

Jøtul F 400 USA

USA/CAN - Installation and Operating Instructions

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Kindly save these instructions for future references.

USA/Canada

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. Kindly 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 737 and ANSI/UL 1482, Canadian Standards: CAN/ULC-S627-M93



Standards

The Jøtul F 400 woodstove has been tested and listed to;
U.S. Standards: ANSI/UL 737 and ANSI/UL 1482.
Canadian Standards: CAN/ULC-S627-M93

Tests performed by:

ITS, Intertek Testing Services, Middleton, WI

Manufactured by:

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

Distributed by:

Jøtul North America

55 Hutcherson Drive

Gorham, Maine 04038, USA

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 11,300 to 27,800 BTU's per hour.

The Jøtul F 400 woodstove is only listed to burn wood. Do not burn any other fuels.

Read this entire manual before you install and use your new room heater.

Save these instructions and make them available to anyone using or servicing the stove.

Jøtul North America

55 Hutcherson Drive

Gorham, Maine 04038

USA

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.



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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).



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Jøtul North America, Inc.

Jøtul pursues a policy of continual product development. Products as supplied may therefore differ in specification, colour, or type of accessories, from those illustrated or otherwise described in publications and brochures.

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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.
- 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.
- 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 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.

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. 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)
- Door Handle
- Hardware Bag

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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.

Follow these guidelines regarding chimney connector construction:

- **Do not use chimney connector as a chimney. It is intended only for use as a connection 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 stove to a chimney flue 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.** This is because a chimney actually creates a suction, called "draft" which pulls air through the stove.

Several factors affect draft: chimney height, cross-sectional area (size), and temperature of the chimney, as well as the proximity of surrounding trees or buildings.

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 thereby creating inadequate 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 the stove to any air distribution duct or 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 code-approved 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.
- 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 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.

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 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 14 feet (4.27 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 high stove temperatures and short burn times. Excessive draft can be corrected by installing a butterfly damper. 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:

- 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).

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:

- 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.

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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 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.

Remember: “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.

Stove Mounted Heat shield: Rear Heat Shield #154385 is approved for use with the Jøtul F 400 in the US. and Canada. **No other heat shield may be used.**

Notice: 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/sleeping room. 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 Use Solid Wood Fuel Only

First 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.

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.

Important: Never build or allow the fire to rest directly on the glass panel. The logs should always be spaced at least one inch from the glass to allow for proper air flow within the firebox.

5.2 Controls on the Jøtul F 400

Combustion air is controlled by the Primary Air Lever, located above the ashlip on the front of the stove. The lever actuates a shutter over the air inlet which regulates the volume of primary air entering the firebox and affects heat output and burn time.

When first starting or reviving the fire: the primary control lever should be at the far right position, which allows 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 11.

Air Flow / Performance

Primary air enters the firebox directly above the glass panel on the door. The incoming air creates a turbulent barrier or "airwash" between the glass and the fire. Reducing the flow of primary air directly reduces the effectiveness of the airwash. Determining the primary air setting for the best overall performance for your particular needs and installation will only be established over time through trial and error.

5.3 Break-In Procedure

The Jøtul F 400 is constructed of cast iron and stove furnace cement. This type of construction requires the stove to be "broken-in" gradually so that heat expansion does not occur too quickly and cause damage. 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.

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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.

To monitor the stove’s temperature, use a magnetic stove-top thermometer, *placed directly on the corner of the stove’s top plate.*

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.

5.4 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.

- **The ash pan door on the stove must always be securely closed when the stove is in operation.**
 - **Burning the stove with the Ash Door open will over-fire the stove and cause interior damage.**
1. With the primary air control lever in the full open position (*to the right*), start with several sheets of crumpled 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).

See **figure 12** for the best locations to place a stove-top thermometer.

Never overfire the stove. If any part of the stove or chimney glows, you are overfiring. A house fire or serious damage to the stove or chimney could result. If this condition occurs, immediately close down the air control.

5.5 Adding Fuel

When reloading the stove while it is still hot and a bed of hot embers still exist, 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.
- 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).

