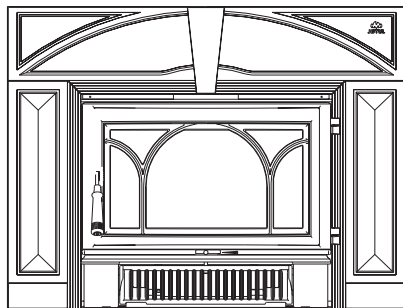


**Jøtul C 450 Kennebec
Fireplace Insert**



Jøtul C 450 Kennebec Fireplace Insert

Installation and Operating Instructions
for the United States & Canada



Keep these instructions for future reference.



NOTICE:
YOU SHOULD CONSULT THE AUTHORITY
HAVING JURISDICTION IN YOUR LOCALE
(SUCH AS MUNICIPAL BUILDING
DEPARTMENT, FIRE DEPARTMENT, FIRE
PREVENTION BUREAU, ETC.) BEFORE
INSTALLATION TO DETERMINE THE NEED
TO OBTAIN A PERMIT.

**NATIONAL
FIREPLACE
INSTITUTE**



CERTIFIED

www.nficertified.org

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



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For Your Records...

Record the following information to help your dealer determine what you will need should your fireplace ever require parts or service. The serial number and manufacturing date are located on the permanent label on the back of the firebox. You may also wish to attach your sales receipt to this manual for future reference.

Model: Jøtul C 450 Fireplace Insert _____

Serial Number: _____

Purchase Date: _____

Dealer Name; _____

Installed by: _____

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 1482-2011, Canadian Standards: CAN/ULC-S627-M93*



Standards & Approvals

The Jøtul C 450 Fireplace Insert has been tested and listed to: U.S.: ANSI/UL 1482-2011
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 04036

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 C 450 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 this 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. For further information on using your heater safely, obtain a copy of the NFPA publication "Using Coal and Wood Stoves Safely," NFPA No. HS-8-1974. The address of NFPA is 470 Atlantic Ave., Boston, MA 02210.

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.

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 guaranty 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 C 450 Fireplace Insert.

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

Unpacking the Fireplace

All firebox components of the Jøtul C 450 Fireplace Insert are contained within the crate on a single pallet. The Surround Kit is contained in the same crate. As you unpack the contents, inspect each item for damage. Notify your dealer of any damage such as dents, cracked glass, or broken bricks.

Contents:

- Firebox Assembly - including Firebricks, 18 installed
- Ash Lip - packed under firebox shroud
- Blower Hardware Bag
- Stove Hardware Bag
 - Fireplace Conversion Notice Plate
 - Door Handle (Stove Tool)
- Cast Iron Surround Assembly

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 and socket with extension

Removing the Firebox from Pallet

1. Detach the Trim Rod from the upper front of the firebox by removing the two screws that secure it for shipping.
2. The ash lip is shipped secured under the firebox shroud. Remove two M6 bolts from the side of the shroud to pull the ash lip out from underneath the shroud. Replace the bolts to re-secure the shroud to the firebox.
3. Remove the screws that secure the firebox base to the pallet. These mounting tabs may be broken off the base as may be necessary to accommodate a very narrow fireplace.

Jøtul C 450 Specifications

Performance

Fuel: 20" Logs
 Heat Output¹: 50,000 BTU/hr. (4.1 kg/hr.)
 Heating Capacity²: 1,100 - 1,600 sq. ft.
 Overall Efficiency³: 71%
 Emissions: 4.4 grams/hr.
 Burn Time: 4-9 hours
 Optional Blower: 125 cfm.
 Shipping Weight: 445 lbs. (202 kg.)

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

Accessories

Steel Wide Surround / 47 3/4" x 34"	#157213
Trimable Surround / 40" x 30"	#157325
Mantel Heat Shield / Std. Cast Srnd.	#155346
Mantel Heat Shield / Steel Wide Srnd.	#157361
Stove Gloves	#157363
Universal Gasket Kit	#157050

The Jøtul C450 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.

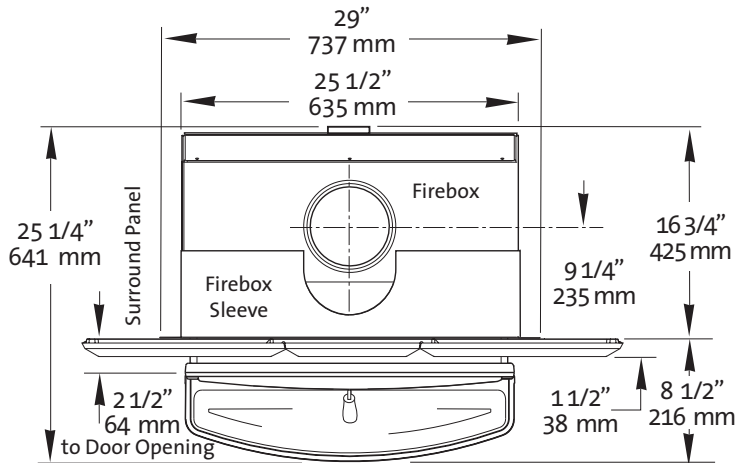


Figure 1. Maximum Sleeve Adjustment

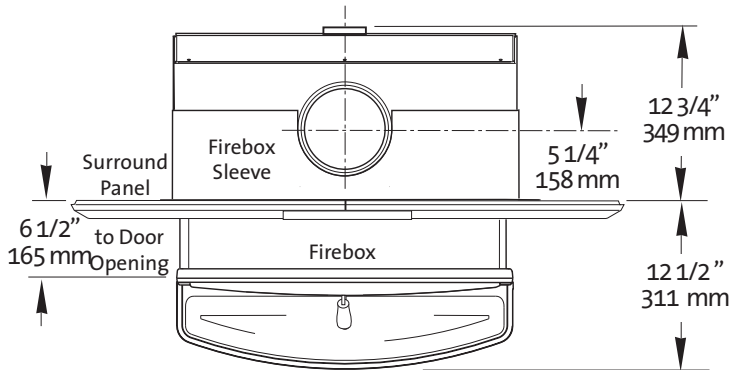


Figure 2. Minimum Sleeve Adjustment

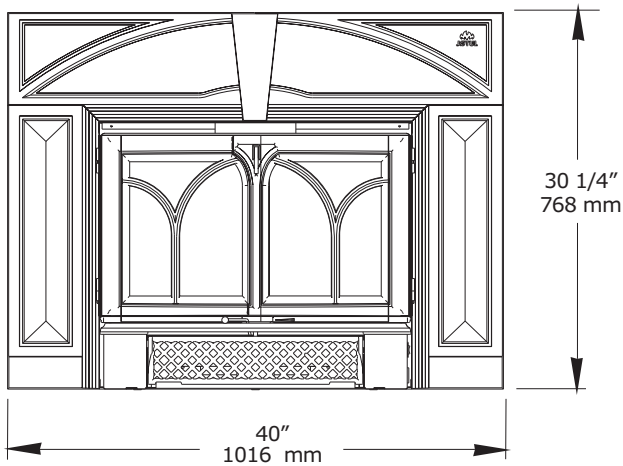


Figure 3. Overall Surround Dimensions are the same for both Kennebec and Tamarack styles. (Kennebec with double-doors shown here).

