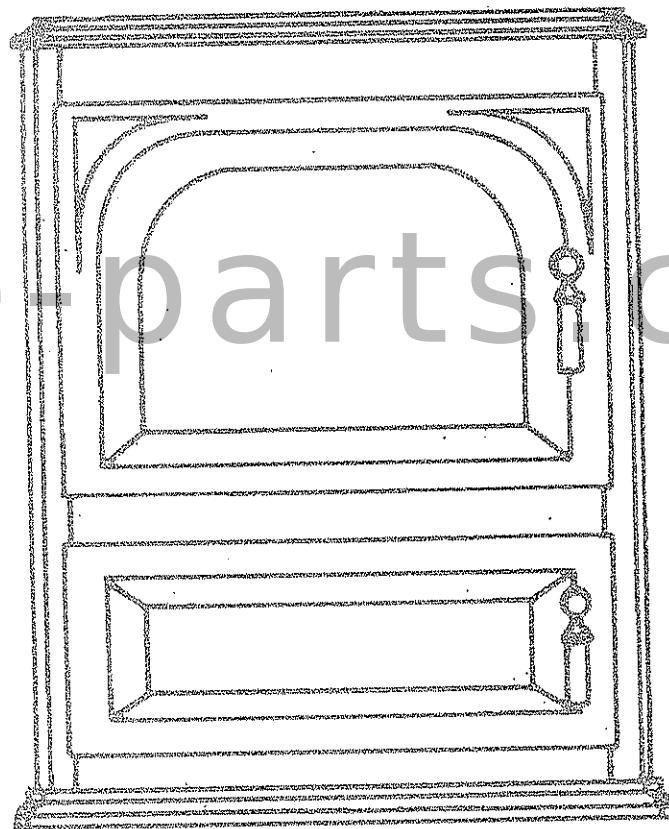


Reliance™ Pellet Stove



Model #2340 Owner's Manual
For use in North America

VERMONT CASTINGS, INC.

SAFETY NOTICE: IF THIS RELIANCE PELLET STOVE 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.

Welcome

Congratulations on your choice of a Vermont Castings Reliance Pellet Stove.

The Reliance represents a breakthrough in pellet heating technology. With a minimum of routine maintenance, your Reliance will provide years of safe, convenient, and reliable operation.

As you become acquainted with your new stove or fireplace, you will find that its visual appearance is matched by its functionality, due to cast iron's unique capability to absorb and radiate heat.

Also, Vermont Castings products are among the cleanest-burning stoves and fireplaces available today. And as an owner of a Vermont Castings stove or fireplace, you are making a strong statement for pollution-free energy. But clean burning depends on both the manufacturer and the operator. Please read this manual carefully to understand how to operate your stove or fireplace properly.

At Vermont Castings, we are equally committed to your satisfaction as a customer. That is why we maintain an exclusive network of the finest dealers in the industry. These dealers are chosen for their expertise and dedication to customer service. They are factory-trained to know the most minute detail of every Vermont Castings product. We also maintain an in-house technical service staff to answer questions about your particular installation or product needs. Feel free to contact your Authorized Vermont Castings Dealer or us anytime you have a particular question about your stove or its performance.

Be assured that your cast-iron Vermont Castings stove or fireplace has been made with the utmost care and will provide you with many years of service.

This manual contains valuable instructions on the installation and operation of your Vermont Castings stove or fireplace. It also contains useful information on maintenance and assembly of this product. We urge you to read the manual thoroughly and to keep this manual as a reference.

Sincerely,

*All of us
at Vermont Castings*

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This manual describes the installation and operation of the Reliance Model #2340 pellet burning room heater. This heater is exempt from Environmental Protection Agency emissions limits based on air-to-fuel ratio. Under specific test conditions this heater has been shown to deliver heat at a rate ranging from 6,500 to 35,000 Btu's/Hr.

We recommend that you hire a professional solid fuel stove installer to install your Reliance, or to advise you on the installation should you attempt to install it yourself.

The Reliance is listed by Underwriters Laboratories and Underwriters' Laboratories of Canada.

The Reliance is listed for burning wood or cardboard pellets. Do not burn other fuels.

Save These Instructions.

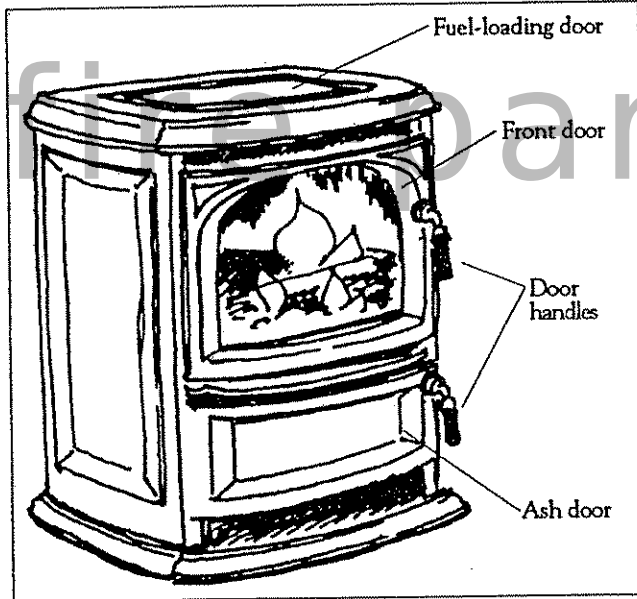
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Operation

The Reliance Controls

Three Special-Function Doors for Easy Access

A Top Fuel-Loading Door lifts to open and provides convenient access to the hopper for loading pellets. A Front Door opens for convenient access to the burn pot for regular cleaning. Below the front door, an Ash Compartment Door opens to provide access to the ash compartment for easy ash removal. Both the fuel-loading and the front doors are equipped with large Viewing Windows: tempered glass for the fuel-loading door, and ceramic glass for the front. Both the front and ash-compartment doors close securely with an adjustable door latch.

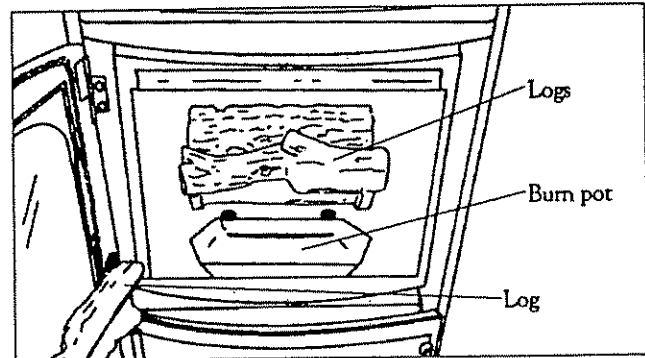


The controls of the Reliance have been designed for convenience and accessibility.

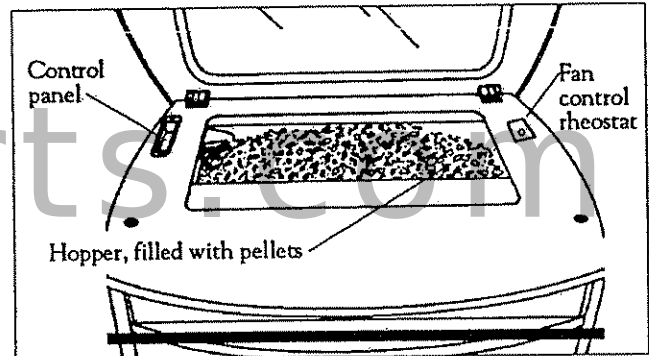
Separate Controls for Starting, Stopping, and Regulating the Fire

The Reliance is a sophisticated controlled combustion system. However, its complex technology is mostly "invisible," harnessed for easy operation with convenient, easy-to-operate finger-tip controls: the heat output can be regulated by an optional wall-mounted electronic thermostat as well as by the built-in heat control, and circulation air flow is controlled with an electronic rheostat.

When the fuel-loading door is raised, the integrated Control Panel is accessible in the left rear corner of the top. There is a separate control for each of the following functions: starting the fire; stopping the fire; adjusting the heat level; and selecting whether the controlling thermostat is on the stove or on the wall.



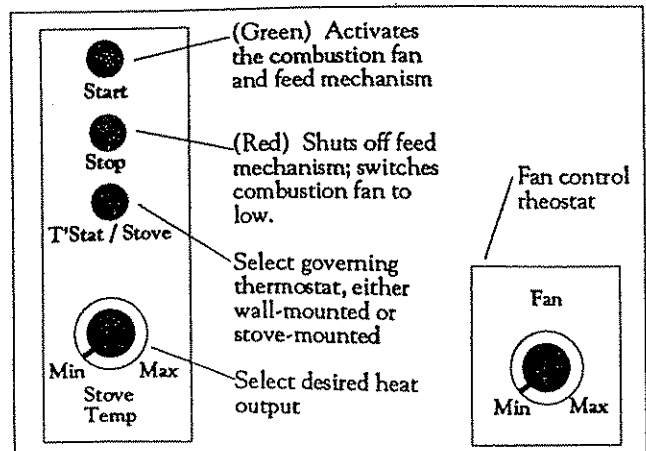
The burn pot may be reached easily through the front door for regular cleaning.



A top loading door allows convenient access to the hopper.

The green Start Switch is at the top of the control panel and activates the combustion fan and the feed mechanism when pushed. It is used only when starting a new fire.

The red Stop Switch is the second control in the panel, and it de-activates the feed mechanism and switches the combustion fan to low when pushed. The combustion fan automatically shuts off when the stove cools.



All operating functions of the stove are activated from the controls located inside the top loading door.

The Heat Output Selection Switch is the third control. It enables you to choose between a stove-mounted control or a wall-mounted thermostat to regulate the stove's heat output.

The Heat Output Control is the fourth control at the bottom of the panel, and it is used to select the amount of heat you desire. It features a variable range of settings between the minimum and maximum feed rates.

Higher heat setting will result in more fuel being burned in a shorter period of time than a lower setting. A lower heat setting will produce longer, lower-level fires.

When the wall thermostat calls for heat, the stove will run at full output; when it does not call for heat, the stove will run at the setting at which the Heat Output Control is set.

IMPORTANT: WHEN USING THE WALL THERMOSTAT MODE, THE HEAT OUTPUT CONTROL SHOULD BE SET TO "MIN." (OR LOW).

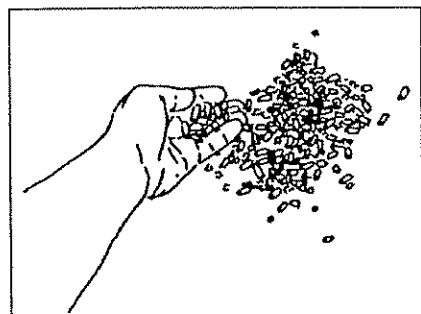
The Fan Rheostat Control is also accessible under the fuel loading door in the back right corner. Use this variable-speed control to regulate circulation air flow.

How To Operate the Reliance

Burn the Recommended Fuel

The Reliance is designed to burn only wood and cardboard pellet fuel. Do not under any circumstances burn charcoal or any other fuels in your Reliance as they may generate carbon monoxide gas. Carbon monoxide inhalation can cause serious illness and even death.

Fuel is the biggest variable in a pellet stove's performance. The density, moisture content, and ash content of a pellet will affect how the heat output dial should be set to achieve best performance.



The hopper will hold up to 50 pounds (22.7 kg.) of pellets.

are to be prominently displayed on each bag containing pellet fuel.

Note: Do not use pellet fuel that exceeds a chloride level of 300 parts per million (PPM), as this type of fuel can damage the stove and void the warranty.

The Reliance is designed to burn standard grade pellets with an ash content of up to 3% as well as premium grade pellets with an ash content of 1% or less. Premium grade pellet fuel offers the most BTU's per pound and less maintenance, such as ash removal. Standard grade fuel will increase maintenance, but still performs well and is generally less expensive.

Avoid burning pellets that have crumbled while in transit into a high percent of "fines," or sawdust. Pellets should be stored under cover to maintain dryness.

Pellet fuel consistency is rapidly improving as new pellet fuel standards take effect. Under the new standard, the grade, type of material used, ash content, fines percentage, and chloride levels

Pellets that are swollen or enlarged from dampness will not feed or burn properly so should not be used. Even for short-term storage, keep wood pellets a safe distance from the heater and out of the areas around the heater used for refueling and ash removal.

Provide Adequate Air for Combustion

The Reliance must have adequate air for combustion. If the house is excessively tight, and/or if exhaust fans elsewhere in the house cause draft problems, additional combustion air must be provided.

The Reliance is listed for use with a duct that provides air from outside the house. A 4" (100 mm) flexible metal duct, similar to dryer vent and commonly found in hardware/building supply stores, can be used to connect outside air directly to the stove. For a more finished-appearing terminus, the outside air adaptor included in the Reliance Mobile Home Kit #0025 can be used.

Opening a window near the stove will also make more air for combustion available, but is not energy-efficient.

Use the Temperature Settings that Work Best for you

No single control setting will fit every situation. The same setting may produce different results in different installations, depending on the heating characteristics of the home, the quality of the fuel, the amount of heat desired, and how long you wish the fire to burn.

When first using the stove, try different heat output settings, and become familiar with how much heat to expect and how long you should expect the fire to last. It may take a week or two to determine the amount of heat and the length of burn you should expect from various settings.

