



HEARTH PRODUCTS

INSTALLATION AND OPERATION MANUAL

MERIT™ SERIES

Free-Standing Pellet Stove

Save These Instructions For Future Reference

P/N 775,024M, Rev. D, 05/2009



Pellet Stove Model Cascade®

A French manual is available upon request. Order P/N 775,024CF.

Ce manuel d'installation est disponible en francais, simplement en faire la demande. Numéro de la pièce 775,024CF.



OMNI-Test Laboratories, Inc.

Report No. 050-S-23-2

This appliance must be properly installed and operated in order to prevent the possibility of a house fire. Please read this entire manual before installation and use of this pellet fuel-burning room heater. Failure to follow these instructions could result in property damage, bodily injury or even death. Contact your local building or fire officials to obtain a permit and information on any installation requirements and inspection requirements in your area.

NATIONAL FIREPLACE INSTITUTE
NFI
CERTIFIED

www.nficertified.org

We recommend that our pellet hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Pellet Specialists or who are certified in Canada by Wood Energy Technical Training (WETT).

Wood Energy Technical Training
www.wettinc.ca

! WARNINGS	
	<ul style="list-style-type: none"> • Hot! Do not touch! The glass and surfaces of this appliance will be hot during operation and will retain heat for a while after shutting off the appliance. Severe burns may result. • Carefully supervise children in the same room as appliance. • Lennox™ pellet-burning appliances are designed for use as a supplemental heater. They are not intended for continuous use as a primary heat source.

IMPORTANT SAFETY AND WARNING INFORMATION

READ THIS MANUAL IN ITS ENTIRETY AND UNDERSTAND THESE RULES TO FOLLOW FOR SAFETY.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

WARNING

Do not attempt to alter or modify the construction of the appliance or its components. Any modification or alteration may void the warranty, certification and listings of this unit.

1. DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE CONNECTED TO ANOTHER APPLIANCE.
2. Do not connect this appliance to air ducts or any air distribution system.
3. DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS APPLIANCE.
4. Do not use class B venting intended for gas appliances as a chimney or connector pipe on a pellet fired appliance.
5. The minimum clearances must be maintained for all combustible surfaces and materials including; furniture, carpet, drapes, clothing, wood, papers, etc. Do not store combustibles within this clearance space (see Clearances on Page 5).
6. **INSTALLATION DISCLAIMER** - This stove's exhaust system works with negative combustion chamber pressure and a slightly positive chimney pressure. Therefore, it is imperative that the exhaust system be gas tight and installed correctly. Since Lennox Hearth Products has no control over the installation of your stove, Lennox Hearth Products grants no warranty, implied or stated for the installation or maintenance of your stove, and assumes no responsibility for any consequential damage(s).
7. Burning any kind of fuel consumes oxygen. If outside air is not ducted to the appliance, ensure that there is an adequate source of fresh air available to the room where the appliance is installed.
8. The appliance will not operate using natural draft, nor without a power source for the blower and fuel feeding systems.
9. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this heater. Keep all such liquids well away from the heater while it is in use.
10. The authority having jurisdiction such as municipal building department, fire department, fire prevention bureau, etc should be consulted before installation to determine the need to obtain a permit.
11. **APPROVED FUEL:** This appliance is designed specifically for use only with pelletized wood fuels only. This appliance is designed and approved for the burning of wood residue pellets with up to 2% ash content. This appliance is NOT approved to burn cardboard, nut hulls, cherry pits, corn, etc. regardless if it is in pellet form. Failure to comply with this restriction will void all warranties and the safety listing of the stove. Consult with your Lennox Hearth Products dealer for more information on approved pellet fuels.
12. **CONTINUOUS OPERATION:** When operated correctly, this appliance cannot be overfired. Continuous operation at a maximum burn can, however, shorten the life of the electrical components (blowers, motors, and electronic controls), and is not recommended. Typical approved operation would include running at the low to mid range setting with occasional running on the maximum setting during the coldest periods of the winter. The blower speed control should be turned to high when operating the stove on the high heat setting. **DO NOT OVER-FIRE THIS STOVE.** Follow all instructions regarding the proper use of this stove.
13. **CAUTION: NEVER PUT FINGERS NEAR AUGER.** This appliance is equipped with a hopper lid switch, which is designed to stop the auger when the hopper lid is opened. **NEVER DISCONNECT OR BYPASSED THIS SWITCH FOR ANY REASON.** Pellet fuel is fed to the UltraGrate™ by a screw auger. This auger is driven by a high torque motor. The auger is capable of causing serious harm to fingers. Keep pellets in the hopper at all times and keep fingers away from auger. The auger can start and stop automatically at any time while the stove is running.
14. **CAUTION: HOT WHILE IN OPERATION.** An appliance hot enough to warm your home can severely burn anyone touching it. Keep children, pets, clothing and furniture away. Contact may cause skin burns. Do not let children touch the appliance. Train them to stay a safe distance from the appliance.
15. **Fly-ash BUILD-UP:** For all wood pellet fuel-burning heaters, the combustion gases will contain small particles of fly-ash. This will vary due to the ash content of the fuel being burned. Over time, the fly-ash will collect in the exhaust venting system and restrict the flow of the flue gases. The exhaust venting system should be inspected regularly and cleaned as necessary.
16. **SOOT FORMATION:** Incomplete combustion, such as occurs during startup, shutdown, or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system. A precautionary inspection on a regular basis is advisable to determine the necessity of cleaning. The exhaust venting system should be inspected regularly and cleaned as necessary.
17. **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 noncombustible floor or on the 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 been thoroughly cooled.
18. The instructions must be strictly adhered to. Do not use makeshift methods or compromise in the installation.
19. Do not abuse the door glass by striking, slamming or similar trauma. Do not operate the stove with the glass removed, cracked or broken.
20. **SAVE THESE INSTRUCTIONS.**
21. See the listing label on the appliance.

CONGRATULATIONS!

When you purchased your new pellet stove, you joined the ranks of thousands of individuals whose answer to their home heating needs reflects their concern for aesthetics, efficiency and our environment. We extend our continued support to help you achieve the maximum benefit and enjoyment available from your new pellet stove.

Thank you for selecting a Lennox Hearth Products stove as the answer to your supplemental home heating needs.

TABLE OF CONTENTS

Important Warnings	Page 2
Packaging List	Page 3
Testing / Listing, EPA	Page 3
Using this Manual	Page 3
Planning Your Installation	Page 3
Selecting a Location	Page 4
Floor Protection	Page 4
Clearances	Page 5
Installation Tips	Page 6
Manufactured Home Installation	Page 7
Installation	Page 7
Damper Adjustment	Page 8
Venting Requirements	Page 9
Care and Operation	Page 17
Fuel	Page 19
Routine Maintenance	Page 20
Specifications	Page 25
Component Definitions	Page 26
Wiring Diagram	Page 27
Troubleshooting	Page 28
Replacement Parts List and Diagrams	Page 29
Optional Accessories	Page 32
Safety / Listing Label	Page 33
Product Reference Information	Page 34

This installation and operation manual will help you obtain a safe, efficient, dependable installation for your appliance and vent system.

PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE BEGINNING YOUR INSTALLATION

PACKAGING LIST

The assembled pellet stove model Cascade®, is packaged with an accessory package which contains the following:

- One - Installation and operation instructions manual
- One - Warranty
- One - Power cord
- One - Grate scraper
- One - 5/32" Allen wrench

TESTING / LISTING

Listing: The listing laboratory is OMNI-Test Laboratories, Inc., Portland, Oregon. The report number is 050-S-23-2 for model Cascade pellet stove.

Testing: In accordance with the specifications and procedures

- Listed and tested to ASTM E1509 and ULC C1482 / ULC S627 for installations as a freestanding room heater
- The safety/listing label is located on an inside hopper surface of the pellet stove. Please read this safety label carefully. It contains important information about installation and operation of this appliance.
- This appliance is tested and listed for residential installation according to current national and local building codes as:
 - A Free-Standing Room Heater
 - A Manufactured Home Heater

EPA (Environmental Protection Agency)

Status: EPA Exempt - Pellet appliances that are designed with the combustion air supply exceeding the 35 to 1 (by weight) ratio are exempt from EPA regulations and are "non-affected facilities."

USING THIS MANUAL

Please read and carefully follow all of the instructions found in this manual. Please pay special attention to the safety instructions provided in this manual.

PRODUCT IS SUBJECT TO CHANGE WITHOUT NOTICE

PLANNING YOUR INSTALLATION

Questions To Ask Local Building Official

A correct installation is critical and imperative for reducing fire hazards and perilous conditions that can arise when wood pellet burning appliances are improperly installed. The installer must follow all of the manufacturers' instructions.

WARNING

Check all local building and safety codes before installation. The installation instructions and appropriate code requirements must be followed exactly and without compromise. Alterations to the stove are not allowed. Do not connect the stove to a chimney system serving another stove, appliance, or any air distribution duct. Failure to follow these instructions will void the manufacturers warranty.

The installation of this appliance must conform to local codes and applicable state and federal requirements. Familiarity with these requirements before installation is essential. Important considerations to discuss with local building officials include:

1. **Applicable codes** (i.e. Uniform Mechanical Code, State or Regional Codes).

Electrical codes:

- In USA, NEC, ANSI/NFPA 70 – Latest Edition
- In Canada, CSA C22.1 – Latest Edition

2. Local amendments
3. Is a permit required - cost. You may wish to contact your insurance company to ask if they require this.
4. If outside combustion air is required
5. Rooms where the installation is not allowed

Power Supply Requirements

These requirements must be met unless otherwise specified by state or local authorities.

- **Power Cord** - The power cord must be plugged into a standard, 120 Volt, 60 Hz grounded electrical outlet with proper ground and polarity. The power cord must be routed to avoid contact with any of the hot or sharp exterior surface areas of the stove.
- **Power Supply** - The approximate power requirement is 250 watts.
- **Manufactured Home Installations** - When installed into a manufactured home, the appliance must be electrically grounded to the steel chassis of the manufactured home (see **Page 7, Manufactured Home Requirements**).

WARNING

Electrical grounding instructions: This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug. Do not route power cord under or in front of appliance.

Surge Protectors

A surge protector is recommended to ensure the stove's electrical components are not damaged due to a surge in the electrical supply. Only high quality protectors listed to UL1449 should be used - low quality protectors do not provide the protection needed.

Smoke Detectors

Since there are always several potential sources of fire in any home, we recommend installing smoke detectors. If possible, install the smoke detector in a hallway adjacent to the room (to reduce the possibility of occasional false activation from the heat produced by these appliances). If your local code requires a smoke detector be installed within the same room, you must follow the requirements of your local code. Check with your local building department for requirements in your area.

Installation / Maintenance Standards

National Fire Protection Association – The primary NFPA standard that refers to installation and maintenance of pellet appliances and venting is NFPA 211 – Latest Edition: Chimneys, Fireplaces, Vents, and Solid Fuel appliances.

SELECTING A LOCATION

The design of your home and where you place your stove will determine its value as a source of heat. This type of appliance depends primarily on air circulation (convection) to disperse its heat, and therefore, a central location is often best. There are other practical considerations, which must be considered before a final selection of locations is made. Some of which includes:

- Existing Chimneys
- Pellet Fuel Storage
- Aesthetic Considerations
- Roof Design (rafter locations and roof pitch)
- Room Traffic
- Proximity to Combustibles
- Electrical Wiring

CAUTION

The body of these appliances are very heavy. The use of a heavy duty escalara (stair step hand truck) is recommended for lifting the appliance body.

NEGATIVE PRESSURE WARNING

This appliance is not designed to be operated in a negative pressure environment. In very airtight homes with large kitchen exhaust fans, furnace cold air returns, fresh air exchange systems and any other air system in close proximity to the heating appliance may create a negative pressure in the same room as the heating appliance. This can create dangerous condition, drawing combustion by-products into the home. Be sure your home has adequate makeup air to eliminate negative pressures caused by the above-mentioned sources. Outside air connected to the appliance probably will not resolve such a problem as the stove is not the source of negative pressure. Lennox Hearth Products accepts no liability for damages resulting from negative pressures described here.

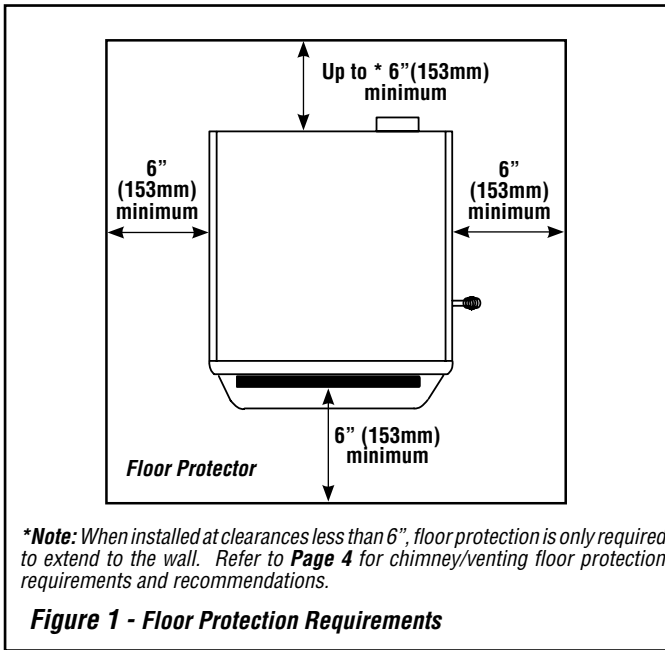
Ventilation Requirements - Provide adequate air for combustion. The fresh air requirements of this appliance must be met within the space where it will be installed. Ventilation is essential when using a solid-fuel-burning heater. In well insulated and weather tight homes, it may inhibit the rate the exhaust flows through the venting system (caused by a shortage of air in the home). The lack of air is caused by many common household appliances which exhaust air from the home (such as a furnace, heat pump, air conditioner, clothes dryer, exhaust fans, fireplaces, and other fuel burning appliances). Also, the combustion process of this heater uses oxygen from inside the dwelling. If the available fresh air delivery in the dwelling is insufficient to support the demands of these appliances, problems can result (i.e. excessive negative pressure will result in performance problems. To correct this problem it may help to open a window (preferably on the windward side of the house) or install an outside combustion air duct to the appliance.

FLOOR PROTECTION

This appliance requires noncombustible floor protection **(the hearth pad or alternate floor protection material does not require a thermal rating).**

A noncombustible floor protector must fully cover the area beneath the appliance as illustrated in **Figure 1**.

If the floor protection is to be stone, tile, brick, etc., it must be mortared or grouted to form a continuous noncombustible surface. In Canada, if a chimney connector / venting extends horizontally over the floor, protection must also cover the floor under the connector / venting and at least 2" (51 mm) to either side (recommended but not required in the US). See Clearances and Hearth Protection shown in **Figure 1**.



CLEARANCES

Standard residential or manufactured home installation. These appliances require the following minimum clearances to combustibles.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS
NE PAS ENLEVER CETTE ÉTIQUETTE DÉGAGEMENT MINIMUM POUR LES MATÉRIEAUX COMBUSTIBLES

Freestanding Stove Installation / Installation Du Poêle Autonome
 Manufactured (Mobile) Home Or Residential Installation / Installation Résidentielle Ou Dans Une Maison réfabriquée (Mobile)

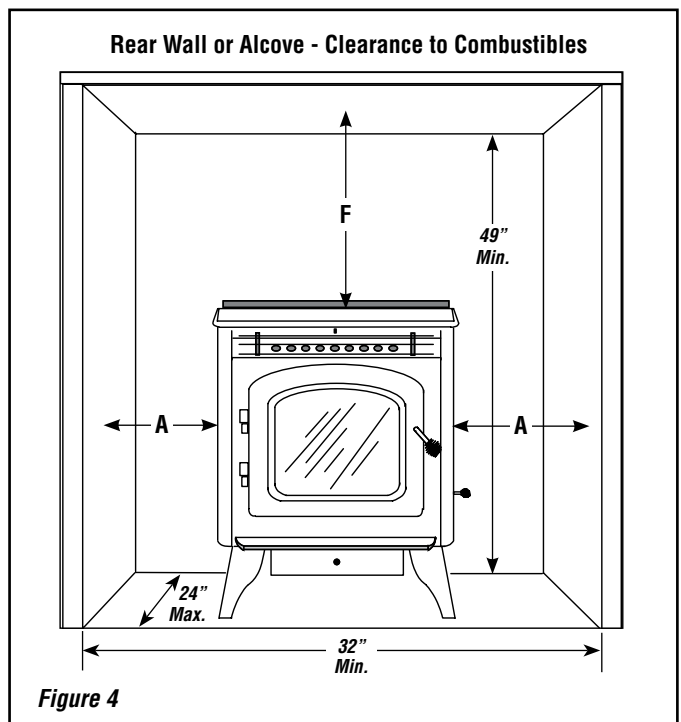
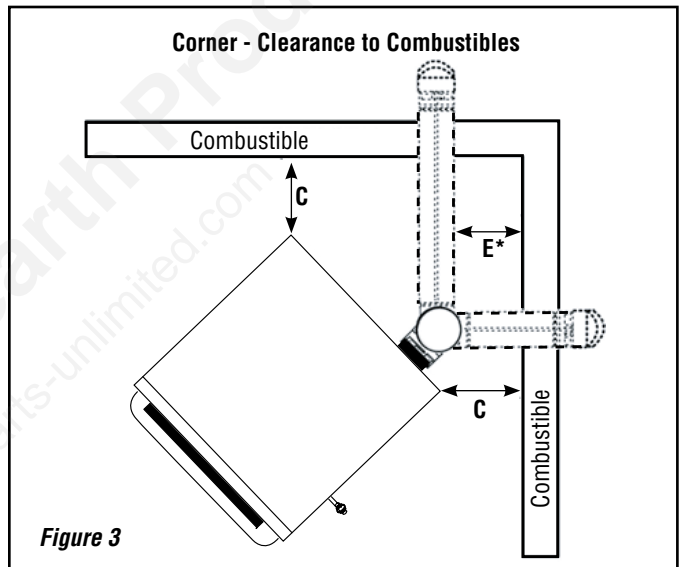
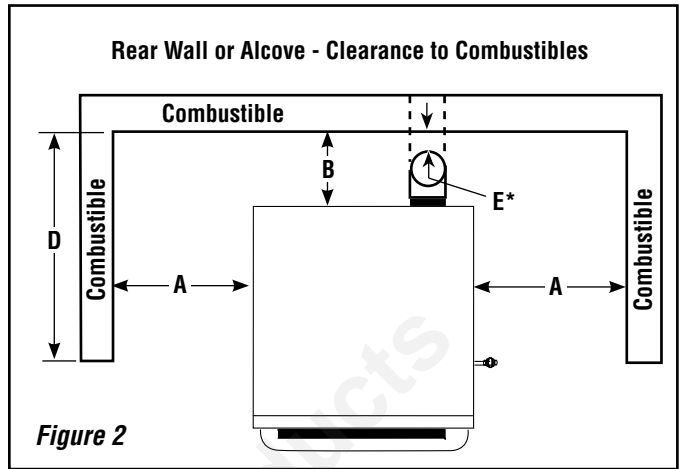
A - Sidewall to unit	4" / 102 mm
B - Backwall to unit	1" / 25 mm
C - Sidewall to unit Corner	1" / 25 mm
D - Max. Depth of Alcove	① 24" / 610 mm
E - Flue to Wall	② 3" / 76mm
F - Ceiling Height above stove top	21-1/2" / 522 mm

① - Alcove Measurements (see **Figure 4**): Height, Minimum – 49" (1245 mm), Width Minimum – 32" (813 mm), Depth Maximum – 24" (610 mm)
 ② See vent manufacturer to verify clearances

Table 1

⚠ IMPORTANT

- **Minimum clearances specified may not allow for ease of operation and maintenance (please take this in to account when planning the installation). If installed to the minimum clearances, removal of the appliance may be necessary for servicing.**
- **Recommended clearance zone from the front of the appliance to combustibles is 4 feet minimum.**
- **Clearances to combustibles for the appliance can only be reduced by means approved by the regulatory authority.**



***Note:** Refer to pipe Manufacturer's installation instructions for minimum pipe clearances.

INSTALLATION TIPS

INSTALLATION TIPS Select Your Installation Type

GOOD INSTALLATION *

Horizontal Installation
(Direct Vent - Outside Wall)

No natural draft. Wind pressures may affect operation

BETTER INSTALLATION

Vertical and Horizontal Installation
(Up and Out)

Some natural draft aids venting. Wind pressures may still affect operation

BEST INSTALLATION

Vertical Installation
(Straight Up)

Natural draft improves operation and negative effects from wind

VENTING TYPE

- a: PL-Vent Pipe / Pellet Vent (w/stainless inner liner)
- b: Stainless Steel flex liner may be used inside existing flue or chimney (woodstove replacement applications)

CAUTION: Do not use Type B-Vent Pipe

REQUIRES 3"

DIAMETER STANDARD PL-VENT / PELLET PIPE

With listed termination kit. If installation requires in excess of 11' of pipe, it is recommended a 4" diameter pipe be used.