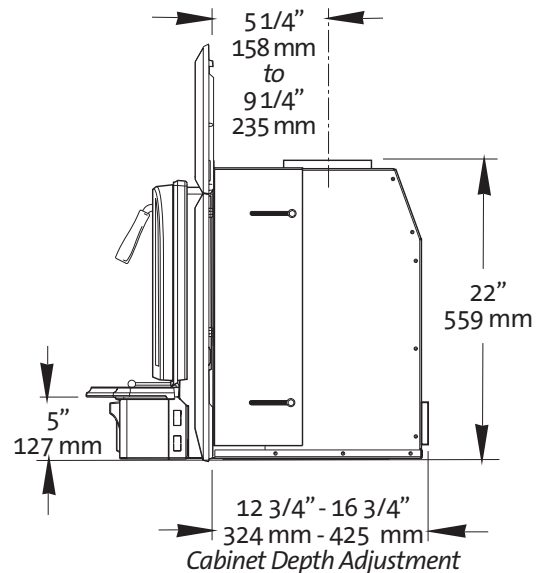


Figure 4. Flue Collar Centerline from Front Face

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.

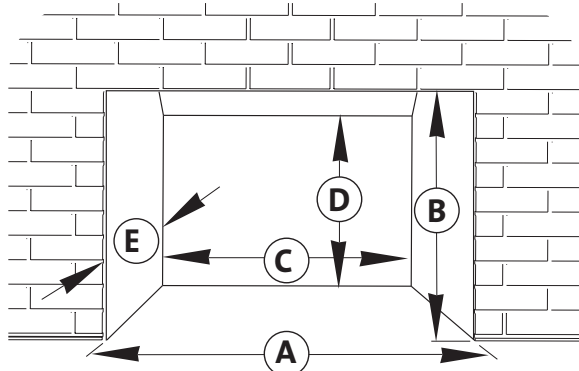


Figure 5. Minimum Fireplace Dimensions

Factory-Built Fireplace Requirements

The Jøtul C 450 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 C 450 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. This metal label is included in the bag containing this manual.
- 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, door opening, or centerline as noted below.

- A: Hearth Protection, width from centerline 20" (508 mm)
- B: Hearth Protection, forward from the door opening 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)

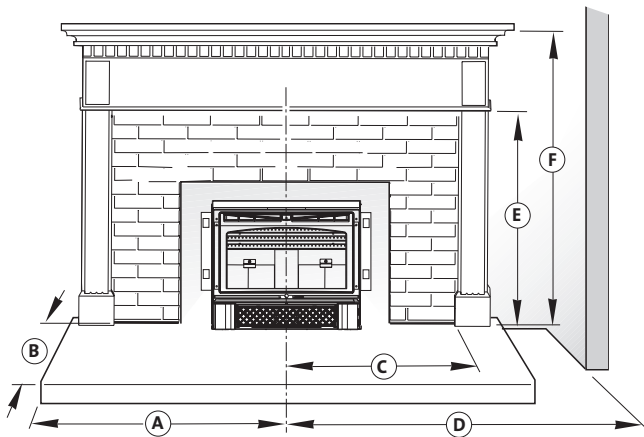


Figure 6. Clearance Diagram - No Heat Shielding

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.

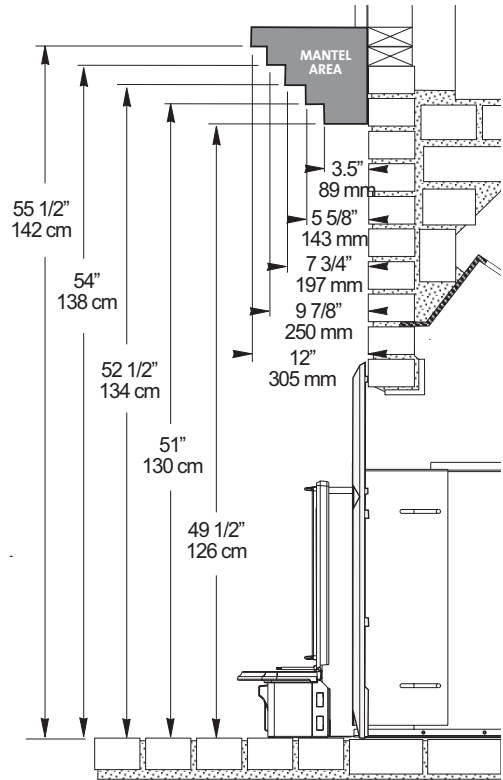


Figure 7. Mantel Clearances - measured from the hearth surface to the lowest mantel surface.

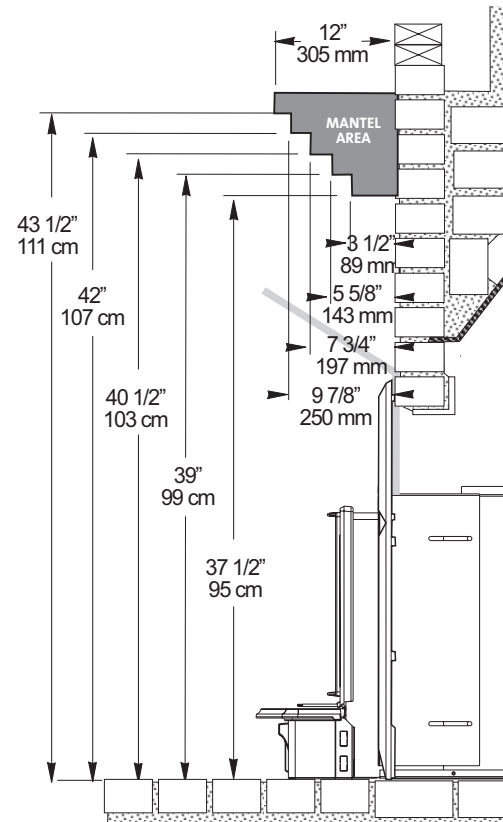


Figure 8. Mantel Clearances, with Mantel Heat Shield 155346 - measured from the hearth to the mantel.

