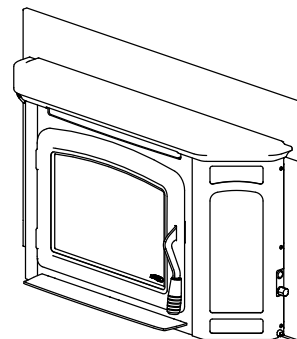




EPA Certified Wood-Burning Fireplace Inserts

**Save These Instructions
For Future Reference**

P/N 506031-02, Rev. A, 10/2012



Montlake™ 230

Wood-Burning Fireplace Inserts Model Montlake™ ML230

With Innovative Thermal Fin Technology (TFT™)

A French manual is available upon request. Order P/N 506223-36.

Ce manuel d'installation est disponible en français, simplement en faire la demande. Numéro de la pièce 506223-36.



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).



Intertek

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This appliance 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 fireplace insert. 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.



WARNING

- **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.**

CONGRATULATIONS!

When you purchased your new wood-burning fireplace insert, 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 wood-burning fireplace insert.

Thank you for selecting a Lennox Hearth Products wood-burning fireplace insert as the answer to your home heating needs.

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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

IMPORTANT SAFETY AND WARNING INFORMATION

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

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 insert 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 inserts 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. 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. **DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE.**
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 insert is burning.
7. The outside surface of the insert 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 insert. Using the heat from the insert to dry wet clothing can be hazardous if clothes are placed too near the surface of the insert.
8. **HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING FURNISHINGS AND COMBUSTIBLE MATERIAL A CONSIDERABLE DISTANCE AWAY. CONTACT MAY CAUSE SKIN BURNS.** Do not allow children to play near the appliance without close supervision. Do not touch the appliance 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 insert who is not familiar with the operating instructions.
10. Attempts to achieve heat output rates that exceed insert design specifications can result in permanent damage to the insert. Never leave your insert unattended on high burn rates. This may cause overfiring. Overfiring the insert may cause a house fire. If the insert glows, you are overfiring.
11. Keep a water hose or hand-operated fire extinguisher close for safety.
12. **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 the insert). 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.
13. Inspect your chimney at least once a month during the burning season to check for soot and creosote accumulations. Any accumulations over 1/8" 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.
14. 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 insert, 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.
15. **Do Not Use Grate Or Elevate Fire - Build Wood Fire Directly On Hearth (firebrick).** Do not use andirons or other methods of supporting the fuel.
16. 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.
17. Check all local building and safety codes before installation. The installation instructions and appropriate code requirements must be followed exactly and without compromise. In the absence of local codes the following standards and codes must be followed.
18. In the U.S.A, install in accordance with the National Fire Protection Association's Code, NFPA 211, Standards for Chimneys, Fireplaces, Vents and Solid-Fuel-Burning Appliances, or similar regulations, may apply to the installation of a Solid-Fuel-Burning appliance in your area. In Canada, the guideline is established by the CSA Standard, CAN/CSA-B365-M93, Installation Code for Solid-Fuel-Burning Appliances and Equipment.
19. **DO NOT CONNECT TO OR USE IN CONJUNCTION WITH ANY AIR DISTRIBUTION DUCTWORK UNLESS SPECIFICALLY APPROVED FOR SUCH INSTALLATIONS.**
20. **WARNING: BURNING IMPROPER FUEL (I.E. CHARCOAL) CAN RESULT IN CARBON MONOXIDE POISONING, WHICH MAY LEAD TO DEATH!**
21. Carbon Monoxide Poisoning – early signs of carbon monoxide poisoning resemble the flu with headaches, dizziness, or nausea. If you have these signs, get fresh air at once! Have the heater inspected by a qualified service technician. Some people are more affected by carbon monoxide than others. These include pregnant women, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.
22. Failure to use manufacturer provided parts, variations in techniques and construction materials or practices other than those described in this manual may create a fire hazard and void the limited warranty.
23. Do not make any make-shift compromises during installation. Any modification or alteration may result in damage to the appliance or dwelling and will void the warranty, certification and listings of this unit.
24. These appliances are designed as supplemental heaters. Therefore, it is advisable to have an alternate heat source when installed in a dwelling.
25. **Do Not Overfire – If Heater or Chimney Connector Glows, You Are Overfiring.**
26. **DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.**
27. **DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTHA OR ENGINE OIL.**

TESTING INFORMATION

This manual describes the installation and operation of these 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 and HUD standards and is listed by Intertek Testing Services, Portland, OR. It has been approved for residential installations.

DRAFT REQUIREMENTS

Your wood fireplace insert 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 fireplace insert 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 appliance 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 (overfiring). Slow or inadequate draft equals poor combustion and possible smoking problems. The following are some conditions that may contribute to poor chimney draft:

1. A chimney too large for your appliance.
2. A chimney with not enough height to produce adequate draft.
3. A chimney with excessive height (this may allow exhaust to cool too much before exiting, which will stall the rate the exhaust exits).
4. Offsets in the venting system are too restrictive (see *Chimney Guidelines*).

Inadequate draft will cause the appliance to leak smoke into the room through the fireplace insert and the chimney connector joints.

Excessive draft may cause an uncontrollable burn or a glowing red fireplace insert or chimney part.

Overfiring Damage - If the heater or chimney connector glows, you are overfiring. Other symptoms may include: Cracking, warping or burning out of components, plated accessories may turn color, stove or insert glass may develop a haze, which will not come off with cleaning.

Overfiring of a stove or fireplace insert is a condition where excessive temperatures are reached, beyond the design capabilities of the appliance. The damage that occurs from overfiring is not covered under the manufacturer's limited warranty.

Also see *Troubleshooting* on **Page 23**.

SELECTING THE PROPER VENTING SYSTEM

The appliance is merely one component of a larger system. The other equally important component is the venting system. This is necessary for achieving the required flow of combustion air to the fire chamber and for safely removing unwanted combustion by-products from the appliance. If the venting system's design does not promote these ends, the system may not function properly. Poorly functioning venting systems may create performance problems as well as be a safety hazard. **A draft test should read greater than .04" W.C. (inches water column) and less than .08" W.C.** As per NFPA-211 standard (see paragraph below), the installer must take into account all variables within the installation and install the appliance in such a manner that satisfies the draft requirements of the appliance. See *Chimney Guidelines* below to assist you in selecting the proper venting system for your installation.

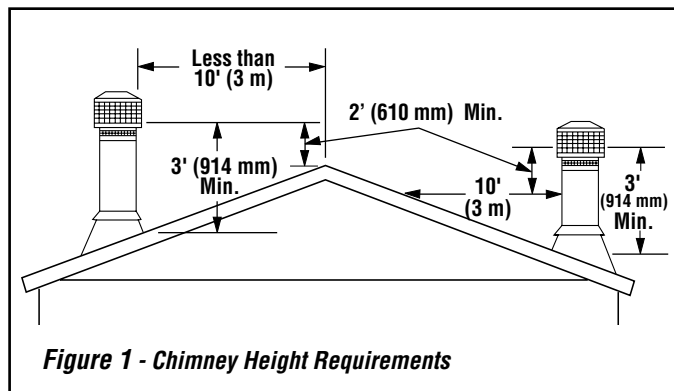
American National Standards Institute ANSI/NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances - See Draft Section: A chimney or vent shall be so designed and constructed to develop a flow sufficient to completely remove all flue and vent gases to the outside atmosphere. The venting system shall satisfy the draft requirements of the connected appliance in accordance with the manufacturer's instructions.

Chimney Guidelines:

- This appliance requires approximately 12 feet minimum of "effective draw" provided by the venting system. As a rule of thumb, every 90 degree total direction change in the venting will result in a loss of approximately 5 feet of "effective draw." Example: If two 45 degree offsets are used, subtract 5 feet from the actual vertical vent height to determine your "effective draw." In this case if you had 14 feet of vertical vent, the effective draw would only be approximately 9 feet (14 ft. - 5 ft. = 9 ft.), therefore it may be necessary to add additional height to the venting system.
- In well insulated and weather tight homes, it may be difficult to establish a good draft up your chimney. The poor draft is caused by a shortage of air in the house (see *Negative Pressure Warning* on **Page 5**).

CHIMNEY HEIGHT REQUIREMENTS

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.**

NEGATIVE PRESSURE WARNING

This appliance is not designed to be operated in a negative pressure. 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 back drafting of the fireplace insert 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. Lennox Hearth Products accepts no liability for damages resulting from negative pressures described above.

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 be difficult to establish a good draft up the chimney (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 can develop in the dwelling which will affect the rate at which this appliance can draft thus resulting in performance problems. To correct this problem it may help to open a window (preferably on the windward side of the house).

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*(3)	B*	C*	D*	E(1)
ML230	USA-15" CAN-381mm	USA-13" CAN-330mm	4" 102mm	1" 25mm	USA-8" CAN-203mm

Model	F (1)	G	H	J(2)	M
ML230	USA-16" CAN-450mm	15-1/2" 394mm	21-1/4" 540mm	5-3/8" 137mm	36-3/4" 934mm

* 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."

(1) (USA) 16" minimum hearth extension on all stoves and inserts as measured from the door opening of the unit. (Canada) 18" (450 mm) minimum hearth extension on all stoves and inserts as measured from the door opening of the unit. Minimum distance of floor protection to the side = 8" (200 mm). 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.

(3) If the mantel projection is 8" or less, the 'A' mantel clearance may be reduced to 14".

Notes:

- Facing material that projects more than 3/4" (19 mm) from the wall is considered a mantel or side wall.

Montlake™ 230		ZC Fireplace UL 127	Masonry Fireplace UBC Chapter 37
G	Depth Min.	15-1/2" (374mm)	15-1/2" (374mm)
H	Height Min.	21-1/2" (546mm)	21-1/2" (546mm)
J	Lintel Max. Depth ①	5-3/8" (137mm)	5-3/8" (137mm)
K	Front Width Min.	36" (914mm)	25" (635mm)
L	Rear Width Min.	22-1/2" (572mm)	22-1/2" (572mm)

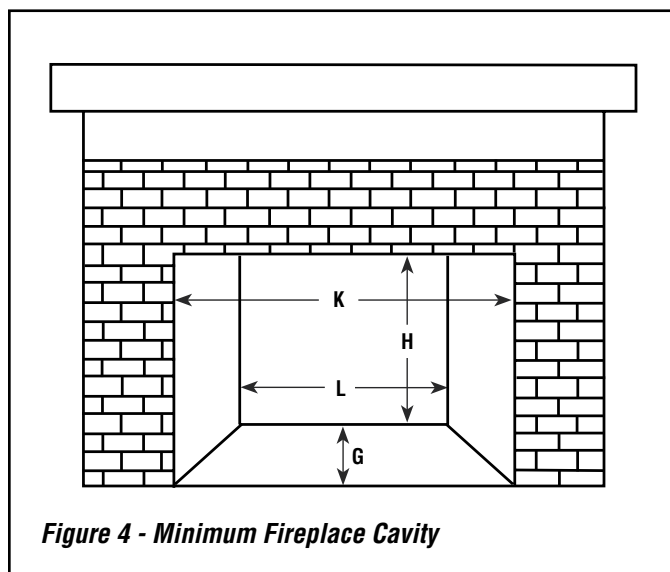
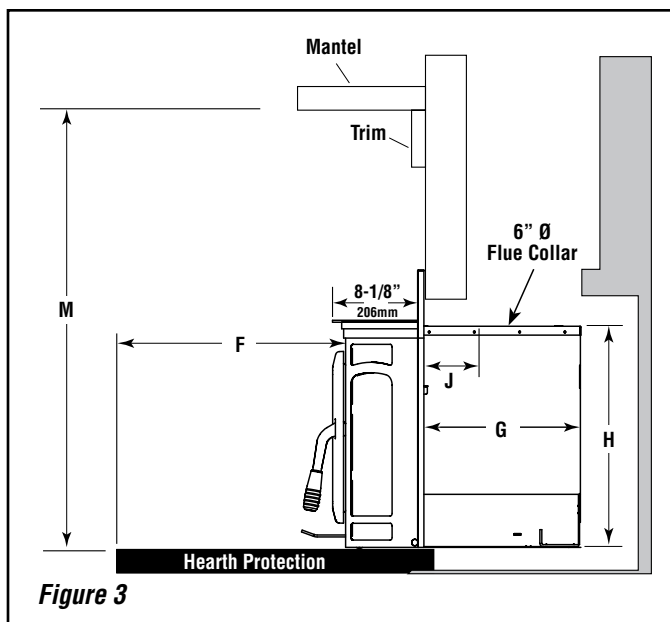
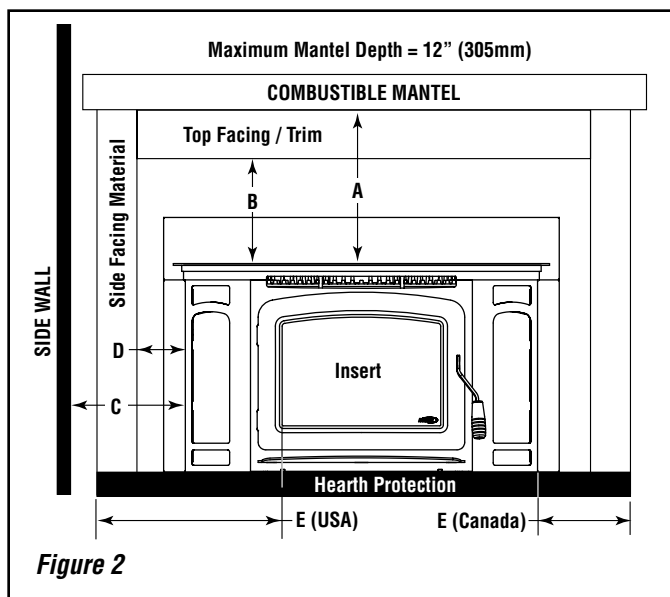
① Without use of adjustable offset box or smoke deflector

Table 1 - Fireplace Sizing

Also see appliance dimensional views on **Page 7** (see **Figure 5**).