MANUFACTURED HOME

Requires outside air for combustion. Use a galvanized or stainless steel pipe for duct. Minimum duct size 1-5/8" dia.

CLEARANCES TO COMBUSTIBLES

Ensure all clearances are maintained in accordance to instructions contained on product safety label and in compliance with pipe/venting requirements.

**PLEASE REVIEW THIS ENTIRE
INSTALLATION AND OPERA-
TION MANUAL FOR ADDITIONAL
INSTRUCTIONS.**

POWER SUPPLY

Must have proper polarity and be grounded.

Note: Use of an extension cord may adversely effect the performance of your unit.

Seal All Venting Joints:

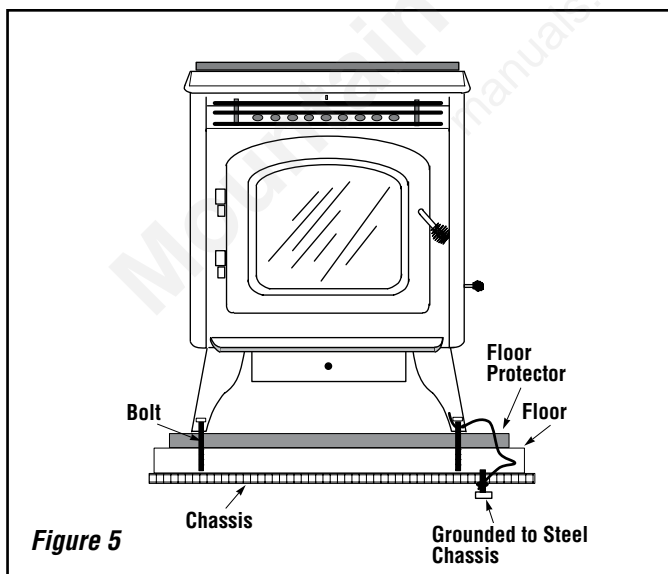
Use RTV
(high temp silicone)

* In horizontal vent installations It is recommended that when an appliance is vented directly through a wall, a minimum of 6 feet (1.83 M) of vertical pipe is installed to create some natural draft. This will reduce the possibility of smoke or odor entering the dwelling during appliance shutdown or loss of power.

MANUFACTURED HOME INSTALLATION

In addition to the standard installation instructions, the following instructions may be required by local, state or federal building codes:

- Installation should be in accordance with the Manufactured Home and Safety Standard (HUD), CFR 3280, Part 24.
- The stove must be permanently bolted to the floor using four 1/4" Lag screws. The lag screws must be an adequate length to extend through the hearth pad and into the floor as shown in **Figure 5**. Install the lag screws as shown in **Figure 5**. A minimum of two lag screws must be used.
- Connecting the Cascade™ stove to outside combustion air is required in manufactured home installations and when required by local building codes. An outside air inlet must be provided for combustion and be unrestricted while unit is in use. Use a galvanized or stainless steel pipe for the duct (the outside air inlet on the stove is 1-5/8" diameter). The air intake on the exterior of the home should always be located a minimum of 18" below the flue termination. The Inlet shall remain free of obstruction while unit is in operation and constructed in a manner so as to prevent material from dropping into the inlet or into the area beneath the dwelling. The inlet shall also have a screen with openings not larger than 1/4" to prevent rodents from entering.
- Stove must be permanently electrically grounded to the steel chassis of the manufactured home using a 8 GA copper wire and a serrated or star washer (to penetrate paint or protective coating to ensure grounding). The location selected for ground attachment to the stove must be dedicated for this purpose. Grounding must comply with NFPA-70-latest edition standards, CSA C22.1-latest edition in Canada, as well as any local codes.
- See **Pages 9 through 16** for additional information on venting requirements.
- **WARNING: DO NOT INSTALL THIS STOVE IN A SLEEPING ROOM IN A MANUFACTURED HOME.**
- **CAUTION: THE STRUCTURAL INTEGRITY OF THE MANUFACTURED HOME FLOOR, WALLS, CEILING/ROOF MUST BE MAINTAINED.**



Manufactured Home Exhaust Vent Pipe Installation Guidelines

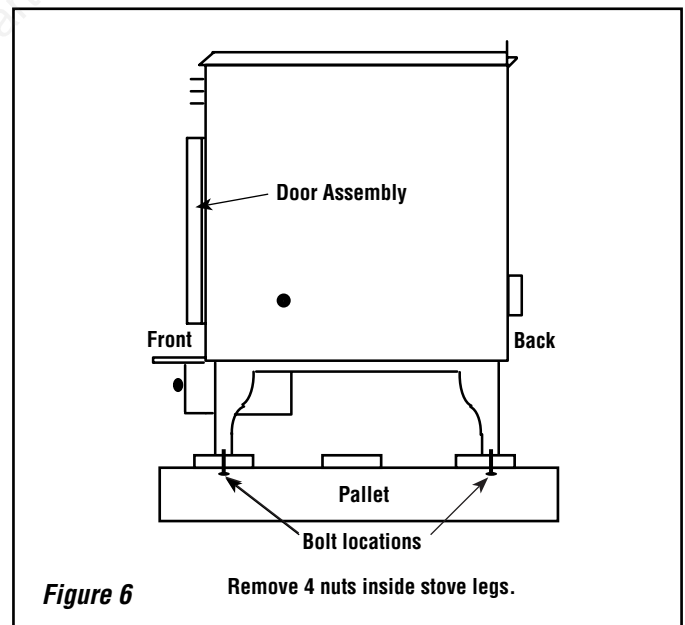
This stove is approved for venting with Type L and Type PL pellet vent pipe listed to UL 641 and ULC S609. We recommend the use of venting products manufactured by Security Chimneys International. The pipe should extend at least 3 feet above the part of the roof through which it passes. The top of the pipe should be at least 2 feet above the highest required elevation of any part of the manufactured home within 10 feet of the pipe (see **Page 12, Manufactured Home Chimney Height Requirements**).

If the exhaust vent exits the manufactured home at a location other than the roof, and exits at a point 7 feet or less above the ground level on which the manufactured home is positioned, a guard or method of enclosing the pipe shall be provided at the point of exit for a height of up to 7 feet. The openings, if any, in this guard shall not allow a 3/4" rod to pass through. A 1/2" rod could pass through but should not be able to touch the pipe when inserted through the opening a distance of 4 inches.

INSTALLATION

Removing Appliance From Pallet

1. After removing the packaging from the stove, lift the hopper lid, and remove any pre-packaged items that were shipped in the hopper. Also open the door assembly and remove any pre-packaged items.
2. Using a 1/2" socket or open end wrench, remove the four nuts from inside the stove legs that secure the stove to the pallet braces.



Installation Check List

It is strongly recommended that you have an authorized Lennox Hearth Products dealer install your stove. If you install your stove yourself, you should review your installation plan with an authorized Lennox Hearth Products dealer.

Check list:

Check off each item as you proceed with the installation process.

- Read the ENTIRE stove installation section first.
- Determine the appropriate measurements and locations for your installation.
- Follow the general installation directions under Installation.
- Be sure to pre-fit all items before you install, fasten, or set up the stove permanently.
- Measure for exhaust (also outside air tube when applicable) and mark the location. Place the unit in place to make sure it's correct before cutting holes in your wall.

Prior to lighting your appliance:

- Review the Important Warnings section (see **Page 2**).
- Review Fuel Specifications (see **Page 19**).
- Review and follow instructions in the Care and Operation Section (see **Pages 17 through 19**).
- Plug power cord connector into corresponding connector on the back of appliance.

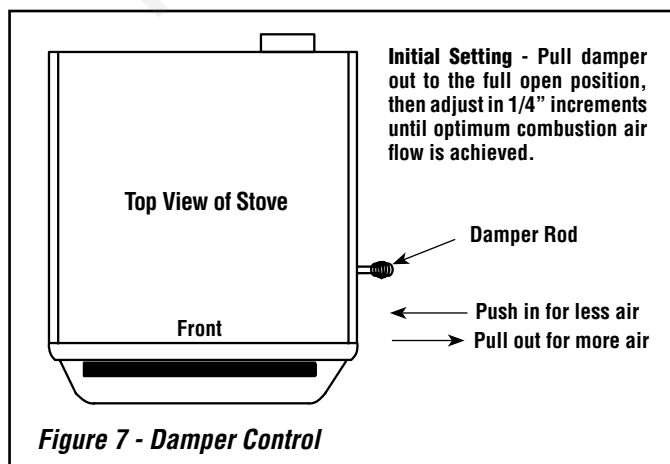
After you have begun operation of your appliance:

- Review the routine cleaning / maintenance information.
- Enjoy the warmth from your new Lennox Hearth Products pellet appliance!

Damper Location and Adjustment

The damper is a plate that helps control the amount of airflow supplied for combustion. With the damper pulled out all the way, the airflow is at its maximum. As the damper is pushed in, the amount of air that is allowed to flow is reduced.

It is very important to preset your damper prior to burning your pellet stove. The damper rod is located on the right side of the stove as shown in **Figure 7**. **The damper should be pulled all the way out to the full open position during initial operation.** It may need to be manually adjusted inward depending on the type of pellet fuel being burned. Adjust in 1/4" increments until optimum combustion air flow is achieved. The damper control adjusts the amount of combustion air to the UltraGrate™. When the damper has been correctly adjusted, you will observe a brisk, yellow-to-whitish flame. Fuel should not "pile-up" in the grate. The proper air settings will vary from stove to stove due to installation, altitude, and the fuel being burned.



It will be necessary to monitor the appearance of the flame during the first 4-8 bags of pellets. If the flame is smoky red or orange with evidence of soot at the top of the flame, the damper will need to be adjusted to deliver more combustion air (see **Figure 7**). If the flame is "short" at the higher burn rates and appears to burn the pellets out of the UltraGrate™ faster than they can be resupplied, or there are significant variations of flame height within a single burn setting, the damper may need to be adjusted to deliver less combustion air.

After the damper is adjusted, re-evaluate the appearance of the flame. It may be necessary to continue adjusting the damper in increments until proper combustion is achieved (the flame should become a brighter yellow and begin to "dance").

Once the damper has been properly set, and if the routine maintenance is performed as needed, the damper should not require re-adjustment unless you are changing from a premium grade pellet to a standard or high ash pellet, in which case the damper may need to be moved outward to help prevent the accumulation of ash in the UltraGrate™.

Damper Adjustment Guideline

Lack of Combustion Air: By opening the damper, this will increase combustion air delivery. Symptoms of insufficient combustion air include; unburned fuel, lazy smoky or red / orange flame, excessive ash or soot, excessive buildup on glass, fuel may "pile-up."

Contributing factors:

- High Altitude – Lack of oxygen
- Restrictive Venting (elbows, horizontal runs, cold external chimneys, etc.).
- Dirty / Poor Quality Fuel.
- Lack of Maintenance

Note: Excessive amounts of Fly-ash built-up in the grate, clinkers in the grate or leakage of air (if the grate is not properly seated) will starve the fire for air. See Routine Maintenance, on Pages 20 through 24 for information on cleaning requirements.

Excessive Combustion Air: Adjusting the damper to a more closed position will reduce the combustion air delivery. Symptoms of excessive air include; fuel burns too quickly (results in smoking or smoldering pellets), white to yellow flame, etc. If the damper is open too far, the burning pellets will lift off the grate and fly up into the air much like popping corn does. Another flame characteristic of a damper that is open too far is a flame that has significant variation in height on any single burn setting.

Note: Excessive combustion air reduces efficiency.

Contributing factor:

- Venting system providing excessive draft.
- Dry, hot burning fuel

Correct Combustion Air / Proper Burn Characteristics: When the damper is correctly set, the burning pellets should move (wiggle) around slightly and the flame should be bright yellow and stay at relatively even height.

Outside Air Installations

Connecting the Cascade™ pellet stove to outside combustion air is optional, except in manufactured (mobile) home installations and when required by local building codes. The stove's air intake will accept 1-5/8" ID pipe to accommodate outside air installations. The air intake on the exterior of the home should always be located a minimum of 18" below the flue termination and must remain free of obstruction. The inlet must also have a screen with openings not larger than 1/4" to prevent rodents from entering.

VENTING REQUIREMENTS

It is recommended that only an Lennox Hearth Products dealer install your pellet stove. The specified installation requirements must be followed to ensure conformity with both the safety listing of the appliance and local building codes. All clearances, installation instructions and precautions specified by the vent manufacturer must be followed.

Selecting a Location

Review the appliance clearance requirements before installing the venting system (see **Page 5**). Position the appliance far enough away from walls to allow adequate room for servicing. Choose the appliance location with the least amount of interference with the house framing, plumbing, wiring, etc.

Preferred Vent Configuration

For the best performance, we recommend a vent run design which runs vertically and terminates above the roof line. This design will allow natural draft to improve the flow of flue gases and will aid in combustion and stove performance.

Type of Pipe

This stove is approved for venting with Type L and Type PL pellet vent pipe (sometimes referred to as “L-Vent pellet vent”, listed to UL 641 or ULC S609). We recommend the use of venting products manufactured by Security Chimneys International. Connect the pellet vent pipe or the “tee” to the flue collar using a minimum of three screws and seal as specified in “Pipe/Liner Joint Requirements” on this page. **Do not use class B gas chimney or single wall chimney as a substitute.**

Size of Pipe

These pellet appliances are approved for use with the following vent sizes: 3” (75 mm) standard, or 4” (100 mm), see **Page 13** - for determining correct size vent. When 4” pipe is used: for horizontal vent installations use a 3” (75 mm) to 4” (100 mm) adapter - available from vent manufacturer. For vertical installations use a 3” (75 mm) to 4” (100 mm) “tee” - available from vent manufacturer.

Offsets

In every installation, a single or double clean-out “tee” is recommended for every ninety-degree offset (this tee will help collect ash residue and will allow for routine cleaning without the need to disconnect sections of pipe).

Pipe Clearances/Requirements

See pipe manufacturers instructions for installation of venting components and clearances. Follow pipe manufacturers installation precautions for passing pipe through a combustible wall or ceiling (i.e. use an approved thimble).

Notes

- *Offsets and horizontal runs accumulate fly-ash and soot which reduces the exhaust flow and performance of the stove.*
- *Total Offsets in venting system should not exceed 270° total in direction change.*
- *Maximum Vertical Vent - 30 feet (9.14 M)*
- *Horizontal Runs - The maximum total horizontal run must not exceed 10 feet (3.1 meters).*
- *Horizontal run of pipe requires 1/4” (7 mm) rise per foot.*
- *Pellet vent pipe requires 3” (75 mm) clearance from outside of pipe unless otherwise specified by vent manufacturer - all diameters: 3” (75 mm) and 4” (100 mm). A support bracket must be installed every 4 feet (1.2 m) of pellet vent pipe on the exterior wall of the house unless otherwise specified by vent manufacturer.*
- *It is not recommended to terminate exhaust vent on the prevailing wind side of the house.*
- *In Canada, where the venting may pass through a wall, or partition of combustible materials, the installation shall conform to CAN/CSA-B365. When installing the wall thimble and other venting components, follow the vent manufacturers instructions. Maintain an effective vapor barrier at the location where the chimney or other component penetrates to the exterior of the structure.*

Pipe/Liner Joint Requirements

Silicone sealant and three screws are required to secure the first vent connection to the appliance flue collar. Secure and seal the remaining vent sections per the vent manufacturers instructions. ALL horizontal joints must be sealed gas-tight (air tight, sealed connection). Use RTV high temperature silicone or Interam, if necessary, to provide a complete seal between vent sections.

Connection to Masonry Chimney through a Wall

Be sure to verify the construction of a masonry chimney, as it may have combustible framing.

Approved liner when relining Masonry or Factory Built Fireplaces is 2100HT (degree F.) liner listed to UL 1777 or ULC S635.

Connection to an Existing Class A Chimney

A chimney adapter can be used to make the connection from 3" (75 mm) or 4" (100 mm) pellet vent pipe (listed to UL 641 or ULC S609) to existing UL chimney system. Verify with the pipe manufacturer that your pipe brands will interconnect.

Horizontal Vent Installations

On all horizontal vent installations (short, horizontal runs with no vertical pipe); care should be taken when choosing a location for terminating the vent. It is not recommended to directly vent the exhaust on the prevailing wind side of the house. It is recommended that when an appliance is vented directly through a wall, a minimum of 8 feet (2.5 m) of vertical pipe should be installed to create some natural draft. This will reduce the possibility of smoke or odor entering the dwelling during appliance shutdown or loss of power.

Vent Termination

Do not terminate vent in an enclosed or semi-enclosed area such as: carports, garage, attic, crawl space, under a deck, porch, narrow walkway, closely fenced area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway etc.

