



St. Croix Lancaster Installation Manual

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GENERAL INFORMATION

SAFETY PRECAUTIONS

**SAVE THIS
INSTALLATION MANUAL**

SAFETY NOTICE: The stove must be properly installed in order to prevent the possibility of a house fire! These installation instructions must be strictly observed! Failure to follow instructions may result in property damage, bodily injury or even death.

The stove's exhaust system works with negative combustion chamber pressure and a slightly positive chimney pressure. Therefore, it is imperative that the air intake and exhaust system be airtight and installed correctly. Do not install a flue damper in the exhaust vent of this unit.

Do not connect this unit to a chimney flue serving another appliance or to any air distribution duct or system.

BUILDING PERMIT

Contact the local building officials to obtain a permit and information on any local installation restrictions and inspection requirements.

DEFINITION OF "STOVE"

The word "stove" as used in this manual is interpreted to mean a corn or wood pellet burning freestanding stove or insert, unless otherwise noted.

SAFETY TESTING

The stove has been independently tested and listed by Warnock Hersey Laboratories in accordance with the proposed ASTM Standards and the applicable portions of UL 1482 and ULC S627/B366.2, and Oregon Administrative Rules 814-23-901 through 814-23-909, stating requirements for installation as a stove, heater or hearth insert for masonry, metal and zero clearance fireplaces and for mobile home installations. The safety-listing label is located on the back of the stove.

DISCLAIMER OF WARRANTY

Since Even Temp Company has no control over the installation of a stove, Even Temp Company grants no warranty, implied or stated, for the installation of a stove and assumes no responsibility for any special, incidental or consequential damages.

INSTALLATION CHECK LIST

BEFORE INSTALLATION

Thoroughly read and understand this manual. **SAVE THIS MANUAL.**

Check with local authorities and obtain needed permits

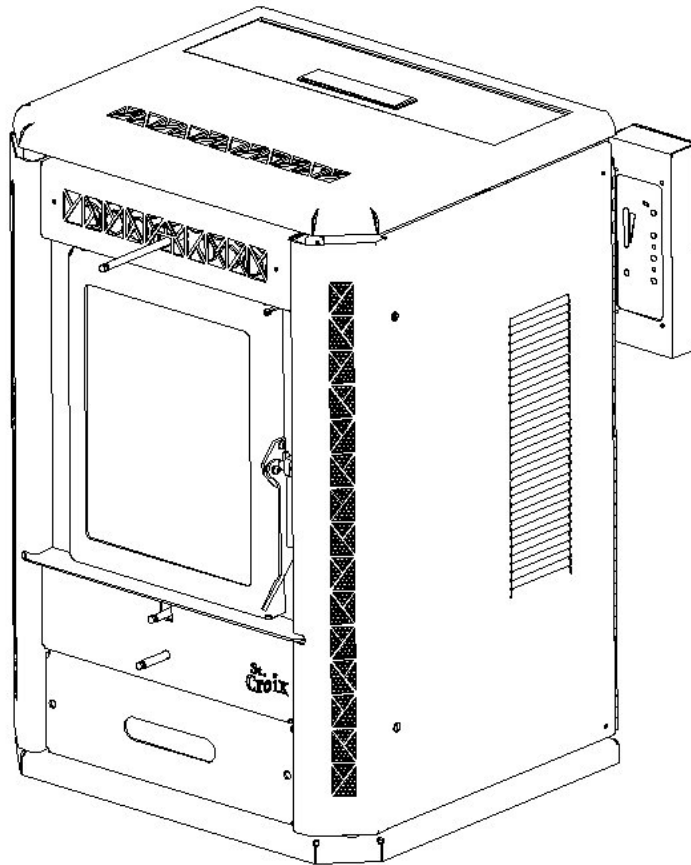
3. It is strongly recommended that the stove receive a Dealer's "Pre-delivery Check" prior to installation.
4. We recommend installation by a qualified professional.

BEFORE STARTING THE STOVE FOR THE FIRST TIME

1. Outside combustion air may be recommended for certain installations (Negative Pressure). Use only approved parts. Outside Air kit #100354 is available or any comparable components as listed on page 14.
2. All joints of PL vent and single wall stainless steel pipe should be fastened by at least 3 screws and correctly installed. (Follow vent manufacturer's instructions). Seal all joints with high temperature silicone to create an airtight seal.
3. Any "plated" areas should be cleaned thoroughly with a glass cleaner such as Windex® and a soft cloth just before lighting the first fire. This will remove fingerprints and oils that may cause a permanent stain or mark on the gold plating the first time it is heated. Never use an abrasive cleaner or material on any plated or painted surfaces. Never clean the plated surfaces when stove is hot.
4. **WARNING:** The high temperature paint on this stove may take several hours of burning at a high fuel setting to cure fully. During this time, an odor that is not harmful may be evident. When odors are present, the area around the stove should be well ventilated.
5. **Caution:** The high temperature paint can be easily scratched prior to burning the stove.

APPROVED INSTALLATIONS

The Lancaster is approved for CONVENTIONAL and MOBILE HOME installations as a FREESTANDING stove. The stove may be installed on the Hearth in front of a fireplace and vented through the chimney of the fireplace.



WARNING: The stove must not be installed in a sleeping room.

EXHAUST VENTING

CONDENSATION: When planning the installation of your Corn stove, keep in mind that condensation is detrimental to exhaust systems. Corn has higher moisture content than pellets and can be more susceptible to condensation forming in certain types of installations. Install the stove with a minimum of the system exposed to the cold temperatures outside the envelope of the house. Check with the manufacturer of your venting system that they honor the warranty of their PL Vent with the use of corn.

VENTING: APPROVED MATERIALS

The stove requires a venting system, approved for pellet stoves by a certified testing lab. Approved pellet stove venting materials are: 1) PL vent, a double wall vent with a stainless steel liner; and 2) Single wall rigid or flexible stainless steel pipe. PL Vent and Single wall vent is available through manufacturers such as: Energy Vent LTD, James A. Ryder, Simpson DuraVent and Selkirk Metalbestos and is carried by many local pellet stove dealers. In this manual approved venting will be referred to a “PL vent” or “Single wall vent”. All single wall vent adaptors must be stainless steel.

NOTE: TYPE “B” GAS VENT MUST NOT BE USED IN ANY CORN STOVE INSTALLATION.

Examples of venting system components follow:



High temperature ceramic roping reduces potential fly ash escaping through joints.

Stainless steel inner liners resist corrosive flue gas damage to the system..



Flex pipe is 430 stainless steel, 4 ply construction with a total thickness of approx. .07 inches.

TYPICAL PL VENT COMPONENTS



*RAIN CAP
VERTICAL OR
HORIZONTAL*



WALL THIMBLE



*CHIMNEY
ADAPTER*



SUPPORT BRACKET



*ADJUSTABLE LENGTH
PIPE*



*SINGLE TEE
w/TEE CAP*



*SINGLE REDUCTION
TEE w/TEE CAP*



*DOUBLE TEE
w/TEE CAP*



PIPE ADAPTER



INCREASER



45° ELBOW



90° ELBOW

VENTING: DETERMINING MATERIALS

TYPE OF MATERIALS:

1. *PL Vent must be used for venting all Freestanding stoves.*

2. **Exception: Single wall stainless steel may be used inside a fireplace or fireplace chimney.** (No clearances to combustibles are needed on single wall stainless steel adaptors, rigid or flex pipe installed within a fireplace or inside a chimney.)

3. A clean out “tee” (PL Vent or “Quick-Connect Exhaust”) must be installed directly to the stove and at the bottom of each vertical run of the exhaust system. These tees are to assist in periodically cleaning the pipe. Single or double clean-out tees may be used. **The exhaust system must be installed so the entire system can be cleaned without disassembly.**

NOTE: ADHERE TO THE PL VENT CLEARANCES TO COMBUSTIBLES AS REQUIRED. STRICTLY OBSERVE THE PL VENT MANUFACTURER’S SAFETY SPECIFICATIONS.