Hearth Extension / Thermal Protection Requirements			
Bottom Clearance	Thermal Protection Thickness	Hearth Extension Depth	
		USA	Canada
0" (0mm)	1-1/2" (38mm)	16" (406mm)	18" (450mm)
4-1/2" (114mm)	1/2" (13mm)	18" (450mm)	18" (450mm)
7-1/2" (191mm)	0" (0mm)	16" (406mm)	18" (450mm)

*Distance between hearth and the bottom of the appliance



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

SPECIFICATIONS - MONTLAKE™ 230

Product Reference Information			
<i>Cat. No.</i>	<i>Description</i>	<i>Ship. Weight</i>	<i>Ship. Volume</i>
H8658	Montlake 230 Wood-Burning Insert	390 lb.	26.6 cu. ft.

Notes:

- Dimensions shown are approximations only (+/- 1/4")
- Diagrams, illustrations and photographs are not to scale – consult installation instructions. Product designs, materials, dimensions, specifications, colors and prices are subject to change or discontinuance without notice.
- Approved for residential and manufactured home installations.
- Optional Kits Available:
Door Trim Kit

1 Square-foot heating capacities and burn times are approximations only. Actual performance may vary depending upon home design and insulation, ceiling heights, climate, condition and type of wood used, appliance location, burn rate, accessories chosen, chimney installation and how the appliance is operated.

Specifications

Listing

Flue Size	6" (152 mm)
Log Length	16" W x 18" D Max. (406mm W x 457mm D Max.)
Firebox	17" W x 19" D x 12-1/2" H Max. (432mm W x 483mm D x 318mm H Max.) Volume = 2.3 cu. ft.
Glass Viewing Area	16-1/2" W x 11-5/16" H (419mm W x 287mm H)
EPA Test Load: Cord Wood: ❶	28,200 BTUs/hr. 76,000 BTUs/hr.
Maximum Burn Times ❶	12 hours
Heating Capacity ❶	1200 to 2200 sq. ft.
EPA Grams Per Hour	3.6 gr/hr
EPA Phase II and Washington State Approved	



The Montlake™ Model ML230 wood-burning fireplace insert is safety listed with the following agency:

- *Intertek, Tested to UL 1482, ULC S628*

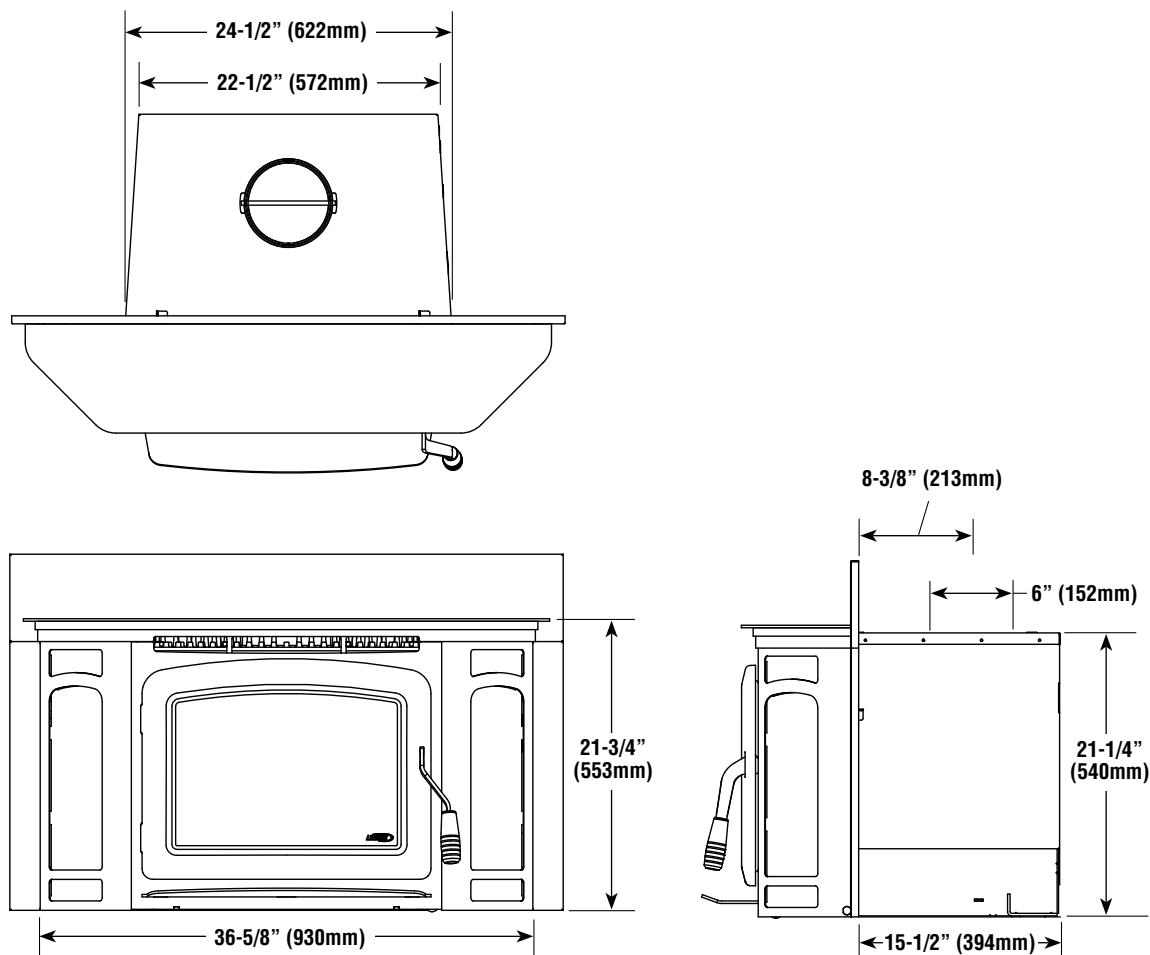


Figure 5

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

HEARTH PROTECTION

The hearth/floor protection must be a thermally rated non-combustible material meeting or exceeding a thermal rating of $k=.47$ with a listed thickness of 1-1/2" (38mm). The covering must extend to the front, a minimum of 16" (406mm) in the USA and 18" (450mm) in Canada. It must extend to the sides a minimum of 8" (200mm) in the USA and Canada (measured from the door opening in the USA and measured from the side of the unit in Canada).

To calculate the minimum thickness required for alternate material use either the **k formula** or **r formula** shown below.

Reference information

k_M = k value per inch of **alternate** material
 r_M = r value per inch of **alternate** material
 T_M = minimum thickness required for **alternate** material
 T_s = standard thickness of the **alternate** material

k_L = k value per inch of **listed** material
 r_L = r value per inch of **listed** material
 T_L = minimum thickness of **listed** material

Note: An asterisk "*" in formula below indicates it is a value taken from **Table 2**.

k formula:

Example using k formula: If Micore 160 Mineral Fiber Board is to be used for the floor protection, what is the minimum thickness required?

Minimum thickness of alternate material (T_M)	=	$\frac{k\text{-value (per Inch) of alternate material } (k_M)}{k\text{-value (per inch) of listed material } (k_L)}$	x	Specified min. thickness of listed material (T_L)
T_M (inches)	=	$\frac{* k_M}{* k_L}$	x	$* T_L$
T_M (inches)	=	$\frac{* .35}{* .48}$	x	$* 1.5"$
1.092 (inches)	=	.728	x	$* 1.5"$

Answer - The minimum required thickness of the Micore 160 is 1.094" therefore round up to nearest standard thickness available which is 1.125" (1-1/8")

r formula:

Example using r formula: If Micore 160 Mineral Fiber Board is to be used for the floor protection, what is the minimum thickness required?

Minimum thickness of alternate material (T_M)	=	$\frac{r\text{-value (per Inch) of listed material } (r_L)}{r\text{-value (per inch) of alternate material } (r_M)}$	x	Specified min. thickness of listed material (T_L)
T_M (inches)	=	$\frac{* r_L}{* r_M}$	x	$* T_L$
T_M (inches)	=	$\frac{* 2.08}{* 2.86}$	x	$* 1.5"$
1.092 (inches)	=	.728	x	$* 1.5"$

Answer - The minimum required thickness of the Micore 160 is 1.094" therefore round up to nearest standard thickness available which is 1.125" (1-1/8")

Listed Material			
	k (per inch)	r (per inch)	Listed Min. Thickness
Listed Material	.48 k_L	2.08 r_L	1-1/2" (1.5") T_L
* Approved Alternate Materials for Floor/Hearth Protection			
Alternative Materials	Thermal Values		Minimum Thickness (rounded to nearest 1/8 inch)
	k (per inch) k_M	r (per inch) r_M	Min. Thickness T_M
Kaowool M Board	.47	2.13	1.469" (1-1/2")
Micore 160™ U.S. Gypsum	.35	2.86	1.094" (1-1/8")
Micore 300™ U.S. Gypsum	.46	2.17	1.438" (1-1/2")
Durock™ Cement Board U.S. Gypsum	1.92	.52	6.000" (6")
Hardibacker™	1.95	.51	6.094" (6-1/8")
Hardibacker 500™	2.30	.43	7.188" (7-1/4")
Cultured Stone Hearth-stone™	2.82	.35	8.813" (8-7/8")
Wonderboard	3.23	.31	10.090" (10-1/8")
Super Firetemp M Johns-Manville	.61	1.64	1.906" (2")
Super Firetemp L Johns-Manville	.54	1.85	1.688" (1-3/4")
Face brick	9.00	.111	28.125" (28-1/8")
Common brick	5.00	.20	15.625" (15-5/8")
Cement mortar	5.00	.20	15.625" (15-5/8")
Ceramic tile	12.5	.08	39.063" (39-1/8")
Marble	~11	~.09	34.375" (34-3/8")
Table 2			

* If the hearth extension material(s) that is intended to be used is NOT listed in Table 2, the material can still be used if the material(s) is a thermally rated noncombustible material. However, the manufacturer of the material must provide either the listed k-value per inch or r-value per inch with listed thickness so that the minimum thickness required for the floor protection can be calculated (per instructions here or as specified in the NFI Certification Manuals).

INSERT INSTALLATION

NOTE: LENNOX HEARTH PRODUCTS RECOMMENDS PROFESSIONAL INSTALLATION BY A LICENSED AND BONDED INSTALLER. SEE YOUR DEALER FOR RECOMMENDATIONS. IMPROPER INSTALLATION OR MIS-USE WILL VOID YOUR WARRANTY AND CREATE A SERIOUS SAFETY HAZARD.