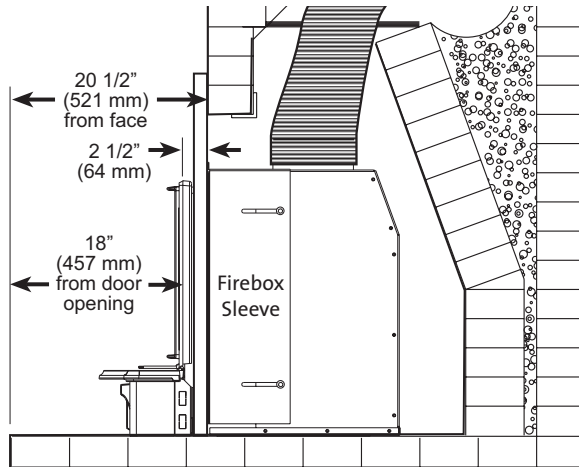


Figure 9. Sleeve adjustment results in minimum firebox extension forward of fireplace face.

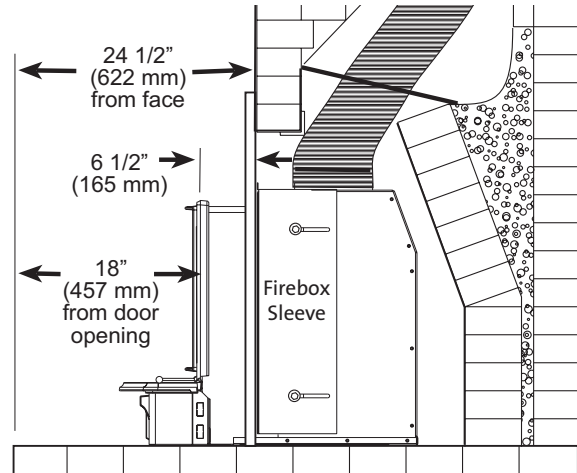


Figure 10. Provide hearth protection to accommodate maximum firebox extension forward of fireplace face.

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**
 - A) **Front** - The protection must extend at least 18 inches (457 mm) forward from the door opening.
 - B) **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 the door opening. See figures 9 and 10.

Chimney Connection

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

In the U.S:

The insert is connected to a listed stainless steel flexible connector that extends beyond the chimney flue tile liner. A sealed block-off plate must be installed at the damper area of the existing fireplace. See fig. 11.

For internal chimneys, (no sides of the chimney exposed to the outside below the roofline,) a positive connection to the first flue tile is acceptable provided the tile is no larger than 8" x 12". For external chimneys, (one or more sides are exposed to the outside below the roof line,) a positive connection to the first flue tile is acceptable provided the tile is no larger than 8" x 8".

A 6", 7", or 9" stainless steel liner, extending the full height of the chimney, is required for all installations where the flue tile is greater than 8" x 12" for internal chimneys, or 9" x 8" for external chimneys.

In Canada:

The 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. See fig. 11a.

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

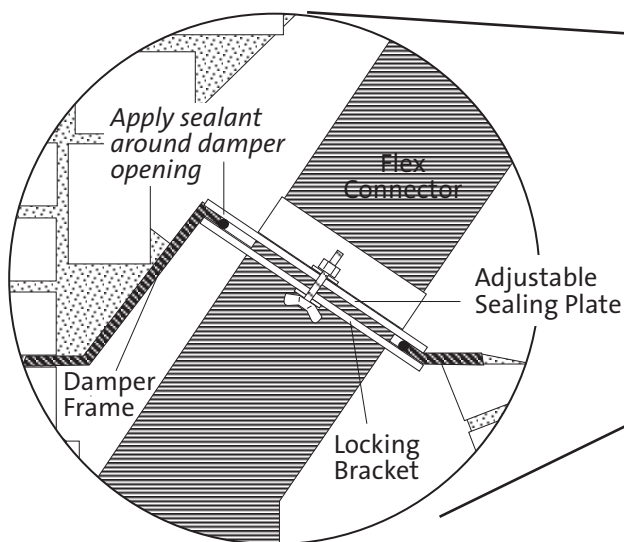
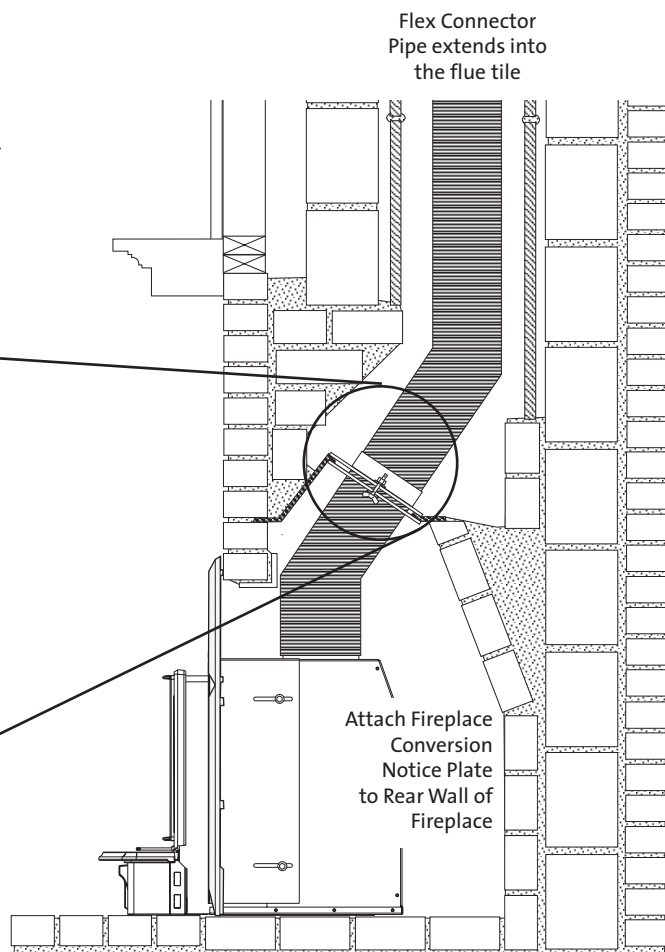


Figure 11. Positive Chimney Connection - U.S.

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 smoke shelf 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.



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 firebox 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.