Poor-quality pellets will not allow you to operate the Reliance at a maximum setting. You may only be able to set the heat output dial at a 12:00 setting to avoid spilling pellets.

The stove's paint and cement may emit a hot metal odor during the first few fires. If necessary, provide extra ventilation near the stove by partially opening a door or window.

How To Start and Maintain a Fire

Operate the Reliance only with all doors fully closed. Operating the unit with any door(s) open can result in overfiring the unit, may cause dangerous toxic gases such as carbon monoxide to escape and possibly lead to asphyxiation, or could even result in a house fire.

STEP 1. Plug unit into a properly grounded outlet. If an extension cord is required, use a heavy duty, 3-prong appliance cord.

STEP 2. If the stove has been operated previously, make sure all key internal components are clean.

Check that no pellets or debris have been left to prevent the loading door from closing properly. (Repeat this check after every fuel loading). A tight seal of the door to the top plate is essential for proper operation of the stove.

STEP 3. Lift the top fuel-loading door and fill the hopper with wood or cardboard pellets (NOTE: Pellets must be dry; wet, soft, swollen pellets will not work.)

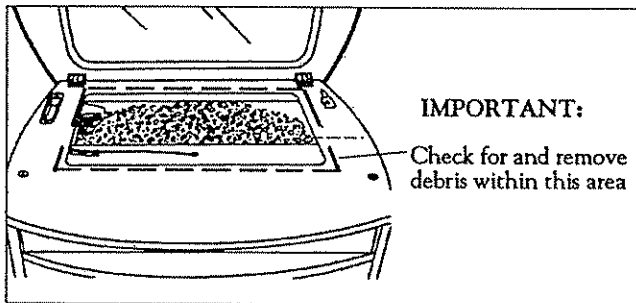
STEP 4. Place 2-3 handfuls of pellets into the burn pot, taking care not to cover the rows of air holes.

STEP 5. Moisten the pellets with wood pellet starting fluid or gel pellet starter; ignite the pellets with a match, and close the front door. NOTE: USE ONLY WOOD PELLET STARTING FLUID OR GEL PELLET STARTER.

CAUTION: Do not use any other fluid than that specified to start the fire. DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, LIGHTER FLUID, NAPHTHA, OR ENGINE OIL. Also, never use gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this heater. Keep all such liquids well away from the heater while it is in use.

The use of such fluids could lead to overfiring the stove. Do not overfire the stove to reduce the risk of damage to the stove or to the home.

STEP 6. Wait 30 seconds to a minute to allow the gel starter to ignite some of the pellets in the burnpot. Push the green "Start" button on the control panel, and close the fuel-loading door. (Before closing the door, always check the gasket seal area on the inner top to be sure it is free from pellet dust and debris. A damp rag or paper towel can be used to remove pellet dust.)



Before closing door after each loading, check for debris that may affect seal.

The level of pellets in the burn pot will begin to rise as the feed mechanism continues to run. Always light the stove with the stove set-point control on "Minimum." Once the stove has stabilized at the minimum set-point (evident when the feeder mechanism begins to cycle on and off), increase the setting on the heat output dial a little at a time to the desired level. This allows the castings to heat gradually, but steadily.

CAUTION SHOULD BE EXERCISED WHEN INCREASING THE SETPOINT CONTROL FROM A LOW TO A HIGH SETTING. FRESH PELLETS BEING FED INTO THE BURN POT MUST BE GIVEN SUFFICIENT TIME TO IGNITE AND BURN COMPLETELY. IF UNBURNED PELLETS ARE SPILLING INTO THE ASH PAN, REDUCE THE SETPOINT UNTIL THE AUGER TURNS OFF, WHICH WILL ALLOW THE STOVE TO "CATCH UP." ONCE THE PELLETS IN THE BURN POT ARE ALL BURNING, THE SETPOINT CAN BE INCREASED. IT IS RECOMMENDED TO NEVER INCREASE THE SETPOINT FROM MINIMUM TO BEYOND 12:00 O'CLOCK WITHOUT ALLOWING THE STOVE TO STABILIZE.

This procedure will minimize the possibility of partially-burned pellets spilling into the ash pan during start-up. It will also minimize carbon deposits in the burn pot and on the glass and logs.

NOTE: If you are using the wall thermostat, set the Heat Output Control to low.

During the first few uses, the Reliance may emit a hot metal smell and the curing stove paint may create a light haze in the room. This can activate a smoke detector. If this happens, let outside air into the home by opening a door or window.

In the event of a power outage, smoke may not be vented properly from the stove and may seep into the home. This too may activate a smoke detector.

You'll soon find out that this stove is **HOT WHILE IN OPERATION! KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

Refueling a Pellet Fire

STEP 1. Remove ash from the front lip of the burn pot using a poker so that it does not build up behind the front log. Make sure the spaces between the logs have not closed with ash.

STEP 2. Lift the top fuel-loading door and fill the hopper with wood pellets.

Check carefully to confirm that no pellets or debris have been left to prevent the door from sealing properly.

Step 3. Adjust the Heat Output Control for the heat output you desire. **NOTE:** If you are using the wall thermostat, set the Heat Output Control to "min." (or low).

Step 4. Close the fuel loading door.

How To Turn Off the Stove

Turning off the stove can be as simple as raising the fuel-loading door and pushing the red "Stop" button.

However, sometimes a smoldering fuel condition can occur when shutting down the stove that can lead to the formation of carbon ridges on the burn pot. The carbon can block the combustion air holes on the burn pot, and, if this happens, will need to be removed before the next fire.

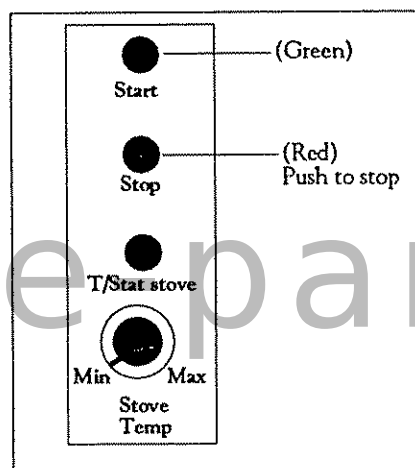
To avoid the need for scraping before the next fire, we recommend the following shut-down procedure:

1. Set the heat output dial to the lowest setting. Check the ash pan level. The ash pan should be at least partially empty.

2. After waiting five minutes for the feed rate to diminish, push the red stop button. This will prevent the auger from feeding more pellets. The combustion fan will continue to operate, evacuating smoke from the firebox.

3. Rake all burning pellets out of the burn pot into the ash pan below using the burn pot scraper.

4. Push the green start button and hold in. This



activates the auger to feed fresh pellets to the burn pot. When you see fresh pellets being delivered, push the red stop button. Again scrape out any burning pellets onto the burn pot. It is a good idea to check the stove again in 10-15 minutes to ensure that the fire has gone out completely.

The Reliance should now be ready for the next fire without additional burn pot maintenance.

Remove and Store Ash Safely

Check the ash pan before reloading the stove. If the ash level is close to the top, turn the heat set-point to "Low," scrape the accumulated ash into the ash pan. The ash pan can then be emptied.

NOTE: To prevent the spillage of hot pellet coals into the room during ash removal, de-activate the auger by pushing the red "Stop" button. Re-activate the auger by pushing the green "Start" button once the ash removal process is complete.

Before replacing the ash pan, clear away any ash or embers that have spilled over the sides and back of the pan. Be sure the handle on the ash pan is lowered before closing the door. Also, be sure the ash door is closed securely.

Empty the ash pan regularly, typically every couple of days to once a week or longer. The frequency will vary depending on how hot you run your stove: the higher the set-point, the more fuel you burn, and the faster ash will accumulate. Higher ash-content fuels will accumulate faster; in fact, there can be a dramatic difference in ash accumulation between high-ash and low-ash fuels.

Ash may contain hot coals and must be treated with extreme care.

Always Dispose of Ash in a Safe Manner

Ash should be removed frequently and placed outdoors in a metal container with a tight-fitting lid. The closed container of ash should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ash is disposed of by burial in soil or otherwise locally dispersed, it should be retained in the closed container until all cinders have thoroughly cooled.

CAUTION: Never use a vacuum cleaner to remove ash from the stove; always remove and dispose of the ash properly. Embers can remain hot indefinitely.

Maintenance

For Best Heating Performance, Clean the Reliance Regularly

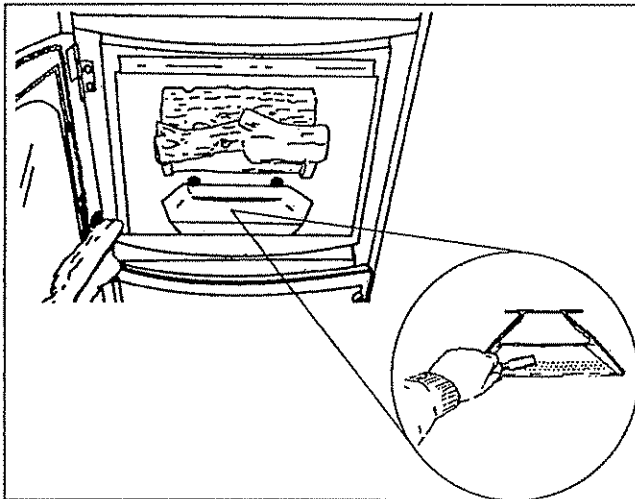
Like any quality high-performance machine, the key internal components of the Reliance must be kept clean for the stove to perform at its best. Two procedures in particular are vital to ensure optimum combustion and maximum heat transfer: the burn pot must be scraped to remove carbon deposits and ash; and the exhaust passages must be brushed periodically.

Maintenance that involves scraping can be done best with the Reliance Scraper Tool. For brushing, a soft-bristle brush such as a paint brush as well as a long-handled wire brush are useful.

Scrape the Burn Pot before Lighting

Use the burn pot scraper to scrape the surfaces of the burn pot thoroughly before each lighting of the Reliance. After scraping, close the door and turn on the stove. Then, open the door quickly and close it a few inches to clear the burn pot holes. Any holes that have not cleared with this procedure should be cleared manually with a narrow probe such as the end of a coat hanger.

Also, scrape the burn pot any time the pellet flow appears abnormal. (NOTE: Be sure to wear protective



stove gloves if the unit has been operating, since the burn pot and surrounding area may be hot.)

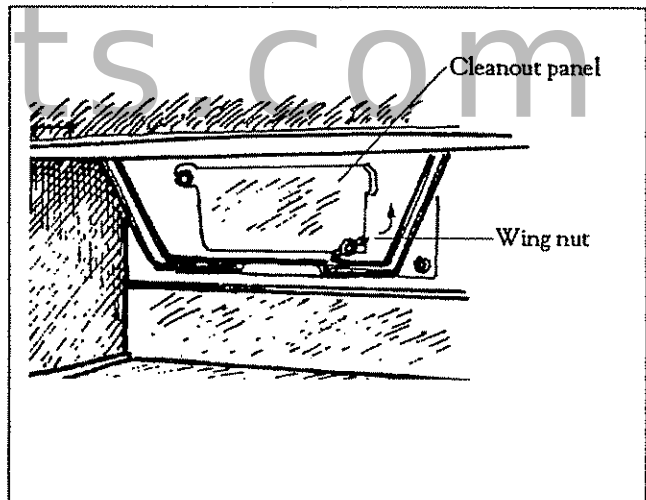
The scraper may be used as a general-purpose tool for other tasks as well. Use it to knock off the ash buildup that may form on the front lip of the burn pot with some fuels. Or, when wrapped completely with a dry cloth it can be used to clean the glass. It can even serve as a clearing tool if your auger hangs up, a problem that can occur as a result of using pellets that are too long.

Clean Ash from the Burn Pot

Ash will find its way through the air holes into the bottom of the burn pot and should be removed on a regular basis. The frequency may vary depending on the amount of fuel you burn. To start, clean the ash every two weeks. If this is not frequent enough, clean more often. Or, if there is little visible ash, a longer time between cleanings may be acceptable.

The best indication that a cleaning is due is the performance of the stove itself. If you notice a decline in performance or the flames become "lazy," it is time to clean the stove following this procedure:

- Wait until the stove is no longer hot.
- Open the ash compartment door and remove the ash pan.
- Loosen the wing nut that secures the pivoting clean-out panel on the front of the burn pot, but do not remove the nut. Pivot the panel upward to reveal the clean-out hole.



Pivot the cleanout panel upward for access to the burn pot.

- Tap the sides of the burn pot with a rubber mallet, or with a block of wood tapped by a hammer to dislodge any clinging ash. **CAUTION:** To avoid damage, do not strike the burn pot directly with a metal hammer.

- Reach in and remove any ash that has accumulated or that has been dislodged.

- Pivot the panel back over the hole and tighten the wing nut.

- Replace the ash pan, and close and latch the ash compartment door.

Cleaning the Exhaust Passages

For optimum performance, certain interior surfaces of the Reliance should be cleaned every 4-6 weeks (or as needed).

The Reliance has been designed so that access to the interior passages is possible through the front door. All that is required is the removal of the three exhaust passage covers.

Wear old clothing to protect against soiling from carbon deposits, use a soft-bristled brush as well as a long-handled wire brush, and follow the directions below to make this cleaning routine a regular part of your maintenance procedure.