This appliance is approved for use in a masonry fireplace built to UBC Chapter 37 or equivalent with a minimum 25" (635mm) opening at the front of the fireplace.

In residential applications, this appliance may be installed in a bedroom in the United States.

These heaters are designed to be installed into an existing masonry fireplace (built to UBC 37 or ULC S628 standards) or factory-built, solid-fuel and wood-burning fireplaces (listed to UL 127 or ULC S610) only.

Approved with or without positive flue connection. Approved with minimum 6" (152 mm) diameter stainless steel listed reline system. Country® Collection wood-burning inserts are tested to UL 1482 / ULC S628 and listed by Intertek Testing Services, Portland, OR.

MASONRY FIREPLACE PRE-INSTALLATION PREPARATION

Remove any doors or screen materials from the fireplace opening. Remove the damper mechanism completely. Also remove grates or ember catches inside the fireplace hearth. If your fireplace is equipped with a smoke shelf or baffle and if it interferes with the installation it may be removed. Do not remove brick or mortar from masonry fireplace to accommodate insert.

Check all clearances for the flue connection prior to starting the install to ensure proper alignment. 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.

FACTORY-BUILT ZERO CLEARANCE FIREPLACES – INSTALLATION PREPARATION

Fireplace and Chimney Requirements

This appliance must only be installed in a zero clearance factory-built fireplace using 6" (152mm) stainless steel pipe extending from the insert's flue into the chimney of the fireplace. For optimum safety and performance we recommend a full length stainless steel liner directly connected to the insert's flue outlet. This appliance must only be installed in a zero clearance factory-built fireplace that is structurally sound. Fireboxes or chimneys that have flaws, burn-outs, or warping must be replaced or repaired prior to installation. Check with your fireplace manufacturer if any problems exist. All convection vents and louvers must be left unmodified and unobstructed.

This appliance can only be installed in the factory-built fireplaces listed to UL 127 or CSA S610.

The fireplace cavity must be no smaller than 36" (914 mm) in width, 21-1/2" (546 mm) in height and 15-1/2" (394 mm) in depth. Installations into other brands of the same size is permissible only with approval from local building officials.

Modifications allowed to the factory-built fireplace are as follows:

- Remove the damper
- Remove the smoke shelf or smoke baffle
- Remove ember catches
- Remove viewing screen/curtain
- Remove side and rear bricks
- Remove the fire grate
- Remove doors

The factory built chimney must be listed per UL 127 (US), and meet type HT requirements of UL 103 (US). Factory built fireplace chimneys tested to UL 127-1998 (or later), may be at the fireplace manufacturer's option, tested to the same criteria as UL 103HT requirements. If the chimney is not listed as meeting HT requirements, or if the factory built fireplace was tested prior to 1998, a full height listed chimney liner must be installed from the appliance flue collar to the chimney top. The liner must meet type HT requirements (2100°F) per UL 1777 (US). The liner must be securely attached to the insert flue collar and the chimney top. To prevent room air passage to the chimney cavity of the fireplace, seal either the damper area around the chimney liner with high temperature sealant or the fireplace with fiberglass batting.

FACTORY BUILT FIREPLACE WARNING TAG

The fireplace must not be altered, except for the exceptions listed above. The permanent metal warning label provided must be attached to the back of the fireplace, stating that the fireplace may have been altered to accommodate the insert, and must be returned to original condition for use as a conventional fireplace.

Note: Secure the tag using screws or nails to the fireplace

WARNING

THIS FIREPLACE HAS BEEN ALTERED TO ACCOMMODATE A FIREPLACE INSERT AND SHOULD BE INSPECTED BY A QUALIFIED PERSON PRIOR TO RE-USE AS A CONVENTIONAL FIREPLACE.

Figure 6 - Fireplace Warning Label

CHIMNEY LINER INSTALLATION

IMPORTANT NOTE: See Draft Requirements and Selecting a Proper Venting System on **Page 4** to assist you in choosing the proper venting system for your installation.

WARNING: CHIMNEY CONNECTOR MUST BE IN GOOD CONDITION AND KEPT CLEAN. DO NOT INSTALL DAMAGED PARTS.

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 adaptors or flue offsets and slide the liner up as far as necessary for the bottom piece to clear the insert during installation.

In Canada, This fireplace insert must be installed with a continuous chimney liner of 6" diameter extending from the fireplace insert to the top of the chimney. The chimney liner must conform to the Class 3 requirements of CAN/ULC-S635, Standard for Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents, or CAN/ULC S640, Standard for Lining Systems for New Masonry Chimneys.

POSITIVE FLUE CONNECTION (REQUIRED IN CANADA)

A positive flue connection is providing a seal between the vent pipe or liner and the existing fireplace chimney for the purpose of preventing room air passage to the chimney cavity of the fireplace. There are different approved methods to achieve this. See *Direct Connect Positive Flue Connection* on this page.

Direct Connect Positive Flue Connection

See the following instructions for approved methods of achieving a positive flue connection - See **Figure 8**.

A qualified installer should evaluate the existing fireplace to determine the best method for achieving a positive flue connection between the vent pipe or liner and the existing fireplace chimney. The most common method for achieving a positive flue connection in masonry fireplaces is to secure a seal-off plate (i.e. 22-gage sheet steel) in the fireplace throat using masonry screws. Other acceptable methods include packing noncombustible material (i.e. high temp fiberglass or ceramic insulation) around the vent pipe or using a flue adaptor. Whatever "seal off" method is used, it must effectively seal the area to prevent room air passage to the chimney cavity of the fireplace.

Alternate Flue Liner Attachment Method (for short fireplace installations)

For shorter fireplace firebox installations, where it may be difficult to attach the liner to the flue collar on top of the insert, you can complete the final liner attachment from within the insert firebox as follows:

1. Remove the screw, bracket and inner collar as shown below.
2. Using 3 screws, secure the liner to the inner collar.
3. From within the insert firebox, pull down the inner collar (with liner attached).
4. Reassemble the components as shown below.

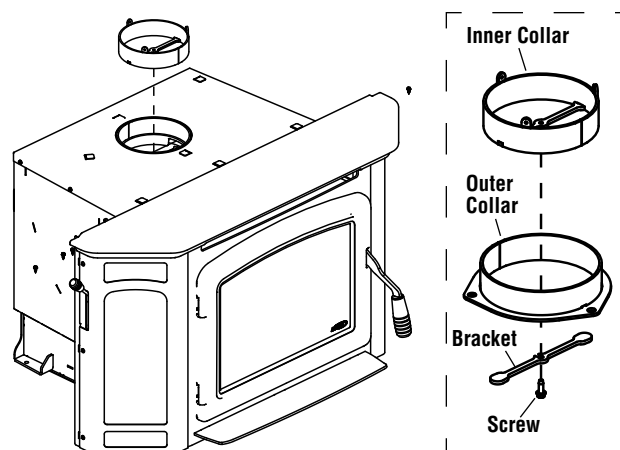
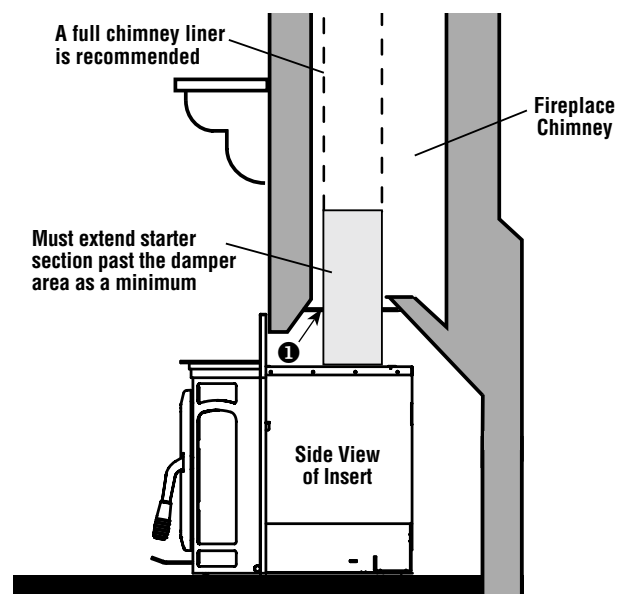


Figure 7

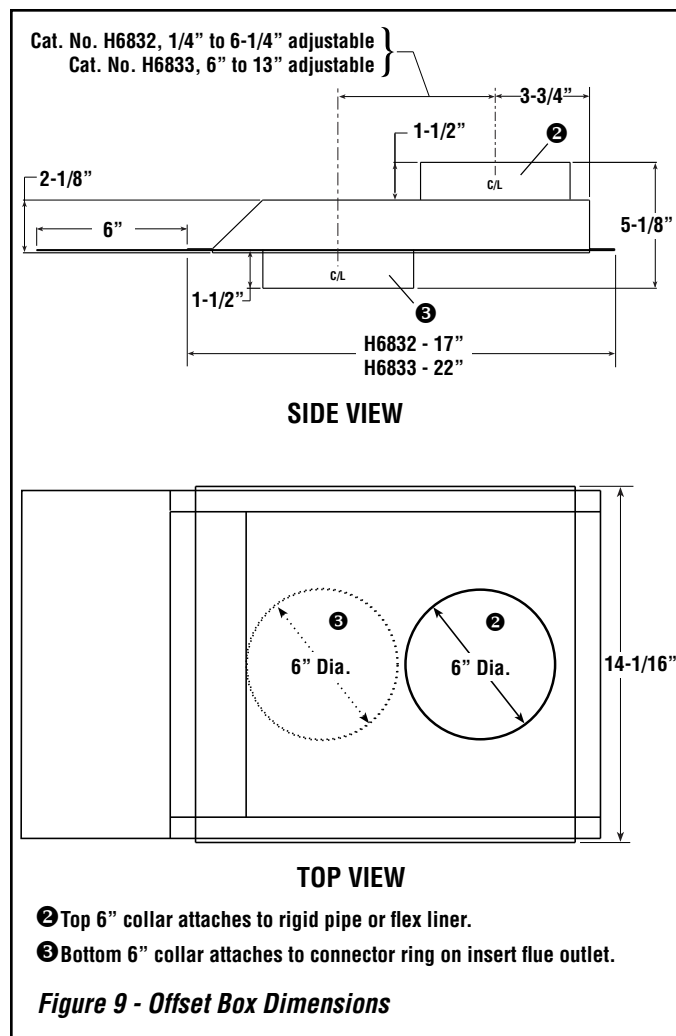


① A non-combustible seal is required at the damper area (to prevent dilution air from entering the chimney). See *Direct Connect Positive Flue Connection* on this page. A seal-off plate method is shown here.

Figure 8 - Positive Flue Connection

Offset Boxes

Offsets can be handled using an offset box (it aligns flue outlet of insert with the fireplace flue (see **Figures 9 and 10**). Care should be used to ensure that this adjustable offset box is oriented so it does not angle down when positioned on the insert flue outlet (level or slightly up at the outbound end is recommended).



INSTALLATION PROCEDURE FOR MASONRY AND FACTORY-BUILT FIREPLACES

READ THE ENTIRE INSTALLATION INSTRUCTIONS AND CHECK ALL REQUIRED CLEARANCES PRIOR TO INSTALLING THIS APPLIANCE.

WEAR GLOVES DURING INSTALLATION IN CASE OF SHARP EDGES ON THE FIREPLACE.

⚠ CAUTION



SHARP EDGES - WATCH YOUR FINGERS

Wear gloves to guard against any sharp metal edges.

Position Insert and Connect Venting

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" (13 mm) from the face of the fireplace where the surround panels cover. Lower the chimney and make attachment to the insert.

Leveling the Insert in the Fireplace

The leveling leg access holes are accessible from inside the firebox. Break away both cover plates and insert the leveling bolts (provided in manual pack). Level the fireplace insert by using a 9/16" socket to adjust the bolts. The leveling bolts are 1" in length and combined with minimal clearance in the firebox, only allows for 1/2" adjustment. If more adjustment is needed, longer 3/8-16 UNC bolts can be used at the appropriate lengths. For installs where the fireplace bottom is sloped down toward the back, refractory brick can be used to first level the fireplace floor prior to installing the insert.