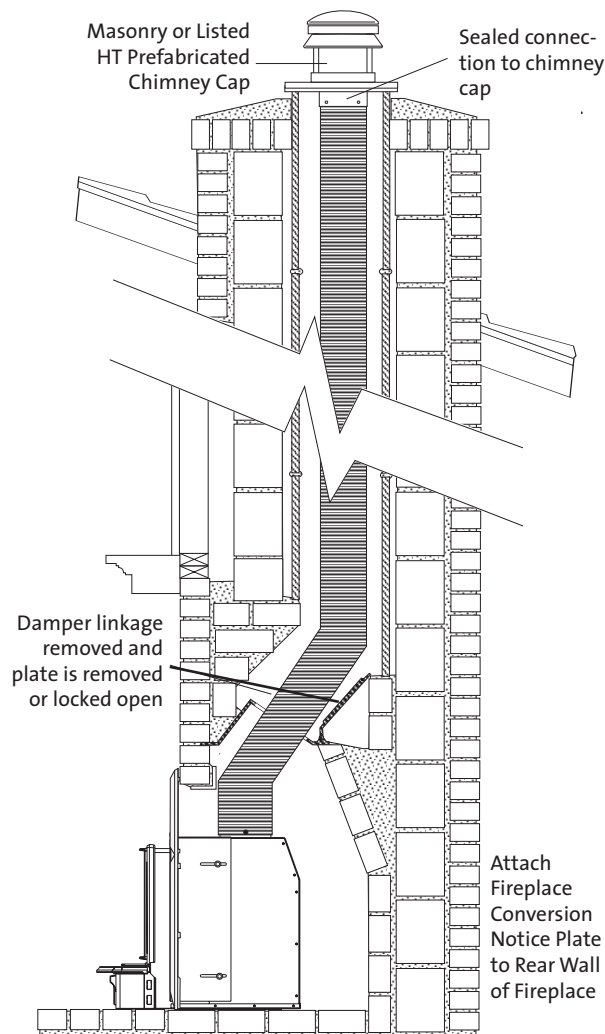


Figure 11a. Positive Chimney Connection - Canada.

Tools Required:

- 10 mm socket or wrench

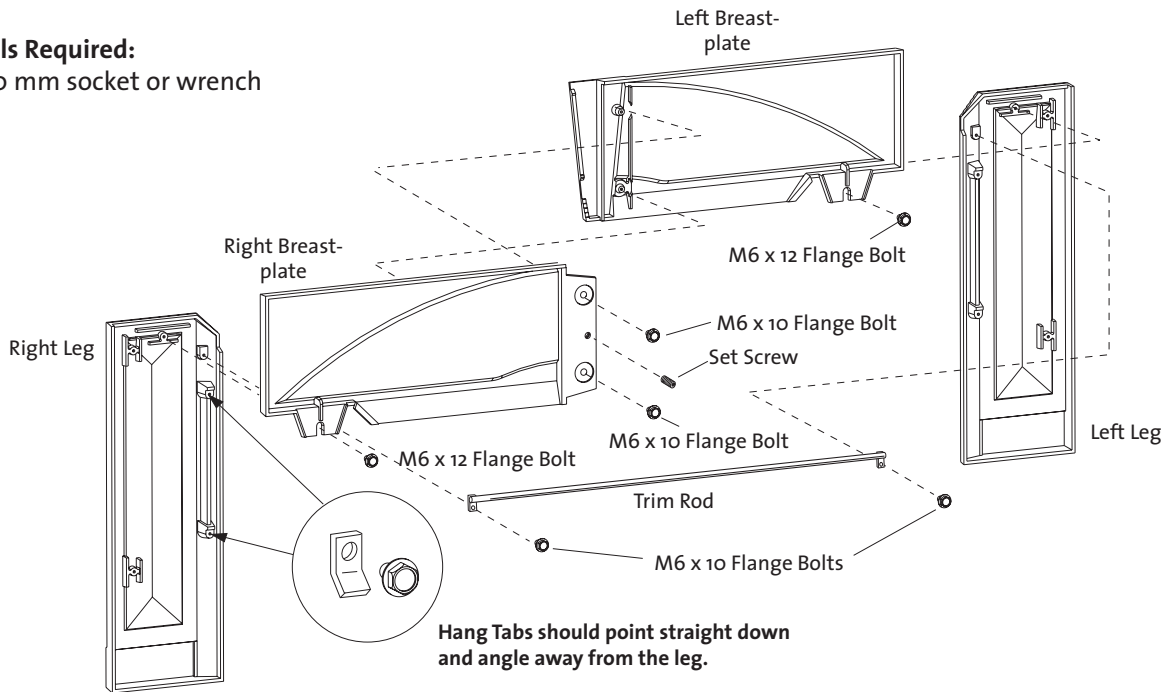


Figure 12. Kennebec Classic Surround Panel Assembly

Kennebec 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 M6 x 12 hex head flange bolts to attach the Legs to the Breastplate assembly.
4. Install the Trim Rod, using the two M6 x 10 bolts located on the Right and Left Legs.
5. Optional: If you will be installing the a Mantel Heat Shield, use the instructions included with that kit.

6. 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.

Optional Surround Panels and Mantel Heat Shields

Follow the installation instructions supplied with these kits:

Steel Wide Surround / 47 3/4" x 34"	#157213
Trimable Surround / 40" x 30"	#157325
Mantel Heat Shield / for Standard Cast Surround	#155346
Mantel Heat Shield / for Steel Wide Surround	#157361

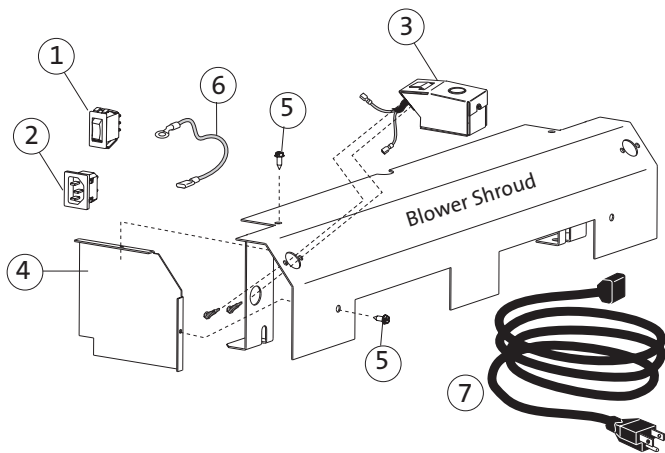


Figure 13. Blower hardware contents and orientation.

Blower Assembly

The blower is fully assembled, except for the wire harness connections which depend on what side you wish the power cord to be routed. The power receptacle, control switch, and snapstat assembly must all be installed on the same side. See fig. 13 for part orientation.

1. Remove the Ash Lip if it has been installed.
2. Remove the Base Grill. Use a 10 mm wrench to loosen the upper two M6 flange nuts at the back of the grill. The two lower nuts should already be loose. Lift the grill up to disengage it from the side ash lip supports.
3. Remove the Ash Lip Support from the side where the power receptacle and switch will be installed. Use the 10mm socket with 6" extension to loosen the two nuts (A, Fig. 14) that secure the panel to the Base Plate.
4. Loosen the two hex nuts (B, Fig. 14) and pull the blower out of the firebox.
5. Remove the Blower Shroud with removal of two hex nuts (C, Fig.14) from the shroud legs.
6. Insert the Control Switch and Power Receptacle: Use a flat head screwdriver and pliers to pry the knockouts from the appropriate ash lip support. Work from the inside, to avoid marring the outside surface. Insert the Power Switch in the upper hole, and the Power Cord Receptacle into the lower hole. See fig. 15.
7. Install Snapstat Assembly: Remove the snapstat knockout from the same side of the Blower Shroud. Run the snapstat leads through that hole and attach the bracket to the Shroud using two #8 x 1/2" sheet metal screws. The clearance hole in the shroud leg is for screwdriver access. See fig. 13.