QUANTITY OF MATERIALS:

1. Installing the vent system with a **minimum of three feet (3’) of vertical rise** above the stove exhaust port will provide some Natural Draft.

FAILURE TO PROVIDE THE NATURAL DRAFT THAT RESULTS FROM A VERTICAL RISE MAY RESULT IN SMOKE BEING RELEASED INTO THE HOUSE WHEN ELECTRICITY TO THE UNIT IS INTERRUPTED WHILE BURNING OR SMOLDERING CORN REMAINS IN THE BURN GRATE.

2. Additional vertical exhaust venting may be needed when using:

a. More than one (1) elbow or tee; and/or

b. Horizontal runs of over three (3) feet.

3. For a venting system ending in a horizontal run, the exhaust pipe must be terminated by a listed end cap or a PL vent elbow (45 or 90 degrees). Note: End caps or elbows must vent exhaust gases away from the building.

4. For termination above the building roofline a rain cap is required.

5. The exhaust pipe on all stoves is 2.95” O.D. to accommodate a 3” stove pipe adaptor. Your installation may require the use of 4” vent. (3” to 4” adapters are available for both PL Vent and Single Wall Vent.)

Use the following guidelines:

Venting size Guidelines

Type of Installation: _____ Size: _____

- | | | | |
|----|---------------------------|----------|------------|
| A. | Less than 10' horizontal: | 3" | Acceptable |
| B. | 10' to 12' horizontal: | 3" or 4" | Acceptable |
| C. | Over 12' horizontal: | 4" | Required |

(A horizontal installation over 12' is NOT RECOMMENDED)

- | | | | |
|----|-------------------------|----------|------------|
| D. | Less than 15' vertical: | 3" | Acceptable |
| E. | Over 15' vertical: | 4" | Required |
| F. | Above 4000' elevation: | 3" or 4" | Acceptable |

Note: Four (4) inch vent may be used in all installations. If in doubt, use 4" vent.

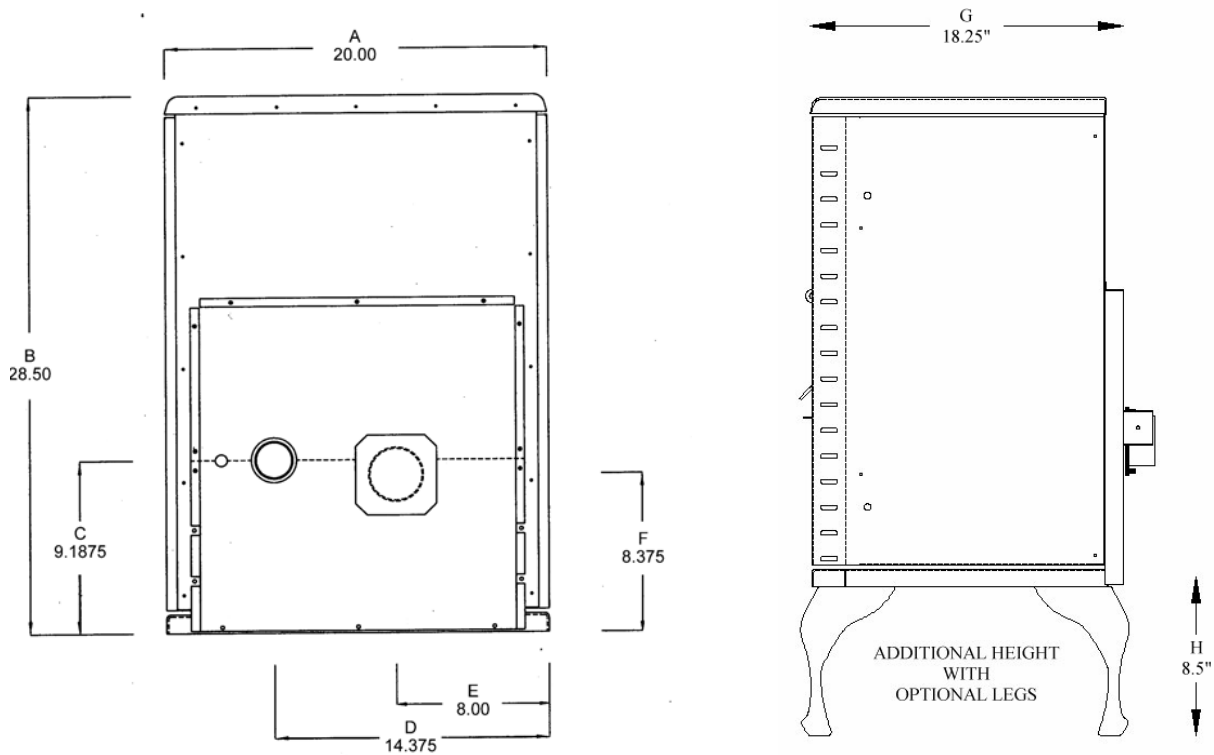


Figure 1. REAR VIEW

- | | |
|--|---|
| A – Width of Stove | E – Side of Stove to Center of Exhaust |
| B – Height of Stove | F – Center of Exhaust from Floor |
| C – Center of Intake Tube from Floor | G – Depth of Stove |
| D – Side of Stove to center of Intake Tube | H – Additional Height with Optional leg Kit |

VENTING: THROUGH COMBUSTIBLES

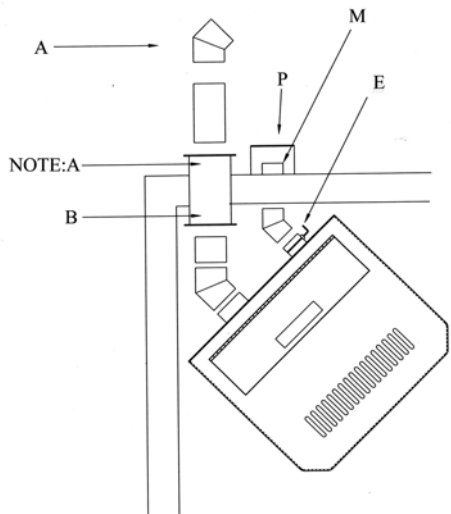


Figure 2
Corner Installation

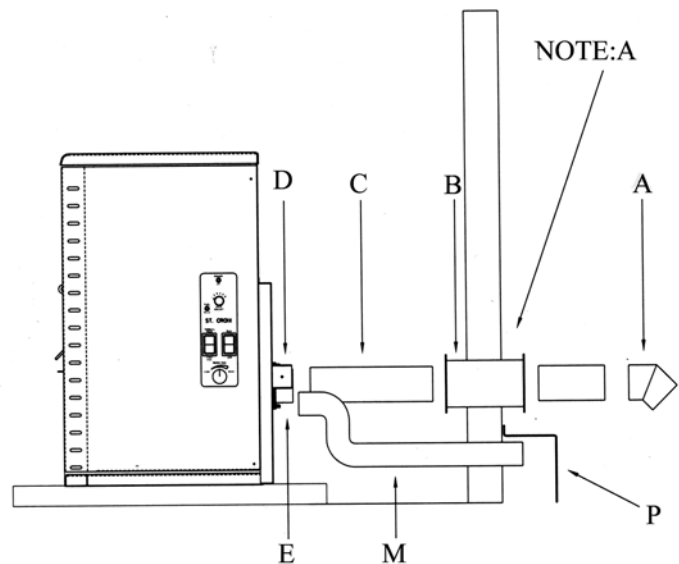


Figure 3
Through the Wall Installation

Note A: Double wall PL vent requires a minimum of three inch (3") clearance to combustibles and the use of a listed wall thimble, fire stop or roof flashing where applicable.

