



EPA Certified Wood-Burning Fireplace Insert

Retain These Instructions
For Future Reference

P/N 775,213M, Rev. A, 04/2007



Wood Fireplace Insert Model Canyon™ C310

A French manual is available upon request. Order P/N 775,213CF.

Ce manuel d'installation est disponible en français, simplement en faire la demande. Numéro de la pièce 775,213CF.

These appliances must be properly installed and operated in order to prevent the possibility of a house fire. Please read this entire installation and operation manual before installing and using your wood stove. 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.



www.nficertified.org

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



Tested &
Listed By



OMNI-Test Laboratories, Inc.

Beaverton
Oregon USA



! WARNINGS

- **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.**

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TESTING INFORMATION

This manual describes the installation and operation of the Canyon™ C310 non-catalytic wood heaters. These heaters meet the U.S. Environmental Protection Agency's emissions limits for wood heaters sold on or after July 1, 1990. This heater has been developed, tested, and constructed in accordance with the requirements of UL 1482, ULC S628-93 and HUD standards and is listed by OMNI Test Laboratories, Beaverton, OR. It has been approved for residential and alcove installations.

GENERAL SAFETY PRECAUTIONS

1. When this room heater is not properly installed, a house fire may result. To reduce the risk of fire, follow the installation instructions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.
2. Wear gloves during installation to avoid injury from sharp edges on the stove and/or its parts.
3. This unit is designed and engineered to burn only dry, well-seasoned wood. Burning wet wood will greatly reduce your stoves efficiency, produce excessive amounts of smoke, and can cause dangerous chimney fires due to creosote build-up.
4. Before opening the door, the **draft control must be fully open to avoid possible combustion flash** (ignition of hot volatile gases as the door is opened).
5. Do not use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this stove. Keep all flammable liquids and combustible materials 36" from any point of the stove when it is in use.
6. While burning, fuel utilizes oxygen from the air in the room. Be sure to allow an adequate amount of fresh air into the room where the stove is burning.
7. The outside surface of the stove will be hot while burning properly and can set items like clothing and curtains on fire. Keep furnishings and other combustible materials away from the stove. Using the heat from the stove to dry wet clothing can be hazardous if clothes are placed too near the surface of the stove.
8. Do not allow children to play near the stove without close supervision. Do not touch the stove while it is burning. Use extreme caution while the unit is in use. Surface temperatures become dangerously hot and can cause serious burns.
9. Do not allow anyone to operate the stove who is not familiar with the operating instructions.
10. Attempts to achieve heat output rates that exceed stove design specifications can result in permanent damage to the stove. Never leave your stove unattended on high burn rates. This may cause overfiring. Overfiring the stove may cause a house fire. If the stove glows, you are overfiring.
11. Use smoke detectors near your stove as well as in sleeping areas. Keep a water hose or hand-operated fire extinguisher close for safety.
12. Inspect your chimney at least once a month during the burning season to check for soot and creosote accumulations. Any accumulations over 1/4" thick should be removed by a professional chimney sweep. Do not attempt to burn out heavy creosote accumulations with a hot fire. If large accumulations are occurring, review your burning procedures.
13. If a creosote fire should develop, the fire department should be called immediately, and then attempts should be made to control the fire until assistance arrives. If a "runaway" fire should develop causing over-heating of the stove, the door and draft regulators should be closed immediately. The fire should die down once deprived of oxygen. After a severe chimney fire, the complete chimney system should be checked before further use.
14. Do not operate with a grate or with an elevated fire. Always build the fire on the surface of the firebrick.
15. Please read this entire manual before you install and use your new room heater. Failure to follow instructions may result in property damage, bodily injury, or even death.

DRAFTING

Your wood stove is dependent upon a properly functioning chimney for optimum performance. It is a high efficiency appliance that loses much less heat up the chimney than older appliances and fireplaces. For this reason it is important to match the stove to the chimney. The chimney has two functions: 1) It draws combustion air into the appliance (without air, no fuel will burn) and 2) It exhausts combustion by-products. Your new Country™ Collection stove is what is known as a “natural draft” appliance. The appliance depends solely on the natural draft of the chimney system to draw combustion air into the unit. Draft is the force that moves air from the appliance up into the chimney. The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions, and other factors. Too much draft may cause excessive temperatures in the appliance. **Slow or inadequate draft equals poor combustion and possible smoking problems.** The two main culprits of poor chimney draft are: 1) A chimney too large for your appliance and 2) A chimney with not enough height to produce adequate draft for your particular stove model. Your Lennox Hearth Products dealer will be able to advise you on matching a proper system for your new stove. Inadequate draft will cause the appliance to leak smoke into the room through the stove and the chimney connector joints. An uncontrollable burn or a glowing red stove or chimney part indicates excessive draft. Also see Troubleshooting on page 15.

NEGATIVE PRESSURE WARNING

This appliance is not designed to be operated in a negative pressure. Very airtight homes with large kitchen exhaust fans, or homes with furnace cold air returns located in close proximity to the wood stove or fireplace insert may create negative pressure in the same room as the heating appliance. This can create dangerous back drafting of the stove and chimney joints, 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 or fireplace insert is not the source of negative pressure. Lennox Hearth Products accepts no liability for damages resulting from negative pressures described above.

