



# Green Mountain Insert 70

(Model 8450)

## Wood Fireplace Insert

### OWNER'S MANUAL

#### Installation And Operating Instructions



Safety tested according to ULC S628,  
UL 737 and UL 1482 Standards  
by an accredited laboratory

**CONTACT LOCAL AUTHORITIES WITH  
JURISDICTION (BUILDING  
DEPARTMENT or FIRE OFFICIALS),  
ABOUT PERMITS REQUIRED,  
RESTRICTIONS AND INSTALLATION  
INSPECTION IN YOUR AREA.**

**SAVE THIS OWNER'S MANUAL FOR FUTURE REFERENCE**

**PLEASE READ THIS ENTIRE OWNER'S MANUAL BEFORE YOU INSTALL AND USE YOUR  
NEW GREEN MOUNTAIN INSERT 70 WOOD FIREPLACE INSERT.**

**If this room heater is not properly installed, a house fire may result.**

**To reduce the risk of fire, follow the installation instructions.**

**Failure to follow these instructions can result in property damage, bodily injury, or even death.**

**Conforms to UL Std. 1482 & 737**

**Certified to ULC Std. S628**



We recommend that our  
products be installed and  
serviced by professionals who  
are certified in the U.S. by NFI  
(National Fireplace Institute).

**[www.nficertified.org](http://www.nficertified.org)**

#### **California Prop 65**



**WARNING:** This product can expose you to  
chemicals including glass wool fiber and carbon  
monoxide which are known to the State of California to  
cause cancer, birth defects or other reproductive harm.  
For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# NOTES ON INSERT OPERATION AND EFFICIENCY

## Rating:

You have purchased a HearthStone Green Mountain Insert 70 tested to CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii) and draft ASTM WK47329-14 where applicable. This insert is certified to comply with the U.S. Environmental Protection Agency 2020 particulate emissions standard using cord wood. It is certified at 1.54 gr/hr. emission rate and under specific test conditions has been shown to deliver heat at rates ranging from 14,800 to 28,600 Btu (output).

This wood heater has a manufacturer-set minimum allowable low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual.

Please refer to the Warranty section of this manual for registration instructions. In case of warranty claims, please contact the point of original sale or the nearest authorized HearthStone dealer. Our dealer network processes all warranty claims. Authorized HearthStone dealers can be located at [www.hearthstonestoves.com](http://www.hearthstonestoves.com).

This heater is designed to burn natural wood only. Higher efficiencies and lower emissions generally result when burning air-dried seasoned hardwoods, as compared to softwoods or to green or freshly cut hardwoods. **DO NOT BURN:** *Garbage, lawn clippings, material containing rubber (including tires), materials containing plastic, waste petroleum products paints or paint thinners, asphalt products, materials containing asbestos, construction or demolition debris, railroad ties, pressure treated wood, manure or animal remains, salt water driftwood or other previously salt water saturated materials, unseasoned wood, paper products, cardboard, plywood or particleboard.* This prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, sawdust, wax and similar substances for the purpose of starting a fire in an affected wood heater. Burning these materials may result in a release toxic fumes or render the heater ineffective and cause smoke.

Following the maintenance guidelines set forth in this manual will help insure the efficient use of your wood heater and minimize visible emissions. Having your insert inspected by a trained professional on a regular basis will greatly increase the potential for recognizing potential impacts to efficiency.

Proper draft is important to the efficient operation of your heater. Refer to the Normal Operation section of this manual for information regarding adequate draft. Both excessive and sub-minimum draft can affect the efficiency of your wood heater. Excessive draft can lead to over-consumption of fuel, lower overall heating capacity of the fireplace insert and potential over firing. Low draft can result in inefficient burns, low heat output, expulsion of smoke into the living area when fireplace insert doors are opened and an increased potential for build-up of flammable materials in the flue.

## Efficiency:

Efficiency was measured and weighted using CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii) and draft ASTM WK47329-14 and CSA B415.1-10 methodology. A weighted average was used to calculate the overall efficiency across all of the 4 burn rate categories using the higher heating value (HHV). The weighted average efficiency is 69% (HHV).

To maximize the efficiency of your wood fireplace insert make sure it is sized properly for the space you plan to heat. An oversized fireplace insert will often be forced to burn at a lower and dirtier burn rate. Consult with your dealer for sizing and correctly placing the fireplace insert in your home. An incorrectly placed fireplace insert can greatly reduce efficiency. Maximizing the efficiency of your fireplace insert will heat your house quickly, burn cleaner and use less wood.

Refer to the Choosing Firewood section of this manual for appropriate fuel selection. Seasoned firewood is typically at or near 20% moisture content. This can be measured with any number of hand-held moisture meters available through your local hearth shop. Follow instructions included in the meter you purchase to measure fuel wood moisture content. Burn only dry, seasoned wood as using wet wood will greatly reduce your efficiency.

## CO Emissions:

The Green Mountain Insert 70 has an average CO emission rate over all burn categories of 89.4 g/hr. Wet wood or unapproved fuel described above can greatly affect the emissions of a wood burning fireplace insert.

## Smoke/Fire/CO Detectors:

It is highly recommended that smoke and CO detectors be installed throughout the heated space when a wood burning heater is installed. Be certain to install these devices not only in the area where the wood appliance is located, but also in bedrooms, hallways leading to other areas of the house and all common areas of the heated space. Check the batteries in these devices and assure operation by performing whatever test operations are recommended by the manufacturer.

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## INTRODUCTION

Thank you for purchasing a Green Mountain Insert 70 wood fireplace insert from HearthStone Quality Home Heating Products. This fireplace insert will provide years of comfortable heat. This fireplace insert combines the warmth and comfort of soapstone and cast iron with the efficiency of advanced combustion technology. The Green Mountain Insert 70's large glass window allows you to enjoy the fire from a variety of locations in the room. We trust that you will appreciate the quality of this product.

Your Green Mountain Insert 70 wood fireplace insert burns very efficiently and produces a large amount of heat. However, you should not consider your Green Mountain Insert 70 the sole heat source for your home.

Please read this manual in its entirety. Its purpose is to familiarize you with your fireplace insert's safe installation, proper break-in, operation and maintenance. It contains extremely important information so keep it handy and refer to it often.

A qualified heating technician may need this owner's manual as a reference when installing this fireplace insert in your home. There are national, state, and local building codes that direct the technician on how to install your fireplace insert. These codes stipulate the dimension of stovepipe and clearances to walls, ceilings, hearth, and other combustible surfaces. The codes exist to reduce the risk of fire. Failure to follow these instructions can result in fire, property damage, bodily injury, and even death.

It is extremely important to install this fireplace insert with the proper clearance from combustible surfaces. You can purchase specific connector pipe and special wall coverings as specified by this manual and the NFPA 211 code to protect combustible surfaces. As a general rule, keep furniture, drapes, curtains, wood, paper, and other combustibles at least 36 inches (92 cm) away from the fireplace insert. Never install the fireplace insert in or near a storage location for gasoline, kerosene, charcoal lighter fluid or any other flammable liquids.

Install the fireplace insert in your central living area to allow heat to radiate naturally to distant rooms. Do not install your fireplace insert in a poorly insulated area. This is inefficient and would likely result in higher fuel usage.

- **SAFETY NOTICE:**

**AN IMPROPERLY INSTALLED FIREPLACE INSERT CAN RESULT IN A HOUSE FIRE. FOR YOUR SAFETY, CAREFULLY FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.**

The safety of your fireplace insert will depend on many factors, some of which include: distance to combustible objects, correct venting, and adequate chimney maintenance. Should you have any questions, do not hesitate to contact your dealer for additional information.

Contact your dealer for any necessary warranty service.

This Green Mountain Insert 70 Model 8450 fireplace insert is warranted by:

**HearthStone** Quality Home Heating Products, Inc®  
317 Stafford Ave.  
Morrisville, Vermont 05661, USA  
[www.hearthstonestoves.com](http://www.hearthstonestoves.com)

## CODES

When you install your Green Mountain Insert 70 wood fireplace insert, it is imperative that you adhere to all Federal and local codes. Obtain these codes from either of the following sources:

**American National Standards Institute, Inc. (ANSI)**  
1430 Broadway  
New York, NY 10018  
[www.ansi.org](http://www.ansi.org)

**National Fire Protection Association, Inc. (NFPA)**  
Battery March Park  
Quincy, MA 02269  
[www.nfpa.org](http://www.nfpa.org)

## SAFETY INFORMATION

**Read and understand this Owner's Manual thoroughly before installing and using this fireplace insert.**

**Make sure to install your fireplace insert:**

- According to the manufacturer's recommendations
- In accordance with all applicable codes
- With the proper sized chimney

- When installed and operated as described in these instructions, the Green Mountain Insert 70 wood insert is suitable for use in residential installations. The Green Mountain Insert 70 wood insert is not intended for installation in a bedroom.
- The information given on the certification label affixed to the appliance always overrides the information published, in any other media (owner's manual, catalogues, flyers, magazines and web sites).
- Mixing of appliance components from different sources or modifying components may result in hazardous conditions. Where any such changes are planned, HearthStone should be contacted in advance.
- Any modification of the appliance that has not been approved in writing by the testing authority violates CSA B365 (Canada), and ANSI NFPA 211 (USA).
- Connect this insert only to a listed stainless steel chimney liner for use with solid fuel.
- If required, a supply of combustion air shall be provided to the room.
- Do not connect to or use in conjunction with any air distribution ductwork unless specifically approved for such installation.
- Do not connect this unit to a chimney flue serving another appliance.
- The insert and its stainless steel chimney liner are to be installed only within a lined masonry chimney and masonry fireplace conforming to building codes for use with solid fuel. Do not remove bricks or mortar from the existing fireplace when installing the insert.
- In Canada, the CSA B365 Installation Code for Solid Fuel Burning Appliances and Equipment and the CSA C22.1 Canadian National Electrical Code are to be followed in the absence of local code requirements. In the USA, the ANSI NFPA 211 Standard for Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances and the ANSI NFPA 70 National Electrical Code are to be followed in the absence of local code requirements.
- This insert must be installed with a continuous chimney liner of 6" diameter extending from the 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.

- The insert is not approved for use with a so-called "positive flue connection" to the clay tile of a masonry chimney.

**When using your fireplace insert, follow these safety precautions:**

- **Never** burn kiln dried, painted or treated wood in this fireplace insert.
- **DO NOT BURN GARBAGE.** **Never** burn garbage or trash, colored or glossy paper, solvents, plywood, artificial logs, cardboard, or driftwood, in this fireplace insert.
- **Never** burn coal in this fireplace insert.
- **DO NOT BURN FLAMMABLE FLUIDS.**
- **DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE.** **Never** use gasoline, kerosene, charcoal lighter fluid, or other flammable fluids to start or invigorate the fire. These fuels will cause dangerous burning conditions in the fireplace insert. Keep all such materials away from the fireplace insert.
- **Never** use a wood grate or other device to elevate the fire.
- **Never** allow logs in the firebox to hit the glass when the door is closed.
- **Never** slam the door or use the door to force wood in to the fireplace insert.
- **Never** over-fire your fireplace insert. (See page 27)
- **Never** put articles of clothing or candles on a hot fireplace insert.
- **Never** connect the fireplace insert to a flue used by another appliance.

**Other safety guidelines:**

- Keep all combustible items such as furniture, drapes, clothing, and other items, at least 36" (0.92 m) from the fireplace insert (See page 114)
- Install a smoke detector, preferably in an area away from your wood fireplace insert.
- Keep a fire extinguisher handy. We recommend the type rated "A B C."

- Dispose of ashes properly. (See page 29)
- Keep children and pets away from the fireplace insert when it is burning; they could be seriously injured by touching a hot fireplace insert.
- Clean your chimney system as needed. (See page 29)
- Outside combustion air may be required if:
  1. This solid-fuel-fired appliance does not draw steadily, smoke rollout occurs, fuel burns poorly, or back-drafts occur whether or not there is combustion present.
  2. Existing fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke roll-out when opened, or back-draft whether or not there is combustion present.
  3. Opening a window slightly on a calm (windless) day alleviates any of the above symptoms.
  4. The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices that exhaust house air.
  5. There is excessive condensation on windows in the winter.
  6. A ventilation system is installed in the house.

If these or other indications suggest that infiltration air is inadequate, additional combustion air should be provided from the outdoors. Outside combustion air can be provided to the appliance by using the optional outside air kit #94-53500

## PERIODIC CHECKLIST

Perform each of these tasks at the specified intervals.

### At the End of Every Week:

- Empty ashes from the firebox, sooner if the firebox is full.

### At the Beginning of Every Other Month:

- Depending upon your use of the fireplace insert, visually inspect the chimney connector and chimney for creosote. (see page 29)
- Check door seals using the "dollar bill test." - When the fireplace insert is cool, shut the door on a dollar bill. If the bill pulls out without any resistance, then your fireplace insert's door is not sealing properly. To tighten the seal, adjust

the door latch mechanism or change the door gasket. (Refer to page 29.)

### At the End of Every Season:

- Dismantle the chimney connector and clean it thoroughly. Replace any pieces that show signs of rust or deterioration.
- Inspect and, if necessary, clean your chimney.
- Clean out the inside of the fireplace insert thoroughly.
- Inspect all door gasket material and replace if worn, frayed, cracked or extremely hard.

## EMERGENCY PROCEDURES

If you have a stovepipe or chimney fire, follow these instructions:

1. If the fire is too threatening, leave the area and call the fire department immediately! If not, perform the next three steps.
  2. Close the primary air control.
  3. Close the stovepipe damper (if present).
  4. Keep the fireplace insert front door closed!
- **WARNING: DO NOT ATTEMPT TO PUT OUT A STOVEPIPE OR CHIMNEY FIRE BY THROWING WATER ONTO THE FIREPLACE INSERT, STOVEPIPE, OR CHIMNEY. THE EXTREMELY HIGH TEMPERATURE OF SUCH FIRES CAN CAUSE INSTANTANEOUS STEAM AND SERIOUS BODILY HARM.**

Once the chimney fire expires, leave the primary air control closed and let the fire in the fireplace insert die out completely. Inspect the fireplace insert, stovepipe, and chimney thoroughly for any sign of damage before firing the fireplace insert again. You must correct any damage before using your fireplace insert again. We recommend having the fireplace and the insert verified by a certified sweep or a fire marshal before using the insert after 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.

# Specifications

## Maximum Heat Output:

28,600 BTUs per hour of cordwood (based on independent laboratory test results).

## Floor Size of Heated Area:

Up to a maximum of 2,000 square feet. Factors unique to your home can reduce the square footage the fireplace insert will heat. Home insulation value, number and efficiency of windows, floor plan, fireplace placement, quality of the fuel and other conditions may limit the heating ability of the fireplace insert.

## Firebox Capacity:

2.4 cubic feet.

**Maximum Log Length:** Up To 20" (50.8 cm).

**Emissions:** 1.54 g/hr.

**Burn Time:** HeatLife Up to 8+ hrs. Note: The amount and weight of wood contained per cubic foot of firebox volume can vary from 10 to 25 lbs. per cubic foot depending on type of wood, moisture content, packing density and other factors.

## Fireplace insert Dimensions:

**Height:** 25 3/4" (65.4cm)

**Width:** 33 1/2" (85.1cm)

**Depth:** 19 5/8" (49.8cm)

**Weight:** 513 lbs. (233 kg)

**Connector Size:** 6" (152 mm) diameter

**Metal Chimney:** 6" (152 mm) inside diameter

**Masonry Chimney:** 6" (152 mm) inside diameter (round flue), 8" x 8" (203 x 203 mm) (square flue)

**Crate Dimensions:** H-34" W-30" L-35" or 86.5x76.5x 89cm

## Optional Equipment:

Outside Air Kit	94-53500
Steel Surround	94-5950110
Surround Lower Panel	94-5950510
Surround Extension	94-5950010
Fire Screen Insert	94-69500

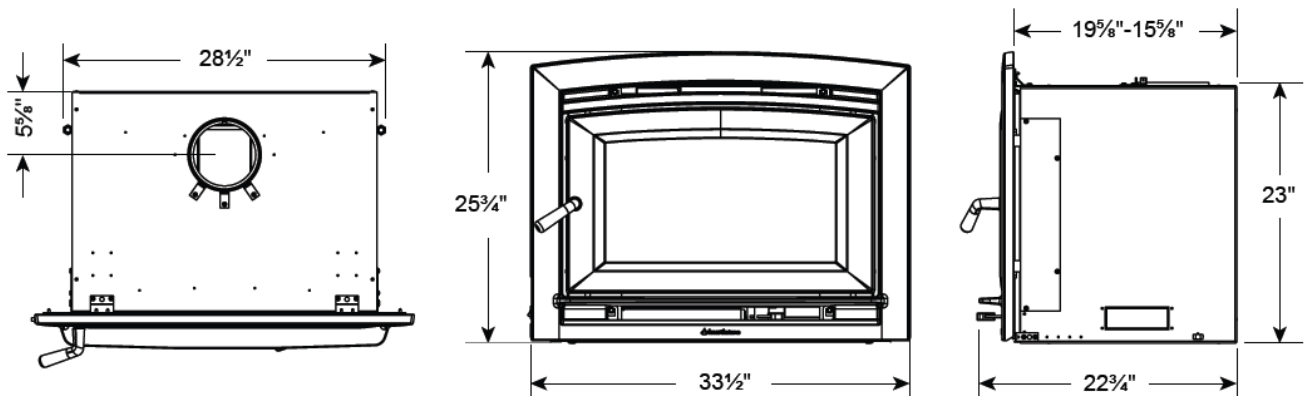


Figure 1 – Green Mountain Insert 70 Dimensions

# Installation

Read this chapter to obtain a sound understanding of how to properly install your Fireplace Insert. Contact the following agency for more information:

## National Fire Protection Agency

Batterymarch Park  
Quincy, MA 02269  
1-800-344-3555  
1-617-770-3000  
[www.nfpa.org](http://www.nfpa.org)

## UNPACKING

HearthStone packages your Green Mountain Insert 70 wood fireplace insert with the greatest care so that it ships safely. Under certain circumstances, however, damage may occur during transit and handling. When you receive the Green Mountain Insert 70, carefully unpack and inspect the fireplace insert and all accompanying parts. Ensure that all parts are included inside the fireplace insert. If any parts are damaged or missing, please contact your authorized HearthStone dealer immediately.