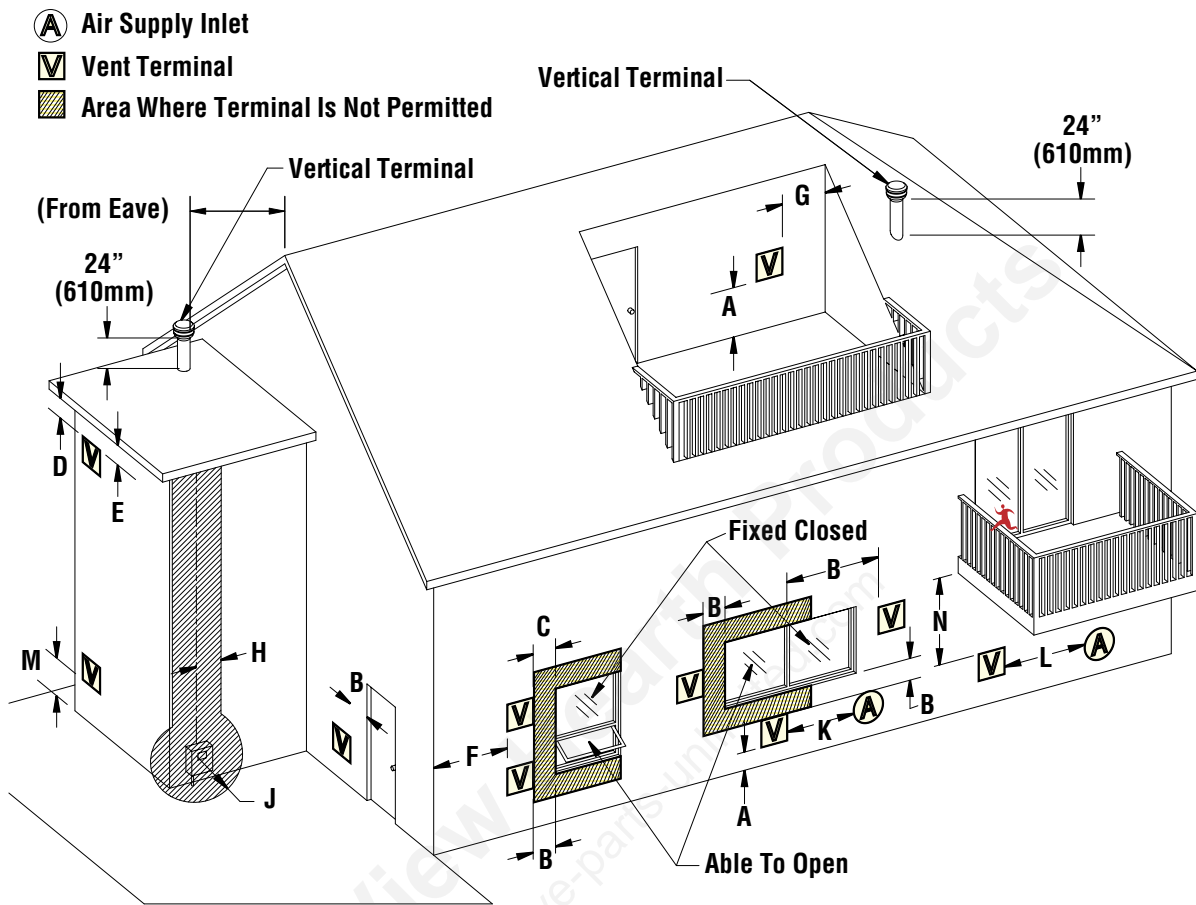
Vent surfaces can get hot enough to cause burns if touched. Adults should supervise children when they are in the area of a hot stove. Non-combustible shielding or guards may be required.

Termination Cap

The termination of the outside chimney of the pellet stove shall be located in accordance with the following:

- A. Higher than 3 feet (.92 m) above any forced air inlet (air conditioner, etc.) located within 10 feet (3 m).
- B. Not less than 4 feet (1.2 m) below, 4 feet (1.2 m) horizontally from or 1 foot (3.1 m) above any gravity air inlet (door, window, etc.) which flue gases could reenter the dwelling.
- C. Not less than 2 feet (.6 m) from combustible materials such as an adjacent buildings, fences, protruding parts of the structure, roof overhang, plants and shrubs, etc. and not less than 7 feet (2.1 m) above grade when located adjacent to the public sidewalks (access). The final termination of the exhaust system must be configured so that flue gases do not jeopardize the safety of people passing by, overheat combustible portions of nearby structures or enter the dwelling.
- D. Not less than 3 feet (.92 m) below an eave (maximum overhang of 3 feet (.92 m) or any construction that projects more than 2" (51 mm) from the plane of the wall.
- E. The distance from the bottom of termination to grade is 12" (305 mm) minimum. This is conditional upon plants and nature of grade surface: Be careful to choose a location for the vent termination which does not expose people or shrubs to high heat from the exhaust gases. The exhaust gases are not hot enough to ignite grass, plants and shrubs located in the vicinity of the termination although they should be a minimum of 3 feet (.92 m) away. The grade surface under the termination must not be a lawn.
- F. Since sparks may escape from the exhaust pipe of any stove, use caution when positioning the vent pipe. Refer to pipe manufacturer's instructions when installing and terminating the exhaust. The vent pipe should be horizontal and never run the pipe in a downward direction (recommend a 1/4" [7 mm] rise per foot horizontal).

Vent Termination Locations



- A = Clearance above grade, veranda, porch, deck, or balcony (min. 12"/30cm)
- B = Clearance to window or door that may be opened (min. 12"/30cm above - 48"/1.2m below and to the side)
- C = Clearance to permanently closed window *(min. 12"/30cm)
- D = Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of *(min. 24"/60cm) from the centerline of the terminal (min. 22"/55cm) check with local code.
- E = Clearance to unventilated soffit *(min. 12"/30cm)
- F = Clearance to outside corner *(min. 12"/30cm)
- G = Clearance to inside corner *(min. 12"/30cm)
- H = Not to be installed above a meter/regulator assembly within *(min. 36"/90cm) horizontally from the centerline of the regulator.
- J = Clearance to service regulator vent outlet *(min. 72"/1.8m)
- K = Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance *(min. 48"/1.2m)

- L = Clearance to a mechanical air supply inlet *(min. 120"/3.1m)
- M = **Clearance above paved sidewalk or a paved driveway located on public property *(min. 84"/2.1m)
- N = ***Clearance under veranda, porch, deck, or balcony (min. 12"/30cm)

Note:

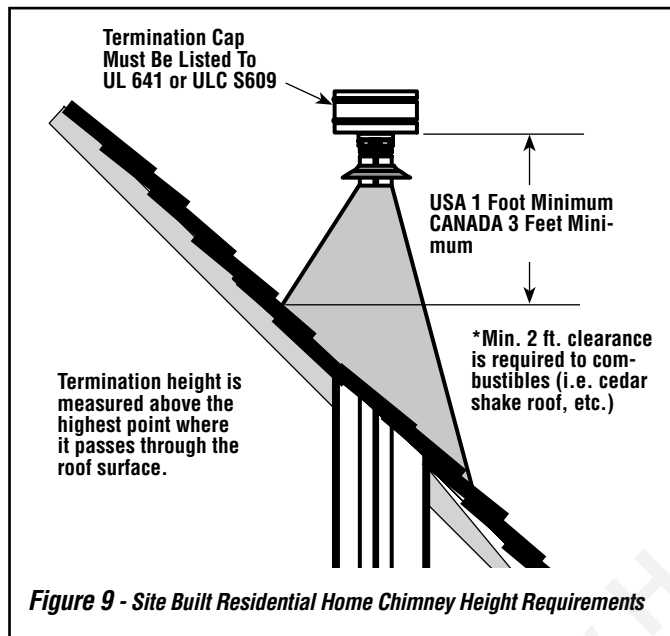
- * Local codes or regulations may require different clearances.
- ** A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings.
- *** Only permitted if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

Figure 8

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

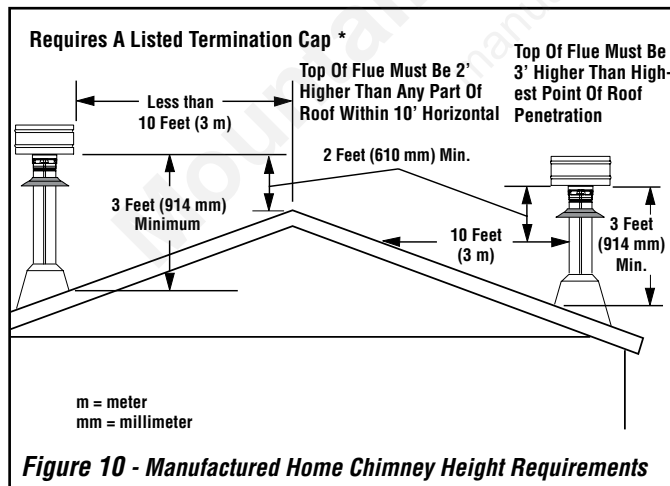
Chimney Height Requirements - Site Built Residential Home

The vent termination height required is - USA, 1-foot minimum; Canada 3-foot minimum above the roof penetration point as illustrated below (Ref. USA - National Standard, NFPA 211 and Canada National Standard CSA B365-01). Check with your local building official for additional requirements for your area.



Chimney Height Requirements - Manufactured Homes

The chimney must extend 3' (.92m) above the level of roof penetration and a minimum of 2' (.61m) higher than any roof surface within 10' (3m) (see below). Check with your local building officials for additional requirements for your area.



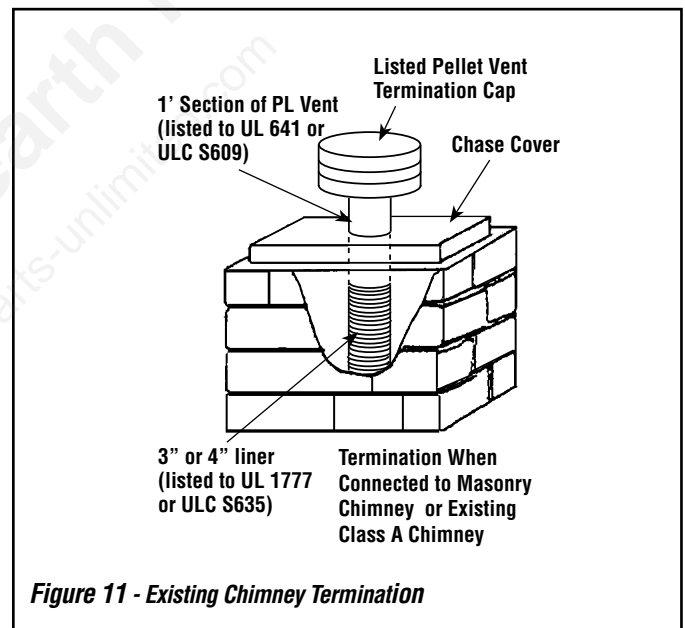
To pass inspection in nearly any jurisdiction, the chimney must meet both safety and exhaust flow requirements. The (3' by) 2' by 10' rule applies to both masonry and factory built chimneys

*** Ref. USA - National Standard, NFPA 211-latest edition and Canada National Standard CSA B365-01-latest edition. Vents installed with a listed cap shall terminate in accordance with the terms of the cap's listings.**

Termination When Connected to Masonry Chimney or Existing Class A Chimney

A flexible corrugated chimney liner has much greater resistance to the flow of flue gases than does a rigid liner. For this reason we recommend that a larger, 4" liner be used on vertical runs exceeding 15 feet or that rigid venting be used. See **Figure 11**.

If a flexible corrugated chimney liner is used, it must be fully extended to eliminate any sagging and to improve the exhaust flow.



Determining Size Of Pipe To Install

To determine what diameter pipe to use in an installation (3" or 4"), first find the "equivalent pipe length" using the following guidelines, then plot the number and the altitude on the installation chart (**Figure 12**).

Fill out the installation chart, and calculate your total equivalent pipe length. After you have the total equivalent pipe length, use the *Pipe Selection Chart (Figure 12)* to determine if your installation requires 3" or 4" exhaust pipe.

Installation Chart

Type of Pipe	# of Elbows or Feet of pipe		Equivalent Feet	Total Equivalent Feet
90° Elbows / Tee (A & G)		x	5 Ft. (1.5 m)	
45° Elbows (C)		x	3 Ft. (1 m)	
Horizontal (B & F)		x	1 Ft. (.3m)	
Vertical(E)		x	.5 Ft. (.15m)	

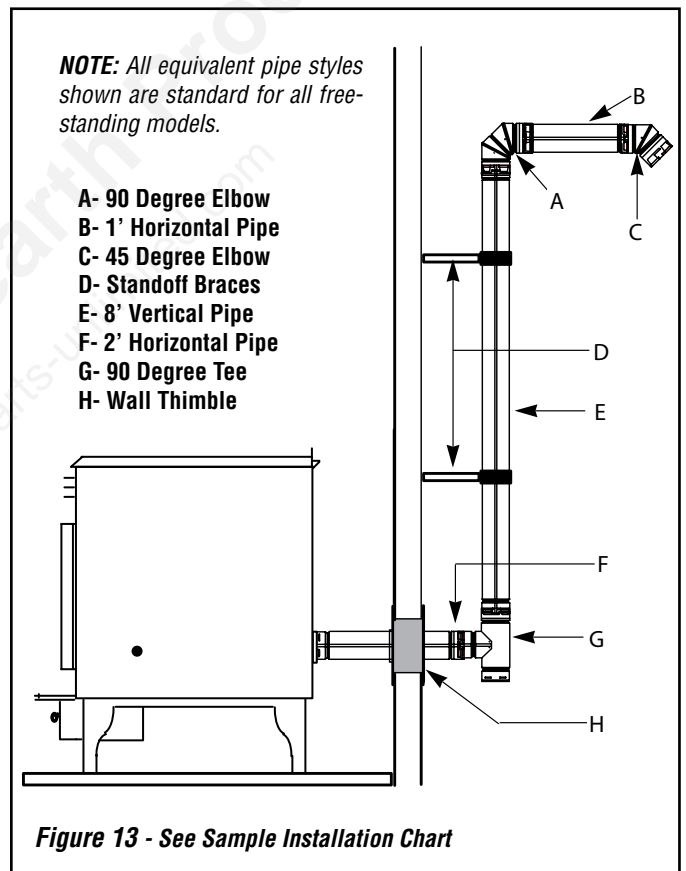
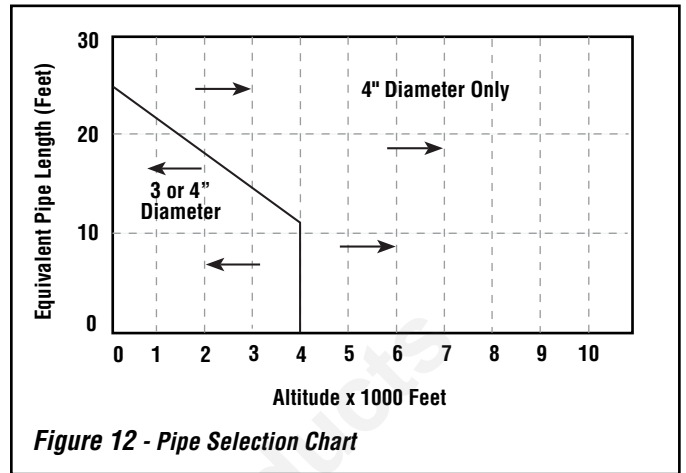
Table 2

Sample Installation Chart

Type of Pipe	# of Elbows or Feet of pipe		Equivalent Feet	Total Equivalent Feet
90° Elbows / Tee (A & G)	2	x	5 Ft. (1.5 m)	10 (3m)
45° Elbows (C)	1	x	3 Ft. (1 m)	3 (1m)
Horizontal (B & F)	3	x	1 Ft. (.3m)	3 (1m)
Vertical (E)	8	x	.5 Ft. (.15m)	4 (1.2m)

Total Equivalent Feet = 20

Table 3 - Sample Chart for Figure 13



Standard Horizontal Vent Installation

Installing the Cascade™ Pellet Stove

This stove is approved for venting with Type L and Type PL pellet vent pipe listed to UL 641 or ULC S609. We recommend the use of venting products manufactured by Security Chimneys International.

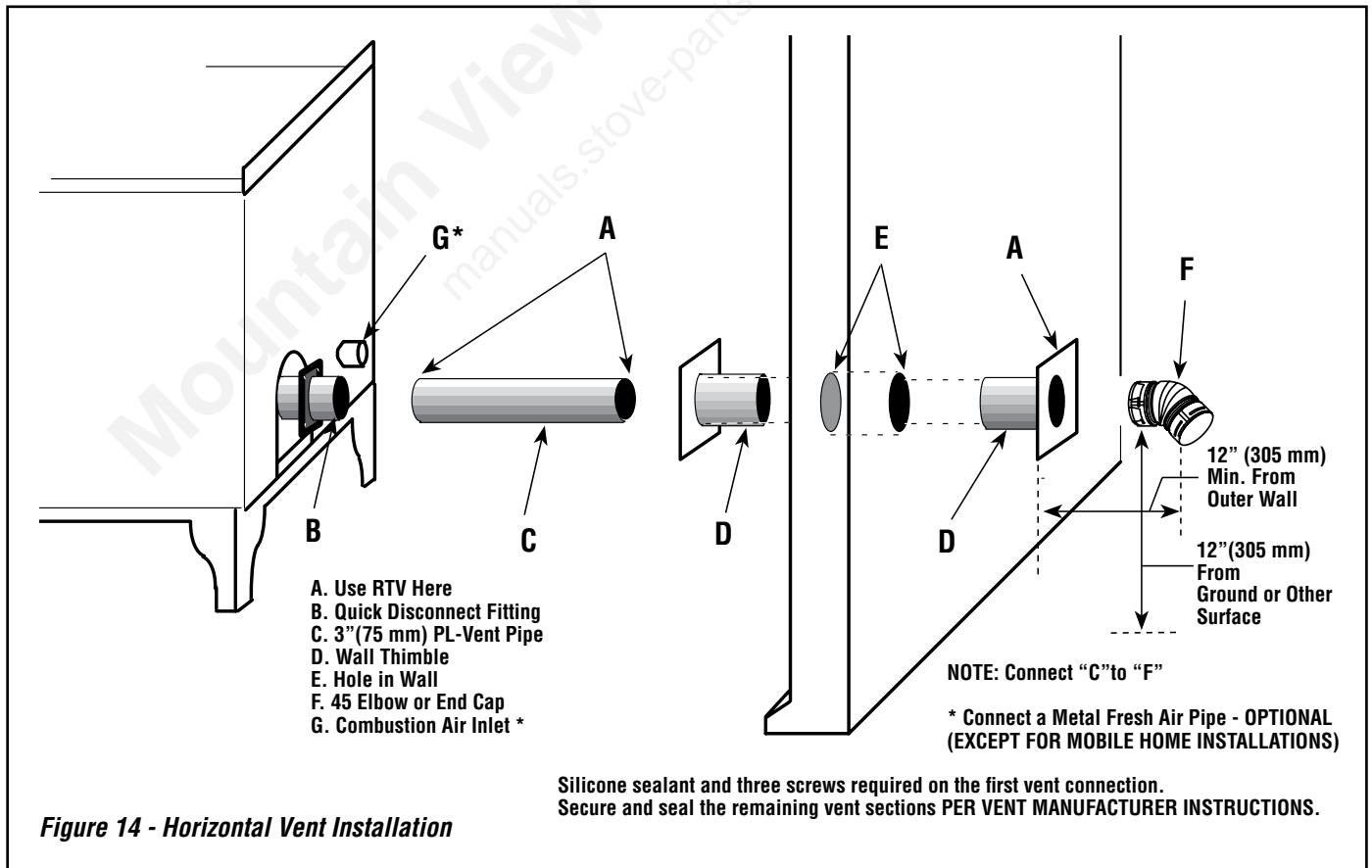
1. Locate the proper position for the listed type "PL" wall thimble. Avoid cutting wall studs when installing your pipe. Use a saber saw or keyhole saw to cut the proper diameter hole through the wall to accommodate the wall thimble. Use extreme caution to avoid cutting into power lines within the wall of the home. The hole size will depend on the brand of pellet vent that you are using. Install the wall thimble in the hole.
2. **ALL INTERLOCKING PIPE CONNECTIONS MUST BE SEALED GAS-TIGHT AND SECURED TOGETHER PER VENT MANUFACTURER INSTRUCTIONS.**

Position the stove approximately 12" (305 mm) from the wall on the floor pad. Push the "PL" pipe through the wall thimble. Squeeze a bead of high temperature silicone (RTV) sealer around the end of the machined portion of the 3" (76 mm) pipe connector on the back of the stove. Firmly push on a section of "PL" pipe until inner pipe liner pushes into the bead of RTV sealer.

