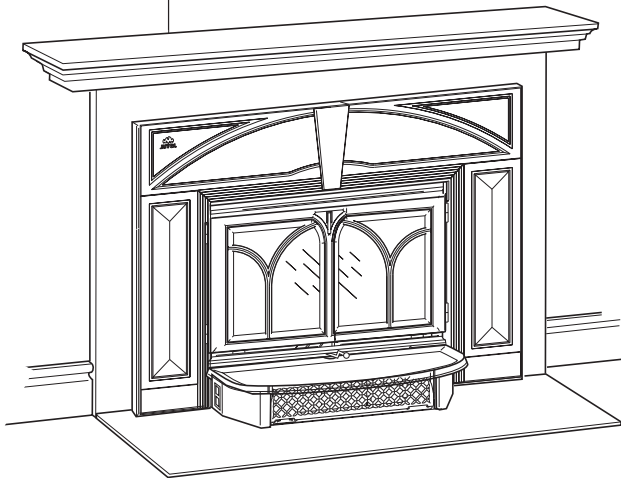


Jøtul C450 Kennebec  
Fireplace Insert

# Jøtul C450 Kennebec Fireplace Insert

Installation and Operating Instructions  
for the United States & Canada



Keep these instructions for future reference.

## *Welcome to Jøtul...*

*Congratulations on the purchase of your new Jøtul C 450 Kennebec Fireplace Insert.*

*We at Jøtul are glad you've made the decision to warm your hearth with a Jøtul product. Your new fireplace insert exemplifies our experience gained over 150 years as the world's largest manufacturer of solid fuel burning appliances. We've been making fine quality cast iron wood and coal stoves and fireplaces continuously since 1853.*

*The C 450 Kennebec Fireplace Insert combines advanced wood combustion technology with the warm, traditional elements of cast iron. With proper care and use, your Jøtul fireplace will provide you with many years of safe, dependable and satisfying service.*

*The C 450 Kennebec Fireplace Insert is designed and approved for installation into an existing, conventional masonry fireplace. Please take a few minutes to familiarize yourself with this manual and the features of your new Jøtul fireplace.*



# Table of Contents

## Standards and Safety Notices

Standards / Codes .....	4
Safety Notices .....	5
Preparation .....	5

## Specifications

C450 Kennebec Fireplace Insert .....	6
C450 Kennebec Surround Assembly .....	6

## Installation

Masonry Fireplace Requirements .....	7
Factory-built Fireplace Requirements .....	7
Chimney Height .....	7
Clearance to Combustibles .....	8
Hearth Protection .....	9
Chimney Connection .....	10
Surround Assembly .....	11
Mantel Heat Shield Assembly .....	12
Blower .....	13

## Operation

Wood Fuel .....	16
Air Control .....	16
Starting / Maintaining the Fire .....	17
Formation of Creosote .....	17

## Maintenance

Ash Removal .....	18
Glass Care .....	18
General Maintenance .....	19
Gaskets .....	19

## Illustrated Parts Breakdown

Parts List .....	20-21
------------------	-------

## Appendix A

Alternate Floor Protection .....	22
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# Installation and Operation Instructions for USA/Canada

## Installation et fonctionnement pour Canada

**SAFETY NOTICE: IF THIS SOLID FUEL ROOM HEATER IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

**Avis de sécurité: Une installation non appropriée de ce poêle de chauffage risque de provoquer un incendie. Assurez votre sécurité en respectant les directives d'installation suivantes. Consultez les autorités locales du bâtiment ou de la prévention des incendies au sujet des restrictions et exigences relatives aux inspections d'installations dans votre région.**

*Tested and listed by ITS, Intertek Testing Services, Middleton, Wisconsin.  
Tested to U.S. Standards: ANSI/UL 1482, Canadian Standards: CAN/ULC-S627-M93*



### Standards

The Jøtul C450 Kennebec Fireplace Insert has been tested and listed to: U.S: ANSI/UL 1482  
Canada: CAN/ULC-S628-93

*Tests performed by:*  
ITS, Intertek Testing Services, Middleton, WI

*Manufactured and distributed by:*  
Jøtul North America  
55 Hutcherson Dr.  
Gorham, ME 04038

### MEA No. 368-04-E

This heater meets the U.S. Environment Protection Agency's Emissions limits for wood heaters manufactured and sold after July 1, 1990.

Under specific test conditions, this heater has shown heat output at rates ranging from 10,000 to 35,000 BTU's per hour.

**THE JØTUL C450 KENNEBEC FIREPLACE INSERT IS ONLY LISTED TO BURN WOOD. DO NOT BURN ANY OTHER FUELS.**

**READ THIS ENTIRE MANUAL BEFORE YOU INSTALL AND USE YOUR NEW FIREPLACE INSERT.**

**SAVE THESE INSTRUCTIONS AND MAKE THEM AVAILABLE TO ANYONE USING OR SERVICING THE FIREPLACE.**

### Check Building Codes

When installing, operating and maintaining your Jøtul C450 Kennebec Fireplace Insert, follow the guidelines presented in these instructions, and make them available to anyone using or servicing the stove.

Your city, town, county or province may require a building permit to install a solid fuel burning appliance.

**In the U.S.**, the National Fire Protection Association's Code, NFPA 211, *Standards for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances*, or similar regulations, may apply to the installation of a solid fuel burning appliance in your area.

**In Canada**, the guideline is established by the CSA Standard, CAN/CSA-B365-M93, *Installation Code for Solid-Fuel-Burning Appliances and Equipment*.

Always consult your local building inspector or authority having jurisdiction to determine what regulations apply in your area.



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



## Safety Notices

- **BURN SOLID WOOD FUEL ONLY**
- **DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE. DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS.**
- **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 MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR LOSS OF LIFE.**
- **CONTACT THE LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA. WHEN NOT ADDRESSED IN THIS MANUAL, OR BY LOCAL CODE AUTHORITIES, INSTALLATION SPECIFICATIONS AND REQUIREMENTS DEFER TO NFPA 211.**
- **DO NOT CONNECT THIS FIREPLACE TO ANY AIR DISTRIBUTION DUCT OR SYSTEM .**
- **EXTREMELY HOT WHILE IN OPERATION! KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT WILL CAUSE SKIN BURNS.**
- **NEVER OPERATE THE FIREPLACE WITH A CRACKED OR BROKEN GLASS PANEL.**
- **Install smoke detectors in the living areas and bedrooms of your home. Test them regularly and install new batteries twice annually. When installed in the same room as the stove, a smoke detector should be located as far from the stove as possible to prevent it from sounding when adding fuel to the fire.**
- **Avoid creating a low pressure condition in the room where the stove is operating. Be aware that operation of an exhaust fan or clothes dryer can create a low pressure area and consequently promote flow reversal through the stove and chimney system. The chimney and building, however, always work together as a system - provision of outside air, directly or indirectly to an atmospherically vented appliance will not guarantee proper chimney performance. Consult your local Jøtul authorized dealer regarding specific installation/ performance issues.**

# Installation

## Preparation

We strongly urge you to have your authorized Jøtul dealer install your new Jøtul C450 Kennebec Fireplace Insert. If you install the unit yourself, ask your dealer to review your installation plans.

- Check with local building officials to determine what permits may be required before installation.
- Notify your insurance company before installing this fireplace.

## Approved Installations

The Jøtul C450 Kennebec Fireplace Insert may be installed into an existing masonry fireplace with a fully-lined masonry chimney.

## Unpacking the Fireplace

All components of the Jøtul C450 Kennebec Fireplace Insert are contained within the carton on a single pallet. Carefully unpack the contents and inspect each item for damage. Notify your dealer of any damage such as dents, cracked glass, or broken bricks.

### Contents:

- **Steel Firebox** - including Firebricks, 18 installed
- **Surround Panels** -

Matte Black /	Blue Black
Left Breastplate	Right Breastplate
Left Leg Panel	Right Leg Panel
Trim Rod	
- Ashlip Assembly / Base Extension
- Hardware Bag
  - Fireplace Conversion Notice Plate
  - M6 x 12 Hex Head Flange Bolts, 4
  - M6 x 10 Hex Head Flange Bolts, 2
  - M6 Fender Washers, 4
  - Stove Tool

### Tools & Materials Required:

- work gloves
- safety glasses
- tape measure
- phillips screwdriver
- tin snips
- power drill
- High Temperature Sealant
- 1" (25 mm) masonry anchors or nails, two
- #10 x 1/2" sheet metal screws, three
- 10 mm open end wrench or socket

# Jøtul C450 Kennebec Specifications

## Performance

Fuel:	20" Logs
Heat Output <sup>1</sup> :	50,000 BTU/hr. (4.1 kg/hr.)
Heating Capacity <sup>2</sup> :	1,100 - 1,600 sq. ft.
Overall Efficiency <sup>3</sup> :	71%
Emissions:	4.4 grams/hr.
Burn Time:	4-9 hours
Optional Blower:	125 cfm.
Shipping Weight:	445 lbs. (202 kg.)

- <sup>1</sup> Maximum Heat Output based on total kilograms of dry wood burned in a one hour period.
- <sup>2</sup> Heating Capacity and Maximum Burn Time will vary depending on design of home, climate, wood type and operation.
- <sup>3</sup> Overall Efficiency is based on a burn rate of .99 kg wood per hour.