Be sure to remove the packaging material in the flue collar and above the baffle before installing the chimney.

## PACK LIST

1. Green Mountain Insert 70 Model 8450 Wood Fireplace Insert
2. Two boxes containing soapstone lining
3. Owner's Manual
4. Leveling bolts (x2)
5. Spacers for soapstone (x2)
6. Metal label for fireplace installation
7. Brackets for chimney liner (x3)

## ZONE HEATING

Your new Green Mountain Insert 70 wood insert is a space heater, which means it is intended to heat the area it is installed in, as well as spaces that connect to that area, although to a lower temperature. This is called zone heating and it is an increasingly popular way to heat homes or spaces within homes.

Zone heating can be used to supplement another heating system by heating a particular space within

a home, such as a basement family room or an addition that lacks another heat source.

Houses of moderate size and relatively new construction can be heated with a properly sized and located wood insert. Whole house zone heating works best when the insert is located in the part of the house where the family spends most of its time. This is normally the main living area where the kitchen, dining and living rooms are located. By locating the insert in this area, you will get the maximum benefit of the heat it produces and will achieve the highest possible heating efficiency and comfort.

The space where you spend most of your time will be warmest, while bedrooms and basement (if there is one) will stay cooler. In this way, you will burn less wood than with other forms of heating.

Although the insert may be able to heat the main living areas of your house to an adequate temperature, we strongly recommend that you also have a conventional oil, gas or electric heating system to provide backup heating.

Your success with zone heating will depend on several factors, including the correct sizing and location of the insert, the size, layout and age of your home and your climate zone. Three-season vacation homes can usually be heated with smaller inserts than houses that are heated all winter.

## MASONRY FIREPLACE REQUIREMENTS

The masonry fireplace must meet the minimum requirements found in the building code enforced locally, or the equivalent for a safe installation. Contact your local Building Inspector for requirements in your area. An inspection of the fireplace should include the following:

### CONDITION OF THE FIREPLACE AND CHIMNEY:

- The masonry fireplace and chimney should be inspected prior to installation, to determine that they are free from cracks, loose mortar, creosote deposits, blockage, or other signs of deterioration. If evidence of deterioration is noted, the fireplace or chimney should be upgraded and/or cleaned prior to installation.
- Masonry or steel, including the damper plate, may be removed from the smoke shelf and adjacent damper frame if necessary to

accommodate the insert's chimney liner, provided that their removal will not weaken the structure of the fireplace and chimney, and will not reduce protection for combustible materials to less than that required by the building code.

#### CHIMNEY CAPS:

- Mesh type chimney caps must have provision for regular cleaning, or the mesh should be removed to eliminate the potential of plugging.

#### CLEARANCE TO COMBUSTIBLES:

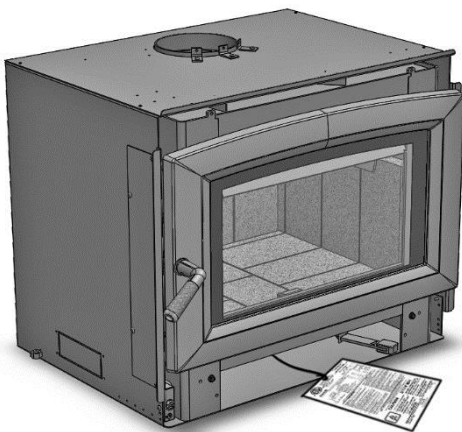
- The fireplace should be inspected to make sure that there is adequate clearance to combustibles, both exposed combustibles to the top, side, and front as well as concealed combustibles, in the chimney and mantle area. Your local inspector should have information on whether older fireplaces are of adequate construction.

#### OPENING SIZE:

- Refer to page 13 *Minimum Masonry Opening* for suitable size fireplace openings.

## CERTIFICATION LABEL

The label is on a metal plaque in the blower space below the firebox. It is attached with a lanyard to the firebox so it can pull out far enough for inspection. Take care when lifting and installing the insert to keep the label inside the firebox to avoid any damage.



**Figure 2 - Label Location**

Since the information given on the certification label attached to the appliance always overrides the information published in any other media, it is

important to refer to it to have a safe and compliant installation. The model and the serial number can also be found on the label.

It is recommended to note the insert serial number on this manual. It will be needed to identify the version of the appliance in the event replacement parts or technical assistance is required. It is also recommended to register the warranty online at [www.hearthstonestoves.com](http://www.hearthstonestoves.com)

## MASONRY FIREPLACE THROAT DAMPER

If the fireplace's draft control system is to remain in the masonry fireplace, it must be locked open for access of the chimney liner or removed entirely. If you remove draft control system from the masonry hearth, you will need to install the metal plate (27009), supplied with the owner's manual kit, indicating that the masonry hearth has been modified. It must be secured inside the masonry hearth, in a visible place and easy to locate.

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

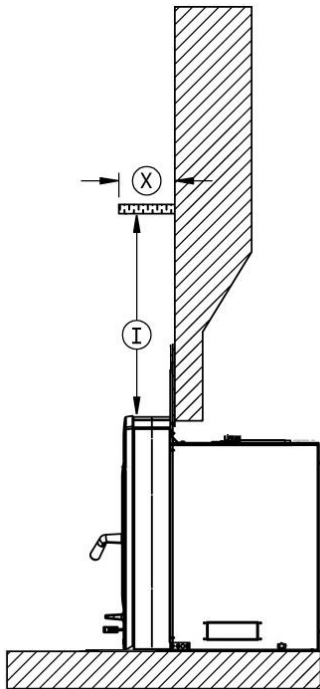
☺ CE FOYER A PEUT-ÊTRE ÉTÉ MODIFIÉ AFIN DE RECEVOIR UN APPAREIL ENCASTRABLE, IL DOIT DONC ÊTRE VÉRIFIÉ PAR UNE PERSONNE QUALIFIÉE AFIN DE DÉTERMINER SA CONFORMITÉ AU CODE LOCAL AVANT DE LE RÉUTILISER. ☺

27009

## INSTALLATION OF A COMBUSTIBLE MANTEL SHELF

It is possible to install a combustible shelf with a maximum depth of 12" at a height of at least 27" above the insert. At a height of more than 27", the shelf must still have a maximum depth of 12".

MAXIMUM MANTEL SHELF DIMENSION (X)	MANTEL SHELF CLEARANCES (I)
12" (305 mm) max.	27" (686 mm) min.

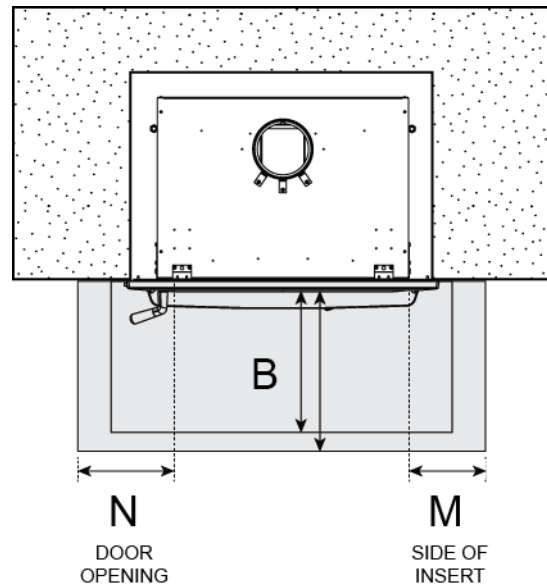


**Figure 3 – Mantel Shelf**

## HEARTH REQUIREMENTS & FLOOR PROTECTION

Ensure you protect combustible flooring with a covering of noncombustible material. The minimum floor protection must be met under the fireplace insert and extend beyond the fireplace insert as follows:

	FLOOR PROTECTION	
	Canada	USA
<b>B</b>	18" (457 mm) <sup>1</sup>	16" (406 mm) <sup>1</sup>
<b>M</b>	8" (203 mm)	N/A
<b>N</b>	N/A	8" (203 mm)



**Figure 4 – Hearth Requirements**

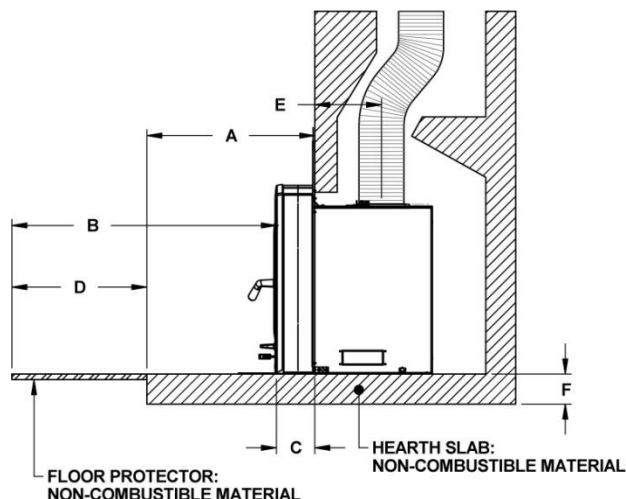
<sup>1</sup>From door opening. The depth of the hearth extension in front of the insert is included in the calculation of the floor protector's dimensions. The masonry hearth should be at least 5" (127 mm) higher than the combustible floor in front of it and a floor protection must extend at least 16" (406 mm USA) and at least 18" (457 mm Canada) without an R value. If the hearth elevation is lower than 5" (127 mm), the non-combustible floor protector in front of the insert should have an R value equal or greater than 1.00 and shall extend 23" (584 mm) in front of the unit.

To determine the need to add floor protection (D) beyond the hearth extension, do the following calculation using the data in following table:  $D = B - (A - C)$ .

The standard configuration of the insert leaves no projection of the convection air jacket in front of the fireplace opening. Therefore, the minimum projection is 0". Although it is possible to position the insert to obtain a projection of 2" (51 mm) or 4" (102 mm) of the convection air jacket in front of the fireplace opening with the use of the surround extension. The choice of the configuration will depend on the previous installation instructions and compliance with building code.

If the value (D) is negative or zero, additional floor protection in front of the unit is not needed because the masonry fireplace hearth extension is large enough. If the value (D) is positive, an additional floor protection in front of the hearth extension at least equivalent to the result (D) must be added.

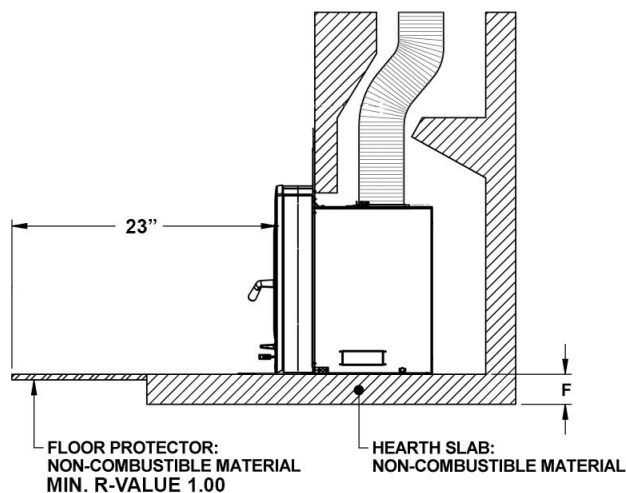
	Maximum Extended	Minimum Extended
<b>A</b>	Dimensions of the hearth extension	Dimensions of the hearth extension
<b>B</b>	See the following sections	See the following sections
<b>C</b>	2" / 4" (51 / 102 mm)	0" (0 mm)
<b>D</b>	$D=B-(A-C)$	$D=B-(A-C)$
<b>E</b>	10" / 12" (254 / 305 mm)	14" (356 mm)
<b>Air Jacket</b>	Back from fireplace facing 2" or 4"	Flush with fireplace facing



**Figure 5 – Floor Protection**

## INSTALLATION RAISED 5" OR LESS

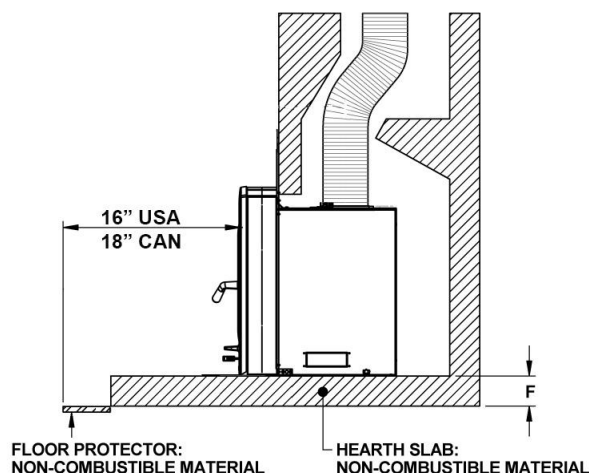
If non-combustible material floor protection needs to be added in front of and level with the hearth extension of the masonry fireplace ( $F = 5"$  or less), an R-value equal to or greater than 1.00 is required and should extend at least 23" (584 mm) in front of the unit (B).



**Figure 6 – Installation 5" or Less**

## INSTALLATION RAISED MORE THAN 5"

If the extension of the masonry hearth is raised more than 5" (127 mm) from the floor protection, a non-combustible material, without an R-value, must extend at least 16" (406 mm in USA) or 18" (457 mm in Canada) in front of the unit.



**Figure 7 – Installation More Than 5”**

## R-VALUE

There are two ways to calculate the R-value of the floor protection. First, by adding the R-values of materials used, or by the conversion if the K factor and thickness of the floor protection are given.

To calculate the total R value from R values of the materials used, simply add the R-values of materials. If the result is equal to or greater than the R-value requirements, the combination is acceptable. R-values of some selected materials are shown below:

Table: Thermal Characteristics of Common Floor Protection Materials\*

MATERIAL	CONDUCTIVITY (k) PER INCH	RESISTANCE (R) PER INCH THICKNESS
Micore® 160	0.39	2.54
Micore® 300	0.49	2.06
Durock®	1.92	0.52
Hardibacker®	1.95	0.51
Hardibacker® 500	2.3	0.44
Wonderboard®	3.23	0.31
Cement mortar	5.00	0.2
Common brick	5.00	0.2
Face brick	9.00	0.11
Marble	14.3 – 20.00	0.07 – 0.05
Ceramic tile	12.5	0.008
Concrete	1.050	0.950
Mineral wool	0.320	3.120

insulation		
Limestone	6.5	0.153
Ceramic board (Fibremax)	0.450	2.2
Horizontal still air** (1/8")	0.135	0,920**

\* Information as reported by manufacturers and other resources

\*\*Horizontal still air can't be 'stacked' to accumulate R-values; each layer must be separated with another non-combustible material.

Example 1:

Required floor protection R of 1.00. Proposed materials: four inches of brick and one inch of Durock® board.

Four inches of brick ( $R = 4 \times 0,2 = 0,8$ ) plus 1 inch of Durock® ( $R = 1 \times 0.52 = 0.52$ ).

$0.8 + 0.52 = 1.32$ . This R value is larger than the required 1.00 and is therefore acceptable.

Example 2:

In the case of a known K and thickness of alternative materials to be used in combination, convert all K values to R by dividing the thickness of each material by its K value. Add R values of the proposed materials as shown in the previous example.

Example:

Common brick K value = 5

Thickness = 4"

R value = Thickness/K =  $4/5 = 0.8$

Durock K value = 1.92

Thickness = 1"

R value = Thickness/K =  $1/1.92 = 0.52$

Total R value =  $.8 + 0.52 = 1.32$

## MINIMUM MASONRY OPENING

Refer to the Figure 'Clearance to Combustibles'

	MINIMUM MASONRY OPENING
<b>J</b>	23 5/16 " (592 mm)
<b>K</b>	28 7/8 " (733 mm)*
<b>L</b>	19 5/8 " (498 mm)**

\* Where a fresh air intake is needed, we suggest you add a minimum of 4" to the width of the minimum masonry opening.

\*\* If surround extension is used L = 17 5/8" or 15 5/8". If installed without the surround extension L = 19 5/8".

## COMBUSTIBLE SURFACE REQUIRED CLEARANCES

**Note:** Dimensions shown in the following figures are from the body of the fireplace insert unless otherwise indicated.

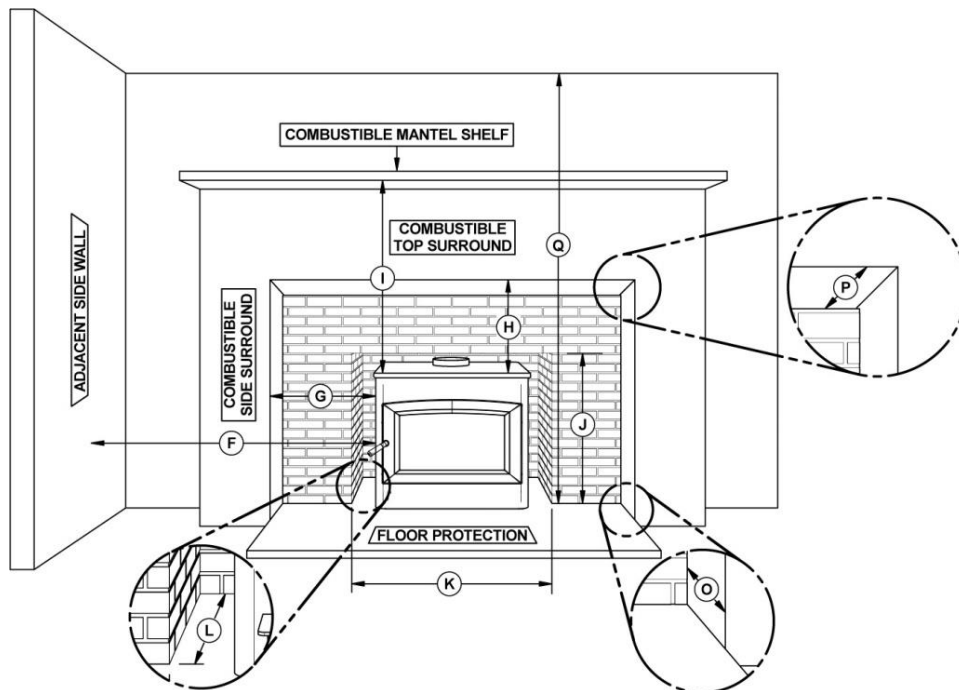
It is very important to follow minimum clearances for chimney connectors to combustibles such as walls and ceilings when installing the fireplace insert near combustible surfaces.