Installing Surround Panels and Insert Top

Once the insert is in place and the venting has been connected, install a surround panel kit to cover the exposed fireplace opening. For factory-built fireplace installations, you must leave 1/4" space between the surround panels and the fireplace front. After installing the surround panels, install the insert top warming surface.

Installing Front Support

If front support is necessary, use Part# H8675 to support the front of the insert and fill the space between the hearth and the insert bottom. Leveling legs can be used to support the front of the insert and can be inserted into two 3/8-16 holes located under the front of the firebox.

Notes:

- Although not required, a full-length stainless steel liner is recommended for optimum safety and performance. If a full-length liner is not used and a consistent draft cannot be maintained during operation, it may be necessary to use a full-length liner. See your Lennox Hearth Products dealer for details.
- When installing your fireplace insert with a positive flue connection into a factory-built fireplace, be sure to leave the insulation off the surround panels (flanges) and leave a 1/4" (6 mm) airspace insulation off the surround panels and the facing of your fireplace.
- This appliance may be vented into a code-approved masonry chimney with flue liner.
- It is necessary to permanently seal any opening between the masonry of the fireplace and the facing masonry.

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

MANUFACTURED HOME INSTALLATIONS

This appliance is approved for installation into a manufactured (mobile) home. Installation should be in accordance with the Mobile Home Construction and Safety Standard, Title 24 CFR, Part 3280 (in Canada CAN/CSA Z240 MH), or, when such a standard is not applicable, the Standard for Mobile Home Installations, ANSI A225.1.

The appliance must be secured to the floor of the fireplace and grounded to the chassis of the mobile home.

WARNING: DO NOT INSTALL IN SLEEPING ROOM OF A MOBILE HOME.

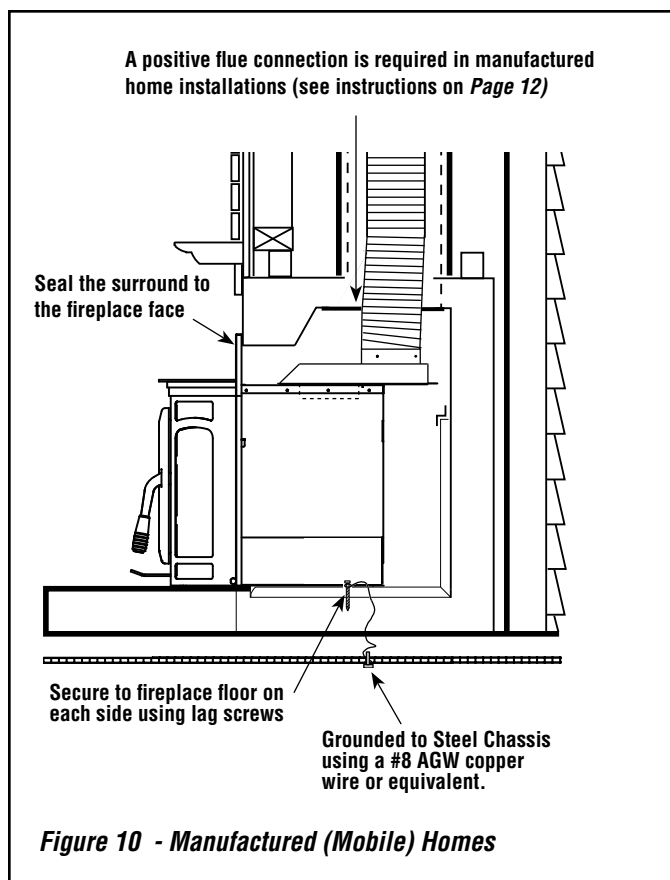
CAUTION: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.

Approved Chimney Liner - Flexible or Rigid 6" Stainless Steel 2100°F HT Liner listed to UL-1777 (US) or ULC-S635 (Canada).

YOUR CHIMNEY LINER INSTALLATION MUST COMPLY WITH LOCAL BUILDING AND FIRE CODES.

Outside Combustion Air

In Manufactured (mobile) Home installations, outside combustion air is required. This can be achieved by sealing the surround assembly to the fireplace face (and anywhere else that room air may enter the firebox of the fireplace). A positive flue connection is also required (see instructions on **Page 10**). This will ensure combustion air is drawn through the existing fireplace air duct from outside the house and into the air intake on the lower back of the appliance.



Factory Built (ZC) Fireplace
Built to UL-127 (US) or ULC-S610 (Canada) Standards

Requires a minimum of a positive flue connection (*Figure 8*) in the USA. In Canada, a full length stainless steel flue liner is required.

Approved Liner -
6" - 2100°F HT Liner listed to
UL-1777 (US) or ULC-S635
(Canada)

Flexible or Rigid 6"
Stainless Steel
Liner

Remove Fireplace
Damper Or
Secure Open

Secure liner to flue
outlet using three
sheet metal screws

Shown with offset
box installed (see
Offset Boxes on
Pages 10 and 11)

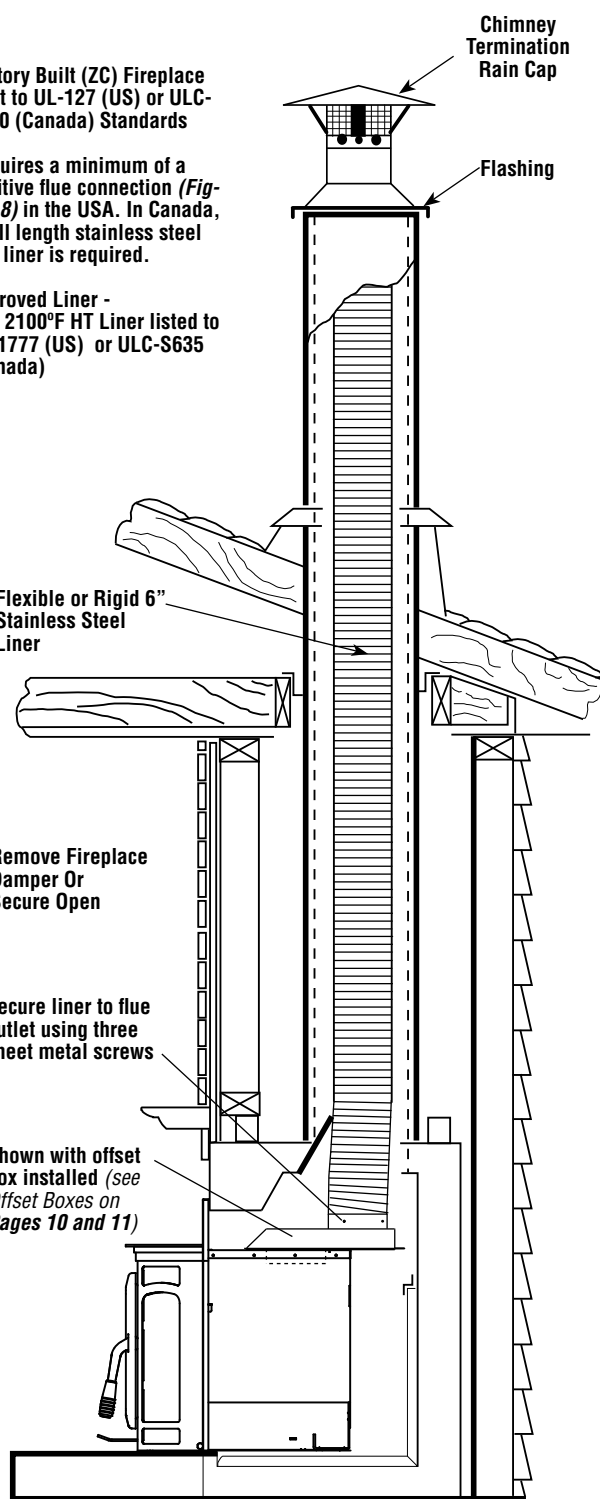


Figure 11 - Typical Installation - Factory Built Fireplace

Masonry Fireplace -
Built to UBC Chapter 37
Standards

Requires a minimum of a positive flue connection (*Figure 8*) in the USA. In Canada, a full length stainless steel flue liner is required.

Approved Liner -
6" - 2100°F HT Liner listed to
UL 1777 (US) or ULC S635
(Canada)

Flexible or Rigid 6"
Stainless Steel
Liner

Remove Fireplace
Damper Or
Secure Open

Secure liner to flue
outlet using three
sheet metal screws

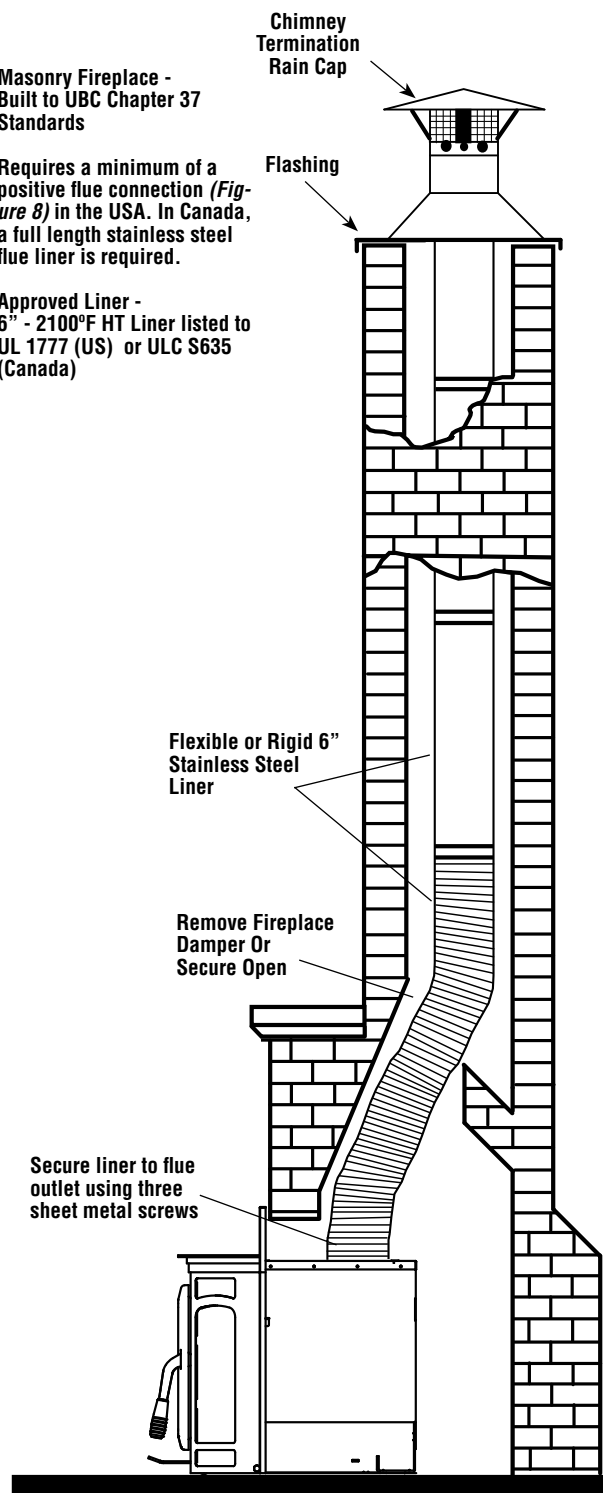


Figure 12 - Typical Installation - Masonry Fireplace

**YOUR CHIMNEY INSTALLATION MUST COMPLY WITH LOCAL BUILDING AND FIRE CODES.
INSTALL VENTING SYSTEM PER VENT MANUFACTURERS INSTRUCTIONS!**

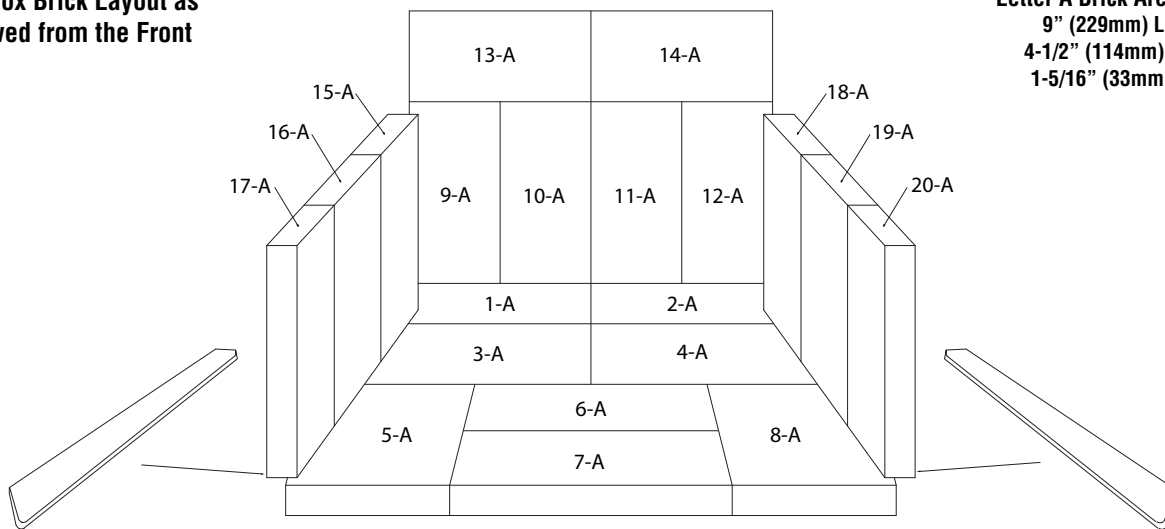
BRICK AND BAFFLE INSTALLATION

CAUTION: Wear gloves during brick installation in case of sharp edges inside the stove or insert.