*The Jøtul C450 Kennebec Fireplace Insert meets U.S. EPA emission limits for wood heaters sold after July 1990, and are tested and listed to ANSI/UL 1482, and CAN/ULC S628.93. It is intended for installation in accordance with NFPA 211 or CAN/CSA B365.*

**MEA No. 113-00-E**

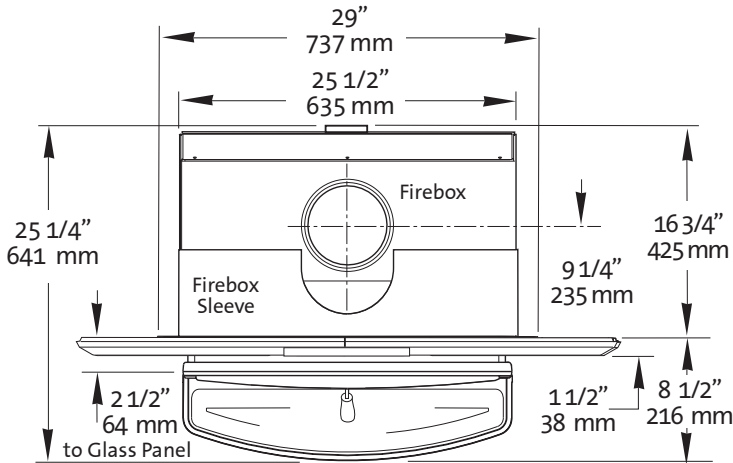


Figure 1. Maximum Sleeve Adjustment

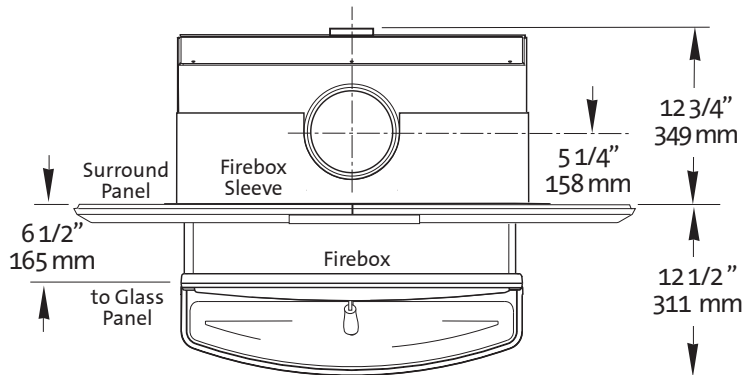


Figure 2. Minimum Sleeve Adjustment

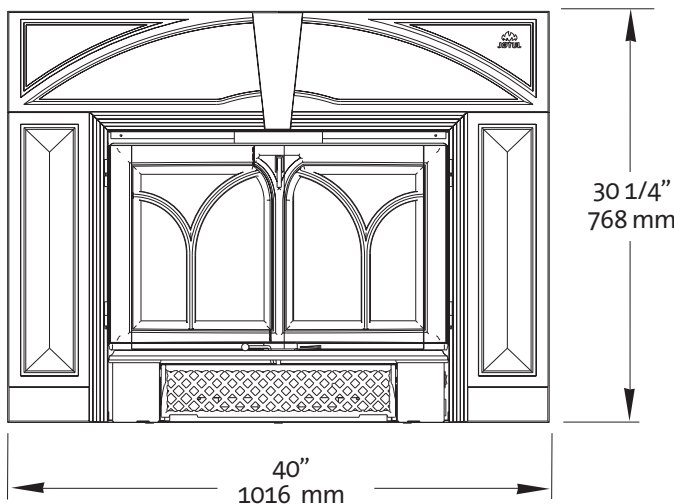


Figure 3. Overall Surround Dimensions

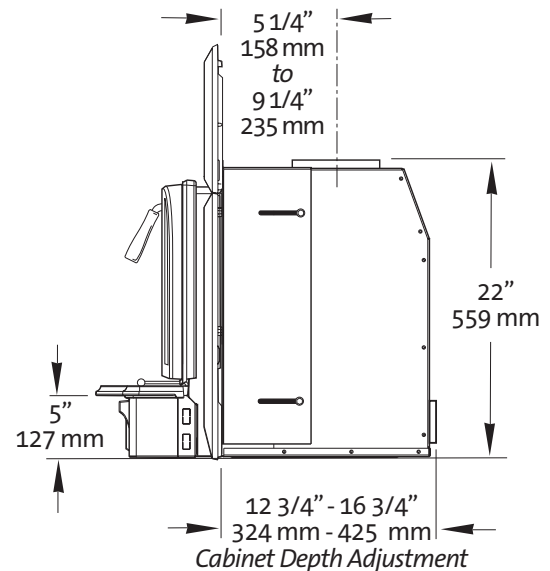


Figure 4. Flue Collar Centerline from Front Face

# Installation

## Masonry Fireplace Requirements

- The entire fireplace and chimney must be cleaned and inspected before installation. The system must meet local building code requirements.
- The structure and components must be free of any defects such as cracks or broken bricks or flue tiles. Any damage must be repaired before installation. Any opening that may exist between the masonry of the fireplace and the facing masonry must be permanently sealed.
- The chimney must have a clay tile liner or a stainless steel liner utilizing a positive connection.
- **DO NOT REMOVE BRICKS OR MORTAR FROM THE FIREPLACE OR CHIMNEY STRUCTURE.** However, masonry or steel may be removed from the smoke shelf and adjacent damper frame area to accommodate installation of a chimney liner, provided that their removal will not weaken the structure of the fireplace or chimney, and will not reduce protection for combustible materials.
- **CHIMNEY HEIGHT:**  
Minimum - 15 ft. ( 4.57 meters)  
Maximum - 33 ft. (10.5 meters)

## Minimum Fireplace Dimensions

- A:** FRONT WIDTH \* ..... 27 1/2" (698 mm)
- B:** HEIGHT ..... 23" (584 mm)
- C:** REAR WIDTH..... 25 1/2" (648 mm)
- D:** REAR HEIGHT..... 21 1/2" (546 mm)
- E:** DEPTH..... 14" (355 mm)

\* NOTE: Width dimension accommodates clearance for Surround attachment to the front of the firebox.

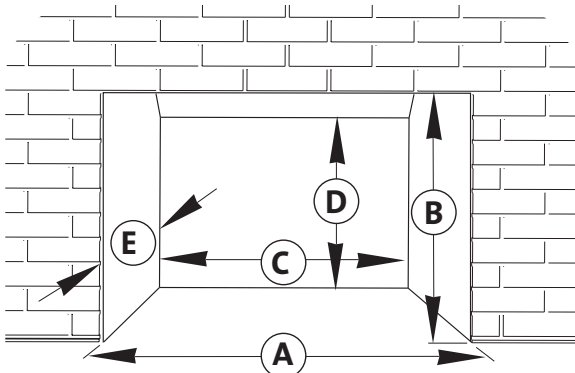


Figure 5. Minimum Fireplace Dimensions

## Factory-Built Fireplace Requirements

The Jøtul C450 may be installed into a factory-built fireplace with the following conditions:

- The factory-built fireplace must be listed per UL 127 or ULC S610.
- Installation must include a full height listed chimney liner meeting type HT requirements (2100F) per UL 1777 (U.S.) or ULC S635 (CAN). The liner must be securely attached to the insert flue collar and the chimney top.
- The damper or fireplace front must be sealed to prevent passage of room air into the the chimney cavity.
- Circulating air chambers (i.e. in a steel fireplace liner or metal heat circulator) may not be blocked.
- Air flow within and around the fireplace shall not be altered by installation of the insert. The C450 Surround Panels comply with this requirement.
- Alteration of the fireplace is limited to  
a) removal of the damper for liner installation  
b) removal of external, non-functional trim which must be stored within the fireplace for replacement.
- Fireplace Conversion Notice PN 220508 must be permanently attached to the back of the fireplace.
- Final approval is contingent on the authority having local jurisdiction.

## Clearance to Combustible Materials

- There may be no combustible materials located anywhere within 36" (914 mm) of the front of the fireplace insert. This precaution includes items such as drapes or doors that could swing into the area within 36" of the insert.
- Clearance (open space) must be maintained between the fireplace insert and combustible materials located above and to the side. See figures 6 - 8 for minimum dimensions.

## Minimum Clearances

Clearances are measured from the hearth surface, glass, or centerline as noted below.

- A:** Hearth Protection, *width from centerline* ..... 20" (508 mm)
- B:** Hearth Protection, *forward from glass* ..... 18" (457 mm)
- C:** Side Trim, *1" max. thickness, from centerline* .... 20 3/4" (527 mm)
- D:** Side Room Wall ..... 44 1/4" (1124 mm)
- E:** Mantel- with no Heat Shield:  
3 1/2" (90 mm) ..... 49 1/2" (1257 mm)
- F:** Mantel- with no Heat Shield:  
12" (304 mm) *max. depth* - 55 1/2" (1410 mm)

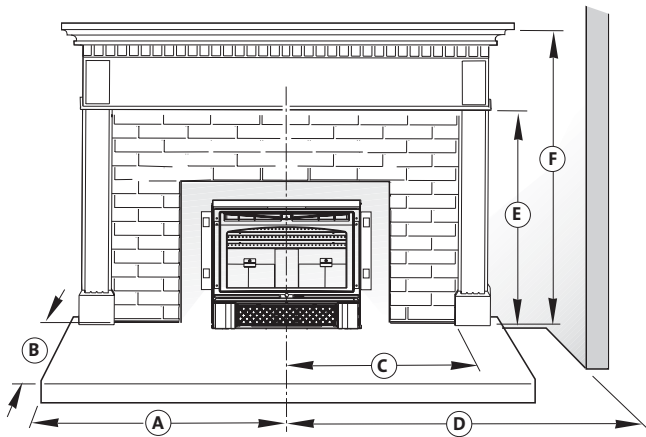


Figure 6. Clearance Diagram - No Heat Shielding

## Mantel Clearance with Optional Heat Shield 155346

Clearance may be reduced as shown in fig. 8. Maximum approved Mantel Depth is 12".

