

Jøtul F 400 Castine

Non-catalytic Wood Stove

Classic and Clean Face

Installation and Operation Instructions for the United States and Canada



- The Jøtul F 400 Castine non-catalytic stove is listed to burn solid wood only. Do not burn any other fuels.
- Read this entire manual before you install and use this appliance.
- Save these instructions for future reference and make them available to anyone using or servicing the fireplace insert.
- This wood heater requires periodic inspection and repair for proper operation. See this manual for specific maintenance information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in this owner's manual.



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WARNING !

THIS WOOD HEATER HAS A MANUFACTURER-SET MINIMUM LOW BURN RATE THAT MUST NOT BE ALTERED. IT IS AGAINST FEDERAL REGULATIONS TO ALTER THIS SETTING OR OTHERWISE OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THIS MANUAL.

This heater meets the 2015 U.S. Environmental Protection Agency's emission limits for wood heaters manufactured after May 15, 2015. This heater may not be sold after May 15, 2020.

Standards

The Jøtul F 400 Castine solid fuel heater has been tested and listed to :

U.S. Standards: ANSI/UL 1482.

Canadian Standards:

CAN/ULC-S627-M00 and CAN/ULC-S628-M93

Certified Safety Tests performed by:

Intertek Testing Services, Middleton, Wisconsin U.S.A.

Manufactured by:

Jøtul North America, Inc.
55 Hutcherson Drive
Gorham, Maine 04038, USA
and

Jøtul AS, P.O. Box 1411, Fredrikstad, Norway



A French language version of this manual is available to download at www.jotul.ca.

Télécharger la version française de ce manuel à l'adresse www.jotul.ca.

NOTE: It is normal for a new, painted stove to emit odor and smoke during initial fires, depending upon temperatures over time. This is caused by the curing of the high temperature paint and manufacturing materials. This condition can be alleviated by opening a window or door to provide additional ventilation.

Combustion Specifications

Jøtul F 400 Castine

Heat Output Range: ¹	11,300 to 27,800 BTU/hr.
Max. Heat Output:	55,000 BTU/hr.
Heating Capacity: ²	Up to 1,500 sq. ft.
Maximum Burn Time: ²	Up to 8 hours
EPA Efficiency: ³	HHV: 68.29% LHV: 73.78%
CO Emissions: ⁴	101.46 g/hr
Pariculate Emissions: ⁵	3.8 g/hr

Fuel: Up to 20" Logs (508 mm)

- ¹ *Heat Output Range* results are determined during specific emissions tests established by the EPA.
The *Maximum Heat Output* value is representative of a more frequent re-fueling cycle than specified in the EPA High Heat Output test method.
- ² *Heating Capacity and Maximum Burn Time* will vary depending on design of home, climate, wood type and operation
- ³ *EPA Validated Efficiency:*
High Heat Value and Low Heat Value are obtained per CSA B415.1-10 test method. HHV calculation encompasses all products of combustion, including H₂O condensation. LHV calculation includes H₂O in its vapor state. Simply put, HHV assumes all the water component is in a liquid state (condensed) at the end of combustion and that heat recovered from condensation can be put to use.
- ⁴ *Carbon Monoxide Emissions* rate results from Test Method CSA B415.1-10.
- ⁵ *Particulate Emissions* rate is obtained using EPA Test Method 28-5H.

See Sect. 5.0 of this manual for important information regarding the safe, proper, and most efficient operation of your stove.

Check Building Codes

When installing, operating and maintaining your Jøtul F 400 woodstove, 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.

Safety Notices

- BURN SOLID, NATURAL WOOD FUEL ONLY. DO NOT BURN ANY OTHER FUEL.
- DO NOT USE CHEMICALS OR FLUIDS TO START A FIRE. DO NOT BURN GARBAGE OR FLAMABLE FUELS.
- DO NOT USE A GRATE OR ELEVATE THE FIRE. BUILD THE FIRE DIRECTLY ON THE HEARTH.
- IF THIS ROOM HEATER IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTRUCTIONS IN THIS MANUAL. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR LOSS OF LIFE.
- CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.
- ANY EXISTING CHIMNEY SYSTEM MUST BE INSPECTED BEFORE INSTALLATION OF THIS APPLIANCE.
- DO NOT CONNECT THIS STOVE TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.
- EXTREMELY HOT WHILE IN OPERATION! KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT WILL CAUSE SKIN BURNS. USE A CHILD GUARD SCREEN TO PREVENT ACCIDENTAL CONTACT BY SMALL CHILDREN.
- INSTALL SMOKE DETECTORS IN THE LIVING AREA AND BEDROOMS OF YOUR HOME. TEST THEM REGULARLY AND INSTALL FRESH BATTERIES TWICE ANNUALLY.
WHEN INSTALLED IN THE SAME ROOM AS THE STOVE, A SMOKE OR CARBON MONOXIDE DETECTOR SHOULD BE LOCATED AS FAR FROM THE STOVE AS POSSIBLE TO PREVENT THE ALARM SOUNDING WHEN ADDING FUEL.
- 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. In some cases, the optional Outside Air Kit #154335 can be used to alleviate this condition. 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.
- Jøtul strongly recommends that this stove be installed by a professional solid fuel technician, or that you consult one if you do the work yourself. Also, consult your insurance company regarding any other specific requirements.



We suggest 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).



1.0 Installation

If this solid fuel room heater is not properly installed, a house fire may result. For your safety, follow the installation directions exactly. Contact the local building or fire officials about restrictions and installation inspection requirements in your area.

Your local officials have final authority in determining if a proposed installation is acceptable. Any requirement by the local authority having jurisdiction that is not specifically addressed in this manual, defaults to NFPA 211, and local codes in the U.S. or in Canada, CAN/CSA-B365-M and local codes.

1.1 Assembly Before Installation

Unpack the Stove

Inspect the stove for damage. Contact your dealer immediately if any damage is found. Do not install the stove if any damage is evident.

Contents:

- Inspection Cover (Not for use in US/Canada)
- Bottom Heat Shield
- Door Handle
- Hardware Bag

1.2 Flue Collar Reversal

The Flue Collar is oriented in the Top Exit position. If a Rear Exit position is required, remove the two mounting bolts, and turn the collar 180 degrees. Secure the collar using the same bolts, nuts and washers.

1.3 Chimney Connector

Use 6" single wall or listed 6" double-wall stovepipe to connect the stove to the chimney. Single wall stovepipe must be black iron or stainless steel and have a minimum thickness of 24 gauge. Do not use aluminum or galvanized steel pipe for chimney connection - these materials are not suitable for use with solid fuel. Attach the flue collar to the chimney connection using 2 self-drilling screws found in the miscellaneous kit.

Follow these guidelines regarding chimney connector construction:

- **DO NOT USE CHIMNEY CONNECTOR AS A CHIMNEY. IT IS INTENDED ONLY TO BE USED A CONNECION DEVICE.**
- Each connector section must be oriented with the male (crimped) end pointing toward the stove. See **fig. 2**.
- Secure all connector joints with three sheet metal screws.
- For the best performance, the chimney connector should be as short and direct as possible, including no more than two 90° elbows.
- **The maximum vertical run of single wall stovepipe should not exceed 10 ft. (305 cm). The maximum horizontal run should not exceed 3 ft. (92 cm) with a 1/4" rise per foot.**
- No part of the chimney connector may pass through an attic or roof space, closet or other concealed space, or through a floor or ceiling. All sections of the chimney connectors must be accessible for cleaning. Where passage through a wall or partition of combustible construction is desired, the installation must conform with NFPA 211 or CAN/CSA-B365, and is also addressed in this manual.
- **DO NOT CONNECT THIS HEATER TO ANY CHIMNEY SERVICING ANOTHER APPLIANCE.**

2.0 Chimney Requirements

There are two types of chimneys suitable for the Jøtul F 400 :

1. A code-approved masonry chimney with a ceramic tile or listed steel flue liner.
2. A prefabricated chimney complying with the requirements for Type HT (2100°F) chimneys per UL 103 or ULC S629.

The chimney size should not be less than the cross-sectional area of the flue collar, and not more than three times greater than the cross-sectional area of the flue collar.

When selecting a chimney type and the location for the chimney in the house, keep this in mind: **It is the chimney that makes the stove work, not the stove that makes the chimney work.** It is the temperature differential between the chimney and the air outside that initiates and maintains the draft necessary to pull air into the stove to support combustion.

Several factors beside stove design affect draft strength; chimney height, cross-sectional area, flue temperature, environmental conditions such as weather and local geography, as well as the proximity of surrounding trees or buildings. Weak draft, for whatever reason, can cause smoke leakage into the room and poor overall performance.

A short masonry chimney on the exterior of a house will give the poorest performance. This is because it can be very difficult to warm the chimney enough to generate adequate draft. In extremely cold climates, it may be necessary to reline the chimney or extend its height to help establish draft.

A tall, interior masonry chimney is easier to keep warm and will perform the best under a variety of weather and environmental conditions.