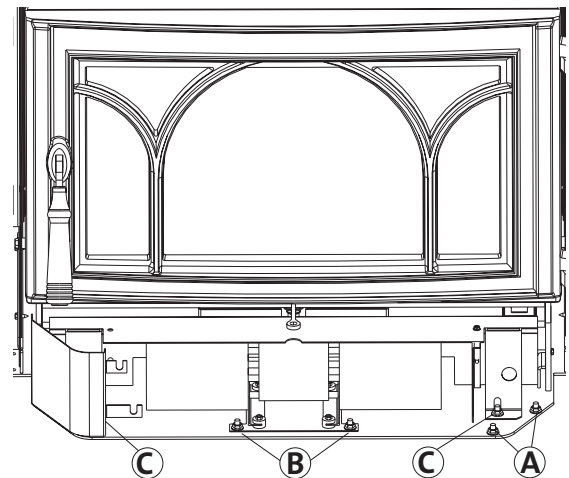


Figure 14. Blower removal.

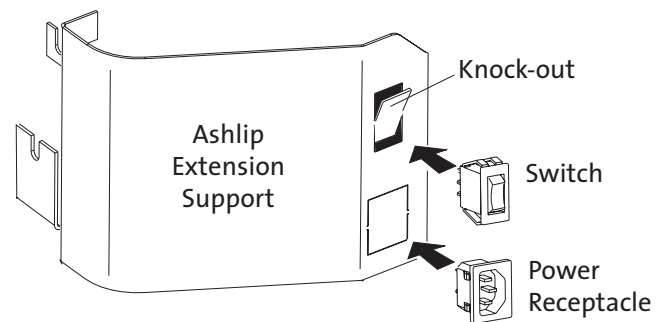


Figure 15.
Remove knock-outs and install inserts.

8. Attach the Air Deflector: Using the two remaining #8 sheet metal screws, attach the Air Deflector to the Blower Shroud on the same side as the snapstat is installed. See fig. 13, parts 4 and 5.
9. Re-attach the Blower Shroud to the firebox base using the two M6 x 12 flange head nuts previously removed. Confirm that the snapstat assembly is in direct contact with the firebox floor.
10. Replace the blower and re-tighten the mounting nuts.
11. Connect the loose wires as shown in fig. 16.
Green: Remove the hex nut from the corner post and attach the ring terminals of the two ground leads to that post. Attach the jumper lead to the middle Power Receptacle terminal.
White: Wire harness to lower Power Receptacle
Black: Wire harness to lower Switch terminal
Red: Wire harness to upper Switch terminal
Beige:
 - Snapstat to middle Switch terminal
 - Snapstat to upper Power Receptacle
12. Re-attach the Blower Shroud to the firebox base using the two M6 x 12 flange head nuts previously removed. Confirm that the snapstat assembly is in direct contact with the firebox floor.
13. Replace the blower and re-tighten the mounting nuts.
14. Replace the Ash Lip Support and tighten the nuts.
15. Replace the Grill and Ash Lip.
16. Plug the power cord into the receptacle and run the cord to the nearest house current outlet.

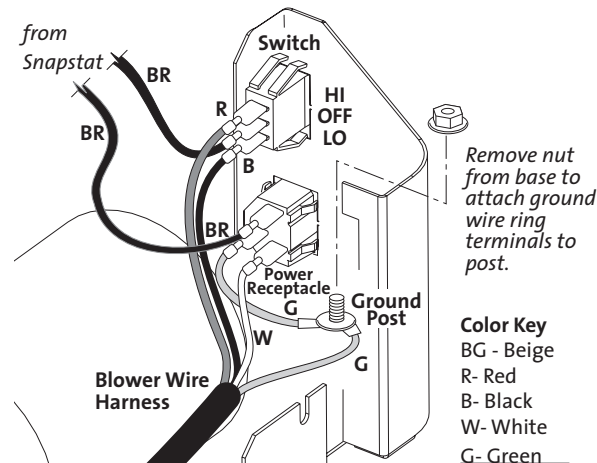


Figure 16. Wiring orientation.

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.

Blower Operation

The 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.

Blower Maintenance

In order to ensure that the blower delivers many years of reliable performance, you should inspect it regularly and clean it of any household dust and debris that may have accumulated. This is particularly important if there are any pets in the home.

ALWAYS DISCONNECT THE BLOWER FROM THE POWER SOURCE BEFORE CLEANING. Use a vacuum with soft brush attachment to clean the blower housing and compartment, as well as the area under the insert firebox.

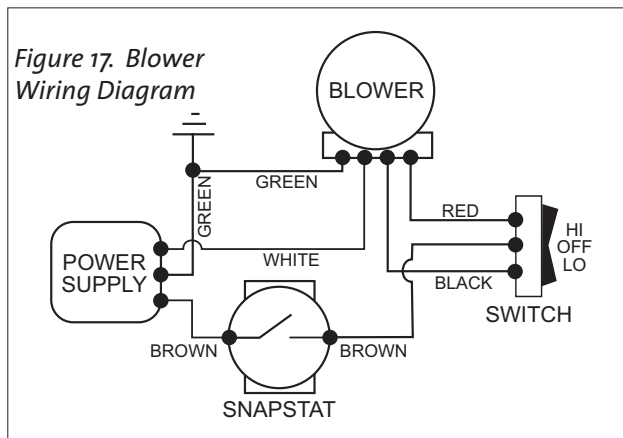


Figure 17. Blower Wiring Diagram

Operation

Read the following section carefully before building a fire in your Jøtul C 450 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 LOGS 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. 19. 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 DOOR(S) FULLY CLOSED. A PARTIALLY OPENED DOOR MAY RESULT IN OVER-FIRING. ALSO, IF DOORS ARE LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT OF THE DOOR OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE.