The clearances shown in this section have been determined by test according to procedures set out in safety standards ULC S628 (Canada), UL1482 (U.S.A.) and UL737 (U.S.A.). When the insert is installed so that its surfaces are at or beyond the minimum clearances specified, combustible surfaces will not overheat under normal and even abnormal operating conditions.

**NO PART OF THE INSERT MAY BE LOCATED CLOSER TO COMBUSTIBLES THAN THE MINIMUM CLEARANCE FIGURES GIVEN.**

	CLEARANCES
<b>F</b>	16" (406 mm)
<b>G</b>	9" (229 mm)
<b>H</b>	27" (686 mm)
<b>I</b>	27" (686 mm)
<b>Q</b>	84" (213 cm)

	MAXIMUM THICKNESS
<b>O</b>	5" (127 mm)
<b>P</b>	12" (305 mm)

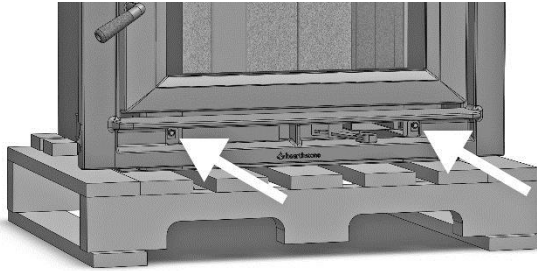


**Figure 8 – Clearance to Combustibles**

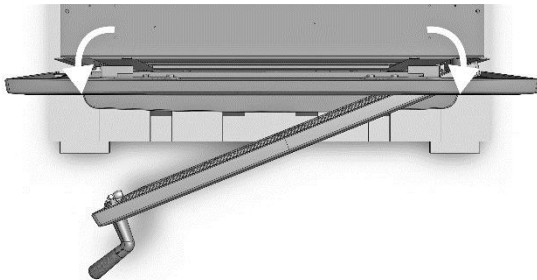
## INSTALLING THE INSERT

1. Remove the contents of the firebox. This will include the owner's manual packet, 2 boxes of soapstone for lining the firebox, spacers for the floor stone, leveling bolts and enamel touch-up if applicable.

2. Remove the front casting from the insert.
  - a. Remove the two screws visible below the ash lip.

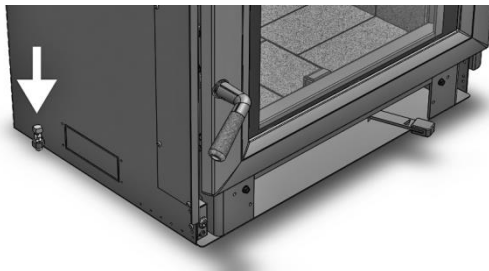


- b. Tilt the frame up slightly, then LIFT the frame up and off the hanger tabs on top of fireplace insert.

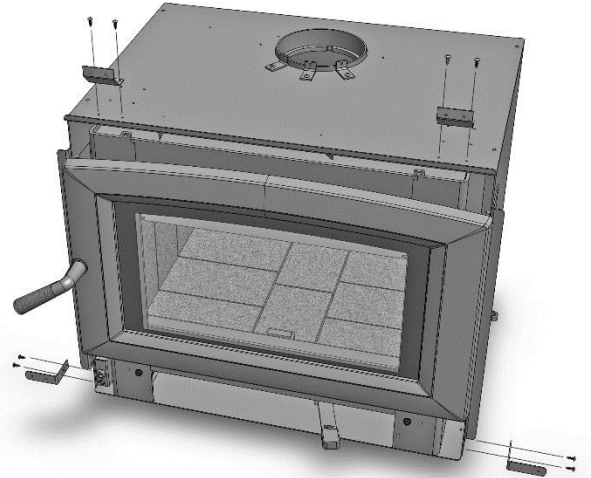


- c. Carefully remove the front casting from the fireplace insert. It may be easiest to open the door slightly and allow the door handle to swing out of the way.

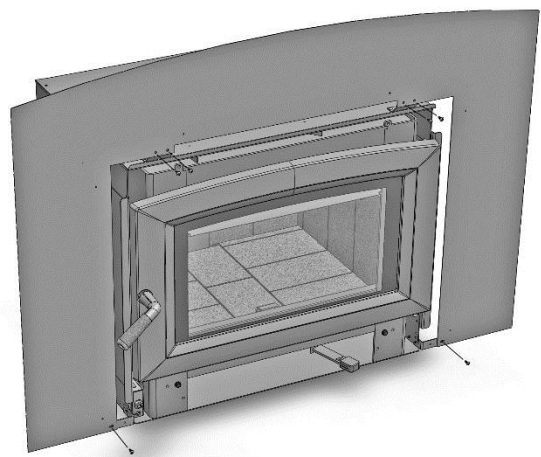
3. With two or more people, lift the insert and remove it from the pallet.
4. Insert the leveling bolts. There are 2 nuts welded to the outside of the firebox, one in each of the lower rear corners. Thread the included leveling bolts into the nuts.



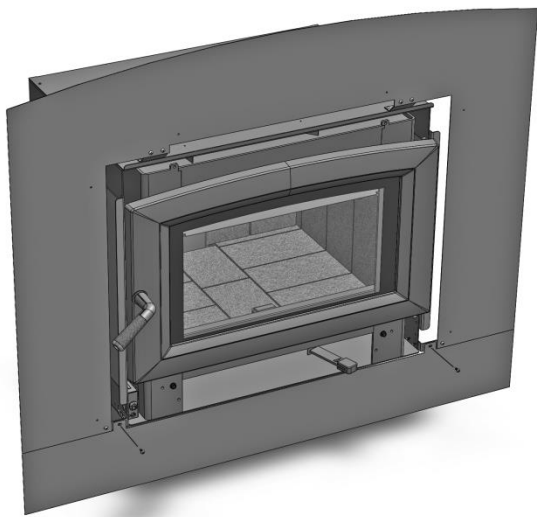
5. If installing the optional steel surround, attach the surround brackets according to the instructions included with the steel surround before placing the insert in the fireplace opening.



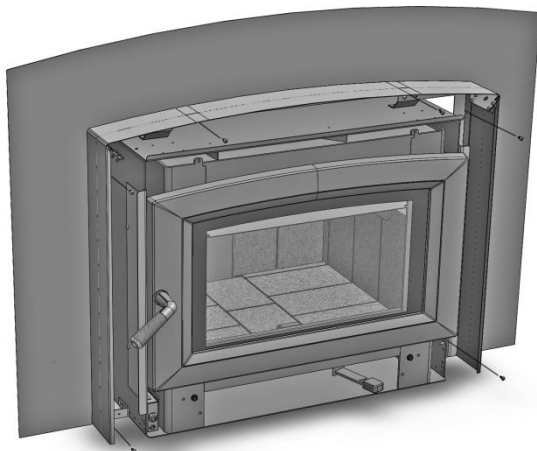
6. Place the insert in the fireplace opening and connect the liner to the inlet on top of the insert. Follow the instructions in the Liner Installation / Liner Connection section of this manual.
7. Level the insert. Adjust the bolts installed in Step 4 to level the insert if needed.
8. (Optional) Install the Steel Surround following the instructions included with that optional accessory. Connect the surround to the previously installed brackets.



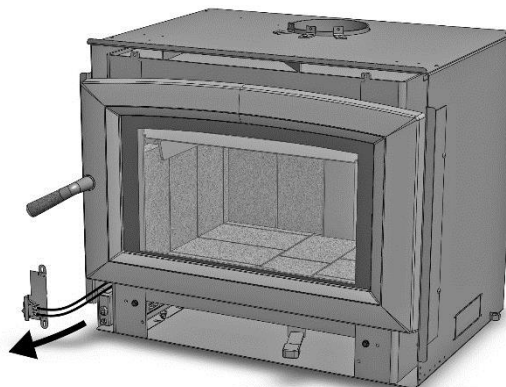
9. (Optional) Install the Lower Surround Panel following the instruction included with that optional accessory.



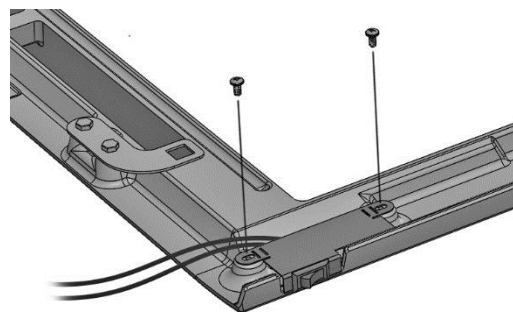
10. (Optional) Install the Surround Extension following the instructions included with that optional accessory. To install the surround extension, the surround must be installed in position 4" back from the front face of the insert. The extension can also be as a 2" extension by cutting the extension panels and installing the surround 2" back from the front of the insert.



11. Install the blower switch plate on the front casting:
- Gently remove the blower switch assembly from the lower left corner of the insert. It is very important not to disconnect the wires.

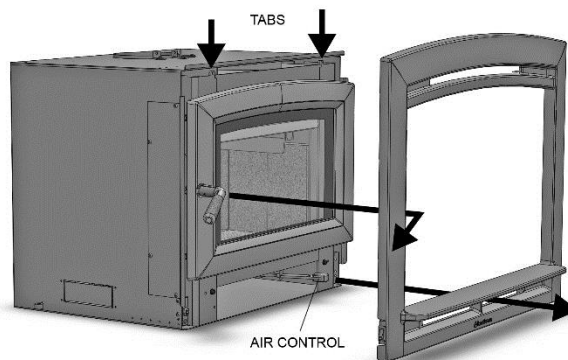


- Attach the blower switch plate to the lower rear left corner of the front casting using the two screws in the bosses.



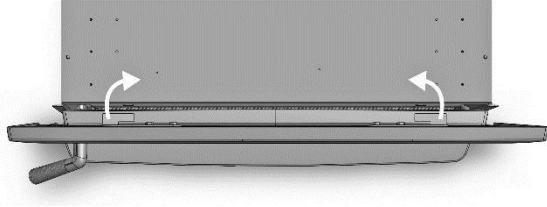
12. Install the front casting following the procedure from Step 2 in reverse order.

- Carefully position the front casting on the fireplace insert. Make sure the air control handle passes through the opening in the front casting below the ash lip. It may be easiest to open the door slightly to avoid hitting the door handle.

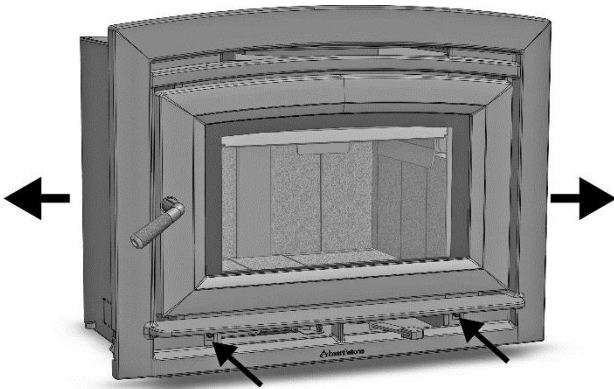


- Be careful not to pinch the blower switch wires.

- c. LIFT the front casting up and onto the tabs on top of fireplace insert. Guide the hanger brackets onto the tabs and let the front casting rest on the top edge of the firebox.



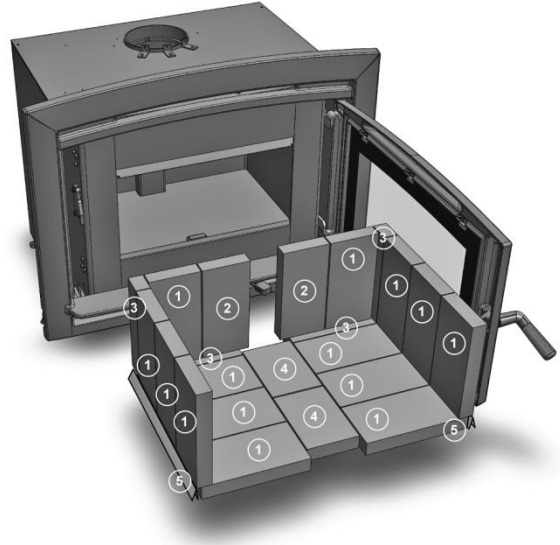
- d. Position the front casting by sliding it left or right. Center the front casting with the door. Carefully check that the door can open fully without making contact with the front casting.



- e. Install the two screws below the ash lip. These screws should pass through the square holes in the hanger brackets (attached to be front casting) and back into the holes they were removed from in Step 2. You may need to lift the front casting slightly to engage the screws.

13. Install the soapstone in the firebox following the diagram below.

- Install the floor bricks first.
- Install the 2 spacer channels along the sides of the firebox.
- Install the side stones, inserting the top of each stone behind the retaining steel then standing the stone against the firebox wall.
- Install the rear stones, inserting the top of each stone behind the retaining steel then standing the stone against the firebox wall.



	SIZE	QUANTITY
1	9" X 4.5" X 1.25"	14
2	9" X 4.25" X 1.25"	2
3	9" X 2" X 1.25"	4
4	6.5" X 4.5" X 1.25"	2
5	Spacer Channel	2

14. Inspect the installation.

- The door opens fully and seals shut.
- The air control moves left and right.
- The blower turns on and off.

## OUTSIDE AIR SUPPLY

(Optional Kit #94-53500)

You can connect an outside air source directly to this fireplace insert using an optional outside air kit. The advantage of providing outside air directly to the fireplace insert is that the air used by the fireplace insert for combustion is taken from outside the residence rather than from within the room where the fireplace insert is located.

The International Residential Code (IRC) does not allow the outside air duct to terminate higher than the appliance. Some building officials restrict vertical rise in the duct's termination. HearthStone recommends the termination be at the same level, or lower than the air intake on the fireplace insert.

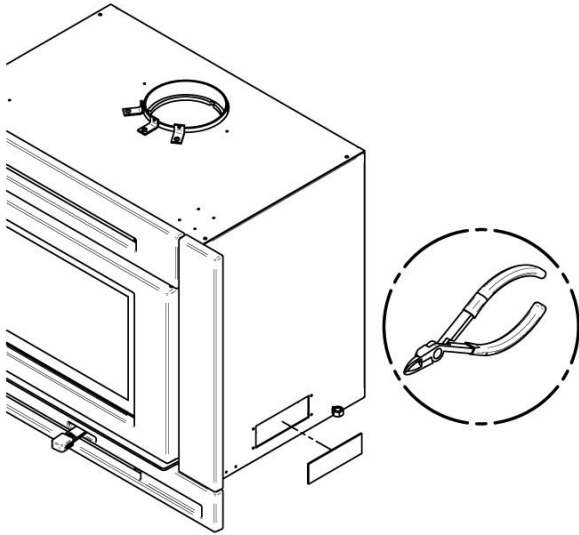
Locate the termination of the duct on the outside wall of the home in such a manner to avoid the

possibility of obstruction by snow, leaves or other material.

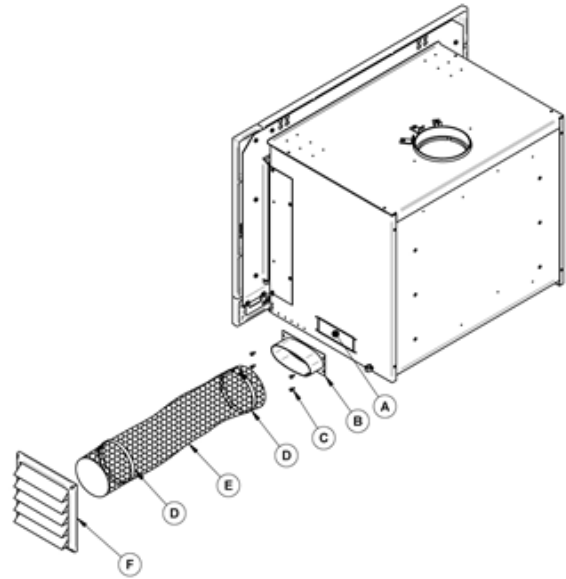
#### Install the Outside Air Supply:

Using pliers, remove the rectangular knock-out plate (A) located on the left or right side of the convection air jacket. Choose the side that is best for your installation.

Note: Only remove the knock-out that will be connected to the fresh air inlet.



**Figure 9 – Outside Air Inlet**



**Figure 10 – Outside Air Kit Detail**

Then, install the fresh air kit adapter (B) using 4 screws (C). Secure the flexible pipe<sup>1</sup> (E) to the adapter (B) using one of the adjustable pipe clamps (D). Secure the other end of the pipe to the outside wall termination (F) using the second adjustable pipe clamp (D). The outside wall termination (F) must be installed outside of the building.

<sup>1</sup> The pipe must be HVAC type, insulated, and must comply with ULC S110 and/or UL 181, Class 0 or Class 1.

# The Venting System

## GENERAL INFORMATION

The venting system, made up of the chimney and the liner inside the chimney, acts as the engine that drives your wood heating system. Even the best insert will not function safely and efficiently as intended if it is not connected to a suitable chimney and liner system.

The heat in the flue gases that pass from the insert into the chimney is not waste heat. This heat is what the chimney uses to make the draft that draws in combustion air, keeps smoke inside the insert and safely vents exhaust to outside. The heat in the flue gas can be seen as the fuel the chimney uses to create draft.