The following guidelines give the necessary chimney requirements based on the national code (ANSI-NFPA 211 for the US. And CSA CAN-B365 for Canada). However, many local codes differ from the national code to take into account climate, altitude, or other factors. Your local building inspector is the final approving authority. Consult them prior to installation.

DO NOT CONNECT THIS HEATER TO ANY AIR DUCT OR HEAT DISTRIBUTION SYSTEM.

2.1 Masonry Chimneys

When installing the Jøtul F 400 into a masonry chimney you must conform to all of the following guidelines:

- The chimney flue size should not be less than the cross-sectional area of the stove flue collar.
- The cross-sectional area of the flue of a chimney with no walls exposed to the outside below the roofline shall not be more than three times the cross-sectional area of the stove flue collar.
- The cross-sectional area of the flue of a chimney with one or more walls exposed to the outside below the roofline shall not be more than two times the cross-sectional area of the stove flue collar.
- Larger chimney flues should be relined with a listed or codeapproved liner.
- The masonry chimney must have a fireclay liner or equivalent, with a minimum thickness of 5/8" (14 mm) and must be

installed with refractory mortar. There must be at least 1/2" (12.7 mm) air space between the flue liner and chimney wall.

- The fireclay flue liner must have a nominal size of 8" X 8" (20 cm x 20 cm), and should not be larger than 8" X 12" (20 cm x 30 cm). A round fireclay liner must have a minimum inside diameter of 6" (15 cm) and maximum inside diameter of 8" (20 cm). A larger chimney should be relined with an appropriate code approved liner.
- Brick or modular block must be a minimum of 4" (10 cm) nominal thickness. Stone construction must be at least 12" (30 cm) thick.
- A newly-built chimney must conform to local codes, or, in their absence, must comply with national regulations.
- An existing chimney must be inspected by a professional licensed chimney sweep, fire official, or code officer to ensure that the chimney is in proper working order.
- No other appliance may be vented into the same flue.
- An airtight clean-out door should be located at the base of the chimney.

2.2 Prefabricated Chimneys

A prefabricated metal chimney must be tested and listed for use with **solid fuel burning appliances**. High Temperature (HT) Chimney Standard UL 103 for the U.S. and High Temperature Standard ULC S-629 for Canada.

The manufacturer's installation instructions must be followed precisely. Always maintain the proper clearance to combustibles as established by the pipe manufacturer. This clearance is usually a minimum of 2", although it may vary by manufacturer or for certain chimney components.

2.3 Chimney Height

The chimney must be at least 15 ft (4.57 m) high and 3 feet (92 cm) higher than the highest point where it passes through the roof, and at least 2 feet (61 cm) higher than the highest part of the roof or structure that is within 10 feet (3.05 m) of the chimney, measured horizontally. See **figure 3**.

Chimneys shorter than 15 feet (4.57 m) may not provide adequate draft. Inadequate draft can result in smoke spillage when loading the stove, or when the door is open. Poor draft can also cause back puffing (ignition of gas build-up inside the firebox) and sluggish performance. The minimum height does not, in itself, guarantee proper chimney performance.

Excessive chimney height can promote over-strong draft resulting in extreme stove temperatures and uncontrollable fires. Your Jøtul dealer is an expert resource to consult regarding draft issues or other performance-related questions.

2.4 Wall Pass-Throughs

In the U.S.

The National Fire Protection Association's publication, NFPA 211, Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances permits four methods for passing through a combustible wall. Before proceeding with any method be sure to consult with your local building officials to discuss any local code requirements.

Common Method / U.S.

- See **figures 4 and 5**. Remove all combustible materials from the pass-through area (around the chimney connector), a minimum 12" (30.5 cm). A 6" (15.2 cm) diameter connector will require a 31" x 31" (78.7 x 78.7 cm) square opening.
- The opening must be filled with at least 12" (30.5 cm) of brick around a fireclay liner. The liner must be ASTM C35 or equivalent, having a minimum wall thickness of 5/8" (16 mm).
- The Pass-through must be at least 18" (45.7 cm) from combustible ceiling materials.
- It will be necessary to cut wall studs, install headers, and construct a sill frame to maintain the proper dimensions and to support the weight of the brick.
- The bricks must be solid brick with a minimum of 3 fh inches thick (nominal 4" / 102 mm).
- Refractory mortar must be used at the junction of the chimney and the pass-through liner. The pass-through liner must not penetrate the chimney liner beyond the inner surface of the chimney liner. Use extreme care when constructing the hole in the chimney liner as the tiles can shatter easily.

In Canada

The installation must conform to CAN/CSA-B365, *Installation Code for Solid Fuel Burning Appliances and Equipment*. Before proceeding be sure to consult your local building inspector.

Common Method / Canada

- This method requires the removal of all combustible materials from at least 18" (45.7 cm) around the chimney connector's proposed location. A 6" round liner requires a minimum opening 43" x 43" (109.2 x 109.2) square.
- Locate the pass-through at least 18" from combustible ceiling materials.
- The space that is cleared of combustible materials must remain empty. Sheet metal panels can be used to cover the area. However, when using a panel on both sides of the wall, each cover must be installed on noncombustible spacers at least 1" from the wall. If one panel of sheet metal is to be used it may be installed flush to the wall.

See **section 5.3.1 and 5.3.2 of CAN/CSA - B365-M91**. Consult your local building inspector, authorized Jøtul Dealer, NFPA 211 in the U.S. or CAN/CSA-B635 in Canada for other approved wall pass-through methods.

3.0 Connecting to the Chimney

3.1 Masonry Chimney

When installing a Jøtul F 400 into a masonry chimney through a “thimble” (the opening through the chimney wall to the flue), the thimble must consist of ceramic tile or steel and be securely cemented in place.

The chimney connector/stove pipe must slide completely inside the thimble to the inner surface of the flue liner. It may be necessary to make use of a thimble sleeve (a pipe with a slightly smaller diameter than standard stove pipe). See **figure 5**.

The connector pipe or thimble sleeve must not protrude into the flue liner or otherwise restrict draft.

Use refractory cement to seal the seam between the chimney connector, sleeve, and thimble.

Do not connect this stove to a chimney flue servicing another appliance of any kind.

3.2 Hearthmount into a Masonry Fireplace

The Jøtul F 400 may be installed into a masonry fireplace provided the height of the opening is a minimum of 29 1/2". Use of the Short Leg Package will reduce the stove height by 2 1/4" (57 mm).

Building code requires that the fireplace damper plate be removed or securely fixed in the open position. A connector pipe must then extend from the stove's flue exit through the damper area of the fireplace and into the chimney tile liner. See **figure 6**.

The inside area of the flue liner must not be less than the area of the stove flue collar and cannot be more than three times greater than the cross sectional area of the stove flue collar.

If the chimney liner is too large to accommodate the stove, an approved relining system must be installed to resize the flue. A new sheet metal damper block-off plate must be installed around the connector pipe at the damper frame and sealed with the proper sealant (usually High-Temp Silicone).

3.3 Prefabricated Chimneys

When connecting the Jøtul F 400 to a prefabricated metal chimney always follow the pipe manufacture's instructions and be sure to use the components that are required. This usually includes some type of “smoke pipe adapter” that is secured to the bottom section of the metal chimney and allows the chimney pipe to be secured to it with three sheet metal screws. See **figure 7**.

4.0 Clearance to Combustibles

4.1 Floor Protection (For both U.S. and Canada)

The Jøtul F 400 requires one of the following three forms of hearth protection:

1. Any UL, ULC or WH listed hearth board. (No bottom heat shield required).
2. Any noncombustible material that has a minimum R- value of 2.0. (No bottom heat shield required.)
3. Any noncombustible material with the use of the stove's bottom heat shield.

All forms of protection must include a noncombustible surface extending continuously a minimum of 16" for U.S (460 mm for Canada) in front of the stove, and 8" (200 mm) from the sides and back of the stove (measured from side and back panels).

This will result in a minimum floor protection of 42"W X 44"D. See **figure 8**.

In a rear vent installation, the floor protection must also extend under the stove pipe a minimum of 2" (50 mm) beyond either side of the pipe. See **figure 8**.

Consult appendix A at the back of this section for alternate floor protection methods and materials.

4.2 Clearances to Walls and Ceilings

The clearances listed and diagramed in this manual have been tested to UL and ULC standards and are the minimum clearances to combustible materials specifically established for the Jøtul F 400.

A combustible surface is anything that can burn (i.e. sheet rock, wall paper, wood, fabrics etc.). These surfaces are not limited to those that are visible and also include materials that are behind noncombustible materials.

If you are not sure of the combustible nature of a material, consult your local fire officials.

“Fire Resistant” materials are considered combustible; they are difficult to ignite, but will burn. Also “Fire-rated” sheet rock is also considered combustible.

Contact your local building officials about restrictions and installation requirements in your area.

See pages 8-9 for complete clearance requirements and diagrams.