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

1. Install firebox bottom brick spacers on both the left and right side of firebox. The brick spacers are located in the package with the manual. Assure that brick spacers are pushed to each side until they are in full contact with the firebox side on each side.
2. Install brick #1-20 in the numbered sequence shown in **Figure 13**.
3. Brick's 13 and 14 will be located between the steel firebox and rear baffle board (already installed).
4. Once all bricks are installed confirm that the already installed baffle boards are in there correct location and resting on the secondary burn tubes.

Firebox Brick Layout as Viewed from the Front



Letter A Brick Are Full Size
9" (229mm) Long x
4-1/2" (114mm) Wide x
1-5/16" (33mm) Thick

Figure 13

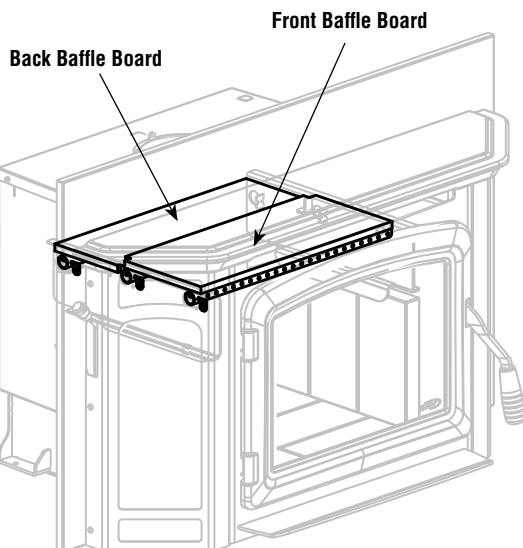


Figure 14 - Baffle Boards Installed

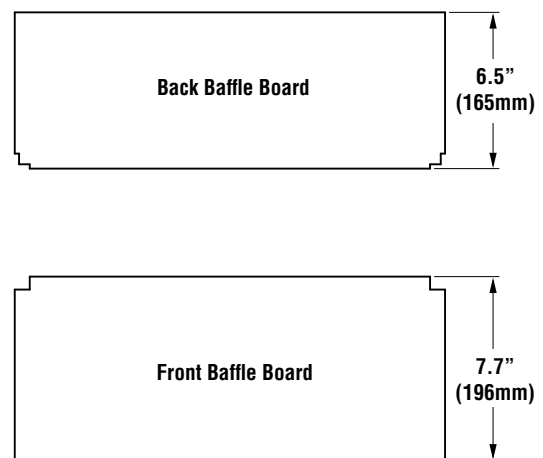
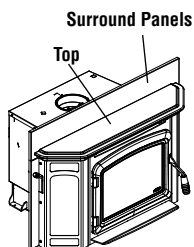


Figure 15 - Baffle Boards

POST INSTALLATION CHECKS

- ☐ Check that one of the required surround kits is properly installed per the instructions provided in kit (Instr. # 506033-76). See *Page 26* for ordering information.
- ☐ Check that one of the required top warming surface kits is properly installed per the instructions provided in kit (Instr. # 506033-75). See *Page 26* for ordering information.
- ☐ Check that all chimney pipe joints are secured and installed according to the manufacturers instruction.
- ☐ Be sure all roof flashings are watertight (if applicable).
- ☐ Ensure baffle and brick are properly installed (see *Page 14*).



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 OR INSERT. NOTIFY YOUR INSURANCE COMPANY.

ATTACHING CONTROL LABELS

Once the surround panels are in place, apply the included control labels as shown in *Figure 16*.

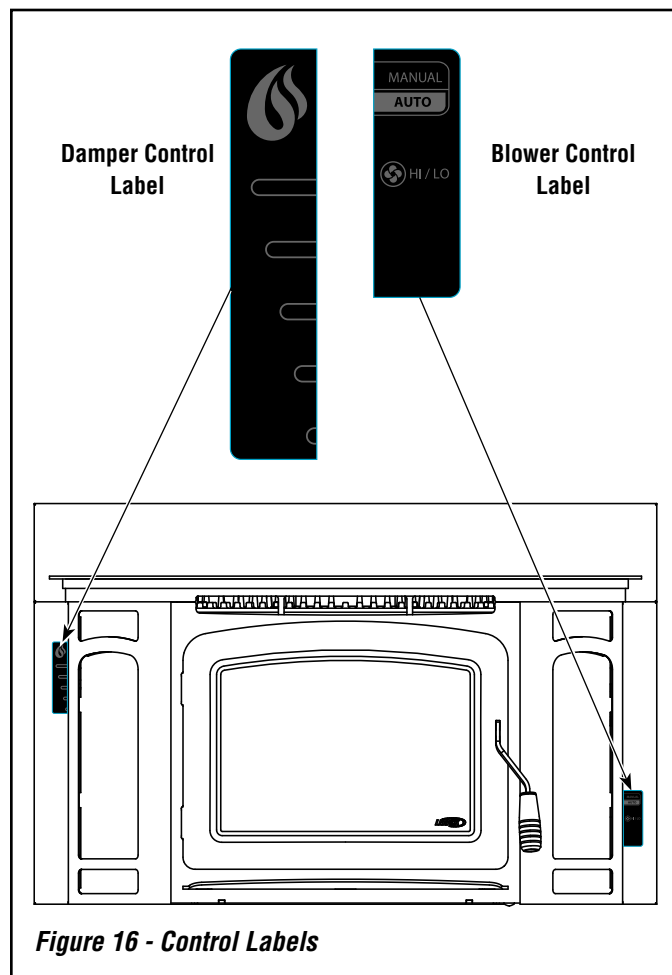


Figure 16 - Control Labels

PAINT CURING

If your appliance has plated accessories, be sure to clean it with a household type glass cleaner and a very soft cloth to remove any fingerprints and residues prior to the first fire and before any fire if the plated accessory has been handled or soiled. Do not close the door tightly during the "Burn-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 or fireplace insert during the curing process.

Your new appliance is painted with a high temperature paint that cures during the first few firings. We recommend that you put your stove or fireplace insert through a regimen of three burns. The first two should last for 20 minutes each at 250 degrees (the stove or fireplace insert 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. During these first burns, open the appliance door frequently to help prevent the door gasket from adhering to the appliance. After the stove or fireplace insert 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 OR INSERT.** Spray can touch-ups should be done only with a high temperature stove paint (cat. no. H8159), available from all Lennox Hearth Products dealers.

BURN-IN PERIOD

Please be patient with the heat output of your stove or fireplace insert 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 or fireplace insert and may make it difficult to start. **(DO NOT OVERFIRE THE STOVE OR INSERT DURING THIS PROCESS. IF THE STOVE OR INSERT OR CHIMNEY BECOMES RED, REDUCE THE AMOUNT OF AIR ENTERING THE STOVE OR INSERT IMMEDIATELY).**

OPERATING HINTS

1. Burn only dry, well-seasoned cord wood. In some states it is illegal to burn wet wood or anything other than clean, dry wood products.
2. Your stove or fireplace insert is designed to operate with the door closed! Operate only with the door shut tightly at all times except when loading wood and possibly on start up to establish a draft. Never leave the unit unattended while the front door is opened.
3. **DO NOT** hit or move the baffle board while loading wood. Occasionally check the baffle. Loading oversized logs may dislodge the baffle boards.

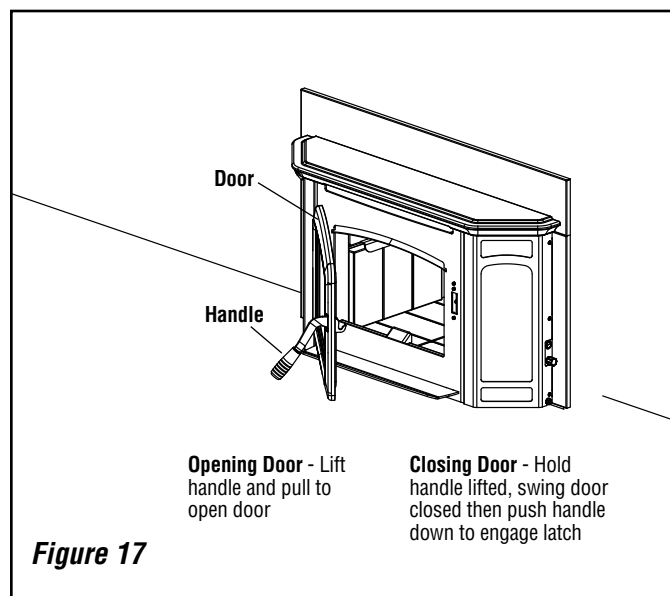
4. **CAUTION: THE DRAFT CONTROL MUST BE FULLY OPEN BEFORE OPENING THE DOOR TO AVOID POSSIBLE COMBUSTION FLASH!!** (Ignition of hot volatile gases as the door is opened).
5. Feeding excessive amounts of fuel to the stove or fireplace insert should be avoided. It is important to supply it with sufficient draft and fuel to maintain a moderately hot fire. If, during overnight burns, heavy creosote deposits develop inside your stove or fireplace insert and on the door, the draft is set too low - review your burning habits!

DOOR OPERATION

Do not operate the appliance with the door open or ajar other than possibly during start up to create a draft (Do not leave the unit unattended while the front door is slightly open during start up). Operating the appliance with the door open other than in initial start up if needed will produce extreme temperatures within the appliance. Damage caused from over-firing is not covered under the manufacturers limited warranty.

! WARNING

Be careful not to abuse door assembly by striking or slamming it. If the door assembly or glass is broken or damaged, they must be replaced with factory original parts before heater can be safely operated. Use only components provided by the manufacturer as replacement parts.