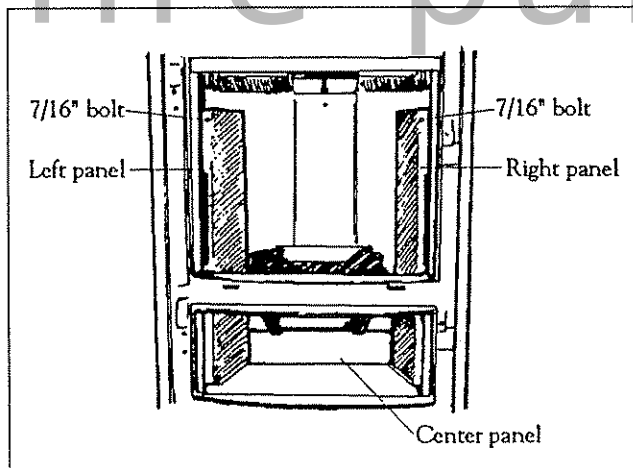
Step 1. Let the Reliance cool so that it can be worked on safely.

Step 2. Open the front door and remove the logs.

Remove the center log first and set it aside. Then, lift the back log slightly so that it is disengaged from the brackets on which it is supported. Handle the logs carefully and remove them through the front door.

Step 3. Remove the right exhaust passage cover.

Locate the 7/16" bolt that secures the exhaust passage cover panel in its upper right corner and remove it. Lift the cover panel so that it clears the retaining rib on the bottom. Angle it out of the way or remove it through the front door.

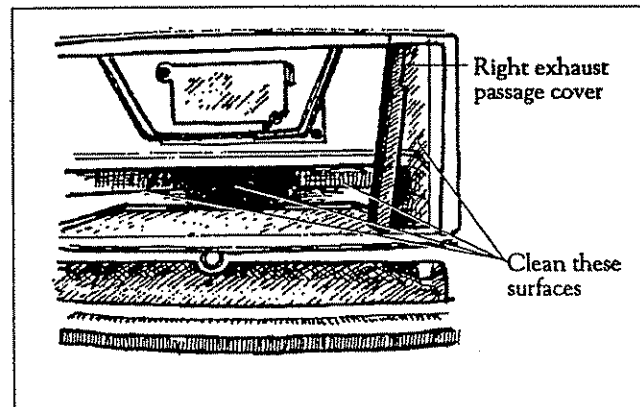


Step 4. Remove the left exhaust passage cover.

Remove the bolt and the cover in the same way that you removed the right cover in Step 3. Lift the cover panel so that it clears the retaining rib on the bottom. Angle it out of the way or remove it through the front door.

Step 5. Remove the center exhaust passage cover.

This panel is held in place by the right and left covers, and once those are removed it needs only to be lifted out.



The inner exhaust passages are exposed once the panels are removed; here, the right panel has been loosened but not removed from the stove.

Step 6. Clean the exposed inner surfaces.

Use the soft-bristle brush to dislodge the light fly ash and soot. Use the long-handled wire brush for the more stubborn deposits, and for the more distant surfaces. Dislodge any combustion residue that has collected on the combustion fan impeller, which can be reached at the very back.

Step 7. Remove from the stove any dislodged soot and ash that has accumulated from the brushing.

Step 8. Re-install the center exhaust passage cover.

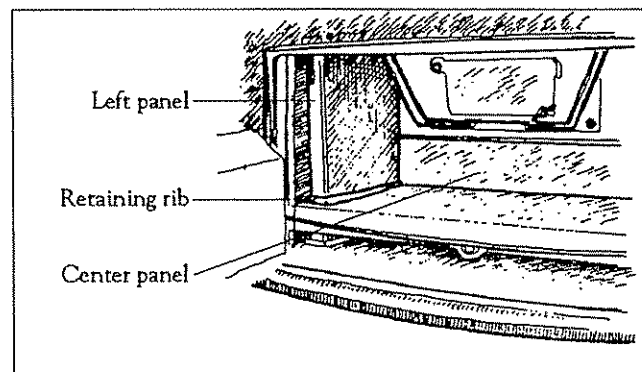
Position it so that the ends will be behind the left and right covers. Continue to hold it while you put the left cover into position.

Step 9. Re-install the left exhaust passage cover.

Slide the bottom behind the retaining rib, tilt the top into position, line up the holes, and secure it with the bolt removed previously.

Step 10. Re-install the right exhaust passage cover.

Slide the bottom behind the retaining rib, tilt the top into position, line up the holes, and tighten the bolt that secures it.



Cleaning the Pellet Vent

Inspect the pellet vent twice a year and remove carbon deposits and fly ash as needed.

The optional Reliance L-Vent Coupler, part #0024, greatly simplifies access to the pipe for inspection and/or cleaning: only four bolts need be removed to separate the coupler, and the more permanent silicone seal connections of the coupler to the stove and the venting are preserved intact.

If the installation does not include the L-Vent Coupler, it is necessary to disconnect the pellet vent from the Reliance vent collar by breaking the silicone seal.

Insert an appropriately-sized brush into the vent and pass it back and forth several times to dislodge any residue. Remove any accumulation.

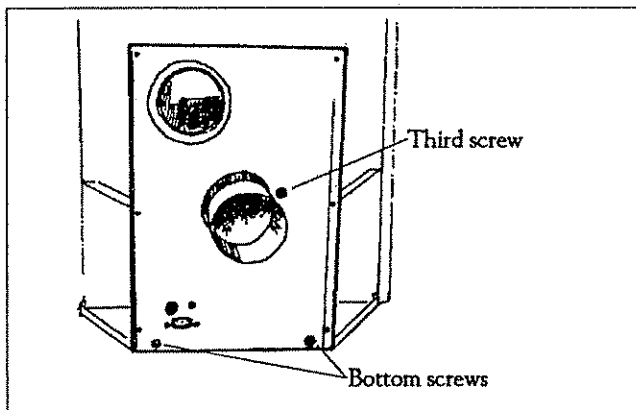
Apply high-temperature silicone where needed when re-connecting the venting (this is not necessary when using the L-Vent Coupler, since a re-usable gasket makes the seal).

Servicing the Exhaust Fan and Motor

Once a year, clean any dust, carbon deposits, or fly ash from the blades of the exhaust fan. At the same time, lubricate the bearings in the exhaust fan motor.

To perform these procedures, first unplug the power cord. Remove the sheet metal shroud mounted to the back of the Reliance that is held in place by 12 Phillips screws. Disconnect the 4" (100 mm) inlet hose by first removing the hose clamp that secures it.

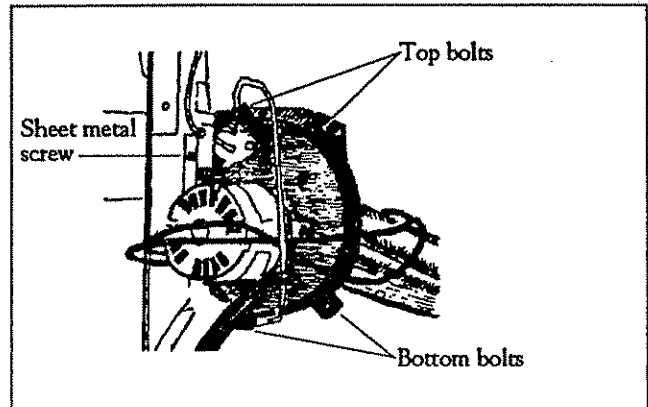
Then, remove the *lower access cover*, made of sheet metal, that is exposed once the shroud is removed. The lower access cover is held in place by three Phillips screws: two at the bottom and the third to the right of the center opening. Remove the two at the bottom first, and then the center one. The access cover can be moved to the left out of the way or, by disconnecting the wires, removed entirely.



The lower access cover is held in place by three Phillips head screws.

Clean the Exhaust Fan Impeller

To get at the exhaust fan blades, first remove the motor. The motor is attached with four Phillips-head bolts, two each at the top and bottom, plus a fifth Phillips sheet metal screw that connects it at the vent collar.

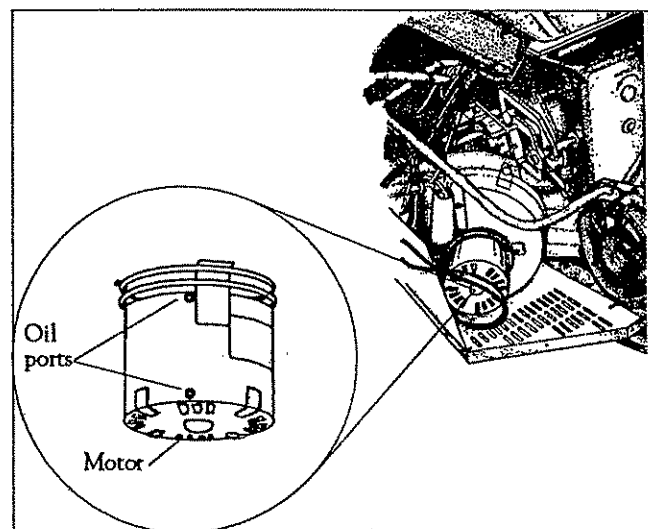


NOTE: ONE OF THE FOUR PHILLIPS SCREWS INCLUDES A STAR WASHER THAT BREAKS THE PAINT TO GROUND THE MOTOR. THIS WASHER MUST BE INCLUDED ON ONE OF THE BOLTS WHEN THE MOTOR IS REPLACED.

Lubricate the Exhaust Fan Motor Bearings

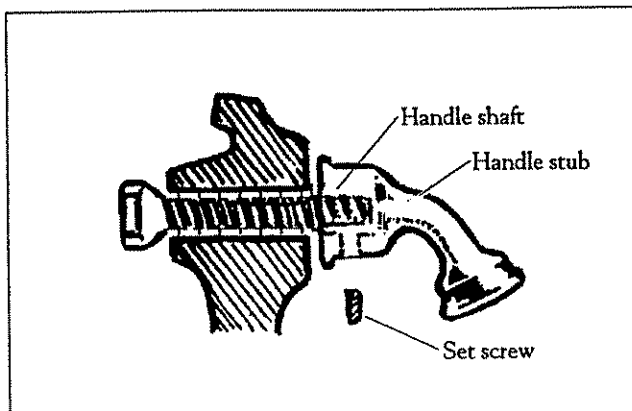
It is not necessary to remove the motor in order to oil the bearings, but it is convenient to perform this procedure while the motor is already exposed for the cleaning of the fan blades.

Using a syringe-type oil dispenser, apply to each of the two rubber-gasketed ports three drops of lubricating oil equivalent to a straight 20W non-detergent motor oil.



Adjust the Door Latches Needed

The door latch mechanism consists of a handle stub containing a set screw, a threaded handle shaft, and a latch. The handle shaft is ground flat across the threads on one side.

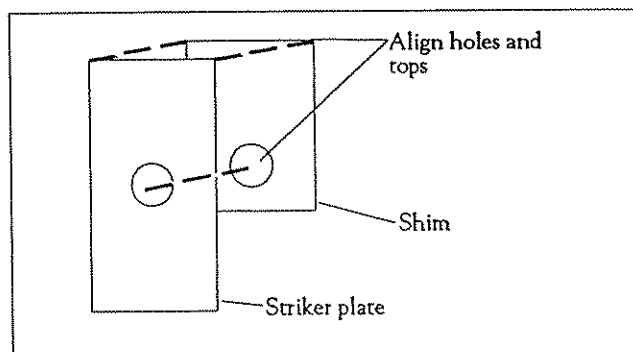


Properly assembled, the shaft is threaded through the door frame from the inside outward, and then into the handle stub. It is locked in place when the set screw is tightened against the flattened surface of the shaft.

A door adjustment shim is included in the parts bag that is supplied with the stove and should be stored until needed. It is sized to make any subsequent adjustment of the door as precise as possible. Each complete revolution equals $1/16''$, while the shim thickness is $1/32''$, or $1/2$ the thickness of a complete revolution.

Should the door need tightening, remove the striker plate mounted on the stove front and place the shim behind it. Replace the striker plate and tighten the screw that holds it.

Additional adjusting of the door is accomplished by turning the handle shaft in small increments counter-clockwise into the door and the handle stub. The set screw must be loosened before this is done, and re-tightened when the adjustment is complete.



Place the shim behind the striker plate with the holes and the top edges of each aligned.

Test and Repair the Door Gaskets

If the door will not tighten sufficiently after the latch has been adjusted, try "adjusting" the gasket in the area needing attention. Pack more cement or a smaller diameter gasket into the channel beneath the gasket so that the main gasket is raised and makes contact with the

door frame. This procedure should solve the problem. If it doesn't, replace the gasket following these steps:

- Wearing safety goggles and a dust mask, remove the original gasket by grasping an end and pulling firmly.
- Use a wire brush or the tip of a screwdriver to clean the channel of any remaining cement or bits of gasket.
- Apply a thin bead of stove cement in the newly-cleaned groove.
- Pack the gasket into the groove. Wait until you are a couple inches from the end before you cut it.

Test the gasket by closing the door on a slip of paper. A good seal will provide resistance when you try to pull the paper out. Adjust the gasket in any areas where an inadequate seal is evident.

All rope-type gasketing used in the Reliance is made of fiberglass. The gasket size for the front and ash doors is $3/8''$ diameter.

For the top load door, the gasket is a $3/8''$ square silicon sponge gasket. Should this gasket ever need to be replaced, use only the correct replacement gasket available from your Vermont Castings' dealer.

Cleaning the Glass

If it is necessary to clean the glass, a non-abrasive fireplace glass door cleaner works best. The commercial cleaner Bon Ami also works well.