4.3 Using Shields to Reduce Clearances

Chimney Connector Heat Shields: Use only connector heat shielding listed for use with solid fuel heaters. The connector heat shield must begin 1" above the lowest exposed point of the connector pipe and extend vertically a minimum of 25" (640 cm) above the top surface of the stove.

Double Wall Connector: Listed double wall pipe is an acceptable alternative to connector pipe heat shields.

Wall-Mounted Protection: When reducing clearances through the use of wall mounted protection:

- *In the U.S. refer to NFPA 211, Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances*, for acceptable materials, proper sizing and construction guidelines.
- *In Canada, refer to CAN/CSA-B365, Installation Code for Solid-Fuel Burning Appliances and Equipment*, also for acceptable materials, proper sizing and construction guidelines.

NOTE: Many manufacturers have developed woodstove accessories that permit clearance reduction. Use only those accessories that have been tested by an independent laboratory and carry the laboratory's testing mark. Be sure to follow all of the manufacturer's instructions.

4.4 Alcove Installation

The Jøtul F 400 can be installed in an Alcove as diagrammed in figures 9 and 10.

1. The stove must be installed with listed double wall pipe.
2. In a protected alcove installation both side walls and rear wall must be protected per NFPA 211 or CAN/CSA-B365. The wall protection must be elevated 1" (25 mm) from the floor and spaced at least 1" (25 mm) off the combustible wall, using noncombustible spacers, to allow for air circulation behind the shield.
3. The height of the wall protection including the bottom air space must be 48" (121 cm).
4. The Bottom Heat Shield is required in all Alcove installations.
5. Alcove floor protection must consist of a UL/ULC or WHI listed hearth pad or a non combustible material with a minimum R value of 2.0.
6. Minimum ceiling height in an **unprotected** installation, off the top of the stove is 58" (148 cm). The minimum ceiling height off the top of the stove in a **protected** ceiling installation is 36 (91.5 cm).

4.5 Mobile Home Installation

The Jøtul F 400 has been approved for use in mobile homes in the U.S. and Canada with the following stipulations:

1. The stove must be secured to the floor of the mobile home. Use Floor Bracket Kit #750304.
2. The stove is provided outside air for combustion. Outside Air Kit #154335 (see page 16 for more details).
3. Use only listed double-wall pipe for the chimney connection.
4. The stove must be grounded to the mobile home chassis.
5. The stove must otherwise be installed in accordance to 24CRR, Part 3280 (HUD).

Consult with your local building inspector or fire officials about restrictions and requirements in your area, prior to installing the stove.

WARNING!

- **DO NOT INSTALL THIS STOVE IN A BEDROOM/S**
- **Do not install the stove in any way that might compromise the structural integrity of the mobile home floor, walls, ceiling, or roof.**

5.0 Operation

Please read the following section completely before building a fire in your new Jøtul F 400 .

5.1 Combustion Efficiency

The Jøtul F 400 Castine has an EPA tested High Heating Value (HHV) efficiency rate of 68.29. There are, however, aspects of efficiency that you should be aware of in order to get the most from your stove. Operation habits and fuel moisture can have a significant effect on efficiency. Poorly seasoned wood having a higher than optimum moisture content, can reduce the amount of energy transferred to the living area as a result of the energy expended to evaporate the excess fuel moisture in order for the wood to burn. Operational habits - such as not building a robust kindling fire to readily ignite the larger fuel pieces - can result in an inefficient, smoldering fire. Additionally, most modern wood heaters' optimum performance and efficiency are at the medium to medium-low burn rates.

The location of the stove can also have a significant effect on heating efficiency, primarily in regard to distribution of the heat. For example, a wood heater centrally located in an open living area, will likely provide better circulation of heat than will a stove located in a room adjacent to the larger living area.

5.2 Minimize Carbon Monoxide Emissions

Testing the F 400 Castine to CSA B414.1-10 resulted in a carbon monoxide emission rate of 101.46 grams per hour. Most all means of combustion produce CO, including wood fires. You can greatly reduce CO levels by maintaining a well-established fire and avoiding operation that produces a smoldering, smoky fire. We highly recommend that a CO monitor (detector) be installed in the same room as the stove. The monitor should be located as far away as possible from the stove to avoid alerts when the doors are opened.

5.3 Wood Fuel and Performance

The F 400 is designed to burn natural wood only. Higher efficiencies and lower emissions generally result when burning air-dried, seasoned hardwoods, as opposed to softwoods, green or freshly cut hardwoods. Wood that has been air-dried for a period of 6 to 14 months will provide the cleanest, most efficient heat. Wood seasoned more than 2 years will burn too quickly to take advantage of the stove's low end efficiency strength.

A seasoned log will have check marks on the ends and be lighter than an unseasoned log which will show little or no check marks.

We recommend using a moisture meter to determine the moisture content of your wood. For purposes of home heating, your fuel should have a moisture content between 12 - 20%. Wood with higher moisture content will burn, however, very inefficiently. Most of its heat value will be lost to driving water out of the wood. Worse, that moisture will condense as creosote in the relatively cool chimney flue, increasing the potential for a chimney fire. Use of unseasoned wood defeats the purpose of any modern wood-burning stove.

BURN UNTREATED WOOD ONLY. DO NOT BURN:

- Coal;
 - Garbage;
 - Synthetic fuel or logs;
 - Material containing rubber, including tires;
 - Material containing plastics;
 - Waste petroleum products, asphalt products, paints, paint thinners or solvents;
 - Materials containing asbestos;
 - Construction or demolition debris;
 - Railroad ties or pressure-treated wood;
 - Manure or animal remains;
 - Lawn clippings or yard waste;
 - Salt water driftwood or other previously salt-water saturated materials;
 - Unseasoned wood;
 - Colored paper, or
 - Paper products, cardboard, plywood, or particle board. *(The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax or similar substances for the purpose of starting a fire.)*
- Burning of any of the materials listed above can result in the release of toxic fumes, cause smoke, or render the heater ineffective and cause smoke**
- 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.**

NOTE: Avoid letting logs rest directly on the glass panel. The logs should be spaced off of the glass enough to allow for proper air flow within the firebox.

5.4 Air Flow and Control

Your Jøtul F 400 is designed to support efficient combustion and heat transfer by directing air through the stove in two separate channels; **Primary and Secondary**. See figure 11.

Primary air is manually regulated by a lever and valve at the front of the stove. The valve position controls the volume of primary air entering the firebox and thereby affects fire intensity, heat output and burn time. Primary air is directed to the main body of the fire through air ports at the front of the stove. Separate manifolds at each side also deliver pre-heated primary air at top of front plate to create an ‘air-wash’ to help keep the viewing glass clean.

Secondary air allows combustion of volatile gas and other by-products of primary combustion that would otherwise enter the atmosphere unburned. This unregulated air is preheated as it passes over the back of the stove and through a stainless steel manifold at the top of the firebox. This additional hot oxygen allows any unburned gasses to be burned inside the stove. The action of secondary combustion can be readily seen through the viewing glass a slow, rolling flames suspended over the main fuel bed and smaller jets of flame extending from the secondary manifold ports. At the same time, no smoke will be observed exiting the chimney. This is evidence that the stove is operating at the so-called “sweet-spot” wherein optimum efficiency is realized.

When first starting or reviving the fire: the primary control lever should be set to the far right position, which permits the maximum amount of air into the stove. The greater the amount of air entering the stove, the hotter and faster the fire will burn. **Moving the lever to the left** reduces the airflow into the stove which prolongs the fire at a lower heat output. See figure 12.

Use a Stove-top Thermometer

Determining the primary air setting for the best overall performance for your particular needs and installation will be established over time through trial and error. Each installation has unique characteristics that will affect stove performance. You should use a stove-top thermometer to monitor the status of the fire. Place the thermometer on the stove top, centered two one side or the other. See fig. 13. Generally speaking, once the stove temperature has reached 400°F - 600°F, the air control may be set in a mid-range position to allow adequate oxygen to support efficient combustion throughout the burn cycle.

5.5 Break-In Procedure

The Jøtul F 400 is constructed of cast iron and stove furnace cement. Cast iron, while very durable, expands and contracts as it is heated and cooled. This type of construction requires the stove to be “broken-in” gradually so that thermal expansion does not occur too quickly. The following steps describe the proper break-in procedure for the Jøtul F 400:

1. Light a small fire of newspaper and kindling. Only allow the stove to reach a maximum surface temperature of 200°F (93°C). Burn for approximately 1 hour.
2. Allow the stove to cool to room temperature.
3. Light a second fire, allowing the stove to reach a maximum temperature of 300°F (149°C) for 1 hour.
4. Cool the stove to room temperature.
5. Light a third fire and gradually allow the stove to reach a surface temperature of 400°F (204°C).
6. Cool stove to room temperature. This completes the “break-in” procedure.