## BLOCK-OFF PLATE

To reduce the possibility of a cold air back draft from the masonry chimney into the room, the installation of a sheet metal block-off plate (A) is recommended. When fabricating the block-off plate, cut the pipe hole slightly larger than the liner diameter and pass the liner through the hole. Install the block-off plate and secure it with masonry nails. Seal the joints between the plate and the chimney with high temperature silicone and use stove cement to seal between the pipe and the plate.

In Canada, the CSA B365 Standard permits 'Roxul' type wool to be stuffed around the liner as it passes through the throat area as an alternative to a sheet metal block-off plate. However, this method is less efficient than using a plate.

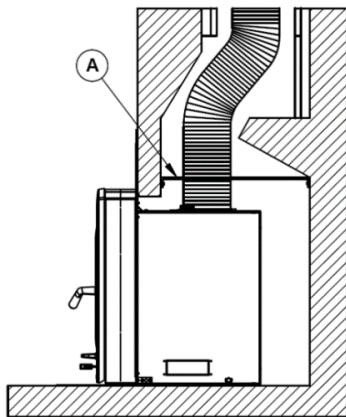


Figure 11 – Block Off Plate 1



Figure 12 – Block Off Plate 2

## SUITABLE CHIMNEYS

Your wood insert will provide optimum efficiency and performance when connected to a 6-inch diameter chimney liner. The connection to a chimney having a diameter of at least 5 inches (Canada only) is permitted, if it allows the proper venting of combustion gases and that such application is verified and authorized by a qualified installer. Otherwise, the diameter of the flue should be 6 inches. The reduction of liner diameter to less than 6" should only be done if the total height of the masonry chimney is greater than 20 feet.

## LINER INSTALLATION

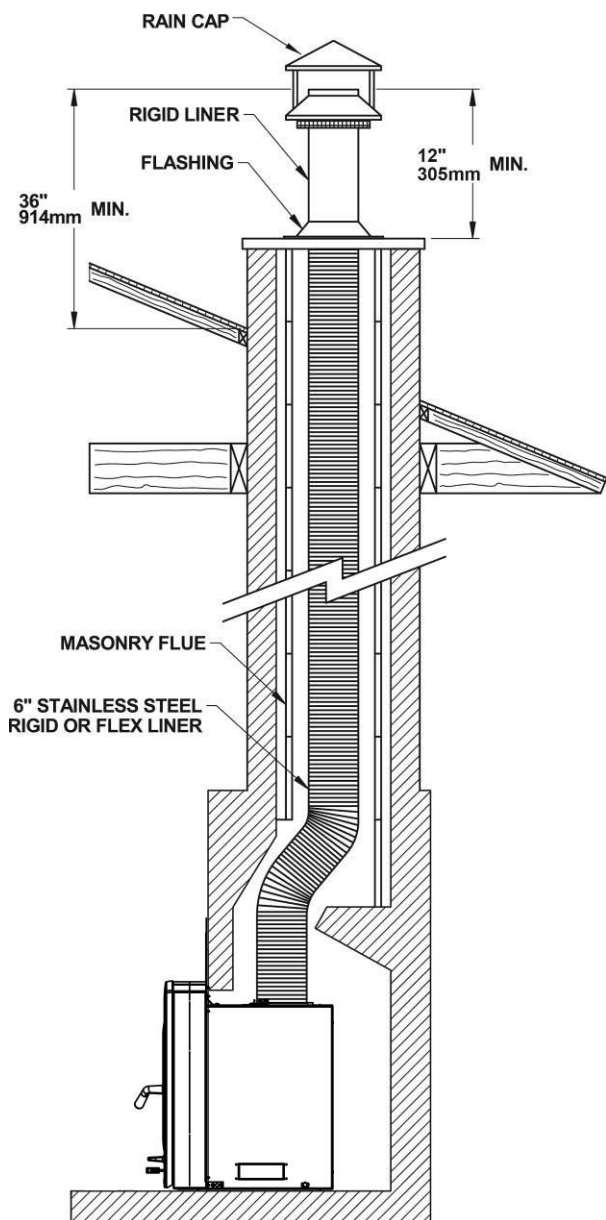
The use of a chimney liner (rigid or flexible) is recommended to ensure the best performance. To ensure an optimal draft, it is also strongly recommend adding a minimum of 12" rigid liner between the top of the masonry chimney and the rain cap. In all cases, liners should be installed in accordance with the liner manufacturer's instructions, including instructions for extension above the masonry.

Use chimney liners listed UL 1777, ULC S635 or CAN/ ULC S640.

In order to connect the insert to the liner, refer to the section LINER CONNECTION.

**ATTENTION INSTALLER:** When positioning the unit in a fireplace opening prior to the flue installation, install the insert into the opening until the top lip of air jacket is flush with fireplace facing.

If lag bolts or anchors are to be used to secure the insert, the hole locations should be marked with the unit in place. Remove the insert and locate the anchors.



**Figure 13 – Liner Installation**

## LINER CONNECTION

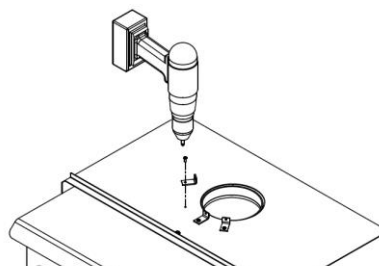
Two options are possible to connect the liner to the insert:

### Liner Starter Adaptor

Two options are possible:

Install the chimney liner starter adapter, provided with the chimney liner. Follow the chimney liner starter adapter manufacturer's instructions.

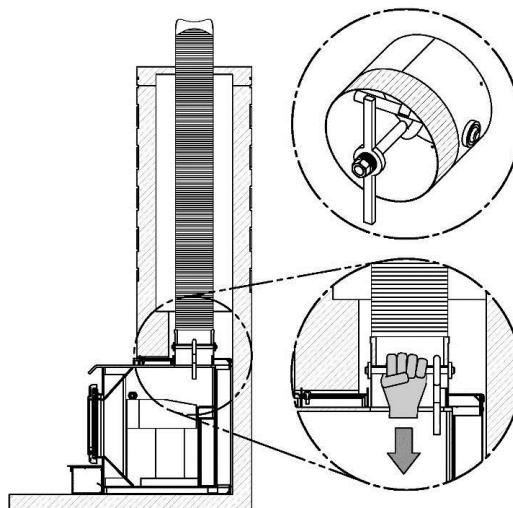
In order to connect the chimney liner starter adapter to the flue outlet, install three brackets with the three screws, all provided in the user manual, on top of the insert.



**Figure 14 – Liner Connection**

The long end of the brackets must be attached to the insert. Insert the chimney liner into the flue collar of the unit and secure the liner to the brackets with three self-tapping screws (not included).

The dealer may offer a liner fastening system (HearthStone accessory #94-67500), sold separately. Follow the installation instructions provided with the liner fastening system.



**Figure 15 – Liner Fastening System**

## Liner Offset Adaptor

A liner offset adaptor, sold separately, can also be installed. This should only be installed if no other option is possible and if the total height of the fireplace and chimney is at least 20 feet. This kind of adaptor is restricting the free flow of exhaust gases and may result in smoke roll-out from the insert when the door is open for reloading. When installing a liner offset adaptor, secure the three brackets provided in the user manual on top of the insert. The long end of the brackets must be attached to the insert. Then, follow the instructions in the manual provided with the liner offset adaptor kit.

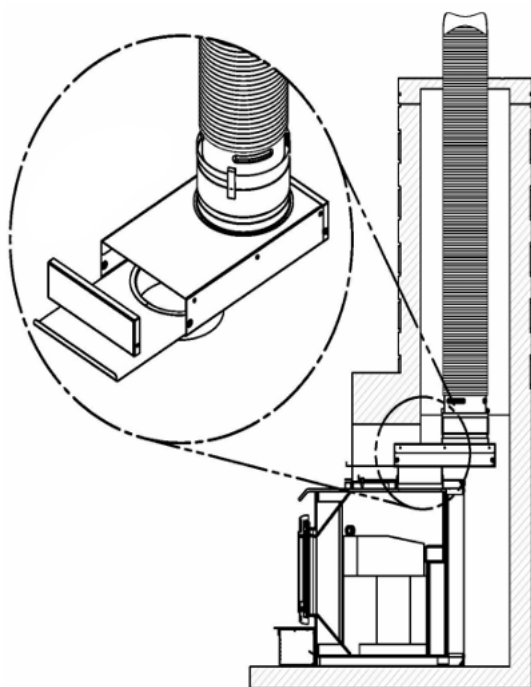


Figure 16 – Offset Adaptor

## MINIMUM CHIMNEY CLEARANCES

The top of the chimney should be tall enough to be above the air turbulence caused when wind blows against the house and its roof. The chimney must extend at least 1 m (3 ft.) above the highest point of contact with the roof, and at least 60 cm (2 ft.) higher than any roof line or obstacle within a horizontal distance of 3 m (10 ft.).

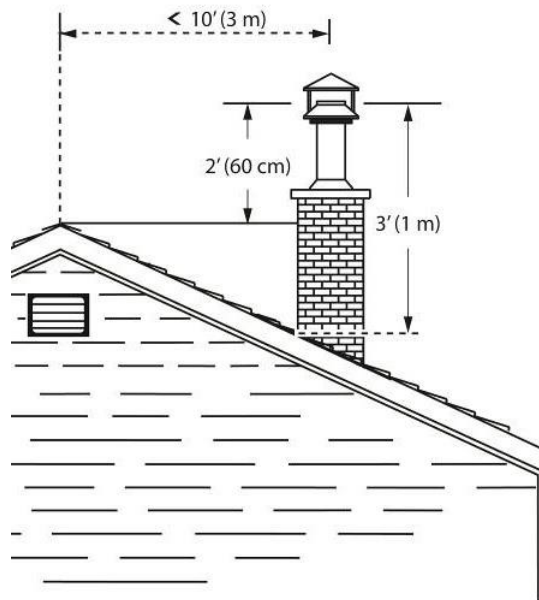


Figure 17 – Min. Chimney Height 1

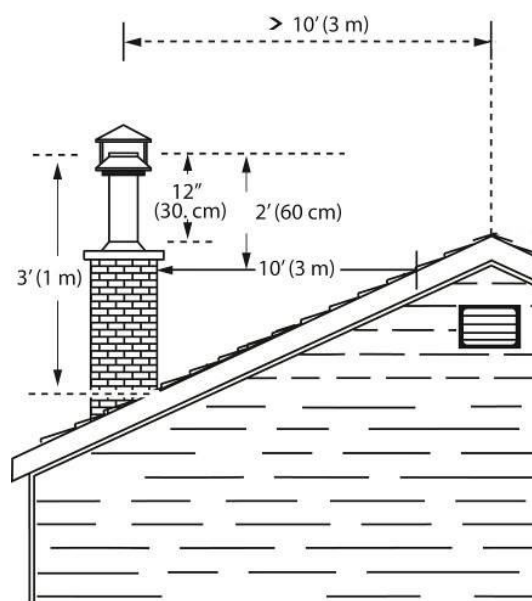


Figure 18 – Min. Chimney Height 2

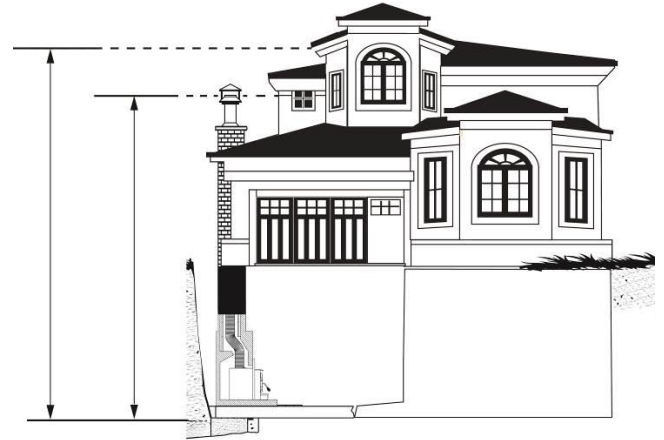
## CHIMNEY LOCATION

Because the venting system is the engine that drives the wood heating system, it must have the right characteristics. The signs of bad system design are cold back drafting when there is no fire in the insert, slow kindling of new fires, and smoke roll-out when the door is opened for loading.

When it is cold outside, the warm air in the house is buoyant so it tends to rise. This tendency of warm air to rise creates a slight pressure difference in the house. Called 'stack effect', it produces a slightly negative pressure low in the house (relative to outside) and a slightly positive pressure zone high in the house. If there is no fire burning in a heater connected to a chimney that is shorter than the warm space inside the house, the slight negative pressure low in the house will compete against the desired upward flow in the chimney.

There are two reasons why the chimney in the house at right will cold backdraft when it is cold outside and there is no fire burning in the insert. First, the chimney runs up the outside of the house, so the air in it is colder and denser than the warm

air in the house. And second, the chimney is shorter than the heated space of the house, meaning the negative pressure low in the house will pull outside air down the chimney, through the insert and into the room. Even the finest insert will not work well when connected to this chimney.



**Figure 19 – Chimney Location**

## SUPPLY OF COMBUSTION AIR

In Canada, wood inserts are not required to have a combustion air supply from outside. Research has shown that outside air supply do not compensate for the depressurization of the house and may not be sufficient to provide a supply of combustion air in windy weather. However, to reduce the risks against smoke spillage due to house depressurization, a carbon monoxide (CO) detector is required in the room where the insert is installed. The CO detector will provide warning if for any reason the wood insert fails to function correctly.

The safest and most reliable supply of combustion air for a wood insert is from the room in which it is installed. Room air is already preheated so it will not chill the fire, and its availability is not affected by wind pressures on the house. Contrary to commonly expressed concerns, almost all tightly sealed new houses have enough natural leakage to

provide a small amount of air needed by the insert. The only case in which the wood insert may not have adequate access to combustion air is if the operation of a powerful exhaust device (such as a kitchen range exhaust) causes the pressure in the house to become negative relative to outdoors.

If an air intake is installed through the wall of the house, its pressure can vary during windy weather. If there are changes in wood insert performance in windy weather, and in particular if smoke puffs from the insert, the air duct should be disconnected from the insert to determine if it is the cause of the problem. In some windy conditions, negative pressure at the duct weather hood outside the house wall may draw hot exhaust gases from the insert backwards through the duct to outdoors. Check the outdoor air duct for soot deposits when the full system is cleaned and inspected at least once each year.

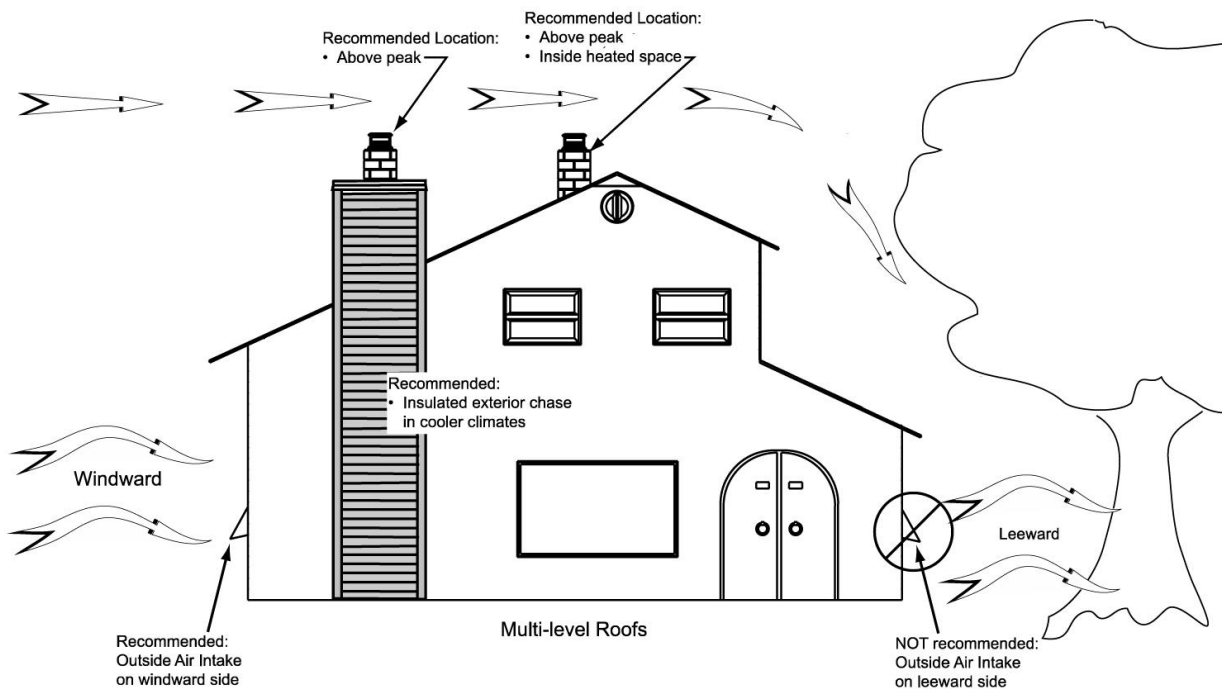


Figure 20 – Supply of Combustion Air

# OPERATION

Once your Green Mountain Insert 70 is installed, you are ready to light a fire.

Every installation, season's firewood, and operator's technique varies. Learn how to use your fireplace insert most efficiently for your installation. We can give you the basic principles, but only you can ensure maximizing the potential of your fireplace insert while also operating it safely.

- **WARNING: HOT WHILE IN OPERATION! KEEP CHILDREN, PETS, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

Read this entire chapter before lighting your first fire. It explains the controls and features of your wood fireplace insert, how to choose firewood, and how to use your fireplace insert on a daily basis.

## CONTROLS AND FEATURES

Before lighting any fires, become familiar with the location and operation of your fireplace insert's controls and features and learn how to use them (See Figure 24). For your own safety, do not modify these features in any way. We recommend you use fireplace gloves when the fireplace insert is in operation and hot.