ATTENTION: We strongly recommend using a battery backup system if the corn stove is installed using horizontal venting only. This prevents any smoke from entering your home in the event of a power failure.

Legend for Figures 2 through 5

- | | |
|-----------------------|----------------------------|
| A. 45 degree elbow | I. PL Vent Fire Stop |
| B. Thimble | J. Roof Flashing |
| C. PL Vent Section | K. Storm Collar |
| D. Stove Exhaust Pipe | L. Rain Cap |
| E. Air Intake Damper | M. Outside Air Pipe |
| F. Air Vent Damper | N. PL Vent Section |
| G. 90 degree elbow | O. Wall Band |
| H. 45 degree elbow | P. Outside Air Inlet Cover |

1. PL vent may be installed directly through a combustible wall, ceiling or roof according to PL vent manufacturer's instructions. (See Figures 2 and 3).
2. The PL vent system must be properly sealed and secured as per PL vent manufacturer's specifications. An airtight seal is necessary in connecting the vent to the stove. Using a PL Vent pipe adapter, secure the PL vent with at least three sheet metal screws and high temperature silicone adhesive, (RTV), or metal tape at each joint.

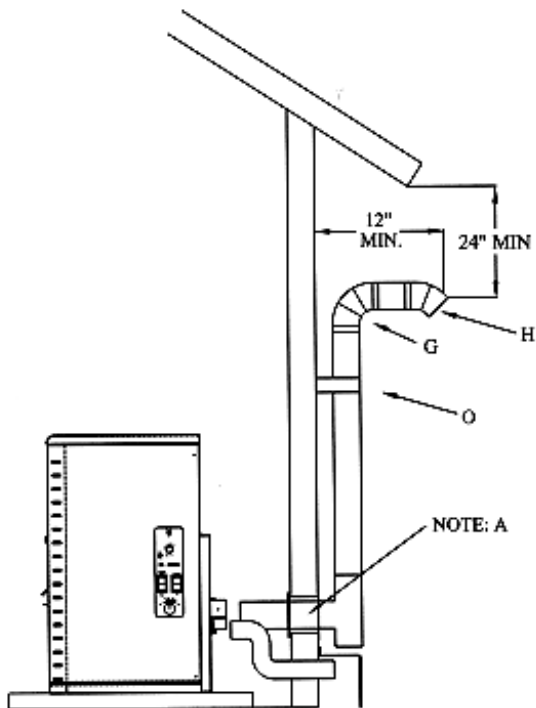


Figure 4
Exhaust Venting Under The Eaves

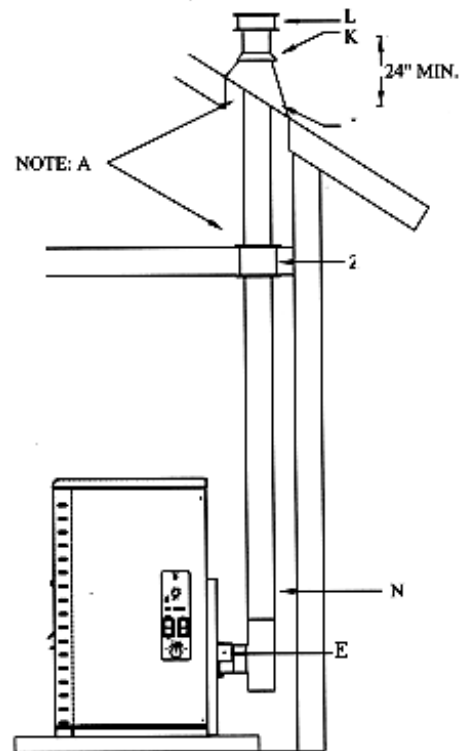


Figure 5
Exhaust Venting Through Ceiling and Roof

Note A: Double wall PL vent requires a minimum of three inch (3") clearance to combustibles and the use of listed wall thimble, fire stop or roof flashing where applicable.

1. When terminating the exhaust system under the house eaves, (Figure 4) the end of the vent pipe system must be at least twelve inches (12") from the wall and 24" below the eave, a 90 degree (G) and a 45 degree elbow may be used (H).
2. When extending through the roof, (Figure 5) install a PL vent fire stop (I) in the ceiling or in the eaves if the eaves are boxed in. Install roof flashing (J) and a storm collar (K). Extend the PL vent at least twenty-four inches (24") above the roof and terminate with a PL listed rain cap (L).

VENTING: INTO AN EXISTING CHIMNEY

The stove may be connected to an existing Class A chimney or a masonry chimney which meets the minimum requirements of NFPA 211.

1. If the stove's exhaust is connected to a masonry chimney, the masonry chimney must be free of cracks that could leak exhaust gases or fly ash. A relining of the chimney with either PL vent or single wall stainless steel pipe may be necessary to bring the chimney into compliance.
2. When chimneys are relined, a chimney chase cap that reduces the outlet of the chimney to the size of the liner is required. Extend the exhaust vent above the chimney chase cap and finish it off with a rain cap. **A single wall liner may need to be insulated to maintain adequate exhaust temperatures in the vent system.**

Note: Outside Chimneys frequently are difficult to keep warm, if in doubt insulate the liner.