CREOSOTE

Creosote---Formation and Need for Removal---When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire. The chimney and chimney connector should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

ASH DISPOSAL

Ashes should be scooped out of a cool stove with a small metal shovel. Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible floor or 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 the cinders have thoroughly cooled. Ashes can ignite up to 72 hours after removal from the stove.

FUEL

This unit is designed and engineered to burn, dry, well-seasoned wood only. Dry, seasoned wood is that which has been cut, split, and allowed to dry under a covered area where air is free to flow and circulate under and around the wood (not under a tarp or plastic). Make sure wood is not stacked directly on the ground, it may absorb moisture from the ground. It should be allowed to dry in these conditions for a minimum of six months, preferably one year or more. **IT MUST BE UNDERSTOOD THAT WOOD CANNOT BE LEFT IN ANY KIND OF WET OR DAMP AREA OR IT WILL NEVER BECOME COMPLETELY SEASONED.** Your stove will not operate at the level that it is meant to unless you use seasoned, dry wood. Do not burn driftwood or wood that has been in salt water, doing so will void your warranty. Do not burn treated wood, coal, garbage, cardboard, solvents, or colored paper. Burning treated wood, garbage, solvents, or colored paper may result in the release of toxic fumes. This type of burning will also void your warranty.

BREAK-IN PERIOD

If your stove has a Gold or Nickel-Plated Door, be sure to clean it with Windex brand glass cleaner and a very soft cloth to remove any fingerprints and residues prior to the first fire and before any fire if the gold has been handled or soiled. Do not close the door tightly during the "Break-in Period." Also, open the door frequently (every 5-10 minutes) to keep the gasket from adhering to the curing paint. Ventilate the house well during these first firings as the paint gives off carbon dioxide and unpleasant odors. It is recommended that persons sensitive to an imbalance in the indoor air quality avoid the stove during the curing process.

Please be patient with the heat output of your stove for the first few weeks. The steel will go through a curing process that eliminates moisture, which is deep in the steel and firebrick. This moisture will reduce initial heat output of your stove and may make it difficult to start. After you have broken in the paint on the stove it will be necessary to build hot fires to thoroughly remove the moisture from the appliance. Running the stove with the draft fully open for 1 to 1-1/2 hours after starting and adding generous amounts of fuel during the first week or two should complete the curing process. We recommend the use of a thermometer attached to the stovetop or chimney. Temperatures on the connector pipe should run in the 250-600 degree range. **(DO NOT OVER FIRE THE STOVE DURING THIS PROCESS. IF THE STOVE OR CHIMNEY BECOMES RED, REDUCE THE AMOUNT OF AIR ENTERING THE STOVE IMMEDIATELY).**

PAINT CURING

Your new Canyon™ C310 is painted with Forest High Temperature Paint that cures during the first few firings. We recommend that you put your stove through a regimen of three burns. The first two should last for 20 minutes each at 250 degrees (the stove should be allowed to cool completely between each burn). The third should be a burn of at least 450 degrees F. for 45-60 minutes. The paint will become soft, gummy and emit non-toxic smoke during these burns. After the stove cools down for the third time, the paint will harden. **DO NOT BUILD A LARGE ROARING FIRE UNTIL THIS CURING EFFECT IS COMPLETE OR YOU MAY DAMAGE THE FINISH OF YOUR STOVE.** Spray can touch-ups should be done only with Forest brand paint, available from a Lennox Hearth Products dealer.

BRICK INSTALLATION

CANYON™ C310 BRICK INSTALLATION

CAUTION: Wear gloves during brick installation in case of sharp edges behind the stove.

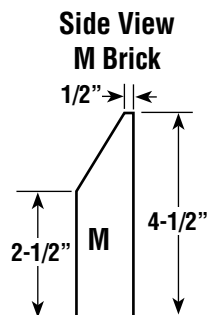
Note: Installation of baffle bricks and ceramic blanket is much easier when you can still access the flue outlet, as in before installing the insert. **Be sure the insulating blanket is placed flat on the bricks so as not to block the flue and that it does not hang out over the front of the baffle.** Use a ruler or a piece of kindling to reach back over the blanket to be sure it is flat on top of the baffle bricks all the way back.

Install bricks #1-30 in the numbered sequence. (Note: Bricks 22-25 lean up against the lower air channel and butt against bricks 17-21 on the bottom of the stove) Next install bricks 35-40 on top of the stainlesssteel secondary tubes in the upper part of the firebox. These bricks fit up against bricks 26-30 on the backwall and should rest on the rear two stainless steel tube supports running front to rear down the center of the stove. Included in your stove are two 13"x17"x1" thick ceramic fiber blankets. Install a ceramic fiber blanket on top of each of these sets of two sets of three bricks making sure the blanket is pushed fully to the rear. Next install bricks 41-46 under the ceramic fiber blanket and on top of the front two stainlesssteel secondary tubes. (**Caution: Make sure that the front of the ceramic fiber blanket does not project beyond bricks 41-46.**)

WARNING: IF THE BRICKS ARE NOT INSTALLED EXACTLY AS SHOWN THEY COULD FALL OUT OF PLACE DURING REFUELING OR BURNING OF THE STOVE CAUSING SERIOUS INJURY.