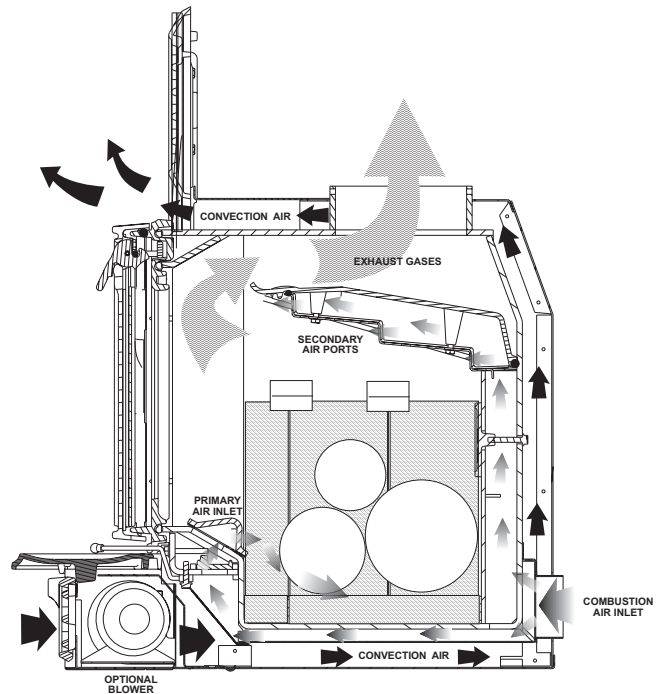


Figure 18. Air Flow Diagram.

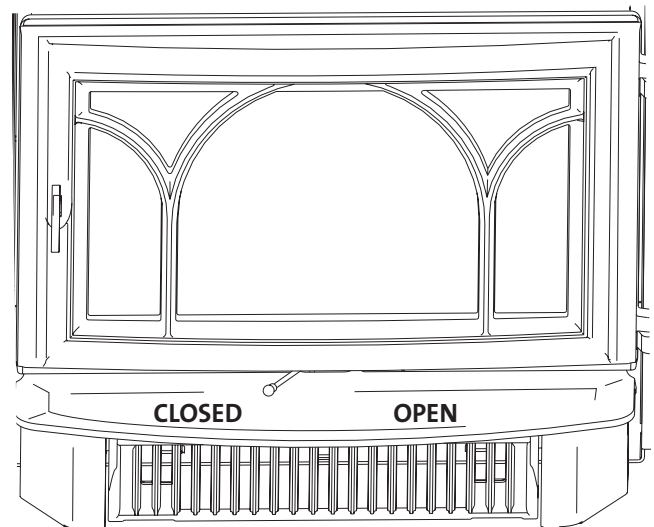


Figure 19. Air Control Setting

Starting and Maintaining a Fire

Burn only solid wood directly on the firebrick 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 firebrick.
2. Place several pieces of small dry kindling (approximately 1" in diameter) on top of the newspaper, with two to three small logs (approximately 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 OVER-FIRE THE STOVE. IF ANY PART OF THE STOVE OR CHIMNEY GLOWS, YOU ARE OVER-FIRING. 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 C 450 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 twice monthly during frequent use 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 non-combustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise 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, OR THOSE CONTAINING AMMONIA. The use of abrasives will damage the glass, leaving a frosted surface. Ammonia will etch the glass to the same effect. Crumpled newspaper is an especially good cleaning material.
3. Rinse and dry glass completely before lighting a fire.

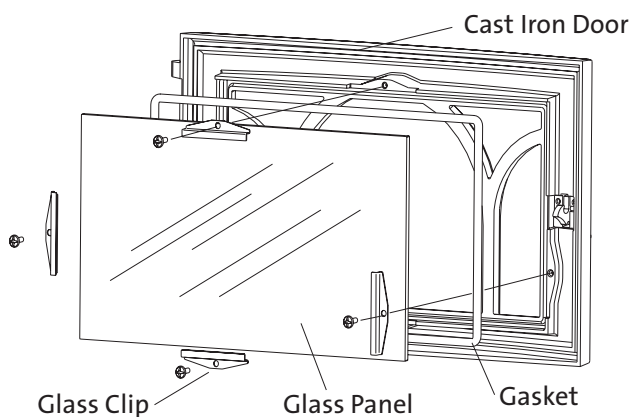


Figure 20a. Single Door Glass Assembly Parts.

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 SPECIFICALLY DESIGNED FOR THE JØTUL C 450 FIREPLACE INSERT:

PART #220356 (TWO) - FOR DOUBLE DOORS

PART #222991 - FOR THE SINGLE DOOR 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. 20a for Single Door / fig. 20b for Double Doors.
3. Gently remove all pieces of the glass panel and gasket.
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 gasket has been seated.

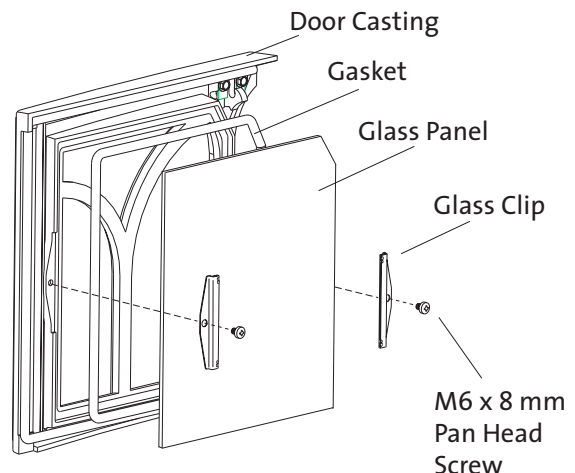


Figure 20b. Double Door Glass Assembly Parts.

General Maintenance

Regular maintenance will assure proper performance and prolong the life of your Jøtul C 450. 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

U.S. Direct-connection Only:

1. Lift the Ashlip from the Ashlip Extension.
2. 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.
3. Remove the three screws that attach the flue connector to the flue collar, and disengage the it from the insert.
4. Pull the firebox and cabinet forward as a unit. The flue connector, liner, and chimney can now be inspected and cleaned.
5. See the Installation section of this manual for reassembly procedures.

Canada Installations (Full Reline):

Remove the combustion baffle from the firebox by lifting it up and tilting it back down and out. The chimney can be swept directly into a bucket placed under the flue outlet.

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.