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, but it is important to inspect the flue after every two weeks of use. 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 draft regulator 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 oxygen through the door, which then supports 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 been sustained.

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.

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 needs to 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 Removal

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 glass area.
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. See **figure 13**.
7. It may be necessary to retighten the glass clips after the stove has been burned and the gasketing has been seated.

Important: It is extremely important to tighten the glass clips slowly and in an alternating pattern as you would tighten the lugs on an automobile wheel.

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, twice a 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.

USA/Canada

7.0 General Maintenance

As with your car, regular maintenance will prolong the life of your stove and ensure satisfactory performance.

- **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.
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.
- Empty stove of all soot and ashes. Only use a vacuum for this job if the vacuum is specifically designed for ashes.
- 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.

7.1 Gaskets

Check door and glass panel gaskets for tightness. To check the seal of the front door, close and latch the door on a dollar bill and slowly try to pull the dollar bill free. If it can be easily removed, the seal is too loose. Check several spots around the door, and repeat the procedure on the ash pan door as well.

7.2 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	3/8" LD	5'
Door Gasket	5/16" LD	5,8'

7.3 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 twice a year 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.

8.0 Accessories

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

8.1 Firescreen (# 129650)

The Jøtul F 400 has been approved for use as an open fireplace, with front door open. Care should be taken when operating the stove as a fireplace.

- Always have the Firescreen in place, attached to the stove front.
- Never overload the stove. For the best appearance, burn logs in the traditional three log configuration.
- When you operate the stove with the screen in place, efficiency is sacrificed for the sake of aesthetics, much as with a conventional fireplace. Wood will burn at a much faster rate as combustion air is uncontrolled. Most of the heat value of the wood will be lost up the chimney.

Not all installations will support the use of the firescreen. Moderate or low draft conditions may result in smoke spillage from the stove when using the firescreen.

Warning: Operate your Jøtul F 400 with the front door fully open and the firescreen in place or fully closed. A partially opened door may result in overfiring. Also, if the door are left partly open, gas and flame may be drawn out of the stove opening, creating risks from both fire and smoke.

8.2 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°.

8.3 Outside Air Kit (# 154335)

Your local building code may require that an outside air supply be connected to the stove. Jøtul Outside Air Kit 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.*

8.4 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.

8.5 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.

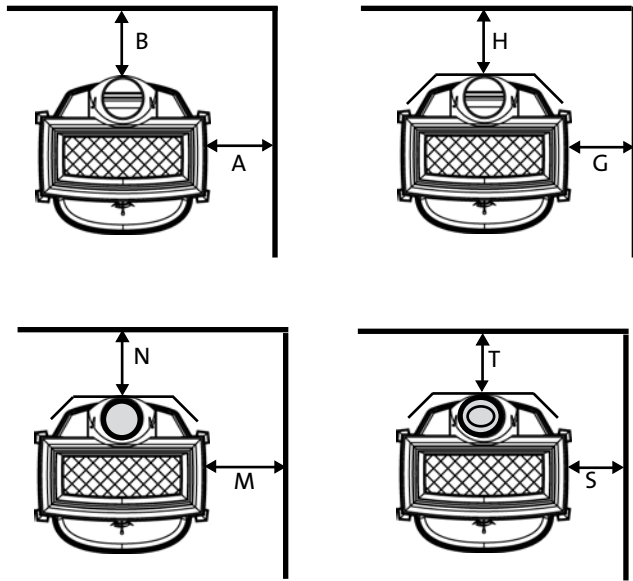
8.6 Bottom Heat Shield (# 154384)

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.