CANYON™ C310 Brick Sizes (see Figures on this page)

- A = 3-7/8 x 8-3/4"
- B = 6-1/2 x 4-1/2"
- C = 3-1/2 x 9"
- D = 1-1/2 x 4-1/2"
- E = 3-7/8 x 9"
- F = 4-1/2 x 9"
- G = 3 x 9"
- H = 3-1/2 x 4-1/2"
- J = 4-1/2 x 7"
- K = 3 x 7"
- M = 4-1/2 x 4-1/2"



Firebox Brick Layout

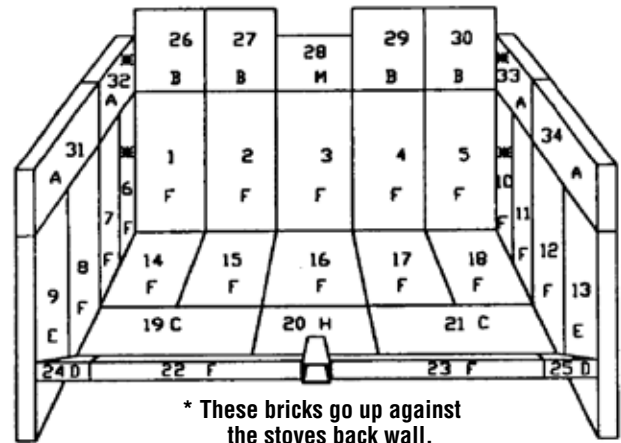


Figure 1

Baffle Brick Layout

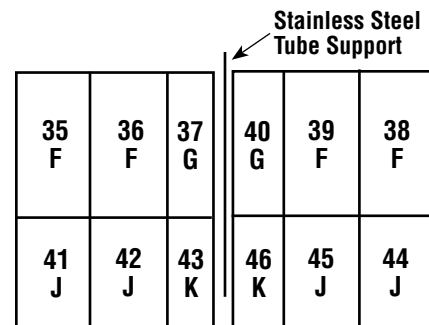


Figure 2

Baffle Blanket Placement

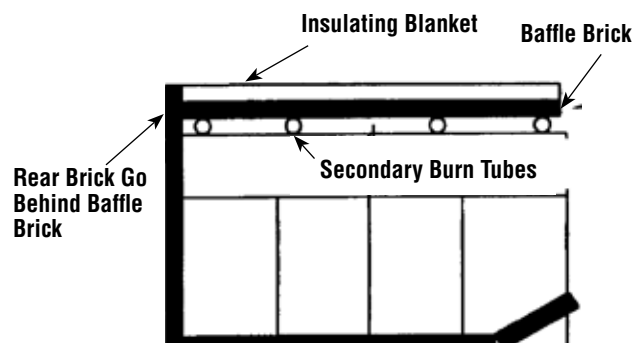


Figure 3

Insulating Blanket Size is 1/2" x 11" x 20" and fits on top of the baffle brick.

Required Clearances

WARNING: BE ABSOLUTELY SURE THE DISTANCE BETWEEN THE HEATER AND THE SURFACE OF ANY COMBUSTIBLE CONSTRUCTION IS NOT LESS THAN SHOWN ON THIS PAGE.

Model	*A	*B	*C	*D	E(1)
C310	USA-30" CAN-787mm	USA-20" CAN-584mm	20" 508mm	15" 381mm	8" 200mm
C310 with mantel and/or side shields	22" 559mm	12" 305mm	20" 508mm	8" 200mm	8" 200mm

Model	F (1)	G	H	J(2)	M
C310	24" 610mm	14-1/2" 368mm	22-1/2" 572mm	5-1/4" 133mm	50-1/2" 1283mm
C310 with mantel and/or side shields	24" 610mm	14-1/2" 368mm	22-1/2" 572mm	5-1/4" 133mm	50-1/2" 1283mm

* Reduced clearances may be available for A, B, C and D dimensions per NFPA 211 - latest edition, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances (in Canada CSA B365 - latest edition). See section on "Reduction of Appliance Clearance with Specified Forms of Protection."

**Side view of optional mantel deflector shown.

(1)Hearth extension reductions: 2" (51mm) reduction for 2" (51mm) raised hearth. (USA & Canada) 24" minimum hearth extension on all stoves as measured from the door opening of the unit (16" [406mm] minimum hearth extension on all inserts as measured from the door opening of the unit). Minimum distance of floor protection to the side = 8" (200mm). This is measured from the sides of the door opening in the USA and from the sides of the insert in Canada.

(2)J = Maximum lintel depth without flue offset or smoke deflector.

Hearth Protection

The hearth and/or floor protection must be a thermally rated non-combustible hearth/floor protector meeting or exceeding a thermal rating of $k=0.84$ or equivalent with a listed thickness of 3/4" (19mm) minimum in USA and Canada. The covering must extend 24" (610mm) in front of the heater and 8" (200mm) to either side (measured from door opening in the USA and measured from the side of the unit in Canada).