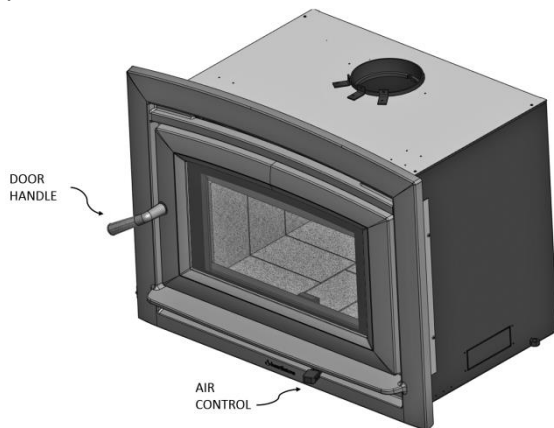


Figure 21 - Controls & Features

**FRONT DOOR HANDLE:** The firebox door allows you to load wood into your fireplace insert; a wood handle operates the door. To open the door, pull up on the handle and swing the door away from the fireplace insert. To latch the door, push the door tightly towards the firebox then continue to push the handle in and down until it latches shut. Gently pull on the door handle to make sure it is properly latched.

**PRIMARY AIR CONTROL:** The primary air control lever is located under the ash lip. The primary air control allows you to regulate the amount of air entering the firebox. Generally, the more air allowed into the firebox, the faster the rate of burn and the higher the heat output. Conversely, less air creates a slower burn, with lower heat output. For maximum airflow, pull the lever left as far as possible; move the lever right as far as possible for minimum airflow (does not close completely).

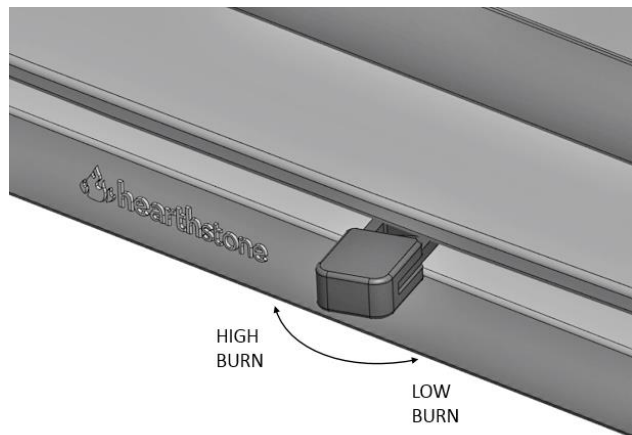


Figure 22 – Air Control

## BLOWER OPERATION

A blower is already installed on this insert. It is located underneath the insert, behind the front casting. Its function is to increase airflow through the heat exchanger and improve hot air circulation in the room. When used regularly, the blower can provide a small increase in efficiency, up to 2%. However, the use of a blower should not be used as a way to gain more output from an insert that is undersized for the space it is intended to heat.

**Ensure the blower cord is not in contact with any surface of the insert to prevent electrical shock or fire damage. Do not run cord beneath the insert.**

Allow the insert to reach operating temperature (approximately one hour) before turning on the blower, since increased airflow from the blower will remove heat and affect the start up combustion efficiency.

The insert's blower assembly is equipped with a heat sensor. Therefore, you can leave the switch in the automatic position (3). The blower will start automatically when the insert is hot enough and it will stop when the insert has cooled down. You can also set the switch to the manual position (1) to operate the blower at any time. Select the position (2) to manually stop the blower.

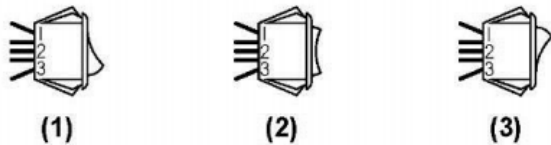


Figure 23 – Air Control

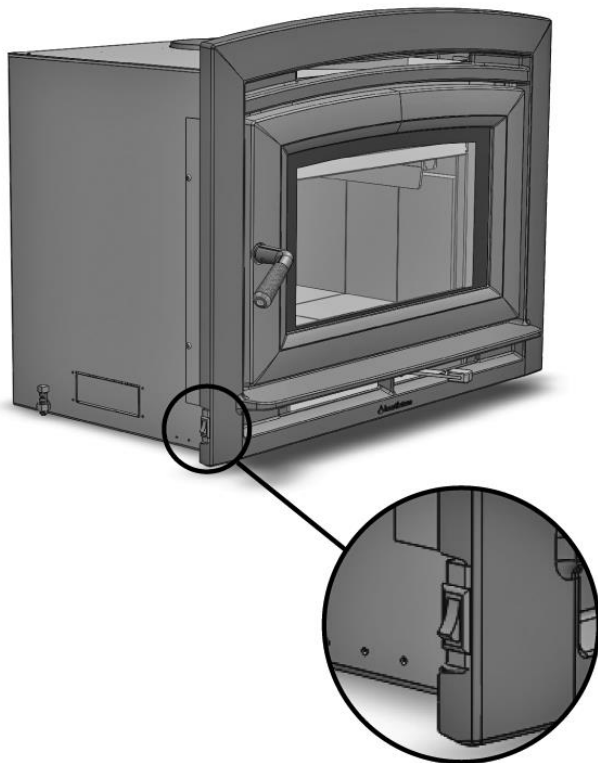


Figure 24 – Air Control

## CHOOSING FIREWOOD

Burn only natural firewood (known as cordwood) in the Green Mountain Insert 70 Model 8450 Wood Heater. This fireplace insert is not designed to burn other fuels.

- **CAUTION: DO NOT USE CHEMICALS OR FLAMMABLE FLUIDS TO START THE FIRE. DO NOT USE CHARCOAL, PELLETS, COAL, ARTIFICIAL LOGS OR ANY OTHER MATERIALS AS FUEL; THEY ARE NOT SAFE. DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS.**
- **THE USE OF UNAUTHORIZED FUEL SUCH AS COAL COULD PRODUCE HIGH LEVELS OF CARBON DIOXIDE IN THE LIVING SPACE. AT HIGH LEVELS CARBON DIOXIDE COULD RESULT IN PERSONAL INJURY OR DEATH.**

The quality of your firewood directly affects heat output, duration of burn and performance of your fireplace insert. Softwoods generally burn hotter and faster, while hardwoods burn longer and produce better coals. Density and moisture content are two critical factors to consider when purchasing wood.

The following is a list of some wood species and their relative BTU (British Thermal Unit) content. The higher the BTU content, the longer the burn. Firewood with higher BTUs is generally ideal for a wood fireplace insert.

### Wood Heat Value: Sorted By Btu Content

Common Name	Lb/ cord	MBTU/ cord
<b>High</b>		
Osage Orange (Hedge)	4,728	32.9
Hickory, Shagbark	4,327	27.7
Hop Hornbeam (Ironwood)	4,267	27.3
Beech, Blue (Ironwood)	3,890	26.8
Birch, Black	3,890	26.8
Locust, Black	3,890	26.8
Hickory, Bitternut	3,832	26.7
Locust, Honey	3,832	26.7
Apple	4,100	26.5
Mulberry	3,712	25.8
Oak, White	4,012	25.7
<b>Medium High</b>		
Beech, European	3,757	24
Maple, Sugar	3,757	24
Oak, Red	3,757	24
Ash, White	3,689	23.6
Birch, Yellow	3,689	23.6

<b>Medium</b>		
Juniper, Rocky Mtn	3,150	21.8
Elm, Red	3,112	21.6
Coffee tree, Kentucky	3,112	21.6
Hackberry	3,247	20.8
Tamarack	3,247	20.8
Birch, Gray	3,179	20.3
Birch, White (Paper)	3,179	20.3
Walnut, Black	3,192	20.2
Cherry	3,120	20
Ash, Green	2,880	19.9
Cherry, Black	2,880	19.9
Elm, American	3,052	19.5
Elm, White	3,052	19.5
Sycamore	2,808	19.5
Ash, Black	2,992	19.1
Maple, Red	2,924	18.7
Fir, Douglas	2,900	18.1
<b>Medium Low</b>		
Boxelder	2,797	17.9
Alder, Red	2,710	17.2
Pine, Jack	2,669	17.1
Pine, Norway (Red Pine)	2,669	17.1
Pine, Pitch	2,669	17.1
Catalpa	2,360	16.4
Hemlock	2,482	15.9
Spruce, Black	2,482	15.9
Pine, Ponderosa	2,380	15.2
<b>Low</b>		
Aspen, American	2,290	14.7
Butternut (Walnut, White)	2,100	14.5
Spruce	2,100	14.5
Willow	2,100	14.5
Fir, Balsam	2,236	14.3
Pine, White (Eastern, Western)	2,236	14.3
Fir, Concolor (White)	2,104	14.1
Basswood (Linden)	2,108	13.8
Buckeye, Ohio	1,984	13.8
Cottonwood	2,108	13.5
Cedar, White	1,913	12.2

Moisture content also plays a key role in the performance of your fireplace insert. Wood freshly cut from a living tree (green wood) contains a great deal of moisture. As you might expect, green wood burns poorly. You must season green wood before

using it in your wood fireplace insert. To season green wood properly, split, stack, and allow it to air dry for a period of one year. Green wood may provide less than 2000 Btu per pound, whereas dry wood can provide up to 7000 Btu per pound.

Stack the firewood on skids or blocks to keep it off the ground, cover only the top of the stack. Plastic or tarps that cover the sides of the woodpile trap moisture and prevent the wood from drying. As for stacking, an old Vermonter said, "The spaces between the logs should be large enough for a mouse to get through, but not for the cat that's chasing it."

- **CAUTION: DO NOT STORE FIREWOOD WITHIN THE FIREPLACE INSERT'S SPECIFIED CLEARANCES TO COMBUSTIBLE MATERIALS.**

### **BUILDING A FIRE**

Once you understand the controls of your wood fireplace insert and have the appropriate firewood, you are ready to start a fire.

- **WARNING: 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.**

### **BREAKING IN YOUR WOOD FIREPLACE INSERT**

It is imperative that your fireplace insert is "broken in" gradually. Soapstone must be "seasoned"; over-firing a new fireplace insert may cause soapstone to crack or may damage other fireplace insert parts. Natural moisture in the freshly quarried soapstone must be driven out slowly to minimize the "shock" to the stone of its first exposure to high firebox temperatures. In addition, the asbestos-free furnace cement must be cured slowly to ensure adequate sealing and bonding.

When you light your first fires, the wood insert will emit some smoke and fumes. This is normal "off-gassing" of the paints and oils used when manufacturing the wood insert. If you find it necessary, open a few windows to vent your room. The smoke and fumes will usually subside after 10 to 20 minutes of operation. The odor and smoke will end once the fireplace insert is "cured".

The first few fires of the season may produce other odors from impurities that exist in the area immediately surrounding the fireplace insert. Some potential impurities are cleaning solvents, paint solvents, cigarette smoke, and soot from scented candles, pet hair, dust, adhesives, a new carpet, and

new textiles. These odors will dissipate over time. You can alleviate these odors by opening a few windows or otherwise creating additional ventilation around your fireplace insert. If any odor persists, contact your dealer or an authorized service technician.

If you adhere to the operating procedures in this manual, the steel, cast iron, and soapstone components of your fireplace insert will give you many years of trouble-free use. With use, the color of the soapstone may change and small fractures may appear on the surface. These changes do not affect the function of the fireplace insert. If a panel breaks completely, it must be replaced

Avoid the following conditions that can cause the glass, soapstone, steel or cast iron pieces to break:

- Do not throw wood into the fireplace insert.
- Do not use the door as a lever to force wood into the fireplace insert.
- Do not load wood encrusted with ice into a burning fireplace insert - the thermal shock can cause damage.
- Do not use a manufactured log grate or otherwise support the fuel. Burn the fire directly on the floor of the firebox.

### BUILDING A BREAK IN FIRE

- 1) Open the bypass handle. Open the front door and place five or six double sheets of tightly twisted newspaper in the center of the firebox. Arrange kindling in a crisscross pattern over the newspaper. Kindling should be approximately ten pieces, 1/2" (13 mm) in diameter and 10" to 16" (254 mm to 406 mm) long.
- 2) Fully open the primary air control by pulling the control handle fully to the left.
- 3) Light the paper under the kindling. Leave the door slightly ajar momentarily until the kindling has started to burn and draft begins to pull.
- 4) Close the door and allow the fire to burn. Keep the door closed while the fireplace insert is in use.
- 5) KEEP A WATCHFUL EYE ON YOUR FIREPLACE INSERT to maintain a steady, low-heat fire. Your first fire should make the fireplace insert warm but **not hot to the touch**. Visible steam, or boiling moisture and hissing indicate the soapstone is too hot. At most, a few small chunks of wood should be added to the fire to reach safe break-in temperatures.

- 6) Once the fireplace insert is warm but **not hot to the touch**, close the primary air control by pulling it fully to the right to allow the fire to die out completely.
- 7) Let the fireplace insert return to room temperature.

Your first fire and first fire each season thereafter should be built and maintained as outlined above. Your patience will be rewarded by a properly seasoned fireplace insert.

- NOTE: The cool flue gas temperatures present during the break-in procedure may cause rapid creosote build-up. The door glass may also get dirty. A good hot fire will clean it. We recommend a visual inspection (and cleaning if necessary) of your stovepipe and chimney once the break-in procedure is completed.

## NORMAL OPERATION

### BUILDING A FIRE FOR EVERYDAY USE

- 1) Open the front door and place five or six double sheets of tightly twisted newspaper in the center of the firebox. Arrange kindling in a tee-pee configuration over the newspaper. Use approximately 10 pieces of kindling, 1/2" (13 mm) in diameter and 10" to 16" (254 mm to 406 mm) long.
- 2) Fully open the primary air control by pulling the lever completely left.
- 3) Light the paper under the kindling. Leave the front door slightly ajar momentarily until the kindling begins to burn and draft begins to pull.
- 4) Close the door and allow the fire to burn.
- 5) Once the kindling is burning, open the front door and add logs, small at first, to build the fire up. Ensure you keep the logs away from the glass in front in order for the air-wash system to work properly. Keep the front door closed while the fireplace insert is in use.

**CAUTION: DO NOT BUILD THE FIRE TOO CLOSE TO THE GLASS. KEEPING THE FIRE TOWARDS THE CENTER OF THE FIRE BOX WILL KEEP COALS FROM BUILDING UP AGAINST THE GLASS DURING RELOADING.**

- 6) Use the primary air control to regulate the desired rate of burn. Pull the handle left for a higher burn rate, and pull the handle right for a

lower burn rate. The air control does not close completely.

**Note:** When opening the front door to reload or rearrange logs, it is advisable to open the door just a crack, pause for a moment then open the door completely. This procedure allows the firebox to clear of smoke before the door is open fully. In addition, reloading on a bed of hot, red coals reduces smoking time and brings fresh fuel up to a high temperature rapidly. When reloading the fireplace insert, try to keep an open path behind the Lower Primary Air Opening (LPAO). It is helpful to leave a small valley in the coal bed behind the LPAO to insure faster re-lighting.

## BURN RATE

**This wood heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual**

**LOW BURN:** Move the air control lever all the way to the right. (See figure 24). This closes the air shutter to its minimum opening. A low burn rate over extended periods is not advisable as it can promote the accumulation of creosote. Inspect the venting system frequently if using low burn rates consistently.

**MEDIUM LOW BURN:** With the primary air control in the low position, pull the air control left (a little less than 1/2"). A medium-low burn rate is the typical setting and is preferable if the fireplace insert is unattended. At this burn rate, a little goes a long way.

**MEDIUM HIGH BURN:** With the primary air control in the low position, pull the air control left (a little less than 1")

**HIGH BURN:** Completely open the primary air control by moving it all the way left. Fully load the firebox with wood on a bed of hot coals or on an actively flaming fire. To minimize creosote accumulation, run the fireplace insert on high once or twice daily for 35 to 45 minutes to fully heat the stovepipe and chimney.

**CAUTION:** Do not burn fuel other than cordwood in your fireplace insert.

## OVER-FIRE CAUTION

Over-firing means the fireplace insert is operating at temperatures above normal temperatures reached

during High Burns outlined in the *BURN RATE* section. Carefully avoid over-firing, as it will damage the fireplace insert. Symptoms of chronic over-firing can include warped components, short burn times, a roaring sound in the fireplace insert or chimney, and discoloration of the finish. A properly installed fireplace insert using fuel and following operating procedures as outlined in this manual should not over-fire.

Excessive draft, inappropriate fuel, and operator error can cause over-firing. Correct an over-fire situation as follows:

- **EXCESSIVE DRAFT:** Contact your local dealer to have a draft reading taken. Any draft in excess of 0.1 WC requires a damper in the stovepipe. Some installations may require more than one damper.
- **INAPPROPRIATE FUEL:** Do not burn coal; kiln dried lumber, wax logs, compressed wood, highly volatile fuels or combustibles, or anything other than natural cordwood.
- **OPERATOR ERROR:** Ensure all the gaskets are in good condition. Replace worn out or compressed gaskets. Only burn the fireplace insert with the door in the closed position, or completely open when using the fireplace screen.

If you suspect your insert is over-firing, discontinue use and contact your dealer immediately. **Damage caused by over-firing is not covered by your warranty.** Results of over-firing can include warped or burned out internal parts, cracked refractory panels, discolored or warped external parts, and damaged finish.

- **ANY SIGNS OF OVER-FIRING WILL VOID YOUR WARRANTY!**

## REMOVAL AND DISPOSAL OF ASHES

You can leave a thin layer of ashes in the firebox if preferred. Allow fire to die down or go out completely. It is important to prevent ashes from building up around the front door opening or they will spill out, or they can pack into the gasket channel and prevent proper sealing. To remove ashes, use a fireplace shovel. Avoid removing large live coals by pushing them to the side and removing only the finer ash with a shovel.

Disposal of ashes - Ashes should be placed directly into a metal container with a tight fitting lid. Do not place any other items or trash into the metal container. Do not pour water into the container.

Replace the container's lid and allow the ashes to cool. Never place the ash disposal container on a combustible surface or vinyl flooring, as the container could be **hot!**

Pending disposal, place the closed ash container on a noncombustible floor or on the ground outside, well away from all combustible materials, liquid fuels, or vehicles. Retain ashes in the closed container until all coals thoroughly cool.