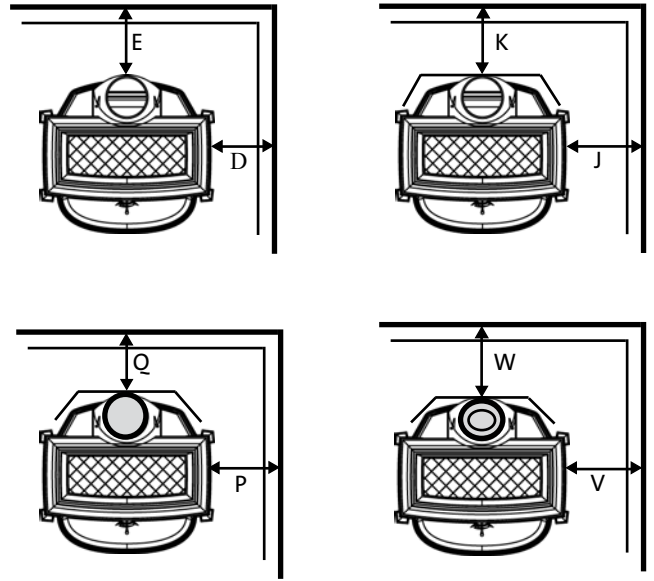
Jøtul F 400 Woodstove Clearances

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.

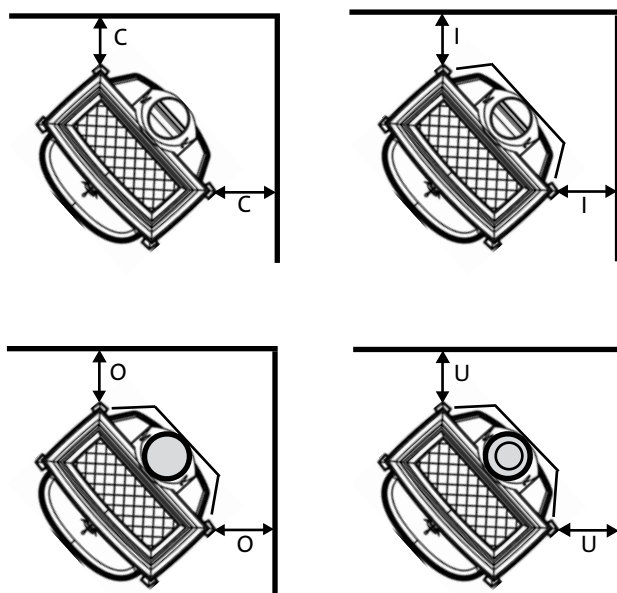


= SINGLE WALL PIPE WITH CONNECTOR SHIELDS



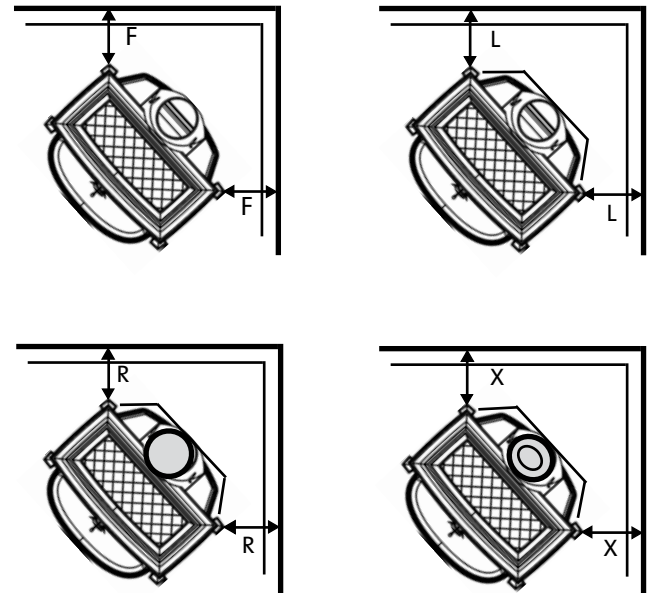
= DOUBLE WALL PIPE

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		
	Side	Rear	Corner*	Side	Rear	Corner*
Stove -no heatshield single wall pipe	19" A 485mm	25" B 635mm	18" C 460mm	11" D 280mm	7" E 180mm	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			13" 300mm		
	Stove to 1" thick or less, top trim			23" 585mm		
	Stove to mantel- maximum mantel depth 12"			25" 635mm		