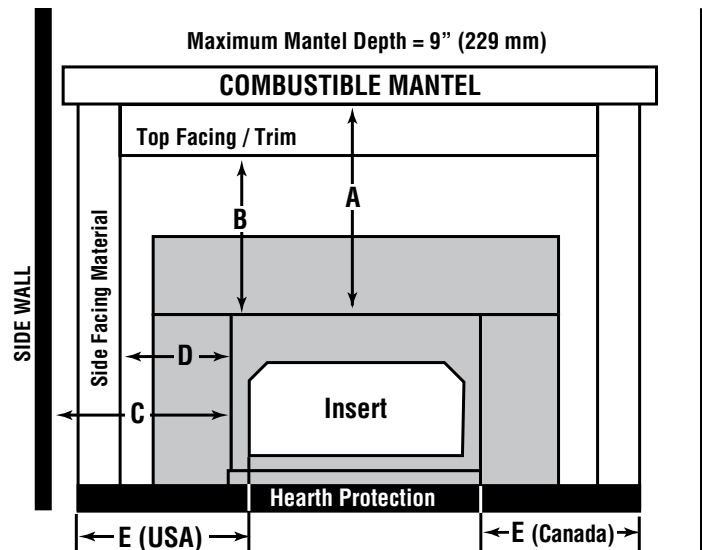


Figure 4

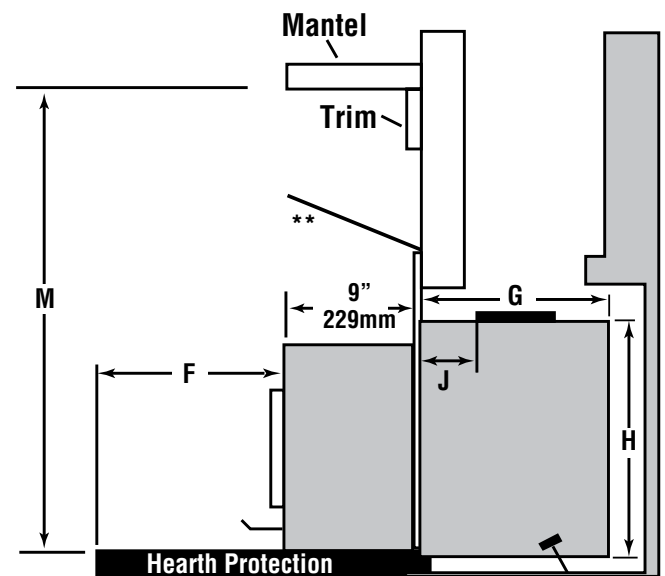


Figure 5

Notes

- Facing material that projects more than 3/4" (19mm) from the wall is considered a mantel or side wall.
- **MINIMUM FIREPLACE OPENING** 22-1/2" (572mm) High x 28-1/2" (724mm) Wide

CHIMNEY REQUIREMENTS

The Canyon™ C310 inserts are approved for use in masonry fireplaces built to UBC Chapter 37 or equivalent with a minimum 30" opening at the front of the fireplace.

Do not remove brick or mortar from masonry fireplace to accommodate insert. Do not remove brick or mortar from masonry fireplace to accommodate insert. Approved with or without positive flue connection. Approved with minimum 6" (152mm) diameter stainless steel listed reline system. Ask your dealer for recommended chimney size. Country Collection inserts are tested to UL 1482 / ULC S628-93 and listed by OMNI-Test Laboratories, Inc.; Beaverton, OR.

Remove and clean behind unit frequently, as creosote build up may occur rapidly.

INSTALLATION PROCEDURES - MASONRY CHIMNEY

NOTE: Although not required, a full-length stainless steel liner is recommended for optimum safety and performance. See your Lennox Hearth Products dealer for details.

Note: When installing your stove with a positive flue connection, be sure to leave the insulation off the surround panels (flanges) and leave a 1/4" (6mm) airspace insulation off the surround panels and the facing of your fireplace.

1. READ ENTIRE INSTALLATION INSTRUCTIONS.
2. Check all **REQUIRED CLEARANCES** as specified in the previous section (page 7) of this installation instruction booklet.
3. Wear gloves during installation in case of sharp edges on the stove and it's parts
4. Determine the depth of the fireplace lintel. The lintel is the masonry area over the fireplace opening, and is supported by a noncombustible plate, usually of steel. The depth may vary from a single brick width (4"/102mm) to that of several brick. If any portion of the flue collar opening on top of the insert (as shown in the diagram below) will project under the lintel area, a deflector plate must be mechanically attached to the fireplace insert to divert heat and gases away from the lintel. Consult your dealer for the correct attachment piece. Compare lintel depth to the distance from the flue collar opening to the fireplace to determine if this caution pertains to your installation. If there is sufficient clearance, a flue offset may also be used. Consult your dealer.

5. Open or remove the existing fireplace damper. Make sure the damper cannot fall closed.
6. Install the two 1/2" x 3" (13mm x 76mm) leveling bolts -heads up- a few turns in the leveling nuts on each side of the outer chamber of the insert at the lower rear corners.
7. Position the insert in the center of the fireplace opening and push it back until the surround brackets are approximately 2" (51mm) away from the fireplace front.
8. Install the side surround panels and push the insert up snug against the fireplace face. Then with the location selected remove the surround panels and level the stove with the leveling bolts using a 3/4" (19mm) socket, extensions (to reach the bolt head), and a ratchet.
9. Glue the insulation around the outer edge of both the top and side surround panels.
10. Install the surround panels loosely, align and tighten. Check for a tight fit against the fireplace.
11. Install the brick and baffle as per instructions on page 6.