If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

**NEVER** place ashes in wooden or plastic containers, in trashcans with other trash, or in paper or plastic bags, no matter how long the fire has been out. Coals within a bed of ashes can remain hot for several days once removed from the firebox.

## FIRE SCREEN

(Optional Kit #94-69500)

Install the optional fire screen:

Open the door.

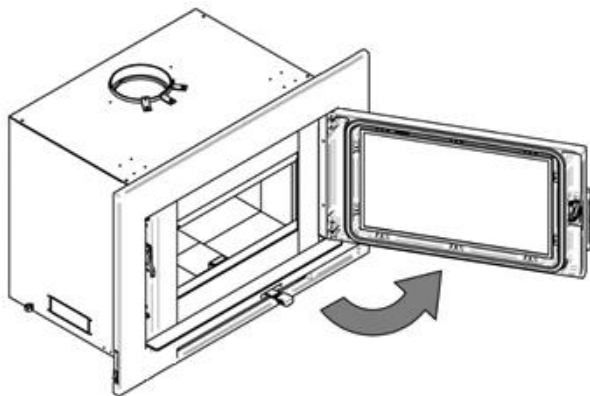


Figure 25 – Open Door

Hold the fire screen by the two handles and bring it close to the door opening.

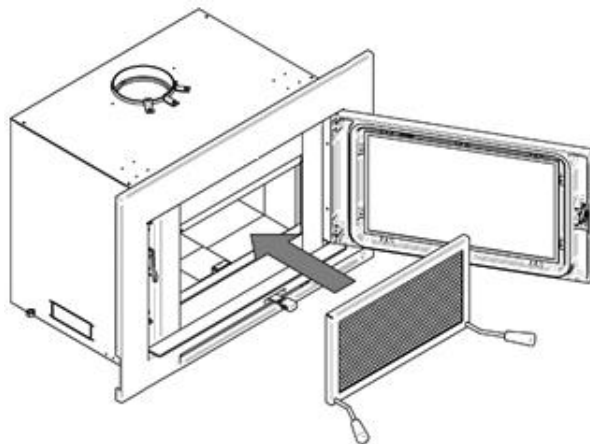


Figure 26 – Install Fire Screen

Lean the upper part of the fire screen against the top door opening making sure to insert the top fire screen brackets behind the primary air deflector.

Lift the fire screen upwards and push the bottom part towards the insert then let the fire screen rest on the bottom of the door opening.

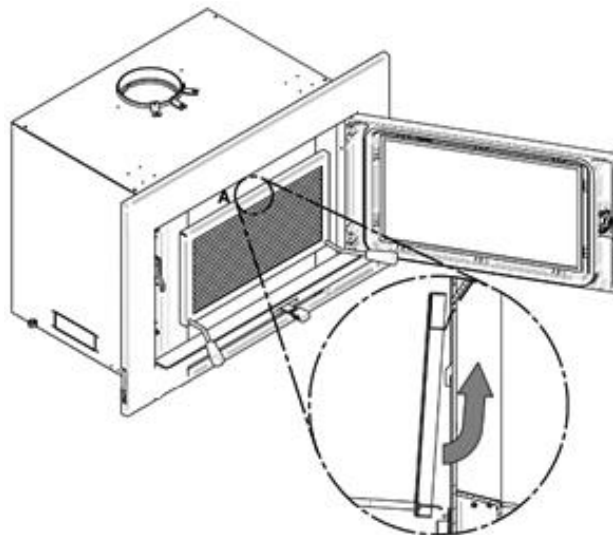


Figure 27 – Install Fire Screen 2

**Warning: Never leave the insert unattended while in use with the fire screen.**

# Maintenance

## CREOSOTE FORMATION & REMOVAL

When wood burns slowly at low temperatures, it may produce tar and other organic vapors, which combine with expelled moisture to form creosote.

These 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, which may damage the chimney or even destroy the house. When burning wood, inspect the chimney connector and chimney at least once every two months during the heating season to determine if there is a creosote buildup.

If a creosote build-up occurs, inspect the stovepipe connector and chimney more often, at least monthly during the heating season to monitor the accumulation. If a creosote residue greater than 1/4" (6 mm) accumulates, remove it to reduce the risk of a chimney fire.

## PREVENTION

Burn the fireplace insert with the primary air control fully open for 35 - 45 minutes daily to burn out creosote deposits from within the fireplace insert and the venting system.

After reloading with wood, burn the fireplace insert with the primary air control fully open for 15 to 20 minutes. This manner of operation ensures early engagement of the secondary combustion system that minimizes creosote buildup in the chimney.

If your glass always remains dirty, your operating temperatures are too low or your wood is wet; therefore, there is a higher risk of creosote buildup.

Inspect the venting system at the fireplace insert connection *and* at the chimney top. Cooler surfaces tend to build creosote deposits faster, so it is important to check the chimney at the top (where it is coolest) as well as from the bottom near the fireplace insert.

## CLEANING

Remove accumulated creosote with a cleaning brush specifically designed for the type of chimney in use. We recommend you use a certified chimney sweep to perform this service. Contact your dealer for the name of a certified chimney sweep in your area (your dealer may be a certified sweep!).

We recommend that before each heating season you have the entire system professionally inspected, cleaned and repaired, if necessary.

## GASKETS

Replace door gasket material every two to three seasons, or whenever it becomes deteriorated or loose, depending on fireplace insert use. If the door seal leaks, a new gasket will ensure a tight seal and improve fireplace insert performance.

We recommend you only use HearthStone replacement gaskets when you need to replace your door gasket. Contact your dealer for a gasket kit that includes instructions, and the gasket for your fireplace insert.

## GLASS

The glass used in our fireplace inserts is actually not plain glass, but a tough, clear ceramic material capable of operating at temperatures up to 2300° F. Do not operate the fireplace insert with a broken door glass. Do not abuse the front door by striking or slamming.

When necessary, clean the glass. For the inside surface of the glass, we recommend using a damp paper towel dipped in white ash. Rub the inside of the glass with a circular motion. When all the deposits are removed, clean up with commercial stove glass cleaners, which are available from your local dealer. Use this type of cleaner for the outside surface as well. Never attempt to clean the glass while the fire is burning or while the glass is hot. Remove deposits by following the instructions provided with the cleaner. Wipe the cleaner off with a soft cloth, or black & white newsprint.

**Important:** scratching or etching the glass will weaken the integrity of the glass. Do not use a razor blade, steel wool, or any other abrasive material to clean the glass. Use a cleaner specifically manufactured for woodstoves only.

The front door glass is a ceramic, thermal shock-resistant glass, made specifically for use in woodstoves. Do not use any replacement glass other than the ceramic glass manufactured and supplied for use in this wood fireplace insert. Replacement glass is available through your local dealer.

Replace the door glass immediately if broken or chipped. Contact your local dealer for replacement glass. The glass kit includes instructions and everything needed for the repair. If you replace the glass yourself, wear work gloves and safety glasses.

## GLASS REPLACEMENT PROCEDURES

Required Glass Kit: Part Number: 96-58405

- **WARNING: DO NOT OPERATE THIS APPLIANCE WITH THE GLASS PANEL REMOVED, CRACKED, OR BROKEN. DO NOT SUBJECT THE DOOR TO ABUSE, SUCH AS STRIKING OR SLAMMING SHUT. ONLY A QUALIFIED SERVICE PERSON SHOULD REPLACE THE GLASS PANEL.**

1. Follow the instructions included with the replacement glass kit.
2. Remove the front casting.
  - a. Remove the two screws below the ash lip, keep these for re-installing
  - b. Lift the front casting up and off the tabs at the top of the firebox face, set aside.
3. Remove the door.
  - a. Use two people to remove the door.
  - b. In an open position, remove the lower hinge from the door, 2 socket head cap screws
  - c. Lift the door off of the upper hinge, save the spacer.
4. Remove the screws from the glass clips (use penetrating oil if necessary) – Set aside for reinstallation.
5. Carefully lift the damaged glass off the door and discard.
6. Remove any remaining glass and old gasket material.
7. Clean the screw holes and place a small amount of anti-seize compound in each one.
8. Install a new glass gasket in the glass gasket groove.
9. Place the new glass onto the door.
  - a. Place the glass with the glossy side facing out. (screen printed side in)
  - b. Align the screen printed arch with the arch of the window opening.
10. **Important! Center the glass** and ensure that the edges of the glass are parallel with the edges of the opening.
11. Screw the glass retainer clips with the glass pads back on the door using a crisscross pattern. Tighten the screws no more than 1/8<sup>th</sup> of a turn after they seat. The glass will break at this point if not positioned correctly.
12. Apply a light film of anti-seize lubricant on the door's hinge pins if needed.

13. Install the door, following step 3 in reverse. Note: use 2 people to install the door.
14. After 5 or 6 fires, check the glass retainer screws, and retighten if necessary.

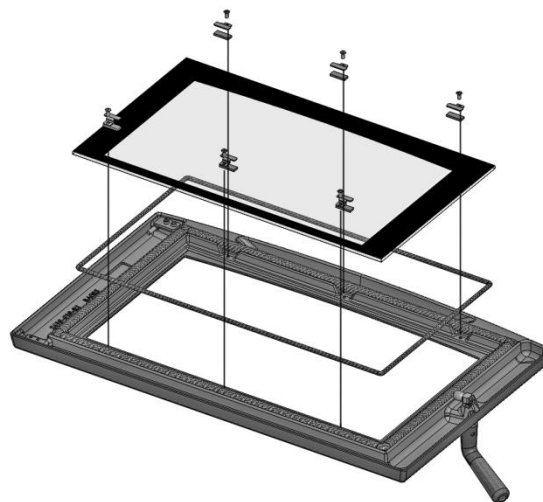


Figure 28 – Glass Assembly

## BLOWER INSTALLATION / REPLACEMENT

1. Loosen and remove two screws below the ash lip of the face plate.
2. Carefully remove the front casting from the fireplace insert. Tilt the frame up slightly, then LIFT the frame up and off the hanger tabs on top of fireplace insert. It may be easiest to open the door slightly and allow the door handle to swing out of the way.

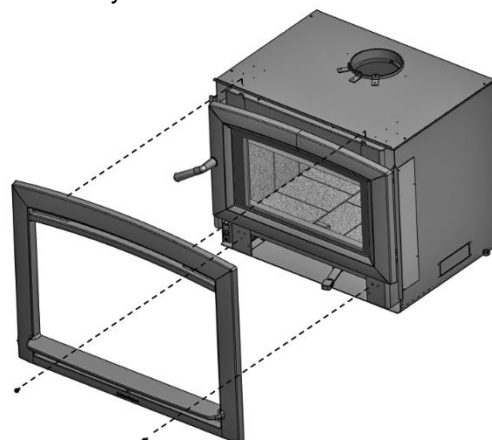
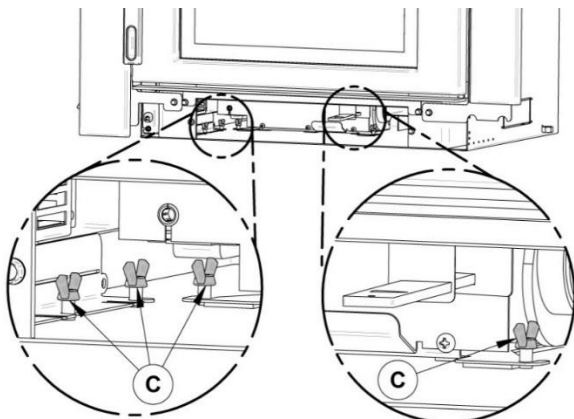


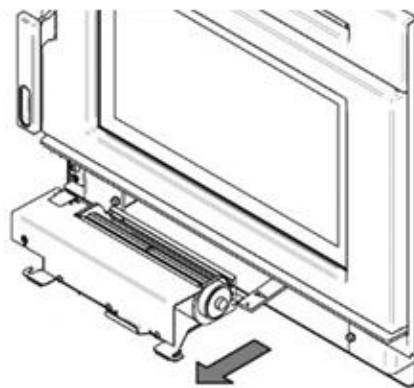
Figure 29 – Remove Front Casting

- Slightly loosen the 4 wing nut (C) then pull the blower assembly towards you to remove it from the convection air jacket. Make sure to disconnect the wiring as it is accessible.

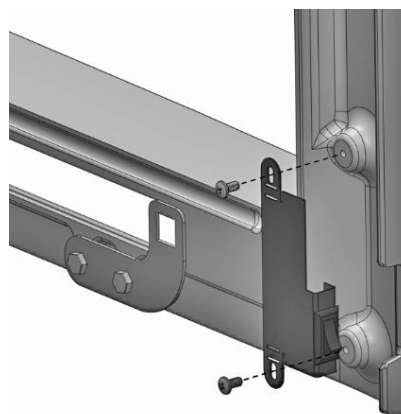


**Figure 30 – Loosen Blower Assembly**

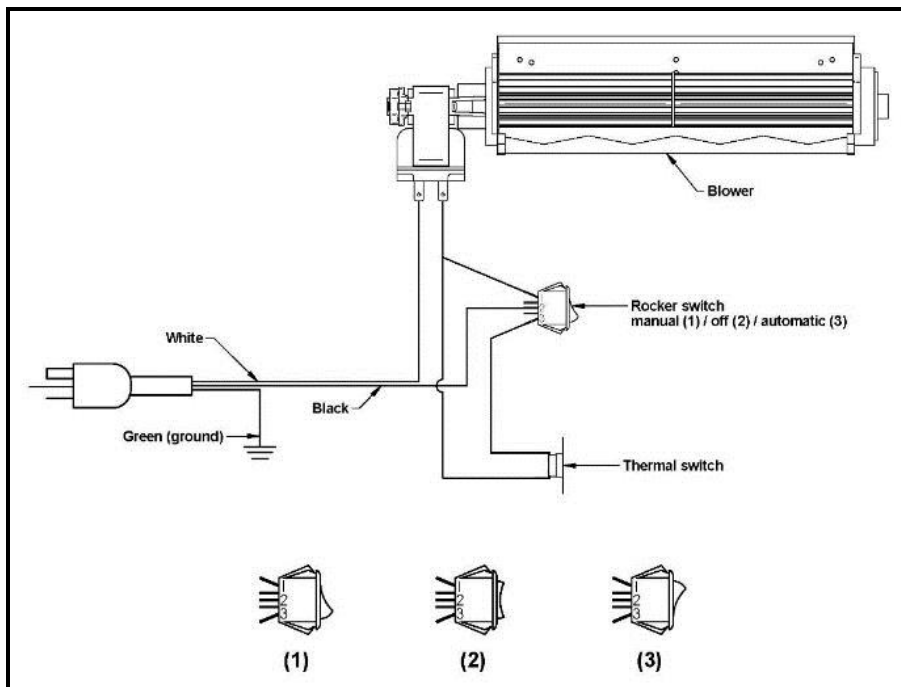
- Carefully remove the blower motor assembly from the fireplace insert. Be sure to disconnect the electrical switch from the cast iron frame once removed, being careful not to pull on the wires or terminals. The switch plate is removed by way of two fasteners on the inside-left of the iron frame as shown.



**Figure 31 – Remove Blower Assembly**



**Figure 32 – Remove Switch Plate**



**Figure 33 – Remove Switch Plate**

## DOOR ADJUSTMENT

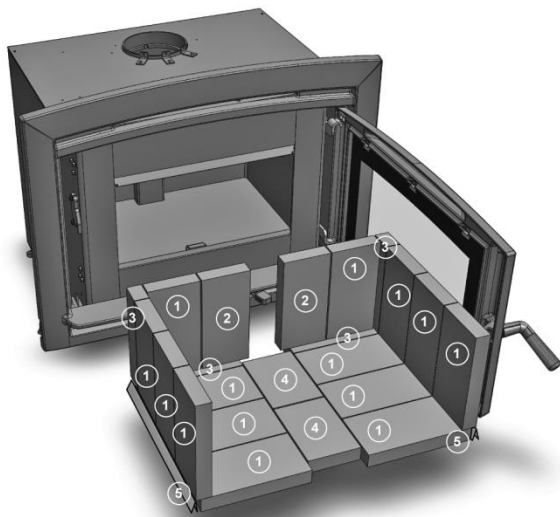
In order for the insert to burn at its best efficiency, the door must provide a perfect seal with the firebox.

The gasket should be inspected periodically to insure a good seal.

To improve the door seal, replace the gasket using Kit# 94-58500.

## REPLACING THE REFRACTORY STONE

1. Allow the insert and ashes to fully cool.
2. Open the front door of the insert and fully clean any ash in the firebox.
3. Remove the rear stones first.
4. Remove the side stones second.
5. Remove the bottom stones last.
6. Installation is the reverse of disassembly. Make sure that the top edges of the stones are behind the retaining steel pieces.