When wiping dry carbon buildup from the glass, open the ash pan door so that any carbon not captured by the cloth used to wipe the glass will fall into the pan below.

Avoid Damaging the Glass

Do not abuse the glass in either door by slamming the door shut or by striking it with a hard object, and never operate your stove if it has damaged or broken glass. If you need to replace the glass, use only glass provided by Vermont Castings.

Replace Broken Glass Immediately

Prepare to replace the glass in your stove by first clearing a large flat area nearby to use as a work surface. Place in order the pieces that you disassemble. This will be a great help when you put the pieces back together.

To remove the glass:

- Open the front door. Carefully remove the front log by lifting it upward from its holder, and put it aside in a safe place.
- Holding the glass with one hand to prevent it from falling out, use the other to remove the Phillips-head screws that hold the stainless steel glass retaining clips on the left and right sides of the glass. Remove the clips and lift the glass.
- Remove the old gasket.

To install the new glass:

- Place a new piece of 3/16" gasket around the perimeter of the frame for the glass to rest on.
- Center the new piece of glass on the gasket.
- Position the glass retainer clips, and fasten in place with the Phillips head bolts you previously removed. Tighten the bolts alternately. Do not over-tighten.

Reliance Maintenance Schedule

Before Lighting a New Fire

- Scrape carbon deposits off burn pot surfaces.

Daily

- Fill hopper with pellets.
- Check for and remove debris around top plate before closing top load door.
- Scrape carbon deposits off burn pot as needed.
- Empty ash pan if necessary.

4-6 Weeks, or as Needed

- Clean exhaust passages
- Check gaskets for wear, and repair/replace as needed.
- Wipe the glass of carbon or light fly ash to prevent etching

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As Needed

- Scrape carbon deposits off burn pot surfaces.
- Remove fly ash from logs using an extremely soft brush or a soft brush attachment on a vacuum cleaner.
- Inspect the pellet vent and remove carbon deposits and fly ash.
- Adjust door latch if necessary.

Annually, At End of Heating Season

- Check gaskets for wear, and repair/replace as needed.
 - Clean any fly ash from exhaust passages.
 - Clean any fly ash from vent pipe.
 - Clean and lubricate combustion fan.
 - Touch up the black paint or enamel finish.
-

Installation

SAFETY NOTICE: IF YOUR RELIANCE IS NOT PROPERLY INSTALLED, OPERATED AND MAINTAINED, A HOUSE FIRE MAY RESULT. FOR SAFETY, FOLLOW ALL INSTALLATION, OPERATION AND MAINTENANCE DIRECTIONS. CONTACT LOCAL BUILDING OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

Stove Installations must be Safe and Legal

Before you begin an installation, review your plans to see that:

- Your stove will be far enough from combustible material to meet all clearance requirements.
- The floor protector satisfies the requirements.
- You have all necessary permits from local authorities.

Your local building official is the final authority for approving your installation as safe and determining that it meets local and state codes.

The labels permanently attached to the back of your Reliance indicate that it has been tested to UL and ULC standards. Clearance and installation information is also printed on the label. Local authorities generally will accept the label as evidence that, when the stove is installed according to the information on the label and in this manual, the installation meets codes and can be approved.

Codes vary in different areas, however. Before starting the installation, review your plans with the local building authority. Your local dealer can provide any additional information needed.

For any unresolved questions about installation, refer to the National Fire Protection Association's publication *ANSI/NFPA 211-1988 Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances*. In Canada, the equivalent publication is *CSA CAN-B365, Installation Code for Solid Fuel Burning Appliances and Equipment*. These standards are the bases for many national codes. They are nationally recognized and are accepted by most local authorities. Your local dealer or your local building official may have a copy of these regulations.

Important: Failure to follow these installation instructions may result in a dangerous situation, including a chimney or house fire. Follow all instructions exactly, and do not allow makeshift compromises to endanger property and personal safety.

NOTE: It is very important to use all of the specified components supplied with your Reliance Pellet Stove Model #2340 or with the Reliance Mobile Home Kit part number 000-0025.

WARNING: USE ONLY THOSE COMPONENTS SPECIFIED FOR USE WITH THE RELIANCE PELLET

STOVE MODEL #2340. DO NOT UNDER ANY CIRCUMSTANCES USE ANY COMPONENTS OTHER THAN THOSE SPECIFIED.

Moving the Reliance

The Reliance is heavy and must be handled with care to prevent bodily injury as well damage to the home or its furnishings.

When a hand truck is used to help move it, the Reliance ash lip should be removed first. Remove the ash lip by unbolting it from the front. Then, tilt the stove enough to slide the hand truck underneath from the front.

Securing the Reliance to the Floor (mobile homes only)

In mobile home installations, the Reliance must be bolted to the floor. This requires the hardware provided with the Mobile Home Kit (part #000-0025) — two metal straps, each with two drilled holes, plus two bolts — and assistance to help maneuver the stove. Follow this procedure:

Step 1. Carefully raise the left side of the Reliance to expose the threaded hole on the left underside of the bottom plate. Block the stove so it can be worked under safely.

Step 2. Place one of the bolts provided through one of the holes in the metal strap, then thread the bolt into the hole finger-tight.

Step 3. Holding the unattached end of the strap to keep it perpendicular to the stove, tighten the bolt into the stove bottom with a wrench.

Step 4. Remove the block and carefully lower the stove to the floor.

Step 5. Repeat this procedure to secure the second strap to the hole in the right underside of the bottom plate.

Step 6. Complete the installation of the stove.

Step 7. With the Reliance in its final installed position, complete the process of securing the unit to the floor of the mobile home by drilling through the strap holes into the floor, and then fastening the straps to the floor with two 3" (75 mm) lag screws.

Installing Outside Air

See Appendices A and B on pages 20-21.

Connecting the Reliance to a Wall Thermostat

See Appendix C on page 22.

Check the Logs

The Reliance logs are factory-installed and require no installation or further preparation before use. However, the rubber band that was placed around them to stabilize them during shipment should be removed.

Venting Requirements

There are several options available for the installation and venting of a Reliance Pellet Stove, depending on whether the installation is new or a modification of an existing one. The requirements that dictate what kind of venting to use vary in the United States and in Canada.

In the United States, you must connect the Reliance directly to a 3" (80 mm) or 4" (100 mm) diameter, UL Listed, Low-Temperature Type L Vent suitable for use with pellet fired appliances and/or UL listed residential-type and building heating appliances; or, as an alternative, connect to a lined (or appropriately relined) masonry chimney that meets local codes.

In Canada, connect the Reliance to a factory-built chimney conforming to CAN/ULC-S629M, Standard for 650° C Factory-Built Chimneys, or to a chimney lined with a 3" (80 mm) or 4" (100 mm) diameter solid-fuel type liner.

Complete pellet venting systems are available from a number of manufacturers such as Metalbestos or Simpson Dura Vent and usually can be supplied by your Vermont Castings dealer. Follow the installation instructions of the chimney manufacturer exactly as you install the chimney.

Many pellet vent manufacturers include the materials and instructions for sealing around the joints where the vent sections connect to prevent possible smoke leakage into the home. If your supplier has no provisions for this, you should do it yourself.

Pellet vent and pellet vent terminations will vary as well. Some terminations tend to direct exhaust toward the building after periods of use, and can be influenced easily by the wind. Other terminations are designed to direct exhausts away. Consult your dealer for the pellet vent he recommends.

Use an RTV-type caulk with a minimum temperature rating of at least 400° F. (204 C.), and thoroughly seal around the exterior of each crack formed where sections are joined.

Sealing the joints is essential in forced-draft, "positive pressure systems" such as the one employed by the Reliance and most other pellet stoves, especially with interior installations of pellet vent.

Venting Restrictions

The venting must not be:

- Within 72" (1.8 m) of a mechanical air supply inlet to a building.
- Above a gas meter/regulator that is within 36" (900 mm) horizontally of the vertical center line of the regulator.
- Within 72" (1.8 m) of a gas service regulator vent outlet.
- Less than 12" (300 mm) above grade.
- Within 40" (1 m) of a building opening or air inlet of another appliance.
- Within 40" (1 m) of the property boundary.

In addition, Canadian regulations specify that the venting for installations in Canada shall not exceed 48" (1200 mm).

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Mobile home installations should also heed the following:

WARNING: DO NOT INSTALL IN SLEEPING ROOM

CAUTION: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL, AND CEILING/ROOF MUST BE MAINTAINED.

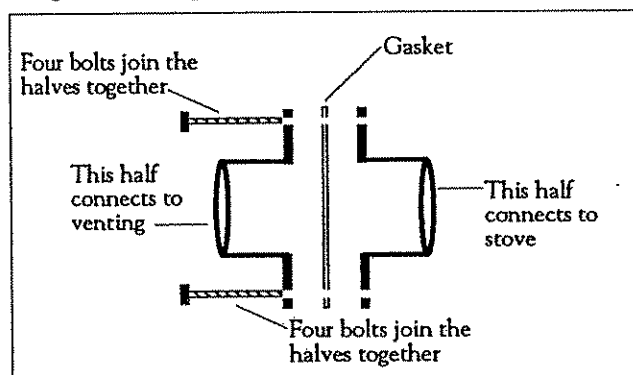
In addition, if in the future you decide to relocate or transport your mobile home, be sure to closely follow the chimney manufacturer's instructions for properly removing your chimney. This will prevent possible damage to your chimney system during transport of the mobile home.

Attaching the Pellet Vent to the Reliance

The Reliance may be connected to any brand of pellet vent with the optional L-Vent Coupler, part #0024. This coupler allows both inspection and maintenance of either the pellet vent or the Reliance without having to disturb the silicon seal. It works like this:

One half of the coupler is secured to the stove's mounting collar; the other half is attached to the pellet vent. The connections are made with sheet metal screws and silicon. Both halves are then joined with a gasketed four-bolt flange.

When it is necessary to disconnect the pellet vent from the Reliance, you need only to remove the four bolts at the gasketed flange.

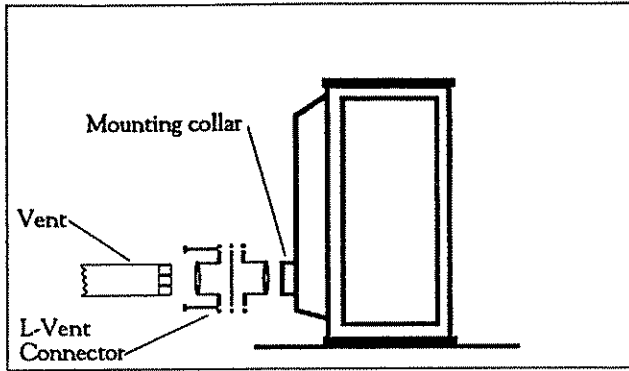


The L-Vent Coupler can be disassembled into two halves to simplify access to the venting for inspection or cleaning.

The pellet vent attachment collar that is mounted on the lower rear of the Reliance is sized so that coupler fits neatly over it.

The L-Vent Coupler should be secured to the collar and venting with three sheet metal screws at each connection. Drill the heavy gauge steel flange with a powerful drill and a 1/8" (3 mm) drill bit.

Use an RTV-type caulk with a minimum temperature rating of at least 400° F. (204 C.) to seal the coupler to the stove on one side and the venting on the other.

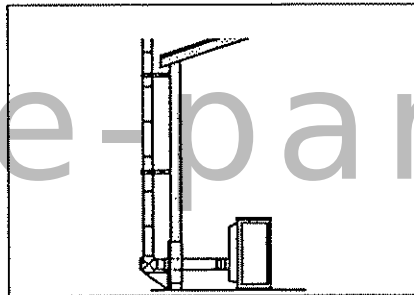


The pellet vent is joined to the mounting collar with the L-Vent Coupler

Wall Pass-Throughs

Whenever possible, design your installation so the connector does not pass through a combustible wall. If you are considering a wall pass-through in your installation, check with your building inspector before you begin to determine what local regulations apply.

The pellet vent manufacturer will supply a 4" (100 mm) thimble which is necessary for passing through a combustible wall. Confirm that wall pass-through components have been tested and listed for use in wall pass-through applications, and follow the chimney manufacturer's installation instructions exactly.



When passing through a wall, use only approved wall pass-through devices provided by your pellet vent manufacturer and follow the installation instructions exactly.

Direct Venting Through an Exterior Wall

Venting the Reliance horizontally through a wall behind it is a cost-effective installation that can be accomplished with a minimum of carpentry work.

There are three options for configuring the vent pipe in such installations: A horizontal direct vent, a horizontal direct vent with a vertical extension that terminates at least two feet below the roof overhang, and a horizontal direct vent with a vertical extension that extends above the roof overhang. Each option has advantages and disadvantages.

Horizontal Direct Vent

With the first option, the venting terminates on the same plane as the pellet vent attachment collar with the installation of a vent cap at the end of the pipe's horizontal run. The horizontal run must not exceed the maximum recommendation as specified by either Vermont Castings, the pellet vent manufacturer, or local building codes.

A horizontal direct vent is probably the easiest and the least expensive to install.

However, there are some disadvantages as well:

A horizontal direct vent installation offers the least assistance in augmenting draft. It is not recommended if you live in an area where power

outages or severe wind are common and you have no back-up source of electricity. Because the Reliance exhaust system is powered by an electrical fan, the normal venting of smoke can be disrupted if the power fails and smoke may enter the home.