USA/Canada

Fig. 1

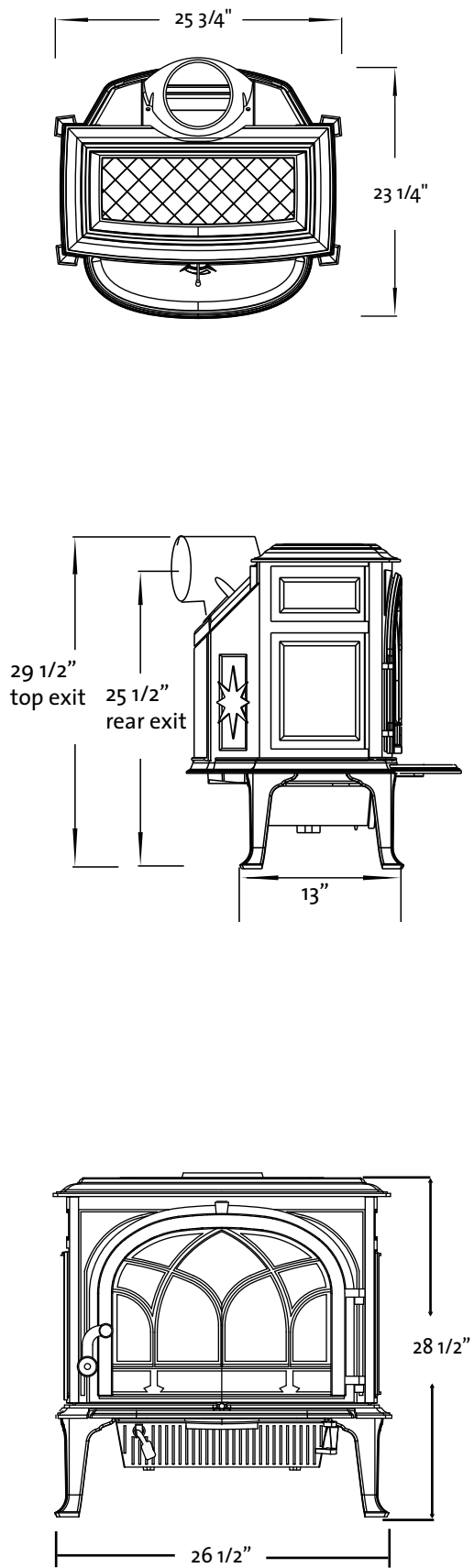


Fig. 2

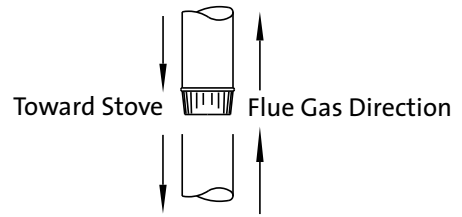


Fig. 3

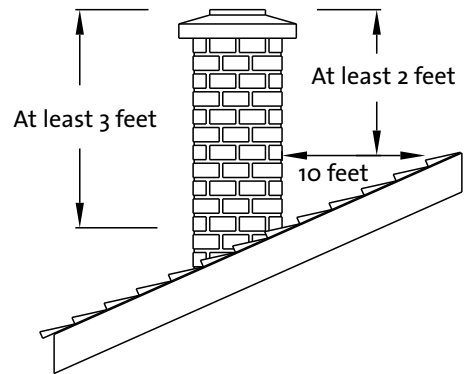


Fig. 4

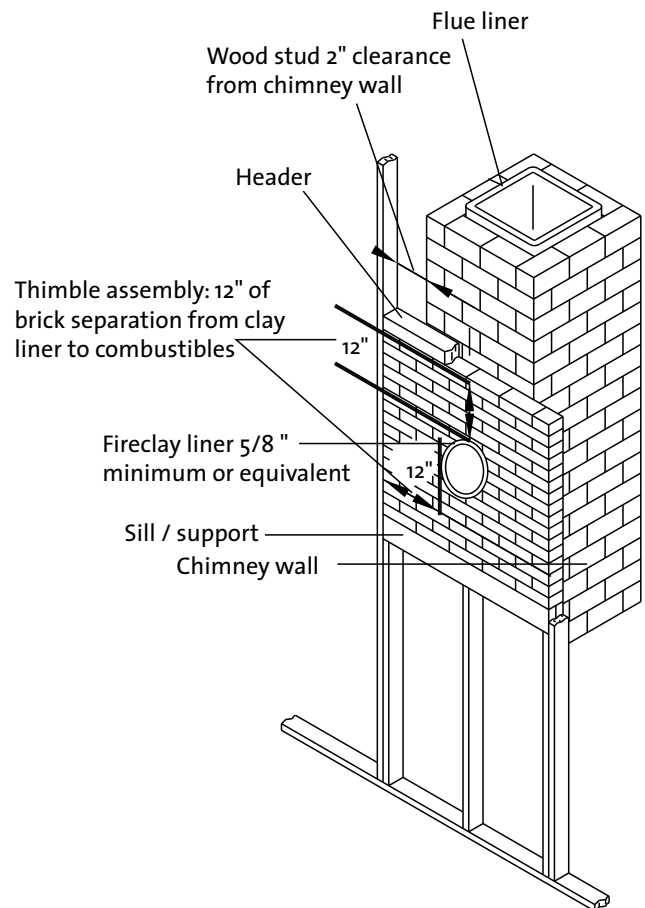


Fig. 5

