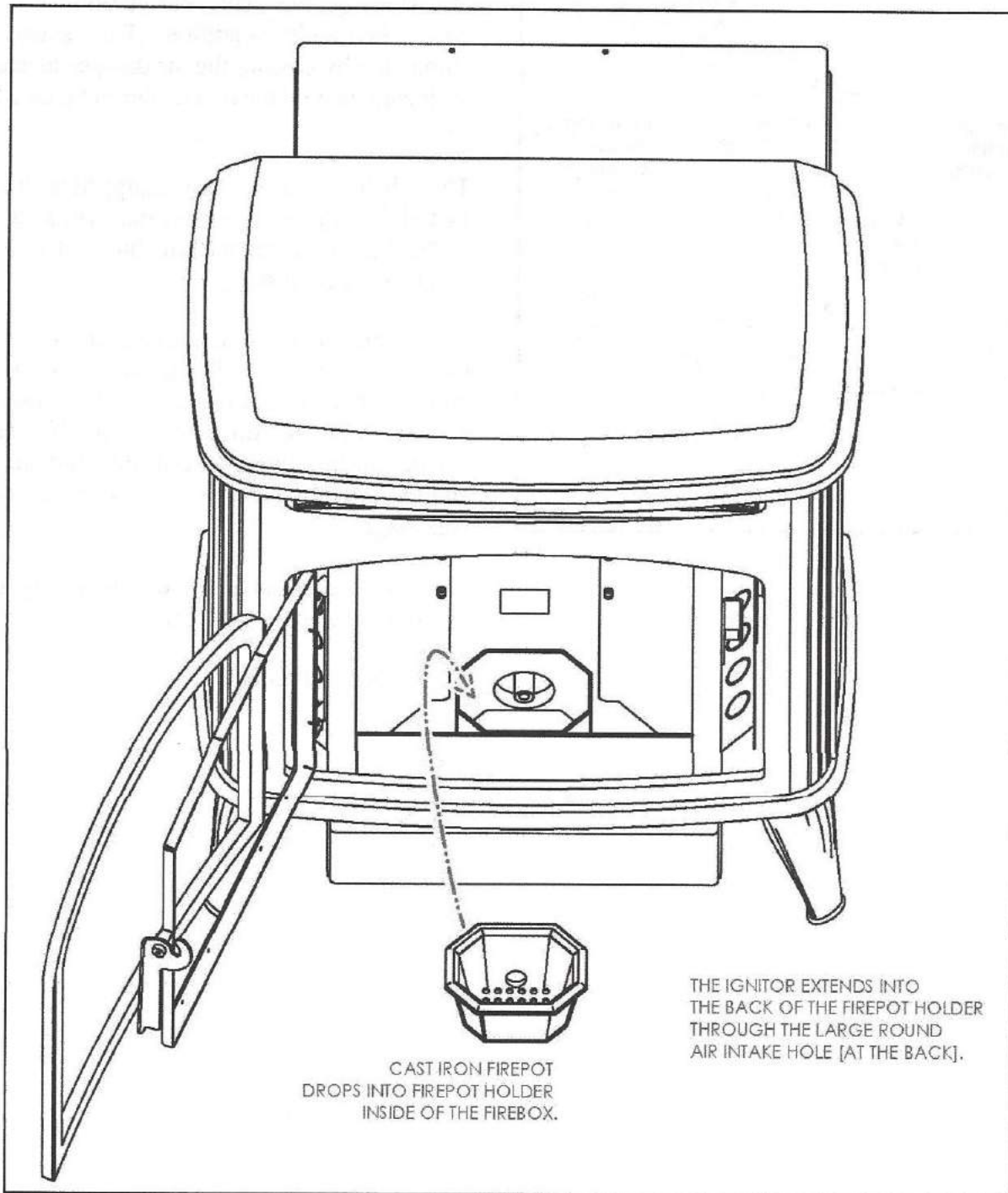
FIGURE 16 – ROUTINE STOVE CLEAN OUT AND MAINTENANCE



The following is a step-by-step procedure to clean out and maintain your pellet stove.