Clearance is measured from the hearth to the bottom of the mantel as illustrated.

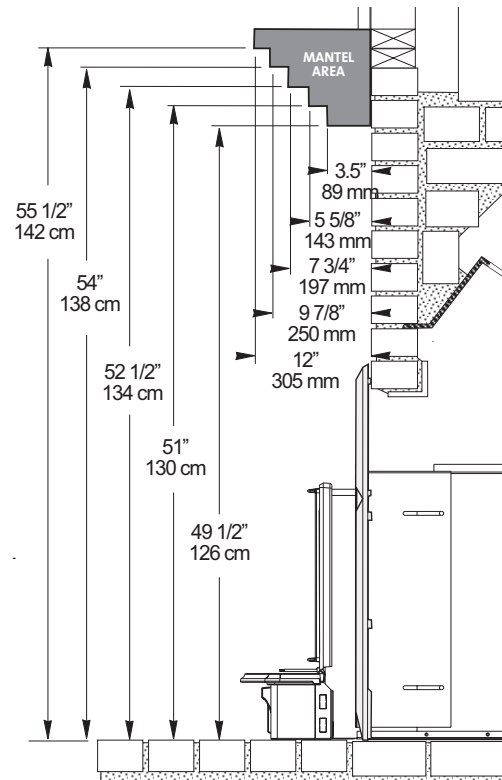


Figure 7. Mantel Clearances - measured from the hearth surface to the lowest mantel surface.

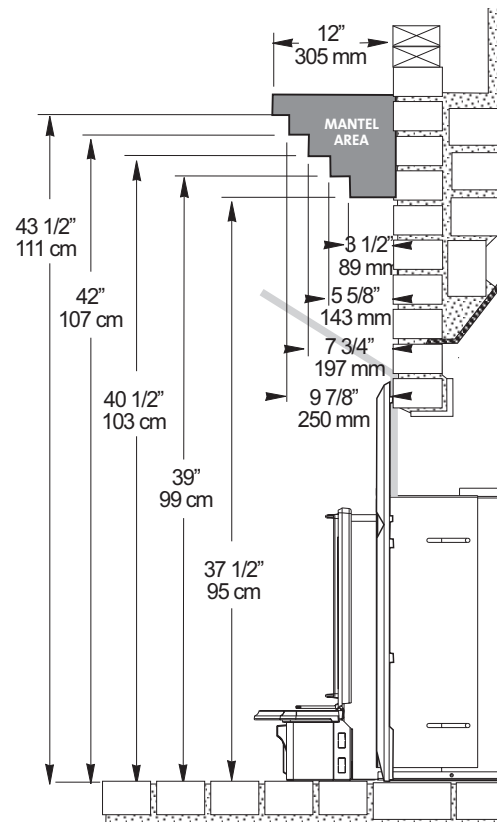


Figure 8. Mantel Clearances, with Mantel Heat Shield 155346 - measured from the hearth to the mantel.

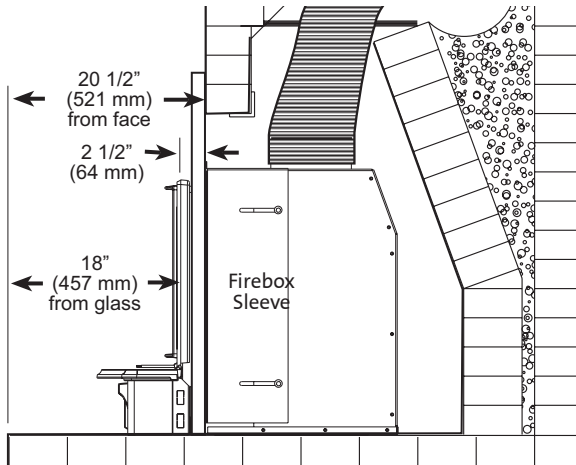


Figure 9. Sleeve adjustment results in minimum firebox extension forward of fireplace face.

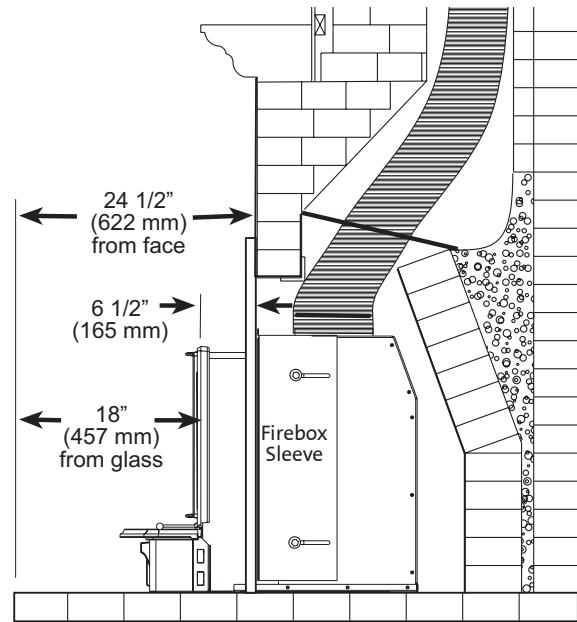


Figure 10. Provide hearth protection to accommodate maximum firebox extension forward of fireplace face.

## Hearth Protection Requirements

The floor area in front of fireplace insert must be protected from live sparks and radiant heat.

- Materials:** Hearth protection must be noncombustible insulating board, having an R value of 2.92 (0.343 K-value) such as Kaowool® 2600 #15 or the equivalent mortared masonry material. See Appendix A on page 18 for information how to calculate the R-value of alternative materials. Alternate protection must composed of materials as specified by NFPA 211.
- Protected Area: 18" Deep x 40" Wide**
  - Front** - The protection must extend at least 18 inches (457 mm) forward from the glass panel in the fireplace insert doors.
  - Sides** - Protection must extend 20 inches (508 mm) to both sides of the centerline of the insert.
- Note that the firebox may extend out forward of the fireplace face depending on where the cabinet sleeve has been set to accommodate flue connection. Always measure hearth protection from the final, installed position of the firebox and glass doors. See figures 9 and 10.

## Chimney Connection

A positive connection must be made between the fireplace insert and the chimney by one of the two following approved methods.

**In the U.S.:** See fig. 11. The insert is connected to a listed stainless steel flexible connector that extends beyond the chimney flue tile liner. Alternatively, 22 ga. blue steel or greater may be used. A sealed block-off plate must be installed at the damper area of the existing fireplace.

**In Canada:** See fig. 11a. This fireplace insert must be installed with a continuous chimney liner of 6" (152 mm) diameter extending from the fireplace insert to the top of the chimney. The chimney liner must conform to the Class 3 requirements of CAN/ULC-S635, Standard for Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents, or CAN/ULC-S640, Standard for Lining Systems for New Masonry Chimneys.

Do not use aluminum or galvanized steel pipe for chimney connection components - these materials are not suitable for use with solid fuel.

## Installation

1. Remove the existing damper and linkage components from the fireplace. Alternatively, you can wire the damper plate to lock it in the open position. Thoroughly clean the firebox and smokesheff area with a wire brush.
2. **If the fireplace has been modified to accommodate installation,** use anchors or masonry nails to attach the metal Fireplace Conversion Notice Plate (PN 220508) to the back wall of the masonry fireplace firebox where it will be readily seen should the insert be removed.
3. Install the Flex Connection plate according to the manufacturer's instructions. The sealing plate may require trimming to accommodate your specific fireplace damper.