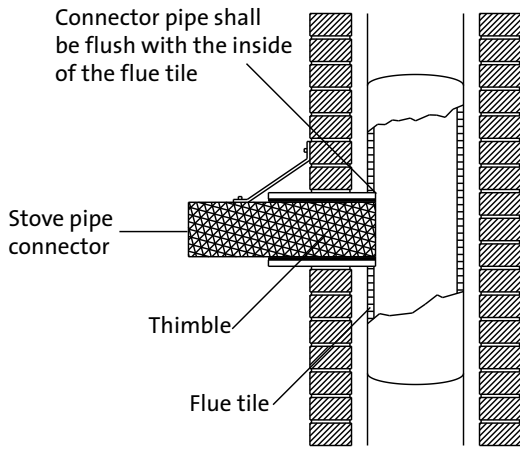


Fig. 8

(Measurements in mm for Canada)

Hearth Protection

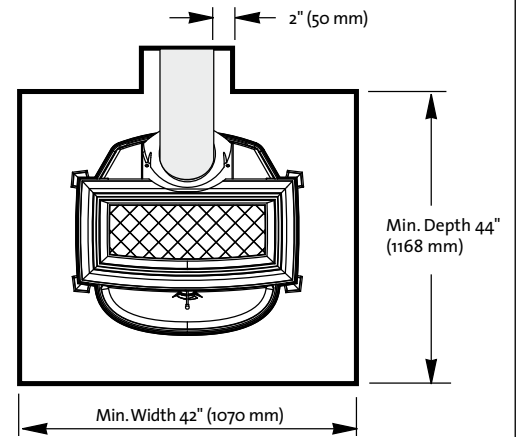


Fig. 6

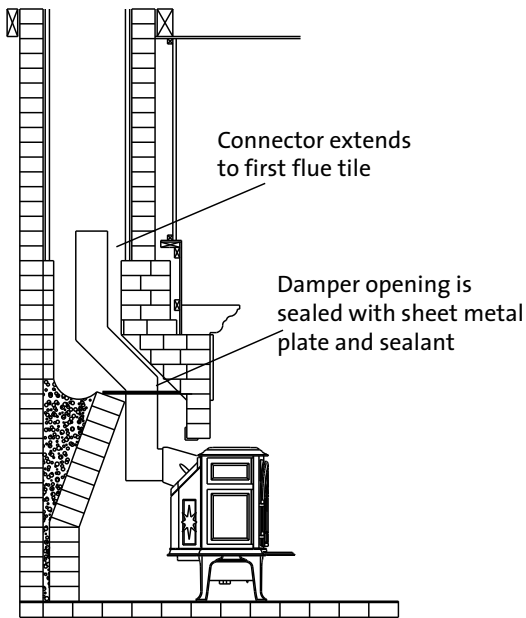


Fig. 9

Unprotected alcove installation (with double-wall pipe)