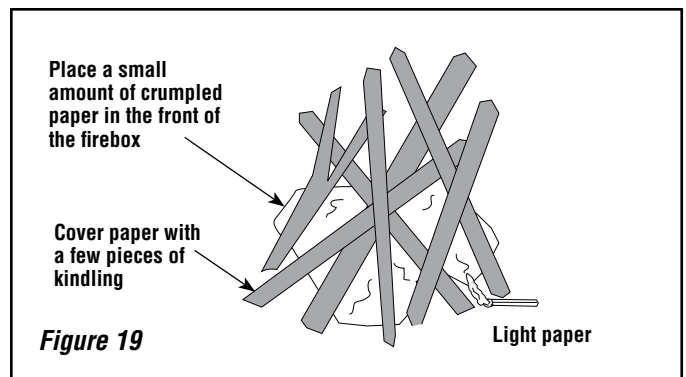
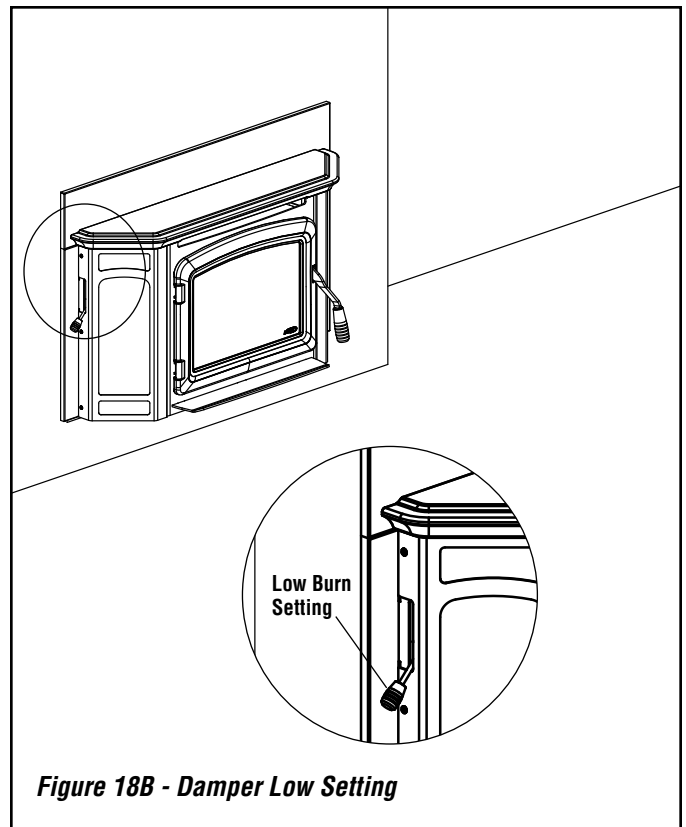
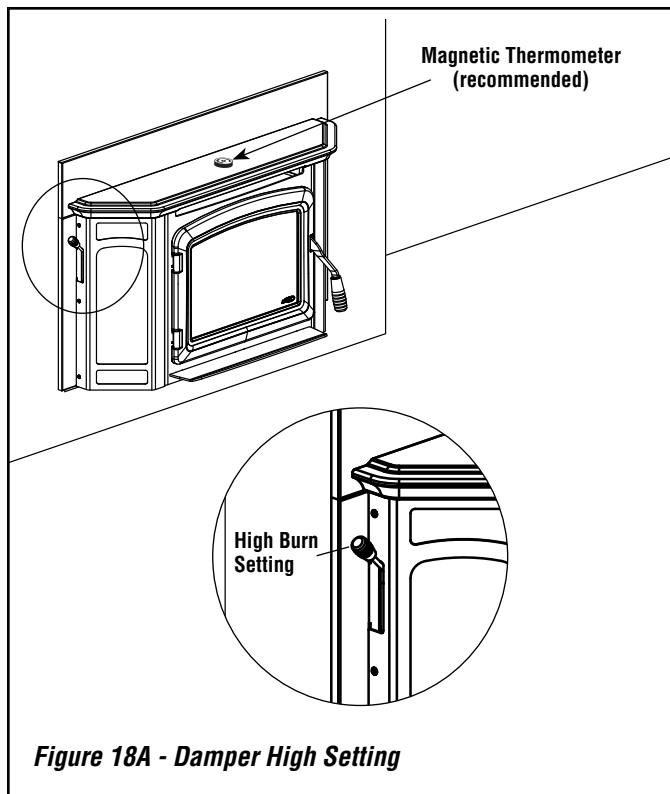
STARTING AND MAINTAINING A FIRE

1. **NEVER USE FLAMMABLE LIQUIDS TO START OR REKINDLE A SOLID FUEL FIRE!!**
2. Fully open the primary draft control by placing draft control (wood handle located on left side of the stove) in the highest position. This control determines the amount of air entering the stove. Lowering this control reduces the burn rate of the stove. For your convenience, the control is marked with five positions to assist you in obtaining repeatable burn rates.
3. Place a small amount of crumpled paper in the 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. You will now close the wood units front door. Your wood units front door may or may not need to be left slightly open during this start up process, this depends on the appliance model and the amount of draft present.
5. When operating any wood burning appliance, it is important to become familiar with how the damper control affects heat output and the overall temperature of the appliance. A stove thermometer can be a helpful tool to help ensure you are not over-firing your appliance and it will also ensure you are burning fuel at a rate that is most efficient. Place a stove thermometer on the top of the appliance as shown in **Figure 18A**. Monitor the temperature every 15 minutes or so until you become more familiar with your appliance. Close the damper all the way down if you begin to reach 400 degrees, as this is a sign that you are operating your appliance at too high a temperature.

DO NOT LEAVE THE APPLIANCE UNATTENDED WHILE THE FRONT DOOR IS SLIGHTLY OPEN.

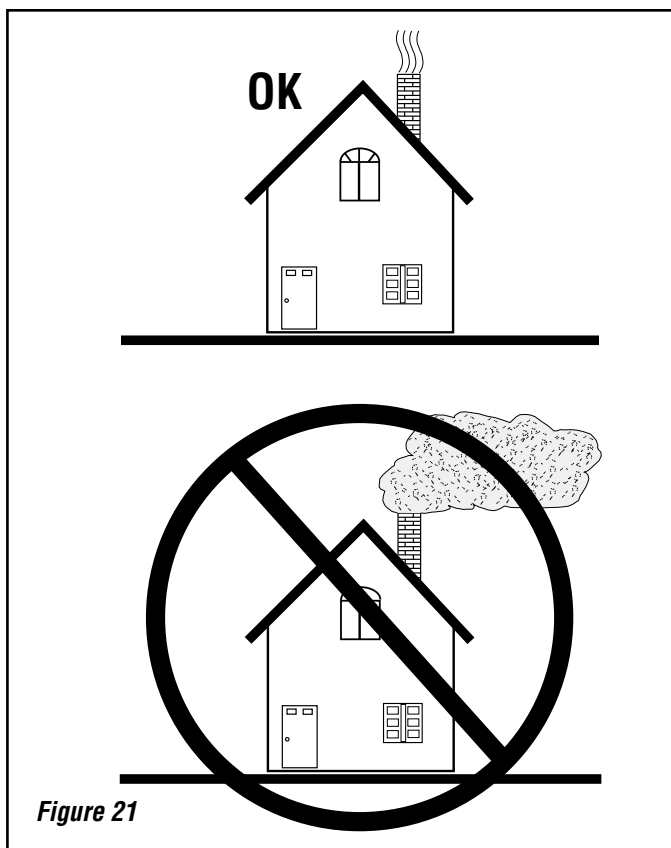
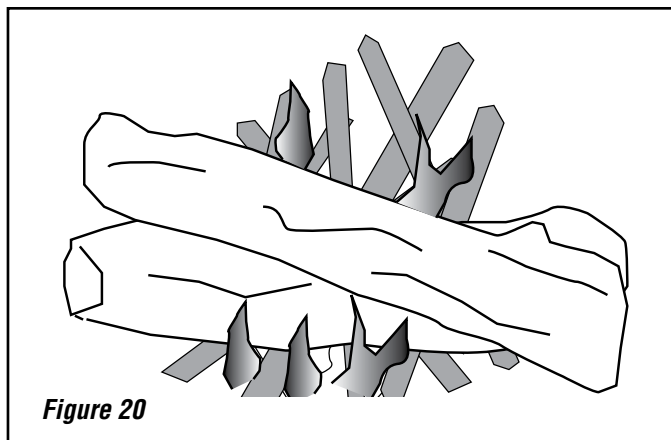
CAUTION: Do Not alter the adjustment range of the draft control for increased firing for any reason.

Operate only with fuel door closed. Maintain all seals in good condition. Do not operate with broken glass.



SEE MAINTENANCE SECTION FOR GLASS CLEANING GUIDELINES AND TIPS FOR KEEPING THE GLASS CLEAN (PAGE 22).

6. Once kindling is burning well, larger pieces of wood may be added, then the door should be fully closed if there was the need to keep it slightly open during start up.
7. For best results, use smaller pieces of wood to get the stove or fireplace insert temperature very high before loading larger wood for sustained burns. If necessary, crack the door to allow ignition of the fuel charge. Do not leave the unit unattended while the front door is slightly open. 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 (*see Figure 21*). Large amounts of smoke indicate an improper burn setting (either too high or too low). Adjust and recheck in 5 to 10 minutes.



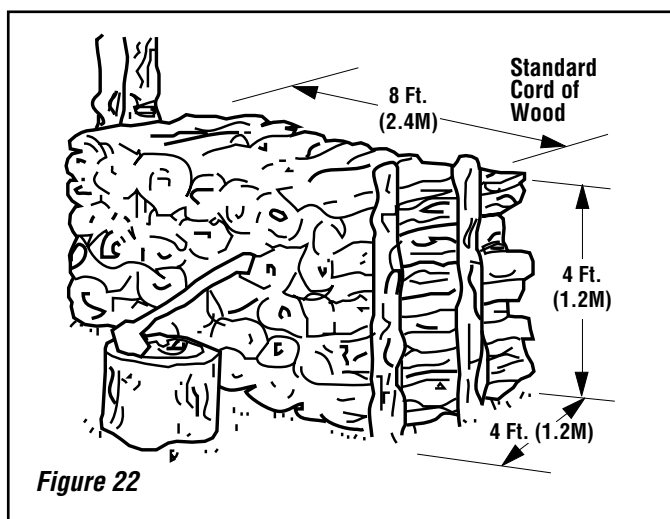
FUEL

This appliance 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 appliance 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 incorrect fuels such as flammable liquids, grease, 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.

Do Not store fuel within space heater installation clearances or within the space required for refueling and ash removal.



What does "Well-Seasoned" mean?

When a tree is cut down, the wood is green, full of sap and moisture. This moisture content can exceed 80%, which must be reduced to less than 20%. Wood properly seasoned is then capable of generating the heat the stove or insert was designed to provide.

Green wood does not burn easily. Attempting to burn green wood often results in a lot of smoke and very little fire. Time is the most important factor in seasoning wood. Ideally the moisture content should be reduced to 11-20%. **NOTE: The use of a firewood moisture meter is recommended to ensure the firewood contains less than 20% moisture.**

Seasoning Guide

Softwoods – 6 months to 18 months

Hardwoods – 12 months to 24 months

Logs that are 5" diameter across or larger should be split in half, three pieces if over 8 inches, and four pieces when over a foot across. If a tree has been dead for 2 – 4 years it still needs to be cut, split, and seasoned for 6 to 24 months depending on the wood.

GETTING THE MOST OUT OF YOUR FIREPLACE INSERT

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.

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

MAXIMIZING YOUR FIREPLACE INSERT’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 or fireplace insert, the firebrick 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 beige color. This means the firebrick have reached a high enough temperature for your appliance to achieve high combustion efficiency and you are ready to adjust the draft control to a lower setting.

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 or insert and then reduce the amount of primary air by closing the draft control down to a lower setting. (More air may produce a slightly greater amount of heat, but will greatly increase wood consumption).

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

1. Thoroughly preheat your appliance before slowing the burn rate by closing the draft control.
2. When loading wood into a preheated stove or fireplace insert, allow a vigorous fire to build before lowering the draft control.
3. Operate your stove or fireplace insert as much as possible in the low to medium burn ranges.
4. 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.
5. Do not continually operate your stove or fireplace insert in the high (wide open) setting. This wastes wood by carrying a great deal of heat up the chimney and can damage your stove or fireplace insert and chimney.
6. Go outside and check your chimney. More than a very small amount of smoke indicates wasted heat, creosote build up and pollution (*see Figure 21*).

ACHIEVING CLEAN, LONG BURNS

To achieve long burn times, after having thoroughly preheated the stove or fireplace insert, let the appliance top cool down to 250 to 325 degrees. Now load the firebox and set the draft control. At this point, you may need to burn the fireplace insert with the draft open for a few minutes to ignite the wood. All Lennox Hearth Products stoves and inserts are EPA tested for emissions at low burn with the air control completely closed. Whether or not you should burn your fireplace insert 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 or fireplace insert or fireplace insert
- Which model stove or insert you have

In order to maximize the burn time of your stove or insert you may need to experiment to get the right balance of starting temperature, wood type, and draft control setting for your particular venting configuration. Do not reload the stove or insert for long burns when the stainless secondary tubes or baffles are glowing red, or when the stove or insert is uncomfortably hot to load. This indicates the stove or insert is too hot to load for a long burn.

BLOWER OPERATION

Blower Operation

The blower can be operated manually or automatically (blower will turn on when the stove or insert is hot and turn off when the stove or insert is cool).