POSITIVE FLUE CONNECTION: See your authorized Lennox Hearth Products dealer for necessary accessories and installation instructions.

Positive flue connectors required for installation in Canada are available from your LennoxHearth Products dealer. Please use one the part numbers indicated below.

71162 - 8" Positive Flue Connector Ring Kit

71163 - 8" to 6" Reducer w/ Positive Flue Connector

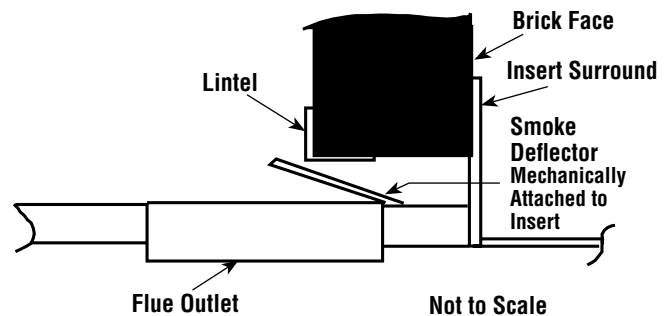


Figure 6

INSERT PRE-INSTALLATION PREPARATION

Install the two 3" (76mm) long bolts (with the head up) through the nuts attached to the insert on the lower rear corner of each side. This will allow you to level the insert when placed into the fireplace. Measure from the front of the top surround mount to the center of the flue. Determine if there is an alignment problem in connecting a liner from the chimney to the insert's flue. If there is an alignment problem, connection can be made using a short piece of stainless flex or a stainless steel offset box (available from your dealer). Before installing the liner, make any attachment brackets or drill any holes in the liner, offset box, or insert. Once installed, it may be difficult or impossible to drill additional holes.

CHIMNEY LINER INSTALLATION

Remove the existing chimney cap and install a stainless steel liner into the chimney (if a special section has been used or drilled to attach to the insert, it must be the bottom piece). The next piece should be a dripless slip joint; followed by the rest of the chimney liner. Fasten the chimney at the top when it is positioned so that the slip joint will allow the lowest piece to slide up enough to clear the insert during installation. Insulate the top four to six feet between the liner and the chimney to prevent heat loss. Install the cap and flash if necessary to prevent water or creosote from entering the chimney's venting system.

From inside the fireplace firebox, attach any adapters or flue offsets and slide the liner up as far as necessary for the bottom piece to clear the insert during installation.

INSTALLING THE INSERT

Place the insert into the fireplace, making sure to center it side to side. Slide the insert in until the surround mounts are approximately 1/2" (13mm) from the face of the fireplace where the surround panels cover.

Lower the chimney and make attachment to the insert. Level the stove by using a 3/4" socket and a long extension and adjusting the bolts on either side of the insert.

Install the side surround panels with the screws supplied. Push the insert in until there is approximately a 1/4" (6mm) gap between the back of the surround panels and the face of the fireplace. Before installing the top surround panel, make sure all connections are tight and that no part of the insert or chimney is touching the firebox or chimney in the fireplace. There must be a minimum of 1" (25mm) clearance between the stove and the zero clearance fireplace. Install the top surround panel.

If additional support is necessary, factory punched holes in the front corners of the bottom air chamber will accept leveling legs. Carefully measure the distance from the hearth protection to the bottom of the stove. Use 3/8" diameter bolts that are 1/2" (13mm) longer than the distance just measured. Thread a nut onto the bolt approximately 1" (25mm). Lift the stove slightly and insert a bolt into each hole and then thread the nut up the bolt until the front is securely supported. Install another nut onto the bolt through the air space in the stove and tighten securely. If desired an insert front support, IFS2101, is available to fill the space between the insert and the hearth protection.

Install the brick and baffle as per page 6.

POST INSTALLATION CHECKS

1. Check that all chimney pipe joints are securely fastened.
2. Check that the heater is securely fastened to the floor (if applicable).
3. Make sure the intake vent has clear access to outside air (if applicable).
4. Make sure the outside air vent has been sealed properly to keep rodents out (if applicable).
5. Be sure all roof flashings are watertight (if applicable).
6. Be sure the stove is properly grounded (if applicable).

FOR YOUR OWN PROTECTION AND INSURANCE PURPOSES, HAVE YOUR CHIMNEY AND CONNECTOR PIPE INSTALLATION INSPECTED BY YOUR LOCAL BUILDING CODE AUTHORITY OR FIRE MARSHAL BEFORE STARTING A FIRE IN YOUR STOVE. NOTIFY YOUR INSURANCE COMPANY.