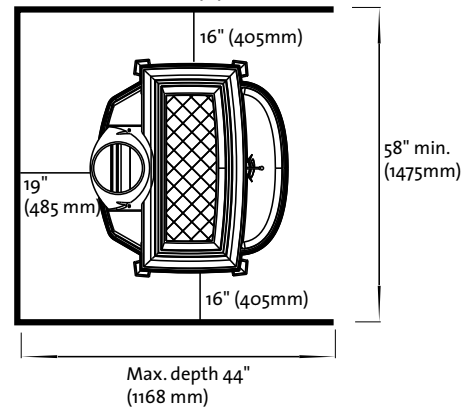


Fig. 7

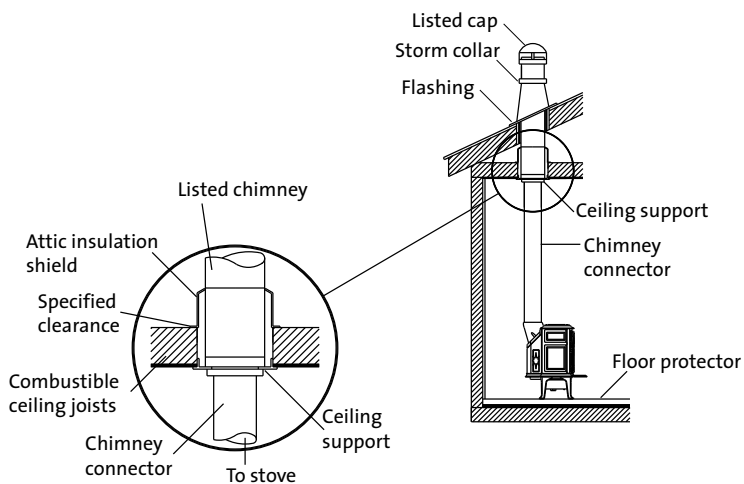
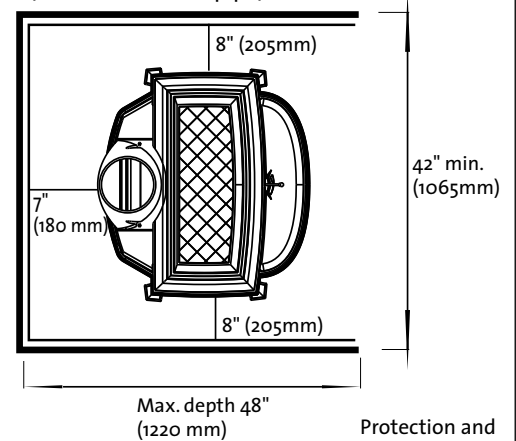


Fig. 10

Protected alcove installation (with double-wall pipe)