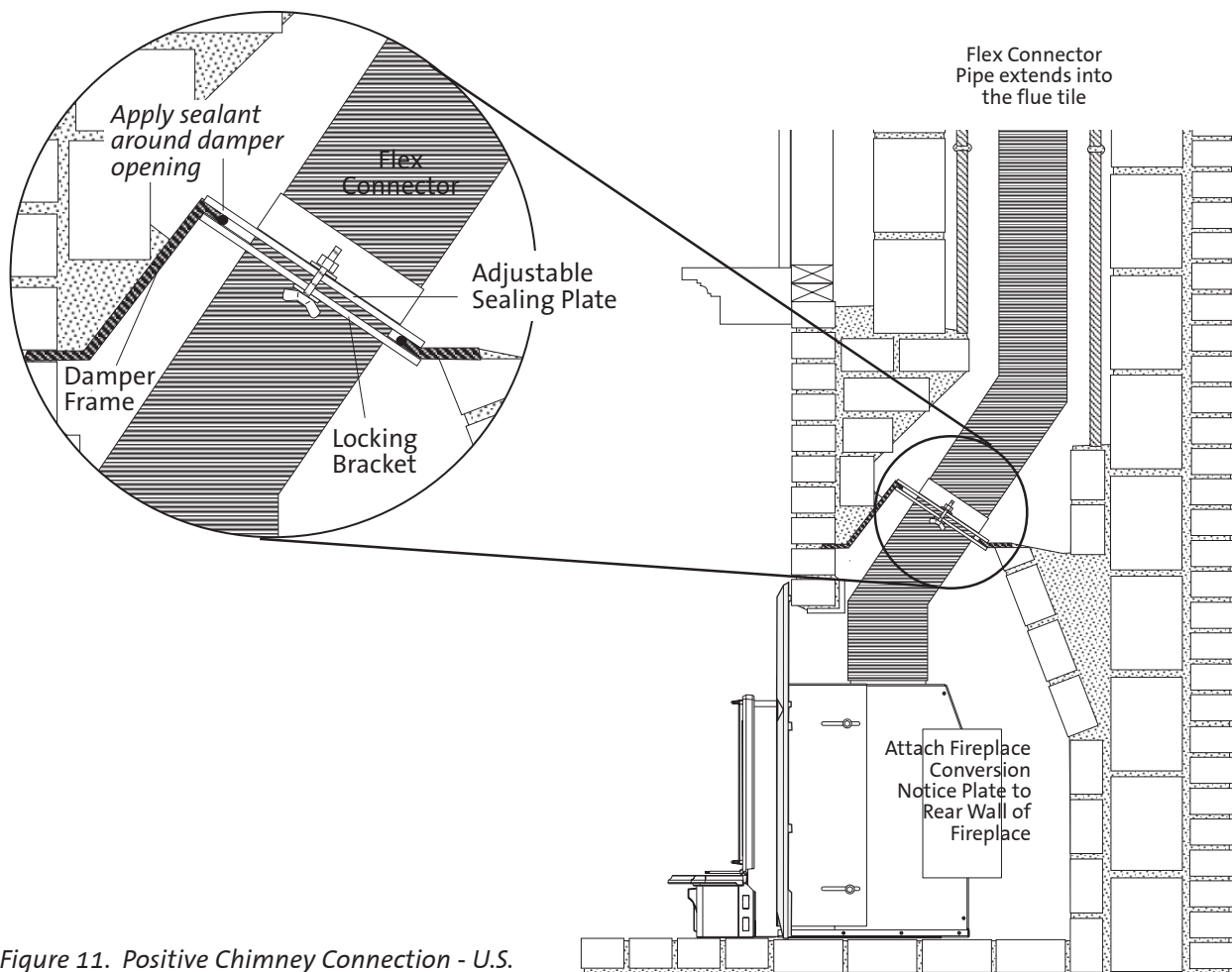


Figure 11. Positive Chimney Connection - U.S.

## Installing the Firebox

1. If appropriate, use 3" flexible noncombustible duct to connect an outside air inlet to the air inlet collar at the back of the firebox.
2. With assistance, move the firebox into position within the fireplace and align the insert flue collar with the Adaptor Collar.
3. Attach the flue connector pipe. Use a 1/8" bit to drill attachment holes into connector pipe at the three pilot hole locations in the insert Flue Collar. Secure the flue connector pipe using three #10 x 1/2" sheet metal screws.
4. Adjust the position of the Firebox to ensure that the Surround Panel Hangers are flush with, or slightly proud of, the outside face of the fireplace. If the Hangers are set back from the face, you will be unable to engage the Surround Hanger Clips with the holes in the Hangers.

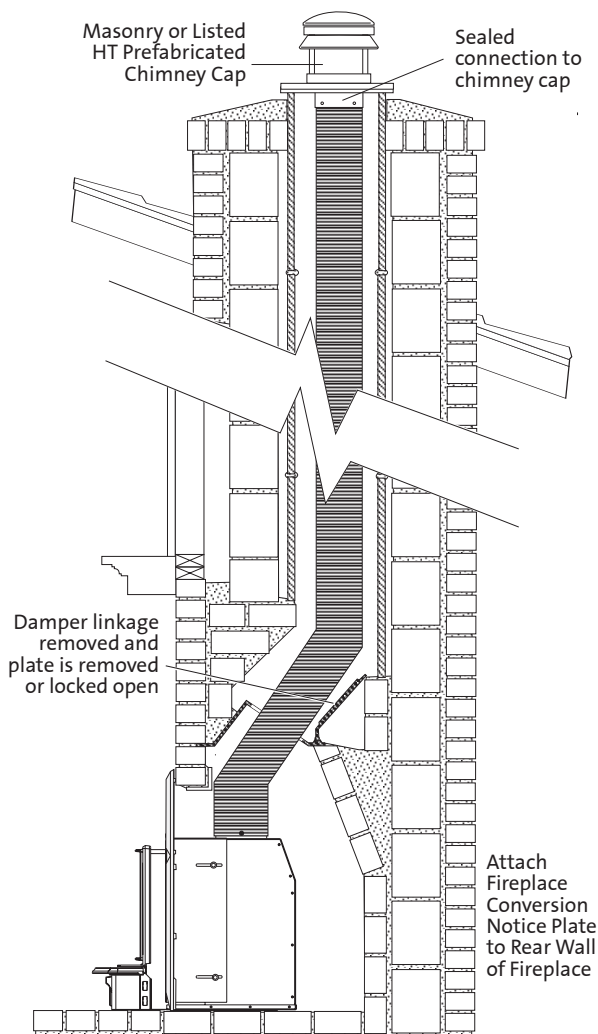


Figure 11a. Positive Chimney Connection - Canada.

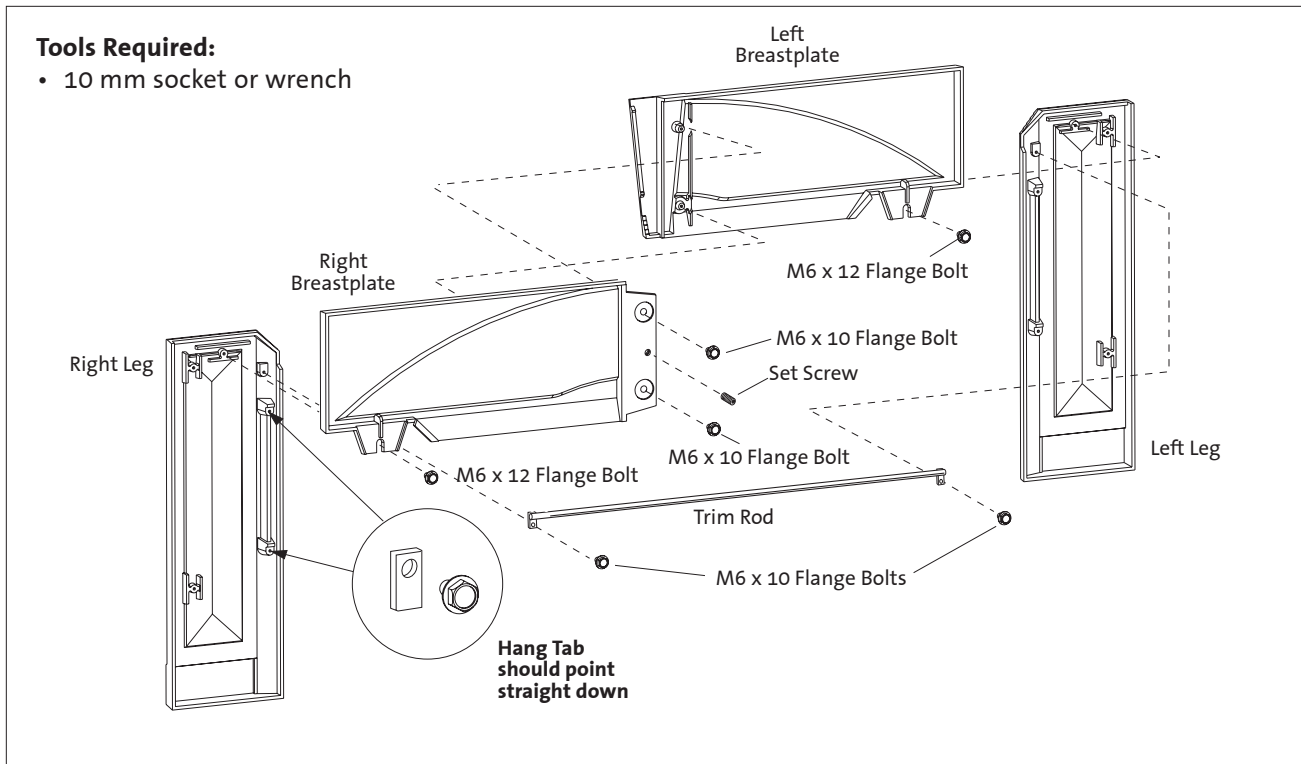


Figure 12. Surround Panel Assembly

## Surround Assembly

All fasteners have already been installed in the appropriate locations at the factory. You will need to remove them, attach the parts together as described below and re-install the fasteners at those locations.

- 1. Layout the parts.** Place the castings face down on a protective surface such as carpeting, blankets or a sheet of cardboard. See fig. 12, page 12.
- 2. Attach the Breastplates to each other.** Use a 10 mm socket or wrench with two M6 x 10 hex head flange bolts.
- 3. Attach the Leg plates.** The Legs must be oriented with the Hang Tabs on the inside edges as shown in fig. 12. Use the two remaining M6x 12 hex head flange bolts to attach the Legs to the Breastplate assembly. See Fig. 12.
- 4. Install the Trim Rod,** using the two M6 x 10 bolts located on the Right and Left Legs.
- 5. Optional: Install the Wide Surround.** If you will be installing the optional Wide Surround Panels, use the instructions included with that kit.
- 6. Optional: Install Mantel Heat Shield 155833.** If you will be installing the optional Mantel Heat Shield, use the instructions included with that kit.

- 7. Attach the Assembly to the Firebox.** Lift the entire assembly upright and position it in front of the insert firebox. **DO NOT LIFT THE ASSEMBLY BY THE TRIM ROD.** The four Hang Tabs on the surround legs must engage with the adjacent holes in the two brackets on either side of the firebox opening. The surround will easily engage with these brackets if the firebox is slightly proud of the fireplace opening.

Hang the surround assembly on the firebox and push the entire unit into position so that the surround is flush against the fireplace face.

Final leg panel alignment can be adjusted by slightly loosening or tightening those attachment bolts as necessary.