3. Push the stove with pipe attached towards the wall (the pipe will go through the wall thimble). Do not position the back of the stove closer than 1" (25 mm) from the wall (see *Clearances, Page 5*).
4. Install listed type "PL" 45 degree elbow with rodent screen or cap on outside end of pipe. The Inlet shall remain free of obstruction while unit is in operation and constructed in a manner so as to prevent material from dropping into the inlet or into the area beneath the dwelling. The inlet shall also have a screen with openings not larger than 1/4" to prevent rodents from entering.
5. If the installation includes a source of outside combustion air; cut a separate hole through the wall for the fresh air tube. This tube should be 1-5/8" (42 mm) minimum diameter I.D., steel only. Connect outside air pipe to air inlet on stove. This tube must be terminated with a 45 degree elbow or hood.

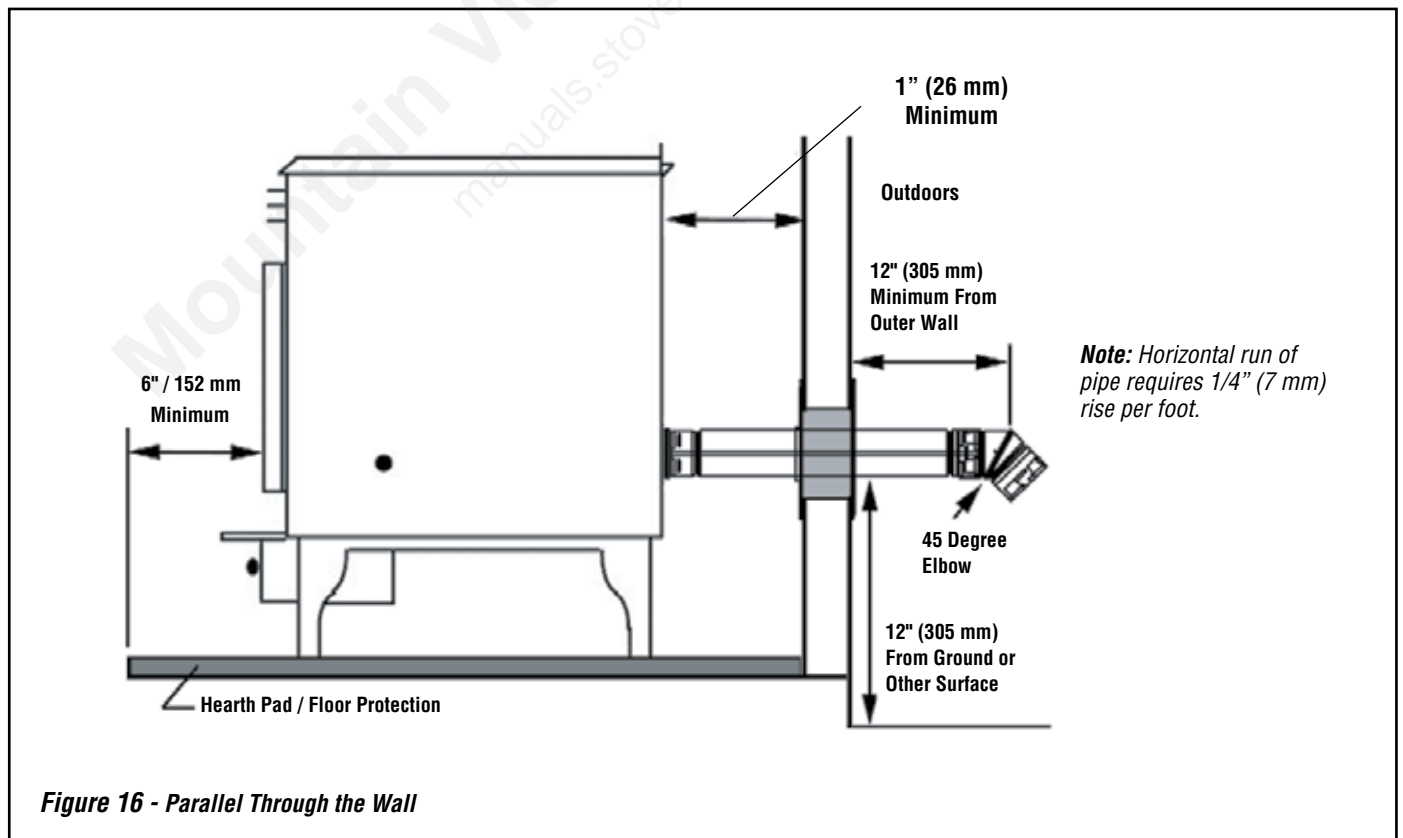
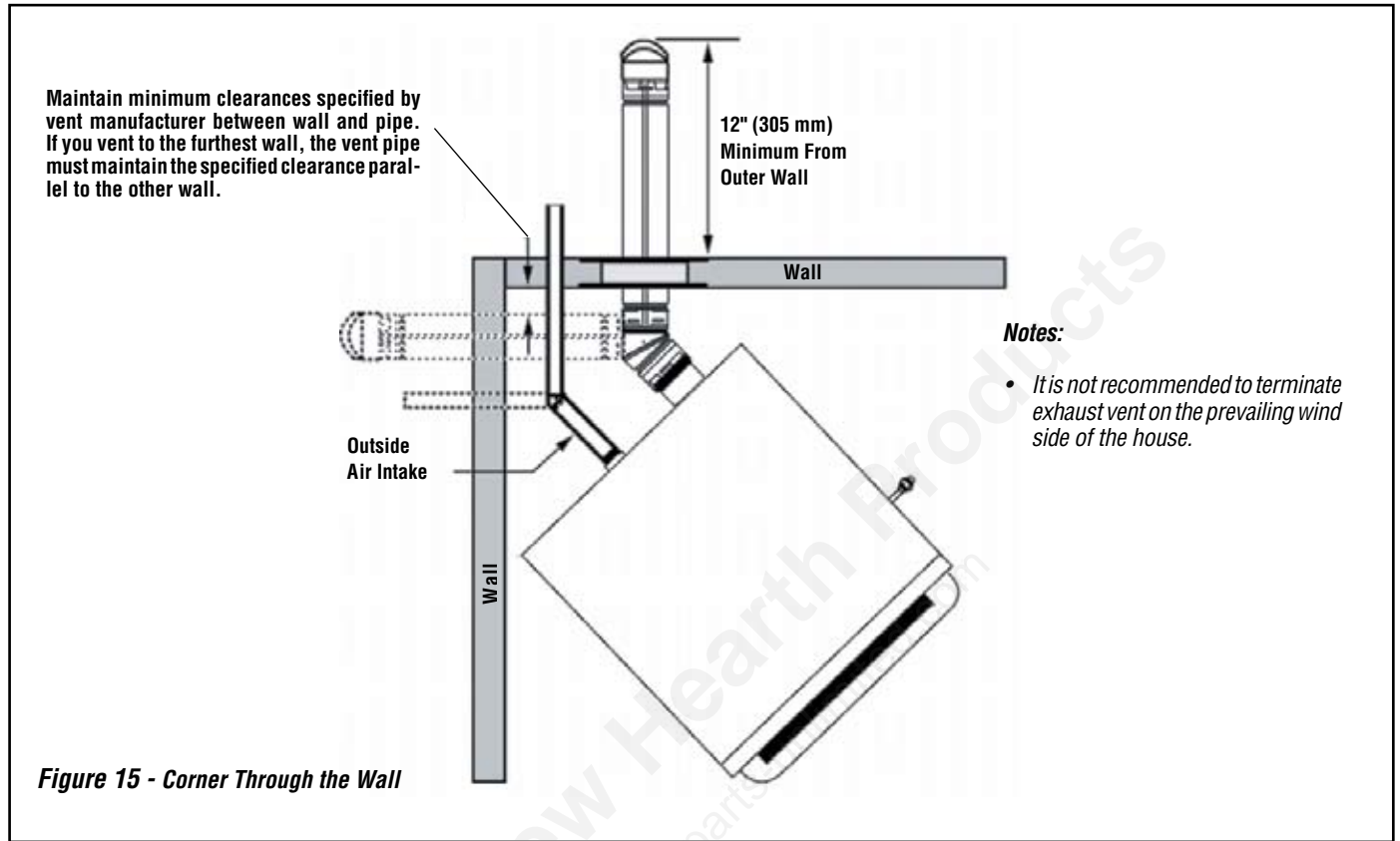
Notes:

- Combustion air may also be drawn from a vented crawl space under the home.
- All joints for connector pipe are required to be fastened together per the vent manufacturers instructions. If vented horizontally, joints must be made gas-tight (air tight, sealed connection) in a manner as specified on this page (see instruction #2). **INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.**
- Greater back clearance will improve the ease of serviceability of the stove.
- The end of the exhaust pipe must extend a minimum of 12" (305 mm) from the outside of the building.



Standard Horizontal Installation Configurations

Model: Cascade®



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

Standard Vertical Installation Configurations

Model: Cascade®

This appliance may be connected to an existing flue or by installing type "PL" vent pipe (listed to UL 641 and ULC S609). If a liner is run all the way to the top of the existing chimney, the existing flue should be sealed with a steel plate. Start a vertical run with a Tee at the back of the stove. Other options are illustrated below. **Note:** See Vent Termination Requirements on **Pages 9 through 11**.

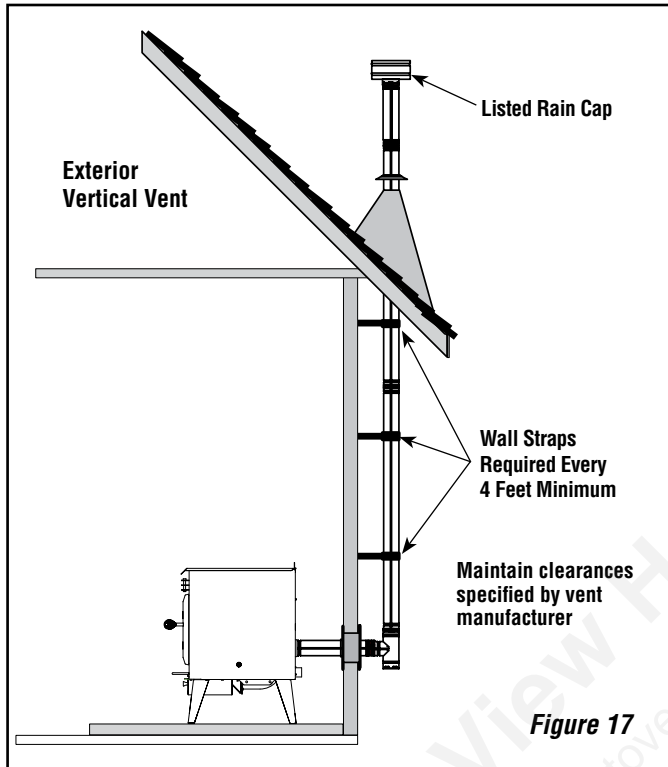


Figure 17

Preferred Installation – Vertical Vent Through the Roof

This venting configuration allows for the best stove performance. The vertical pipe promotes natural draft and with the chimney inside the dwelling, the flue gases stay warm, thus rising at a consistent rate.

Note: See **Pages 9 through 11** for Vent Termination Requirements.

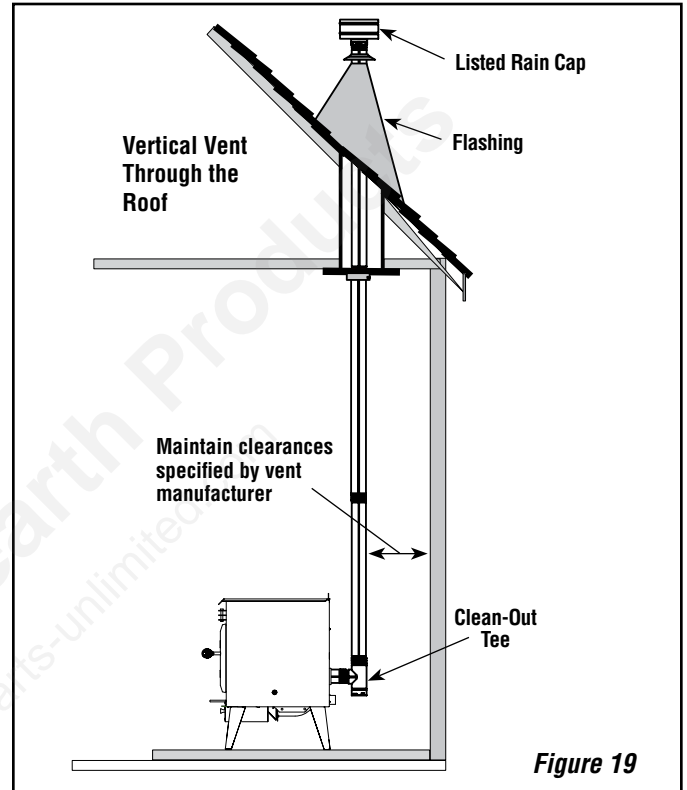


Figure 19

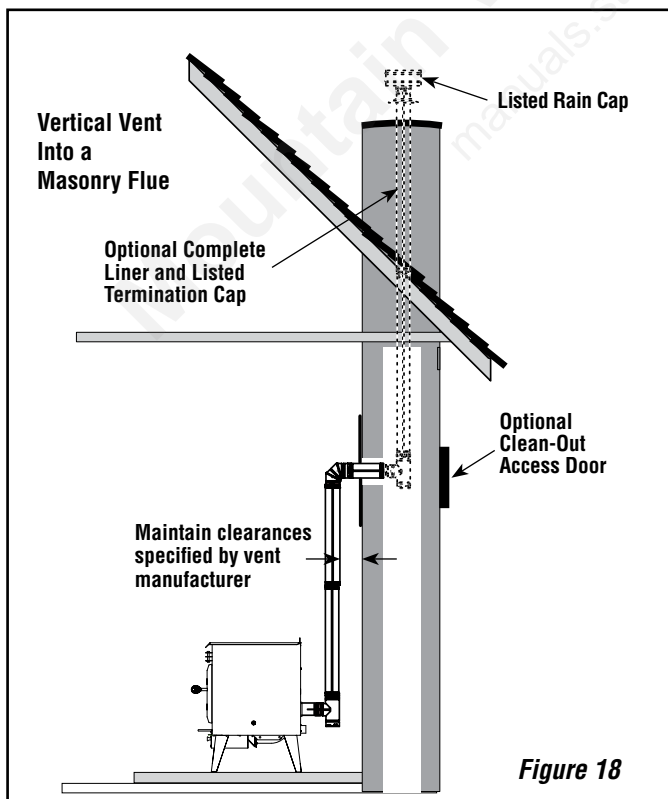


Figure 18

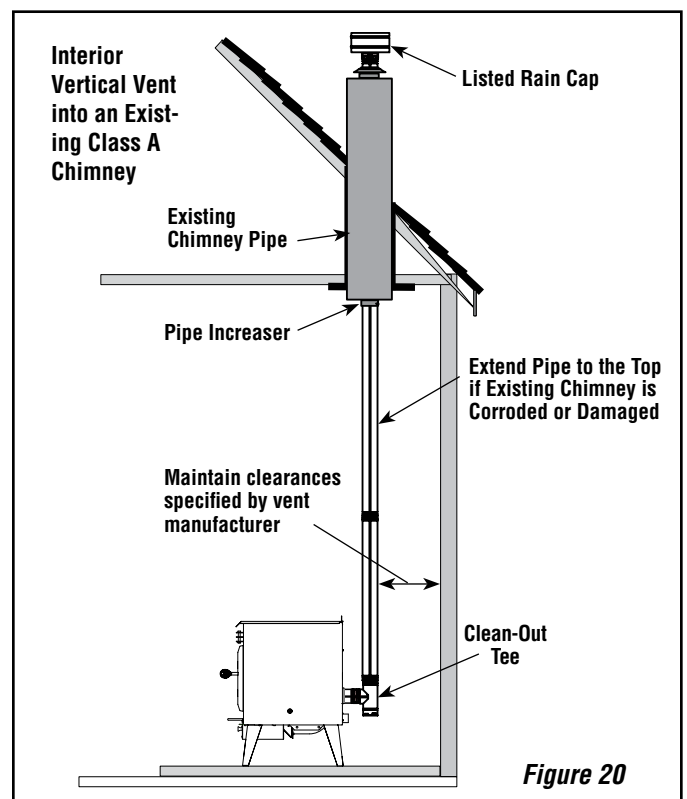
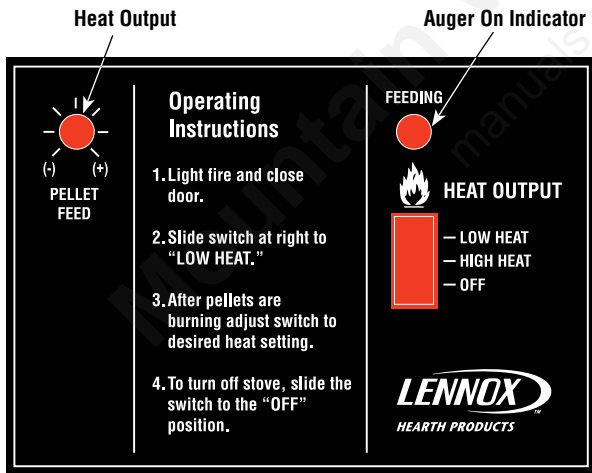
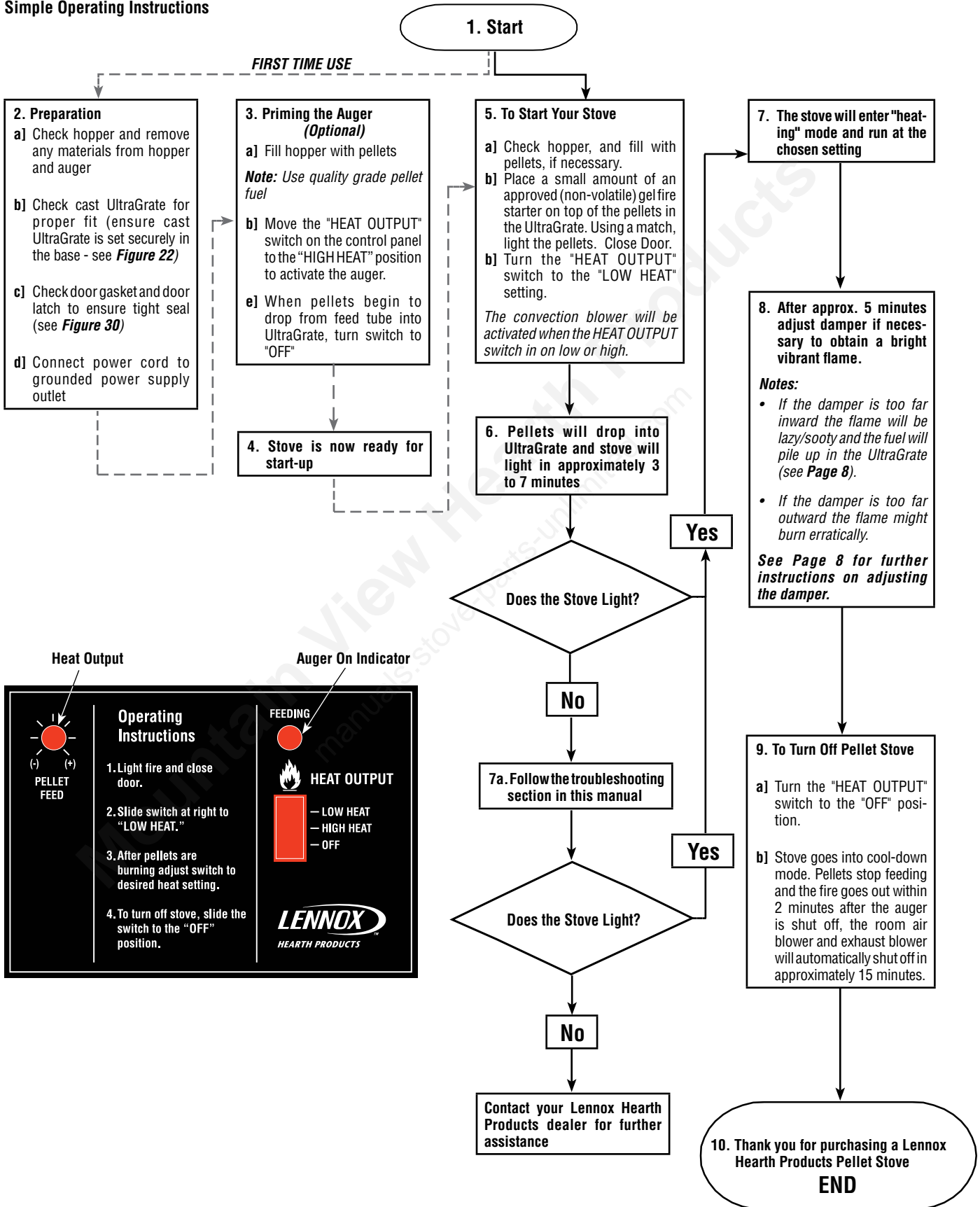


Figure 20

CARE AND OPERATION

Simple Operating Instructions



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

Control Board

Heat Output Switch - The Heat Output switch activates both the convection and combustion blowers and the auger motor. If the exhaust does not reach operation temperature within 25 minutes, the stove will automatically shut down. If this occurs, repeat the lighting procedure (pre-lighting instructions).