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

Fig. 11

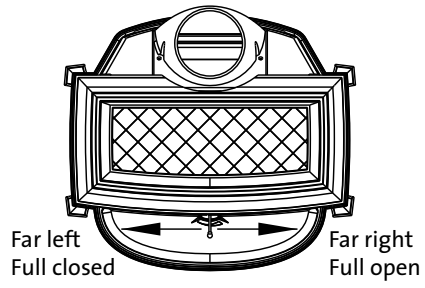


Fig. 12

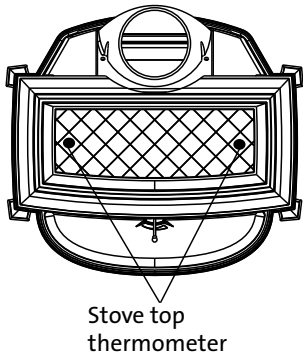
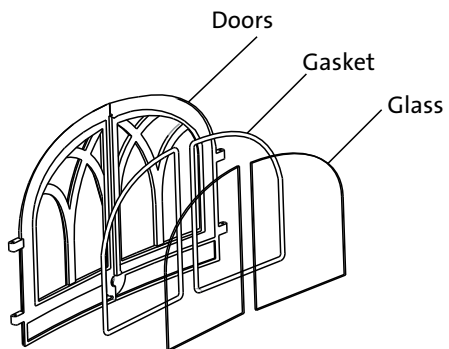
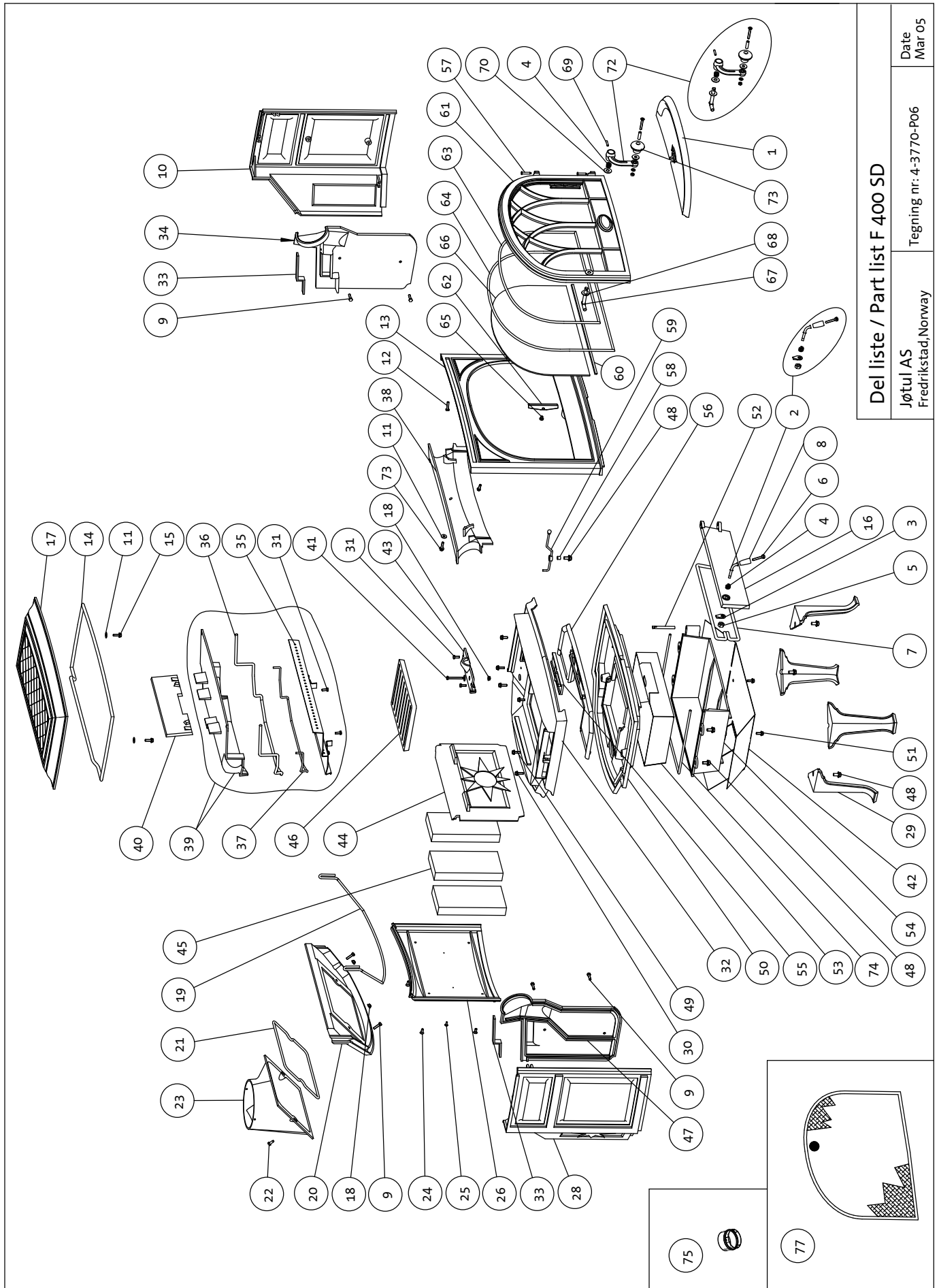