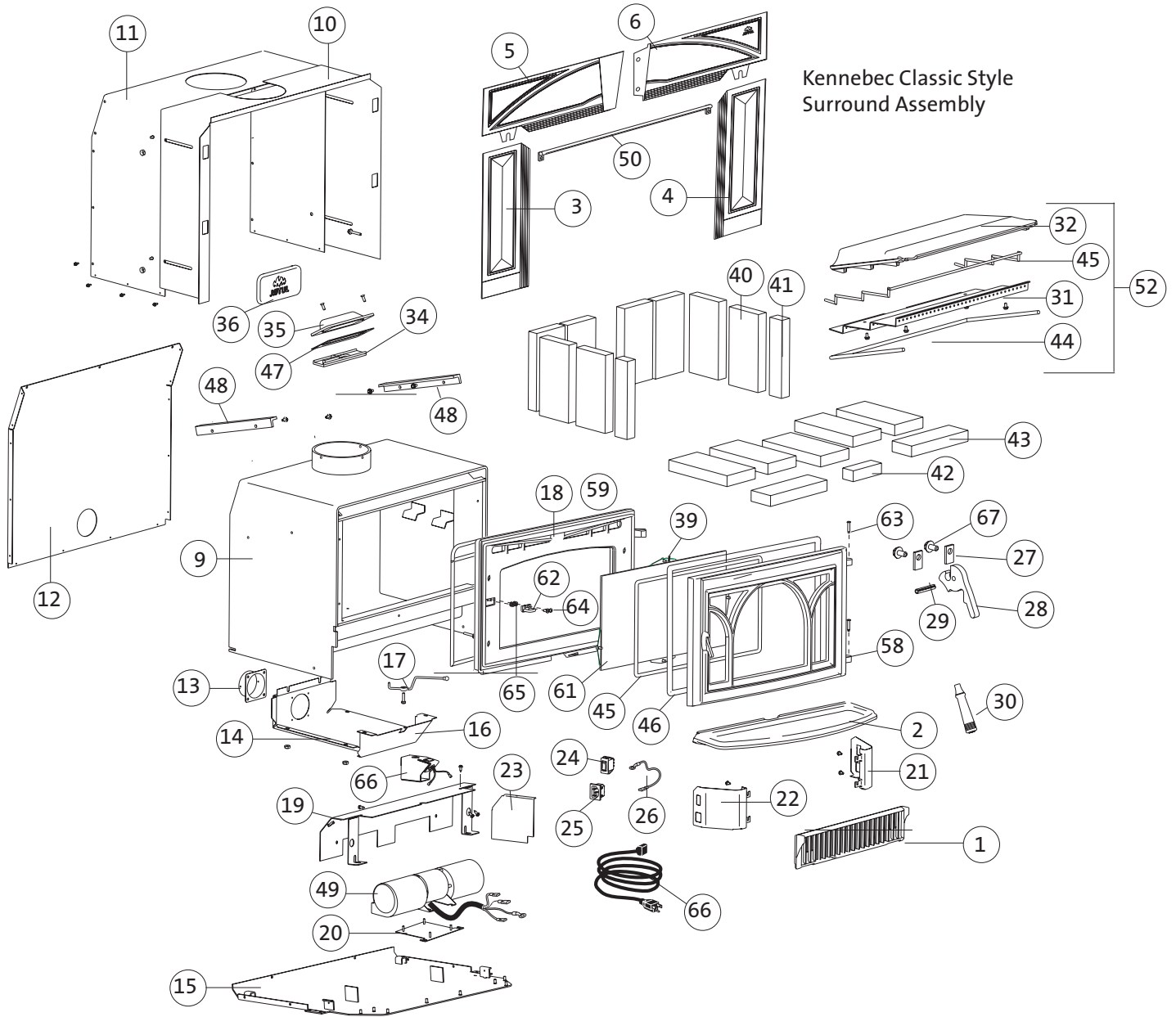
Gasket Replacement

See the Parts List on page 21 to order the correct gasket material. Universal Gasket Kit #157050 is also available.

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.

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Jøtul C 450 Fireplace Insert Illustrated Parts Breakdown



Jøtul C 450 Parts List

No.	Description	Part Number		
1.	Control Door, Vertical Grille - Matte Black	157042	33.	Latch, Receiver - Double Door 220349
	Control Door, Vertical Grille - Blue Black	157041	34.	Air Slider 104082
2.	Ashlip - Matte Black	10397992	35.	Inspection Cover 103985
	Ashlip - Blue Black	10397927	36.	Brick Retainer 103984
3.	Kenn. Surround Leg, Left - Matte Black	10425992	37.	Hang Tab, Surround Panels, (4) not shown 224144
	Kenn. Surround Leg, Left - Blue Black	10425927	38.	Glass Panel, (2) - Double Door 220356
4.	Kenn. Surround Leg, Right - Matte Black	10426092	39.	Glass Retainer, (4) 153620
	Kenn. Surround Leg, Right - Blue Black	10426027	40.	Refractory Brick, (13) 129082
5.	Kenn. Breastplate, Left - Matte Black	10425792	41.	Refractory Brick, 9" x 2" (2) 220390
	Kenn. Breastplate, Left - Blue Black	10425727	42.	Refractory Brick, 1 5/8" x 4 1/2" (1) 220391
6.	Kenn. Breastplate, Right - Matte Black	10425892	43.	Refractory Brick, 9" x 3" (2) 220518
	Kenn. Breastplate, Right - Blue Black	10425827	44.	Gasket, 3/8" LD Rope (Baffle) 100038
9.	Firebox	220317	45.	Gasket, 1/4" LD Rope / Self-adhesive (Glass) 200024
10.	Shroud Front, Adjustable - Matte Black	22033892	46.	Gasket, 3/8" LD Rope (Front Plate, Doors) 100038
	Shroud Front, Adjustable - Jøtul Iron Gray	22033885	47.	Gasket, Inspection Cover 220513
11.	Shroud, Cabinet Sleeve	220315	48.	Baffle Support, (2) 220306
12.	Shroud, Back Panel	220312	49.	Blower 155342
13.	Air Inlet Collar, 3" dia.	220502	50.	Convection Air Rod (Trim Rod) Matte Black 22053192
14.	Air Channel, Back / Bottom	220308	51.	Miscellaneous Hardware Kit 155613
15.	Shroud, Bottom	22422392	52.	Baffle Assembly, Complete 155309
16.	Air Channel, Front	220307	58.	Front Assembly, Single Door - Matte Black 157039
17.	Air Valve Handle	157392		Front Assembly, Single Door - Blue Black 157038
18.	Front Plate	103973	59.	Replacement Single Door - Matte Black 157036
19.	Blower Shroud (Heat Shield)	224711		Replacement Single Door - Blue Black 157035
20.	Blower Base	224709	60.	Control Door, Vertical Grille - Matte Black 157042
21.	Ashlip Support - Right	22471392		Control Door, Vertical Grille - Blue Black 157041
22.	Ashlip Support - Left	22471492	61.	Glass Panel, Single Door 222991
23.	Air Divider	220533	62.	Latch Receiver, Single Door 225398
24.	Rocker Switch, Blower Control	129130	63.	Hinge Pin, Black (2) 127075
25.	Power Cord Receptacle, Blower	220503		Hinge Pin, Nickel (2) 125960
26.	Ground Jumper, Blower	155344	64.	M6 x 14 Button Head Cap Screw, (2) 118215
27.	Hang Tab	129680	65.	Washers, .062 (6) 117947
28.	Door Latch	220340	66.	Blower Snapstat, 110/-20°F Ceramic 220755
29.	Roll Pin, 5 x 35	127064	67.	M6 x 12mm Flange Hex Hd Bolt 117130
30.	Door Handle (Stove Tool)	154310		
31.	Air Manifold, Secondary	220305		
32.	Baffle Plate	103983		

Jøtul C 450 Options

Mantel Heat Shield / for standard cast iron surround	155346
Mantel Heat Shield / for steel wide surround	157325
Trimable Surround, 40" x 30" / Matte Black	157325
Steel Wide Surround, 47 3/4" x 34" / Matte Black	157213

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

$R \text{ brick} = 1/C = 1/1.25 = 0.80$

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

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

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 =

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

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.