In such areas, the Outside Air Kit available with the Mobile Home Kit (part #0025) can help prevent smoke from entering the home.

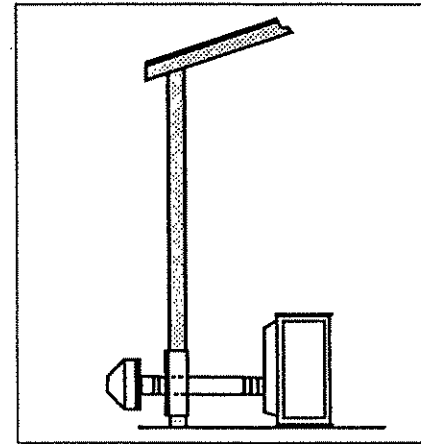
The close proximity of the vent termination to the side of the building makes it possible under some conditions for combustion by-products to be blown against the exterior wall after leaving the pellet vent. This may stain certain surfaces

Other problems with horizontal direct vent may occur if the termination will be:

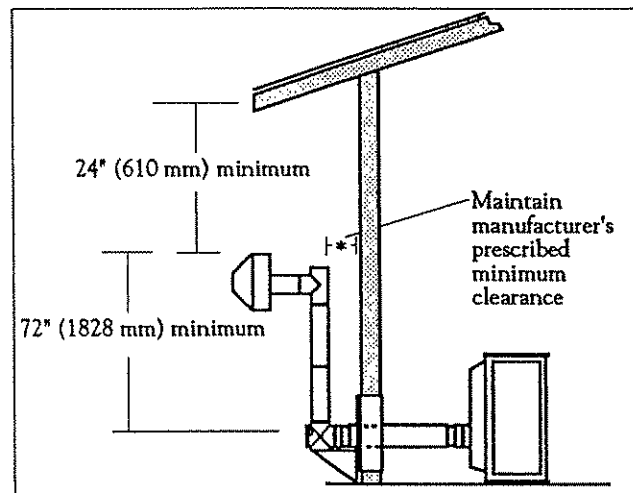
- Near walkways or driveways
- Within 18" (460 mm) above wooden decks
- In areas where snow may accumulate and cause a blockage, or where falling snow may cause damage

When outside air is being used for combustion, a distance of 2' (1220 mm) must be maintained between the vent termination and the combustion air intake.

In addition, the pellet vent termination must conform with the guidelines listed under Venting Restrictions as well.



Not recommended for areas that have regular power disruption.



A vertical section may be added to pellet vent that is direct-vented to the outside for improved "backup draft."

Horizontal Direct Vent with Vertical Rise Ending Below Eave

A vertical rise of at least 6' (1828 mm) above the stove's flue collar will help provide a natural "backup" draft, so that smoke will continue to be evacuated from the stove if the electricity is disrupted. This is an advantage over the horizontal direct vent without a vertical rise that was discussed previously, and results in increased combustion efficiency as well.

For this installation type as well as the one discussed above, the close proximity of the vent termination to the side of the building makes it possible under some conditions for combustion by-products to be blown against the exterior wall after leaving the pellet vent.

Other problems may be encountered if the termination of the vertical rise is:

- Within 40" (460 mm) of windows
- In areas where snow may accumulate and cause a blockage, or where falling snow may cause damage

In addition to meeting the guidelines under Venting Requirements, the horizontal direct vent installation with vertical rise installation must satisfy the following criteria as well:

- As stated above, the vertical rise must extend at least 5' above the flue collar of the stove.

- The listed chimney cap must maintain a clearance of at least 24" (610 mm) from the lowest point of the roof overhang.

- The installed vent cap must observe its manufacturer's recommended clearance to the house, and the cap must be designed specifically for such installations (it should not be a cap designed for vertical termination above the roof line).

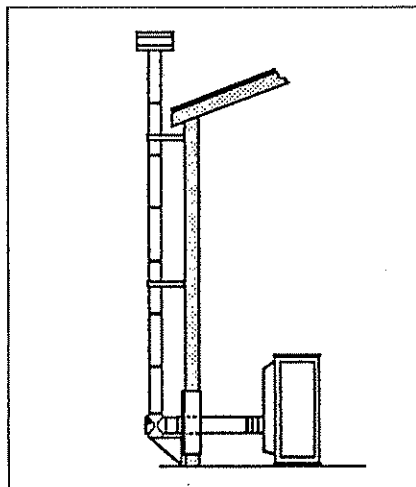
- A two-way cleanout must be installed at the base of the vertical rise to facilitate cleaning both the vertical and horizontal sections.

NOTE: If the clearances recommended by the manufacturer of the pellet vent purchased for your installation exceed those stated here, they will supercede the clearances listed here.

Horizontal Direct Vent with Vertical Rise Bypassing Eave and Ending Above Roof Line

If the building's dimensions do not allow any of the clearances outlined in the preceding section, the vertical rise may be extended past the eave to terminate above the roof line with an appropriate vent cap.

This installation offers the best assistance to draft when the stove is operating, if the power



Installations that extend past the eaves must observe minimum clearances to the roof.

fails, and in venting exhaust by-product away from the building.

This type of installation vents combustion by-products above the home, and as a result is one of the preferred installation options.

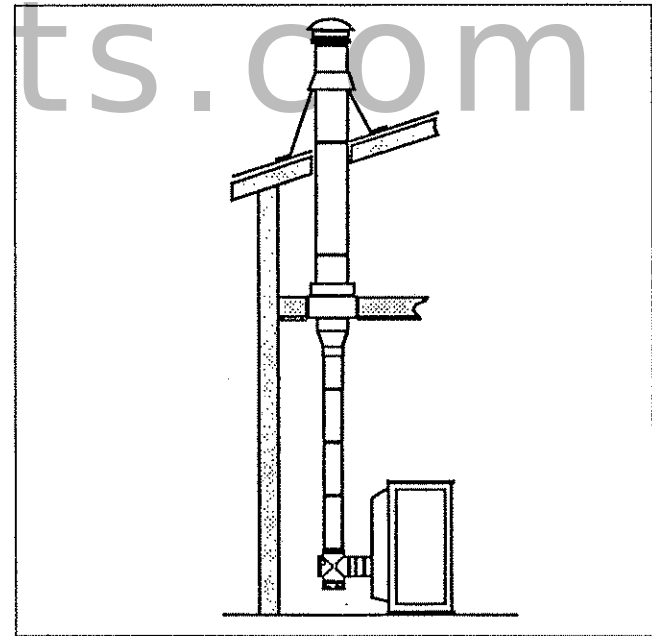
Venting beyond the eave ending above the roof line, however, is the most expensive type of exterior wall installation.

We recommend that the vent termination extend at least 3' (900 mm) above the point at which it passes the roof line, and at least 2' (600 mm) higher than any part of the roof within 10' (3 m) (NFPA-211). Venting that extends above the roof line more than 5' (1520 mm) should be properly braced. Consult the pellet vent manufacturer's instructions for specific requirements.

Venting to a Prefabricated Chimney

If your home has an existing prefabricated metal chimney that meets the qualifications stated in the "Venting Requirements" section above, it may be used as part of the system that vents your Reliance.

For best performance, and for metal chimneys larger than 6" (150 mm) in diameter, leave the metal chimney in place but reline it with pellet vent. Then, seal the opening around the pellet vent at the point where it enters the original chimney in a way that satisfies local codes.



Venting into a metal chimney with a diameter of 6" (150 mm) or less through the use of a 3"-to-6" (80-150 mm) adaptor is a second, though less satisfactory, way to make use of an existing metal chimney.

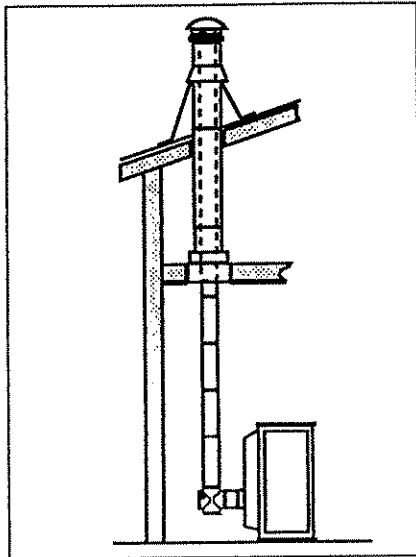
A second option that may be used on existing metal chimneys that are 6" (150 mm) diameter or smaller is to run pellet vent up to the chimney, then use a 3"-to-6" (80 mm-150 mm) adaptor.

Check on the availability and compatibility of such adaptors before you buy. Some manufacturers offer adaptors that will make the transition between 3" (80 mm) pellet vent and 6" (150 mm) chimneys only between components of their own brand.

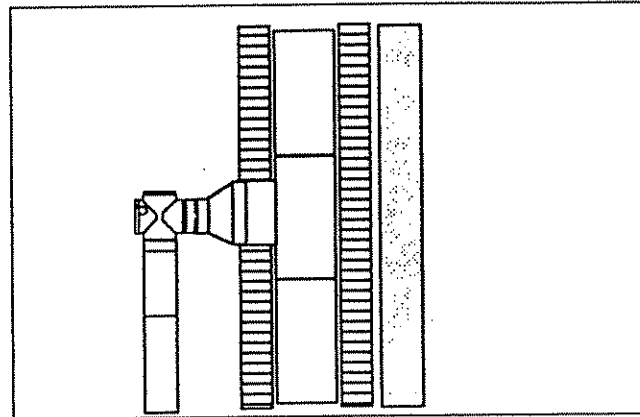
If the pellet vent is a different brand than the chimney and no suitable adaptor is available, a new adaptor can be

custom-fabricated. Run a bead of high temperature silicone between the adaptor and the chimney to seal the connection.

Before you pursue this option, however, check with local building officials to be sure that local codes will allow this approach.



The most effective way to use an existing metal chimney is to run pellet vent through it.



A 3"-to-6" (80-150 mm) adaptor may be used to connect the pellet vent to small, interior masonry chimneys.

The liner should be properly supported and should extend down the flue to the thimble. An appropriate elbow should be used to direct the liner through the thimble to a point where it can be connected to the pellet vent.

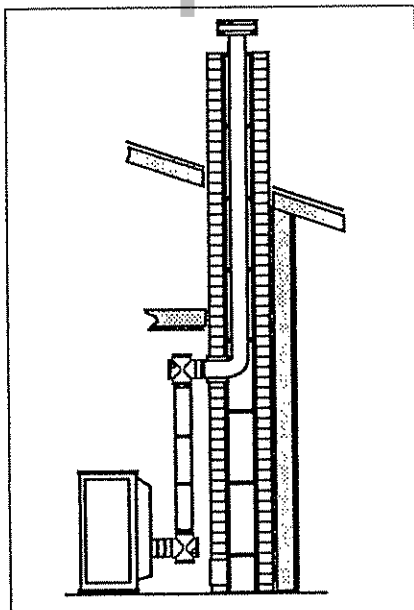
When adapting pellet vent to an existing thimble, use the adaptor supplied by the manufacturer to ensure a proper fit. Run a bead of high temperature silicone between the adaptor and the thimble to seal the connection.

As with the directions given for connecting to a prefabricated metal chimney, check with local building officials first to be sure that local codes will allow this approach.

Venting to a Masonry Chimney

Both freestanding masonry chimneys and fireplace masonry chimneys may be used for installation of your Reliance if either of the two methods are employed. Such chimneys must be lined.

The first — and by far the best — method involves relining the chimney. The second method involves adapting the 3" (80 mm) pellet vent to a 6" (150 mm) thimble, but this approach should only be used with chimneys having a flue size of 6" x 6" (150 mm x 150 mm) or smaller. Larger flue sizes, and particularly those of exterior chimneys, are more susceptible to downdrafts and the formation of condensation which leads to chimney deterioration. A masonry chimney flue must be relined with a 3" (80 mm) stainless steel liner, or, if the vertical length of the chimney is more than 15 feet (5.3 meters), (or if the altitude is higher than 4,000 feet), a 4" (100 mm) stainless steel liner should be used.

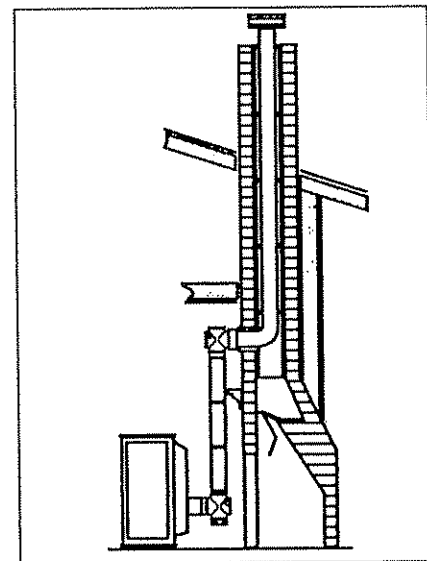


Because of their large size masonry chimneys often affect pellet stove performance adversely. For best results, reline with a 3" (80 mm) stainless steel liner.

Above a Fireplace

In this installation type, the pellet vent rises from the stove past the mantel, turns ninety degrees, and approaches the thimble where it connects with either the stainless steel liner or the thimble adaptor (for chimneys having a flue size of 6" x 6" (150 mm x 150 mm) or smaller only) as described in the preceding section.