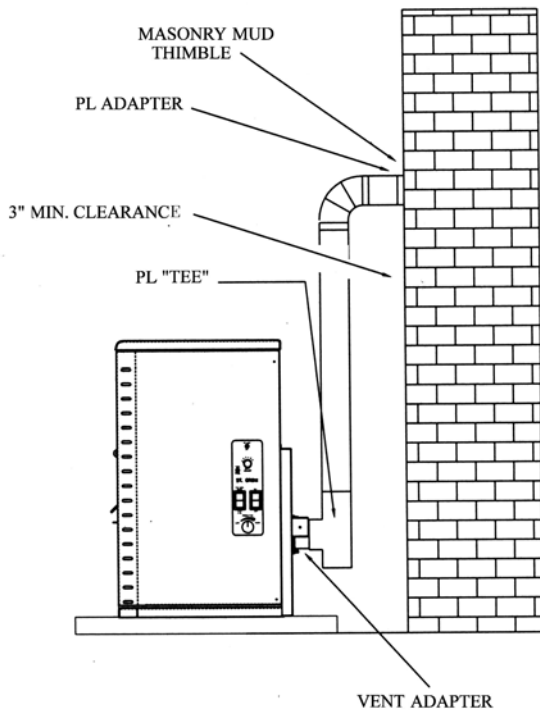


Figure 6.
Venting into Masonry Chimney

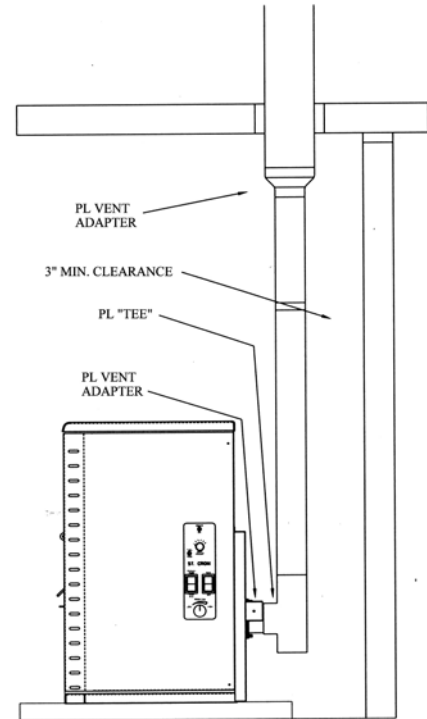
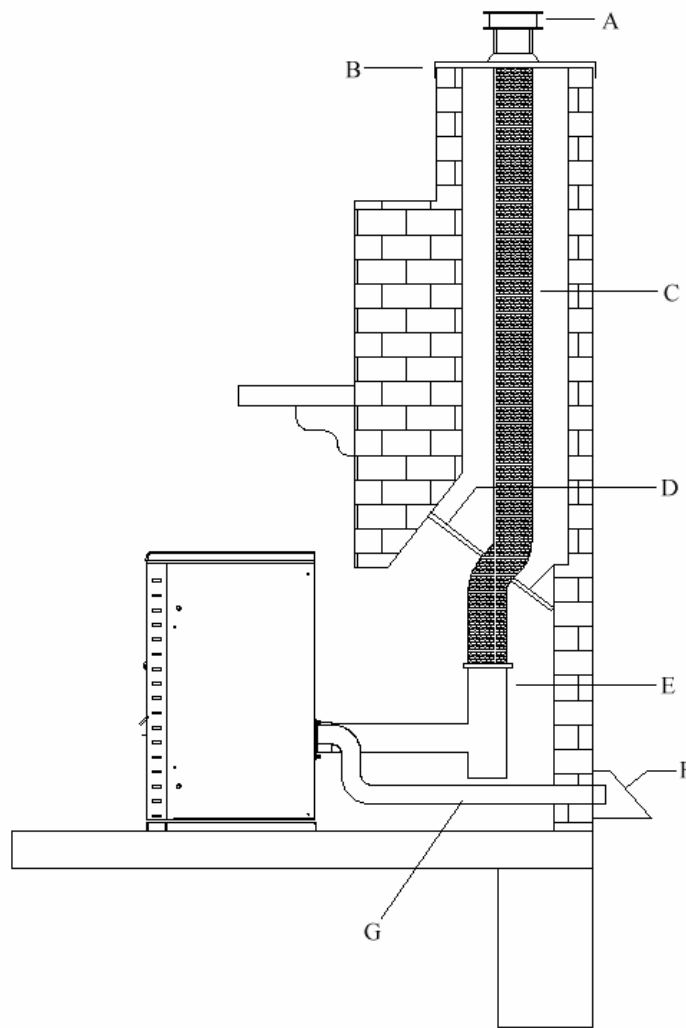


Figure 7.
Venting into Class A Chimney

3. Venting into the side of an existing masonry chimney must be done through a masonry thimble. When wall penetration is necessary to access a masonry chimney, use a listed PL vent wall thimble. (Figure 6).
4. When venting into a Class A steel chimney, (Figure 7), use an appropriate PL Vent adapter.

Hearth Mount



Legend

- A – Vertical Cap
- B – Chimney Flashing
- C – Stainless Steel Liner / PL Vent System
- D – Positive Block Off Plate
- E – PL Tee or Single Wall Tee
- F – Outside Air Shield – May be needed
- G – 2” Metal Outside Air Pipe - Optional

Figure 8. Venting to the Top of Chimney

When installing as a hearth mount stove into a fireplace the unit must either be relined, terminating above the chimney chase top, or positively connected to the existing chimney system using a block off plate (D). An approved flex liner of PL vent must be used. **A chimney system with known drafting problems may require a liner, which may also need to be insulated to keep vent system warm in cold chimney environment.**

VENTING: TERMINATION REQUIREMENTS

In determining optimum vent termination, carefully evaluate external conditions especially when venting directly through a wall. Since you must deal with odors, gases, and fly ash, consider aesthetics, prevailing winds, distances from air inlets and combustibles, location of adjacent structures and any code requirements.

1. Exhaust must terminate above combustion air inlet elevation.
2. Do not terminate vent in any enclosed or semi-enclosed area, (i.e. Carports, garage, attic crawl space, etc.) or any location that can build up a concentration of fumes.
3. Vent surfaces can get hot enough to cause burns if touched by children. Non-combustible shielding or guards may be required

The type of installation must first be considered before determining the exact location of the venting termination in relation ship to doors, window, cavities or air vents. See figures 4a and 4b below.

- a. **Without** Outside Air connected to the unit. For These types of installations please refer to the dimensions listed below in figure 4a.

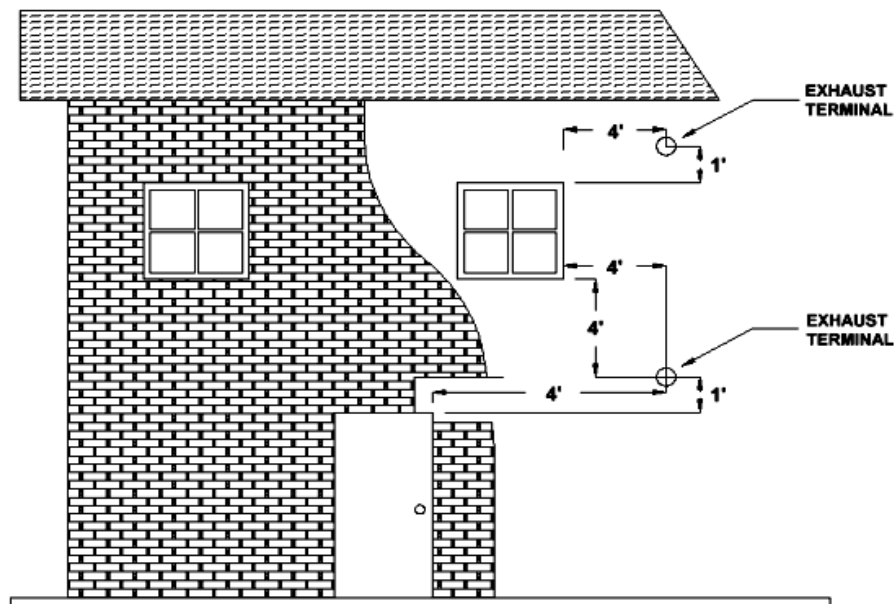


Figure 4a

4' (1.2 m) BELOW	a door, window, cavity, or air vent
Or	
4' (1.2 m) HORIZONTALLY FROM	a door, window, cavity, or air vent
Or	
1' (305 mm) ABOVE	a door, window, cavity, or air vent

- b. **With** Outside Air Connected to the unit. In this manner the appliance is a Direct Vent Appliance (sealed Combustion System) as listed in NFPA 211-6.

3.3.3.2 *Direct Vent Appliance (Sealed Combustion System Appliance)* A system consisting of an appliance, combustion air and flue gas connections between the appliance and the outside atmosphere, and a vent cap supplied by the manufacturer, and constructed so that all the air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Special Venting Arrangements are listed in NFPA 211-31

10.7.1.2 *The Vent Terminal of a Direct Vent Appliance with an input of 10000 BTU/Hr or less shall be located at least 6” from any opening into a building, and such an appliance with an input of over 10000 BTU/Hr, but not over 50000 BTU/Hr shall not be located less than 9” from any opening through which vent gases could enter a building, and the vent terminal of such appliance with an input over 50000 BTU/Hr shall be located not less than 12” from the opening.*