Note: Keep the stove under 400°F (204°C) surface temperature during any “break-in fire”, with the exception of the last “break-in” fire. If the temperature exceeds 400°F, move the primary air control lever all the way to the left to shut off the air supply completely. It is normal that the stove top temperature will continue to climb until the fuel burns down somewhat. Once the fire is out and the stove has cooled to room temperature, continue the break-in procedure. **Never attempt to reduce the temperature by removing burning logs from the fire.**

NOTE: It is normal for a new painted stove to emit an odor and smoke during its first several fires. This is caused by the seasoning of the high temperature paint and will diminish with each fire. Opening a window or door to provide additional ventilation will alleviate this condition.

5.6 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.

- **WARNING: THE ASH PAN DOOR MUST ALWAYS BE SECURELY CLOSED WHEN THE STOVE IS IN OPERATION. BURNING THE STOVE WITH THE ASH DOOR OPEN WILL PROMOTE UNEVEN THERMAL EXPANSION AND CAN RESULT IN DAMAGE TO THE STOVE AND VOID YOUR WARRANTY.**

Traditional Fire Building

1. With the primary air control lever in the full open position (*to the right*), start with several sheets of crumbled newspaper placed directly on the grate. On top of the newspaper, place several pieces of small dry kindling (approx. 1” in diameter) with two to three larger logs (approx. 3” to 5” in diameter) on top.
2. Light the fire and close the door, slowly building the fire by

adding larger and larger logs. Be sure to follow the break-in procedure before creating a hot fire that might damage the stove.

3. Once the stove has reached a surface temperature range of between 400° and 600°, (204°C -316°C), adjust the primary air control lever as necessary to generate the heat output and burn time desired.

Jøtul recommends use of a magnetic stove top thermometer to monitor the surface temperature of the stove. The optimum surface temperature range for the most efficient burn is between 400° and 600° (204°C -316°C). for the best locations to place a stove-top thermometer.

Top-Down Fire Building - See fig. 14.

Many people find this method to be superior to the traditional method.

1. With the primary air control lever in the full open position (*to the right*), place two short 1/4-split logs on the firebox floor, perpendicular to the rear wall, about 6 inches apart.
2. Place kindling across the base logs.
3. Place one or two smaller logs on top of the kindling.
5. Place newspaper between the two bottom logs under the kindling. Light the news paper and close the door. Continue to add kindling and small logs as necessary to build the fire. Keep the air control fully open until the fire is well-established.

WARNING: DO NOT OVERFIRE THIS HEATER. IF ANY PART OF THE STOVE OR CHIMNEY CONNECTOR GLOWS, YOU ARE OVERFIRING. A HOUSE FIRE OR SERIOUS DAMAGE TO THE STOVE OR CHIMNEY COULD RESULT.

ATTEMPTS TO ACHIEVE HEAT OUTPUT RATES THAT EXCEED HEATER DESIGN SPECIFICATIONS CAN RESULT IN PERMANENT DAMAGE TO THE HEATER.

Creosote and Soot Formation and the Need for Removal

When wood is burned slowly, it produces tar and other organic vapors which combine with expelled moisture to form creosote. These creosote vapors condense in the relatively cool chimney flue of a slow burning fire. The creosote that accumulates in the flue is highly flammable and is the fuel of chimney fires. To prevent a chimney fire, the creosote needs to be removed by sweeping the chimney and flue connector. The frequency of sweeping will depend on how you operate your stove. An accumulation of 1/4" or more on the sides of the flue or connector is considered hazardous and should be removed.

In the event that creosote in your chimney or flue connector ignites, the resulting fire is often accompanied by a roaring noise and a crackling sound as flakes of burned creosote break loose. If you suspect you are having a chimney fire, immediately close the primary air control and make sure the stove door is closed. Call the fire department and get everyone safely out of the house.

Trying to extinguish the fire in the stove will not help. In fact it can make the matter worse by allowing more oxygen through the door, which then accelerates the fire in the chimney. When the roaring and crackling has stopped, you should resist the temptation to open the door and look at the fire. The fire may have suffocated, but could rekindle when you open the door. After a chimney fire, do not use your stove until the chimney and the

flue connector has been cleaned and inspected to ensure that no damage has occurred.

5.7 Adding Fuel

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

- Always wear gloves when tending to the stove.
- Push the air control lever to the full open position (far right).
- Wait a few seconds before opening the door.
- Use a stove tool or poker to distribute the hot embers equally around the firebox and away from the air inlet ports at the front center of the firebox floor.
- Load the fuel, usually with smaller logs first.
- Close the door, be sure to latch the door tightly.
- Wait 5 – 10 minutes before adjusting the primary air to the desired heat output setting. (If you have at least a 2" thick ember bed when reloading, it may be possible to close the door and immediately adjust the air control setting).

WARNING: Operate the stove only with the front door fully closed except for refueling. Operation with the door partially open may result in overfiring. Also, if the door is left partially open, combustion gas and flame may be drawn out of the stove, creating risks from both fire and smoke.

6.0 Maintenance

6.1 Ash Removal

For your protection always wear safety gloves when handling the ash pan.

Ash removal will be required periodically depending on how frequently the stove is used. The Jøtul F 400 is equipped with an exterior ash pan assembly that allows easy ash removal without opening the front door.

The ash pan door is located under the front ashlip of the stove. To open the ash door, rotate the door knob counterclockwise to unlatch the door and clockwise to latch the door.

With a gloved hand, grasp the ash pan handle and remove the ash pan. Always close the ash pan door before leaving to dispose of the ashes.

The ashes should be placed in a metal container equipped with a tight sealing lid. The container 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 locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

It is advisable to keep a thin (1") bed of ashes on the firebox floor to help maintain a hot charcoal be.

6.2 Glass Care

Cleaning

On occasion it will be necessary to clean the carbon deposits and fly ash off of the glass. If the carbon and fly ash are allowed to remain on the glass for an extended period of time it could eventually cause the glass to become etched and cloudy. Any creosote that might develop on the glass will burn off during the next hot fire.

Follow this cleaning procedure:

1. Glass must be **completely cool**.
2. Only use a cleaner that is specifically designed for this purpose. The use of abrasives will damage the glass and ultimately leave the glass frosted.
3. Rinse and dry glass completely before burning the stove.

Caution! Always operate the door slowly and carefully 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. **Never operate the stove with a cracked or broken glass panel.**

Important: Replace glass only with ceramic glass panel specifically designed for the Jøtul F 400. Do not use substitutes. Replacement glass is available from your local Jøtul dealer.

6.3 Glass Replacement

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.
3. Gently remove the glass panel and gasketing.
4. Using a wire brush, remove all remaining debris from the gasket channel.
5. Apply a small bead of gasket/stove cement to the gasket channel. Beginning at the bottom center, press the new gasket into place without stretching it. Do not overlap the ends of the gasket rope.
6. Center the new glass panel over the gasket with the word "Front" facing out. Reinstall the glass clips. **NOTE: It is extremely important to tighten the glass clips gradually, and in an alternating pattern as you would when tightening the lugs on an vehicle wheel. See figure 15.**
7. It may be necessary to retighten the glass clips after the stove has been burned and the gasketing has been seated.

6.4 Chimney System

The Jøtul F 400 is designed to burn cleanly and efficiently when used according to the guidelines in this manual. In order to maintain proper performance, **you should inspect the chimney and chimney connector at the beginning of each heating season and then every other month during the heating season.** Clean the chimney whenever creosote and fly ash accumulation exceeds 1/4 inch in any part of the system.

Chimney brushes are available from your local Jøtul dealer or hardware supply store. Your dealer can also refer you to a reputable, professional chimney sweep who will have all the equipment to ensure a complete and proper job. Failure to keep the chimney system free of creosote and build-up could result in a serious chimney fire.

7.0 General Maintenance

Regular maintenance will prolong the life of your stove and ensure satisfactory performance.

7.1 Enamel Care

- **DO NOT ATTEMPT TO CLEAN HOT ENAMEL SURFACES.** Clean only cold enamel surfaces with a soft damp cloth and polish with a clean dry cloth. Most stains can be removed with a solution of baking soda and vinegar. Let this solution sit on the stain for a minute or two before rubbing it dry with a damp cloth. Organic cleaning commercial cleaning solutions, such as Citra-Solv®, can also be effective.
- **DO NOT USE SOAPY OR ABRASIVE SOLUTIONS.** These can cause stains. Coffee, tea, and fruit juices will also cause stains.
- **AVOID CONTACT WITH METAL OBJECTS.** Trivets, kettles, or pots, can damage the enamel.

7.2 Gaskets

Door and glass panel gaskets will harden and compress with over time. Inspect and replace if necessary. Use Universal Gasket Kit 157050, available from your local Jøtul Authorized Dealer.

7.3 Gasket Replacement

1. Use pliers and a putty knife to remove the old gasket from the door.
2. Thoroughly clean the channel with a wire brush.
3. Apply a small bead of cement to the channel.
4. Gently press the new gasket into the cement to seat it in the channel. Close and latch the door and then reopen. Wipe any excess cement squeezed out from around the gasket.