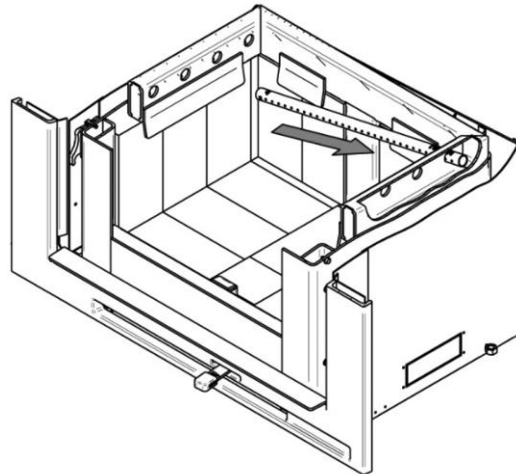


**Figure 34 – Refractory Stone**

	SIZE	QUANTITY
1	9" X 4.5" X 1.25"	14
2	9" X 4.25" X 1.25"	2
3	9" X 2" X 1.25"	4
4	6.5" X 4.5" X 1.25"	2
5	Spacer Channel	2

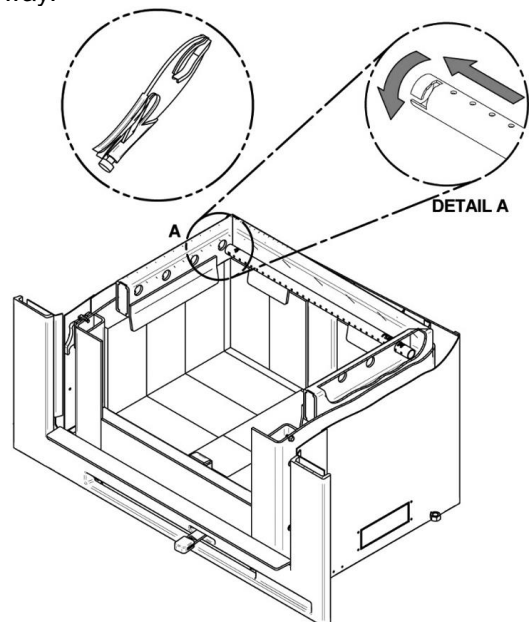
## INSTALLATION OF SECONDARY AIR TUBES AND Baffle

1. Starting with the rear tube, lean and insert the right end of the secondary air tube into the rear right channel hole. Then lift and insert the left end of the tube into the rear left channel.



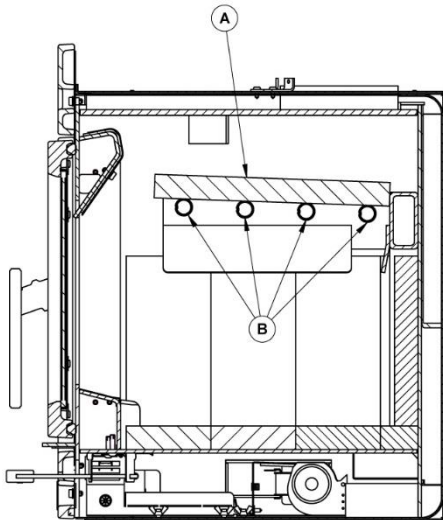
**Figure 35 – Secondary Air Tubes 1**

2. Align the notch in the left end of the tube with the key of the left air channel hole. Using a « Wise grip » hold the tube and lock it in place by turning the tube as shown in DETAIL A. Make sure the notch reaches the end of the key way.

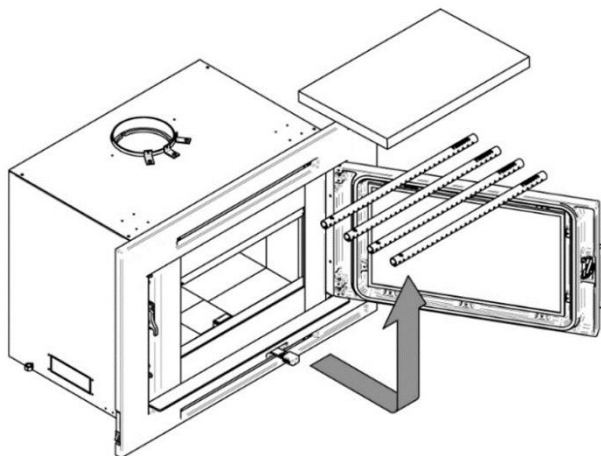


**Figure 36 – Secondary Air Tubes 2**

3. Repeat steps 1 and 2 for the two tubes in the back then install the baffle before installing the two front tubes.
4. To remove the tubes use the above steps in reverse order.



**Figure 37 – Secondary Air Tubes 3**



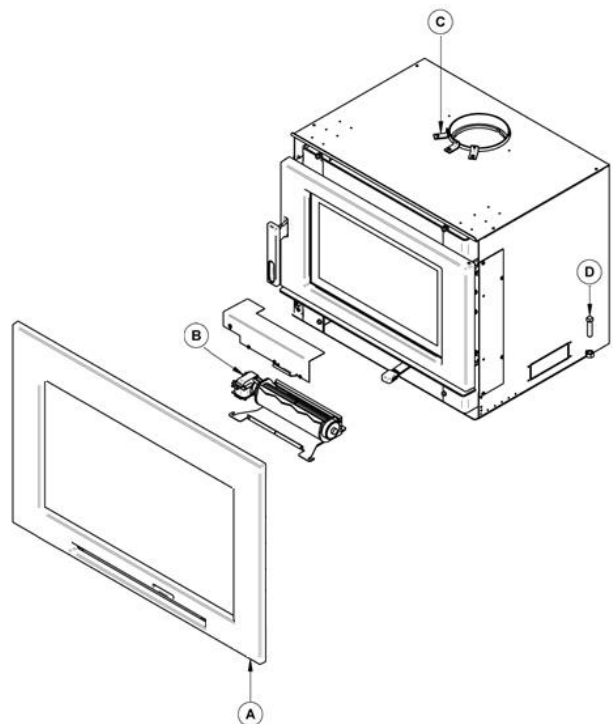
**Figure 38 – Secondary Air Tubes 4**

Note that secondary air tubes (B) can be replaced without removing the baffle board (A).

## REMOVAL INSTRUCTIONS

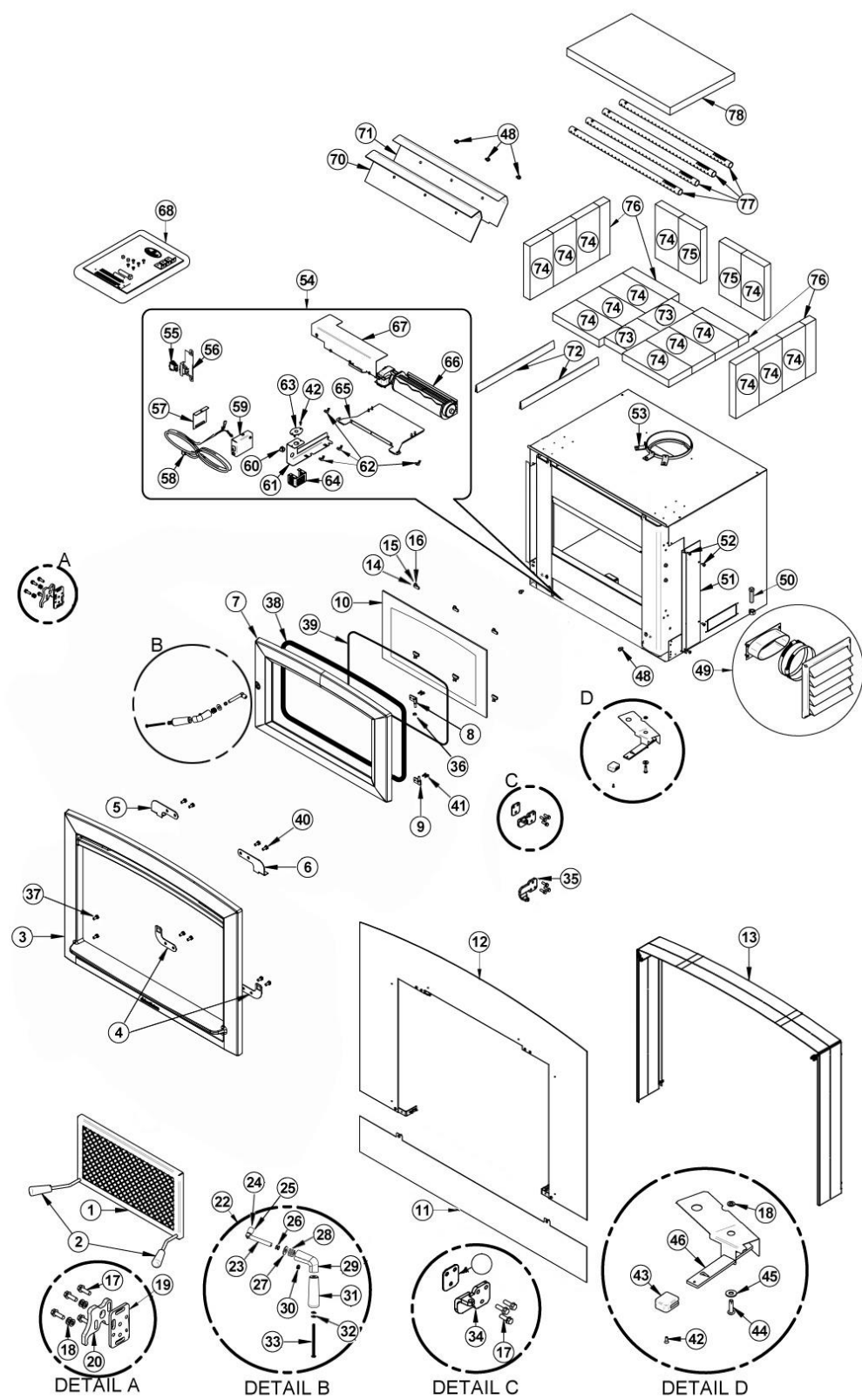
For the purpose of inspecting the insert itself or the fireplace, your insert may need to be removed. To remove your insert follow these instructions:

1. Remove the front casting assembly (A)
2. If necessary, remove blower (B)
3. Remove the screws that secure the chimney liner to the fixation brackets (C).
4. Unscrew the leveling bolts (D) located on each side of the insert.
5. Pull-out the insert from the fireplace opening to perform the maintenance work.



**Figure 39 – Insert Removal**

# Illustrated Parts List



**IMPORTANT: THIS IS DATED INFORMATION.** When requesting service or replacement parts for your insert, please provide the model number and the serial number. We reserve the right to change parts due to technology upgrade or availability. Contact an authorized dealer to obtain any of these parts. Never use substitute materials. Use of non-approved parts can result in poor performance and safety hazards.

#	Item	Description	Qty
1	AC01315	RIGID FIRESCREEN	1
2	30569	ROUND WOODEN HANDLE BLACK	2
3	2410-520	FRONT CASTING, GMI70	1
4	5450-012	HANGER, FRONT CASTING, LOWER	2
5	5450-013	HANGER, FRONT CASTING, UPPER LEFT	1
6	5450-014	HANGER, FRONT CASTING, UPPER RIGHT	1
7	2410-510	DOOR, GMI70	1
8	5450-024	HINGE WITH PIN, DOOR, UPPER	1
9	5450-026	HINGE WITH PIN, DOOR, LOWER	1
10	3030-069	GLASS, 21.25" C11.94"	1
11	94-5950510	SURROUND LOWER PANEL, 42.25" X 5.25"	1
12	94-5950110	SURROUND, STEEL, 42.25" X 31.25"	1
13	94-5950010	SURROUND EXTENSION, 2" – 4"	1
14	5021-060	GLASS CLIP	6
15	3120-021	GASKET, GLASS CLIP	6
16	4500-2105	SCREW, MACHINE, 10-24 X 3/8" UND-CUT, FLAT, PH	6
17	30094	HEX SCREW WASHER HEAD 1/4-20 X 3/4" F ZINC TYPE	10
18	30187	STAINLESS WASHER ID 17/64" X OD 1/2"	3
19	PL65233-01A	LATCH SHIM	1
20	PL65234-01A	DOOR LOCK	1
22	94-71500	HANDLE REPLACEMENT KIT	1
23	5450-020	DOOR LATCH	1
24	5450-022	ROLLER, LATCH	1
25	4300-0701	CLEVIS PIN WITH C-CLIPS	1
26	4700-0790	SPACER, DOOR LATCH, BRASS	2
27	4600-0800	WASHER FLAT, 5/16, USS, 7/8OD, BLACK	1
28	5240-138	SPRING, LATCH, WOOD STOVE	1
29	2010-254	HANDLE CRANK, CAST IRON	1
30	4500-2976	SET SCREW, 5/16-18X38", HALF DOG	1
31	3900-179	WOOD HANDLE	1
32	4600-0400	LOCK WASHER, 1/4, SPLIT	2
33	4500-1680	SCREW, MACHINE, 1/4-20 X 3-1/4", ROUND, SLOT	1
34	5450-010	DOOR HINGE, UPPER	1
35	5450-011	DOOR HINGE, LOWER	1
36	4700-0850	SPACER, HINGE	1

#	Item	Description	Qty
37	4500-2114	MACHINE SCREW, 10-24 X 3/8", PAN, PH, BLACK	2
38	3110-066	GASKET ROPE, 5/8", MED DENSITY, BLACK, 7'	1
39	3110-056	GASKET ROPE, 1/4", BLACK, ADHESIVE, 6'	1
40	4500-0700	CAP SCREW, 1/4-20 X 5/8", HEX, GRADE 5, BLACK OXIDE	8
41	5400-2132	SOCKET HEAD CAP SCREWS, 10-24 X 1/2", BLACK	4
42	30021	SELF TAPPING SCREW 8-32 "F" TYPE X 7/16" FLAT HEAD PHILLIPS BLACK	2
43	30764	WOODEN AIR CONTROL HANDLE	1
44	30506	SCREW PAN TORX TYPE F 1/4-20 X 1" BLACK	1
45	30206	ZINC WASHER 5/16"ID X 3/4"OD	1
46	SE65842	AIR CONTROL DAMPER ASSEMBLY	1
48	30060	THREAD-CUTTING SCREW 1/4-20 X 1/2" F HEX STEEL SLOT WASHER C102 ZINC	5
49	AC01298	5"Ø FRESH AIR INTAKE KIT OVAL	1
50	30337	SQUARE HEAD SET SCREW 1/2-13 X 1-3/4"	2
51	5450-100	LATCH AND HINGES ACCESS PANEL	2
52	30131	BLACK METAL SCREW #10 X 1/2" TYPE "A" PAN QUADREX	4
53	PL34052	LINER FIXATION BRACKET	3
54	SE65746	FAN ASSEMBLY	1
55	44092	3 POSITION ROCKER SWITCH	1
56	5450-015	SWITCH BRACKET	1
57	PL65629	JUNCTION BOX COVER	1
58	60013	POWER CORD 96" X 18-3 type SJT	1
59	PL65627	JUNCTION BOX	1
60	30413	SNAP BUSHING	1
61	PL65626	FAN WIRE GUIDE	1
62	30484	WING NUT 1/4-20	4
63	44028	CERAMIC THERMODISC F110-20F	1
64	PL65632	THERMODISC CASING	1
65	PL65746	FAN BOTTOM FIXATION PLATE	1
66	44075	TANGENTIAL BLOWER 1800 115V-60Hz-30W (S) 90 CFM	1
67	PL65748	FAN PROTECTION COVER	1
68	SE45929	INSTRUCTION MANUEL KIT MATRIX INSERT	1
70	21387	TOP AIR DEFLECTOR INSULATION	1
71	PL65505	TOP AIR DEFLECTOR PROTECTOR	1
72	PL30583	FLOOR BRICK RETAINER / SPACER	2
73	9450-00 (KIT)	SOAPSTONE: 6 1/2" X 4 1/2" X 1 1/4"	2
74	9450-00 (KIT)	SOAPSTONE: 4 1/2" X 9" X 1 1/4"	14
75	9450-00 (KIT)	SOAPSTONE: 4 1/4" X 9" X 1 1/4"	2
76	9450-00 (KIT)	SOAPSTONE: 2" X 9" 1 1/4"	4
77	PL65514	SECONDARY AIR TUBE	4
78	21389	C-CAST BAFFLE 20" X 12 1/2" X 1 1/4"	1

## REPLACEMENT KITS & OPTIONAL ACCESSORIES

PART #	DESCRIPTION
94-53500	OUTSIDE AIR KIT
94-69500	FIRE SCREEN INSERT
94-5950010	SURROUND EXTENSION
94-5950510	SURROUND LOWER PANEL
94-5950110	STEEL SURROUND
94-58500	GASKET KIT: DOOR AND DOOR GLASS
94-58505	GLASS KIT: GLASS AND GASKET
94-71500	HANDLE KIT, FULL ASSEMBLY
94-73500	FRONT DOOR LATCH KIT
94-76500	BAFFLE KIT
94-57500	BLOWER KIT

Refer to the Illustrated Parts list for further detail about insert components, available online at [www.hearthstonestoves.com](http://www.hearthstonestoves.com).

# Troubleshooting

## COMMON ISSUES

Virtually all wood insert operators experience basic common problems at one time or another. Most are correctable and generally require only a minor adjustment of the insert, installation, or operating technique. In cases where weather conditions dramatically affect insert performance, the problems are typically temporary and resolve themselves once the weather changes.

Keep in mind that your house itself regulates room/house temperatures. How well the walls, floors and ceilings are insulated, the number and size of windows, the tightness of exterior doors, and the construction or style of your house (vaulted ceilings or other open spaces which collect large percentages of heat, ceiling fans, etc.) all are determining factors of room temperature.

Your Insert's performance is also greatly dependent on its installation. One common cause of poor performance is inadequate draft. An oversized chimney flue is commonly the cause. Oversized flues result in decreased vacuum, which prevents the smoke from rising out the chimney. Oversized flues are also more difficult to heat effectively, especially when burning a high efficiency insert like the Green Mountain Insert 70. Cool flue temperatures inhibit the establishment of a strong draft (and encourage accumulation of creosote). The lack of a strong draft will cause the fire to die down and may even force smoke into the room. If your chimney is the proper size and a strong draft is not easily established, there is the possibility the chimney is just too cold. Again, hot chimneys promote a stronger draft. Other draft issues and guidelines are as follows:

### 1. AN "AIRTIGHT" HOUSE:

- a. Inadequate infiltration air supply in a super-insulated or especially well sealed home.
- b. Air starvation exacerbated by exhaust fans, such as clothes dryers, bathroom vent fans, or cook stove exhaust fans.

### 2. TALL TREES OR BUILDINGS:

- a. These obstructions, in close proximity to the top of the chimney can cause chronic or occasional downdrafts.
- b. Consider the placement of other objects when selecting a site for a new chimney.

### 3. WIND VELOCITY:

- a. Strong, steady winds generally create a strong (better) draft.
- b. "Gusty" wind conditions may cause erratic downdrafts. Strong winds can produce a negative pressure condition in the upwind side of a structure.