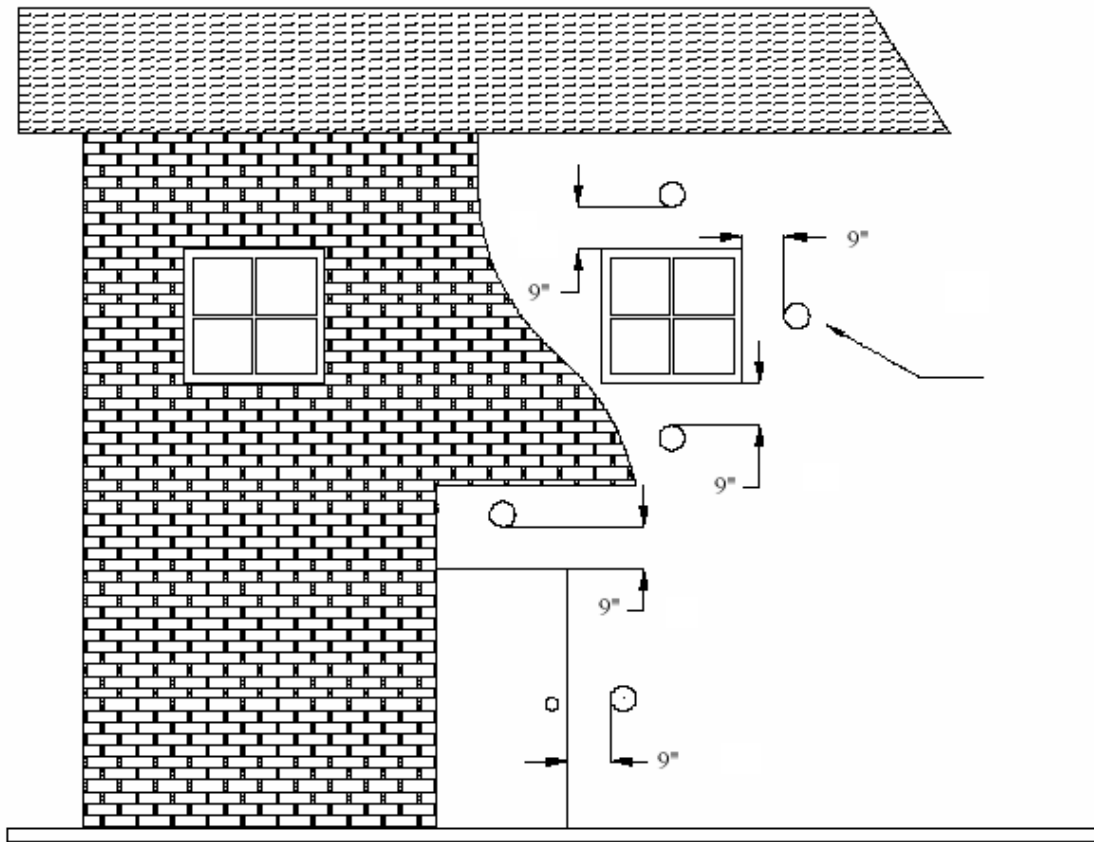


Figure 4b

9” (229 mm) ABOVE, BELOW OR HORIZONTALLY FROM a door, window, cavity, or air vent.

THE EXHAUST TERMINATION LOCATION MUST BE AT LEAST: (FIGURE 10)

- | | |
|-------------|---|
| 1' (305 mm) | ABOVE the ground level |
| 7' (2.1 m) | FROM a public walkway |
| 1' (305 mm) | FROM The wall penetration point |
| 3' (915mm) | FROM a gas meter/regulator assembly |
| 2' (610 mm) | FROM any adjacent combustibles such as:
Adjacent buildings, fences, protruding parts
of the structure, roof eaves or overhangs,
plants, shrubs, etc. |

Note: Certain local code restrictions may apply. Check with Local Officials first before installing.

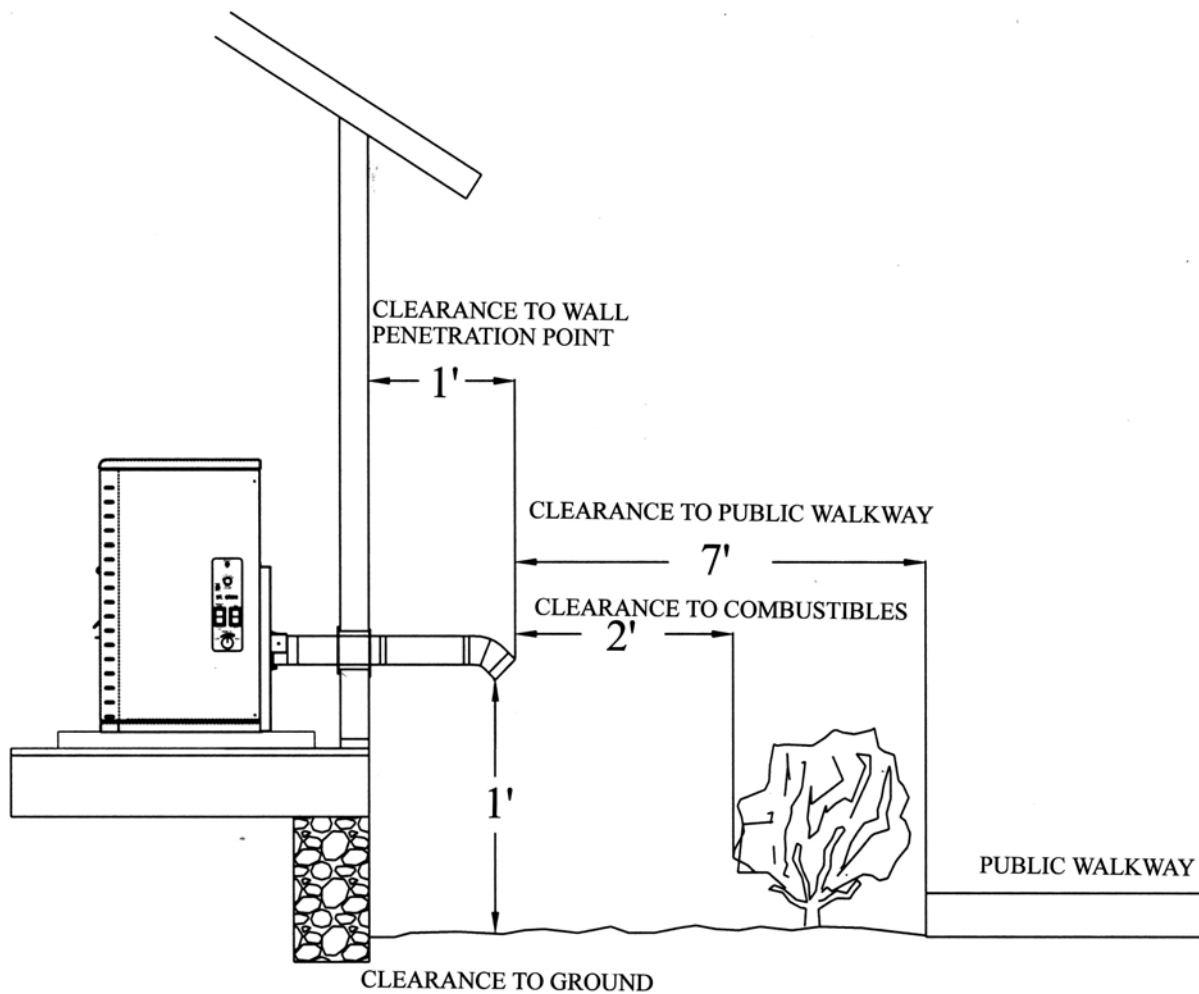


FIGURE 10

VENTING: TERMINATION CLEARANCE REQUIREMENTS SIDE VIEW

(All dimensions show MINIMUM distances)

COMBUSTION AIR

WARNING: USE THE AIR INTAKE DAMPER FOR ADJUSTING COMBUSTION INLET AIR ONLY! OTHER METHODS OF RESTRICTING OR BLOCKING COMBUSTION INLET AIR ARE STRICTLY PROHIBITED!