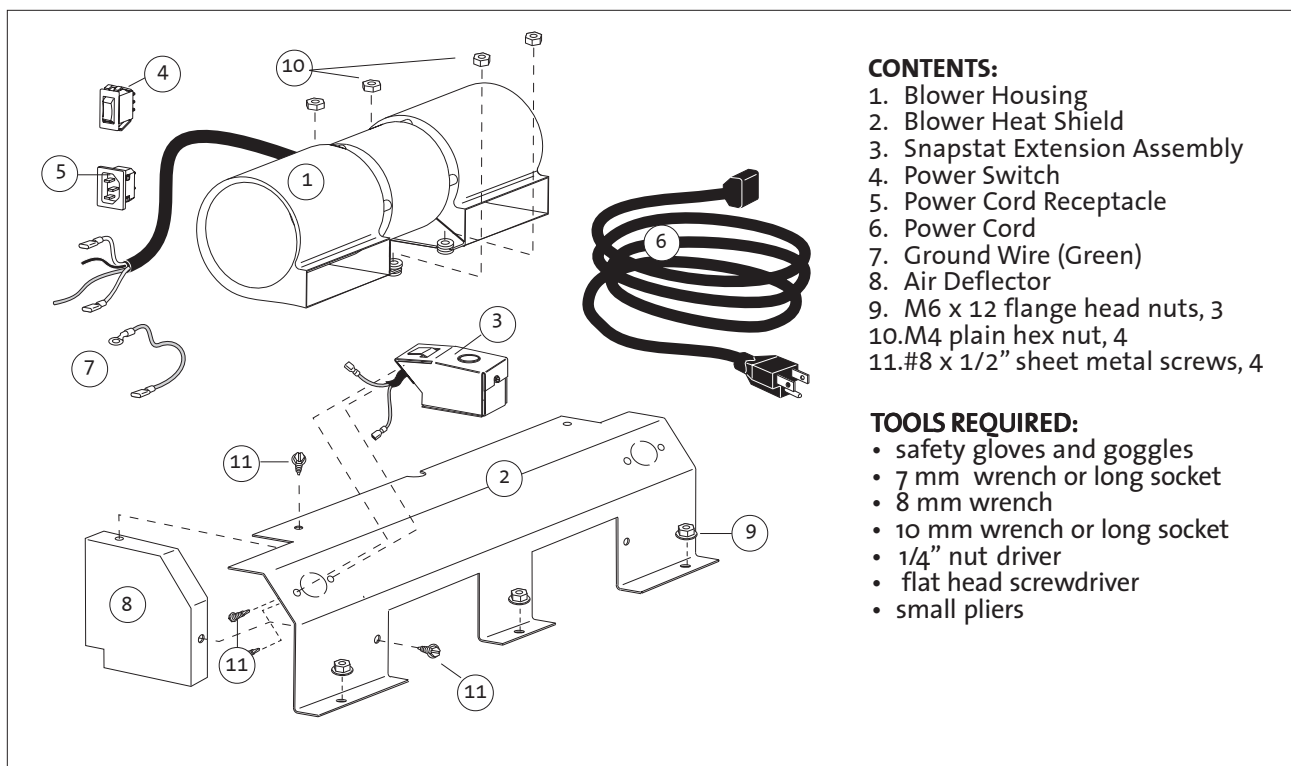


Figure 13. Kit Contents - 155304 Blower

**CONTENTS:**

1. Blower Housing
2. Blower Heat Shield
3. Snapstat Extension Assembly
4. Power Switch
5. Power Cord Receptacle
6. Power Cord
7. Ground Wire (Green)
8. Air Deflector
9. M6 x 12 flange head nuts, 3
10. M4 plain hex nut, 4
11. #8 x 1/2" sheet metal screws, 4

**TOOLS REQUIRED:**

- safety gloves and goggles
- 7 mm wrench or long socket
- 8 mm wrench
- 10 mm wrench or long socket
- 1/4" nut driver
- flat head screwdriver
- small pliers

### Optional Blower 155304

The optional two-speed blower will enhance heat circulation around the firebox and out into the room. The blower is controlled by a heat activated switch (snapstat) that will ONLY function when the control switch is in either the HI or LOW setting. After the fire has been burning for a time, the snapstat will react to the heat and activate the blower, if the switch is in the HI or LOW position. Conversely, the blower will continue to operate until the snapstat cools as the fire wanes. The blower will then shut off automatically.

For best performance, do not turn the switch on until after the fire is well-established.

If the blower is not needed, place the blower control switch in the OFF position.

- THIS BLOWER MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH THE CURRENT ANSI/ NFPA 70, NATIONAL ELECTRICAL CODE OR CSA C22.1-CANADIAN ELECTRICAL CODE.
- THIS UNIT IS SUPPLIED WITH A THREE-PRONG (GROUNDING) PLUG FOR PROTECTION AGAINST SHOCK HAZARD AND SHOULD BE PLUGGED DIRECTLY INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. DO NOT CUT OR REMOVE THE GROUNDING PRONG FROM THE PLUG.
- ALWAYS DISCONNECT THE POWER SUPPLY WHEN PERFORMING ANY SERVICE ON THE FIREPLACE INSERT.

## Installing the Blower:

- 1. Unpack and check the contents** of the blower kit. Contact your dealer if any damage is evident or parts are missing. See fig. 13.
- 2. Remove the Front Grille** from the Hearth Extension to provide better access to install the blower. Use the 8 mm wrench to loosen the two retainer nuts (fig. 15) and lift the grille from the extension base.
- 3. Insert Switch and Receptacle:** Determine on which side of the ash lip extension you wish to install the power cord and switch. The snapstat must also be installed on that side. Use a flat head screwdriver and pliers to pry the knockouts from that ashlip support. Work from the inside, to avoid marring the outside surface. Insert the Power Switch in the upper hole. Insert the Power Cord Receptacle into the lower hole. See fig. 14.
- 4. Attach the Blower:** Use a 7 mm wrench or long socket to attach the Blower to the Extension Base using the four M4 nuts as illustrated in fig. 15. **Do not overtighten.** Be sure to orient the blower as shown with the ducts facing to the rear.
- 5. Install Snapstat Extension Assembly:** Remove the snapstat knock-out from the appropriate side of the Heat Shield. Run the snapstat leads through the hole and attach the bracket to the Heat Shield using two #8 x 1/2" sheet metal screws. See fig. 16.
- 6. Attach the Air Deflector:** Using two #8 sheet metal screws, attach the Air Deflector to the Heat Shield on the same side as the snapstat is installed. See fig. 13, parts 8 and 11.

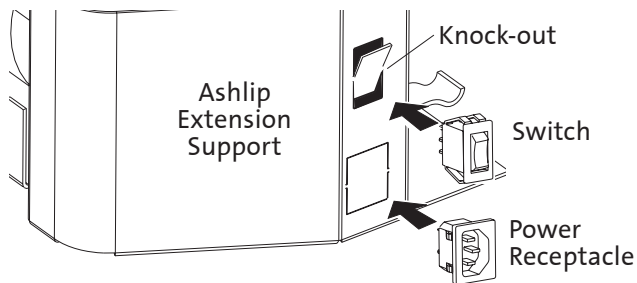


Figure 14.  
Remove knock-outs and install inserts.

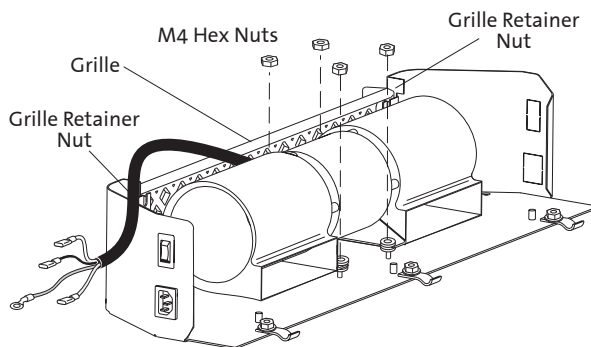


Figure 15. Attach the Blower to the Extension Base plate.

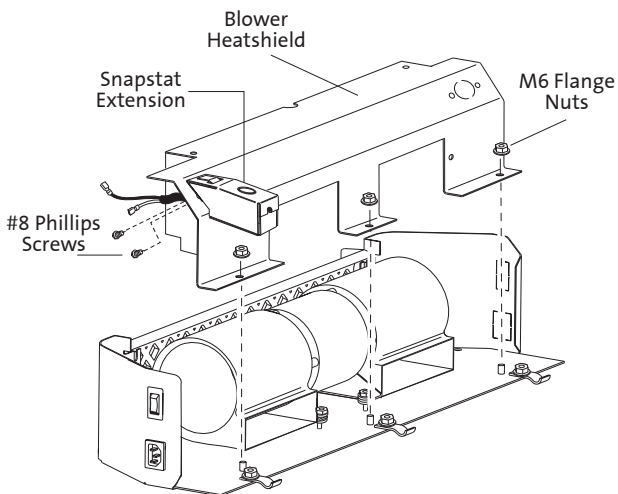


Figure 16. Attach the Heat Shield to the Extension Base plate.

**7. Connect the wire leads:** Follow the diagram as shown in fig. 17. Connect the loose wires as follows:

**Green:** • Remove a M6 flange nut from the extension base and attach the two ground leads with ring terminals to that post. Replace nut.  
 • Ground to middle Power Receptacle terminal.