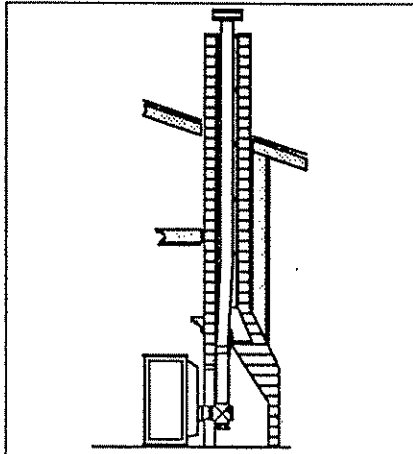
Follow the same guidelines mentioned above for installing pellet vent into a freestanding masonry chimney, and pay special attention to one additional point: The fireplace damper must be closed and sealed to prevent room air from being drawn up the flue, reducing the draft. However, it must be possible to re-open the damper to inspect or clean the chimney.



You must also seal the damper to prevent room air from escaping.

Through a Fireplace

For best results, reline the chimney with stainless steel liner according to the directions given previously for masonry chimneys. This greatly reduces the possibility of condensation forming within the larger masonry flue, especially if the chimney is an exterior one. Cleaning is much easier also with a total reline.



Use a stainless steel liner when venting through a masonry fireplace,

The damper plate should be removed or fixed in the open position, and the resulting space around the stainless steel lining should be blocked off with a sheet metal plate and sealed with silicone to prevent room air from rising up the flue.

Maximum Horizontal Length

A few guidelines should be observed if it is necessary to vent the Reliance horizontally for an extended distance.

Elbows in the vent system create draft resistance, and the number of elbows used should be kept to a minimum. We recommend a maximum horizontal run of 13 feet, using three 90° elbows. In addition, we recommend that any vertical rise in the system be accomplished as close to the stove as possible to enhance the draft. Stove performance in installations that exceed these guidelines can be unpredictable.

Altitude, fuel quality, and the frequency of routine maintenance can all affect stove performance.

At higher altitudes, a section of vertical rise on the exterior of the building can enhance the draft.

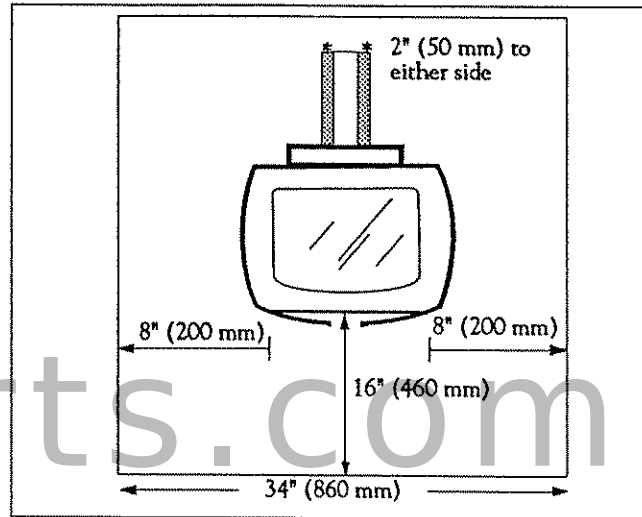
NOTE: For installations that have 3 feet or more of horizontal run, routine maintenance of the burnpot and heat exchange passages must be observed to ensure best performance. Cleanout tees may be substituted for elbows to make inspection and cleaning of the venting more convenient.

Selecting the Best Installation for Your Needs

Consult your dealer for assistance in choosing the best installation for your home. Because chimney components and their recommended clearances can vary between manufacturers of pellet vent, and because local building codes may vary throughout the country, your local Vermont Castings Authorized Dealer is a valuable resource.

Minimum Floor Protection

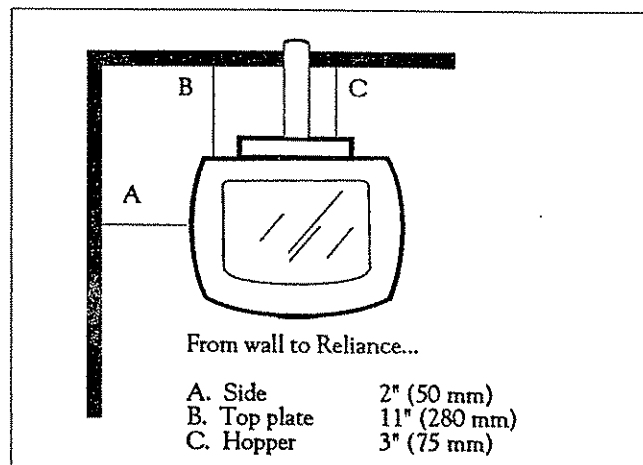
Install the Reliance on any non-combustible material of any thickness and K factor, or use a UL listed floor protector. The floor protector must extend 16" (410 mm) from the front load door to protect the floor from hot embers that could fall either from the front log or from or from the swing-out ash pan when it has been opened for inspection or maintenance. The floor protector also must extend 8" (200 mm) from the right and left sides of the load door, resulting in a floor protector width of 34" (860 mm). The protector also must extend under the pellet vent connector for its horizontal length and 2" to either side.



Keep the Stove a Safe Distance from Surrounding Materials

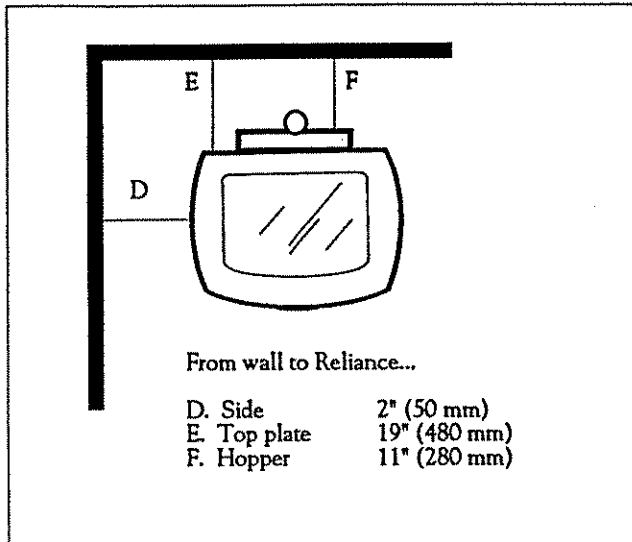
The Reliance radiates heat in all directions when operating. A safe installation requires that adequate clearance be maintained between the stove and nearby combustible materials to ensure that such materials do not overheat. The diagrams below illustrate the minimum clearances for the Reliance in some typical installations.

Parallel Installation, Vent Through Back Wall

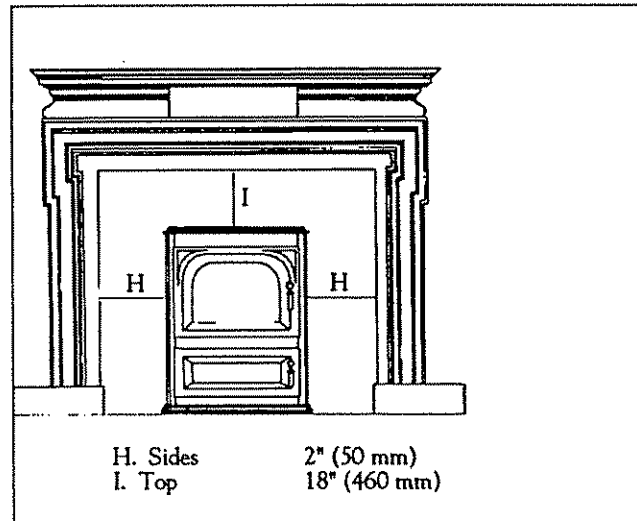


Note that the top plate is not the nearest part of the stove to the wall even when its clearance is observed.

Parallel Installation, Vent Through Ceiling

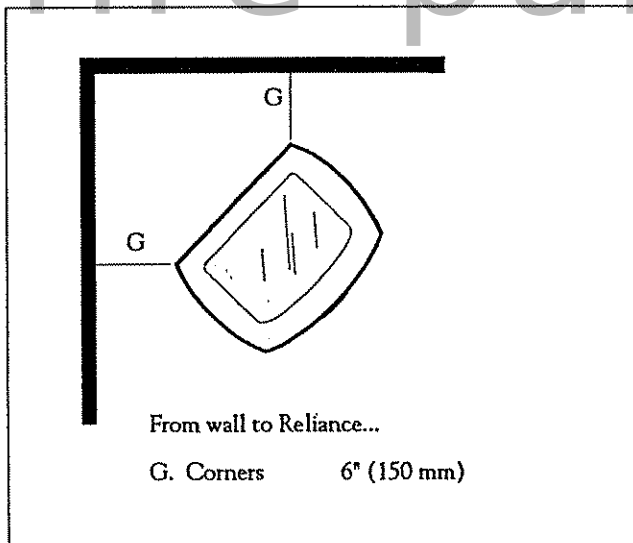


Fireplace Installation



Note that the top plate clearance must take into account the amount of space taken up by the back panel-shroud as well as the pellet vent connector and/or elbows behind the stove.

Corner Installation



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Appendix A

Installing the Reliance Mobile Home Kit

The Mobile Home Kit directs fresh air from the outside directly to the stove and effectively separates air access to the stove's combustion system from the interior of the home. The kit is required when using the Reliance Pellet Stove in a mobile home, but it is a desirable efficiency enhancement in any installation.

As an added advantage, a properly installed outside air kit will prevent smoke from entering the home in the event of a power outage. For this reason, installing the kit is recommended in areas that experience power outages frequently.

Kit Contents

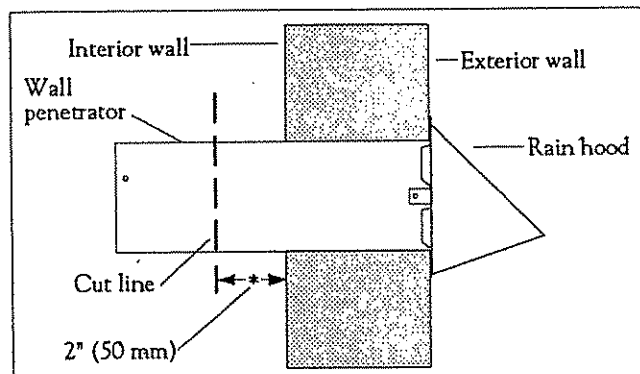
- 1—4 x 12" (100 x 300 mm) wall penetrator with hood and rodent screen
- 1—length of 4" (100 mm) diameter flexible aluminum dryer vent
- 2—hose clamps for securing the dryer vent at each end
- 2—brackets for securing the stove to mobile home floor residential installations
- 2—1/4-20 x 1/2" hex screws

Step 1. Locate the Reliance very close to its final installed position. All clearance rules expressed both in the manual and on the label mounted on the back of the stove must be observed.

Step 2. Mark where the 4" (100 mm) hole in the wall must be cut to be nearest the air inlet flange on the back of the stove. The air inlet of the Reliance is the opening above and to the left of the flue exit on the back of the stove.

Step 3. Cut the hole.

Step 4. Slide the wall penetrator through the hole from the outside, with the opening of the rain hood pointing down. It should slide easily through the hole. The wall penetrator will accommodate walls up to 10" (250 mm) thick. If your wall is thicker than that, obtain a longer (and identical) piece of pipe from your dealer or hardware store.



Cut the wall penetrator so that 2" (50 mm) protrudes into room.

Step 5. Mark the wall penetrator so that after it is cut a 2" (50 mm) section will protrude into the room.

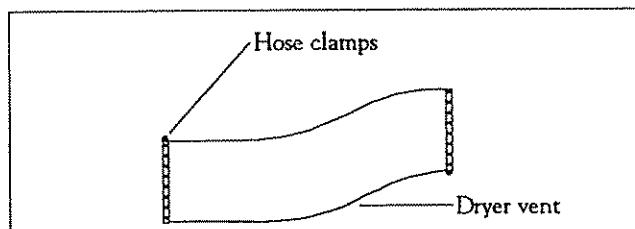
Step 6. Remove the wall penetrator and cut it at the marked point with tin snips. Regular scissors may be used if no snips are available. Wear gloves when making the cut, and be careful of any sharp sharp edges left on the pipe from the cut.

Step 7a. Fasten the wall penetrator's rain hood to the exterior of the home. Slide the penetrator through the wall from the outside, and position it with the rain hood opening pointing down. Secure the rain hood to the side of the home with two wood screws. The rain hood may be painted to match the exterior of the home.

Step 7b. Once the rain hood is secured to the exterior of the mobile home, apply a thin bead of silicone sealant all the way around the edge of the rain hood to maintain an effective vapor barrier.

Step 8. Determine the approximate length of dryer vent that will be needed to connect the wall penetrator to the air inlet flange when the stove is in its final position, and cut the vent to that length.

Step 9. Slide the two large hose clamps supplied with the kit over the dryer vent. Slip one end of the vent over the end of the wall penetrator, and the other end over the air inlet flange on the stove. If it is necessary to bend (or



The dryer vent is secured by hose clamps on either end.

"form") the dryer vent to make the connections, avoid bending the vent so sharply that the 4" (100 mm) ID is closed off.

Step 10. Secure the dryer vent to the wall penetrator and the air inlet flange by tightening the hose clamps.

Step 11. Move the Reliance into its final position and connect the 3" (75 mm) L-vent to the flue connection according to the instructions in the Owners' Manual.

NOTE: The opening of the wall penetrator on the exterior of the home should be checked regularly to confirm that no leaves, paper, or other debris have collected there to restrict air flow to the stove. Promptly remove any debris found on the inlet screen.