“OFF” position - The “Off” position on the Heat Output switch will turn the stove off by turning off the auger motor. The remaining fuel in the grate will safely burn up. Once the stove has cooled sufficiently the blowers will shut off automatically.

“HIGH HEAT” position - The “High Heat” position on the Heat Output switch will increase the fuel feed rate and blower speed for maximum heat output.

“LOW HEAT” position - The “Low Heat” position on the Heat Output switch will decrease the fuel feed rate and blower speed.

Auger “On” Light - The red L.E.D. light on the control panel indicates when there is power to the auger motor. Under normal operation, this light will blink on and off.

Fuel Feed Trim Control - The fuel feed trim control on the control panel should be used when the damper control will not correct a poor combustion problem. Turning the trim control counter clockwise will decrease the amount of fuel entering the UltraGrate™ and turning the trim control clockwise will increase the amount of fuel entering the UltraGrate. The trim adjustments compensate for fuel differences. Factory set “ON” time is 1.9 seconds. The trim range is 1.6 to 4.5 seconds. Factory “OFF” time for low is fixed at 4.2 seconds and for high it is fixed at 2 seconds.

Note: This control board is not thermostat or igniter capable.

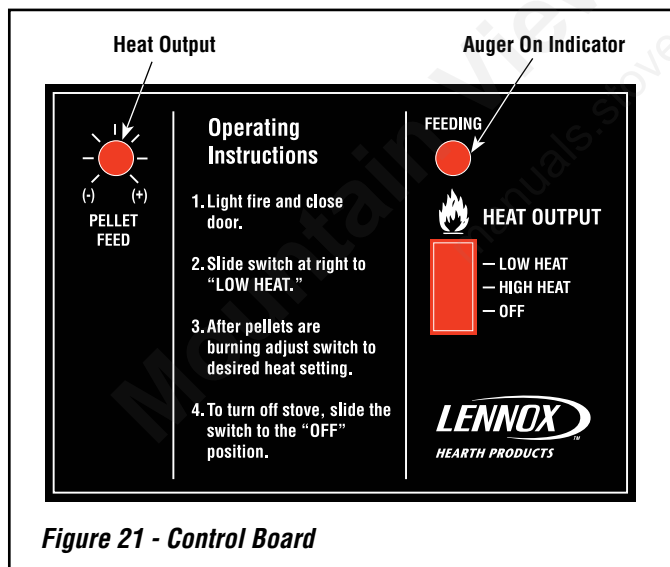


Figure 21 - Control Board

Fuel Delivery Rate

The feed rate switch manages the fuel delivery rate by controlling the amount of time the auger motor will run as follows:

- * Feed rates are approximations only. Actual feed rate will vary depending on size, quality and length of fuel used and variations in line voltage.
- ** Estimated heat input based on fuel value of 8,400 BTU per lb. of fuel.

Note: It is normal for some ash to build up on the inner glass surface at the lower burn settings.

Fuel Delivery Rate					
Feed Rate Setting	Auger Motor ON/OFF Time (seconds)	Auger “ON Time” Trim (seconds)	* Lb.’s per hour fuel delivery	**Approximate BTU per hour fuel delivery	Burn Time (hours)
Low =	1.9 on / 4.2 off (+/- 5%)	1.6 to 4.5 seconds	1.5 Lb.’s / hr.	12,600 BTU / hr	40
High =	1.9 on / 2 off (+/- 5%)	1.6 to 4.5 seconds	3.5 Lb.’s / hr.	30,000 BTU / hr	17

Table 4

Initial Start-up / Empty Hopper Or Feed Tube:

During an initial start-up, or in the case where the hopper has run out of fuel, it will be necessary to prime the auger feed system.

To prime the auger feed tube:

1. Ensure all packing material and foreign objects are removed from the hopper. Fill the hopper with recommended pellet fuel and plug the stove into the wall outlet.
2. Move the Heat Output switch on the control panel to the “HIGH HEAT” position to activate the auger and blowers.
3. Look through the combustion chamber door and when you can see the first pellets dropping into the grate, the auger is fully primed. This will take up to 10 minutes.

Starting Your Pellet Stove

1. After the auger is fully primed, adjust the Heat Output switch to the “OFF” position.
2. Place a small amount of an approved (non-volatile) gel fire starter on top of the pellets in the UltraGrate (if chips are used as firestarter, place chips in UltraGrate first then place pellets on top). Consult with your authorized Lennox Hearth Products dealer for approved fire starting products). DO NOT USE FLAMMABLE LIQUIDS TO START YOUR STOVE.
3. Light the fire starter in the UltraGrate with a match and close the door.
4. After approximately 10 seconds, move the Heat Output switch on the control panel to the “LOW HEAT” position. You will notice that the fire will become active and there will be air coming from the Heat Exchange Tubes and pellets will now begin to feed into the UltraGrate.
5. After the fire is burning well, adjust the Heat Output switch to the desired setting. Adjust the damper control if necessary for proper combustion. Look for a brisk, bright yellow to whitish flame.

Remember, different brand fuels feed at different rates.

Turning Off Your Stove

Move the Heat Output switch to the “OFF” position. This will stop the fuel feed and any remaining fuel in the grate will safely burn up. The blowers will continue to run until the stove has cooled off sufficiently and will then shut off automatically.



WARNINGS

• Never empty pellets from the Burn-Pot into the hopper. Pellets that may appear to be cool may retain enough heat to ignite other pellets resulting in smoke or fire damage.

• DO NOT OVERFIRE THIS STOVE. This may cause serious damage to your stove and void your warranty. It also may create a fire hazard in your home. IF ANY EXTERNAL PART OF THE UNIT BEGINS TO GLOW, YOU ARE OVERFIRING. Immediately slide the knob to the “OFF” position on the control board.

Filling the Hopper

To fill the hopper when stove is off:

1. Lift the hopper lid to its full opened position.
2. Fill the hopper with pellets.
3. Check to make sure there are no remaining pellets on top of the hopper that may prevent the hopper lid from fully closing.
4. Close Hopper lid.

To fill the hopper when stove is in operation:

1. Repeat steps 1 thru 4 above.
2. When finished, check the red Auger "On" Light on the control panel to verify that the stove is still in normal heating mode. The Auger "On" Light indicates when there is power to the auger motor. Under normal operation, this light will blink on and off.
3. If the Auger "On" Light on the control panel is off, the hopper lid has been open too long and unit has gone into shut-down mode. To relight, follow lighting instructions on **Page 17**.

Caution: Failure to ensure pellets in the UltraGrate remain burning after re-fueling may result in smoke escaping from the unit.

Lighting

Follow instructions on **Page 17**.

Automatic Safety Features

Power Outage: During a power outage, the stove will shut down safely. It will not automatically restart when the power is restored. However, a momentary power interruption may not shut your stove down.

A small amount of smoke may leak from the top of the window glass, the hopper and from the combustion air intake, if the stove is vented horizontally with no vertical pipe. This will not persist for more than 3 to 5 minutes and will not be a safety hazard. It may set off your smoke alarm. To re-light the stove, follow the normal procedure for starting your stove.

Note: *If the area in which you live is prone to frequent power outages, it is recommended that a minimum of 8 feet (2-1/2 meters) of vertical vent pipe be included in the installation to induce a natural draft in the event of a power outage.*

Overheating: A high limit thermal switch will automatically shut down the stove if it overheats. The stove will need to be manually re-lit. Allow up to 45 minutes cooling time before re-lighting. If the overheating continues, contact your authorized Lennox Hearth Products dealer for more information.

FUEL



The use of unapproved, dirty, wet and / or high salt content fuel will void the warranty!

Fuel Specifications - Using the UltraGrate™ burn system, this appliance has been designed to burn wood residue pellets only (with up to 2% ash content). Agricultural pellets (i.e. corn, alfalfa etc.) are not permitted to be burned in the stove. Dirty fuel will adversely affect the performance of the stove. The pellet fuel should meet P.F.I. (Pellet Fuel Institute) standards for standard grade or premium grade residential pellet fuel. If the pellet fuel meets these standards, it will be printed on the bag. Any questions regarding pellet fuel can be answered at the Pellet Fuels Institute (PFI), www.pelletheat.org.

Pellet Feed/Pellet Size - The pellet feed system is designed to handle a wide range of pellet sizes up to a maximum of 5/16" diameter. Different pellets may feed at considerably different rates. You may notice a difference in the burn if you change pellet fuel sizes. The longer the pellet, the slower it will feed and vice versa. If the stove will not stay burning at the minimum fuel feed setting, those particular pellets may not be feeding fast enough. If this happens, reduce the amount of combustion air by adjusting the damper. See **Page 8** before adjusting the damper.

Clinkering - Silica (or sand) in the fuel, along with other impurities, can cause clinkering. A clinker is a hard mass of silica formed in the burning process. Clinkering is a function of the fuel, (not the stove), but adversely affects the performance of the stove by blocking off the air passages in the grate. Even P.F.I. approved pellet fuel may tend to clinker. A clinker can be removed from the UltraGrate™ and placed in the ash pan with the use of the grate scraper/ash pan tool furnished with your stove. See **Routine Maintenance** (on **Pages 20 through 24**) for more information on cleaning.

Ash - The frequency of removal of the ash and maintenance performed on the stove is directly proportional to the ash content of the fuel and the operation duration of your pellet stove. Low ash fuel may allow longer intervals between cleaning, however, a stove burning high ash fuel may need to be cleaned as often as everyday.

Fuel Feed Rates - Different brands of pellets will feed at varying rates due to their size and density (length and diameter). This may require a slight adjustment in the damper control (see **Page 8**) or the fuel feed trim to compensate (see **Page 18**).

Note: See *Fuel Delivery Rate* on **Page 18** for burn times.

PLEASE NOTE: Lennox Hearth Products has no control over the manufacturing of pellet fuel and will not be held responsible for poor stove performance or any damage caused by poor quality pellet fuels.

Pellet Fuel Storage -

- Store your wood pellets in a dry place to prevent them from absorbing excess moisture.
- Do Not store your wood pellets within the clearance zone of the stove.
- Do Not store your wood pellets in a place that would block removal of the ash pan or block access to refueling the hopper.

Wood pellets manufactured to the pellet fuels institute (P.F.I.) certification standard are available in two grades, Standard and Premium. The primary difference between the two is the ash content of the pellets.

The P.F.I. specification for standard grade and premium grade residential pellet fuel is as follows:

- CHLORIDES (Salt): Less than 300 p.p.m. to avoid stove and vent rusting.
- BULK DENSITY: 40 lb. / Cu. Ft. minimum
- MOISTURE CONTENT: 8% maximum
- ASH CONTENT: < 2% maximum (standard grade) < 1% maximum (premium grade)
- FINES: 0.5% maximum through a 1/8" screen
- BTU CONTENT: There are a number of variations in pellet fuels that are not included in PFI standards. For example, BTU (heat value) content may range from just under 8,000 to almost 9,000 BTU, depending upon species and region of the country and other variables.

ROUTINE MAINTENANCE

IMPORTANT CAUTIONS:

- **UNPLUG POWER CORD AND ENSURE APPLIANCE IS COLD BEFORE PERFORMING ANY MAINTENANCE WORK.**
- **Some brands of pellets produce more ash and clinkers than others. Therefore the frequency of performing the following cleaning procedures depends to a great degree on the quality of the pellets burned.**
- **Not cleaning this unit will cause it to burn poorly and will void your warranty for this appliance.**
- **When removing ash build-up, use an approved ash vacuum only. A cleaning brush can be used to loosen any ash build-up before vacuuming. DO NOT USE A STANDARD HOUSEHOLD VACUUM OR "SHOP VAC" AS THE FILTERS WILL LEAK THE FINE PARTICLES OF ASH INTO THE HOME.**

Notes

- *Cleaning schedule will vary depending on quality of pellets used. Burning high ash pellets will require more frequent cleaning.*
- *Using a drop cloth is recommended as some ash may spill onto the floor during the cleaning process.*

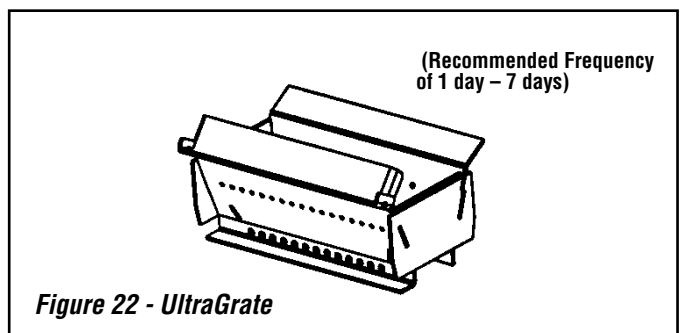
Cleaning

The following areas need to be inspected during routine cleaning:

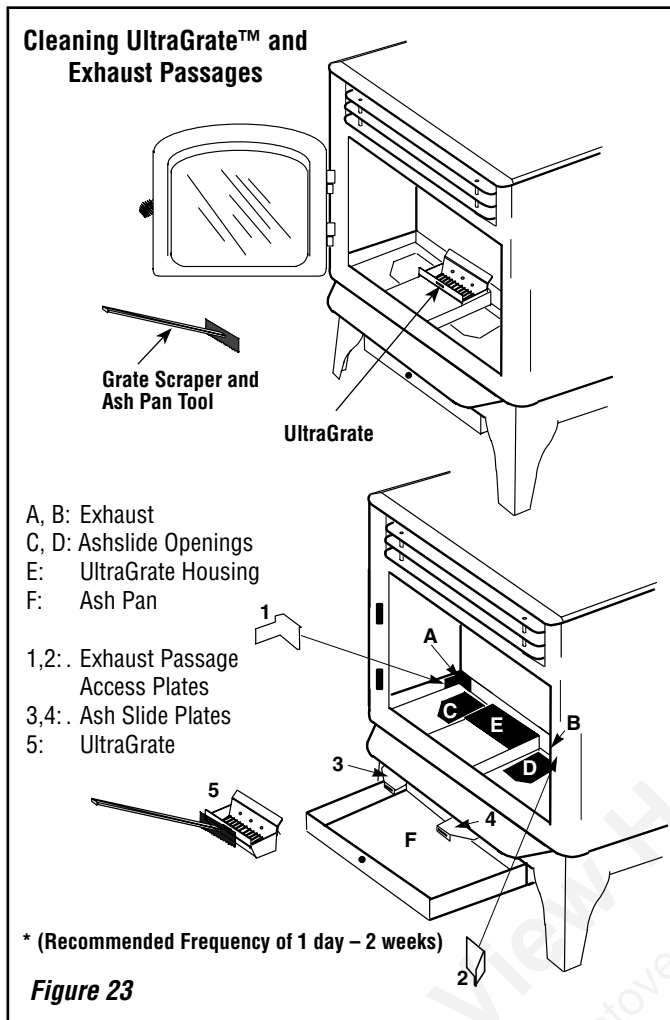
- UltraGrate™ (burn grate) (Homeowner)
- Ash Slide Plates (Homeowner)
- Ash Pan (Homeowner)
- Heat Exchange Tubes (Homeowner)
- Exhaust Passages and Vent Pipe (Qualified Technician Only)
- Gaskets (Qualified Technician Only)
- Window Wash (Homeowner)
- Cleaning Rear Stove Compartment (Qualified Technician Only)
- Blower Cleaning (Qualified Technician Only)

UltraGrate™ (Burn Grate)

Inspect the UltraGrate periodically so that the air holes don't clog with ash or clinkers. The UltraGrate can easily be cleaned with the grate scraper tool, or it can be removed. It is very important to monitor the ash build up under the UltraGrate, as too much of ash will block combustion air from entering the grate, causing pellets to pile-up in the grate. A clogged grate will reduce the overall performance of the stove, cause dirty glass and if not cleaned may lead to smoke escaping the stove. The ash build-up under the grate is easily dumped into the ash pan by pulling out the ash slides weekly (see *Ash Slide Plate*, **Figures 23 and 25**).



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE



Cleaning Glass:

DO NOT CLEAN THE GLASS WHEN THE STOVE IS HOT.

CAUTION: Do not open the front door when the stove is hot. Clean the glass using a soft cloth or paper towel and a household glass cleaner or gas stove window cleaner. A commercial glass cleaner designed for stoves is recommended. Do not use abrasive cleaners. A damp cloth with a small amount of ash from the firebox can also be used to clean the glass.