**White:** • Wire harness to upper Power Receptacle.

**Black:** • Wire harness to lower Switch terminal

**Red:** • Wire harness to upper Switch terminal

**Brown:** • Snapstat to middle Switch terminal

• Snapstat to lower Power Receptacle

**8.** Tuck the sheathed wire harness under the cutout on the Air Deflector and **replace the Front Grille.**

**9. Attach the Heat Shield to the Extension Base** using the three M6 x 12 flange head nuts as shown in fig. 16.

**10.** After attaching the Ashlip Extension / Blower Assembly to the fireplace (see below), plug the power cord into the receptacle and run the cord to the nearest house current outlet.

## Install the Ashlip Extension Assembly

The assembly is comprised of a steel Extension Base and a cast iron Ashlip plate.

- Engage the three spring clips on the Extension Base with the adjoining cutouts on the firebox base. Align the clips with these slots and push the Extension to snap it together with the base of the firebox base. The clips should slide over the front edge of the bottom plate to engage with the cutouts. See fig. 19.
- The Ashlip plate simply rests on the Extension Base. Engage the plate under the front doors.

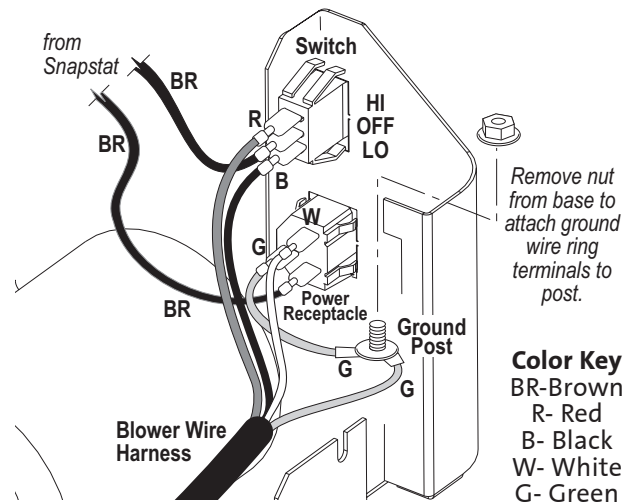


Figure 17. Wiring configuration.

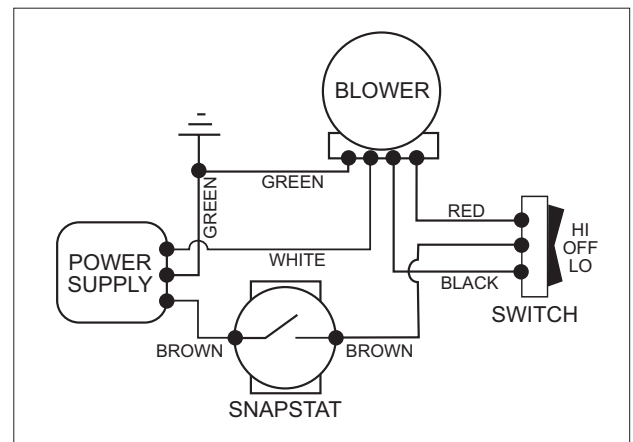


Figure 18. 155304 Blower Wiring Diagram

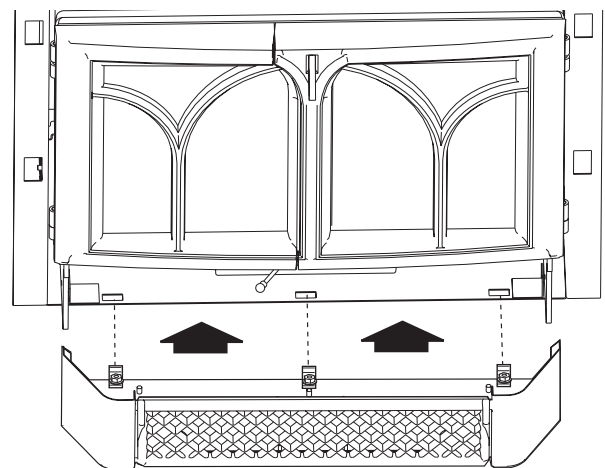


Figure 19. Attach the Ashlip Extension to the Firebox base. Be sure that the clips slide OVER the front edge of the bottom plate, not under it.

# Operation

Read the following section carefully before building a fire in your Jøtul C450 Kennebec Fireplace Insert.

## Fuel

This stove is designed to burn natural wood **ONLY**. Wood that has been air-dried for a period of 6 to 14 months will provide the cleanest most efficient heat. **Frequent use of green or inadequately seasoned wood is conducive to creosote accumulation and generally poor performance.**

### DO NOT BURN...

- Coal
- Treated or painted wood
- Garbage
- Chemical Chimney cleaners
- Cardboard
- Colored paper
- Solvents
- Any synthetic fuel or logs

The burning of any of these materials can result in the release of toxic fumes. **NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR "FRESHEN-UP" THE FIRE.** Always keep such liquids away from the heater at all times.

### WARNING

NEVER ALLOW THE FIRE TO REST DIRECTLY ON THE GLASS. THE LOGS SHOULD ALWAYS BE SPACED AT LEAST ONE INCH FROM THE GLASS TO ALLOW FOR PROPER AIR FLOW WITHIN THE STOVE.

## Air Control

A single lever regulates the Primary Air flow that controls the intensity of the fire and consequent heat output and burn time. This lever is located on the front of the stove directly above the ashlip.

When first starting or reviving the fire, the control lever should be set at the far right position to allow the maximum amount of air into the stove. See fig. 21. After the fire is well-established, the lever should be set at position to moderate incoming air to maintain the desired long term heat output and/or burn time.

In general, the more air made available to the fuel will result in the hottest fire intensity and the fastest fuel consumption. Alternatively, the less air made available to the firebox will result in low heat output and slow fuel consumption.

### WARNING:

OPERATE THIS FIREPLACE INSERT ONLY WITH THE FRONT DOORS FULLY CLOSED. PARTIALLY OPENED DOORS MAY RESULT IN OVERFIRING. ALSO, IF DOORS ARE LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT OF THE STOVE OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE.

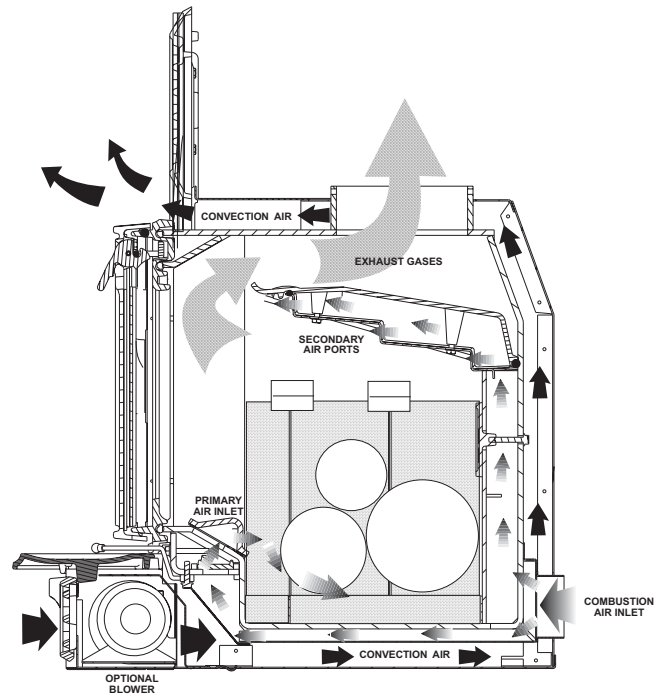


Figure 20. Air Flow Diagram.

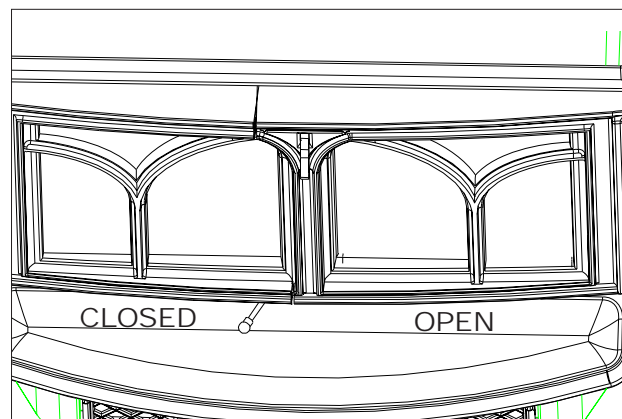


Figure 21. Air Control Setting

## Starting and Maintaining a Fire

**Burn only solid wood directly on the bottom grate of the stove, do not elevate the fire in any way.**

1. Set the Air Control Lever in the full open position.
  2. Crumple several sheets of newspaper directly on the grate.
2. Place several pieces of small dry kindling (approx. 1" in diameter) on top of the newspaper, with two to three small logs (approx. 2" to 3" in diameter) on top.
3. Light the fire and close the door. Gradually build the fire by adding larger and larger logs as the fire develops a bed of coals.
4. When you have added the final logs, adjust the Air Control Lever to provide the desired fire intensity.

Experiment with a variety of air control settings to determine the best one for your individual circumstances. Remember that fuel characteristics, chimney system condition, building design, and weather conditions all affect the performance of your fireplace insert. In time, you will discover how these elements combine and how you can work with them to achieve satisfactory performance.

**NEVER OVERFIRE THE STOVE. IF ANY PART OF THE STOVE OR CHIMNEY GLOWS, YOU ARE OVERFIRING. A HOUSE FIRE OR SERIOUS DAMAGE TO THE STOVE OR CHIMNEY COULD RESULT. IF THIS CONDITION OCCURS, IMMEDIATELY CLOSE THE AIR CONTROL.**

## Adding Fuel to the Fire

When reloading the stove while a bed of hot embers still exists, follow this reloading procedure:

- Always wear stove gloves when tending to the fire.
- Push the Air Control Lever to the full open position (far right).
- Wait a few seconds before opening the door. This allows the renewed air circulation to clear unburned gases from the firebox.
- Use a stove tool or poker to distribute the hot embers equally around the firebox.
- Load the fuel, usually with smaller logs first.
- Close the doors and secure the latch.