Jøtul C 450 Kennebec Fireplace Insert Warranty

This warranty policy applies to wood-burning products identified by Jøtul trade names, as set forth below.

A. Limited Lifetime Warranty - Parts Only:

Jøtul North America Inc. (JØTUL) warrants, to the original retail purchaser, that those baffle and air manifold components of the Jøtul Stove or Fireplace Insert specified above will be free of defects in material and workmanship for the life of the stove. This warranty is subject to the terms, exclusions and limitations set forth below.

B. Cast Iron, Enamel, and Steel Components:

Jøtul North America Inc. (JØTUL) warrants, to the original retail purchaser, that those components of the Jøtul Stove or Fireplace Insert specified above will be free of defects in material and workmanship for a period of five (5) years from the date of purchase. This warranty is subject to the terms, exclusions and limitations set forth in the following text.

C. Electrical Components (blowers, thermostatic switches):

JØTUL warrants, to the original retail purchaser, that those components of the Jøtul Stove or Fireplace Insert specified above will be free of defects in material and workmanship for a period of one (1) year from the date of purchase. This warranty is subject to the terms, exclusions, and limitations set forth in the following text

JØTUL will repair or replace (including parts & labor), at its option, any of the above components determined by JØTUL to be covered by this warranty. You must, at your own expense, arrange to deliver or ship the component to an authorized Jøtul dealer and arrange for pickup or delivery of the component after repairs have been made. If, upon inspection, JØTUL determines that the component is covered by this warranty, the repair or replacement will be made as set forth above. This warranty is not transferable and is extended only to, and is solely for the benefit of, the original retail purchaser of the Jøtul Stove or Fireplace Insert. This paragraph sets forth the sole remedy available under this warranty in the event of any defect in the Jøtul Stove or Fireplace Insert.

The warranty period for any replaced component will be the remaining unexpired portion of the warranty period for the original component. Please retain your dated sales receipt in your records as proof of purchase.

EXCLUSIONS AND LIMITATIONS

NOTICE: This warranty is void if installation or service is performed by someone other than an authorized installer or service agency, or if installation is not in conformance with the installation and operating instructions contained in this owners manual or local and/or national fire and building regulations. A listing of local authorized installers, service agencies and gas suppliers can be obtained from the National Fireplace Institute at <http://www.nficertified.org/>.

This warranty does not cover the following:

- 1) Repair or replacement of parts that are subject to normal wear and tear during the warranty period or to parts that may require replacement in connection with normal maintenance. These parts include paint, gaskets, burn plates, firebricks, fire grates, ceramic insulation blankets or glass (glass is only warranted against thermal breakage).
- 2) Damage due to incorrect installations not in conformance with the installation instructions contained in this owners manual or local and/or national fire and building regulations.
- 3) Damage, including damage to enamel surfaces, caused by improper operation, over-firing, and/or misuse. Improper operation, such as burning the stove with the ash door open, can damage the stove. Over-firing occurs when any part of the stove glows red. Over-firing can also be identified by warped plates, rust-colored cast iron, paint pigment that has turned dusty white, or bubbling, cracking and discoloration of the enamel finish. Misuse includes,

without limitation, use that is not in conformance with the operating instructions contained in this owners manual.

- 4) Damage due to, or repair of, rust. Use of stove-top steamers may cause rust.
- 5) Damage due to service performed by an installer or service agency, unless otherwise agreed to in writing by JØTUL.
- 6) Damage caused by unauthorized modification, use or repair.
- 7) Costs incurred by travel time and/or loss of service.
- 8) Labor or other costs associated with the repair of components beyond the warranty period.
- 9) Damage incurred while the Jøtul Stove or Fireplace Insert is in transit.

IN NO EVENT SHALL JØTUL, ITS PARENT COMPANY, SHAREHOLDERS, AFFILIATES, OFFICERS, EMPLOYEES, AGENTS OR REPRESENTATIVES BE LIABLE OR RESPONSIBLE TO YOU FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER SIMILAR DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR DAMAGES TO A STRUCTURE OR ITS CONTENTS, ARISING UNDER ANY THEORY OF LAW WHATSOEVER. ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WRITTEN WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, JØTUL MAKES NO ORAL, WRITTEN OR OTHER WARRANTY WITH RESPECT TO JØTUL OR SCAN STOVES OR FIREPLACES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on the length of implied warranties. Therefore, the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

JØTUL reserves the right to discontinue, modify or change the materials used to produce the Jøtul Stove or Fireplace. JØTUL shall have the right to replace any defective component with substitute components determined by JØTUL to be of substantially equal quality and price.

The dollar value of JØTUL's liability for breach of this warranty shall be limited exclusively to the cost of furnishing a replacement component. JØTUL shall not in any event be liable for the cost of labor expended by others in connection with any defective component. Any costs or expenses beyond those expressly assumed by JØTUL under the terms of this warranty shall be the sole responsibility of the owner(s) of the Jøtul Stove or Fireplace Insert.

No dealer, distributor, or other person is authorized to modify, augment, or extend this limited warranty on behalf of JØTUL. NO MODIFICATION OR CHANGE TO THIS WARRANTY WILL BE EFFECTIVE UNLESS IT IS MADE IN A WRITTEN DOCUMENT MANUALLY SIGNED BY AN AUTHORIZED OFFICER OF JØTUL.

An authorized installer may have been provided with certain information related particularly to the Jøtul Stove or Fireplace Insert; however, no authorized installer or other person who may service the appliance is an agent of JØTUL. No inference should be made that JØTUL has tested, certified, or otherwise pronounced any person as qualified to install or service the appliance. JØTUL shall not be liable or otherwise responsible for any error or omission by a person installing or servicing a Jøtul Stove or Fireplace Insert.

If you believe your Jøtul or Fireplace Insert is defective, you should contact your nearest authorized Jøtul dealer, who will process a warranty claim. IN ORDER TO QUALIFY FOR WARRANTY COVERAGE, JØTUL MUST RECEIVE NOTICE OF A POSSIBLE DEFECT WITHIN SIXTY (60) DAYS OF THE DATE THE DEFECT IS FIRST DISCOVERED, OR REASONABLY COULD HAVE BEEN DISCOVERED.

This warranty is given by Jøtul North America, Inc.,
55 Hutcherson Drive, Gorham, Maine 04038 USA

Cat.no 138344-G
November 2012

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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