The rocker switch on the control panel allows you to select between manual operation or automatic operation as follows (see **Figure 23**):

MANUAL OPERATION: Turn rocker switch to the manual position (up) and adjust rheostat knob to the desired speed. The blower will have to be manually turned "OFF" by rotating the rheostat knob counterclockwise until it clicks.

AUTO OPERATION: Turn rocker switch to the "AUTO" position and the rheostat to the ON position (rotate rheostat knob clockwise until it clicks). When the stove or insert warms up, the blower will automatically turn on (adjust rheostat knob to the desired speed setting). When the stove or insert cools down, the blower will automatically turn off.

Rheostat Operation - The highest blower speed is obtained by turning the rheostat knob clockwise until it clicks "ON", then rotate towards "HIGH" to increase blower speed. Rotate the knob clockwise for a lower speed. To turn off, continue to rotate the knob counterclockwise until it clicks "OFF."

Blower Operation Guidelines

While in auto operation mode, the blower will turn off and on based on the temperature of the appliance. Auto operation ensures there is sufficient heat build-up to warm the air being moved by the blower before the blower is turned on. Likewise, when the appliance cools off, the blower is turned off to prevent circulating cool air. Depending on the size and intensity of the fire it may be necessary to adjust the blower speed accordingly to ensure uninterrupted blower operation. For example a small fire may require a slower blower speed to keep the heat output by the blower consistent. If the blower is operated in manual mode, it may be necessary to adjust the blower speed as the fire begins to burn down and the appliance is no longer hot enough to effectively heat the air moved by the blower. If the air coming from the blower feels cool, one should either decrease the blower speed or stoke the fire to build up more heat.

NOTE: Turn blower off before opening the door to load the fuel.

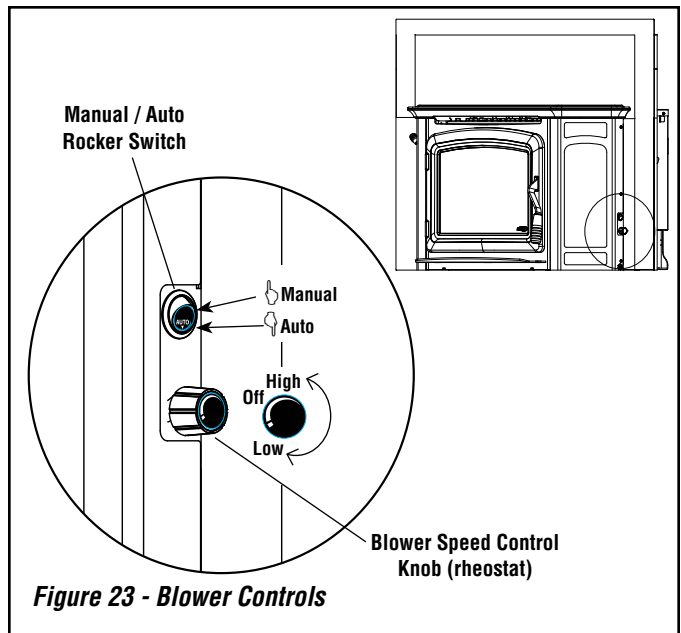


Figure 23 - Blower Controls

⚠ WARNING

The blower must be plugged directly into a properly grounded three-prong receptacle, 120 VAC, 60 Hz, single phase. Do not cut or remove the grounding prong from this plug. Do not route power cord under or in front of appliance.

Installation must be in accordance with National Electrical Code, ANSI/NFPA 70 - latest edition. In Canada, the current CSA C22-1 Canadian Electrical Code - latest edition.

DANGER: Disconnect power before servicing blower.

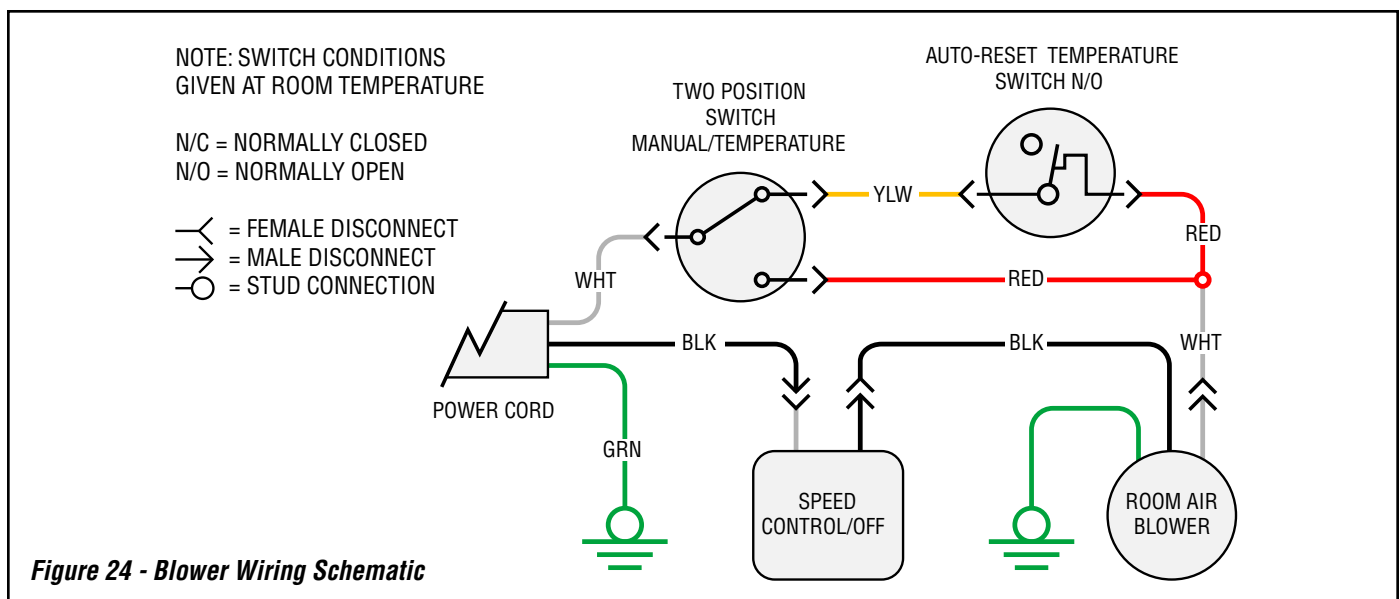


Figure 24 - Blower Wiring Schematic

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

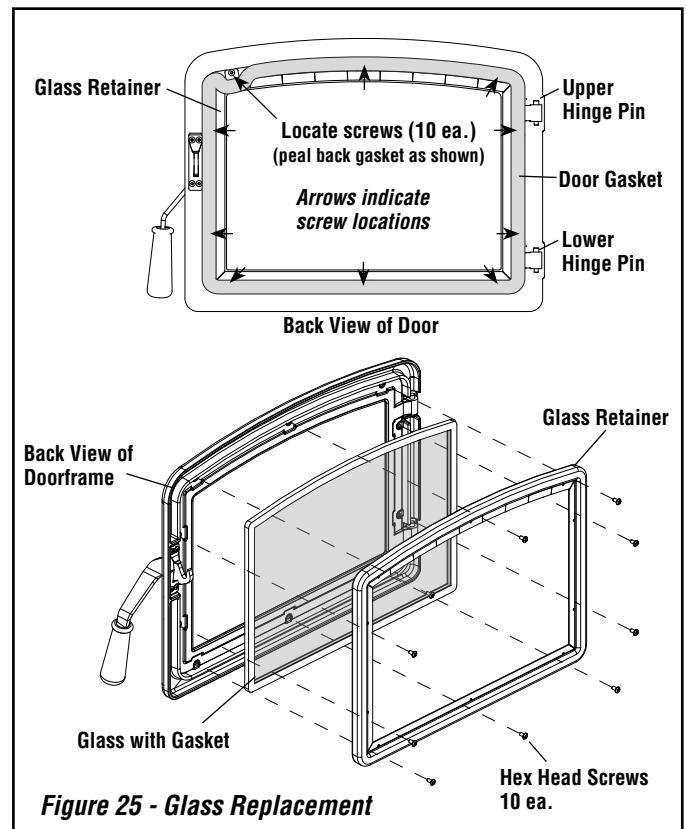
DO'S AND DON'T

- DO NOT:** Install or operate the stove or fireplace insert before reading this manual.
- DO NOT:** Close the draft beyond the point at which the flames are completely extinguished.
- DO NOT:** Open the stove or fireplace insert door without fully opening the draft first.
- DO NOT:** Burn driftwood or wood that has been in salt water. This includes 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 Door Trim 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 Burn-In period.
- DO:** Be sure to clean any fingerprints from optional accessories that have plated surfaces before burning the appliance. Clean the plated surfaces only with household type glass cleaner and a very soft cloth.
- DO:** Consult local building department if other than recommended clearances are desired.
- DO:** Read instructions for the baffle boards occasionally to ensure you have not bumped or moved them out of place when loading wood.
- DO:** Check the chimney and baffle monthly to make sure they are clean.
- DO:** Burn seasoned, dry wood only! (RAIN = WET WOOD)
- DO:** Open the door frequently during Burn-In period to keep gasket from adhering to the curing paint.
- DO:** Enjoy the warm feeling of your new Lennox Hearth Products appliance.

MAINTENANCE

GLASS REPLACEMENT INSTRUCTIONS (Refer to *Figure 25*)

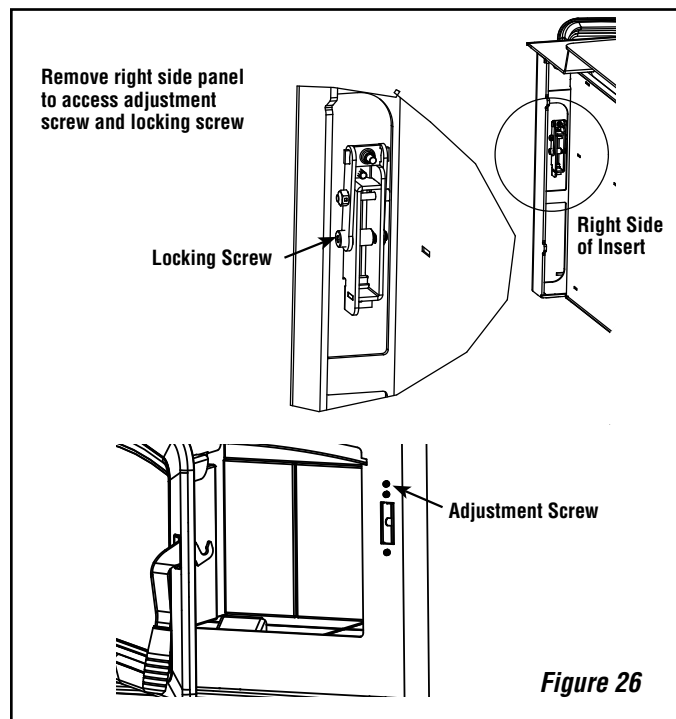
- Step 1. Remove Door Assembly** - Remove the upper and lower hinge pins by pressing the bottom of each hinge pin up, then pull out from the top. Lift off door and place face down on a soft surface.
- Step 2. Remove Glass Retainer Screws (10 ea.)** - Using an 1/8" allen wrench remove the ten glass retainer screws. To locate screws, peel back the door gasket as necessary. The screws are located by the holes in the stainless steel glass retainer strips.
- Step 3. Remove Glass** - Carefully remove broken glass one piece at a time (protective leather gloves are recommended).
- Step 4. Clean Door Frame** - Clean the area of the door frame where the new glass with gasket will be installed.
- Step 5. Install New Glass Assembly** - Install the new glass with gasket (use only factory supplied 5mm ceramic glass with gasket. **Do not substitute**).
- Step 6. Reinstall Retainer and Screws** - Carefully reinstall the glass retainer and screws. Be very careful not to overtighten the screws (this could result in glass breakage when the stove or insert is hot).
- Step 7. Reinstall Door** - Align hinges on door frame with corresponding hinge holes on the face of stove or insert. Reinstall the upper and lower hinge pins from the top.