- Wait 5 – 10 minutes for the fire to re-establish before adjusting the Air Control Lever for the desired heat output. If a thick bed of live coals is present, you may be able to add fuel and immediately set the air control without waiting for the fire to be re-established.

## Creosote Formation

The Jøtul C450 Kennebec is designed to burn wood cleanly and efficiently when operated as described in this manual. However, when wood is burned slowly and at low temperatures, tar and other organic vapors are produced which condense on the relatively cooler chimney flue surfaces to form creosote. Failure to keep the chimney system free of creosote build up could result in a chimney fire.

The creosote that accumulates in the chimney is highly flammable and is the **fuel** of chimney fires. To prevent chimney fires, it is important to have the chimney flue and connector pipe inspected at least twice annually and cleaned whenever accumulation of 1/4" or more is evident. A qualified chimney sweep or other authorized service person can provide this service.

It is also important to remember that chimney size, temperature and height all affect draft which in turn affects the formation of creosote. An exterior chimney, whether masonry or prefabricated steel, will be exposed to cold outside temperatures, and consequently, will be more prone to creosote accumulation than an interior flue.

A chimney flue located within the home interior will benefit from the insulating characteristics of the building itself. Consequently, the flue system will be less conducive to condensation of unburned gases and minimal creosote accumulation will result.

As a general rule, try to avoid burning the insert at the lowest air control settings. Although a low setting will prolong burn time, it may also result in incomplete combustion. In reducing the fire intensity, draft is weakened and the chimney flue cools. This, together with the increase in unburned gases, leads to rapid creosote accumulation.

## Break-in Period Ventilation

It is normal for a new stove to emit odor and possibly smoke during the first few fires. This is characteristic of the burn-off of residues from the manufacturing process and the curing of painted surfaces. Open a window near the fireplace insert to provide plenty of fresh air to the room during this "seasoning" period.

# Maintenance

## Ash Removal

Always wear stove gloves when handling ashes.

Ash removal will be required periodically depending on how frequently the stove is used. Use a steel ash shovel and metal container with a tight-fitting lid.

**NEVER USE A PAPER OR PLASTIC BAG AS AN ASH RECEPTACLE.**

The container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise dispersed, **they should be kept in the closed container until all coals and cinders have thoroughly cooled.**

## Glass Care

### Cleaning

Occasionally it will be necessary to clean the carbon deposits and fly ash off of the glass. If deposits are allowed to remain on the glass for an extended period of time, the glass may become etched and cloudy.

Creosote deposits should burn off during the next hot fire.

1. The Glass must be **COMPLETELY COOL**.
2. Only use a cleaner that is specifically designed for this purpose. **DO NOT USE ABRASIVE CLEANING AGENTS.** The use of abrasives will damage the glass, leaving a frosted surface. Crumpled newspaper is an especially good cleaning material.
3. Rinse and dry glass completely before lighting a fire.

## Glass Removal

Always operate the doors slowly and cautiously to avoid cracking or breaking the glass. Never use the door to push wood into the firebox. If the glass becomes cracked or broken follow the replacement procedure below.

### IMPORTANT:

REPLACE GLASS ONLY WITH JØTUL CERAMIC GLASS PART #220356 SPECIFICALLY DESIGNED FOR THE JØTUL C450 KENNEBEC FIREPLACE INSERT. DO NOT USE SUBSTITUTES. REPLACEMENT GLASS PANELS CAN BE ORDERED THROUGH YOUR JØTUL DEALER.

**NEVER OPERATE THE STOVE WITH A CRACKED OR BROKEN GLASS PANEL.**

1. Remove the door from the stove and place on a flat surface.
2. Carefully remove all of the glass clips from the inside of the door. See fig. 22.
3. Gently remove all pieces of the glass panel and gasketing.
4. Remove all remaining debris from the glass area using a wire brush.
5. Apply a small bead of gasket/stove cement and the new gasket. Do not overlap the ends of the gasket rope.
6. Center the new glass panel over the gasket and reinstall the glass clips.
7. It may be necessary to retighten the glass clips after the stove has burned and the gasketing has been seated.

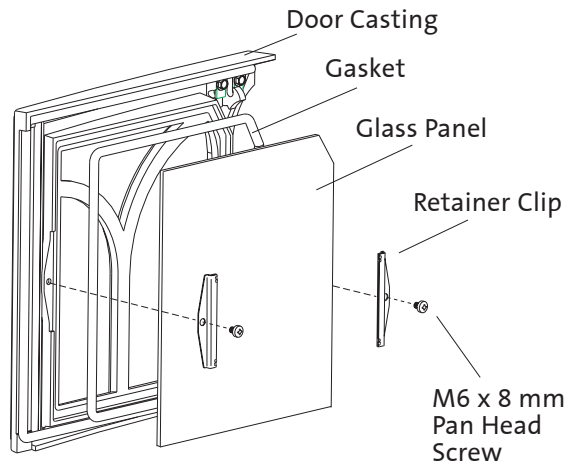


Figure 22. Glass Assembly Parts.

## General Maintenance

Regular maintenance will assure proper performance and prolong the life of your Jøtul C450 Kennebec. The following procedures do not take long and are generally inexpensive. When done consistently, they will help increase the life of your fireplace insert and assure satisfactory performance.

- Thoroughly clean the insert. Enamel surfaces should be cleaned with soap and water.
- Empty firebox of all soot and ashes. Never use a household vacuum cleaner to remove ashes. Only a shop vac with a metal container is acceptable and only when you are certain the ashes are cold.
- Inspect the firebox using a utility light inside and out for cracks or leaks. Replace all cracked bricks and repair leaks with furnace cement.

## Removing the Insert for Cleaning

1. Lift the Ashlip from the Ashlip Extension.
2. Remove the Ashlip Extension from the firebox by grasping the sides and pulling it forward to disengage the three clips from their adjacent slots.
3. Remove the Surround Panel assembly by grasping the lower lip of the Breastplates and lifting it up and off of the firebox cabinet. There are four tabs that must be disengaged from the hangers on either side.
4. Remove the three screws that attach the flue connector to the flue collar, and disengage the it from the insert.
5. Pull the firebox and cabinet forward as a unit. The flue connector, liner, and chimney can now be inspected and cleaned.
6. See the Installation section of this manual for reassembly procedures.

## Gaskets

Check door and glass gaskets for seal integrity. The gaskets should be soft enough to be somewhat resilient to the touch. Over time, gaskets will compress and harden. Replace worn-out or hardened gaskets with the appropriate size material available from your local Authorized Jøtul Dealer.

To check the seal of the front doors, close and latch the doors on a dollar bill and slowly try to pull the dollar bill free. The seal is too loose if the bill can be easily removed. Adjust the door latch and test again.