OPERATING HINTS

1. Burn only dry, well-seasoned wood for maximum heat output. In some states it is illegal to burn wet wood or anything other than clean, dry wood products.
2. Your stove is designed to operate with the door closed! Operate only with the door shut tightly at all times except when loading wood.
3. **DO NOT** hit or move the baffle brick while loading wood. Occasionally check the baffle. Make sure the insulating blanket is always flush with the front of the baffle brick. Loading oversized logs may dislodge the baffle bricks.
4. **CAUTION: THE DRAFT CONTROL MUST BE FULLY OPEN BEFORE OPENING THE DOOR TO AVOID POSSIBLE COMBUSTION FLASH!!** (Ignition of hot volatile gases as the door is opened).
5. Feeding excessive amounts of fuel to the stove should be avoided. It is important to supply it with sufficient draft and fuel to maintain a moderately hot fire. If, during overnight burns, heavy creosote deposits develop inside your stove and on the door, the draft is set too low - review your burning habits!



Figure 7



Figure 8

STARTING AND MAINTAINING A FIRE

Be sure to clean the Nickel or Gold Plated door with Windex brand cleaner and a very soft cloth to remove any fingerprints and residues prior to the first fire.

1. **NEVER USE FLAMMABLE LIQUIDS TO START OR REKINDLE A SOLID FUEL FIRE!!**
2. Fully open the primary draft control by pulling the 1" plastic knob out on the left side (lower front corner) until it stops (away from the stove). This control determines the amount of air entering the stove. Pushing it toward the stove reduces the burn rate in the firebox. For your convenience, the rod on this control is marked with four grooves to assist you in obtaining repeatable burn rates.

3. Place a small amount of crumpled paper in front of the firebox and cover it with a few pieces of kindling.
4. Light the paper and allow sufficient time for the kindling to become fully engulfed in flames. Close the door. Your door may or may not need to be left slightly open during this process, depending on your stove model and chimney draft. Once the kindling is burning well, larger pieces of wood may be added.
5. For best results, use smaller pieces of wood to get stove temperature very high before loading larger wood for sustained burns. If necessary, crack the door to allow ignition of the fuel charge. Now you can add larger pieces of wood and after several minutes of high burn, set the left control for the desired heat output. Check the exhaust in about 15 to 20 minutes. Large amounts of smoke indicate an improper burn setting (either too high or too low). Adjust and recheck in 5 to 10 minutes.
6. After your stove has been thoroughly preheated, your blower can be switched on. When refueling your stove, turn the blower off for the first 30 minutes. On low and medium-low burns run the blower on low. These burn rates would be achieved by operating the stove with the draft rod fully pushed in to up to 3/4" (19mm) open (out). To do this, turn on the blower at the speed control and rotate the control all the way to the right. On medium-high and high burns you may run the blower on high. These burn rates would be achieved by opening the draft rod further than stated previously. To do this, turn on the blower with the speed control and do not rotate the switch after it clicks on.

CLEAN GLASS

SEE MAINTENANCE ON PAGE 14 FOR GLASS CLEANING TIPS

The operator plays an important part in keeping the glass clean and free of build-ups. The first and most important part the operator plays is making sure to burn only well-seasoned firewood. **Wet wood = Dirty glass.** Keeping your glass door clean is partly accomplished by the air wash system of the stove, which sends clean, fresh air for combustion, over the window before it enters the fire. The high temperatures inside the firebox also keep the glass clean. **No stove door stays perfectly clean.** The following are methods for keeping build-up on your glass to a minimum. When properly installed and operated by a knowledgeable operator, your glass door should require very little maintenance. Do not expect to get extremely long burn times and keep the window perfectly clean. Cool temperatures cause condensation of unburned volatiles on the glass. If your glass gets very dirty during overnight burning, try preheating the stove a little longer before damping it down for an overnight burn. Also, don't damper your stove down as low because **you'll get more heat for your money by burning a little hotter for a slightly shorter time.**

The air wash system will perform at its best at medium burn rates. Some stove models will self clean by burning very hot fires but be sure not to over-fire the stove. **If it glows red it is over-fired.** Over-firing a stove also causes the window to soot up. Extremely hot fires with fresh wood may cause the flow rate to exceed one foot per second, which is as fast as a flame can burn. This is why a candle goes out when you blow on it. Blow on it gently and it burns brightly. Blow on it hard and it goes out. This will cause excessive exhaust emissions and your window to soot up, as the stove is unable to burn the gases emitted from the wood. Try slowing the stove down a little by closing the damper somewhat as it warms up.

Keeping freshly loaded wood away from the window will also help. Load fresh logs in the rear of the firebox. Build up tends to occur first on the right side of the window. This is caused by the swirling motion of the exhaust gases similar to water running down a drain. Keep fresh logs further back on the right side of the firebox to help prevent this problem.

Understanding how your Country™ Collection stove works should help you keep your glass door very clean, but as stated: **no glass door stays perfectly clean.** We hope this information is helpful in keeping your glass door clean so that you may enjoy many hours viewing your high efficiency stove. For more information, contact your Lennox Hearth Products dealer.

OPERATING TECHNIQUES AND HINTS

Recent developments in wood-burning technology have made wood-burning a cleaner and more convenient way to heat your home. Overall efficiency in a wood-burning appliance is a combination of combustion efficiency and heat transfer efficiency. Whether heating your entire home, or just a room or two, your understanding of how to best operate your stove or insert will enhance its overall efficiency and performance. What this can mean to you is longer, cleaner burns, less wood use, and more heat.