Gasket List for the Jøtul F 400

Description	Size	Length
Top Plate Gasket	3/8" LD	7
Smoke Outlet Gasket	3/16" LD/SA	3'
Ash Housing Gasket	3/16" LD/SA	4'
Ash Door Gasket	5/16" LD	4'
Glass Gasket	1/4" LD	5'
Door Gasket	3/8" LD	5', 8"

7.4 Chimney System

The Jøtul F 400 is designed to burn cleanly and efficiently when used according to the guidelines in this manual. In order to maintain proper performance, you should inspect the chimney and chimney connector at least bi-monthly during the heating season and clean when creosote and fly ash deposits exceed 1/4" in any part of the system. Failure to keep the chimney system free of creosote and build up could result in a serious chimney fire.

7.5 Stove Inspection

- Completely clean out all the ashes from the firebox. Only use a vacuum for this job if the vacuum is specifically designed for ashes and only if there are no live coals.
- Inspect the stove seams. Use a utility light to inspect the stove inside and out for cracks or leaks. Replace all cracked parts and repair any cement leaks with furnace cement.

8.0 Accessories

Use only accessories that are specifically designed for use with the Jøtul F 400.

Stove-Top Thermometer 5002

Jøtul recommends the use of a magnetic stove-top thermometer to monitor the surface temperature of the stove. The optimum surface temperature range for the most efficient, clean burn is between 400° and 600°.

Outside Air Kit 154335

Your local building code may require that an outside air supply be connected to the stove. Jøtul Outside Air Adaptor 154335 must be used in these installations unless otherwise specified by the local code official. While the use of outside air may be beneficial in some installations, in itself, such a system does not guarantee proper chimney performance.

The Outside Air Kit includes an adapter collar to attach the air duct to the stove. Installation will require these additional materials not included in the kit:

1. 3" (80 mm) diameter flexible metallic Air Duct - of appropriate length to reach from the stove to the outside of the house.
2. Weatherproof Duct Cap for the duct termination on the outside of the house.
3. Rodent Screen - no larger than 1/4" (5 mm) mesh.

Outside air should be considered if:

1. The stove does not "draw" steadily. Smoke rollout occurs when the door are opened. Fuel burns poorly. Backdrafts occur with or without a fire burning.
2. Other fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke roll-out when opened, or back-draft whether or not there is combustion present.

3. Opening a window slightly on a calm (windless) day alleviates any of the above symptoms.
4. The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices that exhaust house air.
5. There is excessive condensation on the windows in the winter.
6. A ventilation system is installed in the house.

If these or other indications suggest that infiltration air is inadequate to supply sufficient air for the stove, additional combustion air should be provided from the outdoor. Outside combustion air can be provided to the appliance by the following means:

1. **Direct connection:** The Jøtul F 400 has been tested and approved for use with the outside air kit listed above.
2. **Indirect method:** Outside air is ducted to a point no closer than (12") 300 mm from the stove, to avoid affecting the performance of the appliance.
3. **A mechanical ventilation system:** If the house has a ventilation system (air change or heat recovery):
 - a. The ventilation system may be able to provide sufficient combustion makeup air for the solid-fuel appliance.
 - b. The homeowner should be informed that the ventilation system might need to be rebalanced by a ventilation technician after installation of the appliance.

Note: *Provision of outside air to the stove, directly or indirectly, may fail to remedy the problems outlined above. Chimney performance is determined by a variety of interrelating factors which may not be affected by the air supply. Your local Jøtul authorized dealer is your best resource for information regarding chimney and stove performance issues.*

Floor Bracket Kit 750304

Use of the Floor Bracket Kit is required in all mobile home installations to secure the stove to the floor. Complete installation instructions and diagrams are supplied with each Floor Bracket Kit.

Rear Heat Shield 154385

A stove rear heat shield has been specifically designed for the Jøtul F 400 to reduce clearances off the rear of the stove to combustible materials. Use of the heat shield **does not** affect the clearance off the sides of the appliance. See pages 8-9 for specific clearance requirements. Complete installation instructions are supplied with the heat shield.

No other type of heat shield may be used on the rear of the Jøtul F 400.

Bottom Heat Shield 154384

The bottom heat shield supplied with your stove has been specifically designed for the Jøtul F 400. It is required in all alcove installations. Use of the bottom heat shield **does not** affect the floor protection requirements described on page 6 of this manual.

No other type of heat shield may be used on the bottom of the Jøtul F 400.

Short Leg Kit

Set of four is used to reduce stove height by 2 1/4" for fireplace installation.

Available Colors:

Matte Black -	350074
Blue Black Enamel -	350075
Ivory Enamel -	350117
Brown Majolica Enamel -	351147

Leg Leveler Kit 156096

Universal Gasket Kit 157050

Stove gaskets are wear parts. This kit includes enough gasket material to replace door and glass gasketing.

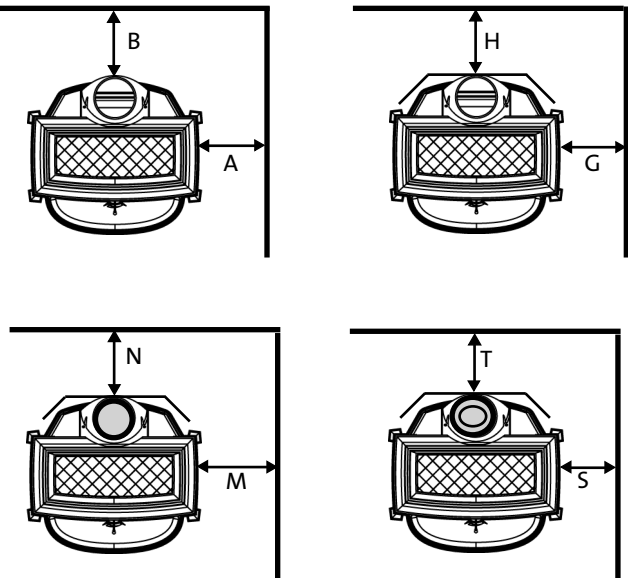
Stove Glove 157363

Excellent quality with full-length.guantlet.

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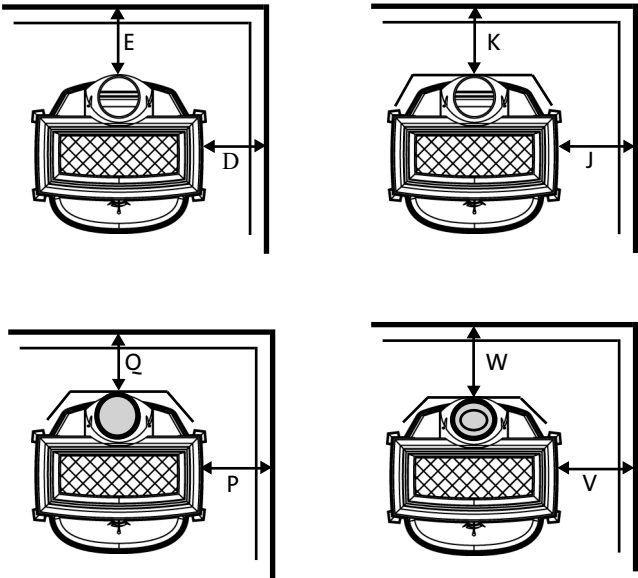
Jøtul F 400 Woodstove Clearances

Unprotected Surface Parallel to the Wall



Protected Surface Parallel to the Wall

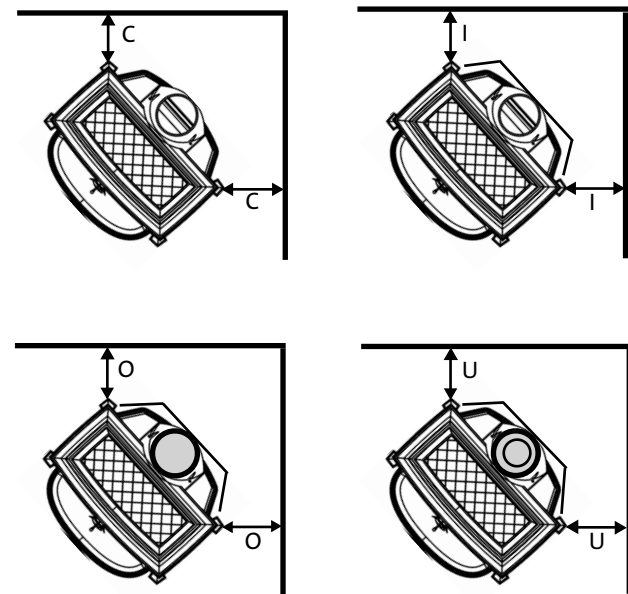
PER NFPA 211 or
CAN/CSA-B365



Important:
Connector heatshields and double wall pipe must be a listed product.
Always follow the manufacturer's instructions.