Servicing Glass

CAUTION: BE CAREFUL NOT TO ABUSE THE DOOR ASSEMBLY BY STRIKING OR SLAMMING IT. IF THE DOOR ASSEMBLY OR GLASS IS BROKEN OR DAMAGED, THEY MUST BE REPLACED BEFORE HEATER CAN BE SAFELY OPERATED. USE ONLY COMPONENTS PROVIDED BY THE MANUFACTURER AS REPLACEMENT PARTS.

Replacing Glass:

1. Remove door from stove by lifting door up and off hinge pins: Place the door on a flat protected (towel) clean flat surface with the inside of the door facing up. Remove the glass clips (by removing screws holding clips), then carefully remove broken glass one piece at a time (protective gloves are recommended).
2. Clean area where the glass with gasket will be installed.
3. Install new glass with gasket (use only factory 5 mm glass with glass channel gasket. Do not substitute). Carefully reinstall glass clips. Be very careful not to overtighten screws.
4. Reinstall door.

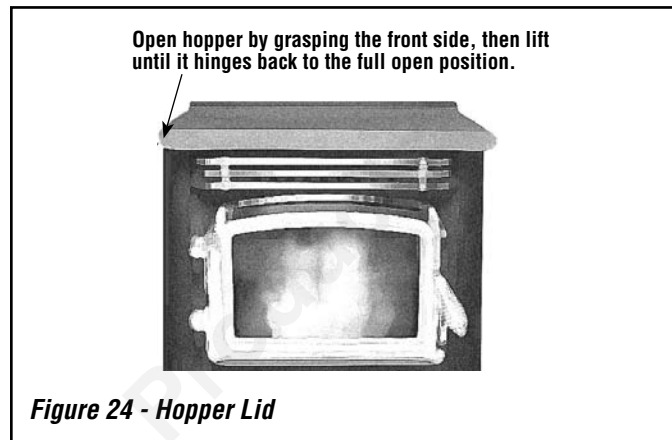
NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

Pellet Fuel Hopper

It is recommended to open the hopper lid by grasping it on the side as shown in the following picture.

Open Hopper Lid by Grasping the Front Side

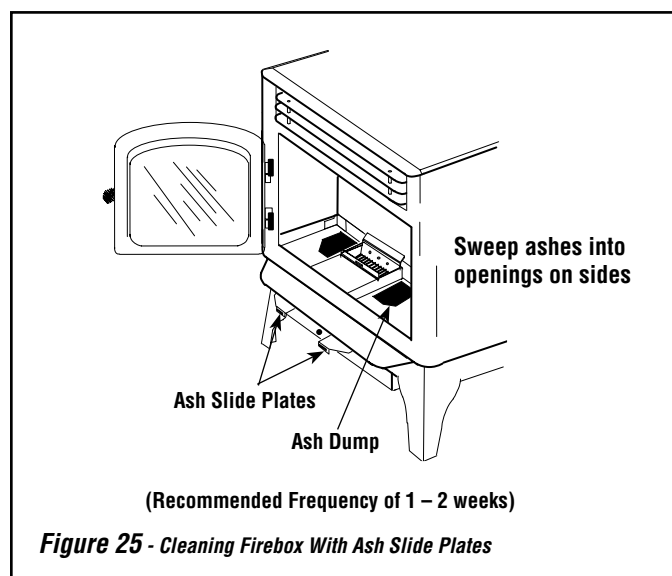
Be very careful not to touch other hot areas on stove!



Ash Slide Plates

Ash that accumulates around the grate can be “dropped” into the ash pan by simply opening the two ash slide plates. The ash slide plates are located under the ash lip of the stove. Using the grate scraper / ash pan tool, grasp each plate and pull it toward you. This will allow the ash to dump or be swept into the ash pan below.

IMPORTANT NOTE: Make sure to fully close the plates when finished. Failure to close the ash release slide plates completely may cause the fuel to burn poorly (due to reduced air-flow through the grate), which may then cause pellets to “pile up” in the grate.



Ash Pan

Note: Periodically check for ash build up under the UltraGrate™. If the ash is allowed to build up to the bottom of the UltraGrate™, there will be a loss of combustion air and the pellets will start to pile up on the grate.

CAUTION: Disposal of Ashes - Ashes should be placed in a metal container with a tight fitting lid. The closed container 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 dispersed, they should be retained in the closed container until all cinders have been thoroughly cooled.

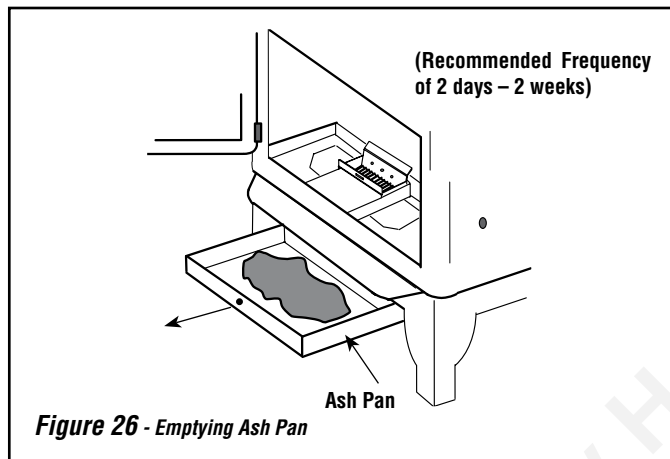


Figure 26 - Emptying Ash Pan

Soot and Flyash:

Formation and need for removal - The products of combustion will contain small particles of flyash. The flyash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as occurs during startup, 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.

Exhaust Passages and Vent Pipe

Inspect frequently and clean when necessary. Fly-ash will accumulate at all bends in the exhaust system.

Note: Large amounts of Fly-ash build-up will create a lack of combustion air. Removing the Tee cap on vertical installations will allow an inspection of the ash build-up in the exhaust Tee and will help you to decide how frequently more extensive cleaning must be performed.

Heat Exchange Tubes

ENSURE STOVE IS COLD BEFORE CLEANING HEAT EXCHANGE TUBES.

Remove Fly-ash from heat exchange tubes as follows:

1. Ensure the door is secured closed.
2. Open the hopper lid (see *Pellet Fuel Hopper, Page 21*).
3. Using the hole in the handle of the grate scraper tool, "grab" onto the heat exchange rake handle located above the door (in the center).
4. Pull the grate scraper tool back and forth several times (upward and forward, then back) to rake a way Fly-ash from the heat exchange tubes.

Note: If a more thorough cleaning of heat exchange tubes is desired, the baffle plate in front of the tubes can be easily removed (slide baffle plate forward until screw heads clear the notches on each side, then remove baffle). With baffle plate removed, use a small brush to clean between tubes (see *Pages 22 and 32, item #3*).

Note: The baffle plate should be removed at least once a year to allow for a thorough cleaning.

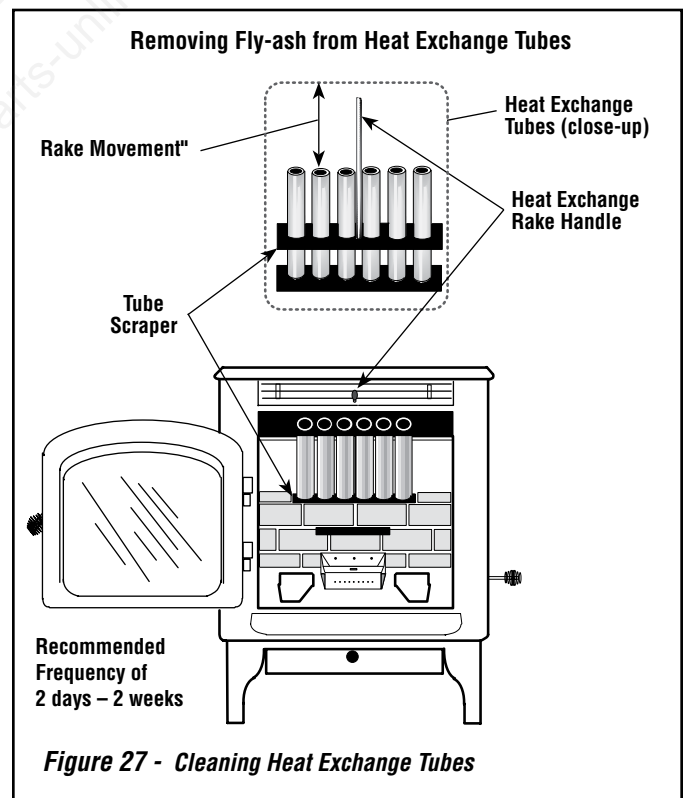
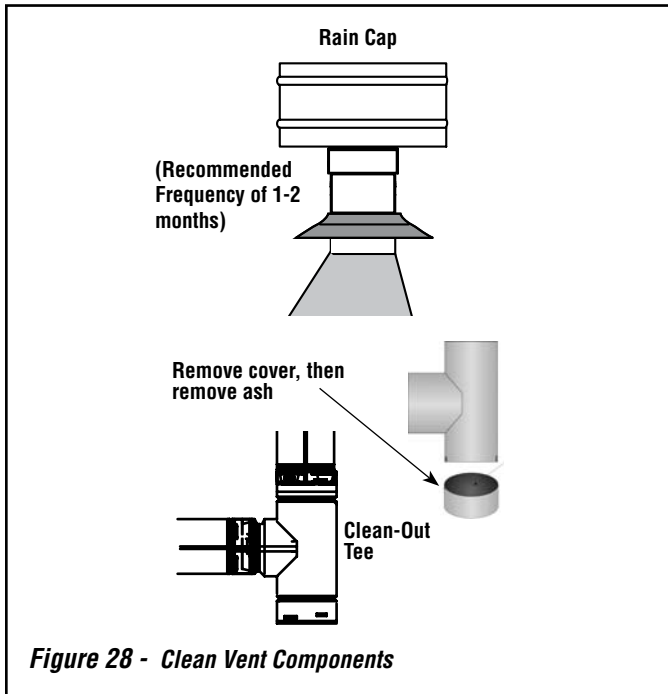


Figure 27 - Cleaning Heat Exchange Tubes



Door Rope Gasket *

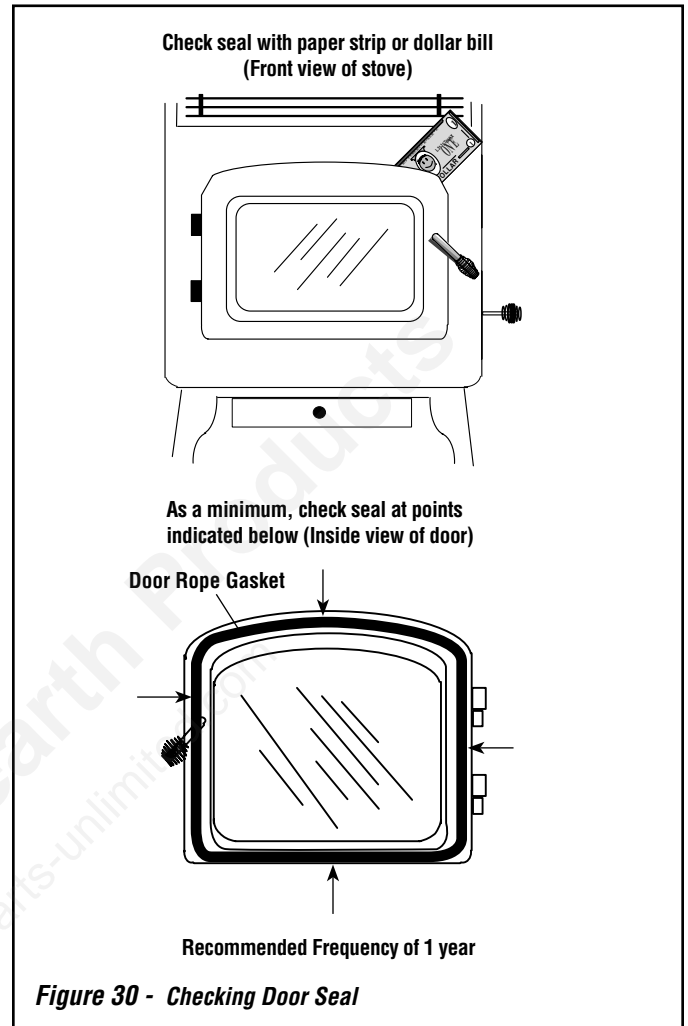
The condition of the rope gasket around the door and windows should be checked periodically and replaced or repaired if necessary. A strip of paper or a paper bill (i.e. one dollar bill) may be used to perform a test of the integrity of the door seal. Close the door on the paper in several different locations and pull. It is normal to feel only a slight amount of friction. The door gasket does not need to be "tight" in all area since a small amount of air drawn into the stove around the gasket is not hazardous or detrimental to the performance of you stove.

Window Wash *

Periodically insert a small piece of cardboard (a business card) between the window trim and the window. Slide the card back and forth a few times to clear any dust or fibers from the window wash gap. Open the door and repeat from the other side of the glass.

Note: The air wash gap should be approximately .075" to .090."

*** ENSURE APPLIANCE IS COLD BEFORE PERFORMING THIS MAINTENANCE WORK.**



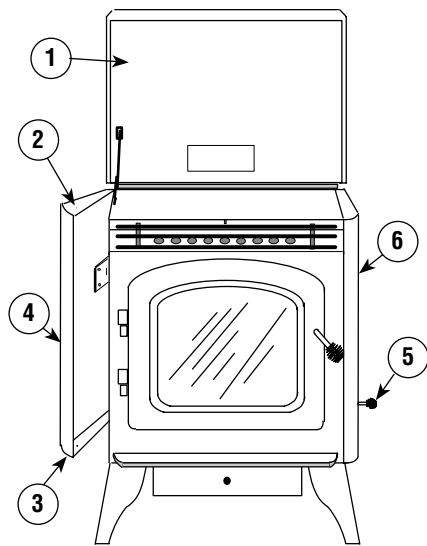
Rear Stove Compartment

The rear stove compartment should be cleaned periodically (a minimum of once a year).

DISCONNECT ELECTRICAL CORD PRIOR TO CLEANING STOVE.

Any household dust, pet hair or sawdust should be vacuumed or wiped out of the rear compartment of the stove, room air blower, and combustion blower (paying special attention to vacuuming out the intakes of both blowers). The electrical components should be wiped clean.

To access the rear stove compartment, see following illustration and instructions for opening side panels.



1. Open Hopper Lid
2. Turn small knob with fingers until top of panel clears this notch.
3. Loosen bottom screw until panel clears this notch (1/4" hex head screw)
4. Swing open hinged panel.
5. Unthread damper arm and set aside.
6. Follow #2 through #4 to open right side panel.

Figure 31 - Vacuum Out Stove Compartments

Motor Lubrication

The blowers are permanently lubricated by the manufacturer. Do not apply oil to any part of the blower. Doing so may cause damage.

Blower Cleaning

Clean the air holes on the motors of both the exhaust and room air blowers annually. Remove the exhaust blower from the exhaust duct and clean out the internal fan blades as part of your fall start-up.

Small Area Paint Touch-up

The stove body is painted with a quality high-temperature stove paint. Use only model TSPK-B Stove Paint, Catalog # 70K99. Do not touch-up your stove with any other paint.

Using one small piece of 320 grit sand paper and lightly sand the blemish so that the edges are "feathered" or smooth to the touch between the painted and bare surfaces. Do not let the sand paper gum up with paint, as this will cause scratches on the metal surface. If there are any scratches, use 600 grit sandpaper instead. Mask off surfaces you do not want painted. Paint lightly over the bare surface first as this will act as an undercoat. Then paint over a larger area in smooth even strokes to blend.

Control Board Removal Procedure

UNPLUG STOVE BEFORE FOLLOWING THIS PROCEDURE.

The electronic control board is located on the left-hand side of the stove. It is mounted to the side panel with four nuts. The control board can be removed or replaced by performing the following procedure.

Note: The control cable is fitted with a quick-disconnect plug that snaps into the back of the control board. The blower and motor wires are all part of the stove wiring harness.

1. With the stove unplugged, open the left side panel by removing the two bolts located on the top and bottom side of the panel. Pull the edge closest to the door firmly away from the stove and swing side panel open.
2. Disconnect the wiring harness from the control board.
3. Locate and remove the four nuts that secure the control board to the side panel of the stove.
4. To re-install your control panel, reverse procedures above.
5. Plug the stove into your wall outlet.

(Recommended Frequency – N/A). The electronic control board is very reliable and should be one of the last components replaced when troubleshooting a stove operational problem.

SPECIFICATIONS - Cascade®

Product Reference Information			
Cat. No.	Model	Ship. Weight	Ship. Volume
H6895	Cascade	175 lb.	14 cu. ft.

Flue Size	3" Rear
Floor Protection Requirements	Front, Sides and Back = 6" (152mm) ❶
Hopper Capacity	60 lbs. ❷
Burn time	17-40 hours ❷
Fuse, Control Board	8 Amp, 250 Volt ❸
Heat Input (Max.)	12,600-30,000 BTU / hr
Overall Efficiency	Up to 81% ❷
Emissions	1.3 gr/hr, EPA Exempt
Convection Blower (Room Air Blower)	102 CFM; 2.10 Amps, 2200 RPM
Combustion Blower	56 CFM; 2.10 Amps, 2200 RPM
Auger Motor	1.25 RPM; .48 Amps

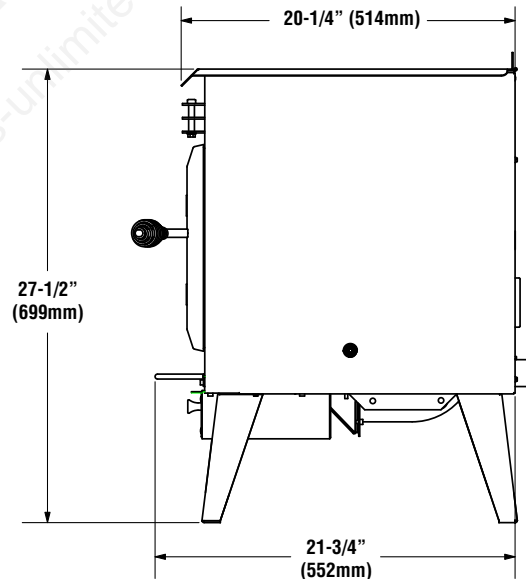
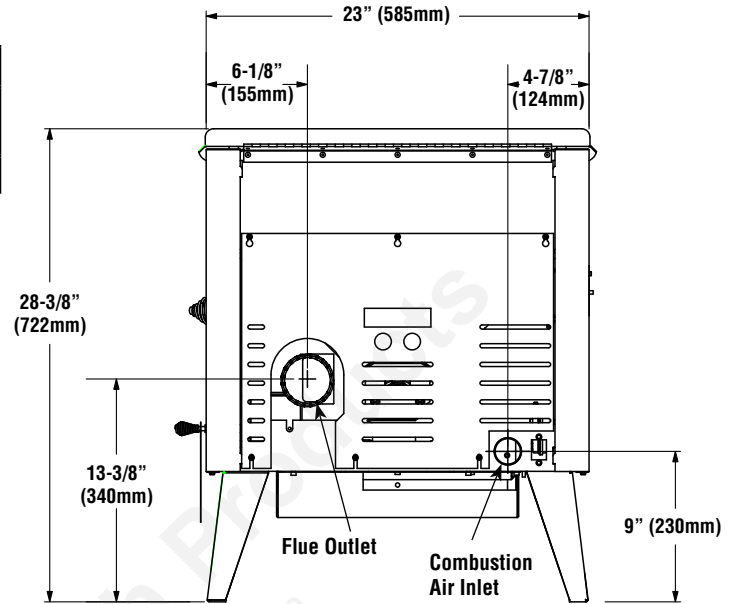
Notes:

- Dimensions shown are approximations only, +/- 1/4" (+/- 6mm)
- Approved for Manufactured Home Installations.
- Optional Kits Available - Gold Door and 3" Quick Disconnect kits.
- The burn grate is designed with advanced UltraGrate™ technology.