Fig. 13





Del liste / Part list F 400 SD

Jøtul AS
Fredrikstad, Norway

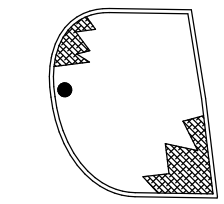
Tegning nr: 4-3770-P06

Date
Mar 05

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77



USA/Canada

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=1020
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=1840
15	Screw Hex. Cap Flange Frame
16	Ash Door
17	Top Plate
18	Nut Hex. Cap Flange
19	Gasket Upper Back Plate, L=835
20	Back Plate Upper Compl.
21	Gasket, L=930
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=180
33	Gasket, L=180
34	Burn Plate Right Compl.
35	Secondary Air Chamber
36	Gasket, L=1200
37	Gasket, L=820
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 Refractory
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
61	Single Door Compl w/o Glass
62	Glass Clip
63	Gasket for Glass
64	Gasket for Door
65	Screw Panh.
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
77	Fire Screen

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 =

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

Thermal resistance=

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

Sluttkontroll av ildsteder

Quality control of stoves and fireplaces

Checked

Utført	Kontrollpunkt	Controlled item
✓	Alle deler er med i produktet (ifølge struktur).	All parts are included.
✓	Alle festemidler er av korrekt type, og er korrekt anvendt.	Correct fastener items have been used and correctly applied.
✓	Overflater er i samsvar med Jøtuls kvalitetsstandarder.	Surfaces comply with Jøtul workmanship standards.
✓	Lukkemekanismer fungerer som de skal, og uten behov for unødig stor kraft.	Door locking mechanisms function correctly; excessive force is not needed.
✓	Produktet/serien møter kravet for lekkasjetest.	The product/lot complies with the leakage test requirement.
✓	Lakkerte/emaljerte overflater møter kravene i Jøtuls kvalitetsstandarder.	Paint/enamel surface finish complies with Jøtul workmanship standards.
✓	Produktet er fritt for utvendig kitt- eller limklin.	Surfaces are not contaminated by external stove cement or glue.
✓	Produktet har ingen sprekker i glass, støpejern eller andre deler.	There are no cracks in glass, cast iron or other parts.
✓	Pakninger er riktig lagt, og skjemmer ikke produktet ved stygge ender eller ved at pakningen er unødig synlig.	Gaskets are correctly applied and do not degrade product appearance (i.e. loose ends or excessive visible exposure).
✓	Dørpakninger er godt limt.	Door gaskets are firmly glued/fixed to the door.
✓	Dørpakninger har tilfredsstillende pakningstrykk.	Door gaskets provide satisfactory sealing.
✓	Sjekk at det ikke "lyser gjennom" i dørpakning eller andre sammenføyninger.	Check for "light through" at door seals and other relevant locations.
✓	Trekkhender osv fungerer normalt.	The function of air valve handle etc is normal.

Jøtul bekrefter herved at dette produktet er kontrollert og funnet å være i samsvar med våre kvalitetsnormer.	Jøtul hereby confirm that this product has been QC inspected and found to comply with our quality standards.	
Lot#/Serie nr.	Checked by/ kontrollert av	Date/Dato:

Cat.no. 222130
Draw.no. 4-4658-P02
Møklegaards Trykkeri AS, May 2008

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

Quality

Jøtul AS has a quality system that conforms to NS-EN ISO 9001 for product development, manufacturing, and distribution of stoves and fireplaces. This policy gives our customers quality and safety piece of mind as a result of Jøtul's vast experience dating back to when the company first started in 1853.

Jøtul North America Inc.

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Gorham, Maine 04038
USA

Jøtul AS

P.o. box 1411
N-1602 Fredrikstad,
Norway