Should you ever notice a sudden change in the flame characteristics (from bright, clean burning to dull and sooty) when operating the Reliance, check the inlet screen for debris.

Appendix B

Installing the Inlet Check Valve

The Inlet Check Valve will minimize the possibility of smoke entering the room should an electrical power outage occur while the stove is in operation.

The check valve is installed on the Reliance air inlet flange, located just above and to the left of the flue exit on the back of the stove. Before you begin, move the Reliance close to its final installed position, but leave enough room to work behind it.

Step 1. Slip the Inlet Check Valve over the air inlet flange on the back of the Reliance, positioned so that the rectangular hole in the sheet metal box is closest to the top of the valve. The plastic flap inside the check valve should swing freely, opening and closing the rectangular opening.

Step 2. Holding the check valve in place against the back of the stove, drill 2 or 3 pilot holes through the valve collar and through the inlet air flange of the stove. The holes should be sized to accommodate the sheet metal screws you will use.

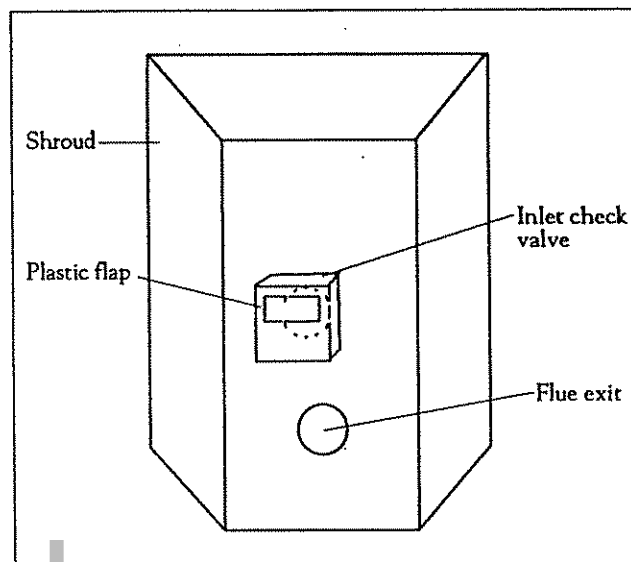
Step 3. Apply a bead of fresh, clear silicone sealant around the entire air inlet flange. Slip the check valve over the flange and rotate the valve back and forth to distribute the silicone sealant. Check that the check valve is oriented as shown in the illustration above.

Step 4. Secure the inlet check valve to the back of the stove using the sheet metal screws and the holes drilled previously. Once the valve is secured, test the movement of the plastic flap to confirm that excess sealant does not prevent it from swinging freely.

Step 5. Allow the silicone sealant to dry completely — preferably overnight — before operating the stove.

Step 6. Move the Reliance into its final. There must be at least a 5" (125 mm) clearance between the back of the shroud and the wall.

NOTE: When the Reliance is operating with the Inlet Check Valve installed, the plastic flap inside the valve should open wide and not restrict the flow of combustion air to the firebox. Inspect the check valve on a regular basis to ensure that the flap is opening fully during normal operation.



Appendix C

Connecting the Reliance to a Wall Thermostat

NOTE: The thermostat must be 24 volt.

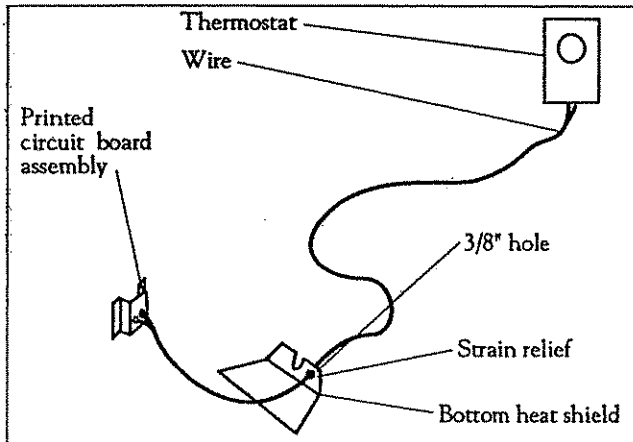


Diagram of the connection of the wall thermostat to the printed circuit board assembly through the sheet metal bottom heat shield.

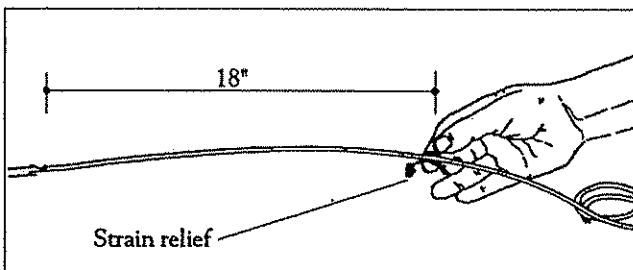
1. Choose a location for the thermostat. Refer to the section "Selecting Location" in the instructions packaged with the thermostat for factors to consider.

2. Using thermostat wire of from 18 to 22 gauge that you have procured locally, route the wire from the thermostat to the back of the stove. Refer to the directions supplied with the thermostat for a suggested procedure to route the wire.

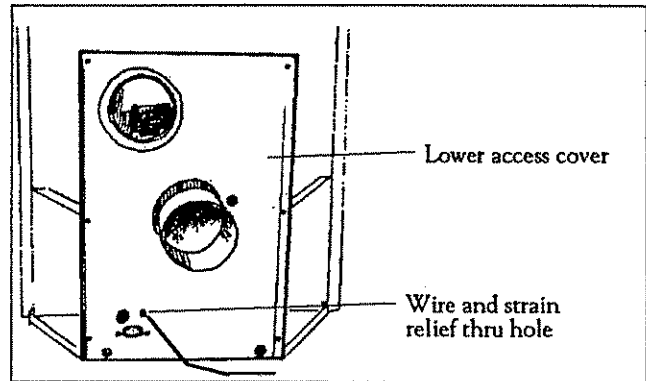
3. Mount the thermostat on the wall and connect the wire to it according to the manufacturer's instructions.

4. Remove the six screws that hold the sheet metal back panel of the Reliance in place and remove the panel.

5. A black plastic strain relief is provided to protect the thermostat wire as it is routed to the printed circuit board assembly; clamp it on to the thermostat wire 18" from the end, oriented with the smaller circumference facing the end of the wire nearest the stove.

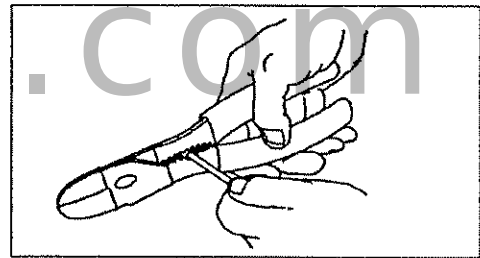


6. Locate the 3/8" hole next to the fuse in which the strain relief will be placed. Thread the end of the wire

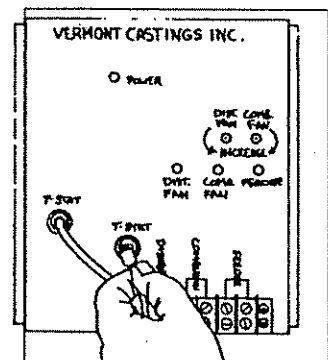


through the hole and plug the strain relief into the hole securely.

7. Attach the two spade connectors to the ends of the wire.



8. Plug the two connectors into the two receptacles in the back of printed circuit board assembly labeled "T-Stat." Make sure the wire is routed well away from fans and hot exhaust passages.



9. Re-install the back panel and secure it with the six screws that were removed previously.

10. Set the "T'Stat/Stove" selection switch on the control panel to "T'Stat." Turn the "Stove Temp" dial on the control panel to "Min."

NOTE: The instructions packed with the thermostat have a section entitled "Heating Anticipation" that describes a thermostat adjustment procedure. It is not necessary to adjust the thermostat for use with the Reliance and this section may be disregarded.

Troubleshooting the Reliance

Your Reliance has been engineered for years of trouble-free operation. Should you ever encounter a problem, however, the following chart can help identify the difficulty.

Do not attempt to repair the stove unless you have good mechanical aptitude and a sound understanding and experience in working with electrical components. Instead, call your authorized Vermont Castings Dealer for assistance.

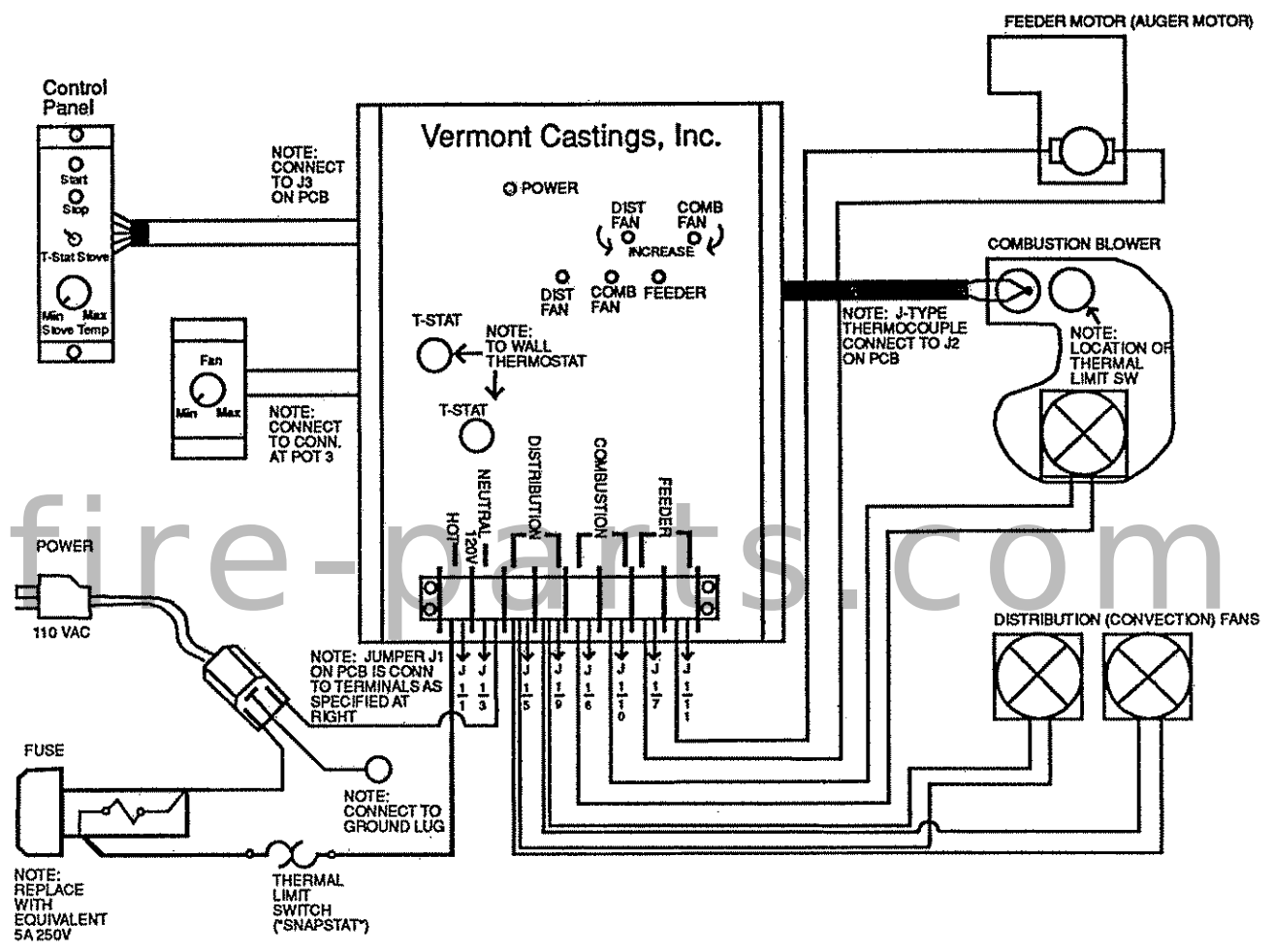
Symptoms	Probable Cause	Solution
I. Stove runs at a high level regardless of dial setting; can't turn fire down to low flame; burn rate fluctuates — from fast flame, to slow "stringy" flame, back to fast flame; erratic fan behavior.	1. Thermocouple malfunction.	1. a. Shut down; pull power cord from outlet. b. Clean the thermocouple with a soft wire brush. c. Press start, but don't quite yet set stove on Max. Hold a match or cigarette lighter under the thermocouple—the auger motor should stop. If it doesn't, replace the thermocouple. d. If auger motor stops, the thermocouple is probably OK. Contact your dealer for further assistance.
II. Difficult to start	1. Dirty burn pot: too much ash or carbon 2. Poor draft caused by air leaks 3. Didn't wait long enough before pushing start 4. Pusher block adjustment too high 5. Wet pellets that won't ignite	1. Clean burn pot of carbon and ash, inside and out. 2. Check seals, gaskets, and door latches. Both doors should have a "tight" positive seal. Check fuel-loading door for debris or torn gasket. 3. Push Stop. Wait for stove to "catch up." Push Start. 4. Contact dealer. (Adjust "yoke" to reduce feed delivery) 5. Use dry pellets.
III. Low heat output	1. Insufficient draft caused by air leaks 2. Sooty exhaust passages 3. Insufficient feed rate — not enough fuel delivery to the combustion zone	1. Check gaskets, debris, exhaust panel clearances, etc. 2. Shut down stove and allow it to cool. Remove logs and exhaust passage cover panels. Clean exhaust panels and replace exhaust panel covers. 3. Contact dealer; as long as the auger is cycling on and off, the feed rate is OK; if not, disconnect power and adjust "yoke" on feeder to reduce feed delivery. Clean stove and test burn thoroughly.