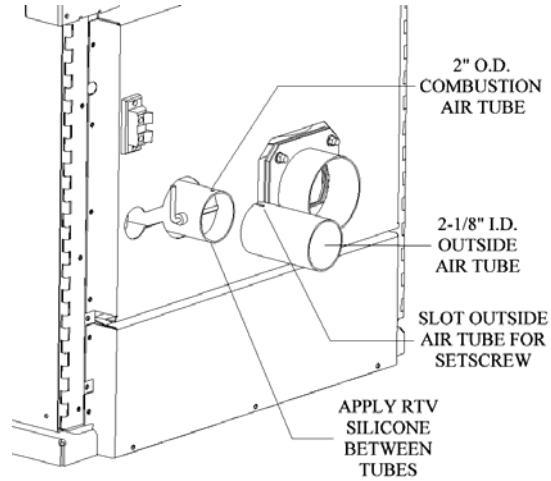


Figure 11A
Stove Air Inlet Connection

1. It is recommended that the stove be connected to an outside source of combustion air under certain conditions (negative pressure). An outside air kit is available, part # 100354 or any flexible metal hose or rigid metal pipe (conduit) must be connected around (NOT INSIDE) the combustion air inlet tube (Figure 11A). Be careful not to pinch or bend the outside air pipe with too small a radius. Outside Air Pipe may be terminated flush with the outside wall but should be protected from wind and weather by a hood. Note: The outside air pipe must terminate above the maximum snow line and below the exhaust vent outlet.
2. Outside air may be drawn from a semi-enclosed attic or crawl space or any semi-enclosed space. Take care not to draw cold air past water pipes that may freeze.
3. Increase the outside air pipe diameter to 3" for runs over ten (10) feet and elevation over 4,000 feet. Note: Long runs should be avoided.
4. Terminate the outside air pipe below the exhaust vent outlet.
5. An open mesh screen should be placed over the outside air pipe opening to prevent birds or rodents from nesting in the opening. Use an elbow or shield to prevent prevailing winds from blowing directly into the outside air intake pipe. NOTE: Mesh screen should be no smaller than one-fourth inch (1/4") by one-fourth inch (1/4").
6. In the case of a **Custom made** sealed fireplace insert shroud, an outside air inlet to the fireplace cavity is necessary to ensure adequate airflow for combustion.

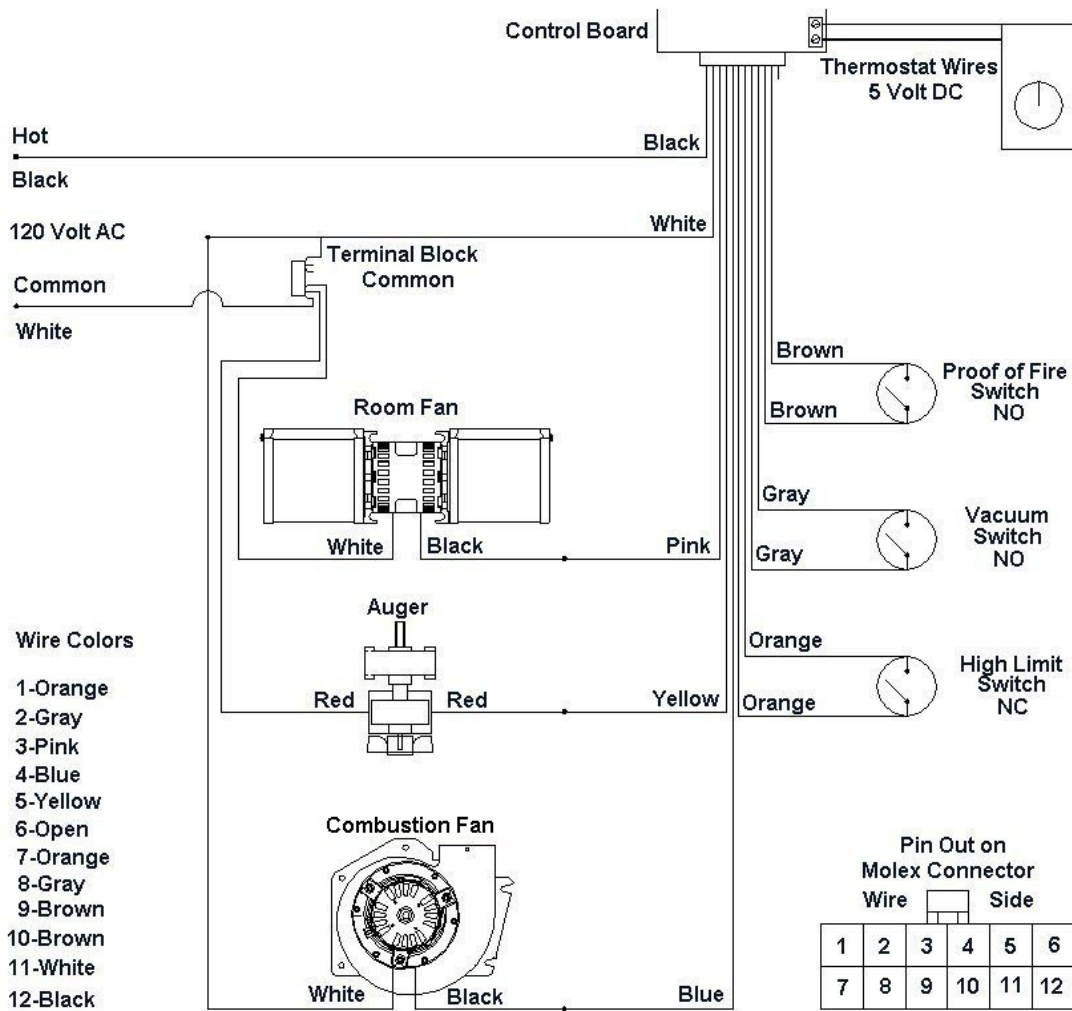
WARNING: OUTSIDE COMBUSTION AIR IS REQUIRED FOR ALL MOBILE HOME INSTALLATIONS!

ELECTRICAL CONNECTIONS

1. The Lancaster is provided with a grounded electrical power cord that can extend from the rear of side. This should be connected to a standard 120 volt AC electrical outlet. The current requirement is approximately 3 amps. (5 amps with igniter running)

2. The power cord must be carefully routed to avoid contact with any hot or sharp exterior surface areas of the stove. (Figure 11B) Any stove installed in a mobile home must be electrically grounded to the steel chassis of the home and bolted to the floor in compliance with, and according to building code requirements.

3. In Canada, the electrical installation must meet the applicable requirements for CSA C22.2.



80P52636

Wiring Schematic

FLOOR PROTECTION

The stove must be installed on a non-combustible protective pad

Hearth models may be placed directly on the noncombustible hearth of a fireplace.

Floor protection is required for the area directly under the stove and extending 6" beyond the front of the stove as shown.