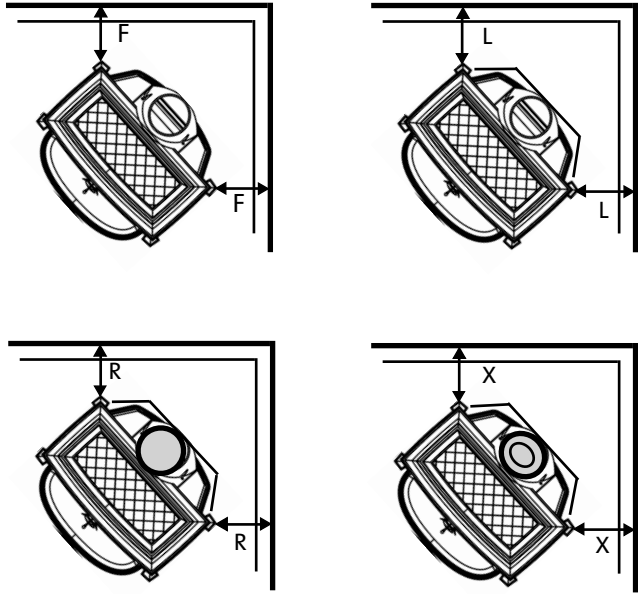


Unprotected Surface Corner Installation



Protected Surface Corner Installation

PER NFPA 211 or
CAN/CSA-B365



Jøtul F 400 Woodstove Clearances

Stove Clearances	Unprotected Surface Installation			Protected Surface Installation PER NFPA211 OR CAN/CSA -B365-M93		
Stove -no heatshield single wall pipe	Side 19" A 485mm	Rear 25" B 635mm	Corner* 18" C 460mm	Side 11" D 280mm	Rear 7" E 180mm	Corner* 8" F 205mm
Stove -with rear heatshield single wall pipe	18" G 460mm	18" H 460mm	13" I 330mm	11" J 280mm	7" K 180mm	8" L 205mm
Stove -no heatshields double wall pipe	16" 405mm	19" 485mm	13" 330mm	8" 205mm	7" 180mm	6" 150mm
Stove -with rear heatshield with connector shield	15" M 380mm	7" N 180mm	11" O 280mm	8" P 205mm	7" Q 180mm	6" R 150mm
Stove -rear heatshield with double wall pipe	15" S 380mm	7" T 180mm	11" U 280mm	8" V 205mm	7" W 180mm	6" X 150mm
Connector Clearances (Pipe)	Unprotected Surface Vertical Installation			Protected Surface Vertical Installation PER NFPA211 OR CAN/CSA-B365-M93		
Single wall pipe	25" 635mm			12" 300mm		
Single wall pipe with rear heatshield	18" 460mm			7" 180mm		
Single wall pipe with connector shields	7" 180mm			7" 180mm		
Double wall pipe	7" 180mm			7" 180mm		
Connector Clearances (Pipe)	Unprotected Surface Horizontal Installation			Protected Surface Horizontal Installation PER NFPA211 OR CAN/CSA-B365-M93		
Single wall connector	18" 460mm			7" 180mm		
Double wall Pipe	6" 150mm			6" 150mm		
Mantel and Trim Clearances	Stove to 1" thick or less, side trim Stove to 1" thick or less, top trim Stove to mantel- maximum mantel depth 12"			13" 300mm 23" 585mm 25" 635mm		

Fig. 1

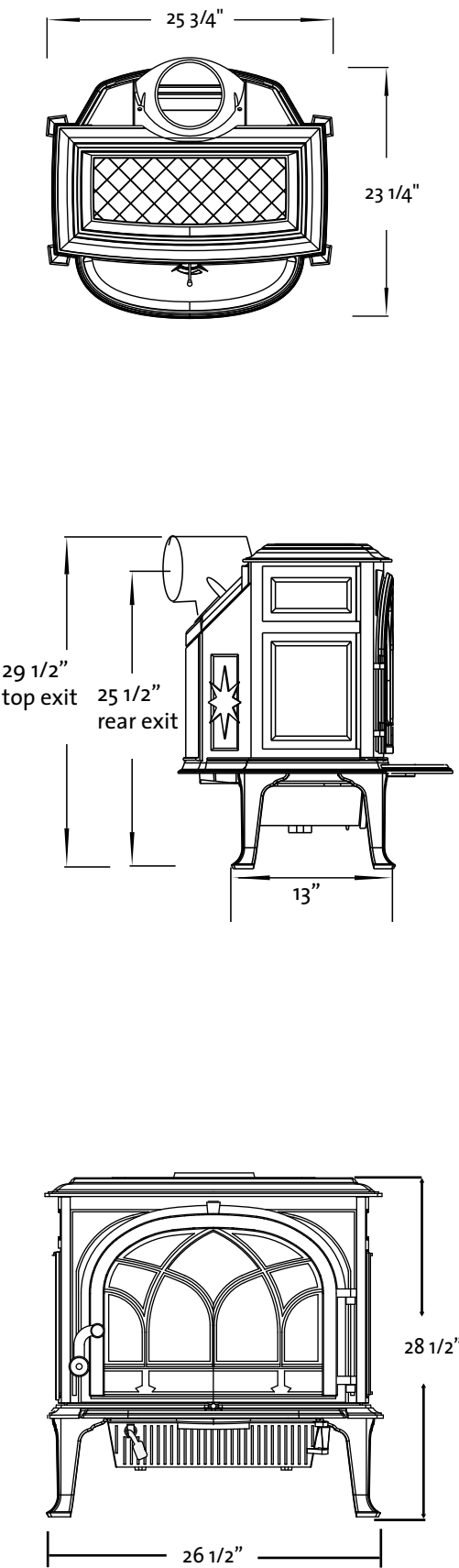


Fig. 2

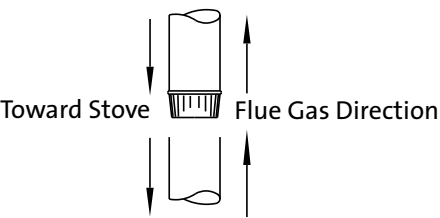


Fig. 3

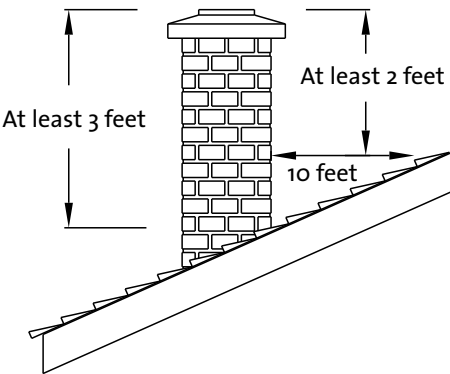


Fig. 4

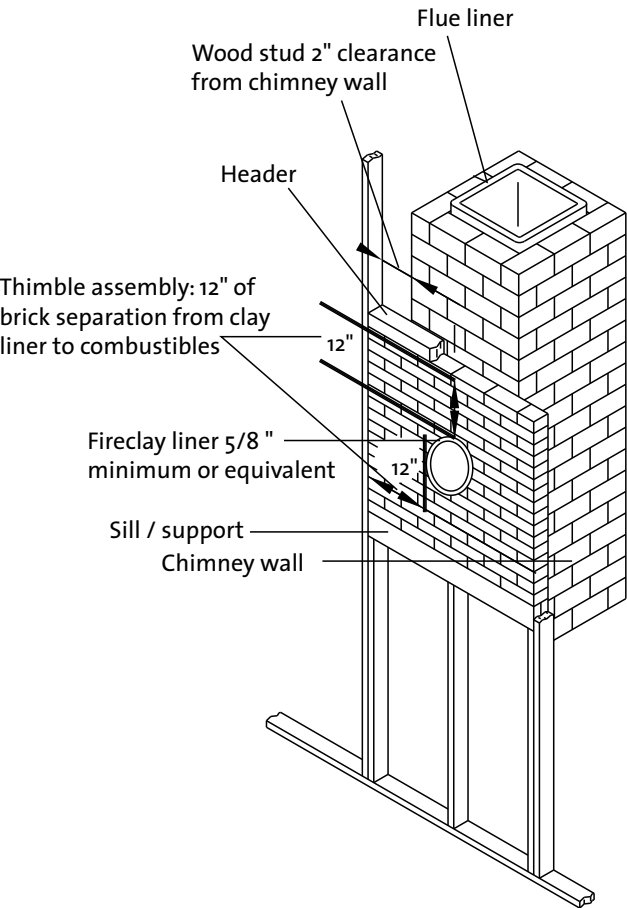


Fig. 5

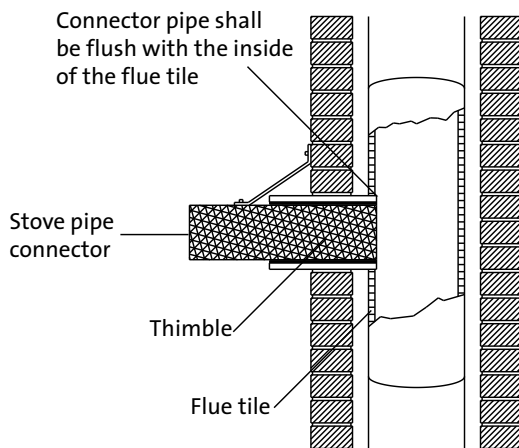


Fig. 8

(Measurements in mm for Canada)