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Symptoms	Probable Cause	Solution
III. Low heat output (continued)	4. Failed distribution fan(s) or distribution fan rheostat control. Fans should come on when activated.	4. Check buttons and remote cable.
IV. Pellets bridge at mouth of feeder	5. Poor quality pellets, which will not allow the "Max" setting to be used. 1. Debris in hopper (ie, pieces of pellet bag, paper, etc.) 2. Wet pellets (swollen) 3. Pellets greater than one inch 4. Carbon build-up on burn pot	5. Change to pellets of acceptable quality 1. Remove remaining pellets, check for debris, etc. 2. Use dry pellets. 3. Use pellets smaller than one inch. 4. Clean burn pot of carbon and ash, inside and out.
V. Internal noise	1. Pusher block "sticking"	1. Remove pusher block. Smooth with emery cloth. Lubricate with dry lubricant such as graphite. 2. Consult dealer.
VI. Fire goes out	1. Fuel used up 2. Power failure 3. Pellet flow obstructed 4. Failure of feed motor or combustion blower	1. Add fuel. 2. Confirm that power is available and that unit is getting power. 3. Remove any obstructions found. 4. Consult dealer.
VIIA. Pellets burn incompletely at startup	1. Didn't wait long enough before pushing "Start." Combustion air "blows out" fire before the pellets have had a chance to ignite.	1. Follow start-up procedure (ie, hit stop, allow stove to catch up, hit start). "Wean" stove up to higher set-points
VIIA. Pellets burn incompletely after fire is well established	1. Poor draft caused by leaks 2. Feed rate too high 3. Burn pot needs cleaning	1. Check draft, leaks, doors, gaskets. 2. Contact dealer. (Adjust "yoke" to lower feed rate). 3. Scrape out carbon, clinkers; open clean-out door and check for ash build-up.
VIII. Auger, blower, or fans won't work	1. Unit is unplugged from power source 2. Blown main stove fuse	1. Plug unit in. 2. Unplug unit. check fuse, located in lower left corner of back shroud, and replace if necessary using properly rated fuse (3A, 250 V.).
IX. Auger won't work	1. Control panel switch mis-set to T-stat without necessary hook-up 2. Thermocouple failure	1. Change setting to "Stove." Auger should work even in T-stat mode to maintain stove at set-point. 2. Replace thermocouple. See solution I-1.

Symptoms	Probable Cause	Solution
<p>X. Dirty glass NOTE: Some deposits will form on the glass of all units during normal operation; they should clean off when wiped with a dry cloth. Deposits will form more readily when unit is run at a higher rate. More stubborn dirt can be removed with Fireplace Glass Door Cleaner found in hardware and specialty shops. Pellet fuels also vary widely. Try different fuel to see if glass stays cleaner.</p>	<p>1. Pellets with too much "fines."</p>	<p>1. Screen pellets to remove fines or try burning different fuel.</p>
	<p>2. Poor draft</p>	<p>2. Check gaskets, seals; clean burn pot.</p>
<p>XI. No flames through logs</p>	<p>1. Flame path through logs blocked with carbon, etc.</p>	<p>1. Clean logs.</p>
	<p>2. Poor draft caused by leaks</p>	<p>2. Clean gaskets for leaks and repair/replace as needed.</p>
<p>XII. Internal noises/squeaks/vibrations</p>	<p>1. Pusher block race needs lubricating</p>	<p>1. Remove feeder cover plate and, with the block all the way forward, lubricate the bearing race (the surface that the pusher block slides on) with "dry" high-temperature powdered graphite lubricant.</p>
	<p>2. Pusher block and/or auger bearings need oiling</p>	<p>2. Remove feed cover plate to oil the pusher block bearing. The auger bearings are accessible to be oiled when the shroud is removed.</p>
	<p>3. Debris on fans, blower, or feeder motors</p>	<p>3. Check for debris and remove any that is found.</p>
	<p>4. Loose screws on shroud</p>	<p>4. Tighten screws.</p>
	<p>5. Feeder-induced vibrations</p>	<p>5. Some vibration is normal. Heavy vibrations being transferred to the hearth can be minimized by installing the "rubber feet" included with the Reliance stove kit.</p>
	<p>6. Faulty or defective feed mechanism</p>	<p>6. Consult dealer.</p>
<p>XIII. Door handle not vertically plumb when closed</p>	<p>1. Imprecise machining of door handle shaft</p>	<p>1. Replace shaft.</p>
<p>XIV. Excessive, frequent cycling of combustion fan (every 5-10 seconds)</p>		
<p>XV. Visible smoke from flue; carbon build-up on logs; poor de-ashing</p>	<p>1. Dirty burn pot</p>	<p>1. De-carbon the burn pot, remove ash in burn pot by opening burn pot clean-out door. Scoop out the ash.</p>
	<p>2. Venting configuration</p>	<p>2. If direct-venting, may need to add vertical rise to increase draft.</p>

Electrical Diagram

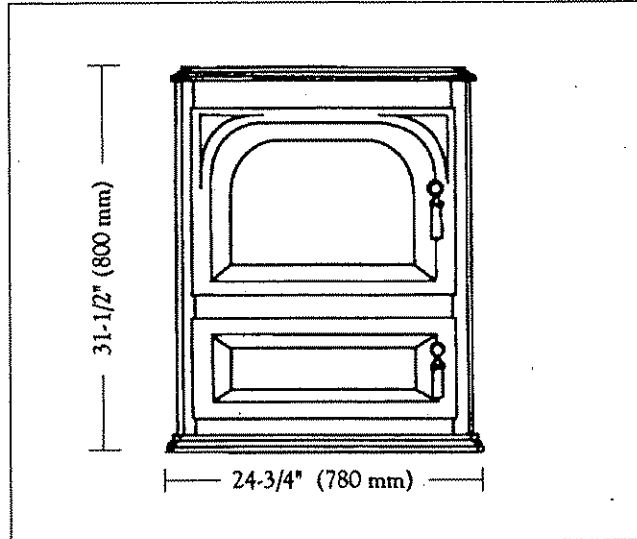


Specifications

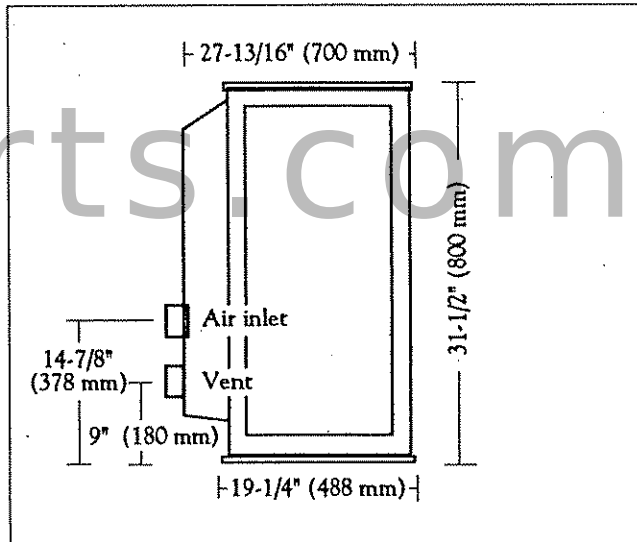
Fuel size/type	Wood/cardboard pellets* Premium (1% or less) or, Regular grade (up to 3% ash content)
Hopper pellet capacity	50 lbs. (22.7 kg.)
Burn time (high/low)	10 hours/up to 40 hours
Lbs. per hour (maximum feed rate)	5 lbs. (2.2 kg.)
Lbs. per hour (minimum feed rate)	1.25 lbs. (.55 kg.)
Range of heat output	6,500-35,000 Btu's/hr.
Area heated	1,400 ft ² (130 m ²)
EPA Emissions rate	EPA Exempt**
Loading	Top
Exhaust vent	3" (75 mm)
Exhaust vent position	Rear
Air inlet diameter	4" (100 mm)
Air inlet position	Rear
Ash handling system	Large capacity swing-out ash pan
Logs	Heavy-duty refractory
Heat exchange area	Cast iron
Power requirement	110V AC
Total power	220 watts, max.
Front glass panel	High-temperature ceramic
Width	16-1/4" (415 mm)
Height	13" (330 mm)
Top glass panel	Tinted tempered glass
Weight	425 lbs. (192 kg.)
Width (cast body)	24-3/4" (780 mm)
Depth (overall)	19-1/4" (488 mm)
Height	31-1/2" (800 mm)

*A.P.F.I./F.F.I. standards

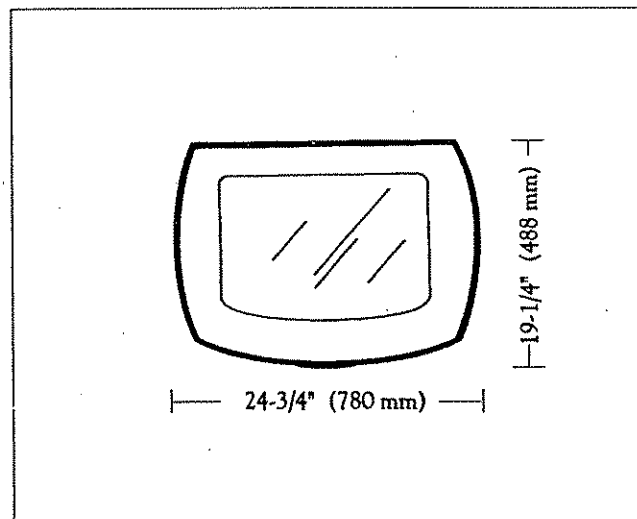
**Method 28A



Front elevation



Side elevation



Top view

Vermont Castings Warranty

Limited Three Year Warranty

Vermont Castings warrants that this Reliance will be free of defects in material and workmanship for a period of three years from the date you receive it, except that the ceramic logs, motor, exhaust fan, blowers, control panel, circuit board, loading door strut, feed mechanism, handles, glass door panels, cement, and gasketing shall be warranted as described below.

Vermont Castings, Inc. will repair or replace, at its option, any part found to be defective upon inspection by a Vermont Castings' Authorized Dealer. The customer must pay for any Authorized Dealer in-home travel fees, service charges, or transportation costs for returning the fireplace to the Authorized Dealer. If upon inspection the damage is found to be the fault of the manufacturer, repairs will be authorized at no charge to the customer for parts and/or labor.

Any Reliance or part thereof that is repaired or replaced during the limited warranty period will be warranted under the terms of the limited warranty for a period not to exceed the remaining term of the original limited warranty or six (6) months, whichever is longer.

Limited One Year Warranty

The following parts of the Reliance are warranted to be free of defects in material and workmanship for a period of one year from the date you receive it: the printed circuit board, the ceramic logs, the motor, the exhaust fan, the blowers, the control panel, the loading door strut, the feed mechanism, the handles, the glass door panels, the cement, and the gasketing. Any of these items found to be defective will be repaired or replaced at no charge, upon the return of said part to a Vermont Castings' Authorized Dealer with postage prepaid.

Exclusions and Limitations

1. This warranty is transferable; however, proof of original purchase if required.
2. This warranty does not cover misuse of the Reliance. Misuse includes any practices, procedures, or use that is not in accordance with the guidelines in the Owner's Manual concerning installation, operation, and maintenance of the Reliance.

3. Vermont Castings offers no warranty on chipping of enamel surfaces. Inspect your Reliance prior to accepting it for any damage to the enamel.

4. This warranty does not cover a Reliance that has been modified unless authorized in writing by a Vermont Castings' representative. This warranty does not cover damage to the fireplace caused from a salt environment or any fuel not recommended in the Owner's Guide.

5. This warranty does not cover a stove repaired by someone other than a Vermont Castings' Authorized Dealer.

6. Damage to the unit while in transit is not covered by this warranty but is subject to claim against the common carrier. Contact the Vermont Castings' Authorized Dealer from whom you purchased your Reliance. (Do not operate the Reliance as this may negate the ability to process the claim with the carrier.)

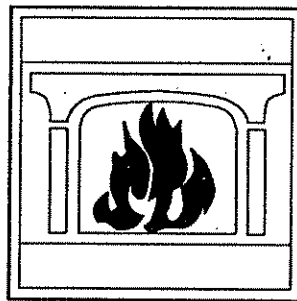
7. Claims are not valid where the installation does not conform to local building and fire codes or, in their absence, to the recommendations in the Owner's Guide.

How To Obtain Service

If a defect is noted within the warranty period, the customer should contact a Vermont Castings' Authorized Dealer with the following information:

1. Name, address, and telephone number of the purchaser.
2. Date of purchase.
3. Serial number from the label on the back of the stove.
4. Nature of the defect or damage.
5. Any relevant information or circumstances, ie., installation, mode of operation when defect was noted.

A warranty claim will then start in process. Vermont Castings reserves the right to withhold final approval of a warranty claim pending a visual inspection of the defect by authorized representatives.



Vermont Castings, Inc.
Route 107 • P.O. Box 501
Bethel, Vermont 05032

VCW International Ltd.
1, Smythe Road
Bristol BS3 2BX
England

*200-0507A