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

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

DOOR LATCH: Adjustment Instructions - Remove the right side heat shield by loosening the 3 screws located on the side of the insert. Using a "L" shaped 5/32" allen wrench, loosen the locking screw in the latch assembly as shown in **Figure 26**. With the locking screw loosened, adjust the top 5/32" allen screw (**Figure 26**) in the front of the insert to adjust the door tension. Turning the screw to the right will tighten the door, turning the screw to the left will loosen the door. When you loosen the door it will be easiest to pull the roller pin to the full forward position and make slight adjustments to tighten to the desired tension. Assure that the tension on the front door creates a good seal between the gasket on the front door and the firebox front. After adjusting the door tension, re-tighten the lock screw and replace the side panel.



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).

PLATED ACCESSORIES: Clean only with a household type glass cleaner and a very soft cotton cloth. Other products may damage plated finish, paint and gaskets.

BAFFLE BOARDS: Your baffle boards should be inspected during every chimney cleaning. If either board is damaged then replace baffle boards.

GLASS CLEANING GUIDELINES

WARNING: DO NOT CLEAN GLASS WHEN APPLIANCE IS HOT!

Glass on any wood stove or fireplace insert will not stay perfectly clean. Here are some guidelines for cleaning and caring for the glass:

- Ensure the stove or fireplace insert is cold prior to cleaning glass.
- This appliance is designed to provide a flow of air over the inside of the glass, where along with high heat helps inhibit build-up on the glass. When build-up occurs, a commercial glass cleaner designed for stoves is recommended. Regular household glass cleaners will not clean creosote.
- Do not use abrasives such as steel pads, steel wool or oven cleaner as they will scratch the glass. Never scrape glass with a razor blade as this may pit the glass and make it impossible to clean in the future.

- Do not use chemical glass cleaners as they may damage the gaskets or painted surfaces.

TIPS FOR KEEPING THE GLASS CLEAN

- Burn only dry seasoned cord wood. Wet wood = Dirty glass.
- A short, hot fire (15 - 20 minutes) may help to clean off some of the normal buildup. Lower burns = more build-up. Higher burns = less build-up.
- Keep freshly loaded wood away from the glass.
- After reloading, allow all the wood to catch flame before dampering down the stove or fireplace insert.

Removal of the fireplace insert for the purpose of inspecting the fireplace insert and fireplace - See Page 11, Reverse installation instructions.

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 monthly during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated (1/8" [3mm] or more), it should be removed to reduce the risk of a chimney fire.

Establish a routine for the fuel, wood burner and firing technique. Check daily for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire the less creosote is deposited, and weekly cleaning may be necessary in mild weather even though monthly cleaning may be enough in the coldest months. Contact your local municipal or provincial fire authority for information on how to handle a chimney fire. Have a clearly understood plan to handle a chimney fire.

DISPOSAL OF ASHES

Ashes should be scooped out of a cool stove or fireplace insert with a small metal shovel. Ashes should be placed in a steel container with a tight fitting lid and moved outdoors immediately. Other waste shall not be placed in this container. 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 fireplace insert.

! CAUTION

Cleaning Glass: Ensure appliance is cold prior to cleaning glass. A commercial glass cleaner designed for stoves is recommended. Do not use abrasive cleaners. Do not clean with any materials, which may scratch or otherwise damage the glass. Scratches on the glass can develop into cracks or break. Inspect the glass regularly. If you detect a crack, extinguish the fire and contact your dealer for a replacement.

! WARNING

Inspect and clean chimney and connector frequently. Under certain conditions of use, creosote buildup may occur rapidly.

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 stove or fireplace inserts' draft depends solely on the natural draft of the chimney (See Draft Requirements on Page 4). If your stove or fireplace insert is not drafting properly, your chimney is the problem. All stoves and fireplace inserts 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 or fireplace insert once it has reached proper operating temperature (See Maximizing Your Fireplace inserts Overall Efficiency on Page 19).
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 (Page 22) and Fuel (Page 18) sections. 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 boards are properly installed. 2) Check the chimney for blockage due to creosote (see Creosote section on Page 22). 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 or fireplace insert 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 or fireplace insert (See Burn-In Period on Page 16). 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 Burn-In Period on Page 16).

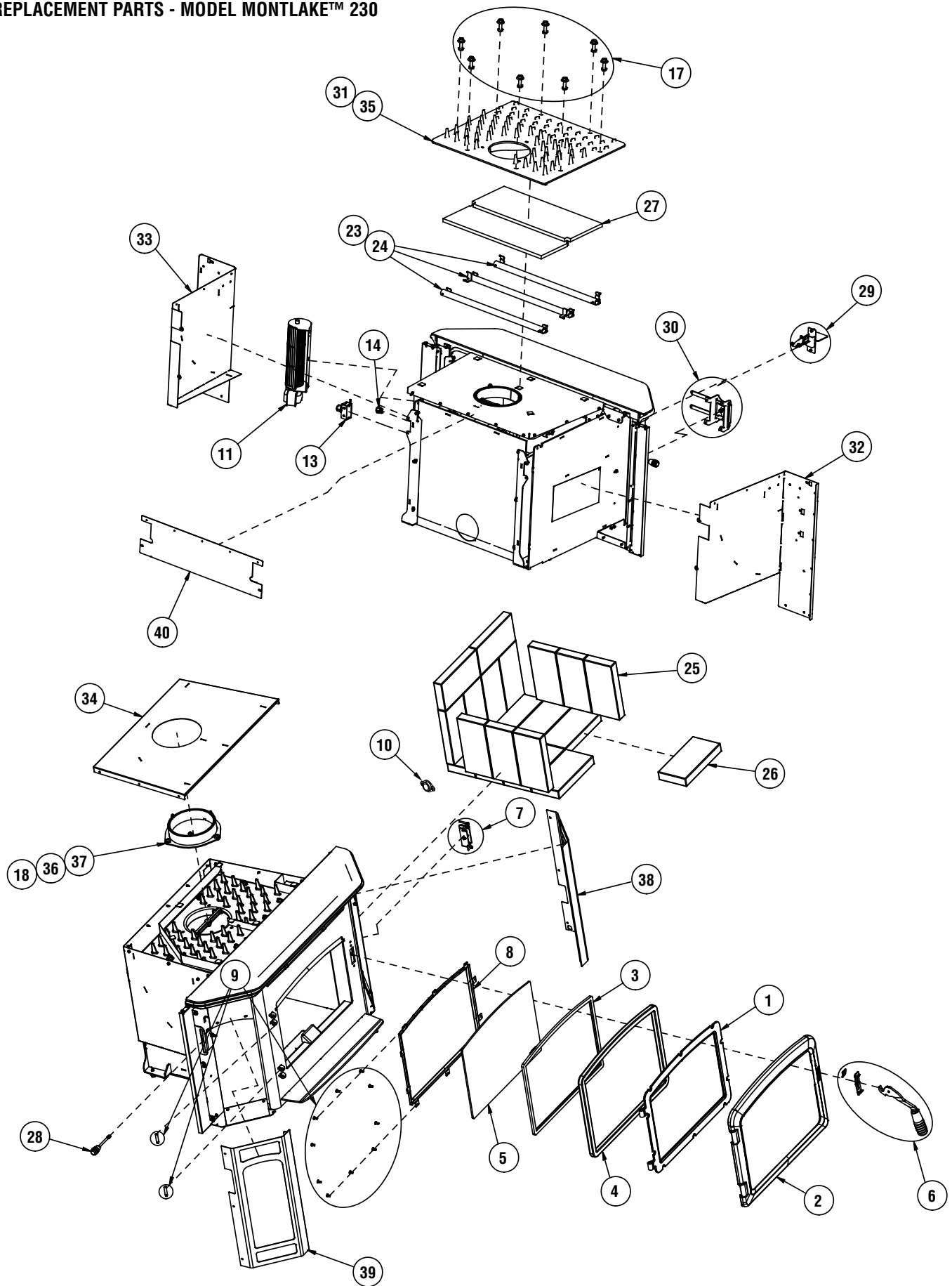
REPLACEMENT PARTS - MODEL MONTLAKE™ 230

Contact an 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.

FRONT DOOR PARTS LIST		
Item #	Cat. No	Description
1	H8365	Inner Door Frame, Cast Iron
2	H8366	Outer Door Frame, Cast Iron
3	H8380	Glass Gasket 1"
4	H5639	Door Gasket 7/8"
5	H8392	Ceramic Glass With Gasket
6	H8395	Door Handle Kit
7	H8397	Door Latch Assembly (4 button head screws and latch)
8	H8394	Glass, Retainer Kit
9	H8398	Door Hardware Kit (includes 2 pins, door roller and 10 button head screws and door set screw)
BLOWER PARTS		
10	H8682	Snap switch
11	H8683	Blower
	H8684	Wire Harness
13	H5742	Rheostat
14	H8066	Toggle Switch
MISCELLANEOUS PARTS		
	71052	Dry Graphite (apply to door handle bushing)
	H5633	Anti Seize, 2 Gram Pouch
17	H8387	Heat Exchanger Bolt Kit
18	H8388	Flue Ring Bolt Kit

MISCELLANEOUS PARTS (continued)		
Item #	Cat. No	Description
	H8390	Taptite Qty 8 (34055)
	H8391	Button Head Screw Qty 8 (34027)
	H8685	Control Labels
FIREBOX PARTS		
23	H8367	Secondary Tube Retainer Clips
24	H8373	Replacement Secondary Air Tube Kit
25	H8378	Complete Firebrick Kit (20 bricks included)
26	H5612	Firebrick 4-1/2" X 9", Each
27	H8379	Baffle Board Kit
BODY PARTS		
28	H8393	Damper Rod
29	H8396	Damper Assembly
30	H8686	Damper Assembly Linkage
31	H8369	Cast Iron Heat Exchanger (hardware included)
32	H8687	Left Side Heat Shield Assy (hardware included)
33	H8688	Right Side Heat Shield Assy (hardware included)
34	H8689	Top Heat Shield (hardware included)
35	H8377	Heat Exchanger Gasket
36	H8690	Flue collar base (hardware included)
37	H8691	Flue collar insert (hardware included)
38	H8692	Right side front panel
39	H8693	Left side front panel
40	H8725	Rear Heat Shield (hardware included)

REPLACEMENT PARTS - MODEL MONTLAKE™ 230



NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

ACCESSORIES - MODEL MONTLAKE™ 230

Cat. No.	Model	Description
TOP WARMING SURFACE KITS (ONE REQUIRED)		
H8673	TOP-STEEL-ML230	Steel Top - Montlake™ 230
H8674	TOP-CASTIRON-ML230	Cast Top - Montlake 230
DOOR TRIM KITS		
H8346	DRTRM-GV230-NKL	Door Trim, Nickel
H8347	DRTRM-GV230-BRNKL	Door Trim, Brushed Nickel
SURROUND KITS (ONE REQUIRED)		
H8677	ML230-FP2641	Surround Kit, 26-1/2" X 41" Black - Montlake 230
H8678	ML230-FP2648	Surround Kit, 26-1/2" X 48" Black - Montlake 230
H8679	ML230-FP3141	Surround Kit, 31" X 41" Black - Montlake 230
H8680	ML230-FP3148	Surround Kit, 31" X 48" Black - Montlake 230
H8681	ML230-FPTRIM3348	Surround Kit, 33" X 48" Black Trimmable - Montlake 230
MISC.		
H8675	ZC-SUPPRT-ML230	ZC Support - Montlake 230
H8159	TSPK-B	Touch-up Spray Paint Kit, Black

Parts / Accessories	Troubleshooting	Maintenance	Operation	Installation	Planning Installation	Safety and General
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WARRANTY

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

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

REPLACEMENT PARTS

See **Page 24** 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

1508 Elm Hill Pike, Suite 108

Nashville, TN 37210

visit us at www.LennoxHearthProducts.com

1-800-655-2008

PRODUCT REFERENCE INFORMATION

We recommend that you record the following important information about your appliance. If you did not purchase your appliance directly from a Lennox Hearth Products dealer, then please call 1-800-655-2008 for the name and phone number of your nearest Lennox Hearth Products dealer who will answer your questions or address your concerns.

Your Appliance's Model Number _____

Your Appliance's Serial Number _____

The Date On Which Your Appliance Was Installed _____

Your Dealer's Name _____

NATIONAL
FIREPLACE
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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).



NATIONAL
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INSTITUTE



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Nous recommandons que nos pôles à bois 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).



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

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