❶ In Canada, floor protection is required directly underneath and 2" from the sides of the flue or chimney adapter. This is recommended in the US.

❷ Burn times, hopper capacity and BTU input may vary depending on the size and type of fuel used.

❸ Fuses are rated as fast acting.



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

COMPONENT DEFINITIONS

- **Air Wash**

The air wash is a portion of the incoming combustion air that is split off and routed to flow across the inside of the glass door which helps the viewing area stay clean.

- **Auger (A)**

A motor powered screw device that transfers the fuel from the hopper to the feed chute to deliver pellets to the UltraGrate™.

- **Auger Motor (B)**

It drives the auger to deliver fuel to UltraGrate™. Motor specifications are: .4 Amp, 1 rpm (revolutions per minute).

- **Blower, Convection (Room Air) (C)**

The blower's function is to transfer the heat from the appliance to heat the room air. Specifications: CFM - 66 low, 102 high; RPM - 1350 low, 2200 high; Current Draw - 2.10 Amps.

- **Blower, Combustion (Exhaust) (D)**

The combustion blower has a radial impeller to deliver more air to the UltraGrate™. It pulls air into the UltraGrate by creating a negative pressure. This is done by extracting the exhaust gases out of the firebox and pushing the exhaust downstream to the flue exit. Specifications: CFM - 33 low, 56 high; RPM - 1350 low, 2200 high; Current Draw - 2.10 Amps.

- **Thermal Switch, Convection High Limit (L190-20F, N/C *) (E)**

The high limit switch is located on the rear of the convection jacket, left hand side, facing appliance. If the temperature of the convection air chamber reaches 190° F., the high limit auto reset will "trip" and stop the flow of electricity to the auger motor. It will not automatically reset until it has cooled below 170° F).

- **Thermal Switch, Low Limit (F140-10F, N/O*) (F)**

The low limit switch is mounted on the exhaust trans duct. At stove temperatures above 140° F, this thermal switch closes contacts and allows power flow to the auger motor.

- **UltraGrate (Burn Grate) (G)**

This is where combustion occurs.

- **Hopper (H)**

The hopper is where the pellets are stored.

- **Hopper Lid Switch (I)**

The hopper lid switch is located behind the left hand stove panel. It detects whether the hopper lid is open and will turn off the auger motor if the hopper lid is not properly closed. When opening the hopper when refueling, do not allow the hopper lid to remain open too long or the fire may extinguish. **NEVER DISCONNECT OR BYPASS THIS SWITCH FOR ANY REASON.**

- **Control Board (Heat Output Switch) (J)**

This is the main power switch, which controls power to the feed system auger motor, combustion blower and convection blower. It has 3 feed rate settings, which controls the burn rate.

- **Pressure Switch (K)**

The pressure switch is located on the left hand side, facing appliance. It is a safety device used to shut off the feed system (auger motor) if there is too much back pressure in venting system. Some possible causes are as follows:

- The venting system is obstructed.
- High altitude or other misc. environmental conditions affecting exhaust flow.
- Improper venting system.

Note: There is no availability for a thermostat connection or for an igniter.

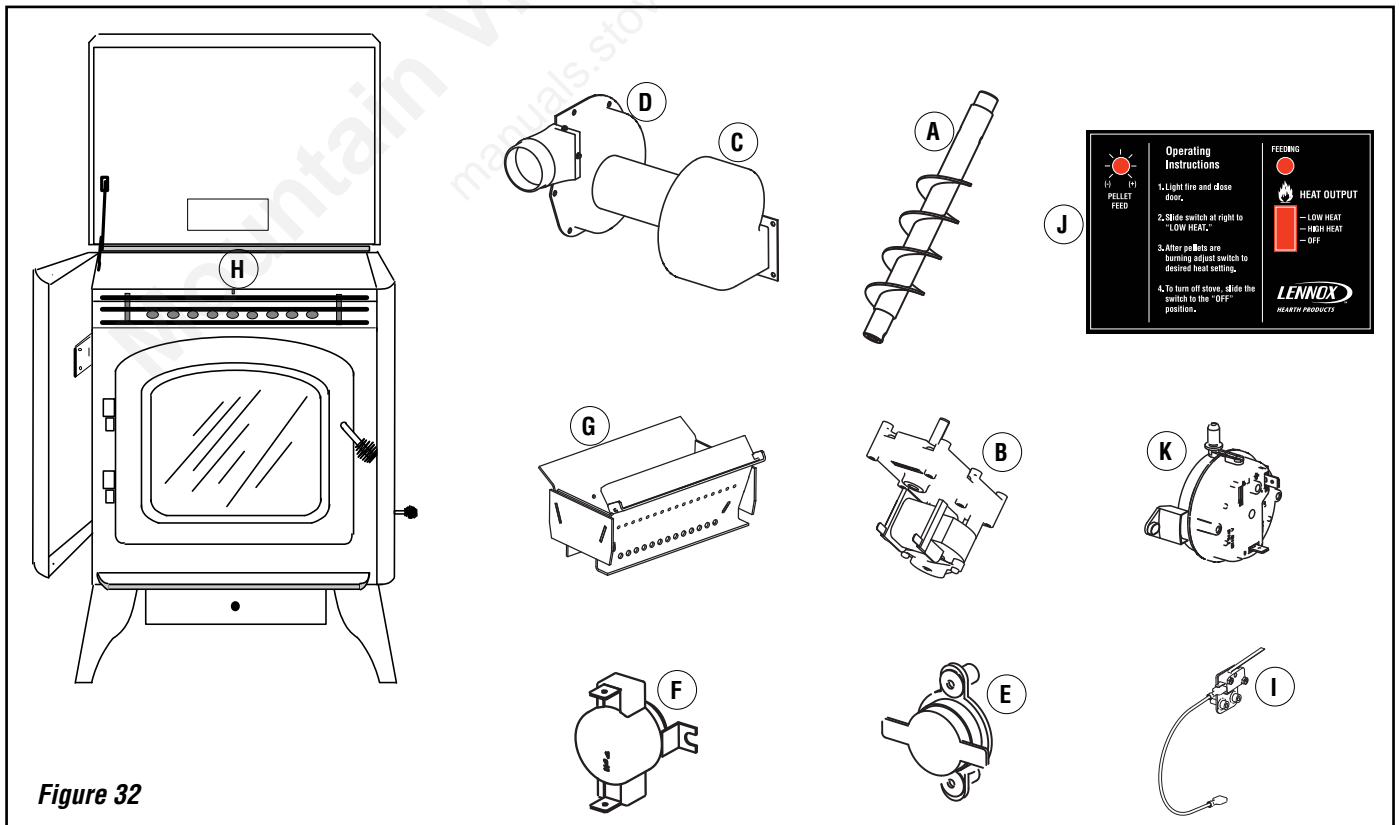
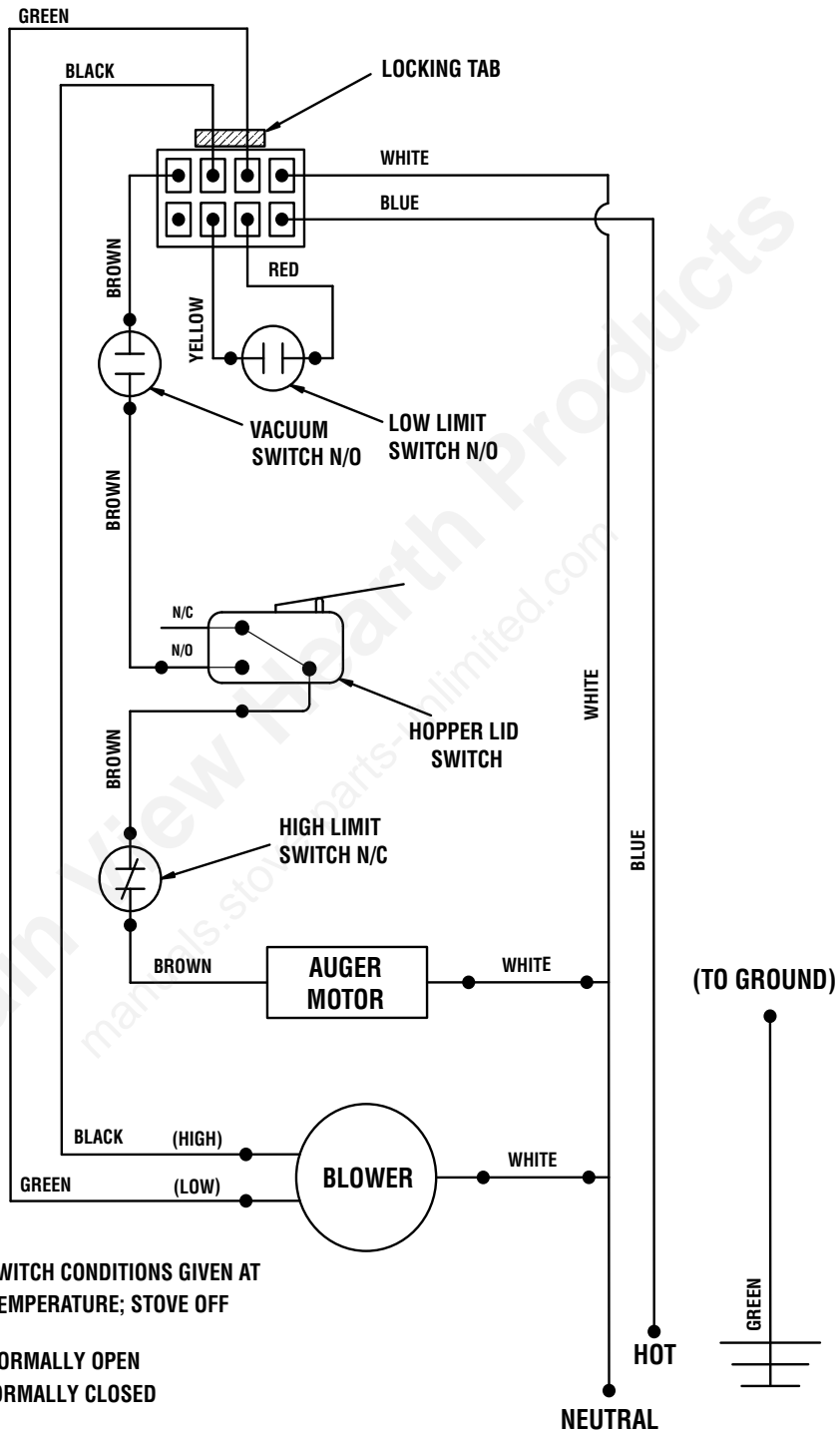


Figure 32

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

CASCADE® WIRING DIAGRAM



NOTE: SWITCH CONDITIONS GIVEN AT ROOM TEMPERATURE; STOVE OFF

N/O – NORMALLY OPEN
N/C – NORMALLY CLOSED

Part No. 60020057 Rev. A 07/2008

Figure 33 - WIRING DIAGRAM 120 V AC

TROUBLESHOOTING

QUALIFIED TECHNICIANS ONLY - UNPLUG APPLIANCE BEFORE PERFORMING ANY TROUBLESHOOTING OR MAINTENANCE

Unplug Appliance Before Performing Any Troubleshooting or Maintenance

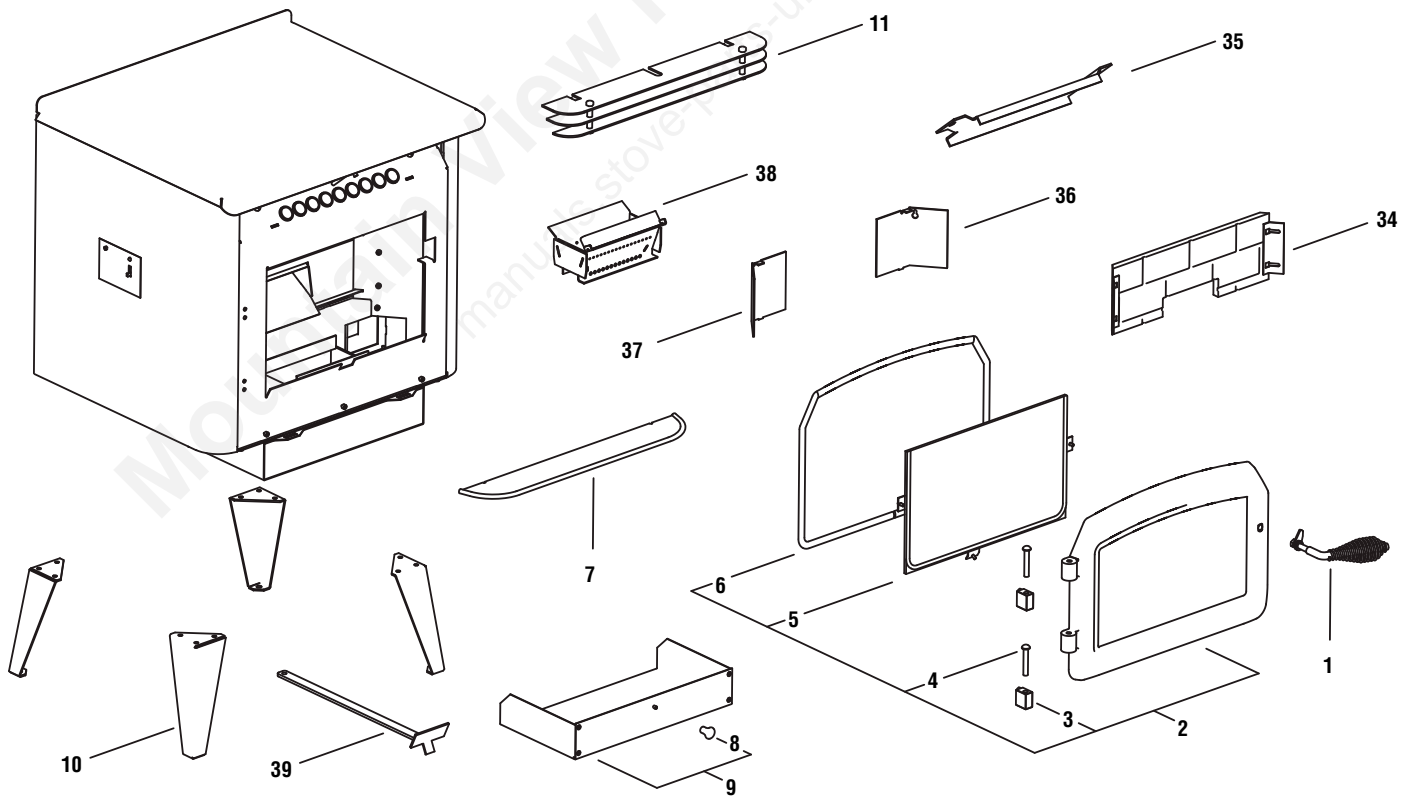
PROBLEM	CAUSE(S)	SOLUTIONS
1. Fire burns with a lazy orange flame. Pellets build up in the grate and the window soots up.	Insufficient combustion air.	<p>A) Remove any clinkers or ash from the bottom of the grate that might be obstructing the primary air holes.</p> <p>B) Change to a better grade of fuel if necessary (See <i>Fuel Specifications</i> on Page 19 and 20).</p> <p>C) Check that the damper has been properly adjusted (see <i>Damper Adjustment Guidelines</i> on Page 8).</p> <p>D) Inspect heat exchange tubes for ash buildup and remove ash if necessary.</p> <p>E) Clean internal exhaust ducts.</p> <p>F) Check if door is sealing properly (see <i>Door Rope Gasket</i> on Page 23 for test procedure).</p> <p>G) Check for blockage in the air inlet tube or exhaust pipe. Clean as necessary.</p> <p>H) Close ash slide plates.</p> <p>I) Have your authorized Lennox Hearth Products dealer check your combustion blower.</p>
2. Fire goes out or stove shuts down automatically	<p>A) The hopper is empty</p> <p>B) Pellets are not feeding.</p> <p>C) The high limit thermal switch has tripped.</p> <p>D) There is too much combustion air for the amount of fuel.</p>	<p>A) Refill hopper.</p> <p>B) See pellets will not feed on this page.</p> <p>C) Allow stove to cool for 1 hour and re-light. If the stove has been operating at a medium to high burn rate and the convection (room air) blower has been turned down low then the blower should be turned up higher. If this problem persists (particularly at lower burn rates), then the high limit thermal switch should be replaced by your authorized Lennox Hearth Products dealer.</p> <p>D) Adjust the damper to reduce combustion airflow (see <i>Damper Adjustment Guidelines</i> on Page 8).</p>
3. Pellets will not feed.	<p>A) Stove has run out of fuel.</p> <p>B) The auger motor or circuit board may be defective. The pressure switch tap or hose may be blocked.</p> <p>C) Back pressure in venting tripping pressure switch.</p> <p>D) High limit thermal switch may have been tripped.</p> <p>E) Self-aligning bearing in auger motor may be mis-aligned.</p> <p>F) Hopper lid is open.</p> <p>G) Hopper lid switch is faulty.</p>	<p>A) Refill hopper.</p> <p>B) Check to ensure that there is no blockage in the pressure tap or hose. Have your authorized Lennox Hearth Products dealer diagnose the problem and clean or replace any necessary parts.</p> <p>C) If new installation check for excessive 90° bends, long horizontal runs or excessive vertical run of 3" pipe. Possibly change to 4" pipe. If older installation check for excessive ash accumulation in pipe or other obstructions. Clean out pipe.</p> <p>D) Allow stove to cool.</p> <p>E) Gently tap the auger motor.</p> <p>F) Close hopper lid.</p> <p>G) Replace hopper lid switch if determined to be faulty.</p>
4. Blowers will not operate.	There is no power to the stove. There is no power to the control board.	<p>A) Check that the stove is plugged in to the wall outlet.</p> <p>B) Check to see if your circuit breaker has tripped.</p> <p>C) Check the wire connections on the high limit thermal switch and Control board.</p>
5. There is soot or Fly-ash in the house.	<p>A) The window is being cleaned when the stove is operating.</p> <p>B) There is leakage at the joints between the combustion fan, connection or exhaust pipe connections. This will be evidenced by dust on the impeller of the convection fan, and in the heat exchanger area.</p> <p>C) The vacuum cleaner is leaking.</p>	<p>A) Turn off stove before cleaning to prevent dispersion of ash and soot into the room.</p> <p>B) Seal up any leaks in the exhaust system with room temperature vulcanizing silicone sealer (RTV).</p> <p>C) DO NOT use a standard household vacuum or "shop vac" as the filters will leak the fine particles of ash into the home. Clean the stove with an approved ash vacuum ONLY.</p>
6. Stove runs for 25 minutes then shuts down.	<p>A) The exhaust gases are not up to temperature.</p> <p>B) The low limit thermal switch is not operating correctly.</p> <p>C) The wires to the low limit thermal switch are loose or disconnected.</p>	<p>A) Re-light stove if necessary.</p> <p>B) Replace the low limit thermal switch.</p> <p>C) Check the connections between the thermal switch and the wiring harness. Make sure that the connections between the thermal switch and harness terminals are secure.</p>
7. Blowers will not shut off after the fuel has been switched off and the stove has cooled down.	The low limit thermal switch has failed in the closed position.	Replace the low limit thermal switch.
8. Blowers will not operate when the Heat Output switch is moved from the "OFF" position.	There is no power to the blower.	<p>Check that the stove is plugged in to the wall outlet.</p> <p>Check to see whether the circuit breaker has tripped.</p> <p>Check the wire connections between the high limit thermal switch and the control board and blower.</p>

REPLACEMENT PARTS LIST - CASCADE®

Contact an Authorized Lennox Hearth Products dealer to obtain any of these parts. Never use substitute materials. Use of non-approved parts can result in poor performance and safety hazards.