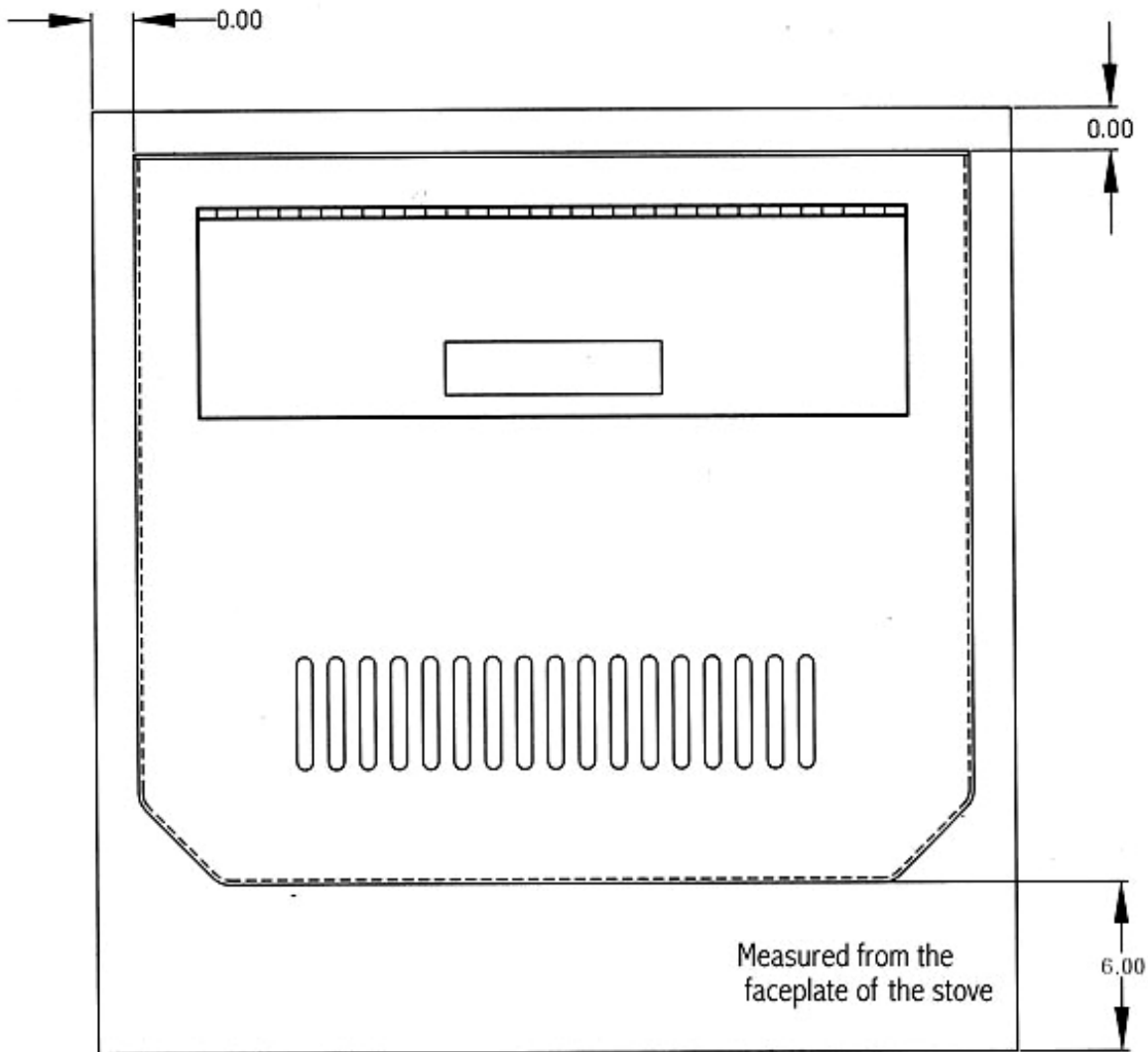


Figure 12
Floor protection (Top View)

MINIMUM CLEARANCES (INCHES) TO COMBUSTIBLE MATERIAL

Figure(s):	From:	
14, 16B	Sides of stove	4"
14, 16A, B	Back of stove	4"
13	Corner of stove	4"
13	Vent pipe	3"
15	Stove to mantel	12"
15	Floor protection: Front (from faceplate)	6"
12	Floor protection: Sides & back of stove	0"
16A	Alcove: Vertical to Combustibles	16"
16B	Alcove: Sides	4"
16A, 16B	Alcove: Back	4"

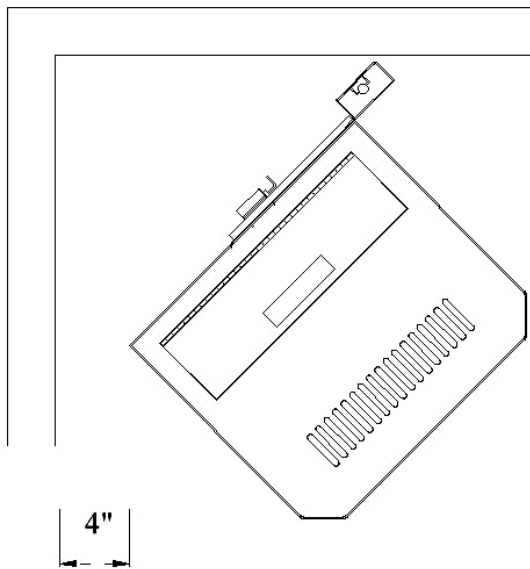


Figure 13 (Top View)
Clearances: corners of stove
4" Needed to slide out the control board

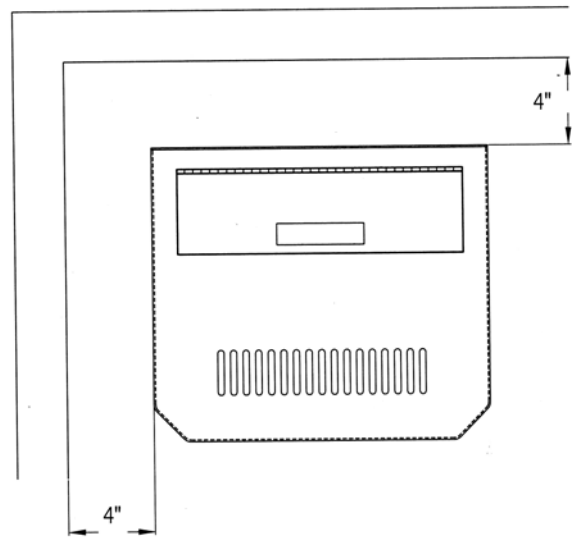
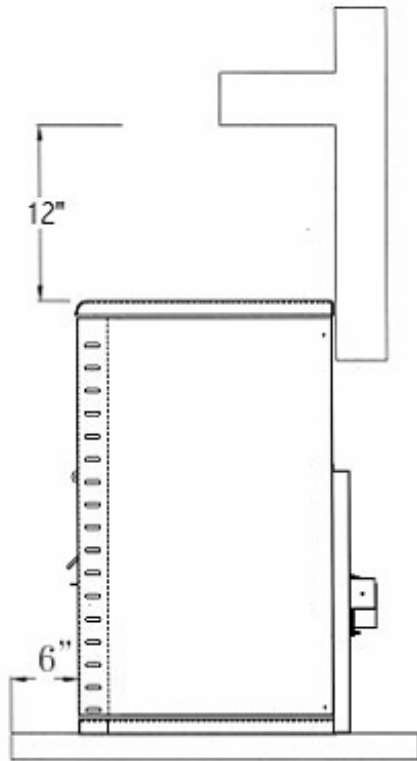
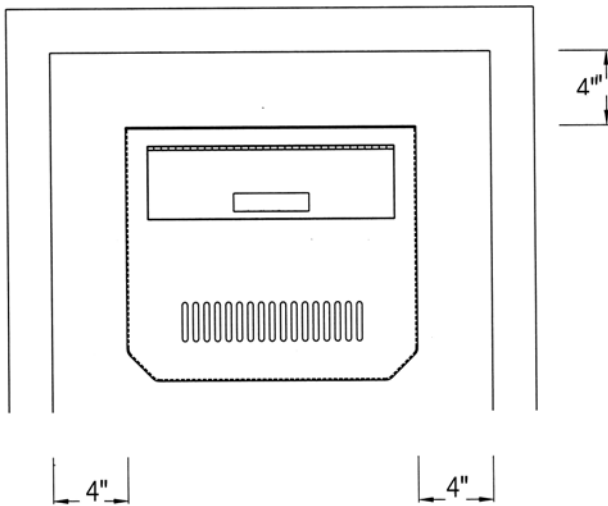
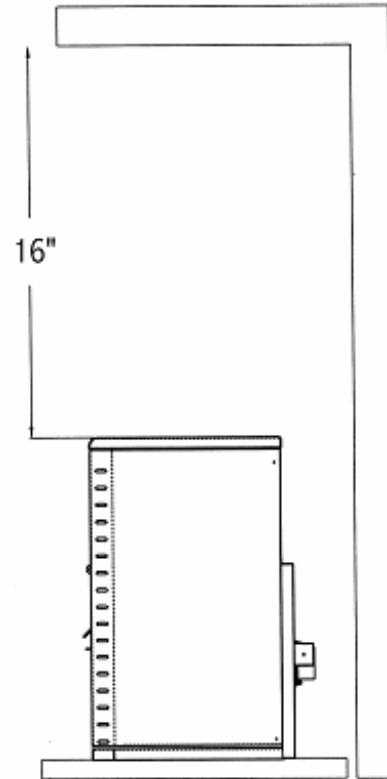


Figure 14. (Top View)
Clearances Sides and Back

Floor Pad and Mantle Clearances
Figure 15



Alcove Installation (Side View)
Figure 16A



Alcove Installation (Top View)
Figure 16B

Although 4 " is the minimum clearance to the sides of the stove, this is not recommended due to the need for access into the inside of the stove for the maintenance as spelled out in the Operations Manual. Please read the section covering Daily, Periodic and Yearly Maintenance in the Operations Manual.