Hearth Protection

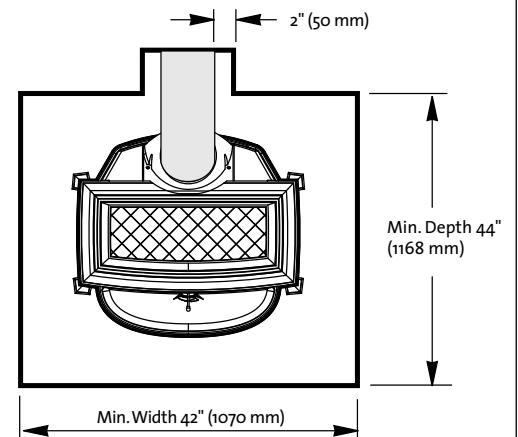


Fig. 6

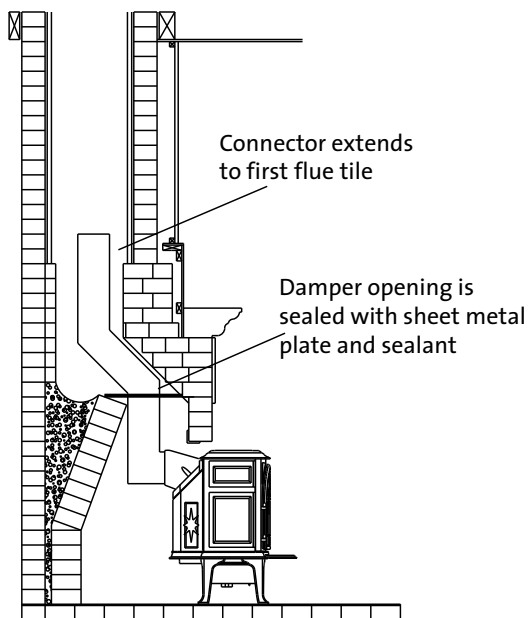


Fig. 9

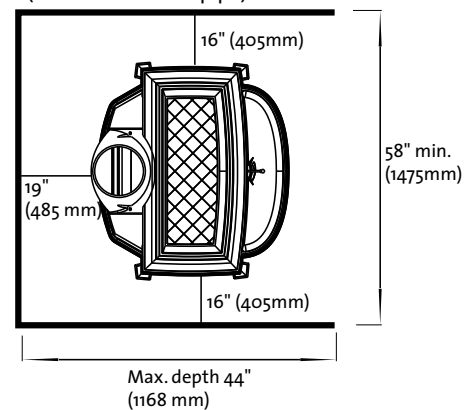
Unprotected alcove installation
(with double-wall pipe)

Fig. 7

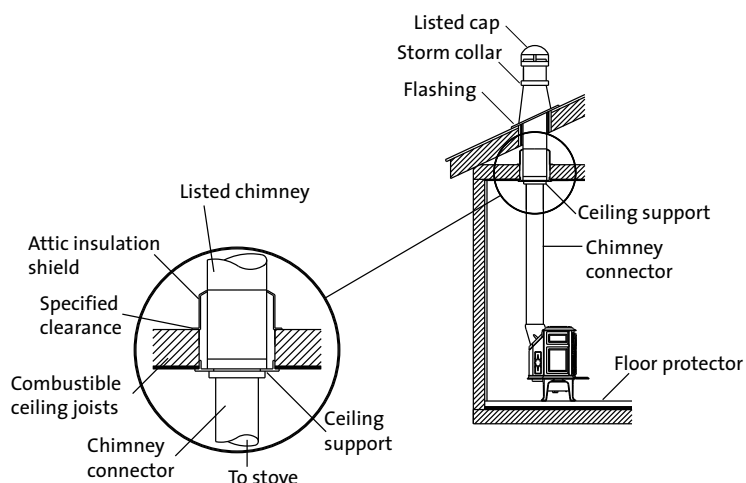
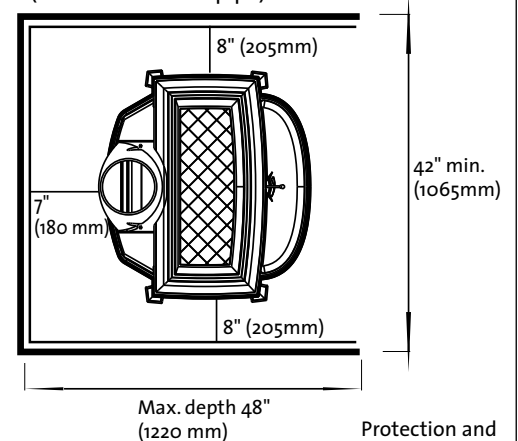


Fig. 10

Protected alcove installation
(with double-wall pipe)

Protection and air space must comply with NFPA 211 OR CAN/CSA-B365.