DOOR PARTS		
Item	Cat. No.	Description
1	17150183	Door Assembly, Black
2	17150086	Door Handle Assembly
3	H7220	Door Hinge Blocks (2 per Pkg)
4	H7219	Door Hinge Pins (2 per Pkg)
5	17150084	Door Glass Kit (Includes clips, screws and gasket)
6	17157100	Gasket Kit, Door and Glass
---	H7714	Glass Clip Top - 17100091
---	H7715	Glass Clip Bottom - 17100013
BODY COMPONENTS		
7	17150046	Ash Lip with Gold Tone Trim,
8	12151412	Knob, Ashpan (6 per Pkg)
9	17152018	Ashpan Assembly
10	17150030	Leg Set (4 per Pkg)
11	17150147	Louver Assembly, Painted
12	H7307	Panel, Back
13	17150029	Damper Rod Assembly, Black (w/ T-Handle)
14	17150164	Panel, Right Side, Painted
15	17150150	Panel, Top (Hopper lid)
16	17150163	Panel, Left Side, Painted
ELECTRICAL PARTS		
17	17150027	Control Board
18	12055908	Fuse, 6 Amp, Fast Acting (12 per Pkg)
19	H7221	Hopper Lid Switch Assembly (1 per Pkg)
20	17150075	Pressure Switch (Hose, 12056003, not included)
21	12056003	Hose, Pressure Switch
22	17140110	Blower Kit, Exhaust and Room Air
23	H5886	Auger Motor
24	H3077	Power Cord
25	H7713	Wiring Harness, 32130
26	12150162	Thermal Switch, High Limit, Room Air Blower Jacket (L190-20F, Bakolite) (3 per Pkg)
27	12150080	Thermal Switch, Low Limit, Fan (F140-10F, Bakolite) (3 per Pkg)
AUGER SYSTEM COMPONENTS		
28	H7070	Bushing, Oilite (2 per Pkg)
29	17150239	Auger Assembly (helix)
30	61050003	Gasket, Auger Endplate (5 per Pkg)
31	17150058	Auger End Plate Assembly (flange)
32	12051001	Auger Bumper Kit (5 per Pkg)
33	12041300	Auger Collar and Screw Kit (3 per Pkg)

FIREBOX PARTS		
Item	Cat. No.	Description
34	17150025	Firebrick Kit
35	H5802	Heat Exchange Baffle
36	H4961	Ash Clean-out Cover, Right
37	H4960	Ash Clean-out Cover, Left
38	16050246	Ultragrate™, Replacement
MISCELLANEOUS PARTS		
39	12055500	Grate Scraper Tool
40	17150028	Knob, Control Board (Slide) (3 per Pkg)
41	61057203	Gasket, Room Air Blower (5 per Pkg)
42	61057210	Gasket, Combustion Blower, 1/8" Lytherm (5 per Pkg)



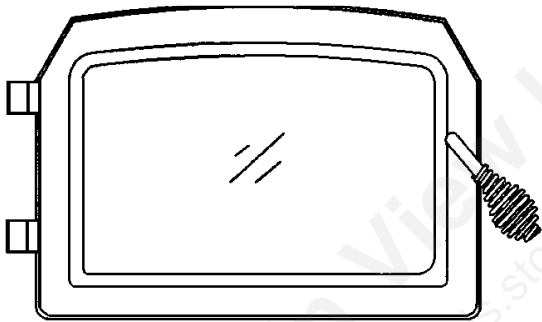
NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

OPTIONAL ACCESSORIES

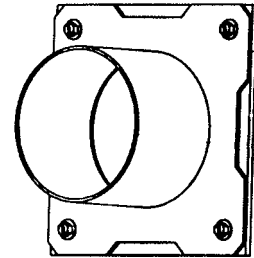
Item #	Catalog #	Model #	Description
1	H0469	DKCA-G	Door Kit, Cascade®, Gold
2	14M80	QDPC – 3	Quick Disconnect Pipe Connector, 3" (ref. Form # 506033-02)
2	12051504		Quick Disconnect Pipe Connector, 4" (ref. Form # 506033-02)
3	12050004		Cleaning Brush (ref. Form # 14720036)
4	70K99	TSPK – B	Touch-up Spray Paint Kit, Metallic Black 12oz Spray Can
	61040040		Gasket, quick Disconnect (10 per Pkg)

NOTE: The form numbers referenced are the part numbers of the instruction sheets included in kits.

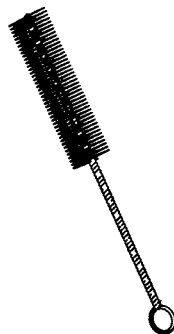
1



2



3



4



SAFETY / LISTING LABEL



Manufactured By / Fabriqué Par:
LENNOX HEARTH PRODUCTS
 PO BOX 987
 Auburn, WA 98071 USA



CERTIFIED FOR U.S. AND CANADA. LISTED ROOM HEATER FOR USE WITH PFI APPROVED PELLETIZED WOOD FUEL ONLY. ANY OTHER TYPE OF FUEL BURNED IN THIS HEATER WILL VOID THE WARRANTY AND SAFETY LISTING. APPROVED FOR USE IN MANUFACTURED (MOBILE) HOMES.

INSTALL AND USE ONLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA. DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE. SEE LOCAL BUILDING CODE AND MANUFACTURER'S INSTRUCTIONS FOR PRECAUTIONS REQUIRED FOR PASSING A CHIMNEY THROUGH A COMBUSTIBLE WALL OR CEILING. 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.

OPERATE ONLY WITH FIREBRICK IN PLACE. WARNING: OPERATE ONLY WITH VIEWING DOOR CLOSED. INSPECT FLUE FREQUENTLY TO PREVENT ACCUMULATION OF SOOT. THE HEATER AND FLUE MUST BE IN GOOD CONDITION. KEEP FURNISHINGS AND OTHER COMBUSTIBLE MATERIALS WELL AWAY FROM HEATER.

COMBUSTIBLE FLOOR MUST BE PROTECTED BY NON-COMBUSTIBLE MATERIAL EXTENDING BENEATH THE HEATER AND 6" TO THE FRONT, SIDES AND REAR AS INDICATED OR TO THE NEAREST PERMITTED COMBUSTIBLE MATERIAL. DO NOT OBSTRUCT THE AREA BELOW THE HEATER.

USE 3" / 75MM OR 4" / 100MM TYPE "PL" LISTED PELLET VENT AND COMPLETE COMPONENTS.

Report No./Numéro de Rapport: **050-S-23-2**
 (Test Date MAR, 2008 / Testé le MARS 2008)

Serial No.
 Numéro de série

Model / Modèle: **CASCADE® (WP5)**
 Tested to/ Testé selon: **ASTM E-1509 / UL 1482**
 / **ULC-S627-M90**

HOMOLOGUÉ POUR LES É.U. ET LE CANADA. RÉPERTORIÉ COMME RADIATEUR INDÉPENDANT. FONCTIONNE AU BOIS DE CHAUFFAGE GRANULÉ. AUSSI UTILISÉ DANS LES MAISONS PRÉFABRIQUÉES (MOBILES). L'UTILISATION D'UN AUTRE TYPE DE COMBUSTIBLE AVEC CE RADIATEUR ANNULERA LA GARANTIE ET LA CERTIFICATION DE L'APPAREIL.

INSTALLER ET UTILISER L'APPAREIL EN CONFORMITÉ AVEC LES DIRECTIVES D'INSTALLATION DU FABRICANT ET DES AUTORITÉS LOCALES EN BÂTIMENT OU LE SERVICE DE PRÉVENTION DES INCENDIES. COMMUNIQUER AVEC LES AUTORITÉS COMPÉTENTES LOCALES EN MATIÈRE DE BÂTIMENT ET D'INCENDIE POUR EN SAVOIR PLUS SUR LES RESTRICTIONS ET L'INSPECTION DE L'INSTALLATION DANS VOTRE RÉGION. NE RACCORDER PAS CET APPAREIL À UN CONDUIT DE FUMÉE DESSERVANT UN AUTRE FOYER. CONSULTER LE CODE DU BÂTIMENT DE VOTRE RÉGION ET LES DIRECTIVES DU FABRICANT POUR CONNAÎTRE LES MESURES DE PRÉCAUTION À PRENDRE POUR PASSER UNE CHEMINÉE DANS UN MUR OU UN PLAFOND. CET APPAREIL ALIMENTÉ AUX GRANULES A ÉTÉ MIS À L'ÉPREUVE ET RÉPERTORIÉ POUR UNE UTILISATION DANS LES MAISONS PRÉFABRIQUÉES CONFORMÉMENT AUX RÉGLEMENTS ADMINISTRATIFS 814-23-900 À 814-23-909 DE L'OREGON.

FAIRE FONCTIONNER L'APPAREIL UNIQUEMENT EN PRÉSENCE DE BRIQUES RÉFRACTAIRES. AVERTISSEMENT : FAIRE FONCTIONNER SEULEMENT SI LA PORTE VITRÉE EST FERMÉE. NETTOYER L'ÉCHANGEUR DE CHALEUR ET LE CONDUIT DE FUMÉE FRÉQUEMMENT AFIN D'ÉVITER L'ACCUMULATION DE SUIE. L'APPAREIL ET LE CONDUIT DE FUMÉE DOIVENT ÊTRE EN BON ÉTAT. GARDER LES MEUBLES ET AUTRES PRODUITS COMBUSTIBLES ÉLOIGNÉS DE L'APPAREIL.

LES PLANCHERS DOIVENT ÊTRE PROTÉGÉS AVEC DES MATÉRIAUX NON COMBUSTIBLES. SOUS LE RADIATEUR, 6" À L'AVANT SUR LES CÔTÉS ET À L'ARRIÈRE TEL QU'INDIQUÉ OU JUSQU'ÀUX MATÉRIAUX NON COMBUSTIBLES PERMIS LES PLUS PRÈS. NE PAS OBSTRUER L'ESPACE SOUS LE RADIATEUR.

UTILISER LES COMPOSANTS DE CHEMINÉE DE TYPE "PL" DE 3 PO/75 MM OU DE 4 PO/100 MM.

ROUTINE MAINTENANCE REMINDER

FREQUENCY OF CLEANING AND MAINTENANCE OF YOUR STOVE DEPENDS ON THE ASH CONTENT OF THE PELLETS YOU BURN. CHECK THE FOLLOWING PARTS OF YOUR STOVE WEEKLY FOR THE FIRST MONTH TO DETERMINE THE FREQUENCY OF CLEANING.

A. BURN GRATE B. HEAT EXCHANGER TUBES C. ASH PAN AND EXHAUST PIPE
 SEE YOUR MANUAL AND/OR DEALER FOR MORE INFORMATION. INPUT RATING RANGE: 1.5 TO 3.8 LBS./HOUR (NOMINAL) ELECTRICAL RATING: 60 HZ, 120 V, LESS THAN 10 AMP

USE ONLY LENNOX HEARTH PRODUCTS AUTHORIZED HIGH TEMPERATURE CERAMIC GLASS (5MM THICK).

RAPPEL D'ENTRETIEN PÉRIODIQUE

LA FRÉQUENCE DE NETTOYAGE ET D'ENTRETIEN DE VOTRE POÊLE DÉPEND DE LA QUANTITÉ DE CENDRE DE GRANULES CONSOMMÉES. VÉRIFIER HEBDOMADAIREMENT LES PIÈCES DE VOTRE POÊLE SUIVANTES DURANT LE PREMIER MOIS POUR ÉTABLIR LA FRÉQUENCE DE NETTOYAGE :

A. GRILLE B. TUBES DE L'ÉCHANGEUR DE CHALEUR C. TRAPPES ET CONTENANT DE CENDRES
 POUR OBTENIR DE PLUS AMPLES RENSEIGNEMENTS, CONSULTER VOTRE GUIDE ET/OU VOTRE DÉTAILLANT. CARACTÉRISTIQUES ÉLECTRIQUES : 120 V, 60 HZ, MOINS DE 10 AMP; CONSOMMATION THERMIQUE : 1,5 À 3,8 LB/H MAX.

UTILISER UNIQUEMENT LE VERRE CÉRAMIQUE HAUTE TEMPÉRATURE APPROUVÉ DE LENNOX HEARTH PRODUCTS (ÉPAISSEUR 5MM)

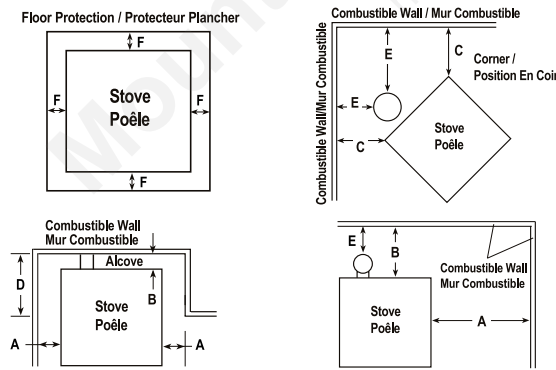
MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS NE PAS ENLEVER CETTE ÉTIQUETTE DÉGAGEMENT MINIMUM POUR LES MATÉRIAUX COMBUSTIBLES	
Freestanding Stove Installation / Installation Du Poêle Autonome	
Manufactured (Mobile) Home Or Residential Installation / Installation Résidentielle Ou Dans Une Maison réfabriquée (Mobile)	
Sidewall To Unit / Du Mur Latéral À L'appareil	A 4"/100 mm
Backwall To Unit / Du Mur Arrière À L'appareil.....	B 1"/25 mm
Wall To Unit Corner / Du Mur Au Coin De L'appareil.....	C 1"/25 mm
Max. Depth Of Alcove / Profondeur Max. De L'alcôve.....	D 24"/610 mm
Flue To Wall / Du Conduit De Fumée Au Mur.....	E 3"/76 mm *
Front/rear/side To Floor Protection Outside Edge / De L'avant, L'arrière Et Les / Côtés Au Plancher Bord Extérieur De Protection.....	F 6"/150 mm **
Minimum Alcove Height / Hauteur De L'alcôve - 49"/1225 mm, Minimum Alcove Width / Largeur De L'alcôve - 32"/800 mm	

* See vent manufacturer to verify clearances / Consultez les instructions du fabricant de l'évent pour connaître les dégagements aux matériaux combustibles
 ** Required in Canada / Recommended in US - Non-combustible floor protection must extend beneath the flue pipe when installed with horizontal venting or under the top vent adapter with vertical installation. / Requis au Canada/ recommandé aux États-Unis - Une protection fait de matériaux non combustibles doit couvrir la surface de plancher localisée sous l'évent d'évacuation lorsque celui-ci est installé horizontalement ou sous l'adaptateur de l'évent lorsque celui-ci est installé verticalement.



CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS. 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. DO NOT OVERFILL HOPPER.

ATTENTION: L'APPAREIL EST CHAUD LORS DE L'OPÉRATION. NE PAS Y TOUCHER. TENIR LES ENFANTS, LES MATÉRIAUX COMBUSTIBLES, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS DE L'APPAREIL. RISQUE DE BRÛLURES CUTANÉES. VOIR LA PLAQUE SIGNALÉTIQUE ET LES DIRECTIVES. OPÉRER L'APPAREIL SEULEMENT SI LE COUVERCLE DE LA TRÉMIE DU COMBUSTIBLE EST FERMÉ. SOUS CERTAINES CONDITIONS, DES PRODUITS DE COMBUSTION POURRAIENT S'ÉCHAPPER SI LA TRÉMIE N'EST PAS FERMÉE. NE PAS SURCHARGER LA TRÉMIE.



Part No. / No. Pièce #60020055 Rev. G, 02/2009 Do Not Remove This Label / E Pas Enlever Ou Recouvrir Cette Étiquette Made In U.S.A. / Fabriqué Aux U.S.A. IGN

Date of Manufacture / Date De Fabrication														
2009	2010	2011	JAN.	FEB.	MAR.	APR.	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			JANV	FEVR	MARS	AVR	MAI	JUIN	JUIL	AOÛT	SEPT	OCT	NOV	DEC
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Note that your serial number is printed on the safety label located in the hopper.

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

WARRANTY

Your pellet stove is covered by a limited warranty (provided with appliance). Please read the warranty to be familiar with its coverage.

Retain this manual. File it with your other documents for future reference.

PRODUCT REFERENCE INFORMATION

We recommend that you record the following important information about your fireplace. Please contact your Lennox Hearth Products dealer for any questions or concerns. For the number of your nearest Lennox Hearth Products dealer, please call 1-800-9-LENNOX.

REPLACEMENT PARTS

See **Pages 29 through 31** for a complete replacement parts list. Use only parts supplied from the manufacturer.

Normally, all parts should be ordered through your Lennox Hearth Products distributor or dealer. Parts will be shipped at prevailing prices at time of order.

When ordering repair parts, always give the following information:

1. The model number of the appliance.
2. The serial number of the appliance.
3. The part number.
4. The description of the part.
5. The quantity required.
6. The installation date of the appliance.

If you encounter any problems or have any questions concerning the installation or application of this system, please contact your dealer.

LENNOX HEARTH PRODUCTS
1110 West Taft Avenue
Orange, CA 92865
Visit us at www.Lennox.com

Your Stove's Model Number _____
Your Stove's Serial Number _____
The Date On Which Your Stove Was Installed _____
Your Dealer's Name _____
Your Dealer's Phone Number _____


NATIONAL FIREPLACE INSTITUTE
NFI
CERTIFIED
www.nficertified.org

We recommend that our pellet hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Pellet Specialists or who are certified in Canada by Wood Energy Technical Training (WETT).

 **Wood Energy Technical Training**
www.wettinc.ca

NATIONAL FIREPLACE INSTITUTE
NFI
CERTIFIED
www.nficertified.org

Nous recommandons que nos pôles à boulettes soient installés et que l'entretien soit effectué par des professionnels certifiés, aux Etats-Unis par le National Fireplace Institute® (NFI), et au Canada par le Wood Energy Technical Training (WETT).

 **Wood Energy Technical Training**
www.wettinc.ca

Lennox Hearth Products reserves the right to make changes at any time, without notice, in design, materials, specifications, prices and also to discontinue colors, styles and products. Consult your local distributor for fireplace code information.

LENNOXTM

HEARTH PRODUCTS

1110 West Taft Avenue • Orange, CA 92865

Printed in U.S.A. © 2000 Lennox Hearth Products
P/N 775,024M REV. D 05/2009