Mobile Home Installation

Unit must be installed in accordance with the:
Manufactured Home and Safety Standard (HUD), CFR 3280, Part 24

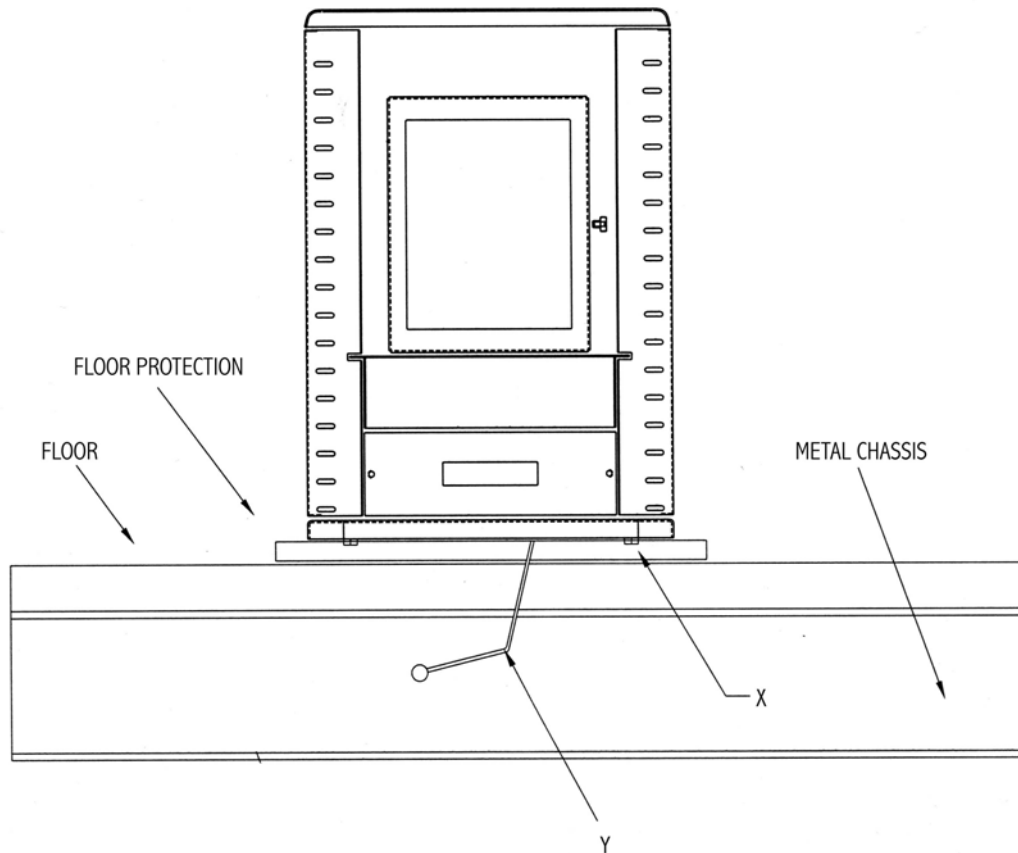


Figure 17.

The stove has been tested and listed for mobile home installations. In addition to all previously detailed requirements, mobile home installations must observe the following: (Figure 17).

1. WARNING: DO NOT INSTALL IN A SLEEPING ROOM.

2. WARNING: COMBUSTION AIR MUST COME FROM THE OUTSIDE OF THE MOBILE HOME! FAILURE TO DO SO MAY CREATE NEGATIVE PRESSURE WITHIN THE MOBILE HOME AND COULD DISRUPT PROPER VENTING AND OPERATION OF THE PELLET STOVE.

3. CAUTION: THE STRUCTURAL INTEGRITY OF THE FLOORS, WALLS, CEILING AND ROOF MUST BE MAINTAINED.

4. Permanently bolt the stove to the floor and pad, (X).
5. Electrically ground the stove and pedestal to the metal chassis of the home. Use a number eight, (8), gauge or larger copper wire, (Y).
6. Maintain an effective vapor barrier at location where PL vent exits the structure.
7. Check any other local building codes or other codes that may apply.
8. Do not use components other than those specified for use with this unit, (Refer to pages 4, 5, 6 and 7).
9. Floor protection requirement must be followed precisely.
10. PL Vent must be used for exhaust venting. (Single wall vent is not allowed). Follow PL Vent manufacturer's installation directions and observe all listed clearances to combustibles.

USE OF A THERMOSTAT

St. Croix corn stoves offer our customers the optional feature of thermostatically controlling your new stove. By using a thermostat to control the operation of your corn stove, you can benefit two ways. First of all, after setting the thermostat to your desired heating needs the stove will operate accordingly to uniformly maintain your desired temperature setting. Secondly, the fuel consumption is being optimized, which ultimately results in lowering your seasonal heating costs.

While the room temperature remains cooler than your desired thermostat setting, the stove will operate at any of the 5 HEAT ADJUST selector positions. When the room temperature rises above the thermostat setting, the stove will automatically operate at position 1 (Pilot) setting.

1. Once you have successfully lit your stove, set the thermostat to your desired heating needs.
2. Set the HEAT ADJUST selector to a position that will effectively create a rise in room temperature above your thermostat setting. The recommended heat adjust settings, while using a thermostat, are any position between 2 through 5.

Thermostat Hook-up

To hook up a thermostat, connect the wires from the Thermostat to the Red and Black connectors on the back of the stove (see figure 18).

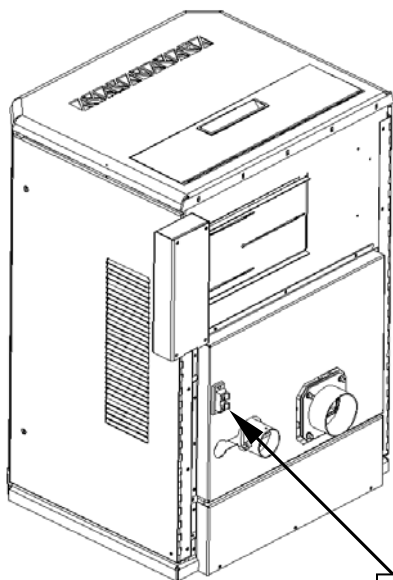


Figure 18

Thermostat Wire Terminal

The external Thermostat wire terminal has been pre-wired to the thermostat wire Terminal on the back of the control board (See figure 19)

Read the Frequently Asked Questions section in the Operations Manual to troubleshoot the Thermostat.

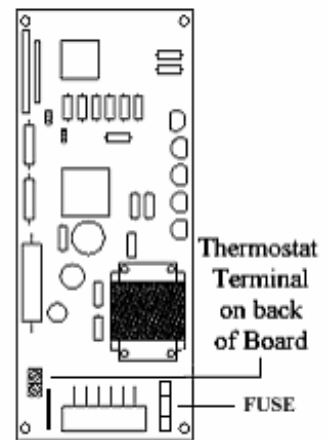


Figure 19

NOTE: Installers must determine a neutral location of where to mount the thermostat panel in order for accurate room temperature measurements.

Notes:

Serial Number:

Date of Purchase:

Dealer Information:

Even Temp, Inc.
P.O. Box 127
Waco, NE 68460

EMAIL: service@eventempinc.com

WEB ADDRESS: www.stcroixheat.com