### 4. BAROMETRIC PRESSURE:

- a. Chimney drafts are typically sluggish on balmy, wet or muggy days (low or falling barometric pressure). This is generally self-correcting as the weather changes.

### 5. BRISKNESS OF FIRE:

- a. The hotter the fire, the hotter the chimney and, therefore, the stronger the draft.

### 6. SEASONAL FACTORS:

- a. Early fall and late spring are generally difficult seasons in which to establish proper drafts. The colder the outside air is (relative to room temperatures) the stronger the draft.

### 7. OPERATING THE FIREPLACE INSERT:

- a. There are days when a draft is just not easily established. As outlined above, seasonal factors or a cold chimney may be the cause.
- b. Starting the fire using small kindling and small wood pieces to obtain a quick, hot fire. Tend the fire frequently with small pieces until the chimney is hot and the draft is well established.
- c. Briefly partially open a window in the room with the insert to help establish a draft quickly.

## Troubleshooting Guide

PROBLEM	POSSIBLE CAUSE	SOLUTIONS
INSERT SMOKES	Operating Technique	Fully open the primary air control one minute before opening doors, and ensure the bypass is open before opening door.
	Cold Chimney or reverse draft	Preheat the chimney when first starting a fire. Briefly open a window in the room containing the insert.
	Blocked Chimney	Examine the chimney and stovepipe for blockage or creosote accumulations.
	Oversized Chimney	Reline the chimney to the appropriate diameter
	Undersized Chimney	Install a draft inducer or replace the chimney.
	Chimney Too Short	Lengthen the chimney.
	Air Infiltration Into The Chimney	Seal chimney connections and openings. Check clean-out doors.
	Not burning proper fuel	Ensure cordwood is seasoned and dry.
	More Than One Appliance Connected to the Flue	Disconnect all other appliances and seal openings.
BACK-PUFFING OR GAS EXPLOSIONS	Operating Technique	Fully open the primary air control one minute before opening the door and keep it fully open for a few minutes after reloading. Ensure the bypass door is open before opening the door
	Extra Low Burn Rate	Burn the insert at a higher burn rate.
	Chimney Down-draft	Install a chimney cap.
	Excessive Ash Build-up	Empty the ash pan more frequently. Increase efficiency of burns, and avoid using poor quality or green wood.
UNCONTROLL-ED OR SHORT BURN	Unsealed or Open Door	Close the door tightly or replace the gaskets. Air leakage around glass gasket – replace gasket
	Excessive Draft	Check the installation. Operate at LOW BURN. Install stovepipe damper. Draft in excess of 0.1 wc should be corrected with a stovepipe damper(s)
	Extra Long Chimney	Shorten the chimney. Install stovepipe damper(s).
	Oversized Chimney	Reline the chimney to the proper diameter.
	High Winds or Hilltop Location:	Install a chimney cap.
INSUFFICIENT HEAT	Poor Quality, low Btu content, or Green Wood	Use only air-dried wood, preferably dried <u>at least</u> one year. Use a wood with a high Btu content if available.
	Low Burn Rate	Operate the insert at a higher burn rate.
	Cold Exterior Chimney	Reline or insulate the chimney.
	Leaky Stovepipe or Chimney	Check the installation. Replace with a pre-fabricated insulated chimney system or a properly sized masonry chimney.
	Too Much Heat Loss From House	Add insulation, use energy efficient windows, or caulk windows, and seal openings in home.
	Excessive Ash Build-up	Empty the ash pan more frequently. Increase efficiency of burns, and avoid using poor quality or green wood.
BLISTERING OF FINISH	Operating Technique	Do not over-fire the insert. Monitor insert temperatures. Use seasoned wood only.
	Excessive Draft	Check the DRAFT. A damper may be required. Operate the insert at a LOW BURN range.

# Safety Label



**Intertek**  
Control number: 4002461  
(March/Mars 2018)

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR  
DETAILED INFORMATION  
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS  
D'INTERTEK POUR PLUS D'INFORMATION

## STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon ULC S628  
Certified to / Certifié selon UL 1482  
Certified to / Certifié selon UL 737  
Certified to / Certifié selon CSA B415.1-10  
Certified to / Certifié selon Draft ASTM WK47329-14  
Certified to / Certifié selon ASTM E2515-11

## LISTED SOLID FUEL BURNING INSERT APPLIANCE

APPAREIL ENCASTRABLE À  
COMBUSTIBLE SOLIDE HOMOLOGUÉ

MODEL / MODÈLE :

GREEN MOUNTAIN

INSERT 70

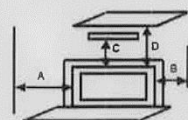
Serial Number  
No. de Série

1

## Clearances to combustibles / Dégagements aux combustibles

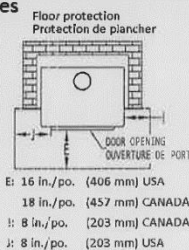
Measured from door opening

Mesuré à partir de l'ouverture de porte



Blower / Ventilateur:  
115VOLTS, 0.8 AMPS, 60Hz

Combustible side wall Mur côté adjacent	A: 16 in./po. (406 mm)
Combustible side surround [1] Paravent latéral combustible [1]	B: 9 in./po. (229 mm)
Combustible top surround [1] Paravent supérieur combustible [1]	C: 27 in./po. (686 mm)
Combustible mantle shelf [1] Tablette combustible [1]	D: 27 in./po. (686 mm)
Combustible top surround with shield [1][2] Paravent supérieur combustible avec écran [1][2]	E: 21 in./po. (533 mm)
Combustible mantle shelf with shield [1][2] Tablette combustible avec écran [1][2]	D': 21 in./po. (533 mm)



F: 16 in./po. (406 mm) USA  
18 in./po. (457 mm) CANADA  
I: 8 in./po. (203 mm) CANADA  
J: 8 in./po. (203 mm) USA

Floor - Ceiling / Plancher - Plafond: 84 in./po. (213 cm)

[1] Subject to a maximum protrusion (consult owner's manual) / Sujet à une saillie maximale (consultez le manuel d'instructions)

[2] Consult owner's manual for additional details concerning shield / Pour plus de détails sur l'écran consulter le manuel de l'utilisateur.

## PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's Installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use with solid wood fuel only. Do not use other fuels.
- Risk of smoke and flame spillage. Operate only with door closed or door open with screen door installed. Open door or remove screen door only to feed the stove.
- Do not connect this unit to a chimney serving another appliance.
- Install only in masonry fireplaces. Do not remove bricks or mortar from masonry fireplace.
- The non-combustible floor protection in front of the unit should have an R value equal or greater than 1.00 extending 23 inches (584 mm) in front of the Insert if the hearth elevation is lower than 5 inches (127 mm) or extend 16 inches (406 mm) (USA), 18 inches (457 mm) (CANADA) without a R value if the hearth elevation is higher than 5 inches (127 mm).
- Connect to a code-approved masonry chimney or listed factory-built fireplace chimney with a direct flue connector into the first chimney liner section.
- Do not overfire. If stove or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain conditions of use, creosote buildup may occur rapidly.
- Do not use grate or elevate fire. Build wood fire directly on hearth.
- Replace glass only with ceramic glass.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

## PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser avec le bois seulement. Ne pas utiliser d'autres combustibles.
- Risque de fuite de fumée et de flammes. Utiliser l'appareil la porte fermée ou ouverte avec le pare-étincelle en place uniquement. Ouvrir la porte ou retirer le pare-étincelle seulement lors du chargement.
- Ne pas raccorder à un conduit de fumée servant déjà pour un autre appareil.
- Installer seulement dans un foyer de maçonnerie. Ne pas enlever les briques ou le mortier du foyer de maçonnerie.
- La protection de plancher incombustible au devant de l'encastrable devrait avoir un facteur d'isolation R égal ou supérieure à 1.00 et se prolonger 23 pouces (584 mm) au devant de l'appareil lorsque l'âtre possède moins de 5 pouces (127 mm) d'élevation et se prolonger 16 pouces (406 mm) (USA), 18 pouces (457 mm) (CANADA), sans facteur d'isolation R au devant de l'encastrable lorsque l'âtre possède plus de 5 pouces (127 mm) d'élevation.
- Raccorder à une cheminée de maçonnerie respectant les codes ou à une cheminée préfabriquée homologuée, directement à la première section de cheminée gainée.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, la formation de crasse peut être rapide.
- Ne pas utiliser de chenets ou de grilles pour élever le feu. Préparer le feu directement sur l'âtre.
- Remplacer la vitre avec un verre de céramique.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.  
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.  
Weighted average emission rate: / Moyenne pondérée des émissions: 1.54 g/h  
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii))



**WARNING:** This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.  
(For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov))



## CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

## ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

Made in St-Augustin-de-Desmaures (Qc)  
22/05/2019 (# test)



à St-Augustin-de-Desmaures (Qc), Canada  
22/05/2019 (# test)

27779



## Limited Warranty

**These warranties give you specific legal rights. You may also have other rights, which vary from State to State.**

HearthStone Quality Home Heating Products, Inc. (HearthStone) warrants to the original retail purchaser only (the "Original Purchaser") the new appliance manufactured by HearthStone, purchased by the Original Purchaser and installed by an authorized HearthStone dealer or their designated representative against any of the occurrences listed in this document that result from defects in material or workmanship. This warranty is not transferrable. All obligations of HearthStone under this document commence on the date of the Original Invoice (the "Purchase Date"). The term "Limited Lifetime" is defined as 10 years from the beginning of warranty coverage.

HearthStone appliances are designed to be operated only with the fuels listed in your owner's manual.

### Insert components Limited Warranty

Warranty Period	Wood	Gas	Pellet	Covered Components
Limited Lifetime	X	X	X	Stone
	X	X	X	Cast iron not listed elsewhere
	X			Clean burning air supply system*
5 Year	X	X	X	Door handles and latches
	X	X	X	Steel Components and Firebox
		X		Burner and logs
3 Year			X	Burn Pot and Baffles
2 Year	X	X	X	Appliance Electrical and Gas Components
	X	X		Refractory, Vermiculite Panels, Baffles
1 Year	X	X	X	Enamel finish against peeling or fading
	X	X	X	Accessories
	X	X	X	Glass
	X			Ash Grate
	X	X	X	All components not listed elsewhere

Any parts repaired or replaced during the limited warranty period will be warranted under the terms of the limited warranty for a period not to exceed the remaining term of the original limited warranty or one year, whichever is longer.

**Parts:** HearthStone will replace through an authorized dealer, defective parts covered by the foregoing warranty at no charge.

**Labor:** Within the first (1<sup>st</sup>) year after the Purchase Date, HearthStone will pay for warranty labor performed by an authorized Dealer at HearthStone's published labor rates in effect at the time the labor is performed only if the appliance is installed by an authorized dealer or their designated representative. Otherwise or thereafter, the Original Purchaser is responsible for the cost of labor.

**Shipping cost for parts:** Within the first ninety (90) days after the Purchase Date, HearthStone will pay for the shipping of appliance parts covered by any of the foregoing warranties to and from HearthStone or an

authorized Dealer, as the case may be. Thereafter, the Original Purchaser is responsible for all shipping costs related to shipping appliance parts to and from HearthStone or an authorized Dealer, as the case may be.

**Shipping cost for the appliance:** Within the first (1st) year after the Purchase Date, if the Original Purchaser is instructed to return the appliance to HearthStone or an authorized Dealer for repair, HearthStone will pay fifty percent (50%) and the Original Purchaser will pay fifty percent (50%) of the shipping costs related to shipping the appliance to and from HearthStone or an authorized Dealer, as the case may be. Thereafter, the Original Purchaser is responsible for one hundred percent (100%) of all of the shipping costs related to shipping the appliance to and from HearthStone or an authorized Dealer, as the case may be. Notwithstanding any other provision of this document, in no event will HearthStone pay for any Dealer fees or other fees for pick up or delivery of the appliance returned for repair; the Original Purchaser shall be responsible for any such fees.

## EXCLUSIONS & CONDITIONS

The warranties contained in this document do not cover, nor is HearthStone responsible for:

1. Damages resulting from:
  - a. Failure to install, operate, or maintain the appliance in accordance with the owner's manual, operating instructions, installation instructions, or safety rating label provided with the appliance.
  - b. Over-firing the appliance. Over-firing can be identified by, but not limited to, warped cast iron or steel, rust colored cast iron, bubbling, cracking and discoloration of steel or enamel finishes.
  - c. Failure to install the appliance in accordance with all national or local building codes.
  - d. Shipping or improper handling.
  - e. Improper operation, abuse, misuse, continued operation with damaged, corroded, or failed components, accident, or improper/incorrect service or repairs.
  - f. Environmental conditions, inadequate ventilation, negative pressure, or improper drafting caused by tightly sealed constructions, insufficient make-up air supply, or air handling devices such as exhaust fans, forced air furnaces, or other such causes.
  - g. Damage caused by direct exposure to water.
  - h. Use of fuels other than those specified in the owner's manual.
  - i. Installation or use of components not supplied with the appliance, or any other components not expressly authorized and approved by HearthStone.
  - j. Modifications of the appliance not expressly authorized and approved by HearthStone in writing.
  - k. Interruptions or fluctuations of electrical power supplied to the appliance.
2. All stones are warranted against cracking or breakage due to thermal stress, excluding surface and hairline cracks and scratches that do not affect the operation, or safety of the appliance.
3. Repair or replacement of wear parts. Such parts that are subject to normal wear and tear during the warranty period such as paint, gaskets, baffles, refractory materials, ash grates, and glass.
4. Damage resulting from installation, modification, alteration, repair or service of the appliance by any party other than an authorized HearthStone dealer (a "Dealer") or their designated representative, or HearthStone.
5. Damage due to water or condensation due to installation of the appliance in a high moisture area.
6. Damage due to installation of the appliance in an atmosphere contaminated by damaging chemicals, including but not limited to chlorine, fluorine or salts.
7. Scratches on glass, enameled surfaces or stones due to mechanical abrasion.
8. Noise caused by expansion or contraction caused by the heating and cooling of the appliance.
9. Odors caused by the heating of the appliance, or surrounding materials
10. Consequential damage caused by leaking of condensate during startup
11. A defect in any part of the appliance if the Original Purchaser fails to comply with HearthStone's or a Dealer's request to ship the part or the appliance to HearthStone or a Dealer, as the case may be.
12. Replacement stones and enameled parts are taken from current stock, and may not match originals in color, grain, or pattern. HearthStone will supply replacement parts for discontinued parts in finishes or colors as available, or at their discretion.
13. HearthStone's obligation under this warranty does not extend to the appliance's ability to heat the desired space. Information is provided to assist the customer and the dealer in selecting the appropriate appliance for the application. Consideration must be given to appliance location and configuration, environmental conditions, insulation and air tightness of the structure.

THE WARRANTIES CONTAINED IN THIS DOCUMENT ARE EXCLUSIVE AND ARE GIVEN BY HEARTHSTONE AND ACCEPTED BY THE ORIGINAL PURCHASER IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND ANY OBLIGATIONS, LIABILITIES, RIGHTS, CLAIMS, OR REMEDIES IN CONTRACT OR TORT, WHETHER OR NOT ARISING FROM HEARTHSTONE'S NEGLIGENCE, ACTUAL OR IMPUTED. ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE GIVEN ONLY TO THE EXTENT REQUIRED BY FEDERAL OR STATE LAW. EXCEPT AS OTHERWISE REQUIRED BY STATE LAW, UPON THE EXPIRATION OF THE EXPRESS LIMITED WARRANTIES CONTAINED HEREIN, NO IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THE SUBJECT APPLIANCE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

THE WARRANTIES CONTAINED IN THIS DOCUMENT EXTEND ONLY TO THE ORIGINAL PURCHASER OF THE APPLIANCE WARRANTED HEREUNDER. THEY ARE NOT TRANSFERRABLE AND DO NOT EXTEND TO ANY SUBSEQUENT OWNERS.

UNDER NO CIRCUMSTANCES SHALL HEARTHSTONE BE LIABLE TO THE ORIGINAL PURCHASER OR ANY OTHER PERSON FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO DAMAGE TO PROPERTY OR PERSONAL INJURIES, WHETHER ARISING OUT OF LOSS OF USE, BREACH OF WARRANTY, TORT, OR OTHERWISE, EVEN IF HEARTHSTONE HAS BEEN APPRAISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

### **QUALIFYING FOR WARRANTY COVERAGE**

To obtain performance of any obligation under this document, the Original Purchaser must, within the applicable warranty time period, contact their original HearthStone dealer, or the current responsible local HearthStone dealer, for instructions regarding the return of defective parts for repair, the return of the appliance for repair, or to schedule a Dealer service call. The Original Purchaser should refer to the Dealer Network search engine contained on HearthStone's Web site ([www.hearthstonestoves.com](http://www.hearthstonestoves.com)) if the original dealer is not available, to find a HearthStone dealer nearest to the Original Purchaser's location.

### **REMEDY**

The remedy for any breach of the foregoing warranties will consist of repair or replacement, at HearthStone's option, of any covered defect in the appliance. When the Original Purchaser contacts a HearthStone Dealer, the Dealer on behalf of HearthStone, as the case may be, will instruct the Original Purchaser to either return the defective part, or the entire appliance (if requested), to the Dealer or HearthStone or allow a Dealer to make a service call at the place where the appliance is located. HearthStone may require that a digital picture be provided to support the claim. Notwithstanding any other provision of this document, the Original Purchaser shall pay for any fees and service charges related to a Dealer's service call or the shipping charges associated with the return.

### **WARRANTY REGISTRATION**

The Original Purchaser can complete their warranty registration on our website at [www.hearthstonestoves.com](http://www.hearthstonestoves.com), or send a completed and signed Warranty Registration Form, which is enclosed in the appliance document packet, to the following address:

HearthStone Quality Home Heating Products, Inc.  
Warranty Department  
317 Stafford Avenue  
Morrisville, VT 05661

**NOTE: SENDING IN THE SIGNED WARRANTY REGISTRATION FORM IS *NOT REQUIRED* AS A CONDITION OF WARRANTY COVERAGE OR HEARTHSTONE'S PERFORMANCE.**