GETTING THE MOST OUT OF YOUR STOVE

The following sections will outline techniques you can use to "get the most out of your stove." Please read them carefully.

MAXIMIZING YOUR STOVE'S OVERALL EFFICIENCY

It is important to know that for high, combustion efficient, clean burns, you will need to have sufficient temperatures inside the firebox for thorough combustion. The best method for determining if you have sufficient temperatures is to watch the brick lining in your firebox. When you first light your stove, the bricks will turn a dark brown or black. After 20 to 30 minutes of a hot fire, most of the bricks should return to near their original light brown or yellow color. This means the bricks have reached a high enough temperature for your stove to achieve high combustion efficiency.

Second, and just as important, is achieving a high level of heat transfer efficiency. Slowing the rate of flow through the stove or insert enhances heat transfer, thus allowing more time for heat to be transferred into your home. To do this, be sure to thoroughly preheat your stove and then reduce the amount of primary air by closing the draft control (lower left) to about 1/2 to 3/4 open. This will decrease the excess oxygen in your flue, which carries heat up your chimney, but should still be enough air to allow the stove to produce its maximum heat output. (More air may produce a lightly greater amount of heat, but will greatly increase wood consumption). When the area being heated reaches a comfortable temperature, slow the burn rate by closing the control to further improve heat transfer.

To get the most out of your stove, you will need to combine good combustion efficiency with good heat transfer practices. The following are some tips on how to operate your stove to achieve the highest overall efficiency.

1. Thoroughly preheat your stove before slowing the burn rate by closing the draft control.
2. Measure the stove temperature at the hottest point on the stove top or face. Use this information to repeat burn rates.
3. Once preheated, add wood (if needed) and partially close the draft control (lower left).

4. Operate your stove as much as possible in the low to medium burn ranges.
5. Do not lower the draft setting so low as to completely extinguish the flames in the firebox. Check for at least some small flames twenty minutes after setting the draft control.
6. Do not continually operate your stove in the high (wide open) setting. This wastes wood by carrying a great deal of heat up the chimney and can damage your stove and chimney.
7. Go outside and check your chimney. More than a very small amount of smoke indicates wasted heat, creosote build up, and pollution.

ACHIEVING CLEAN, LONG BURNS

To achieve long burn times, after having thoroughly preheated the stove, let the stovetop cool down to 275 to 400 degrees (on Elites, locate thermometer on the face of the insert just above the door). Now load the firebox and set the draft control. At this point, you may need to burn the stove with the draft open for a few minutes to ignite the wood. All Country™ Collection stoves are EPA tested for emissions at low burn with the air control completely closed. Whether or not you should burn your stove with the air control completely closed will depend on the following factors.

- * How you load your wood.
- * Your chimney type, height, and draft.
- * Your wood type and its moisture content.
- * The temperature of the stove.
- * Which model Country Collection stove or insert you have.

Experiment with different loading configurations to achieve longer burns. Try loading the wood from side to side and nesting it in the ashes to prevent airflow under and around the wood. Fresh wood should be loaded to the back of the firebox or to the sides. Hot coals or half burned wood should be brought towards the front of the firebox. The way you load your wood can seriously affect burn times. If the new load does not ignite within a few minutes, try crisscrossing the load to allow more airflow around the fire, or try a slightly hotter stove temperature.

Determining the lowest setting for efficient low burns. This will require some experimentation on your part. Try closing the air control all the way with the stove temperature at 325 degrees to 350 degrees. If the flames are completely extinguished, open the air control halfway and then slowly close it until there is only a small amount of flame. It is important to check the stove about 20 minutes after setting the draft control as it takes this long for the stove temperature to stabilize. There should still be some small flames on or above the wood load.

Use 325 degrees as a starting point. You can try starting temperatures 25 degrees higher or lower to achieve desired burn times, start 25 degrees lower if the stove burns the wood too quickly or 25 degrees higher if there are no flames in the firebox for more than a few minutes after loading the wood. You may or may not need to burn the stove with the air control open for a few minutes prior to setting the draft for a low burn, this will depend on the factors mentioned above. **Be sure not to smolder a fire overnight. Check your chimney for large amounts of smoke as this indicates very poor combustion.**

It is important to realize that stove technology has changed. Stoves have changed a great deal in the last few years. This has led to substantial changes in the methods of operation in new stoves as compared to older stoves. In old stoves without full brick linings and ceramic insulation, the rule was “get the stove as hot as possible before setting the draft on low for overnight burns.” On newer, high technology Country™ Collection stoves, this is not necessary. Although it is still important to have the stove hot enough to burn efficiently, it will require less preheating. Once you have determined your optimum operating temperatures for various burn rates, we believe you will find your stove an extremely convenient way to achieve your heating needs.

Do not reload the stove for long burns when the stainless secondary tubes or baffle supports are glowing red, or when the stove is uncomfortably hot to load. This indicates the stove is too hot to load for a long burn. Also, do not load wood for a long burn on a deep bed of hot coals. Try stirring the coals a few minutes before loading the stove for a low burn to allow some of the unburned coals time to burn.