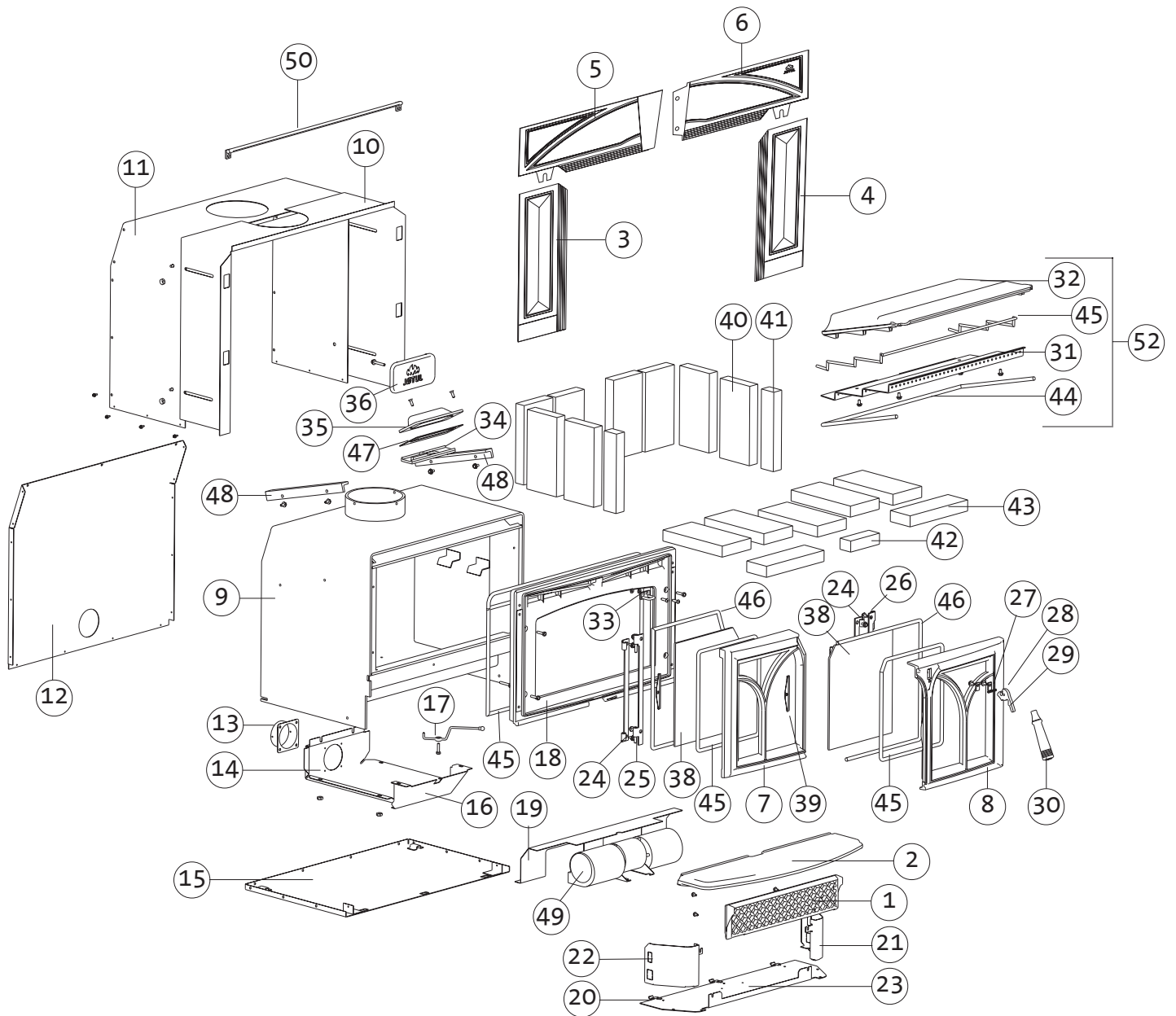
## Gasket Replacement

See the Parts List on page 21 to order the correct gasket material.

1. Remove the old gasket material with a pliers and thoroughly clean the channel with a wire brush.
2. Lay out the new gasket around the channel to determine length. Trim the gasket to leave 1" excess.
2. Apply a small bead of furnace cement in the channel.
3. Lightly press the new gasket into the channel, being careful to avoid compressing or stretching it. Trim the gasket further as necessary to allow the tail end to slightly overlap the other end.
4. Wait ten minutes to allow the cement to set and then close and latch the doors. Reopen the doors and, using a damp cloth, wipe away any excess cement that may be squeezed out from under the gasket.

# Jøtul C450 Kennebec

## Illustrated Parts Breakdown



## Jøtul C450 Kennebec Parts List

No.	Description	Part Number
1.	Control Door - Matte Black	10398092
	Control Door - Blue Black	10398027
	Control Door - Jøtul Iron Gray	10398085
2.	Ashlip - Matte Black	10397992
	Ashlip - Blue Black	10397927
	Ashlip - Jøtul Iron Gray	10397985
3.	Surround Leg, Left - Matte Black	10425992
	Surround Leg, Left - Blue Black	10425927
	Surround Leg, Left - Jøtul Iron Gray	10425985
4.	Surround Leg, Right - Matte Black	10426092
	Surround Leg, Right - Blue Black	10426092
	Surround Leg, Right - Jøtul Iron Gray	10426092
5.	Breastplate, Left - Matte Black	10425792
	Breastplate, Left - Blue Black	10425727
	Breastplate, Left - Jøtul Iron Gray	10425785
6.	Breastplate, Right - Matte Black	10425892
	Breastplate, Right - Blue Black	10425827
	Breastplate, Right - Jøtul Iron Gray	10425885
7.	Door, Left - Matte Black	10397492
	Door, Left - Blue Black	10397427
	Door, Left - Jøtul Iron Gray	10397485
8.	Door, Right - Matte Black	10397592
	Door, Right - Blue Black	10397527
	Door, Right - Jøtul Iron Gray	10397585
9.	Firebox	220317
10.	Shroud Front, Adjustable - Matte Black	22033892
	Shroud Front, Adjustable - Jøtul Iron Gray	22033885
11.	Shroud, Cabinet Sleeve	220315
12.	Shroud, Back Panel	220312
13.	Air Inlet Collar, 3" dia.	220502
14.	Air Channel, Back / Bottom	220308
15.	Shroud, Bottom	220309
16.	Air Channel, Front	220307
17.	Air Valve Handle	220318
18.	Front Plate	103973
19.	Blower Heat Shield (inc. w/ 155304 Kit)	220501
20.	Retainer Clip, (3)	121041
21.	Ashlip Support - Right	220385
22.	Ashlip Support - Left	220386
23.	Shroud Extension, Bottom	220310
24.	Joint Hinge, Loose Leaf (2)	220335

Use only genuine Jøtul replacement parts. Do not substitute parts from any other manufacturer. See your local Authorized Jøtul Dealer or contact us directly:

**Jøtul North America**  
**55 Hutcherson Dr.**  
**Gorham, Maine 04038**  
**207 591-6601 Ext.108**

No.	Description	Part Number
25.	Pin Leaf, left	220334
26.	Pin Leaf Right	220333
27.	Hang Tab	129680
28.	Door Latch	220340
29.	Roll Pin, 5 x 35	127064
30.	Door Handle (Stove Tool)	154310
31.	Air Manifold, Secondary	220305
32.	Baffle Plate	103983
33.	Latch, Receiver	220349
34.	Air Slider	104082
35.	Inspection Cover	103985
36.	Brick Retainer	103984
37.	Hang Tab, Surround Panels, (4) <i>not shown</i>	129680
38.	Glass Panel, (2)	220356
39.	Glass Retainer, (4)	125942
40.	Refractory Brick, (13)	129082
41.	Refractory Brick, 9" x 2" (2)	220390
42.	Refractory Brick, 1 5/8" x 4 1/2" (1)	220391
43.	Refractory Brick, 9" x 3" (2)	220518
44.	Gasket, 3/8" LD Rope ( Baffle)	100038
45.	Gasket, 1/4" LD Rope / Self-adhesive (Glass)	200024
46.	Gasket, 3/8" LD Rope (Front Plate, Doors)	100038
47.	Gasket, Inspection Cover	220513
48.	Baffle Support, (2)	220306
49.	Blower Kit (optional)	155304
50.	Convection Air Rod (Trim Rod) Matte Black	22053192
	Convection Air Rod (Trim Rod) Jøtul Iron Gray	22053185
51.	Miscellaneous Hardware Bag*	155613
52.	Baffle Assembly, Complete	153309

\* not illustrated

## Jøtul C 450 Kennebec Accessories

Blower Kit .....	155304
Mantel Heat Shield .....	155833
Lattice Surround Panel Kits	
Matte Black .....	350557
Blue Black .....	350558
Jøtul Iron .....	350559
Wide Surround Panel Kits	
Matte Black .....	155323
Blue Black .....	155324
Jøtul Iron .....	155354

# Appendix A:

## Alternate Floor Protection

All floor protection materials must be non-combustible i.e.. metal, brick, stone, or mineral fiberboards.

**No combustible material may be used to protect the floor in front of the fireplace insert.**

Follow this procedure to determine if a proposed alternate floor material meets the requirements listed in this manual.

**R-value** = Thermal Resistance

**K-value** = Thermal Conductivity

**C-value** = Thermal Conductance

1. Convert the specification to R-value;
  - a. If R-value is given, no conversion is needed.
  - b. If K-value is given with a required thickness (t) in inches:  $R = 1/K \times T$ .
  - c. If C-value is given:  $R = 1/C$ .
2. Determine the R-value of the proposed alternate floor protector.
  - a. Use the formula in Step 1 to convert values not expressed as "R".
  - b. For multiple layers, add R-values of each layer to determine overall R-value.
3. If the overall R-value of the system is greater than the R-value of the specified floor protector, the alternate is acceptable.

### Example:

The specified floor protector should be 3/4" thick material with a K-factor of 0.84. The proposed alternate is 4" brick with a C-factor of 1.25 over 1/8 inch mineral board with a K-factor of 0.29.

**Step A.** Use formula above to convert specifications to R-value.  $R = 1/K \times T = 1/.84 \times .75 = .893$

**Step B.** Calculate r of proposed system.

4 " brick of C - 1.25, therefore

R brick =  $1/C = 1/1.25 = 0.80$

1/8 " mineral board of K = 0.29, therefore

R mineral board =  $1/.29 \times 0.125 = 0.431$

Total R = R brick + R mineral board =

$0.8 + 0.431 = 1.231$

**Step C.** Compare proposed system R = 1.231 to specified R of 0.893. Since R is greater than required, the system is acceptable.

### Definitions:

Thermal Conductance =

$$C = \frac{\text{Btu}}{(\text{Hr})(\text{ft}^2)(\text{f})} = \frac{\text{W}}{(\text{m}^2)(\text{k})}$$

Thermal Conductivity =

$$K = \frac{\text{Btu}}{(\text{Hr})(\text{ft}^2)(\text{f})} = \frac{\text{W}}{(\text{m}^2)(\text{k})} = \frac{(\text{Btu})}{(\text{hr})(\text{ft})(\text{f})}$$

Thermal Resistance =

$$R = \frac{\text{Btu}}{(\text{Hr})(\text{ft}^2)(\text{f})} = \frac{(\text{m}^2)(\text{k})}{\text{W}} = \frac{(\text{Btu})(\text{inch})}{(\text{hr})(\text{ft}^2)(\text{f})}$$

The Jøtul C450 Fireplace Insert requires floor protection having a **minimum insulating R-value of 2.92.**



Cat.no 137960-D  
Jøtul North America - October 2005

This appliance must be installed in conformance with local and national building regulations. It is important that these instructions be carefully read and understood before beginning the installation. Jøtul pursues a policy of continual product development. Consequently, products may differ in specification, color or type of accessories from those illustrated or described in various publications.

Jøtul vise sans cesse à améliorer ses produits. C'est pourquoi, il se réserve le droit de modifier les spécifications, couleurs et équipement sans avis préalable.



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