1. **Stove must be shut off and completely cold before performing this maintenance.**
2. Open door; remove fire pot and clean-out covers.
3. Vacuum entire inside area, including heat exchanger tubes (both sides), using a pellet vac or shop vac.
CAUTION: Do not use a household vacuum cleaner.
4. Connect vinyl clean-out tube to pellet vac or shop vac. (An adaptor must be used to connect to a shop vac. These can be purchased at hardware stores or home centers.) Insert the clean-out tube down between the heat exchange tubes, and vacuum up the debris. Repeat the procedure on the other set of tubes.
5. Turn control knob to “clean” position for about 45 seconds.
6. Replace clean-out covers and fire pot. The stove is now ready to use.

APPENDIX B – E.I. FIREPOT ASSEMBLY



CAST IRON FIREPOT
DROPS INTO FIREPOT HOLDER
INSIDE OF THE FIREBOX.

THE IGNITOR EXTENDS INTO
THE BACK OF THE FIREPOT HOLDER
THROUGH THE LARGE ROUND
AIR INTAKE HOLE [AT THE BACK].

APPENDIX C – FINE TUNING

Because of the variability of pellets (i.e., length thickness, density, quality of sawdust), fine tuning may be required for your heater to compensate for pellet quality. Following are some suggestions for fine tuning.

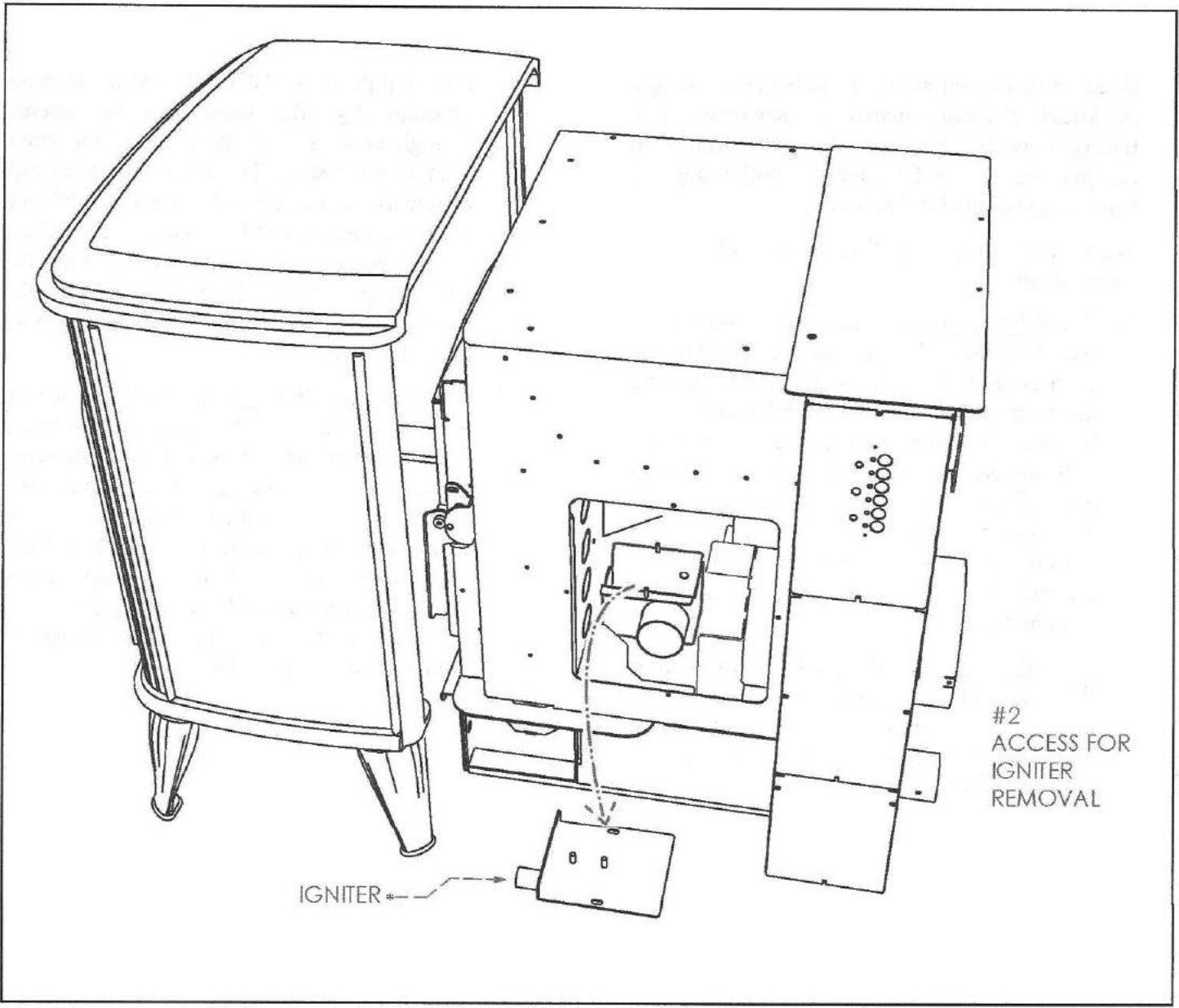
There are three (3) fine-tuning adjustment components:

1. The Trim Button located on the control plate (see FIGURE 11) changes the feed rate on each setting (i.e., Hi, Med, Low). Turning the trim button clockwise will increase the feed rate. Turning the trim counterclockwise will decrease the feed rate. For example, if the pellet being used is a hardwood pellet and longer than 1", then the stove could go out on the low setting for lack of fuel. Turn the trim clockwise to increase fuel and thus sustain the fire.
2. The Air Intake Damper control located on the air intake module (see FIGURE 2) regulates the amount of combustion air being fed to the pellet fire pot. For example, a high vertical

run of pipe (over 10') will warm the pipe; consequently, the draw can be intense enough to suck more heat out of the stove than is necessary. To make the stove run efficiently, close the damper about 60% and see if the heat output increases. If, the pellets are not getting enough air, then opening the air damper may help. Increasing the combustion air utilizing the procedure in #3 may also help.

3. The Fan Trim Pot Adjustment is located on the circuit board (see FIGURE 15). Note the two fan trim pots marked on the drawing (lower left hand corner). Use a small slot screwdriver to adjust fan speeds to compensate for poor pellets or airflow. Turn the trim pots clockwise to speed up the fan speed on both Hi and Low settings. A good, brisk flame that is yellow, not orange, is what indicates a good burn.

APPENDIX D – IGNITER REMOVAL



**THELIN HEARTH PRODUCTS PELLET HEATER
WARRANTY REPLACEMENT PROGRAM**

EFFECTIVE APRIL 1, 1995

NOTE: PLEASE READ THIS WARRANTY REPLACEMENT PROGRAM CAREFULLY BEFORE APPLYING FOR WARRANTY REPLACEMENTS OR CREDIT.

WARRANTY COVERAGE

Warranted for five years from the date of retail purchase against defects in workmanship to include heater cabinet and body. Warranted for one year from date of retail purchase to include drive mechanism and electronic components. Solely for the benefit of the original purchaser (retain your dated sales receipt as proof of purchase). **Some Dealers may require you to pay a service call or trip charge for any warranty work.**

COVERED

Replacement of defective parts and labor and product return to consumer.

NOT COVERED

Door glass, plating, paint, and gasket. Damages caused by abuse or failure to perform normal maintenance and any related expense. This warranty shall not apply to any defect, malfunction, or failure to conform with the warranty provisions if caused by damage (not resulting from defect or malfunction) due to unreasonable use by purchaser. Consequential damages, incidental damages, or incidental expenses, including damage to property. Some states do not allow the exclusions or limitation or incidental consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights that vary from state to state.

WARRANTY WORK

If you find this unit to be defective in material and/or workmanship within a period of five (5) years from the date of purchase, contact your local dealer from whom you purchased the heater. All warranty work must be authorized by the factory in advance of the repair and an authorization number assigned. A warranty claim form must be completed and signed by both the repair person and the customer. For prompt warranty service, please contact the authorized dealer in your area. Have the following information available to assist the repair person.

QUALIFICATION FOR WARRANTY PERFORMANCE

Return product or defective part with proof of purchase and narrative description of defect together with your name and address, freight prepaid to: Thelin Hearth Products, Warranty Division, 12400 Loma Rica Drive, Grass Valley, CA 95945. Returned part or product will be repaired or replaced at Thelin Hearth Products option and will be returned to you freight prepaid as soon as practical, but not later than 30 days after receipt.

HEATER PURCHASE INFORMATION

Date Purchased: _____ Serial Number: _____

Dealer/Retailer where Purchased: _____

Installer/Contractor used for Installation: _____