MAINTENANCE

DOOR HINGES: If door hinges need lubricating, use an anti-seize compound (never use oil) available from your Lennox Hearth Products dealer.

DOOR LATCH: If your door latch fails to latch tightly and the gasket is in good condition, place a length of pipe (cheater bar) over the inside portion of the door handle and bend slightly toward the door until the proper adjustment is obtained. If the door handle does not close easily, apply high temperature anti-seize to the striker.

DOOR GASKET: Periodically check gasket to make sure it is not over-compressed. If compressed, replace with a special woven door rope. (Don't try substituting rope, only use special Lennox Hearth Products door rope).

GOLD OR NICKEL PLATED DOOR: Clean only with WINDEX brand glass cleaner and a very soft cotton cloth. Other products may damage brass, paint, and gaskets.

INSULATING BLANKETS: Your insulating blanket should be inspected during every chimney cleaning. If the blanket is compressed or heavily stained, it should be replaced. Heavy creosote stains or matting is an indication of improper use and your burning habits should be reviewed.

GLASS CLEANING: Only clean glass with products specifically made to use on wood stoves. Other products could damage gaskets and paint. Never scrape glass with a razor blade. This can pit the glass and make it impossible to clean in the future.

WINDOW GASKET: The window gasket can be checked by running the flame of a match near the gasket and around the door. If the flame is drawn in around the window, the gasket should be replaced.

DOOR HANDLE: Door handle may become tight as you use the stove. Free the handle up by using dry graphite supplied with the stove. The directions are included with the graphite.

TROUBLESHOOTING

Problem

Solution

POOR DRAFT:

Extend chimney in length or have the chimney realigned to the proper size flue. Oversized chimneys normally have poor drafts. Remember, the stoves' draft depend solely on the natural draft of the chimney (See Drafting section on page 4). If your stove is not drafting properly, your chimney is the problem. All stoves are thoroughly tested to ensure proper draft with the correct size chimney flue.

EXCESSIVE DRAFT:

With better chimneys being more common, excessive draft can be an issue. Alleviate excessive draft by slowing the burn rate of the stove once it has reached proper operating temperature (See Maximizing Your Stoves Overall Efficiency on page 13).

DIRTY GLASS:

- 1) Burn smaller, hotter fires and check to make sure you are not setting the draft down too far with the draft control.
- 2) Make sure your wood is well-seasoned and dry (not open to rain - see Creosote and Fuel sections on pages 4 & 5).
- 3) See Poor Draft section (above) and Clean Glass (above).

SMOKES WHEN DOOR IS OPEN:

- 1) If smoke is entering the room, check to make sure your baffle bricks are properly installed and that the insulating blanket is pushed back flush with the front of the baffle brick.
- 2) Check the chimney for blockage due to creosote (See Creosote section on page 4).
- 3) Check draft (See POOR DRAFT section above).

WOOD BURNS TOO FAST:

- 1) The draft control must be closed further.
- 2) Add fuel at lower firebox temperatures.
- 3) Load wood side to side and reduce the flow of air under wood.
- 4) The door seal may need replacing, check for leakage.
- 5) See "Excessive Draft."

POOR HEAT OUTPUT:

- 1) Check your wood. Wet, moist, unseasoned wood will not produce heat.
- 2) Your stove needs to be seasoned (moisture removed from the steel and brick). Continue to burn a fire. It normally takes from one to three weeks of burning to season your stove (See Break-in Procedures on page 5).
- 3) See Excessive Draft section above.

PAINT GIVES OFF ODOR (smoke):

Paint is tempering-in. Burn only moderately hot for the first few days until paint is fully cured. Then burn a very hot fire to cure any paint that may not easily cure. Open windows or door to ventilate (See Break-in Procedures on page 5).

Do's AND Don'ts

- DO NOT:** Install or operate this stove before reading this manual.
- DO NOT:** Close the draft beyond the point at which the flames are completely extinguished.
- DO NOT:** Open the stove door without **fully opening** the draft first.
- DO NOT:** Burn driftwood or wood that has been in salt water. This includes some mill ends and scrap lumber that has been floated in salt water on the way to the mill. (This will void your warranty).
- DO NOT:** Handle the Nickel or Gold faceplate unnecessarily. Use the door handle only.
- DO NOT:** Force oversized logs into the firebox as this may dislodge the baffle assembly.
- DO NOT:** Close the door tightly during break-in period.
- DO:** Be sure to clean any fingerprints from the Gold or Nickel faceplate before burning the stove. Clean the Gold or Nickel door only with Windex and a very soft cloth.
- DO:** Consult local building department if other than recommended clearances are desired.
- DO:** Read instructions for the brick baffles occasionally to ensure you have not bumped or moved them out of place when loading wood.
- DO:** Check the chimney and baffle a minimum of every 3 months to make sure they are clean.
- DO:** Burn seasoned, dry wood only! (RAIN = WET WOOD)
- DO:** Open the door frequently during break-in period to keep gasket from adhering to the curing paint.
- DO:** Enjoy the warm feeling of your new Country™ Collection stove.

The manufacturer 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.



HEARTH PRODUCTS

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