Fig. 11

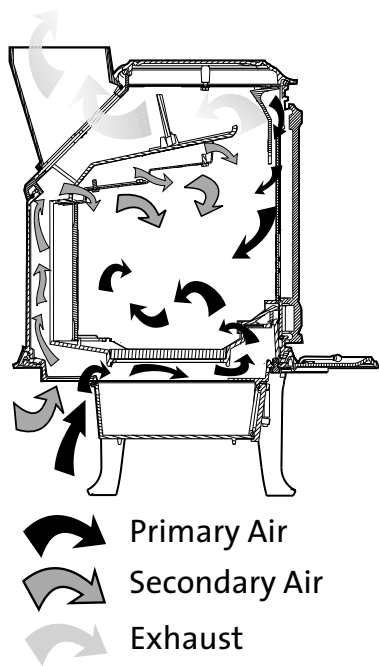


Fig. 14

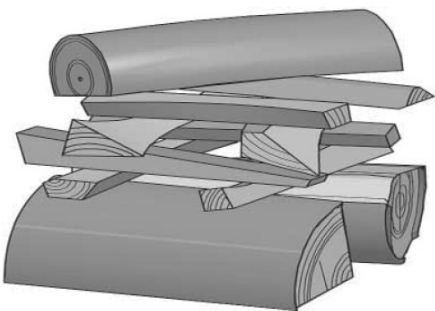


Fig. 12

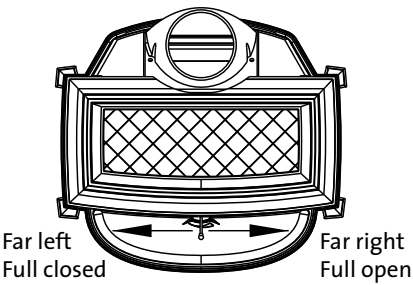


Fig. 15

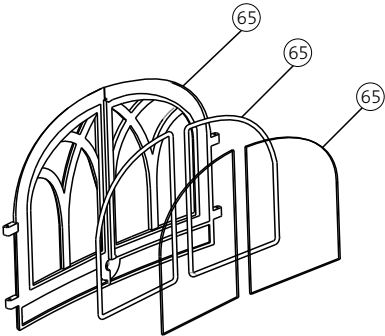


Fig. 13

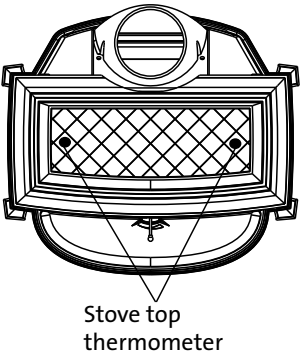
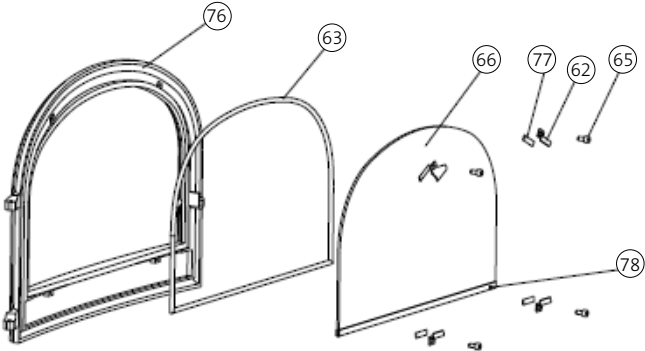
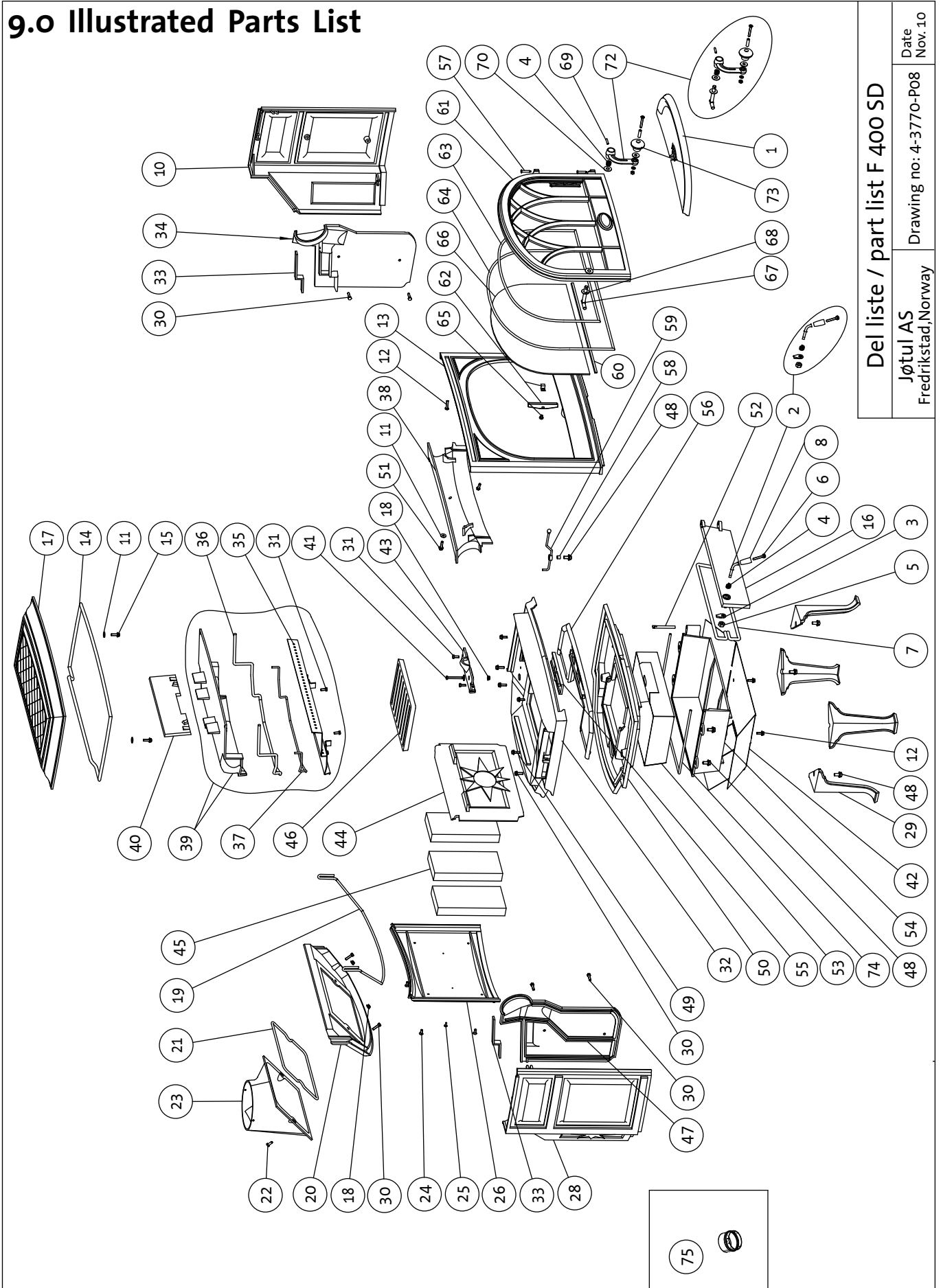


Fig. 16



9.0 Illustrated Parts List



Part list for the Jøtul F 400 woodstove

Consult your dealer for part numbers and replacement parts.

No.	Description
1	Ashlip Packed
2	Handle Ash Door Compl.
3	Latch
4	Spring for Latch
5	Nut Hex.
6	Screw
7	Gasket L + 40.250"
8	Wooden Knob Ash House
9	Screw Hex.
10	Side Right
11	Washer
12	Screw Hex Cap Flange Frame
13	SD Front
14	Gasket top plate, L = 72.50"
15	Screw Hex. Cap Flange Frame
16	Ash Door
17	Top Plate
18	Nut Hex. Cap Flange
19	Gasket Upper Back Plate, L = 32.875"
20	Back Plate Upper Compl.
21	Gasket, L = 36.625"
22	Screw Hex. Selftr.
23	Smoke Outlet Compl.
24	Screw Machine Oval Poz Blackcr.
25	Rivet Gesipa
26	Back Plate Lower Compl.
28	Side Left
29	Leg
30	Screw Hex. Cap Flange Frame
31	Screw Hex.
32	Bottom Upper
33	Gasket for Burn Plate, L = 7"
33	Gasket, L = 7"
34	Burn Plate Right Compl.
35	Secondary Air Chamber
36	Gasket, L = 47.250"
37	Gasket, L = 32.375"
38	Air Deflector
39	Secondary Air Chamber Compl.
40	Baffle Plate II
41	Screw Hex.
42	Heat Shield Underneath, EU
43	Inspection Cover EU
44	Burnplate Back
45	Brick Refactory
46	Fire Grate
47	Burn Plate Left Compl.
48	Screw Hex. Cap Flange Frame
49	Screw Hex. Cap Flange Frame
50	Bottom Lower
51	Screw Hex. Cap Flange Frame
52	Hinge Bolt for Ash Door
53	Ash Pan
54	Ash House Compl.
55	Sliding Vent
56	Air Divider
57	Rivet
58	Sleeve
59	Handle Air Setting
60	U-Channel, Glass Support
61	Single Door - Lattice, Complete w/o Glass
62	Glass Clip
63	Gasket for Glass - 250" ID x 5'
64	Gasket for Door - 375" ID x 5'
65	M6 x 12 Socket Hd Screw
66	SD Glass
67	Latch Bolt
68	Washer
69	Spring Pin
70	Washer
71	Latch
72	Latch Compl. w/Wooden Knob
73	Wooden Knob
74	Gasket Ash House
75	Adapter Outside Air
76	Door - Clean Face, Complete w/o glass
77	Gasket, Glass Clip

Appendix A

Alternate floor protection

All floor protection materials must be non-combustible ie. metal, brick, stone, mineral fiber boards). Any combustible material may not be used.

The easiest means of determining if a proposed alternate floor material meets requirements listed in this manual is to follow this procedure.

R-value = thermal resistance

k-value = thermal conductivity

C-value = thermal conductance

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

$$C = \frac{\text{Btu}}{(\text{hr})(\text{ft}^2)(\text{F})} = \frac{W}{(\text{m}^2)(\text{K})}$$

Thermal conductivity =

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

Thermal resistance=

$$R = \frac{\text{Btu}}{(\text{hr})(\text{ft}^2)(\text{F})} = \frac{(\text{m}^2)(\text{K})}{W} = \frac{(\text{Btu})(\text{inch})}{(\text{hr})(\text{ft}^2)(\text{F})}$$

10.0 Jøtul N. A. Woodburning Product Limited Warranty

Effective January 1, 2013

This warranty policy applies to wood-burning products identified by Jøtul and Scan 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 or Scan Stove or Fireplace Insert specified above will be free of defects in material and workmanship for the life of the product. This warranty is subject to the terms, exclusions and limitations set forth below.

B. LIMITED FIVE YEAR WARRANTY - Cast Iron and Steel Components:

JØTUL warrants, to the original retail purchaser, that those components of the Jøtul or Scan 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 below.

C. LIMITED TWO YEAR WARRANTY - Enamel Finish:

JØTUL warrants, to the original retail purchaser, the enamel finish on cast iron components of the Jøtul Stove or Fireplace Insert specified above against peeling or fading for a period of two (2) years from the date of purchase. This warranty is subject to the terms, exclusions and limitations set forth below.

D. LIMITED ONE YEAR WARRANTY - Electrical Components (blowers, thermostatic switches):

JØTUL warrants, to the original retail purchaser, that those components of the Jøtul or Scan 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 below:

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 or Scan 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 or Scan Stove or Fireplace. This paragraph sets forth the sole remedy available under this warranty in the event of any defect in the Jøtul or Scan Stove or Fireplace.

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 owner's 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, baffles, air manifolds, firebricks, fire grates, 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 owner's 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 owner's manual.
4. Damage due to service performed by an installer or service agency, unless otherwise agreed to in writing by JØTUL.
5. Damage caused by unauthorized modification, use or repair.
6. Costs incurred by travel time and/or loss of service.
7. Labor or other costs associated with the repair of components beyond the warranty period.
8. Damage incurred while the Jøtul or Scan Stove or Fireplace 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 or Scan 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 or Scan Stove or Fireplace.

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 or Scan Stove or Fireplace; 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 or Scan Stove or Fireplace.

If you believe your Jøtul or Scan Stove or Fireplace is defective, you should contact your nearest authorized Jøtul or Scan 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*

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Feb. 2020

Jøtul pursues a policy of continuous product development. Products supplied may therefore differ in specification, colour and type of accessories from those illustrated and described in the manual.



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